Neolithic Monuments on Gotland: Material Expressions of the Domestication Process

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Abstract-*In this paper I will summarise the evidence of monumental architecture during the Neolithic period on the island of Gotland. The archaeological record shows the presence of only one confirmed and one suggested Megalith structure, of Dolmen-type on the Island. The human skeletal remains found here indicate collective burials including individuals of both sexes and of various ages. Another stone monument, which might be interpreted as a Causeway structure (Sarup-type,) may derive from the Neolithic time. During the middle Neolithic (Pitted Ware Culture phase) there is an absence of stone grave architecture and the burials from this time are found in shallow oval pits, often as individualised and single burials. In the Late Neolithic, stone cist burials appear and they are distributed all around the Island. These usually contain one or a few individuals and are in some cases covered by Early Bronze Age cairns, indicating continuous use at the sites into this period. These changes in the burial practises during the Neolithic demonstrate a trend towards a higher degree of selectivity among the individuals buried, which may indicate a trend towards a higher level of stratification in the society.*

Introduction

The aim of this article is to make an overview of stone architecture from the Neolithic period on Gotland. During the past 25 years the research has been dominated by excavations and research concerning the middle Neolithic Pitted Ware sites, especially the Ajvide site, situated on South West Gotland. Here a grave-yard containing 84 graves has been uncovered (Österholm 2008). However, I suggest that it is now time to carry on in the tradition initiated by Nils Lithberg (1914) and continued by Inger Österholm (1989) to study the dynamics of the complete Neolithic era, as a foundation to understand the transition to the Early Bronze Age (EBA).

Traces of so called Pitted Ware cultural groups (named for their use of a specific type of decorated pottery), are indicated by large activity sites located by the coast. Their marine economy, constituted one phase of an ongoing process of adaptations, influences/interactions and choices during the Neolithic. The forerunners, or the Neolithic pioneers, who brought ceramics and domesticated animals to the Island, as well as erecting a few megalith structures during the early Neolithic, are overshadowed by the Pitted Ware groups which in fact were influenced by the Neolithic lifestyle. At these sites are finds of domesticated pigs, cattle and sheep, an abundance of fish and seal bones, and remains of large ceramics vessels, central to this sub-Neolithic population. The subsequent phase, (called the Late Neolithic LN), is less visible concerning preserved settlements/activity areas, but the stone cist graves make them clearly recognisable all around the island. It is suggested that the foundation of agriculture/pastoralism developed on a large scale and became a major part of the economy during this time period. A number of the stone cists were also covered by stone cairns during the EBA, indicating a con-

tinuous use of the same sites. This is probably due to kinship groups bonding with their genealogically important forefathers buried in the stone cists.

The project discussed in this paper is called *Neolithic Lifestyles: Dolmens, Earth Burials and Stone Cists.* It is part of a larger project called *Lifestyles – from Hunter to Urban Mind. The longtime perspective on environmental adaptation and cultural choices in the Baltic Sea Region* conducted at the Department of Archaeology and Osteology at Gotland University. It aims to illuminate the dynamics of the Neolithic period on Gotland, and investigates how the natural environment and cultural choices are important influences on the development of human lifestyles and how these diverged during different time periods. Particular interest is also paid to the transition from the LN and the EBA phases. The theoretical starting point for my project is founded in the rhetoric expressed in the material culture that can be traced to different time horizons (Hodder 1993). I also base my work in relational multivariate studies (Bourdieu 1977, 1996, Bourdieu and Wacquant 1992), and a discussion on the human memory and the uses of memorial places (Nora 2001). The presentation and analyses of the material culture expressed in stone architecture in this paper should be seen as an introduction to the project in its current phase. This material will be subject to further investigation with varied aims. I argue that the large amount of available data needs to be worked on and analysed in new manner, and I have realised that general archaeological thoughts to date can be quite bound in conventions that need to be re-evaluated.

The Dolmen at Ansarve: A collective grave

This Dolmen is the so far only confirmed Megalith construction on Gotland, located on the western part of the Island, in Tofta Parish about 20 km south of Visby. It is situated by the road leading to the old fishing camp site at Gnisvärd. The grave consists today of four 1,2 meter high granite blocks. At the N side there are three stones making up the wall of the chamber on this side. About 1,5 m to the south stands a single large block making up the southern wall of the same chamber. Other features observed are vertical entrance stones on the east corner side of the chamber, and the grave is surrounded by a rectangular outline of limestone slabs limiting a stone pavement surrounding the chamber stones. Based on typological features this rectangular Dolmen can be dated to the end of the early Neolithic c. 3400-3300 BC (Bägerfelt 1992:7) (Figure 1.).

Discovery, description, excavations and results

This grave monument was first discovered by the military medical doctor Karl Bolin in the early 1900s. It was furthermore excavated by him and the School Principal Hans Hansson in 1912. They excavated (scooped out!) the chamber and found, according to Nils Lithberg (1914:94) three human lower jaw bones, which they collected from this excavation. They also mentioned a smaller cist inside the chamber made from sand stone plates (Lithberg 1914:94). Such box-like divisions are common in megalithic graves on the mainland (Blomqvist 1989). Lithberg discussed this structure as a possible mega-

lithic grave, and based on the geographical dispersal of flint artefacts on the island he concluded that "If considering finding such megalithic graves on this island this is the ultimate spot" (Lithberg 1914:94, my translation).

Figure 1. The dolmen at Ansarve, Tofta Parish (Photo P. Wallin).

In the Swedish archaeological site inventory, FMIS (hosted by the National Board of Antiquities) the grave is described as follows:

"Description of the grave: Stone setting, round, c. 7 m diam. and 0,4 m high. In the stone setting, a stone cist or chamber, 3x1,5 m (ESE-WSW) and 0,4 m deep. The N wall consists of three large stones, the easternmost with flat side placed (N-S) 0,8x0,35 m and 0,8 m high, the middle stone is 1,6x0,5 m (SW-NE) and 1,2 m high (Inside measurements), the westernmost is 0,7x0,7 m and 1,2 m high. The S wall of the cist consists of one stone 1,8x0,5 m (WSW-ENE) and 1,2 m high. The S edge of the stone setting is disturbed, and in N-NW 0,3-0,5 m large stones are visible. The stone setting is disturbed also on the E side by gravel quarrying." (my translation).

