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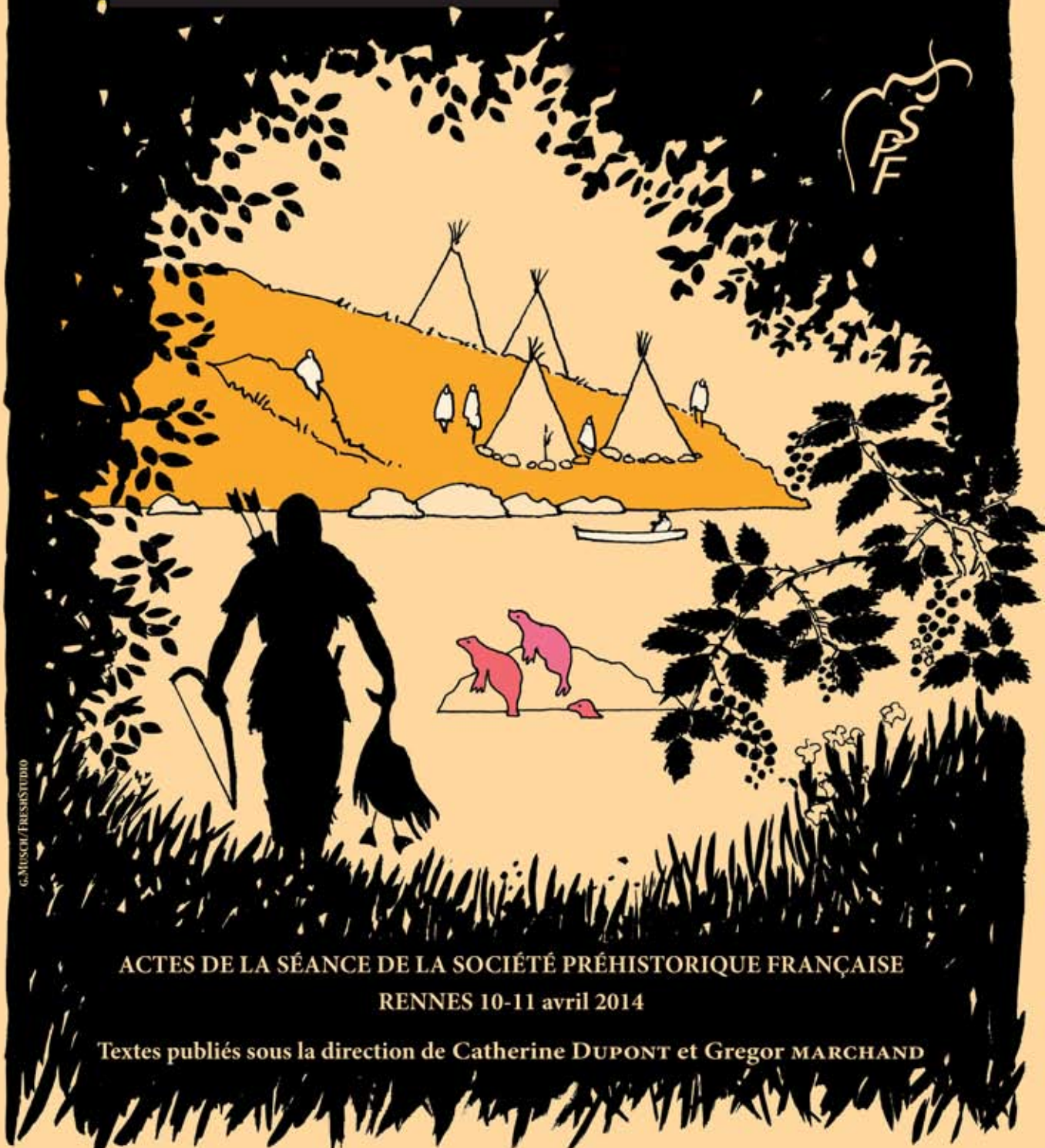
ARCHÉOLOGIE DES CHASSEURS-CUEILLEURS MARITIMES

DE LA FONCTION DES HABITATS À L'ORGANISATION DE L'ESPACE LITTORAL

ARCHAEOLOGY OF MARITIME HUNTER-GATHERERS

FROM SETTLEMENT FUNCTION TO THE ORGANIZATION OF THE COASTAL ZONE



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Archéologie des chasseurs-cueilleurs maritimes.
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The Use and Organisation of a Middle-Neolithic Pitted Ware Coastal Site on the Island of Gotland in the Baltic Sea

Paul Wallin

Abstract: The coastal sites of the mid-Neolithic Pitted Ware culture on the island of Gotland are exceptionally rich in material remains. This is true since the limestone soils protect all sorts of bone remains extremely well. The sites are also generally over 100,000 m^2 large in size. This fact turns them into complex sites full of information, in a sense comparable to the richness of the Late Mesolithic shell midden coastal sites. However, these sites include no oysters, but are on the other hand packed with bones from fish, seals, sea birds as well as pig bones. Parts of the sites are also assigned for human burials, buried under flat ground in clustered grave fields. To understand these complex sites that often include dates from a time span of several hundreds of years they need to be deconstructed with regard to the various activities both vertically and horizontally. The site cannot be seen as a unit, but should instead be seen as multiple sites with an entangled history. Only if seen as a history including several stories it will be possible to understand the use of these sites.

Keywords: mid-Neolithic, Pitted Ware culture, island of Gotland, clustered graves, animal bones.

Résumé : Les sites côtiers du Néolithique moyen de la culture de la Céramique à Fossettes *(Pitted Ware)* de l'île de Gotland sont exceptionnellement riches en artefacts. En témoignent les sols calcaires qui protègent extrêmement bien toute sorte de restes osseux. Les sites ont aussi généralement de plus de 100 000 m^2 de surface. Ce constat fait de ces derniers des sites complexes à riche potentiel d'informations à livrer, d'une signification comparable à la richesse des amas coquilliers côtiers mésolithiques, bien que ces sites ne comprennent pas d'huîtres, mais sont d'autre part composés d'os de poissons, de phoques, d'oiseaux marins, ainsi que d'ossements de cochons. Certaines parties des sites sont également dédiées aux sépultures humaines, enterrées sous le sol dans des zones de tombes groupées. Pour comprendre ces sites complexes, qui possèdent souvent des durées d'occupation de plusieurs centaines d'années, il est nécessaire de déconstruire leurs différentes activités à la fois verticalement et horizontalement. Ce site ne devrait pas être considéré comme une unité, mais plutôt comme plusieurs sites distincts ayant des histoires entremêlées. C'est seulement à travers la conscience de cette multiplicité qu'une compréhension de ces sites peut avoir lieu.

Mots-clés : Néolithique moyen, culture de la Céramique à Fossettes *(Pitted Ware)*, île de Gotland, tombes groupées, ossements d'animaux.

