Embla - a Viking ship has been reconstructed

The origins of the project

The Embla project was initiated by the folk museum in Old Uppsala, as a collaboration project between the Department of Archaeology at Uppsala University, the county labour board in Uppsala and the folk museum, aimed at reconstructing a Viking Age ship, using contemporary methods and materials. The Department of Archaeology provided the project with knowledge and teachers, the county labour board was the main financier and also provided participants and the folk museum answered for inspiration, assistance and contacts. Gunilla Larsson, doctoral candidate with boat-building techniques during the younger Iron Age as a part of her dissertation, from the Department of Archaeology, was leader of the project. The boat building was carried out as a course in Viking Age boat-building techniques, in which 10 unemployed persons consisting of 5 building workers and 5 archaeologists have been taught. The composition of the group has in itself provided the grounds for a fulfilling exchange of knowledge and experience among the participants. The project has received important financial help from sponsors.

The boat-building has been carried out in Ensta only a stone’s throw from the famous gravefield at Valsgärde, on the Fyris River, on land generously contributed by Per Olof Bolin.

To be continued on page 3.
Here we are, with a new issue of the Viking Heritage Newsletter. We are finally nearing our goal, of 4 issues of the Newsletter per year. The next issue is planned to come before the end of this year. We are still very dependent on your help in gathering material for the Newsletter, and we welcome articles as well as news about events, new museums, research projects etc, dealing with Viking history in broad terms.

There has been a demand for the possibility of subscribing to the Newsletter, and in the Board, we have decided to change strategy for the Viking Heritage, and the Newsletter. From now on we will put all our efforts into developing the Viking Heritage Server and Database (http://ottes.got.kth.se) with the aim of becoming the best site in the world for information about Vikings and Viking History, and at the same time further developing the Viking Heritage Newsletter.

From the first of July this year, Viking Heritage has been transferred to the Gotland University College, and as a part of our new strategy, we will from now on change the membership in the Viking Heritage into a subscription to the Viking Heritage Newsletter. So, next time when it is time to pay the membership of 150 SEK (about $22), it will be as a subscription of the Viking Heritage Newsletter and I do hope you will continue to be a part of the Viking Heritage by the subscribing to the Newsletter. You will of course still have access to the Viking Heritage Server and Database, since we are not planning any changes of strategy for the database.

We have also decided that in the long run, we will increasingly put the Newsletter on Internet, since the cost of printing and shipping the Newsletter is becoming rather expensive.

In connection with changing membership in the Viking Heritage association to a subscription of the Viking Heritage Newsletter, we have made some changes of the running of the organisation. From now on, Mr. Olle Hoffman (olle@hgo.se) will be the person responsible for the Viking Heritage Server and Database, as well as for the publication of the Newsletter. I hope you find the variety of articles interesting, and I welcome you to a new issue of the Viking Heritage Newsletter.

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Embla - a Viking ship has been reconstructed!

**By Fil. Kand. Gunilla Larsson, The Department of Archaeology, Uppsala University.**

Continued from page 1.

**Embla’s Viking Age model:**

Embla has been built as a reconstruction of one of the boats in the boat-graves which have been found at the parsonage in Old Uppsala. During a smaller excavation 1973 in conjunction with installing cables, boat rivets were found. Following excavations in 1974, carried out by Else Nordahl, proved that the boat rivets originated from pre-historic boats and that there were at least 4 boat-graves from the early Viking Age in this place. The boat-graves were found in the area between the parsonage and the East mound. One of the boat-graves was chosen as a model for the reconstruction which was to be built.

**Why boatgrave 3 in Old Uppsala?**

The boat was in "good condition" and had been well documented, that is the lines of rivets still lay in a quite undis turbed position and they had been measured accurately one by one with co-ordinates, height level and direction.

The boat is a local find from the Old Uppsala parish, which is the activity area of the local museum.

The boat from the boat-grave was an appropriate size for a reconstruction and the width of the planks posed no insurmountable material problems.

The only remains from the boat were the iron boat rivets. To obtain a picture of the boat, it had to be re-created on a reconstruction sketch, according to information about the position of the rivets. This was done in a 3D-program, Microstation, with guidance from the Department of Archaeology. The co-ordinates and the height levels were fed into the computer and finally a reconstruction sketch emerged from the printer, producing a three-dimensional picture of the hull’s shape....

The reconstruction of the boat from boat-grave 3 is 7.2 metres long and 1.5 metres wide. The boat has been fitted with T-shaped keel, rabbet staves, 4 planks on each side joined together with iron rivets, fitted with rhombic and square washers on the inside. There are traces of three frames indicated by top rivets, there were probably five frames originally. The thwarts were placed over the frames.

**The purpose with the construction work of Embla**

The very special thing about the reconstruction of Embla, is that it is the first time an Archaeology Department in Sweden has devoted itself to experimental archaeology in the form of boat-building. The purpose was not only to recreate the shape of a Viking Age hull, but also to produce this reconstruction with as contemporary methods, materials and tools as possible. In this way, the aim was to gain knowledge about the conditions for boat-building at this time, possibilities, limitations, and problems but also to study which traces the various Viking Age tools leave on material in order to be able to compare them with tool-marks on archaeological finds. Another important purpose was to study how long different operations take, and not least to study the characteristics of a boat built using Viking Age methods, comparing these with characteristics of boats built with traditional boat-building techniques.