The description was made in 1976. It is vague and non interpretative and has not been updated since, even though both earlier (1912) and subsequent (1984) archaeological investigations have been carried out. The grave is described as a "stone setting" with a cist/chamber, and it is not indicated as a Dolmen. However, no field notes or excavation

reports have been found from the 1912 investigation. We do not know if such notes were ever made. The only note of this event can be found in a few lines in Lithberg's dissertation on The Stone Age of Gotland from 1914. During my re-investigation of the 1912 excavation, I found information in the museum storage about finds of bones tied to this place. The note about these bones indicates: *"Tofta parish, Ansarve hage, 3 graves with unburned bones (1,717 and 2,511 grams) and one grave divided in three divisions of (29, 38 and 76 grams). Found at excavation in 1903. No osteological analysis. Stored in box 6818"*. The 1903 date is 9 years earlier than the excavation by Bolin and Hansson, so one may ask if there was an earlier excavation carried out in 1903 by Bolin and/or possibly Oscar Wennersten, who was active at that time. Anyway, these bones were also recovered by Christian Lindqvist who analysed the bones (1997). He did not mention the reference to the 1903 date, but took for granted that the bones derived from the 1912 excavation of the Megalith, which is probably right. This bone material consisted of 14 teeth and 246 bone fragments and the total weight of this material is 4371 grams. According to Lindqvist, all types of bones from the human body are represented, but fragments of the large bones of the bodies are most common and small bones like finger and toe bones are underrepresented (Lindqvist 1997:362). At least eight individuals could be identified among these bones.

A new excavation of the grave took place in 1984. This time students from Stockholm University (one of them is the author of this paper) carried out the excavation under the direction of Inger Österholm and Göran Burenhult (Figure 2.). This time several interesting findings, both concerning construction features, find materials, and bone remains were revealed. The grave was determined to be a Dolmen standing on an E-W oriented rectangular stone/earth platform outlined by limestone slabs standing on edge. The area outside the chamber was partly filled with stones.

Figure 2. The dolmen at Ansarve, after the 1912 excavation.

The grave itself was originally built of six big blocks roofed by one large cap stone. Today only four of these stones remain. A depression was identified on the south side of the chamber indicating that one large side stone originally was placed there, and there are oral traditions indicating that the cap stone "long time ago was brought home to the farm" (Lithberg 1914:94, my translation) probably sometime during the second half of the 19th century. Furthermore, one big boulder probably has been standing at the N to NE corner of the chamber, although no depression was identified there. The NW stone at the entrance was placed with a flat side facing to the N on angle with the W side chamber stone. Here were also two lime stones placed on edge indicating the entrance stones to the chamber. The find material from this excavation contained 249 flint flakes of which three were of south Scandinavian flint (one scraper), four stone axes (round cross-section) and four amber fragments (two in the chamber). A rectangular slab of sandstone with zigzag ornamentation was found close to the short side enclosure (Bägerfält 1992:22). A bronze *tutulus* dated to Montelius period II, was also found inside the chamber (Figure 3). In addition, 547 teeth and 5950 bone fragments were found, the majority were recovered from "the dump" of the 1912 excavation in the N to NE sector of the structure. The total weight of these bones was about 23 kg (Wallin and Martinsson 1986, 1992). These bones were analysed and were shown to derive from a total of 31 individuals of whom 16 were adults, four juveniles, eight infans II, and three infans I. Of the 16 adult individuals, four could be determined to be female and three male. The dental status was generally good, only five teeth had caries, but tartar and heavily worn teeth were common. Only a few fragments were identified as faunal remains: Pig 1 fr., Seal 8 fr., Dog 3 fr., and Fish 4 fr. (Wallin and Martinsson-Wallin 1997).

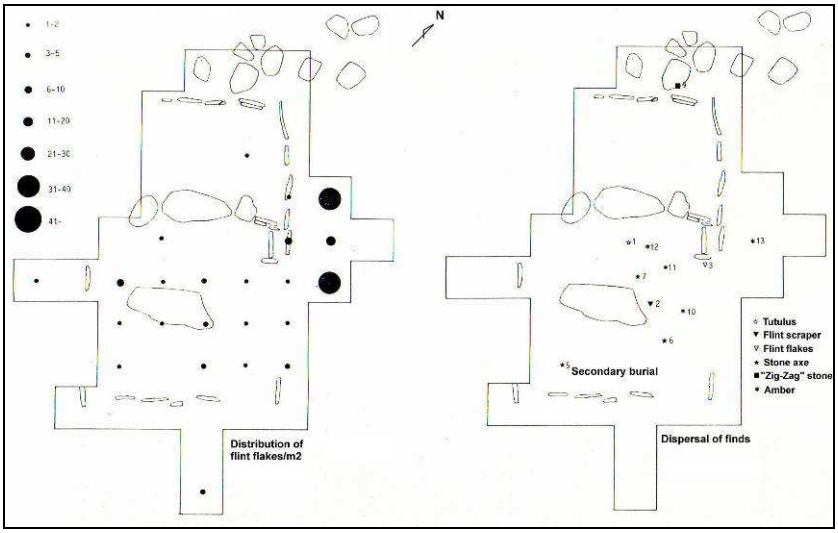

Figure 3. Find dispersal indicated in the 1984 excavated (after Bägerfeldt 1992).

East of the chamber, but still within the outline of the rectangular demarcation, a complete human skeletal remain was discovered. The remains belonged to a woman with an age determined to at least 40 years and possibly older (Figure 4,). The dental status was poor, three molars showed traces of caries, all lower molars on the left side were missing (pre mortem), since the alveolus was re-ossified (closed). When reconstructing the crushed cranium, a rounded hole was noted in the parietal bone on the left side. The suggestion is that this was a trepanation with signs of an ongoing infected healing process, which finally may have caused her death (Figure 5). Trepanations occurred in Scandinavia during the Neolithic. A bone from this skeleton was ^{14}C analysed, and the date indicated an age to the late Bronze Age (However the date had a range of ±230 years and may be erroneous), which means that this monument might have been re-used during the time when the stone ship settings where erected in the vicinity (Wehlin and Martinsson-Wallin 2009 manuscript). If the buried woman belongs to this period it is an anomaly since the prevailing burial practice from the Late Bronze Age period is cremation of the dead, and furthermore trepanations are not known from this period either.

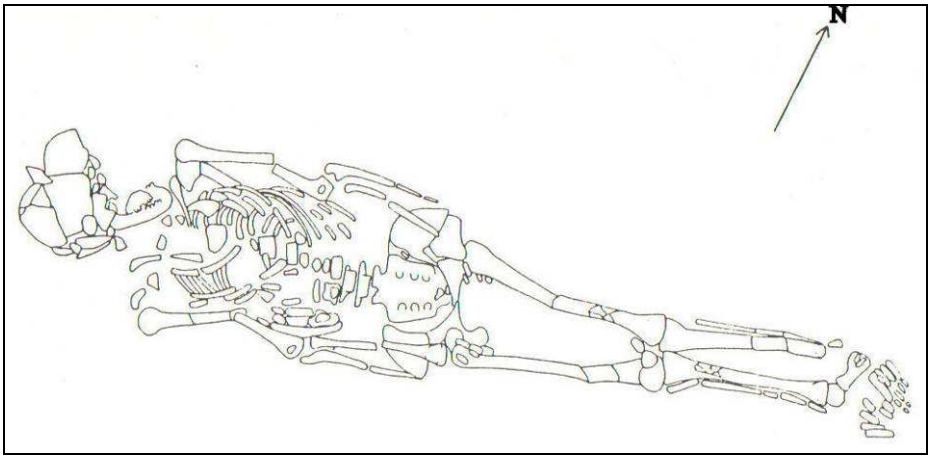

Figure 4. Skeleton of the secondary buried woman dated to the late Bronze Age (after Bägerfeldt 1992).