THE PITTED WARE CULTURE ON GOTLAND

Gotland is an island located in the Baltic Sea, about 80 km to the present Swedish mainland to the west, 180 km to the Baltic countries to the east, and c. 230 km to Poland and, Northern Germany to the south. The island is stretched out in a north-south direction with a total length of about 160 km, and on the thickest part at the middle of the island it is about 60 km wide (fig. 1). It was first settled in the Mesolithic c. 9200 years ago during the final era of the large fresh water Ancylus Lake. At this time the initial settlers probably used the island occasionally since the settlements are small and few, however they are difficult to find since they were covered by the Litorina maximum transgression about 6500 years ago (Martinsson-Wallin et al., 2011, p. 142). However, it was surprisingly not deep sea fishing that attracted the settlers in the first place instead it was the many rich overgrowing lakes on the island that was the main fishing ground for these early settlers. In line with this it was the easy caught gray-seals pups on the shores that were of greatest interest for these hunters. This means that Gotland was not inhabited just because of its marine resources, instead it was used in the same way as these early settlers were used to in their

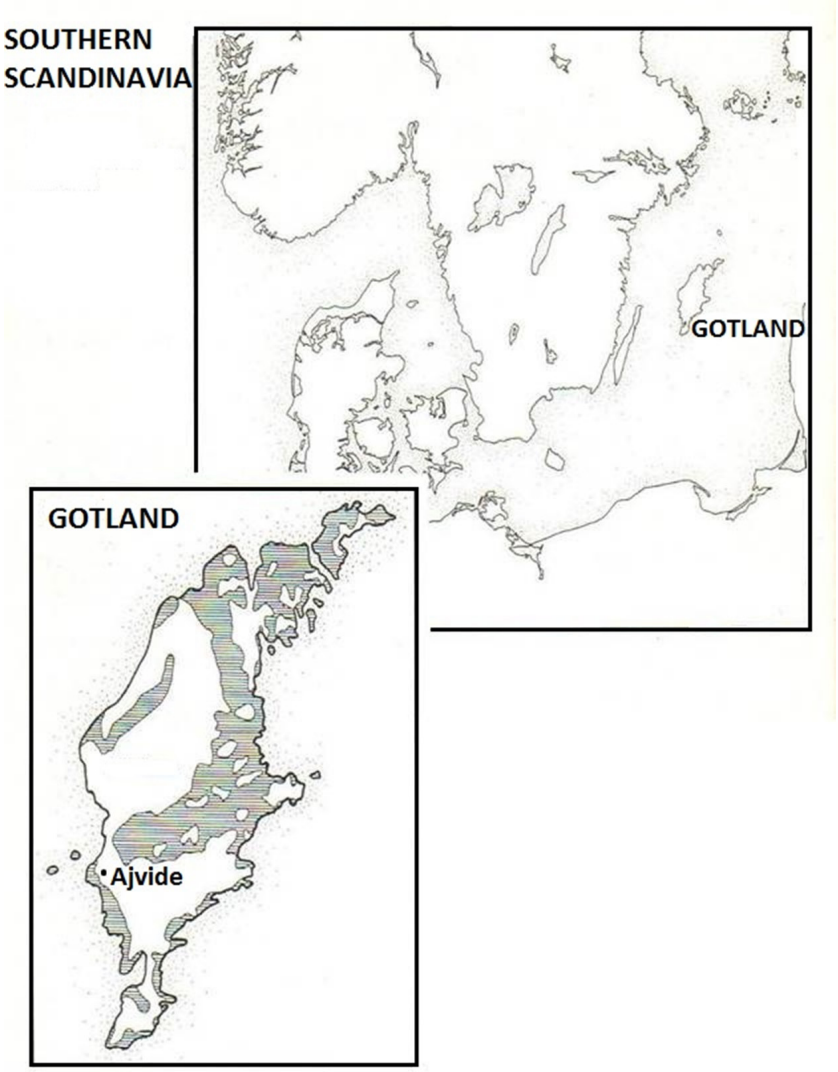

Fig. 1 – Map of the Baltic region and the location of the Ajvide site on Gotland (after Bägerfeldt, 1992, p. 6).
Fig. 1 – Carte de la région de la mer Baltique et localisation du site d'Ajvide sur l'île de Gotland (d'après Bägerfeldt, 1992, p. 6).

mainland settings (Apel et al., in press). Such hunting strategies continued more or less sporadic for a period of over 5000 years until the early Neolithic Funnel Beaker tradition reached the island (Martinsson-Wallin et al., 2011). This farming/pastoralist effort is dated on bones from domestic animals (cheep, cattle and pigs) to around 3900 BC (Lindqvist and Possnert, 1997). This farming event continued for some hundred years and culminated in the building of the easternmost megalith grave, a dolmen, dated to c. 3300–2900 BC on human bone remains found in the chamber (Martinsson-Wallin and Wallin, 2010). At this point we can see a gradual change to a somewhat colder climate that favoured the access of the marine resources, and we also see a specialisation among the population on the island that again took up the hunting lifestyle to live on what the salty Litorina Sea could offer. The farming enterprise seems to have taken an end, and this change has been detected in the ^{13}C values measured in the human remains. Recent aDNA studies have shown that the people associated to the farming Funnel Beaker tradition have a distinct different DNA code than the succeeding Pitted Ware Culture (PWC) population on Gotland, in the sense that the Funnel Beaker farmers have great similarities with farmers of Southern Europe, and the PWC analysed from the site I refer to in this paper show similarities with Mesolithic populations of Europe as well as Baltic populations (Malmström et al., 2009; Skoglund et al., 2014). However, it is still unclear what actually happened during this transition from Funnel Beaker to PWC on Gotland. Ongoing aDNA studies will soon give indications of these economically divided populations on the local Gotlandic scale, since the present comparisons are made on PWC populations from Gotland and a Funnel Beaker population on the Swedish mainland.

The PWC sites, identified by large amounts of its typical pottery with incised pits, are all located by the coast and I. Österholm (Österholm, 1989) indicated that there are seventeen such sites located in twelve areas all around the coast of Gotland. ^{14}C dates from several of the PWC sites on Gotland indicate that they in general have the same use period to the mid-Neolithic time frame (see

Andersson, 2015; Wallin and Martinsson-Wallin, 2015; Eriksson, 2004; Lindqvist and Possnert, 1997; Österholm, 1989; Janzon, 1974). The dispersal of these complex focal points has an even distribution, a pattern which may suggest territorial units (fig. 2). The dispersal displays 'empty' areas between the spots, and this indirectly indicate invisible borders to the neighbour spot (cf. Österholm, 1989; Wallin and Martinsson-Wallin, 1992; Martinsson-Wallin, 2008). It is quite likely that most of these big PWC sites have been detected since they are placed on what today are farming land, and most of them were reported already in the early 20th century. Different territories might therefore in this way be visible and the size of each territory is what could be expected for 'complex hunters' since they indicate a radius of about 10 km in distance between the sites (Higgs and Vita-Finzi, 1972), and these main sites may have been territorial focal points with multiple functions, rich of natural resources, strategic located for meetings, and by time useful as burial and ritual grounds.

This model suggests that Gotland during the mid-Neolithic had a degree of isolation and was rich enough to keep a stable population. This is suggested since the cultural layers show rich natural food resources. This does not mean that they lived in isolation to the mainland, and several finds in the burials indicate contacts to south Scandinavia as indicated by the existence of imported flint axes, cardium shells and amber (Taffinder, 1998); the latter might come from the southeastern shores of the Baltic. There are also slate arrows, as well as bear-, beaver- and elk teeth found in the material (Burenhult, 2002). These were species not living on Gotland and suggests contacts probably with the Swedish mainland to the west and northwest. According to aDNA studies