During construction, it has been necessary, in order to obtain as realistic conditions as possible, to use as a part of the experiment some of the handicrafts which have been prerequisite for ship building during the Viking Age. Some of those ancient techniques include the production and the use of rivets and nails from the same kind of iron (bog-iron ore) which was used in the original, as well as the same finishing agent used during the Viking Age, which aside from wood tar was most likely seal oil and herring brine. The soft, direct reduced iron is considered to have had better corrosion resistance than commercial iron of today. A furnace for iron production was constructed in Fjällnora outside Uppsala, where “iron soil” (Swedish: rödjord) and bog-iron ore were smelted into iron. To obtain suitable tar, a tar pile was built up at the Finsta upper secondary school of Natural Resource Management in Roslagen. In order to get seal oil, which is thought to protect against ice and to preserve the wood a seal was acquired from which a quantity of seal oil was obtained. This seal oil was supplemented with herring brine with good preservation qualities. In some cases there was no information in the boatgrave about the technicalities of constructing the hull. This problem was solved by making comparisons with better preserved boat finds from the Viking Age, above all the "Vik" boat from Söderby-Karl (11th century) and the small boat from Årby in Raskvik parish (9th century), which both have the main parts of their hulls preserved.

**The Viking Age boatbuilding techniques, extent of preservation and the properties of wood**

Perhaps the most surprising feature in certain findings of boats from the Younger Iron Age and the Middle Ages is that the wood is so well-preserved. That oak lumber can remain well preserved during hundreds of years in saturated meadow lands is not remarkable, but more so the fact that boat remains can be preserved almost a hundred years in varied conditions without any other preservative than coating some parts with creosote and linseed oil. Some boat parts have been exposed to sunlight for several years in windows facing south. Still there are no sunshakes in the planking. Other parts have been kept in the attic of the museum built of slag bricks, where the author measured....
about 100% air humidity during parts of the year with 60% as the lowest during summer. An analysis of one piece of planking by Ingvar Johansson, of The Institute of Technology, showed no evidence of decay.

Axel Lindberg who has participated in the mounting of the "Riddarholmen ship" at the Medieval Museum in Stockholm, reported that the same observations had been made regarding this boat find which has a similar story after it was found, being kept unpreserved in a museum storehouse for decades.

The explanation as to why the finds have been so well-preserved is to be found in the boat-building technique.

The technique during the Viking Age and the Middle Ages was to build the ships with raw, radially split logs oak. The method implied that a wedge was driven in where a pith ray was found and the log was then cracked into two halves with a club and wedges, and then into fourths and the fourths into eighths. At best a sixteenth could be produced from larger logs. With this method the fibres were kept intact offering no entrance for drought or decay. A tree trunk consists of longitudinal and radial fibre- and canal systems. The longitudinal system transports for instance nourishment to the branches and provides stability to the trunk through stress (Lindberg 1988 appendix II). The radial system, the pith rays, takes care of the functions in the radial direction. Uneven lighting, wind or nutrient input causes twists in the latter fibre system, which may cause a plank to twist when it cracks. This is an advantage at those places in the hull where a twist is needed, when the twist occurs as a natural asset, a necessity in former times when the wood could not be steamed to the right shape.

At one of the few Swedish buildings of replicas with this method, "Blanka" built with the Medieval find "Helgeandsholmen X" as a model, the boat-builder Axel Lindberg could observe one of the determining advantages with this method. The planking he produced was up to 20 times stronger than sawn timber and could be bent a great deal without breaking even if they were thin, only 22 mm. From the length of the rivets used, Embla’s planking be estimated to be even thinner, 10-15 mm. During the Embla’s construction we used only radially cracked planks 10-12 mm thick with 80 kilos, respectively 160 kilos. Both held and were bent up to 25 cm.

The radially cracking technique during the Viking Age allowed for construction of light boats, which were both fast and easily-manoeuvred and they could also be more easily pulled across land between navigable passages.

Their boat-building technique and the light draft were one of the main explanations for the successful Viking expeditions. Thanks to these factors the Vikings could sail up on any shallow shore or bank and the radially cracking technique permitted to take the hulls being stranded. This meant that it was possible to attack almost anywhere on foreign coasts. The shallow boats could easily sail up the rivers in Western Europe and Russia, the land transport past rapids could be carried out without any special arrangements thanks to their extremely thin hulls and their light weight on account of the radially cracking technique.

Today building is done with dry material which is sawn tangentially or radially. This means many fibre openings which any boat-owner understands will quite easily allow a lot of sun shakes in the planking. The plank is twisted by softening it in hot steam in a steaming drum after which it is bent to the right shape before it is allowed to dry, when it resumes its hard and stiff state.

This was the first part of the article. The second part will be published in the next issue of "Viking Heritage Newsletter".
First of all, it is important to define the terms and limits of this study. This discussion of Viking presence does not limit itself to the archaeological aspect of the Viking raids but extends to their impact on the Frankish society through the dukedom of Normandy among others.

France was chosen as a geographical framework but this does not refer to the current national territory which was not relevant in the political context of that period. Western France resulting from the Carolingian divisions and the France of the year one thousand in the reign of Hugh Capet are a better territory for researching this archaeological and historical analysis. The Viking raids in France took place from the end of the 8th century (799: first raid on the coasts of Vendée related in the annals) to the middle of the 10th century (939: the Normans of the Loire river are chased out of Brittany by Alain Barbetorte’s Bretons). However one must acknowledge the creation of the dukedom of Normandy and the fate of the isolated Scandinavians and the bands of Viking mercenaries in the Frankish and Normans’ service after the period of the great raids—a situation that lasted until at least the 11th century.