Figure 5. Probably trepanated skull of the secondary buried woman (Photo P. Wallin).

The dating of the Megalith is based on six bone samples that have been radiocarbon dated. Three were carried out by conventional ^{14}C after the 1984 excavation, and three additional AMS-dates were carried out by Lindqvist on the earlier excavated material. The earliest date on mixed bone material from the 1984 excavation indicated a date to the EBA, a date in line with the bronze tutulus. A bone from the female outside the chamber indicated late Bronze Age, which is in line with the erected stone ship settings just next to the Megalith. A charcoal sample from under one of the stones indicated a date to around 500 AD and seems to be out of context. However, the later AMS dates show great agreement with the typological dating of the grave type, and all three dates fall in the time frame 3300-2900 BC cal. 2 sigma, which indicates a late Early Neolithic or early Middle Neolithic initial phase of the structure.

A possible Dolmen at Licksarve 2:1, Tofta Parish – A detective story

An additional structure, which could be a second Dolmen, is in the area at Licksarve 2:1 (RAÄ 27) also in Tofta Parish. This structure was already mentioned by Lithberg (1914) and it was described as standing on a yard close to a barn. The barn was probably built sometime in the 1800s, but there was no trace of it in the 1930s. When building this barn it is said that several human skeletal remains were discovered, and that they were re-buried in a nearby stone cairn (this is according to Jan-Erik Wiman born on the Licksarve farm as mentioned in Sigvallius' report from 2001). The site is described in the inventory (FMIS) as part of a destroyed stone ship setting in the following manner:

"Stone ship setting, part of, consisting of four close together standing granite blocks. The stern stone is 1,5 m high and 1x0,8m wide and is slanting 30cg towards SW. SW-SSW of the stern stand the other three stones, which are 0,5-1,3 m high and 0,7-1 m in diameter. All are slanting. Between the stones are some smaller stones from later agricultural activities thrown in." (my translation).

This interpretation is a standard connection when there are a few uprights clustered, since we always make connections to the familiar. On Gotland there are several hundreds of stone ship settings, but Dolmens are extremely rare. If it would have been the other way around, the interpretation of these stones would probably be different. There are in fact other archaeological sites with large stones interpreted as stone ship settings that probably have to be re-evaluated (Personal comm. Joakim Wehlin April 2009). However, on an old photo (probably early 20th century of the site signed by O. Wennersten, found in the Gotland Museum archives, he has written "Stendös i Tofta. Lixarve" ("Dolmen at Tofta, Lixarve") (Figure
6).

When visiting the place today the barn is no longer there. Instead there is the main road from Visby, as well as a bicycle track, just a few meters from the stones which make up the possible Dolmen. In 1998, a rescue excavation was undertaken in a clearance stone

cairn in close proximity to the uprights, and in 2008 a trench was excavated just to the west of the upright stones due to placement of cables in the ground.

Figure 6. The possible dolmen at Licksarve, Tofta Parish, taken in the early 1900s (Photo O.W. Wennersten, Gotlands Museum archives).

The excavations were carried out by Gunilla Wickman-Nydolf at Gotland Museum. According to her field reports, the 2008 trench was unproductive, but the 1998 excavation showed some interesting results: The "clearance cairn," as it is described, was in fact a grave. It was situated about 5 m south of the upright stones (RAÄ 27), and was not marked on the economical map. Part of this structure was excavated. Just below the surface of the cairn, human skeletal remains were discovered mixed with recent remains. These bones were probably the re-buried bones mentioned above, which had been moved from the area of the three upright stones. At the bottom of the cairn, but outside the rim of an inner circular construction, cremated bones were found together with stamp-ornamented pot shards dated to late Iron Age. The inner grave construction was

made of dry mason, a stone packing, and some stones placed on end. The re-located human skeletal remains were analysed by Berit Sigvallius in 2001. In short, the result of this analysis indicates that remains from around 15 individuals were placed on the cairn when the barn was built. Of these, 14 individuals were adults (adultus-maturus 18-64 years), three could be identified as males and three were possible females. One of the individuals was a newborn child (Sigvallius 2001). These remains are of importance since they have been found in connection to the possible Dolmen structure, and since they are unburned they probably belong to the Stone Age or maybe EBA. The large number of individuals is also indicative of a collective grave as a Stone Age Dolmen. An aspect of interest concerning the stone structure itself is that the location is atypical for stone ship settings. The structure is located far from the sea or suitable water ways at the time of construction, which is very uncommon. According to current research by doctoral candidate Joakim Wehlin (Personal comm. Oct. 2009) all known stone ship settings have been erected close to water. They are all located by the sea or lakes, and burials found in the stone ship settings are furthermore generally from cremated bones. Datings of the human skeletal remains found on top of the stone setting will be undertaken as soon as possible to determine their age. Another research agenda is to investigate other sites with upright stones, which have been interpreted as destroyed stone ship settings.

During the writing of this paper new data in this the Licksarve case came to the surface in the shape of two handwritten letters (found at ATA in Stockholm) dated to 1876. It was the farmer Anders Westermark who asked for permit to remove the stones, when building a barn (the barn on the Wennersten Photo above). This means that the barn was probably built shortly after 1876. A description was also sent to the authorities in Stockholm that described the monument in the following way:
”*On request from the farmer Anders Westermark I, the undersigned this day on his land at Lixarfve in Tofta Parish visited an ancient monument. By doing this I thereby ascertained that the site consisted of a sand and gravel mound with 4 larger granite blocks, one 6 feet above the soil and 3 feet in cross section and two of 4 feets height and 2 feet in cross section. This mound placed close to the main road is oval shaped and about 40 feet long, widest to the north. The largest stones are also placed in that direction as the enclosed drawing indicates.*
Tofta 11th Mars 1876. C.P. Norrby Olof M? Östergårda Schoolmaster” (my translation*)*

These letters indicates several interesting facts, first of all people seems to respect the monuments and a stone ship setting would probably not have been so completely destroyed by them, secondly there was obviously a c. 12 m oblong mound surrounding the stones especially towards the N (where the barn was built). The mound was obviously removed, and the human remains may have been found in this mound/gravel when building the barn, since there is no mound today…This mound is also in line with the rectangular shape of the nearby Ansarve dolmen, and one can also add that mounds are not

found in this way associated with stone ship settings. -And best of all, there was an original drawing of the site! (Figure 7, 8.).

Figure 7. The possible dolmen at Licksarve today (Photo J. Wehlin).