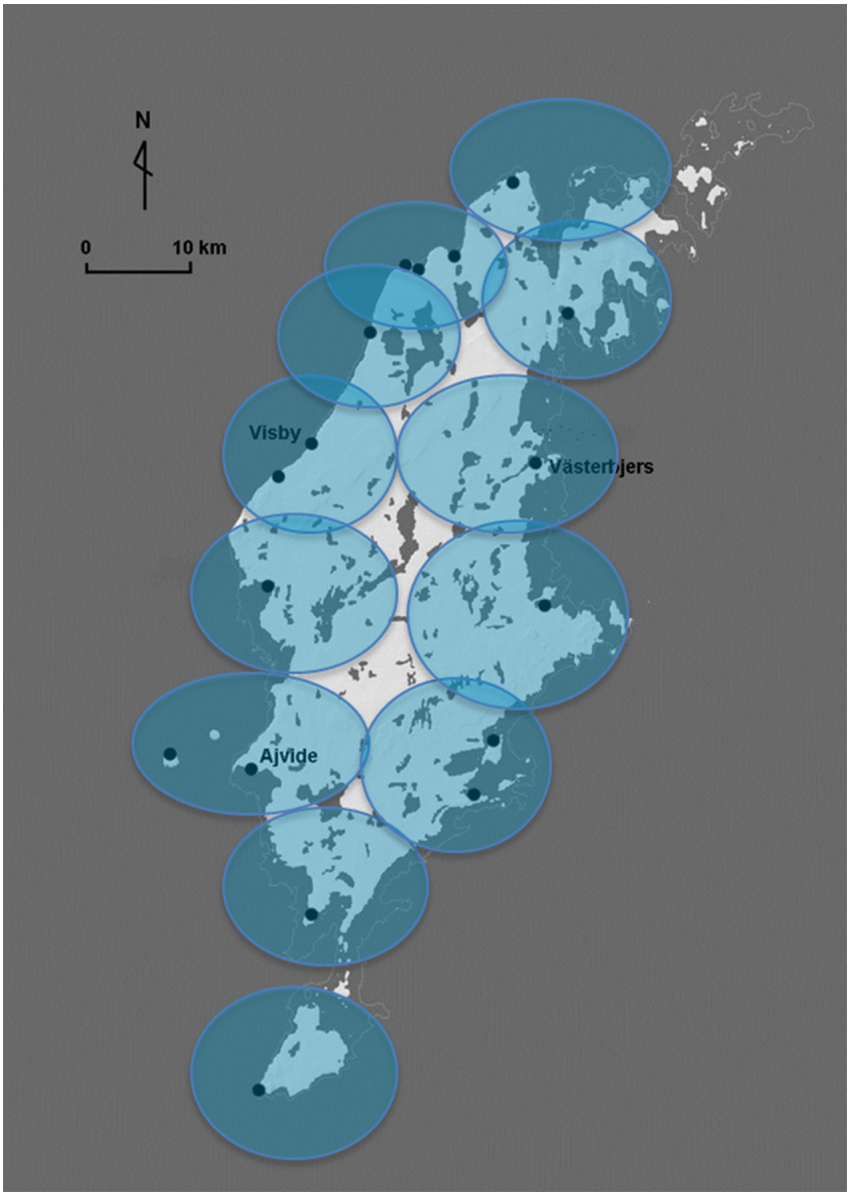

Fig. 2 – The distribution of the Pitted Ware Culture sites possibly indicating territorial units.
Fig. 2 – La répartition des sites de la culture de la Céramique à Fossettes indiquant de probables unités territoriales.

of hedgehog bones found in burials on Gotland, show similarities to pre-historic hedgehogs from the same area (Fraser et al., 2012). However, all these indications of contacts are mainly found in burial contexts, which suggests that these items were seen as exotic or valuables, which indicate that these contacts were not common in a sense that the materials are found in the general debris of the sites. Instead the Gotlandic PWC was using local raw materials when it comes to flint technology and pottery making (Österholm, 1989). Ordovician flint of a quite inferior quality compared to the south Scandinavian quality was used to make smaller flint tools for cutting and drilling etc. Analyses of clay used in the pottery are also of local clay sources (Österholm, 1989), which means that the island was not in regular contact with areas providing them with flint or ready-made pots. I therefore argue that there was a stable local population on Gotland in the mid-Neolithic that lived in a degree of isolation, but with some regular contacts with different shores around the Baltic Sea.

The lifestyle of these groups can be termed sub-Neolithic due to a pronounced hunter- gatherer lifeway, which is indicated by the faunal remains at the sites, which display large amounts of fish, seal and sea bird bones (Österholm, 1989). The marine diet compared to the early middle Neolithic as well as the late Neolithic and Bronze Age, is also indicated in the measured ^{13}C values (around −15) given for the dated human skeletal remains. However, there was also a consumption of pig, which is seen in the bone remains recovered at the sites. The dated pig bones from the PWC cultural layers all have terrestrial values. A continuous pig diet would give more terrestrial ^{13}C values, therefore this consumption may be tied to feasting during meetings and/or burial rituals (fig. 3).

In this paper I will focus on the description of one particular PWC site, which will stand as an example and model of several of the large sites indicated above. The area of such sites are generally around or over 100,000 m^2 in size, and include a c. 50 cm thick cultural layer consisting of animal bones, pottery, local flint-flakes etc. Several of the sites also have burial grounds, as well as spread human remains found in the cultural layer. However an important point is that the sites must be seen as multiple sites with quite long histories. A main aim of this paper is therefore to uncover such histories to fully understand the use and organisation of such sites. The site used here is a site named Ajvide, which is located on the southwest coast of the island. It is chosen because it is the best and most recently excavated site as well as the most extensively excavated and dated site of its kind (Burenhult, 2002). If comparing the Gotlandic sites to the ones on the Swedish mainland they are outstanding, since the mainland examples generally include no or few bone remains due to the acid surroundings there (Sundström et al., 2006). This means that the mainland sites in many cases do have the same content of pottery and flint, but have no bone remains or bone tools. This makes the sites on Gotland valuable also for the understanding of the mainland sites.

THE AJVIDE SITE – A 'KØKKENMØDDINGER' WITHOUT SHELLS…

The view of the Ajvide site has grown slowly during a long time period of about twenty-five years of seasonal seminar educational excavations (1983-2009). This is unusual, since excavations in general are carried out under time pressure. Therefore this site has been published and reported for in different stages (Österholm, 1989; Burenhult 2002; Österholm, 2008; Norderäng, 2009). This process adds different ideas of chronology

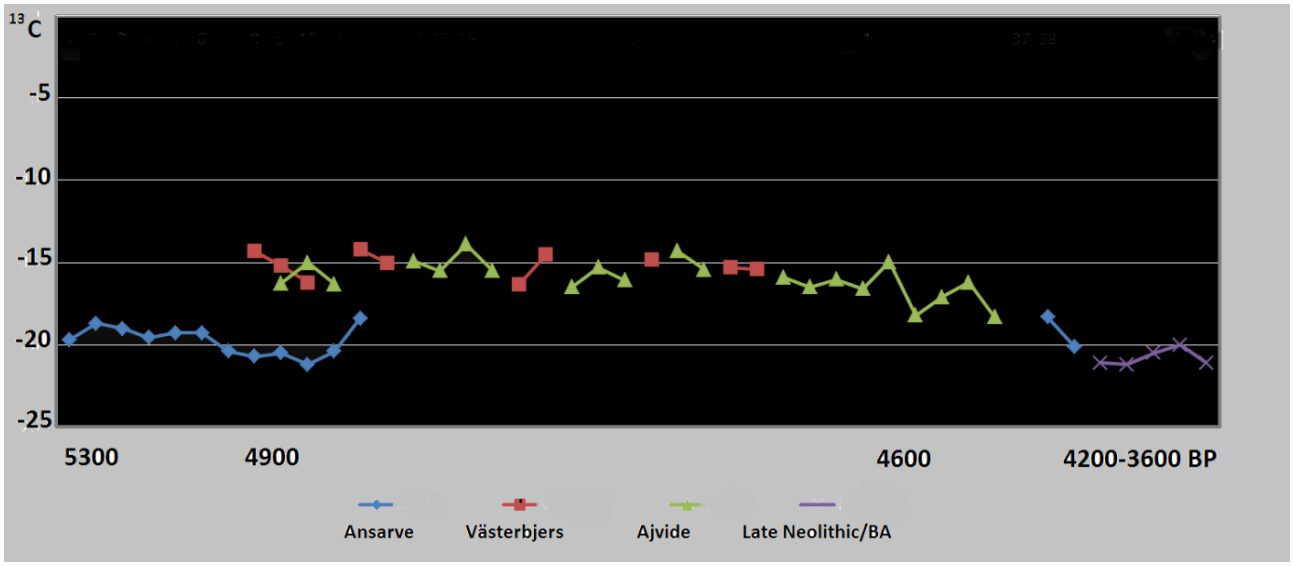

Fig. 3 – ^{13}C measurements from human bone of fifty Neolithic individuals on Gotland. Ansarve: Funnel Beaker Culture; Västerbjers and Ajvide: Pitted Ware Culture.
Fig. 3 – Mesures du ^{13}C d'os humains de cinquante individus néolithiques de l'île de Gotland.