This study is based in part on reading written sources, originating from different orders: royal and monastic annals, chronicles, chapters, hagiographical accounts and various works in prose and verse. Most of the authors of these works were clerks who found themselves on the side of the victims in the assaulted countries. Their monasteries and churches, being without defence, were the favourite prey of Viking warriors. For this reason their writings have to be examined with a degree of caution. They have a tendency to exaggerate facts. This systematic and critical perusal will produce a chronology of events.

Unfortunately, this chronology will be incomplete because in many operational theatres the clergy flees from the Normans, thus depriving the historian of valuable information. Part of this study has already been carried out by the German historian Walter Vogel, but his work does not exceed the year 911. This preliminary study allows us to calculate the impact of the raids on the mentalities and psyches of the attacked populations by observing the flights of the religious communities. We may then observe the evolution of the panic waves and the return to a sense of security, thus permitting us to draw up a relatively complete cartography of the Viking raids. The written sources also serve to provide an estimate of the total number of Norman groups, but in many cases, these estimates are incorrect. Can we believe monk Abbon, a contemporary of the Paris siege in 886, who talks about an army of 30000 Vikings incapable of taking over a fortified township like Paris defended only by 200 Frank knights? While these estimates have no statistical value they do provide evidence of mental shock!

On the other hand, the archaeological sources offer a more tangible research study although they are not lacking problems in interpretation. The archaeology of the Viking invasions is still awaiting some structured supervision, despite a few recent discoveries. It is essential to record and examine as many material traces as possible which can testify to the Viking presence. By occupying whole regions and staying there longer periods, sometimes for many months, Normans have left traces of their presence in the places they have been in, either remains of their camps, or abandoned weapons, boats or ordinary objects.

French soil and most particularly Normandy and Brittany has revealed artefacts proving the Viking presence but, in most cases, it is a case of isolated discoveries. A lot of these discoveries were weapons retrieved during the dredging of the Seine and Loire rivers. The Norwegian archaeologist Haakon Schetelig, during his field trip in France in 1927, was the first to draw up a list of these weapons. Unfortunately, he limited himself to visiting museums close to the waterways used by Scandinavians. He counted 29 weapons (including 21 swords, 7 spears and 1 axe); 15 of these weapons came from the Seine, 13 from the lower Loire and the Vendée. 1 from Picardie. The Swedish archaeologists, Armborn and Nilsson completed this inventory in 1968 with two axe heads kept in Rouen. A sword from the Viking period was discovered in the storerooms of the Denain museum (Nord) in 1987. More recently, a sword and two Nordic spearheads were found during the excavations of the Peran camp (Côtes d’Armor). Recently, in the storerooms of the museum of Montereau (Seine et Marne) in 1993, a sword similar to the one from the Peran camp was identified as probably having been used by the Vikings. By studying the geographical origin of their distribution we notice that many of these weapons have a continental origin. The presence of these weapons, both in Scandinavia and in the Carolingian Empire, shows us the lack of respect for the Carolingian regulations forbidding the export of weapons from the Frankish countries and the booty of high-quality Frankish weapons acquired by the Vikings during their raids. It must be noted that most of these weapons were discovered near places where the Viking presence is verified by written sources.

Archaeological discoveries are not limited to a few isolated weapons. Fibulas with “iron and bones” were found accidentally in 1870 by a road-worker in Pâtres. Abbot Cochet, curator of the Museum of Antiquities in Rouen, bought them in 1870 for their collection. At first, he attributed them to being part of a Scandinavian warrior’s dress. Five years after this discovery he realised that the two fibulas belonged to the burial place of a 9th century Viking woman because in that period dress burials with funeral furniture had disappeared in Western Europe.

These tortoiseshell-shaped fibulas are of a type found widespread in Scandinavia. According to Birgitta Elmqvist, this type of fibula would have been manufactured during the second half of the 9th century and could have come from Norway. The presence of this Scandinavian burial place can be explained by the history of the Norman raids in the lower valley of the Seine; in 855 a group of Vikings invaded the camp of Pâtres and took possession of it. This tomb, which seems isolated, is close to a place of worship and an indigenous necropolis. H. Schetelig points out that the presence of this Viking burial place near a church and a local necropolis reminds us of the situation of the Viking tombs in the British Isles. One of the best known discoveries which was made in 1906 by captain Le Pontois and Paul Du Chatellier, is a ship grave found on the Groix Island (Morbihan). Only a great...
quantity of rivets and traces of the stern decoration similar to the one represented on the Gotland engraved stone (Sweden) remain of the carbonised remains of the boat which was about twelve meters long. We must mention the presence of two charred bodies and important funeral furniture which had been badly damaged by oxidation and fire. The remains of two swords were found, the possession of one allows Dr Müller-Wille to date the site to the second half of the 10th century. We can assume because of the unusual shape of some shield umbo that the Vikings used weapons made in Brittany. This burial place could have belonged to a Viking chief from Nantes. The existence of this ship grave, an undeniable pagan rite, allows us to visualise the Vikings being strongly established on the island in order to practice their religion without being disturbed.

In 1964, on the beach of Reville (North Sea) a Frankish necropolis was discovered during low tide. Among the graves, three burial places were different from the others. Two were delimited by stones representing the shape of a ship, the third was made of four right-angle slabs in the middle of three concentric stone circles. All three contained small fragments of charred bones. According to Michel de Bouard these come from Viking burial places. Currently this Norman attribution is being questioned. Nevertheless, only one object has been found, a Nordic vase resembling a kind of pottery discovered in Birka (Sweden). Nowadays all those vestiges are submerged in the sea.