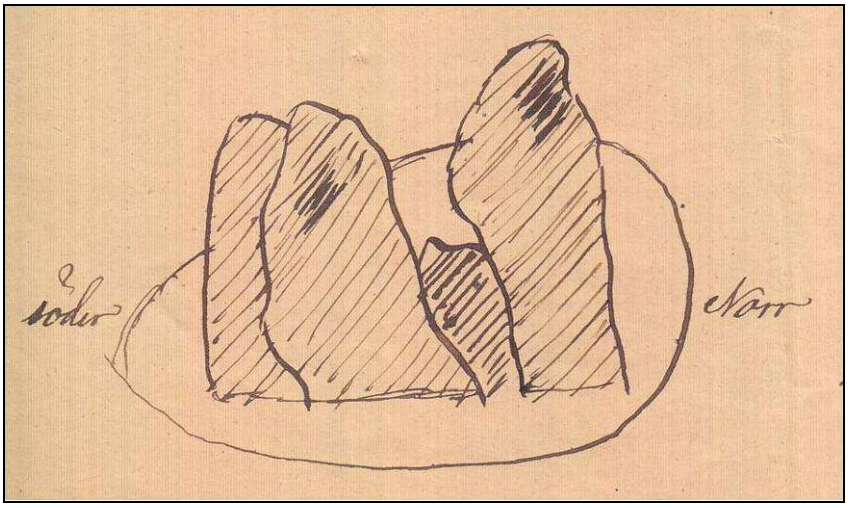

Figure 8. Drawing of the possible dolmen from 1876 (ATA, Stockholm).

Gothemshammar - a causeway structure of Sarup type, or something else?

The area of Gothem located at the Lina wetland/lagoon area was a very resource productive area during the Neolithic and the Bronze Age. Due to the shore line displacement, the area was actually a lagoon area with connection to the sea through a narrow channel during the Mesolithic/Early Neolithic phases. The earliest settlement at *Svalings* represented the early Mesolithic times covered by a later Litorina transgression (Seving 1985). It was followed by several late Mesolithic so called "axe settlements", some in the transition phase to the Early Neolithic. One Early Neolithic Funnel Beaker settlement, *Ardags* in Ekeby sn, is found a few km further to the W (Österholm 1989, Lund 1996), and a middle Neolithic Pitted Ware burial/settlement site is found at *Västerbjers* in Gothem (Stenberger 1943, Leijonhufvud 1989, Sundberg 2008). A LN death house was furthermore found at *Nygårdsrum* (Hallström 1971:114). EBA features are indicated by the huge "*Majstreroir*" complex only three km inland from the *Gothemshammar* site described below. The late Bronze Age activities in the area are indicated by a large number of stone ship settings located especially on the N side of the Lina wetlands (Figure 9).

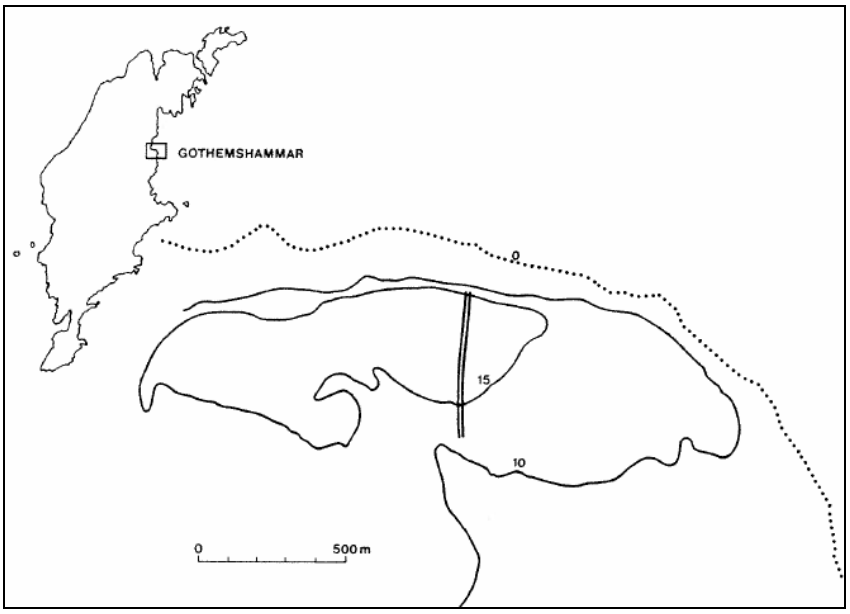

Figure 9. Location of Gothemshammar (After Appelgren och Engström 1989.)

Located on a peninsula close to the entrance of this former rich lagoon area just to the east at the mouth of the River of Gothem, is a site called Gothemshammar. This is a 500 m long stone wall of uncertain age (RAÄ Gothem 131, Busarve 1:34) placed in N-S direction across the peninsula. It has previously been interpreted as a defence or fortification structure from the Iron Age. In prehistoric times it delimited the peninsula that

stretched out into the sea toward the East. The wall is constructed of granite stones of varying size (ca 20-80 cm in diameter). The width of the wall varies between 5-8 m and the height is generally about 1 m in the middle and then slanting towards the E and W where the height is about 50 cm respectively. At the North end of the wall the terrain is steep and slanting, which due to the shore line displacement was limited by the sea in prehistoric times. The South end of the wall ultimately ends about 10,5 m above the current sea level, however a structural change of the outstretched wall is seen at about 12,5 m above sea level. The last 75 m of the wall to the S is probably a subsequent addition. Along the W side of the wall, about 20 ditches are located which vary from about 10x5 m to 25x5 m in size. They appear today as vaguely defined depressions in the ground situated about eight meters W of the W side of the wall.

Landscape studies and dating problematics

A section of the wall structure was subjected to archaeological investigations by the author during the autumn of 2009. The aim was to determine the age and function of the structure. The "defence structure" as it is described, has been discussed scientifically as well as in the media for a long time. The main questions raised is whether it is a defence structure from medieval times/Iron age or a gathering place/cult place of so called "Sarup" type (Andersen 1975, 1997), dated to Neolithic times (Appelgren & Engström 1989a, 1989b, Bendegard 1970a, Uddholm 1970b, Gotlänningen 1944, Sandblom 2008). In 1982, a test excavation was carried out in the area, when two trenches were excavated by Katarina Appelqvist and Johan Engström. These trenches produced no finds, but a thermoluminicence dating was carried out on burned stones which were detected and resulted in a dating to c. 1160 AD. This date was considered erroneous based on the fact that they assumed that the wall was limited by the sea on the south side, but in c. 1160 AD, due to the shore line displacement, the lowest part of the structure would then have been placed too high above the actual sea level. The conclusion was that the burned stones may have derived from a natural fire, and due to the structural appearance the excavators suggested that this is probably a construction from Neolithic times (Appelqvist & Engström 1989a:24-25). They base their assumption on two facts: 1) that the wall at the S side is located at a level too high above the sea and 2) the fact that there are ditches along the W side of the wall, similar to the Danish and Scanian structures dated to the Neolithic.

Excavation and phosphate analysis

In 2007, I initiated a new investigation of this structure which began with a phosphate analysis. The analysis was part of a BA paper in archaeology. The result showed a tendency of higher phosphates on the western side in connection to the ditches (Sandblom 2008). Due to this fact, a seminar excavation at Gotland University directed by the author was carried out in August-September 2009 aiming to settle the question regarding the date of the structure.

Figure 10. The excavation trench 1 at Gothemshammar in September 2009 (Photo P. Wallin).

Figure 11. Structure inside the wall (Trench 1), indicating possible foundation for stabilizing plank construction (Photo P. Wallin).