and formation of the site to a continuous story that finally reached a picture that turned it into a 'unit', everything seen at the same time. By the years the excavation efforts were concentrated to the southern part since it uncovered the burial ground, and a few dates seemed to follow a pattern that the northern graves were the earliest and the southern the latest, an idea that also is visible in some of the main interpretation of the chronological idea of the site (Fahlander, 2010; Burenhult, 2002). However, due to new dates this picture needs to be deconstructed. The general outline of the site are as follows: The site was already the first excavation season outlined by four main excavation spots called areas A, B ,C and D (fig. 4; the last were also divided in an upper and lower area; Österholm, 2002, p. 18). Areas A, B and C were only test-excavated, and area D including the burial ground became the main focus of twenty-five years of seasonal excavations. This narrowing of the site concentrating on the burial ground probably give us a skew image of the real complexity of the site, both concerning its chronology and multiple uses.

CHRONOLOGY, USE AND ORGANIZATION OF THE SITE

The chronology of the site has so far only been discussed in general terms and the frame has been placed to 3200-2200 BC. More dates of different activities have been conducted lately by the author to get a supplementary fine grained scale of such special activities detected at the site (Wallin and Martinsson-Wallin, 2015). By sorting the dates into different groups as indicated in figure 5 we get some meaning to the uses of the site. This indicates chronologically separated repeated practices carried out by the societal members tied to the site. This may give a useful metaphor to understand how societies are changed over time by its individual members and this pattern can be related to the structuration of the site (cf. Giddens, 1984). Each chronological layer/frame can be viewed as past experienced representations, which can give us an outline concerning meanings of different actions at the place. This way of looking at the world as representations or rooms filled of related practices played by its members as a never ending game (cf. Wittgenstein, 2005 and 2012) will give us a more complex view of the PWC world, which also may be understood as distinct culturally inherited practices under constant negotiation between collective and individual treatments/actions.

The radiocarbon sequence seen in figure 5 actually indicates that the site did have different functions tied to different chronological horizons. This is the first step to understand the complexity of the site and five representations of actions that we may call 'phases' can be distinguished in the following manner:

Phase one indicates an Early Neolithic stage at the site. The date came from the cultural layer located a bit north of the main excavation area. Typical for this area is the finds of about one hundred greenstone axes/preforms, but on the other hand no Early Neolithic pottery has been found at Ajvide. Sites with Funnel Beaker pottery have been found on the island but they are all found at inland locations. However, there are other Early Neolithic coastal axe sites and this circumstance may lead to the idea that there were spread Early Neolithic activities, some located near to the coast including axes and axe manufacturing and some inland sites including pottery but no axes (Bågerfeldt, 1992). This fact has never been studied in detail and needs further investigations.

Phase two is indicated by fourteen samples that stem from the bottom layer of cultural debris consisting of mixed animal bones of wild species such as seals, fish, seabirds, fox and hare. However, pig bones are quite common, sometimes almost equal in amount as seal bones in the stratigraphy of the site. The pig bones have been studied and are more similar to wild boar than domesticated pigs (Rowley-Conwy and Storå, 1997). It is possible that the pigs found lived wild in the forests and that they were hunted by the PWC groups on the island. The dates from phase 2 have an overall range from c. 3200–2900 BC, with a higher probability around 3100 BC. A few graves have dates with calibration ranges that in a few cases may be in line with these early indications, but generally the burials are a later phenomenon since the burial pits of these graves are dug down in the existing cultural debris, which means that the cultural layer stratigraphically indicate the first activity at the spot. The activity indicated by the bones show a place with rich marine resources, but still there are pig bones from the very deepest layers, and the ^{13}C values in the earliest human remains are in favour of an extreme marine diet. The presence of pig may therefore indicate that these rich places also were used as meeting grounds involving feasting of pigs brought to the place, as well as, preparation of fish and seal meat which was a main activity at the site. Occasional intake of pig at certain feasts will not give clearly measurable indications in the ^{13}C values in the human bones.

Phase three indicates that the Ajvide site also became a more regular burial ground, and the first phase of this activity took place in the time frame c. 2900–2600 BC. The distribution of the different dated burials is dispersed over the whole burial ground, and do not display an older part at one end of the ground with continuous use in a certain direction. However, older graves may be placed slightly more to the east and younger to the west, slowly following the shoreline, but still stretched out in a north south direction. This may indicate that different families or lineages or other group formations may have used different locations of the ground. The fact that the burials are found in clusters may also point in that direction. All graves are also dug down into the earlier cultural debris. This can be seen as the main PWC burial actions at the site and these actions were kept alive for about 300 years or about ten generations.

Phase four suggests both continuity and new innovations into the ritual thinking of the burial ground. These activities are dated to c. 2600–2200 BC. The continuity

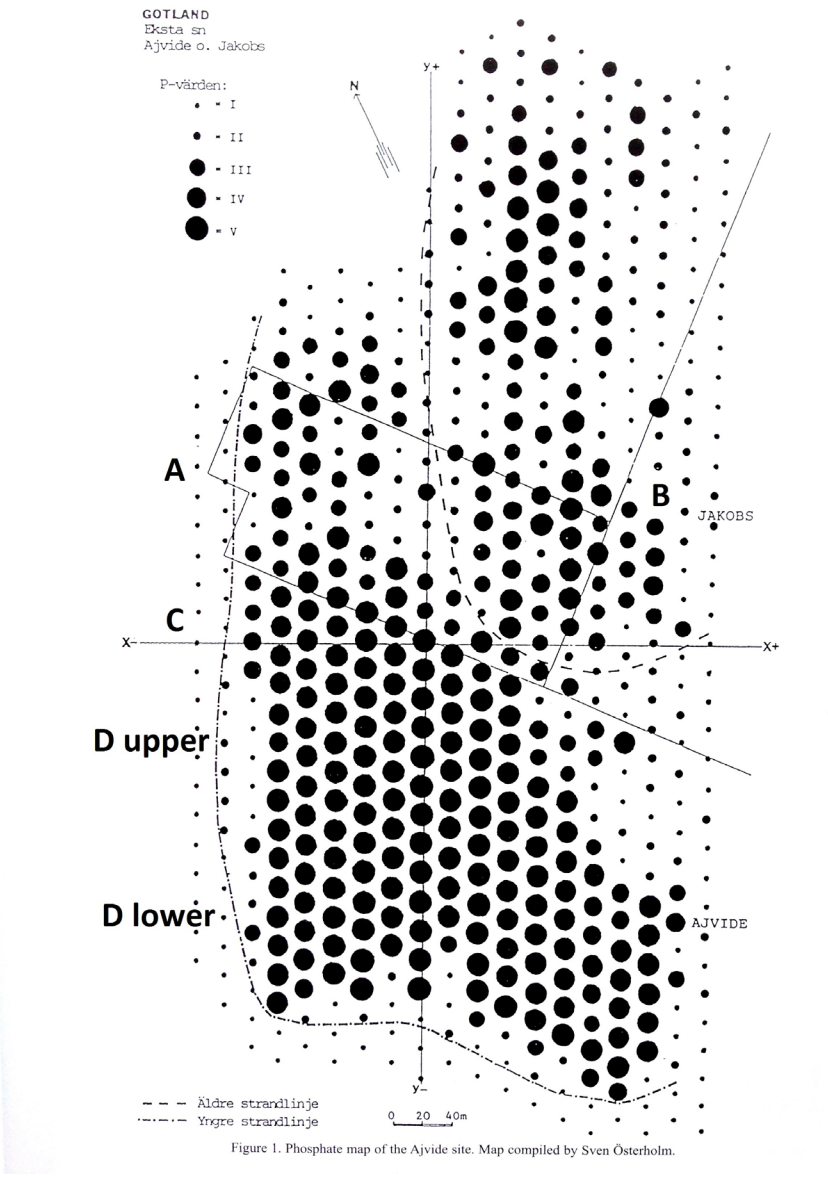

Fig. 4 – Phosphate analysis of the site indicating the size of the site. Excavation areas A-D are pointed out as well.
Fig. 4 – Analyses de phosphate indiquant la taille du site. Les secteurs de fouille A-D sont également indiqués.