According to some archaeological findings, it seems that the Vikings constructed or rebuilt fortifications to serve as shelters or operational bases. Thus a large earth wall closes the peninsula from La Hague (North Sea) to Hague Dike. The 1951-1953 French-Scandinavian excavations revealed the presence of a defence system (traces of a wooden palisade) similar to the oldest part of the danewirke erected by the Danes at the beginning of the 9th century. Originally the Hague Dike was a Celtic construction (900-800 BC, C14); according to Michel de Bouard, the eastern part had been made by the Vikings. No objects of Nordic origin have ever been found to corroborate this hypothesis.

Between 1983 and 1990 the team of the archaeologist Jean Nicolardot excavated the camp of Péran (Côtes d’Armor). This Celtic oppidum was restored at the beginning of the 10th century, as indicated by the discovery of a coin from York made between 905 and 925 found in the burnt rampart. This fortification contains houses and a well. Some pieces of the archaeological furniture resembled Scandinavian material from the Viking period: penny from York, card-combs, pickaxe, casserole, spearhead. An analysis of the rampart’s glazed clay has been dated to between 910 and 920 to linking it to the annals which relates that Alain Barbette, count of Brittany, attacked a Viking fortified place near Saint-Briec. Despite these signs, J. Nicolardot remains cautious in his conclusions.

There are few discoveries considering the number of raids between the 9th and the 11th centuries. Most of the French specialists in the Viking field explain the scarcity of Viking traces by the fact, on the one hand, that the French archaeologists who can identify Scandinavian materials are few and far between and, on the other, that no systematic research has ever been conducted in France. This research could be conducted on the sites stated in the written sources such as the towns temporarily held by the Vikings (Nantes, Angers, Rouen, etc.) and the camps established on the maritime and fluvial islands (island of Jefouse and Oscelle on the Seine river, island of Pont-de-Cée and Bicée on the Loire river, island of Rê and Normoutier on the Atlantic). A study of this kind might be disappointing materially since archaeologists would rather inspect longer periods of occupation; it is of little use to study the movements of an active minority, such as the Vikings, on a such a short time range. Moreover, during their period of stability, their "acculturation" was very quick. Despite these restrictions it would be wise to speak to Scandinavian researchers about making a study of the Viking material and ask the British archaeologists to undertake a comparison between the attempts at establishing Viking colonies in France, in Great Britain and in Ireland.

Study of the written sources allows us to write up a preliminary chronology of events. It is relevant to use Lucien Muser’s three-phase chronology. The first phase is the direct looting which starts with coastal raids, then with attacks on towns and monasteries from waterways. The second phase begins when Vikings come up against an organised state; the danegelds appear. To preserve the peace the Franks pay the Normans to depart. When the country no longer has wealth with lay- and religious people in charge the third phase emerges: direct exploitation. The Vikings seek a political legitimacy with authorities of the country. The latter grant it with conditions: baptism, defence against other Viking groups, cessation of raids, acceptance of the Frankish administration. A first criticism is required: these three phases are not simultaneous for all French operational theatres. On the Seine, phase 1 starts in 820, phase 2 in 845 and phase 3 in 911 when the county of Rouen is granted to Rollo. For the Normans operating on the Loire phase 1 begins in 799, phase 2 in 855 and, phase 3 in 927 with the cessation of the county of Nantes to Viking Rognvald. These three phases, thus defined, have their own set of problems. During the first period it is vital to ask the question: where did the Vikings come from? The main two sea-river ports of the Seine and the Loire, Rouen and Nantes, before the Scandinavian raids, were linked to the trade with England for the former and to Ireland for the latter. Rouen was mostly attacked by the Danes operating in the English Channel and Nantes by the Norwegians sailing in the Irish rivers and the Atlantic. Even if many Viking groups were composed of different nationalities, did each one have its own operational zone corresponding to old commercial waterways from North-West Europe?

During the second phase, the necessity of maintaining a large manpower to ransom local populations should be translated, in the terrain, by the discovery of shelters and Viking winter quarters. However, neither has ever been definitely located. It’s very likely that the Normans used previously established fortifications to their advantage. Written sources quote the examples of Angers, Saintes, Rouen and Pitses. The political game, difficult to apprehend, of this agitated period must also be taken into account. Relationships between the Vikings, the Franks and the Bretons were often ambiguous. Often Norman gangs fought with either one of the belligerents for money in return. Thus Weland, chief of a Norman army operating on the Seine,
did not disdain to besiege his compatriots from Oissel Island for King Charles the Bald. Robert the Strong, Marquis of Neustrie and lay abbot of Saint-Martin of Tours, was killed in Brissarthe (Maine-et-Loire) by the Vikings from the Loire accompanied by Breton soldiers.

The last phase is the most difficult to study. It concerns the creation of the dukedom of Normandy and the fate of the Normans from the Loire. One question needs to be asked: why did the Norman state of Nantes disappear so rapidly, contrary to the one of Normandy? What were the real terms of transfer of the Rouen county in 911 to Rollo by Charles the Simple?