It was 19 x 2 m and placed perpendicular to the wall. It cut the wall in an E-W direction and extended 2x2 m along the W wall side from the main trench (Figure 10). The trench stretched out from one of the ditches in W through the wall towards the E, thus providing an insight to the section and the internal structure of the wall. The excavation revealed several interesting features and finds. There were stone wall demarcations along both the W and E side, which marked the width of the structure to about 6 meters. Between these stone rows there was a gravel/soil filling and slightly off centre from the structure to the E was an inner construction of stones placed in two rows with a gap in-between. The gap was visible in two to three layers of stones indicating that it might be the foundation of some kind of plank construction (Figure 11).

The W wall side also indicated a section of lime stone dry mason technique. The find material consisted of bones found in two different contexts, some bones came from the sand/gravel filling, and some came from a darker layer detected under the wall construction. The bone material consisted of animal bones from pigs, sheep, cattle, seal (one bone) and a few fish fragments. There was no difference in the composition of the species among the bones from the two contexts, which indicates that the filling material is from the same activity as the bottom layer. One artefact, a pointed tool of bone, was recovered from the filling layer. It is quite possible that the filling material derived from the ditches.

New extensive phosphate analyses were also carried out on the land stretching to the E towards the sea. There were occasional indications of higher phosphates, but test excavations in these areas remained unproductive. The structure and the surrounding areas were also mapped, especially around the southern part of the wall. Two sheep teeth were sent to ^{14}C analysis at Lund University (AMS-facilities), one from the filling and the other from the dark layer under the wall structure. The two samples showed the following result: LuS-8685 found in the wall filling was dated to 2660±50 BP, which calibrated at 1 zigma gave 895-790 BC and at 2zigma 920-760 BC. The second sample LuS-8684 found in a dark layer under the wall was dated to 2850±50 BP, which calibrated at 1 zigma gave 1120-930 BC and at 2 zigma 1210-890 BC. These preliminary dates clearly indicate a mid to late Bronze Age context of the structure or the activity predating the structure. If the bones derive from a Bronze Age settlement/activity area located at this spot before the structure was built, it seems a strange place to settle since the area at that time consisted of a rather open stone beach on a peninsula projecting out into the sea. The bone remains found do not reflect a beach camp, since they mainly consist of domesticated animals. Based on this, it seems more likely that the bones found may come from animals brought as food during the construction of the wall. Since it seems the wall has been added on, it may still be possible that earlier parts may be detected further to the N of the wall, which means that a Stone Age date still may be possible. This needs to be investigated further.

Stone cist burials: Late Neolithic and beyond

During the LN, the stone cist burials found their way to Gotland. At this time, visible stone graves can be found all around the island. These graves generally consist of a rectangular stone cist made of limestone slabs placed on end. The size of the cists varies in length between 1-3 m and the width varies between 0,5-1,5 m. The depth of the cists is generally about 0,5 m. They are generally placed in the centre of a flat stone/earth setting, in some cases covered by stones and earth. This fact makes it quite difficult to be accurate in the estimation of the exact number of such graves on the island. They may have originated in the LN and continuously used in the Bronze Age. Such structures are also found in the Iron Age. In this context, I only briefly discuss the known excavated stone cists and furthermore give a broad overview of the complete known stone cist material as it is presented in the FMIS register. Based on the available data, I present the dispersal of the complete material. I also briefly describe one of the most spectacular excavated stone cist known from the LN on Gotland.

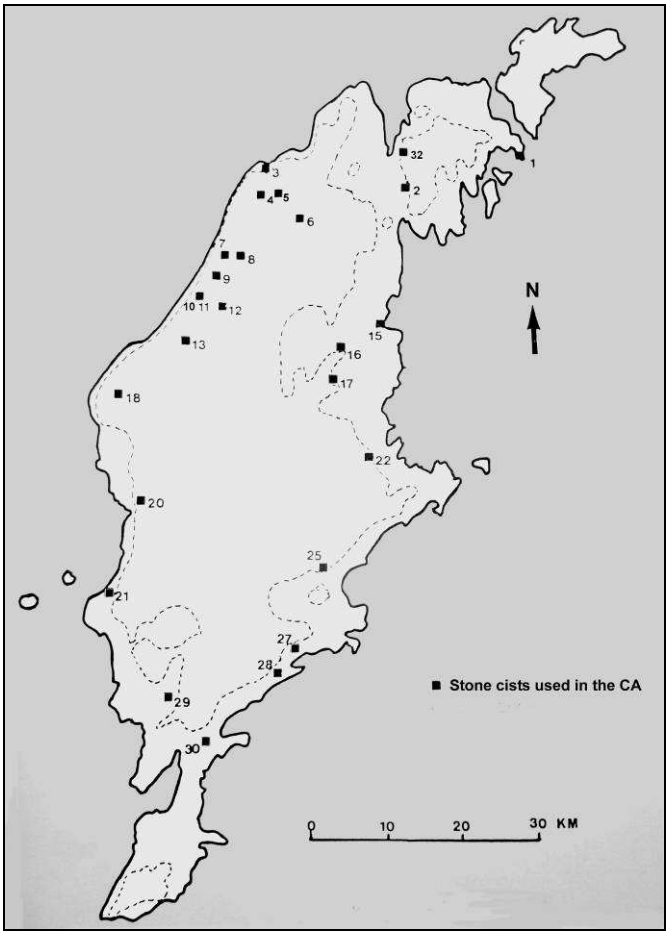

Figure 12. Dispersal of excavated Late Neolithic stone cists (after Luthander 1986).

Analysis of excavated Late Neolithic stone cists

On Gotland there are 42 excavated stone cists dated to the LN. Of these, 36 have more complete information, which serves as the foundation of this analysis (Figure 12). The dataset used here was first collected by Ann Luthander (1988) and further discussed by Bägerfeldt (1992). Since stone cists of similar appearance were used in the Bronze and Iron Ages, I find it difficult to use typology as chronological indicators. Instead, I suggest that morphological definitions of the Neolithic stone cists be used to say something about social and symbolic aspects. The grave morphology, in correlation with different find variations, is analysed aided by a multivariate Correspondence Analysis which investigates how the individual graves vary in relation to their associated variables.

Results of the Correspondence Analysis (CA)

The (CA) is a multi-varied relational statistical analysis, which can be used to analyse individuals in relation to their associated variables. The purpose of using a statistical analysis is not to prove certain relationships, instead it is used as a tool to illuminate possible relationships and use them as a base for producing hypotheses about the relationships revealed (Broady 1991). In this study this means that the individual stone cists are the find units to which different variables and characteristics are tied. Here I have included the 36 excavated Neolithic stone cists, which were complete enough to provide sufficient data. The following variables were considered in this analysis: 1) Length, width and depth of cist, 2) Orientation of the cist, 3) MNI of the individuals buried in the cist, 4) Diameter and height of stone setting/cairn, 5) Different artefacts found in the cist. These units and variables were analysed using the WinBASP statistical package, which is available to download free from this site: (http://www.uni-koeln.de/~al001/basp.html).