is expressed by the same general rituals concerning the burial of the dead, however new additions of larger ritual areas are observed among the earlier graves in at least four identified spots which have been described as dark areas by the excavators (Österholm, 2002; Norderäng, 2009). Another feature that has been dated in three cases are collections of sacrificed bones placed in connection to buried individuals, generally from pigs, and in one of the dated cases, a sheep metatarsal bone as well. These features indicate new ritual ideas. A suggestion might be that the place at this time is under some pressure or influence of the Battle Axe Culture. An interesting fact is also that the ^{13}C values of the latest dated skeletons show slightly lower ^{13}C values of −16 to −18. One of the graves of a child was given thirty-six pig yaws placed at the feet and the right side of the individual. Bone deposits in graves are also generally of pig bones. This may suggest that pigs became economically more important during this phase. This seems to continue into the Late Neolithic and kept the place busy for about ten to fifteen generations. The sheep bones that have been dated are from the late PWC phase, and may together with cattle bones as mentioned above be seen as an influence of the Battle Axe Culture that seems to be quite strong during this period (Palmgren, 2014).

Phase five indicates a Bronze Age use of the southern part of the site dated to c. 1400–1200 BC. However, there is no observed continuity with the previous phase four. From this time a kind of open shelter has been found at the site (a half circle of postholes with a fireplace in front; Österholm, 2008, p. 19). A sheep bone was also dated to this same time frame. This activity may have been quite temporary and perhaps tied to seasonal coastal use in a society otherwise concentrated to farming and pastoralism.

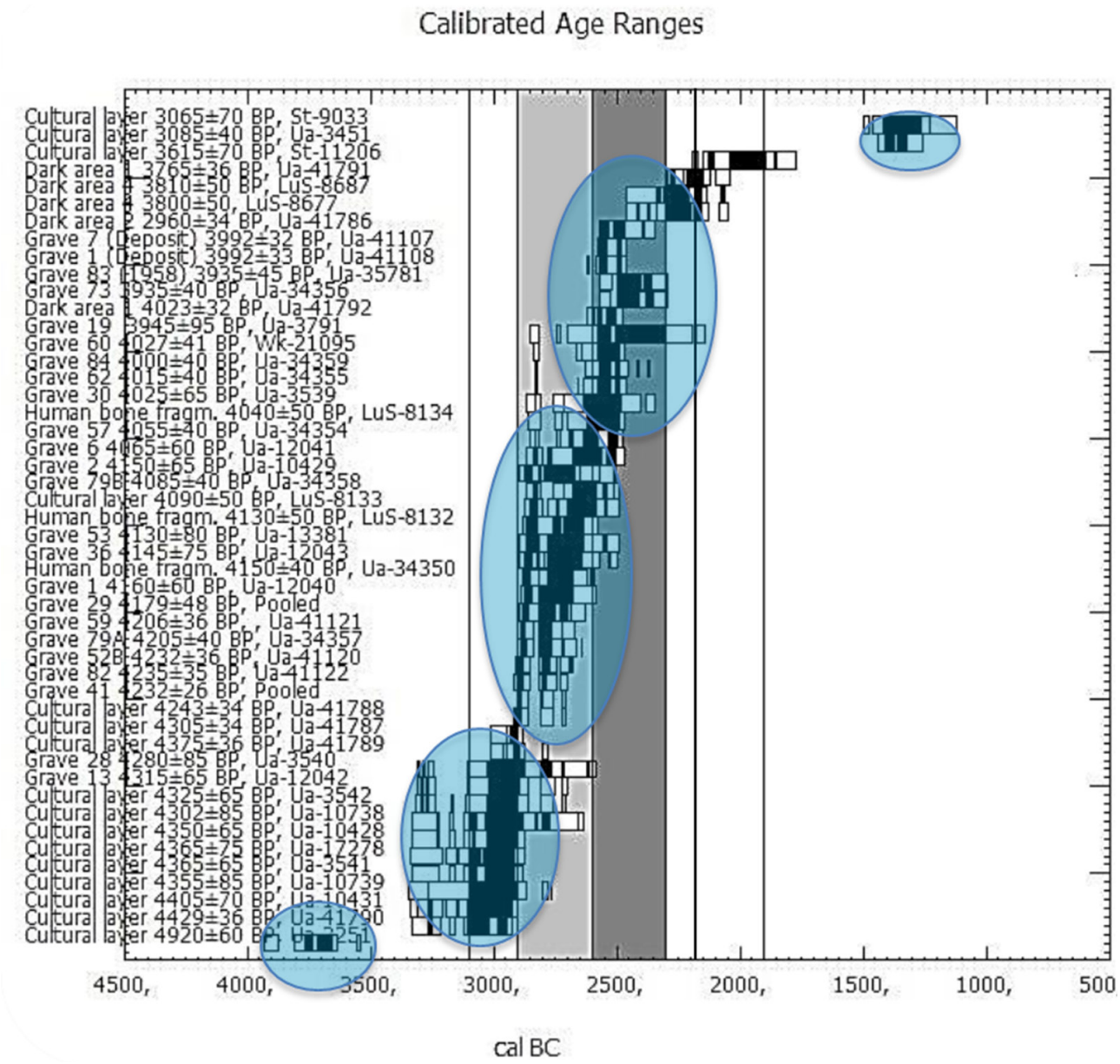

Fig. 5 – Radiocarbon dates from the Ajvide site, indicating various activity phases. All dates measured on human bone are calibrated due to marine effects.

Fig. 5 – Datations radiocarbone du site d'Ajvide, indiquant les différentes phases d'activité. Toutes les dates sur os humains sont calibrées en raison de l'effet réservoir.

THE BURIAL GROUND

In short, the burial ground at Ajvide, consists of eighty-five burial pits, eight of these are empty pits, interpreted as cenotaphs (Burenhult, 1999, p. 54). These burial pits included in total eighty-nine skeletons. The general expression is that the pits included a single buried person, however some also included two or three skeletons. There are also examples of burial pits containing just a few bones or dispersed human remains. It is quite evident that the burial pits appear in clusters, as well as in smaller groups and pairs (Wallin and Martinsson-Wallin, 2015). Other general patterns are that there are females and males from all age groups represented, as well as there are new born to juvenile children. According to osteological determinations (Molnar, 2008) there are about 60% males and 40% females, which may indicate a somewhat skew representation. There are about 25% children which is a quite low number; however bones from children are fragile and may also be more difficult to detect in the field. The common view is that anybody could be buried, even though the under-representation of females and children may suggest that there might have been other alternatives. Detailed studies of the burial site show that there are clusters of graves as mentioned above (Fahlander, 2003), which I develop further below.