No definite proof has been brought forward as to the existence of the famous treaty of Saint-Clair-sur-Epte. The dukedom of Normandy (certified denomination since 965) possessed an original political and legal system. The Normans took over a jurisdiction and an administration inherited from the Franks but with Norse elements. We can quote the heimfor (the prohibition of the assault against houses), the ullac (the banishment), the more danico used by the first Norman dukes (legal cohabitation insuring the children of this union the same rights as a legitimate child). This last practice was to be severely punished by the Church in the 11th century. William the Conqueror, born from such a union, would have difficulties establishing his legitimacy. These two features, Nordic and Frankish, co-existed for a century.

Later Normandy belongs by its administrative organisation and its language, to the history of France. When did the colonisation of the region begin, before or after 911? For the historian Jean Renaud colonisation occurred at two levels. First there was the division of Rollo’s companions (known through the texts by their Scandinavian names: Torkestil, Torsten or their nicknames: Robert the Dane, ancestor of the Harcourt family, and Roger of Montgomery ex Northmannis Northmanu) and an agricultural colonisation that remained limited to the Caux country and to the Lower Seine. However, the coastal establishments founded by the Vikings have left an important heritage in the toponymy (with harbour names of Norse origin such as Dieppe, Honfleur). The toponymic study of Nordic origin names allows us to identify two distinct Viking groups. The oldest group, established in the Caux country, the Lower Seine, the Auge and the Loir, would be of Anglo-Danish origin. The Nordic community fixed in the north of the Cotentin would be Celto-Norwegian. The Viking population in its entirety remained a minority and the actual conditions for their establishment still elude us.

The problem of the Norman colonisation need not preclude the Viking expeditions led in the 11th century. They were sporadic and ordered by people of distinction. The future king, Saint-Olaf of Norway, came to Rouen by order of Duke Richard II in 1014. He was baptised and led war-like expeditions in Brittany and in the Poitou. He acted as leader of the Duke of Normandy’s mercenaries. The time of profit-seeking adventurers had passed. Other Scandinavians were given tasks to perform by noble Franks. Thus, Geldouin, a knight of Danish origin, received custody of several fiefs in Anjou and Touraine from the count of Blois and Champagne around the year one thousand. Foulques Nerra, count of Anjou, reclaimed all his estate during his wars, in order to secure control of the Loire valley. The history of these isolated Nordics can only be revealed by reading the written sources.

In conclusion, we know very little about the Viking presence in France. To remedy this problem, it would be necessary to re-organise all the available knowledge before proceeding, to study the material preserved in museums, to undertake prospecting on the ground. It is a huge task but one which is necessary.

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Some References:
Cassard, Jean-christophe 1996 :Le siècle des vikings en Bretagne. Ed Jean-Paul Gisserot
Chatellier (P. du), Le Pontois (L.), 1908 : La sépulture scandinave à barque de l’île de Groix. Bulletin de la société archéologique du finistère. TXXXV, 1908
Perin, Patrick 1989 : Les objets vikings des musées des antiquités de la seine maritime à Rouen, recueil d’études en hommage à lucien Musset, Cahiers des annales de Normandie, no 23, 1989
Renaud, Jean 1989 : Les vikings et la Normandie, Ed. Ouest France Université
Shetelig, Haakon 1940: Viking antiquities in Great Britain and Ireland, T.IV, 1940
THE GIANT’S GRAVES
A 19th century discovery of human remains on the U.K. island of Lundy

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Introduction:
The island of Lundy lies off the west coast of England, 20 km out in the Atlantic. It is a granite plateau, 150 m. high, 410 hectares in extent measuring 5 km long x 8km wide. The Bristol Channel was a popular haunt of the long-boats (AS Chronicle AD 833-878) and Lundy actually figures in the Orkneyinger’s Saga (78) when Swein Asleifarson pursued Holdbodí to the island but could do nothing due to the stronghold there.

History of Events:
In 1856 an extension of farm buildings uncovered human remains, most notable of which was one contained in a cist, the body, presumably extended (?), allegedly 2.5 m in length. Other bodies, heads to the west, extended in a row, and a pit containing disarticulated bones were also found, and apparently associated with the pit were some glass beads and some fragments of gilt bronze, pottery and shells.

The tale grew with the telling as Victorian antiquarians and journalists embellished the facts with more recently contemporary letters between members of the family and friends have been traced and we can now summarize the few facts as follows.

A number of skeletons were found in a line about .6m deep; one was enclosed in a cist and was of a remarkable size. The skull of this ‘giant’, was resting in a shallow basin cut into the end of a granite block measuring 1.4m x .3m x .3m, which formed part of the cist. The ground was described as ‘slightly mounded’, and a layer of limpet shells lay over much of the area.

20th Century Excavations:
In 1928 and 1933 two separate attempts were made to re-discover the

19th century antiquarians regarded human remains found on Lundy Island as Viking.

More recently this has been regarded as an over-romantic view, but elsewhere in the UK suggest that there might well be an Hiberno-Norse association.

“Giant’s Graves”.
These were unsuccessful in that no cist structure was found but more individual burials were revealed and in both cases appeared to be dated by coins and pottery to the 15th century. The present author, involved in the 1960’s in an island-wide archaeological survey conducted excavations in the field adjacent to the farm buildings erected in the mid 19th century.