Interpretations of the analysis

Three groups indicating the following general trends can be defined through the analysis (Figure 13). We can refer to them as A, B and C:

Group A: This group has small (0,6-1,9x0,35-0,5m) to medium (2,0-2,3x0,6-0,95m) sized stone cists. The surrounding stone setting is flat (0,3-0,4m) and has a small diameter (4,5-9m). Graves have a N/S orientation (in some cases an E/W orientation) and are generally for a single individual. The main finds consist of flint daggers, bone needles, ceramics, and in some cases bronzes.

Group B: This group has medium (2,0-2,3x0,6-0,95m) to large (2,4-3,1x1,0-1,5m) sized stone cists, generally placed in a medium sized (9,1-15m in diameter and 0,5-1,0m high) stone cairn. Graves have N/S orientation (in some cases an E/W orientation) and were mainly for 2-3 persons. The finds consist of flint daggers, bone beads, arrow/spearheads, slate/bone tools, stone axes and in some cases bronzes.

Group C: This group has large (2,4-3,1x1,0-1,5m) to medium (2,0-2,3x0,6-0,95m) sized stone cists generally placed in a large (18-30m in diameter and 1,5-2,5m high) to medium (9,1-15m) sized stone setting or cairn/mound. Graves have N/S orientation with one exception in E/W. These are collective graves for 4-20 persons. The finds consist of flint daggers, bone needles, ceramics, boar teeth, bone beads, flint and in some cases bronzes.

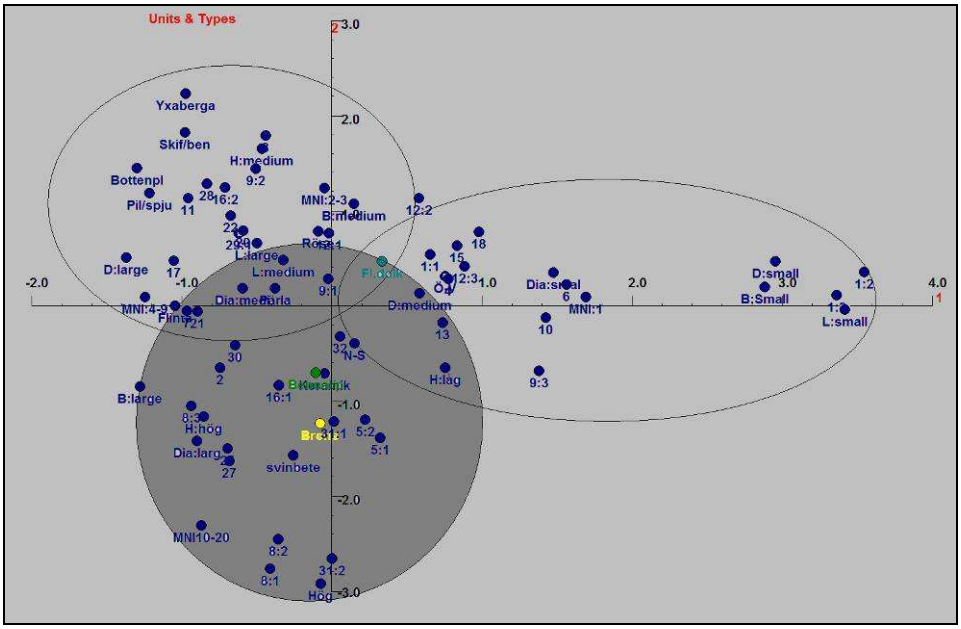

Figure 13. Correspondence Analysis of stone cists, indicating individual cists and additional variables.

Since certain find materials are represented among all the groups described above, and the chronology based on the artefacts is not clear, we need to look for other explanations than chronology. It is possible that the groups may indicate social differentiations and status. Higher complexity is seen in the larger structures, which also include several buried individuals. This could be a sign of genealogical complexity among certain important families. The single smaller graves may be expressions of certain important specialists/individuals or less important family lines. Further analyses along this line could be fruitful when studying the processes that may be of importance during the societal development in the LN and the EBA.

Distribution patterns of stone cists found in FMIS

Concerning the general distribution of observed "stone cists," I have examined the material that I collected from the FMIS dataset. From this, we have an indication of the possible distribution of LN/EBA stone cist graves on Gotland. The problem here is that

some of the cists in the inventory may in fact be dated to the Iron Age. To try to avoid this problem, I have examined the find contexts of the individual cists found. Only the cists that indicate LN finds or those with ties to EBA stone cairns are included in this study. If Iron Age graves are mentioned in the description of the site, I have not included them in this study of stone cist dispersals.

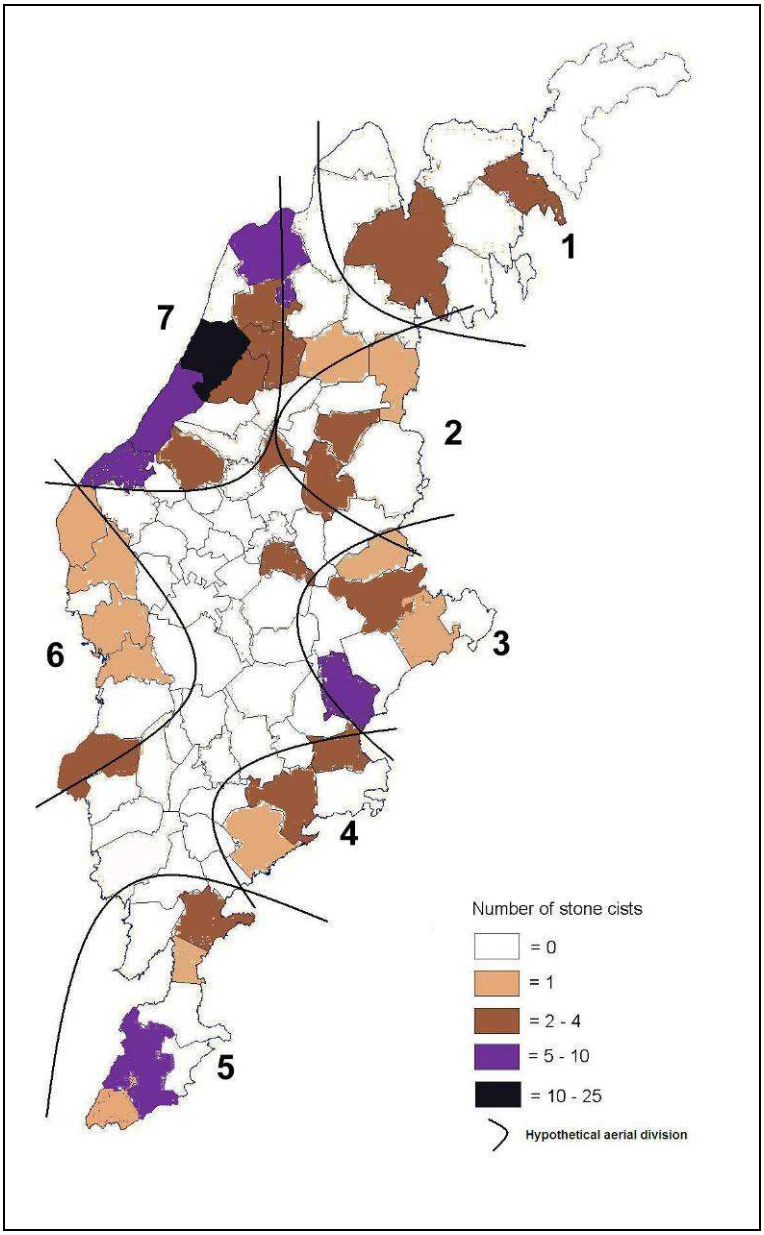

Figure 14. Dispersal of all possible Late Neolithic/Early Bronze Age stone cists.