The spatial distribution of time indications seen at the burial ground, as expressed in phase 3 and 4 above, show

that different chronological events were articulated by practical materializations. This fact give us the following story: At around 2900 BC the burial ground was established and all graves are found in the previous cultural remains which means that they are all dug down in that layer of old debris of bones and pottery. Graves that fall within the timeframe c. 2900–2600 BC can be found in all areas of the excavated burial cluster. This means that there is no successive order suggesting that the burial ground started at one spot and expanded in a certain direction, instead the whole area was used and outlined from the beginning of the burial phase. The logic behind such a structure might be found in how the society was organized into extended family groups or lineages etc. The ritual practice might in other words suggest the social practice, and may therefore be indicative of how the living also organized their village structure into a family/lineage clustering arrangement. Such structural ideas have been discussed by Turner (Turner, 1969), who argues that the fundamental building blocks of the society are displayed during liminal phases. The treatment of the dead is of course the final phase and the limit of life that need to be handled in a right way to secure stability among the living (Wallin, 2015).

The second burial phase described as the chronological phase four above, is a continuation of the burial practices dated to the time frame c. 2600–2200 BC. These burials are also found in all of area D from north to south, and the burial pits are in many cases located close to earlier graves, suggesting that their locations might have been known and perhaps marked by signs/poles etc. visible on the surface. One burial, excavated in 1984, located about 800 m north of the main cluster, was also dated to this late time period, which is also the case concerning another grave, excavated already in 1953, located about 100 m north of the main cluster of graves (Norderäng, 2007). This spread out pattern needs to be further investigated, but may suggest new establishments of later added on family/lineage based groups. A new feature have also been dated to this time frame and that is the so called ‘dark areas’ (Österholm, 1989), which are areas about 20 × 10 m. in size containing dark ‘fat’ soil with high find content of bones and pottery, also including human bone fragments, but no ordinary burials. Four such spots are located in the excavated area (Norderäng, 2009) from north to south with about 30 to 60 m between them (fig. 6 and fig. 7). Another feature, in several cases dated to this time frame is deposits including bones as well as artefacts, mainly pig bones, and in one case it also included a sheep bone (fig. 8, fig. 9 and fig. 10). These features of concentrated bones indicate new ritual behaviours at the site, and it is a fact that pig bones dated from these features, as well as the sheep bone, include the latest dates of the whole sequence of the Ajvide site (see fig. 5). A higher degree of an organized ritualization of the place during this time may indicate new influences or a strong connection to the Battle Axe Culture or even maybe a local hybridized expression of that culture sphere (Palmgren, 2014).

DECONSTRUCTING BURIAL PRACTICES

Several burial practices can be traced by studying the existing burial remains. Helena Andersson did describe some of these practices concerning missing bones, cutting graves, and position of new burials in relation to older ones (Andersson, 2004, p. 10–16). However, if such treatments should be seen as different initial expressions existing at the same time or if they are to be seen as treatment practices that might have been necessary for some of the individuals and added on as a long burial process is still not possible to determine without more detailed chronological analyses. Other reasons of burial destruction must also be considered, and the areas in close connection to these destroyed skeletons need to be investigated in detail to see if spread human bones belong to certain fragmentary skeletons, however unintended destructions are not obvious, since it in all cases were not observed during the excavation. But still such possibilities must be investigated in detail. What can be pointed out is the existence of observable patterns of difference. Such repeated patterns will therefore be described in some more detail below.

What seems to be the general burial practice is the single burial, including one individual buried in a supine position or slightly on the side or even in a flexed position, in an oval shaped pit dug down into the rich remains of earlier hunting activities. The individual could be of any sex and age. Sometimes the burial pit includes two, and in rare occasions three individuals. In 58% of the cases the complete skeleton is recovered, but 19% do miss the head and or upper parts of the body (fig. 11). The concept of ‘single’ burial pit graves may due to the variation of buried individuals in each pit be misleading. If studying the dispersal pattern of all burial pits 86% of them are buried within just one meter to the neighbour pit, sometimes in a parallel manner side by side or in a row. Sometimes they also cut into another burial making a T-shaped pattern (Wallin, 2013; Fahlander, 2003).

A practice different from the general, which distinguishes itself, are the so-called package graves (fig. 12; Norderäng, 2007). Three such burials have been found at Ajvide. This practice suggests that the body was in a state of decomposition, since the buried individual was twisted in an unnatural way, and placed in a rounded pit. Again the buried are males, females and children. Single individual packages are however buried in close connection to another individual. One of these packages included four individuals. This practice is quite rare and may be seen in relation to burial pits that only contain some human bone fragments and the cenotaphs or empty burial pits, which together stand for 23% of the cases.

At Ajvide as well as in other PWC cultural layers on the island there is an existence of dispersed human remains. They are found in all different layers mixed in with the ordinary debris. This may suggest that some

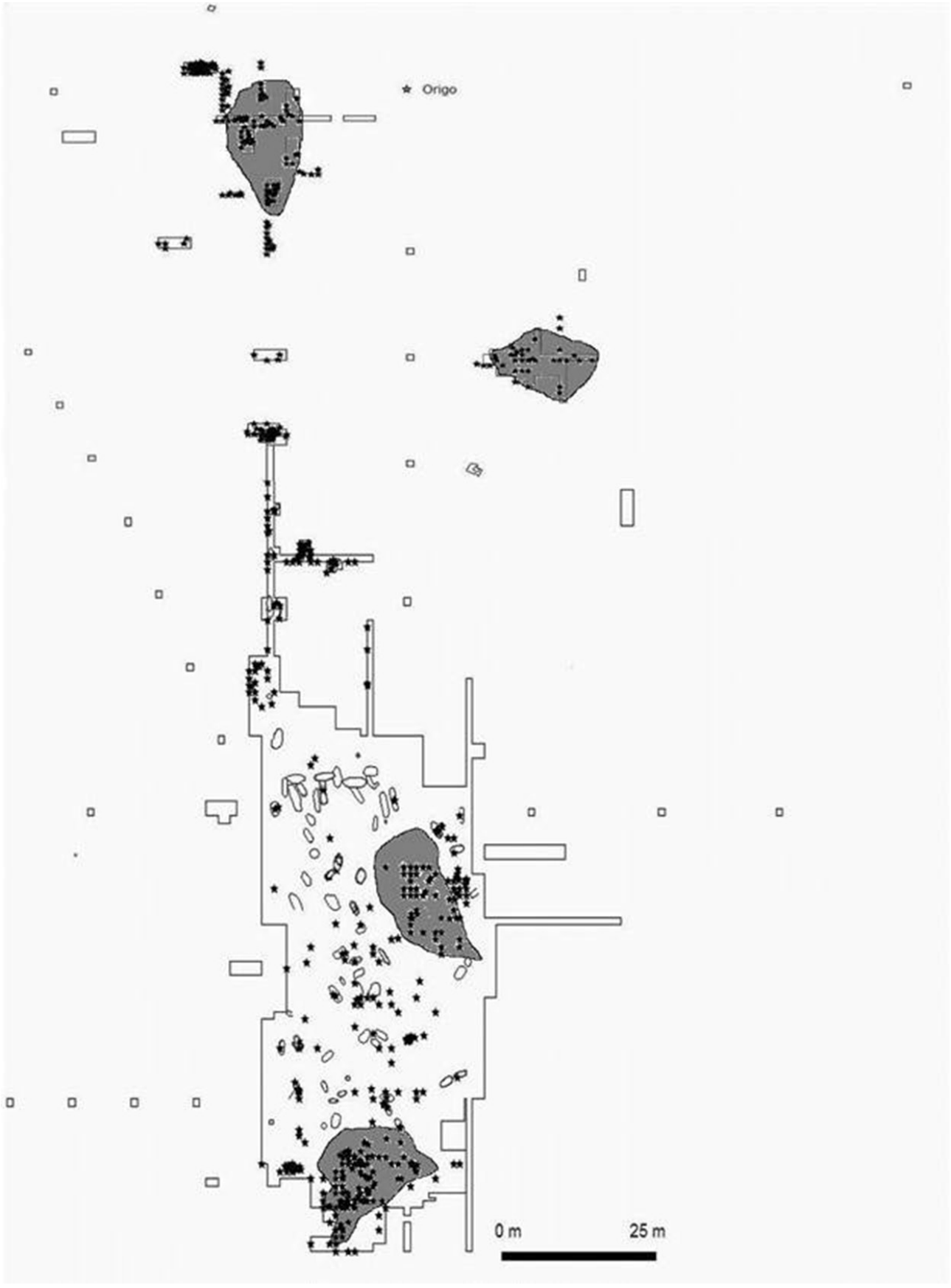

Fig. 6 – Dark coloured spots. Black stars indicate find places of spread human remains.
Fig. 6 – Zones colorées en noir. Les étoiles noires indiquent les endroits de découverte des os humains dispersés.