Two sites of relevance were discovered:

i) a rock-cut ditch associated with occupation material of the mid 12th century, possibly the site referred to in the Saga. This was sealed by a massive 2m. thick wall, ostensibly part of the 13th century stronghold of the documented Marisco family.

ii) a Christian cemetery, with burials in orderly rows, parts of which were detected from the field notes of the 1928 /1933 investigators. One grave was completely excavated and showed the burials to have been dug through a midden of the 14th / 15th century and to have been sealed by a midden of the early 17th century which contained large quantities of limpet shells and pottery, and which overlay a granite grave slab of trapezoidal shape, other examples of which are still to be seen in the 19th century foundations of farm buildings.

The sequence of activity on this site would therefore seem to be:

i) 12th century occupied and defended structure.

Discussion: Where in the above sequence should the ‘Giant’ be placed?
It should be said that no datable animal remains have been found on any site older than the 12th century midden. Victorian reports of the opening of a ‘cist’, presumably Pre-historic, produced no skeletal material.

The island has one of the most important Celtic Early Christian sites in the UK, with many cists and a ‘founder’s grave’, and 4 inscribed memorial stones of the 5th / 6th centuries.

[19th century excavations were successful in locating and excavating a rock-cut ditch and a Christian cemetery, which were dated to the 12th and 13th centuries, respectively.]

[As recent excavations have shown, the ‘Giant’s Graves’ are not of Viking origin, but rather of the 12th century, with possible Prehistoric and Hiberno-Norse associations.]

[The sequence of activity on the site suggests a period of occupation from the 12th century to the late 17th century, with the ‘Giant’s Graves’ being part of a larger defended structure.]

[The island has been a popular site for Viking exploration, but recent excavations have suggested a more complex history with Celtic and early Christian influences.]
Not even a human tooth has survived the acidic peat soil.

Whilst an early Chapel has not been located there exists the probability of such a structure; the early cemetery however is 500 m to the west of the 'Giant's Grave'. Even so the 'pillow stone' is best explained as a pillar stoop, for holy water, and thus presumably derived from a Chapel. Over 140 years have elapsed since the discovery and there is now little firm evidence with which to date the 'Giant'. Much has happened in Viking studies since that time however, even in the UK, and there are a number of circumstantial parallels which may be of relevance.

It appears to have been common practice for Viking burials to have been associated with Early Christian sites, even if the deceased were not themselves Christian. [e.g. Balladoole and Jurby, Isle of Man]. Such burials are usually in slab lined cists and pillow stones are not uncommon. Examples of stone simulated ship burials [e.g. Westness, Orkney] have been described as oval 'cists' with a stem or prow-stone. Is this the function of the Lundy 'pillow', removed from a Christian site?

The adjacent 'pit' is paralleled at Repton, where again disarticulated remains, dated to c AD 875, were found this time in an earlier Christian structure and interpreted as the possibly exhumed remains of the 'Great Army', brought to Repton to accompany the occupant of the focal cist, coincidentally also a 'Giant' discovered in the 17th century. The site, not uniquely, continued to be used as a Christian cemetery. Although the Lundy pit burials could have been the result of 16th grave clearances the evidence there was for the re-interment of earlier grave occupants, fragmented, with the newly dead.

The glass beads, although of a common type, have generally been regarded as 9th century Hiberno-Norse and there is little from the extensive excavations in Dublin, Repton or York to confidently challenge this view.

Associated with the beads in the 19th century account, were pieces of red pottery and limpet shells which we regard as compatible with the 17th century midden, but the fragments of bronze, gilded, perforated and rivetted are strongly reminiscent of the shoulder of a Viking 'tortoise' brooch, often joined in pairs by a short 'chain' of glass beads.

In conclusion we may summarize by process of elimination. The burials were not Prehistoric or Early Christian, although in a cist, because i) on Lundy bones do not survive 1000 years & ii) the integral 'pillow' stone is paralleled in Early Medieval local church furniture, suggesting at least an Early Medieval date for the Giant.

It is not typical of the 16th century burials, although the 7 bodies 'in a row' most probably are of this date. The 'Giants Grave' seems to have stood alone, arguably accompanied by the pit burials.

The glass beads seem to be from a Hiberno-Norse context, but could be late survivals. On balance the circumstantial evidence suggests an interment perhaps contemporary at the latest with the 12th century occupation, and specularly even that of a player in the tales of the Orkneyinga Saga.
In 1994 a large building foundation was cleared away in the city centre of the Limfjord city of Aalborg to make room for a new building site. Before the new buildings were erected the city museum was given the opportunity to conduct archaeological excavations. This was much appreciated since written sources had revealed that the Franciscan monastery of the city had been situated in this area. Fourteen years previous parts of the foundations had been uncovered on a nearby building site. These investigations could now be followed up and soon it became evident that other parts of the monastery had also survived the centuries. In some places the masonry was preserved up to 3.4m high.

There was a danger that the construction work would remove all traces of the ruins, but thanks to the good will of the building contractor, C. W. Obel A/S - and a generous contribution from the municipality - it was possible to preserve them in a basement beneath the projected building. As a welcome fringe benefit, delay in construction could be reduced considerably. Excavations were discontinued but the site was covered with a thick layer of sand. When the piles had been driven for the foundation and the basement walls raised, the sand was once again removed and excavations could be resumed, under shelter - an unusual occurrence for an open-air occupation like archaeology.

The Franciscan monastery is mentioned for the first time in written sources in 1268. My intention at this time is not to present the numerous new details on the monastery which were revealed during the excavations. The fact is that important observations were made under the monastery church and it is those I am going to discuss.