The result of the studies

After an evaluation of the data on stone cists found in FMIS, I ended up with a total of 104 stone cists at 86 sites, distributed all around the island. If studying the dispersal map we can see that the occurrences are tied mainly to coastal locations, except in the Vallstena and Martebo areas where cists are found in inland locations. These are areas that also have great densities of surface finds from the LN period. This may be caused by inland lakes located around Martebo and Lina wetland, and the Dalhem river systems, which likely attracted people to settle in these areas. When looking at the dispersal, it appears that there are about seven areas with concentrations of cist graves. The areas could be defined in this way:

1) Bunge/Lärbro, 2) Boge/Vallstena/Hörsne, 3) Kräklingbo/Gammelgarn/Alskog, 4) Lau/Burs/Rone, 5) Vamlingbo/Sundre/Grötlingbo/Fide, 6) Klinte/Eskelhem/Tofta, 7) Visby/Väskinde/Martebo. (Figure 14).

When comparing the dispersal of stone cists with LN surface finds (Stålbom 1984) there are some similarities but also some differences. A notable difference is that there are fairly high frequencies of surface finds in the central parts of the island. This may be due to the burial landscape belonging to the old traditional areas along the coast, which means that the surface finds in fact indicate the settlement areas closer to fertile soils in inland positions. When instead comparing the dispersal of stone cists to the dispersal pattern of EBA cairns (Nilsson 1981), we find that they more or less have the same dispersal, which indicates that the burial landscape also during the following phase was located in the coastal areas.

The stone cist "Godsbacken" at Häffinds in Burs Parish: -An excavated example

During the summer of 1984, a large earth mound was excavated under the direction of Göran Burenhult. It was carried out within the parameters of the project "Arkeologiska Prospekteringsmetoder" associated with the summer courses conducted by the Hemse Community College in collaboration with Stockholm University. The excavated earth mound was about 27 m in diameter and included secondary burials of cremated bones dated to the late Bronze Age around 700 BC. This earth mound covered a central stone cairn 10 m in diameter that, from the find material, was dated to the EBA c. 1500-1200 BC. However, when excavating the stone cairn, stones in concentric circles were detected at ground level and in the centre of four such concentric circles. At the bottom of the structure, a rather large stone cist with multiple burials (22 individuals) was found (13). This grave could be dated on typological ground to LN, c. 2000 BC, by three nicely shaped bone needles. The buried individuals were from different age groups as well as sexes. One female and one male were placed in a central location in the cist, the female was oriented with the head towards the west and the male to the east. The remaining 20

individuals were all placed with their heads to the east (Burenhult 1986:344-351) (Figure 15).

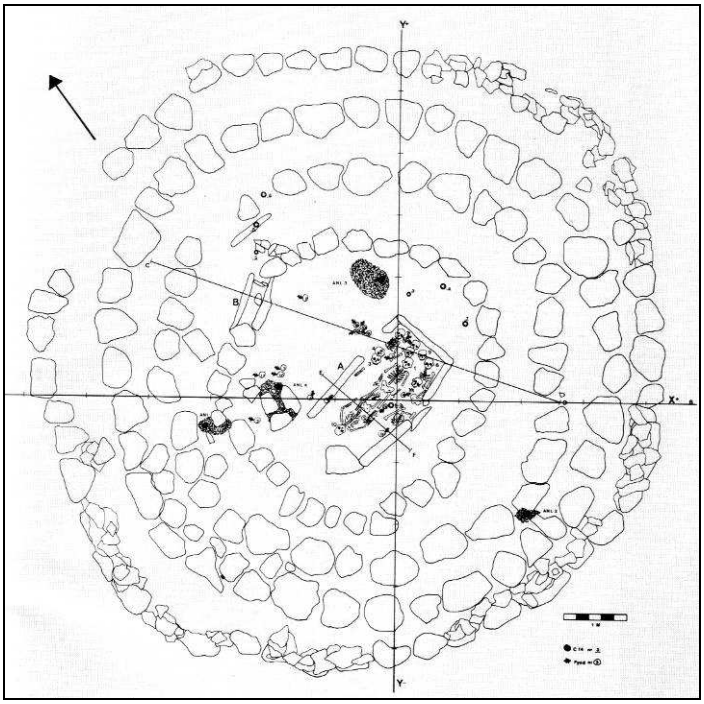

Figure 15. The Late Neolithic stone cist at Häffinds in Burs, excavated in 1984 (from Burenhult 1986).

Times and monuments -A story of introductions, choices and acceptance

Comparisons of Neolithic burial customs on Gotland indicate changes in grave rituals over time. Different expressions can be traced and the rhetoric is clearly told by the use of different stone materials. The dolmens are indicated by a local bold statement, expressed through huge stone blocks, that was however quite unsuccessful. Pitted Ware graves are earth graves without visible stones, but they were very common. Finally, the LN statement used local limestone slabs and stones/earth to establish an accepted use of stones on the individual family levels expressing symbolic power distinctions (Bourdieu 1996), something that continued into the Bronze Age era when new traditions with ties to the old graves, turned memorial milieu into memorial place (Nora 2001).

The Early Neolithic dolmens are rare on the Island and only the one at Ansarve is confirmed and preserved until present day. A somewhat demolished grave of the same kind is possibly found at Licksarve, but this one has not been thoroughly investigated and confirmed. Both these graves were located in Tofta Parish approximately only 4 km apart on the Western side of the island. A question that has to be asked concerning the Ansarve dolmen is, what does this grave in fact indicate? This question must be followed

by questions concerning who made it, and who were buried in this dolmen. First, one can conclude that there are no other burial practices found from this time period, which means that the only practise observed from the early Neolithic is represented by the Ansarve grave. One can speculate whether other graves of this type have been destroyed, as indicated by the possible grave at Licksarve. This could have happened in subsequent time periods, for example during the late Bronze Age, when large stones were needed to build some of the stone ship settings. The other possibility is that the dolmens at Tofta are in fact unique, and that they indicate the only remains from an introduction of a cultural trait that in a sense failed and was never generally accepted.

Gothemshammar is suggested to have been a communal central place, as well as a strategically placed focal/meeting ground, possibly during the Neolithic but at least during the mid-Bronze Age era. The structure including an enclosure wall and ditches (which indicate similarities to Sarup structures), which so far has rendered a Late Bronze Age date, was possibly influenced by south Scandinavian/continental structures of similar types, but transformed into a local expression.