Fig. 7 – Dark spot in the central part of the burial ground (photo G. Burenhult).
Fig. 7 – Zone sombre dans la partie centrale du cimetière (cliché G. Burenhult).

Fig. 8 – Pig bone deposit of grave 6 (photo G. Burenhult).
Fig. 8 – Dépôt d'ossements de cochons de la tombe 6 (cliché G. Burenhult).

Fig. 9 – Thirty-six pig jaws deposited at the feet of a seven-years-old child (photo G. Burenhult).
Fig. 9 – Trente-six mâchoires de porc déposées aux pieds d'un enfant de sept ans (cliché G. Burenhult).

Fig. 10 – Bone and artefact deposit with sheep metapod bone in centre of the deposit (photo G. Burenhult).
Fig. 10 – Dépôt d'ossements et d'artefacts incluant un métapode de mouton au centre du dépôt (cliché G. Burenhult).

Fig. 11 – Individuals buried on back in single, double or triple graves. Some missing heads and upper parts of the body or in some cases other bone elements (photo G. Burenhult).
Fig. 11 – Individus enterrés sur le dos dans des tombes individuelles, doubles ou triples. Quelques têtes et parties supérieures du corps ou dans quelques cas d'autres éléments osseux manquent (cliché G. Burenhult).

of the dead were exposed in the open air until the flesh could be removed from the bones and that the bones later were spread around or that some individuals were dug up and the ancestral bones were used and/or manipulated in different ways. Ritual cannibalism has also been mentioned when it comes to spread human remains (Grönroos, 1913; Welinder, 2009), however this may be difficult to ascertain. One human tibia from the nearby PWC site at Hemmor (that also contain spread human remains) were possibly cut in two pieces and are partly burnt (Hedemark et al., 2000). Burnt and partly burnt human remains have also been reported from some areas at Ajvide, especially from 'dark area 4' (Norderäng, 2009, p. 7–8, fig. 5). This fact may indicate that spread human remains might have been a conscious act, as well as we believe this is true for the complete individuals.

It may also be the case that all individuals were not buried at the burial ground. This is probably not possible to detect for certain. However, it may be suggested based on the fact that the rate of females and children are somewhat underrepresented at Ajvide. It has also been indicated that there are no observations of old women at the PWC site located in Visby (Wallin, 2010). Alternative burial grounds may for example be the sea itself or other exposed locations. However, it is relevant to discuss these circumstances since only a total of ca. 220 burials from the PWC period have been found on the known Gotlandic burial grounds. These sites generally have a time depth that represent about one thousand years of human history. The actual number of individuals found seems in this perspective to be quite low. Of course many more may be detected if more of these known burial grounds were uncovered and the number will also increase if the spread human remains are taken into closer considerations.

Only by studying the authentic burial act we can claim that there was not just one way to deposit the body into the ground during the PWC time. It is through such studies even possible to indicate that we may see different passages of the ritualization of the dead. The 'normal' burial position seen in most single graves is when the person was placed stretched out on the back. This may just be an initial phase, which in some cases needed further treatments (Wallin, 2015). The burial process may actually lead to that some individuals may have been removed, completely or partially, from the grave. In some cases re-buried as a package, in some cases the bones might have been used and finally spread or left on the ground or re-buried into a pit. Such secondary treatments are common in all different social structures from hunters to stratified societies (Larsson, 2009, p. 376–392; Hertz, 1960). In some cases the individual might not have been buried in the ground at all, and instead placed in the open air and spread into the ground during ritual activities and usages of the ancestor's bones. It is therefore quite possible that the remains of most individuals therefore just dissolved and slowly disappeared into an ultimate state of dispersal. The bones connected to the ancestral ground and mixed into the accumulated material debris can, as well, easily be tied to genealogies and in this way become the mythological forefathers that have been protecting the ground since time immemorial.

Fig. 12 – Package grave placed on top of other burial (photo G. Burenhult).
Fig. 12 – Réduction d'une inhumation placée au-dessus d'une autre inhumation (cliché G. Burenhult).

Structure and individuals: observations on burial clusters

When studying clusters, units and groups, there seem to be certain limitations of such spaces detectable in cluster orientation, as well as, in the distances between individual burial pits. The clusters are identified by direction trends, and units by distances to other units which seem to fall between 3-5 m. Within the units, burial pits are located within about 2 m to each other, and pairs are either buried within the same burial pit or within about a meter from each other. This is observed in about 80% of the burial pits. Sometimes closely related graves have quite diverging dates, which may suggest that the graves might have been marked on the surface in some way, indicating that the buried person in the grave were remembered to the living for generations. To follow the descriptions above main burial clusters, units and groups are indicated in figure 13.