Most of us know that there are metres-thick layers of waste beneath the oldest Danish cities. This was also the case in Aalborg, where the original surface was found 4 metres beneath today’s street level at this excavation. Excavations naturally come across the latest cultural layers first, after which you travel further and further back in time as you progressively dig down through the layers. If we want time to move in the right direction, so to speak, we must relate the results from the bottom upwards.

The oldest activity in the place was revealed as thin stripes of soil in the light bedding sand, unmistakable traces of the prehistoric wooden plough. Outside the basement we had earlier found traces of buildings that may be contemporary with the plough marks. Fire-cracked stones from a hearth have been dated by the Thermoluminescence method to about 800 AD (Skalk 1970:3), which indicates that village farmers may have been active here.

The next layer is about one century younger and of a quite different nature. It is a question of a number of small hearths and a larger pit - perhaps a craftsman’s working place - but it was especially two ditches which attracted...
attention. One of the ditches contained traces of poles indicating that a fence had been standing here. The other ditch intersected the first and may therefore be younger, the soil layers tell us that the ditch was cleaned out repeatedly in order keep it open. During the next 150 years garbage accumulated on both sides of the ditch. The diversified contents of these garbage layers tell us a lot about what happened in the place. The finds indicate primarily handicraft activities: cut off pieces of bone and antler from comb-making, a melting pot, bars and remains from bronze casting, while iron slag points reveal forging activities. Glass beads and slag exist, but so rarely that it can not be determined whether a bead-maker also worked here. Spinning and weaving have left behind reels and weaving weights. Whetstones of slate and fragments of green slate vats, both of Norwegian extraction, indicate trade contacts with far distant places but local trade was apparently more important: Animal bones, carbonised barley, sea mussel shells, fish bones and hazelnut shells give samples of foodstuffs the craftsmen were able to barter for.

The collected material gives a picture of a place of handicraft with elements of trade. The open ditch, which may mark a boundary presents the possibility that the whole place has been divided into small lots for the simple craftsmen in the same way known from Ribe (Skalk 1988:4). There it has been proved that a regular settlement pattern, with a system of parallel ditches demarcating two rows of plots, was located in a bigger area with a large number of the craftsmen at work as early as the beginning of the 8th century. While Ribe played an important role in north-western Europe, the same can not be said about Ålborg.

Owing to the expansion of the excavation area, unfortunately only one ditch was located and the plot-system is until further notice only conjecture, pending confirmation, or the emergence of other theories in the future. There was a chance of further discovery in 1980 when the neighbouring site was excavated but then it was the monastery which attracted all attention. If the theory about the "Ribe system" is accepted, it is interesting to note that the two northward "sites" run into a cross road or street, in the form of remains of plank pavement. This paving was preserved up to one and a half metre wide but was originally wider. These remains may be a precursor to Algade, implying that the street lives up to its name- al is an abbreviation of the word adel, old.

Judging from the finds the handicraft site was used about one and a half century, around the middle of the 11th century, but it is unlikely that it was in constant use. Markets were often occupied at intervals and were in most cases dominated by local inhabitants, once or twice a year there were bigger events with people from near and far. We don’t know much about the size of the site, a number of separate finds from the Viking Age have been found in nearby parts of the city, but too few to provide a sharp picture.

In the latter part of the 11th century radical changes occurred. Crafting activities disappeared and were replaced by dwelling houses. They became evident first and foremost by floorings of clay and chalk, almost like horizontal layers over one another, separated by waste layers up to half a metre thick. Unfortunately the narrow excavation circumstances made it impossible to uncover a house site to its full extent. Furthermore the southern part of the floors had been cleared away during construction of the medieval monastery. Remains from five houses in all were found, all orientated with their
The excavations at the monastery contributed quite unexpectedly to the history of Ålborg, particularly the craft site layer from the late Viking Age (ca 900-1050). The find makes a time link between the Germanic Iron Age settlements on the chalk heights and the Medieval Ålborg. The change of the settlement’s location may reflect the increasing importance of sailing. Map: SKALK
Fröjel Gotlandic Viking Re-enactment Society focuses on the Gotland Vikings from the period 650 AD to 1050 AD.

The society has its headquarters at a 20 acre property in Starling Rd Officer in West Gippsland Victoria, just outside the metropolitan area. Here members are able to participate in workshops and activities ranging from forging of weapons, jewellery, clothing and items of everyday use by Vikings, to combat training with sword, spears, axes and archery. Very high safety standards are required for combat be it under standard rules or our own club rules. Inter-club training sessions are a regular feature of our Sunday training.

Members have participated in various inter-club events and combat days as well as displays at local shows etc.

While Fröjel is a very young club and considered to be the "new kids on the block", our members are very dedicated and very serious about accuracy. The extent of this enthusiasm is such that one of our members recently travelled to Gotland to participate in associate professor Dan Carlsson's excavation at Fröjel harbour in order that the club members would have accurate information about the region and the people they portray in their re-enactment. The club is most fortunate to have Mr. Dan Carlson as their patron and now use the Fröjel dragon as their club logo.

Club displays are very impressive with artifacts and replicas of exceedingly high standards, every effort is made to ensure that the foods, costume and equipment is as authentic as humanly possible and members try to portray as accurately as possible the life and times of the Gotland Viking traders. The members take great pride in the accuracy of their endeavours and the club owes much of its success to Dan Carlson and Olle Hoffman from Viking Heritage for their assistance and patience with research into the Fröjel society from the Viking times.