During the middle Neolithic Pitted Ware cultural phase, the burial custom was individual earth burials. No visible stones marked the spot of the buried individuals but every grave is individualised. However, this burial custom is seen all around the island, and therefore appears to be a widely accepted tradition. Persons of all ages and sexes are observed in these grave fields. Small children are however underrepresented in the excavated material. Men are generally more commonly found than women which is indicated both in the grave fields at Visby and at Ajvide. This could indicate that not all individuals in fact were buried and that alternative treatments have occurred. Dispersed human remains are common on these sites and these could be indicative of alternative treatments.

The LN stone cists are represented all around the island, and an analysis carried out suggests that different types and sizes are indications of social distinctions of symbolic expressions rather than chronological indications. This implies that new Neolithic influences reached the Island again, and this time it is reflected in the burial treatment as well as in a changed settlement pattern, a pattern that clearly continued into the EBA and beyond.

References

Andersen, N. H. 1975. Sarup, et befaestet neolitisk anlaeg på Sydvestfyn. *Kuml* 1973-74:109-120. Höjbjerg.

Andersen, N. H. 1997. The Sarup Enclosures. Sarup vol. 1. *Jutland Archaeological Society Publications* XXXIII:1. Jysk Arkeologisk Selskab, Moesgaard. Aarhus University Press.

Appelgren K & Engström J 1989a. ”Gothemshammar – en neolitisk kultplats”. *Gotländskt Arkiv*. Visby.

Appelgren K & Engström J. 1989b. Datering av vallen på Gothemshammar – medeltid eller stenålder? *Tor*. Uppsala.

Bendegard, H. 1970. Hur gamla är fornborgarna? Gotlands Allehanda 4 augusti.

Blomqvist, L. 1989. Sveriges megalitgravar. *Theses and Papers in Archaeology* 1. Stockholms Universitet.

Bourdieu, P. 1977. *Outline of a Theory of Practice*. Cambridge University Press.

Bourdieu, P. 1996. *Symbolsk makt*. Pax Forlag A/S. Oslo.

Bourdieu, P. and L. Wacquant 1992. *An Invitation to Reflexive Sociology*. University of Chichago Press.

Broady, D. 1991. *Om Pierre Bourdieus författarskap och den historiska epistemologin*. HSL-förlag. Stockholm.

Burenhult, G. 1986. Speglingar av det förflutna. Bra Böcker. Höganäs.

Bägerfeldt, L. 1992. *Neolitikum på Gotland. Problem och Konsekvenser*. ARKEO-Förlaget. Gamleby.

Gotlänningen 1944. Fornborgen på Gothemshammar. Anonym författare. 10 november.

Hallström, A. 1971. Boplatser och gravar på Nygårdsrum i Vallstena. *Gotländskt Arkiv*. Visby.

Hodder, I. 1993. The narrative and rhetoric of material culture sequences. *World Archaeology*. Vol. 25, no 2:268-282. Routledge.

Leijonhufvud, M. 1989. *Keramiken på Västerbjers, Gothem sn.* C-uppsats i arkeologi. Stockholms Universitet.

Lindqvist, C. 1997. Ansarve hage-dösen. Tvärvetenskapliga aspekter på kontext och den neolitiska förändringen på Gotland. In. Till Gunborg. Arkeologiska samtal. Eds. A. Åkerlund, S. Bergh, J. Nordbladh, J. Taffinder. SAR no 33:361-378. Stockholms Universitet.

Lithberg, N. 1914. *Gotlands Stenålder*. Stockholm.

Lund, A.-M. 1996. Stenåldersboplatser i linaområdet. En kartläggning och av boplatser runt Linaviken. *C-uppsats i arkeologi*. Stockholms Universitet/Högskolan på Gotland..

Luthander, A. 1988. Senneolitiska gravar på Gotland. *C-uppsats i arkeologi*. Stockholms Universitet.

Nihlen, J. 1927. *Gotlands stenåldersboplatser*. Stockholm.

Nilsson, P.-E. 1981. Om bronsåldersgravars läge på Gotland. *B-uppsats i kulturgeografi*. Stockholms Universitet.

Nora, P. 1996. Mellan minne och historia. In: *Nationens röst. Texter om nationalismens teori och praktik*. Ed. Sverker Sörlin. SNS förlag.

Sandblom, A. 2008. Gothemshammar – Sarupanläggning eller fornborg? *C-uppsats i arkeologi*. Högskolan På Gotland.

Seving, B. 1986. Tre mesolitiska boplatser på Gotland. Ett försök till tolkning av relation och lokaliseringsmönster. *C-uppsats i arkeologi*. Stockholms Universitet.

Sigvallius, B. 2001. Licksarve 2:1. *Osteologisk undersökning av begravningar i ett bronsåldersröse på Licksarve 2:1, Tofta socken, Gotland.* Riksantikvarieämbetet. Avdelningen för Arkeologiska undersökningar. UV-mitt. Unpublished report.

Stenberger, M. 1943. *Das grabfeld von Västerbjers auf Gotland*. KVHAA. Lund.

Stålbom, U. 1984. Gotlands senneolitiska fynd. *C-uppsats i arkeologi*. Stockholms Universitet.

Sundberg, M. 2008. Västerbjers – En plats för ritualer? *C-uppsats i arkeologi*. Högskolan på Gotland.

Uddholm, A. 1970. Fornvallen på Gothemshammar. Gotlands Allehanda

Wallin and Martinsson 1986. *Osteologisk analys av skelettmaterialet från megalitgraven i Ansarve, Tofta Socken, Gotland*. Unpublished report.

Wallin and Martinsson 1992. Osteologisk analys. Ett sammandrag. In: L. Bägerfeldt *Neolitikum på Gotland. Problem och Konsekvenser*. ARKEO-Förlaget. Gamleby. Pp. 26-27.

Wallin and Martinsson-Wallin 1997. Osteological analysis of skeletal remains from a megalith grave in Ansarve, Tofta Parish, Gotland. In: Remote Sensing. Vol. 1. *Theses and Papers in North European Archaeology* 13a:23-28. Stockholm University.

Wehlin, J. 2009 ms. Stenskeppen i Ansarve hage – ankrade i sitt förflutna? Unpublished manuscript.

Wickman-Nydolf, G. 2002. Arkeologisk undersökning och efterundersökning. Licksarve 2:1, Tofta sn. Gotland. Länsmuseet på Gotland. Unpublished report.

Wickman-Nydolf, G. 2009. Kabelschakt intill eventuell skeppssättning. Licksarve 2:1, Tofta sn. Gotland. Arkeologisk förundersökning. Länsstyrelsen Gotlands län dnr 431-1314-06. Gotlands Museum. Unpublished report.

Österholm, I. 1989.Bosättningsmönstret på Gotland under stenåldern. En analys av fysisk miljö, ekonomi och social miljö. *Theses and Papers in Archaeology* 3. Stockholms Universitet.