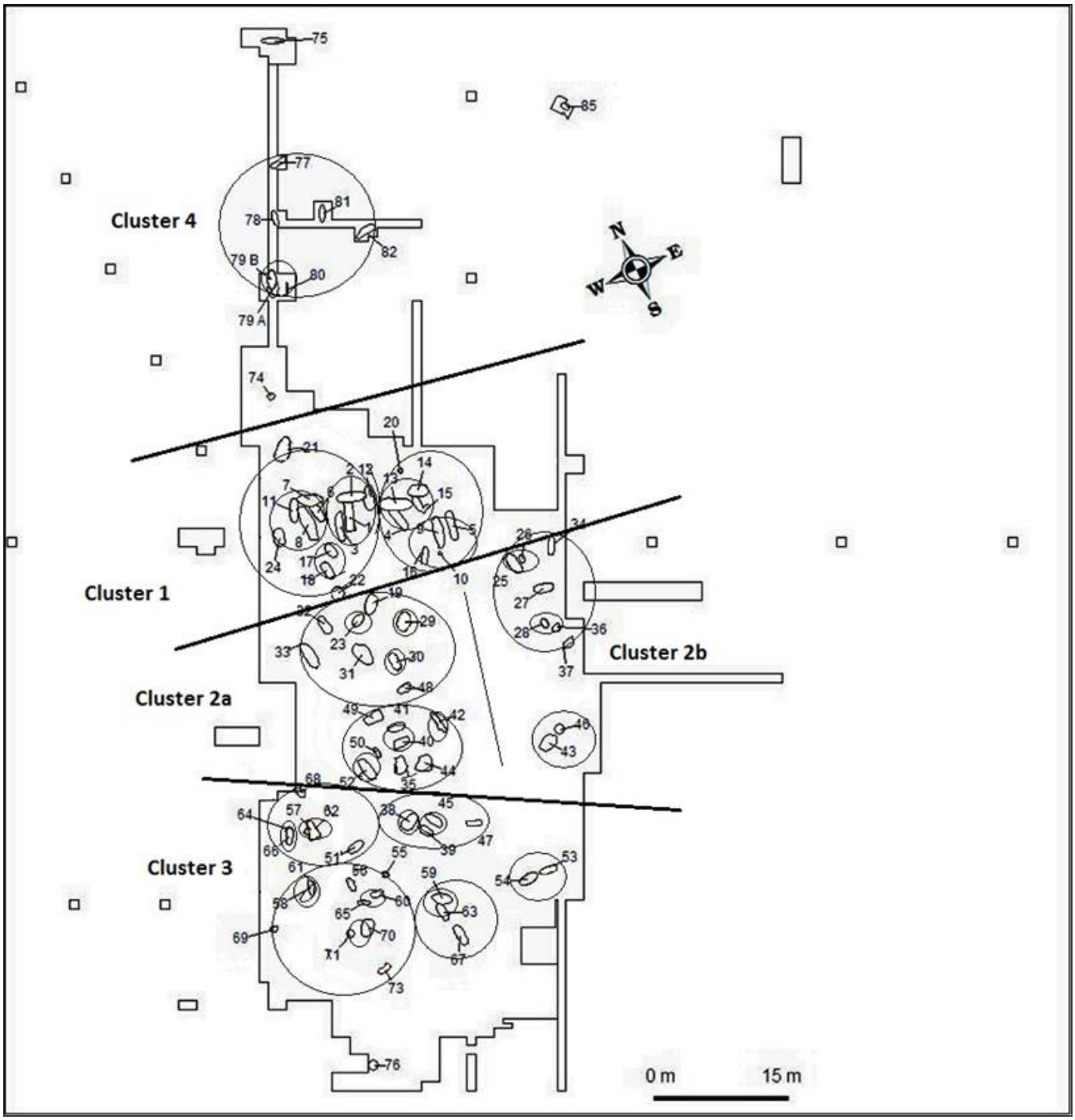

Fig. 13 – Possible division of the clusters and units at the Ajvide site.
Fig. 13 – Subdivisions possibles des groupes et unités du site d'Ajvide.

Description of a cluster structure

Cluster 1, unit 1 (to the left in fig. 14), indicate two main groups, one burial is dated to the early phase and the other to the late phase. The early dated group include female individuals and the later are only males. Two burial pits south of the early female group are also females. One more male grave are located close to the male group. Empty graves are also placed in close connection to these two groups. They have been described as cenotaphs. An alternative interpretation may be that they are a kind of sacrificial pits connected to these graves. Unit 2 (to the right in fig. 14) also suggests two groups of graves, one including a female dated to the early phase, two males and a child. In connection to these is also a cenotaph. The other group contains two females, a child and one cenotaph.

CONCLUSIONS

The Pitted Ware sites on Gotland were all located on strategic accessible landscape positions evenly distributed around the island coasts. The common view

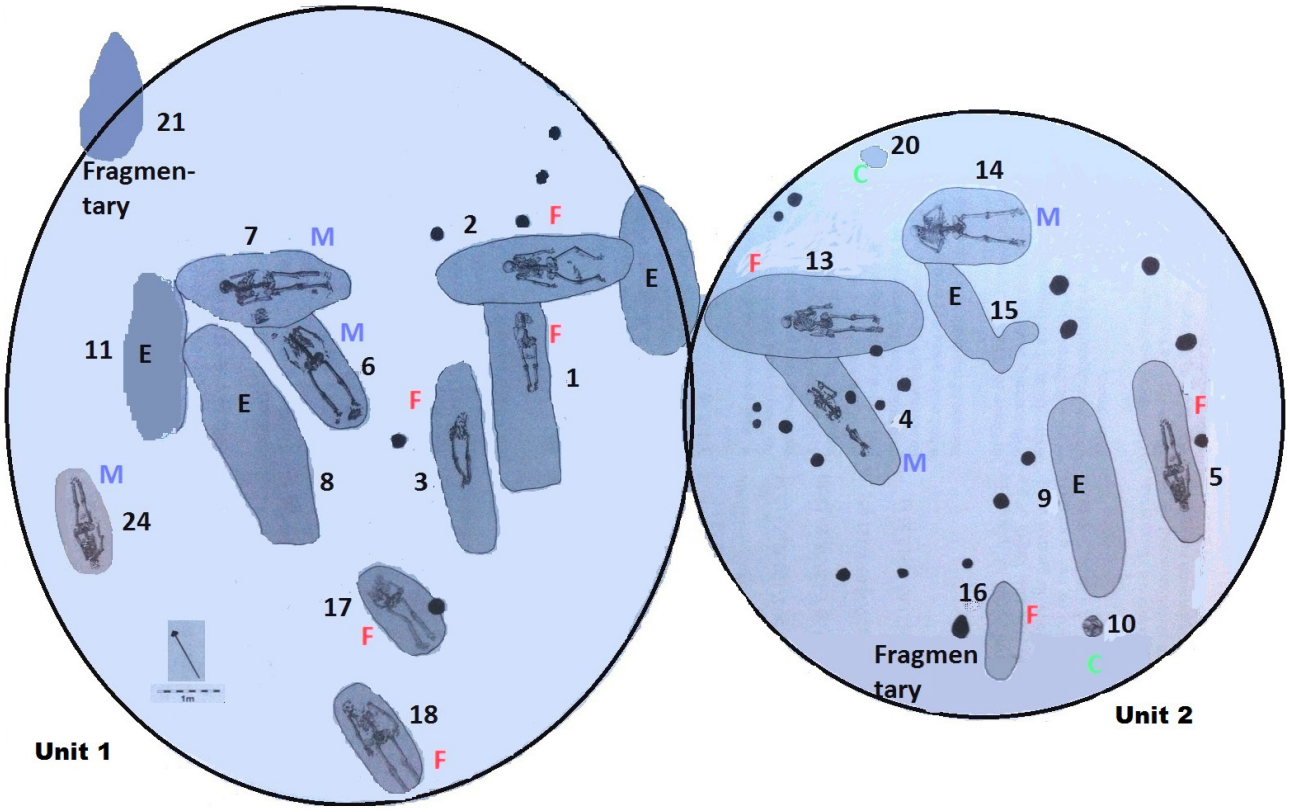

Fig. 14 – Figure 14. Cluster 1, unit 1 and 2 with connected burials. F : Female; M : Male; C : Child; E: empty / cenotaph. The positions of the skeletons in the burial pit are indicated by drawings.
Fig. 14 –Groupe 1, unités 1 et 2 avec des tombes connectées. F : femme ; M : homme ; C : enfant ; E : vide, cénotaphe. Les positions des squelettes dans la fosse sépulcrale sont indiquées par des dessins.

has labelled them as settlement sites some with burial grounds. It has been shown through a case study of the site at Ajvide that these sites must be seen as complex multiple sites with changing activities. Detailed chronological radiocarbon sequences must be carried out to detect such diverging activities. The overall time frame for the PWC phase at the Ajvide site runs from c. 3100-2300 BC, a time period of 800 years. Indicated here is that this frame may be divided into a first phase of fishing, hunting and meetings, but soon also used as a burial ground and finally this part of the site was turned into a more ritualized place. The burial ritual also shows different variations with different treatments of the bone remains. Some show complete skeletons others are incomplete and yet others are grave like empty pits. The organisation of the burial ground also exhibit cluster features and that the different pits are grouped, often in relation to a neighbour grave. This pattern was also repeated and visible in the distribution of so called dark areas, the latest dated activity on the site which also were evenly spread over the site signifying a more complex ritual practice. These practices demonstrate treatments of ancestral remains, resulting in the fragmentation of human remains and in removal of bones, as well as heads (fig. 11), which is seen in c. 20% of the graves.

Such indications of repeated patterns in the organization of the burial ground may give us guidance to how the ordinary social life was organised in the sense that it might point at how the actual settlement could have been ordered. Based on these observations one might suggest that the PWC marine hunters were organized in different relations from the macro level where sites are located evenly spread around the island dividing the tribe into territorial units to the individual site and grave levels that may indicate lineage groups or other family based expressions.

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