On the home front we owe much to clubs like Islendinga who are regular visitors and help with combat and safety training etc. Much of our jewellery has been created by Roy Castel, the jeweller from Islendinga. Roy has made many excellent copies of pieces from the Viking age and is presently making copies of pieces exclusive to Gotland and Fröjel which will soon be added to our display. While some of our members do make their own, the more difficult and intricate pieces are left to Roy to re-create for us thereby ensuring the highest possible standards.

Organisation-wise the club follows similar patterns to many other re-enactment clubs, being democratic with all members having a say in all decisions from functions to membership applications. We do have the usual office bearers and war leader plus safety and first-aid officer. Members will, of course, be attending the 1999 Australian Medieval Conference at Baccus Marsh and participating in the various activities and functions at this biannual event.

Our visitor to Gotland brought back that great Gotland game called Kubb and it has caught on like wildfire among the other re-enactment clubs who have been introduced to it. It is now becoming a regular feature of the weekend training days to the extent that the inter club challenges are flying thick and fast already and a Viking Games weekend and feast is planned for early summer. Every item in the Fröjel display has been researched and proved historically correct before inclusion in order that visitors can see an accurate depiction of Viking life and equipment. The members take great pride in the fact that every item displayed is 100% correct and to this end the display consists of jewellery, tools, equipment and weapon found on Gotland with many being actual artifacts or copies of artifacts found at the Fröjel harbour excavation. Fröjel may be the "new kids on the block" but they take pride in the fact that they are very accurate new kids.
The Viking Invasion in Stockholm

An exceptional and very unusual gathering of ships came about in Stockholm from 31st of July to the 3rd of August. More than 25 Viking ship replicas had been invited to Stockholm from the Nordic countries, Germany, England, Russia and USA. The 1st of August, the Viking fleet arrived into the port at Galärvarvet in the centre of Stockholm.

A lot of activities were carried out during these days. Among them appearances in Stockholm, Viking crafts, workshops, exhibitions, seminars and a big Viking market. Competitions between the Viking crews were also arranged. The Viking fleet then departed with all sails set on the Lake Mälaren headed for the Viking trading town of Birka and the new Birka Museum.

The event was arranged by the Museum of National Antiquities and Stockholm, Cultural Capital of Europe ‘98.

Skidbladner is modelled on the famous Gokstad ship from Norway and its name derives from the Norse mythology where Skidbladner was the ship given to Frej by Loke. The ship was built in Årsta, Stockholm. She is the largest Viking ship now sailing in the world and can take a crew consisting of 36 men with 32 oars. The ship is built entirely of oak except the mast which is made of fir.

About 50 people have been involved in the construction of Skidbladner. The ship was launched June 26, 1998. Its maiden voyage took her from Stockholm to Västervik and then to Kristianopel, Karlshamn, Simrishamn, Trelleborg, Copenhagen, Tylösand, Malmö and then on to Visby where it visited the Medieval week. After the visit in Visby Skidbladner sailed back to Stockholm to be present at the Stockholm Water Festival. When the crew visited harbours in Sweden they also served as ambassadors for the project "No more marine litter" managed by the Swedish National Environment Protection Board. During the autumn the ship will be used for conferences in management training.

- Materials: oak and fir
- Length: 24.3 metres
- Width: 5.25 metres
- Weight: 9.5 tons
- Draught: 80 centimetres
- The height of the mast: 11.5 metres
- Sail: 72 square metres
- Building time: 4 months and 20 days
- Maximum crew: 36 (Rowers: 32)
BTC New Viking Projects

BTC, the Baltic Sea Tourism Commission, and the North Sea Viking Legacy are introducing two different projects in co-operation for the Interreg IIC - a European Union support programme for the Baltic Sea and the North Sea.

BTC will also be arranging a Baltic Conference & Travel Mart in St Petersburg September 28-30, where a presentation will be made regarding the cultural co-operation around the Baltic Sea. Mrs Birgitta Hoberg, the secretary of the ministerial working group on cultural co-operation, will give a presentation and the project co-ordinator for North Sea Viking Legacy, Mr Geir Sor-Reime, will present their product ideas.

A pre-convention tour will be arranged to the old Russian capital Staraya Ladoga and along the Volkov river to Novgorod, an interesting St Petersburg event for those interested in enlarging their Viking Network. Further information may be obtained from the BTC office in Norrköping, Sweden, + 46 11 123503, fax + 46 11 103103.

The new BTC Viking project, called Via Viking, is an attempt to merge the interests of culture and tourism in creating international awareness and attraction for Viking sites, monuments and events. The purpose is to stimulate multi-country product development, aimed at increasing the number of visitors and the sale of souvenirs and handicrafts. It will present activities directed at trade, the consumer and the media and will be a full-scale Viking activity. It will also create very interesting networks between museums, archaeologists, tour operators, travel trade and regional and local tourism organisations.

Via Viking will also be a part of bridging the spatial planning to the tourism industry.

Spatial planning and the sustainable development of tourism will be key issues in the project.

Internet pages of Viking Offers will be introduced and linked to the Viking Heritage website and the Baltic Sea website on: www.balticsea.com.

If you are interested in the Viking Project please contact Romy Sommer at the above mentioned BTC telephone and fax or Email: info@btc.se.

If you would like to be placed on the mailing list for future information regarding the Viking developments please let us know.

SKALK on the Internet

The Danish periodical SKALK, published since 1957, has at present ca. 40,000 subscribers. It publishes articles from the Stone Age through recent times. The following examples from the last years, treating Viking Age matters, may be mentioned:


Take a look on the internet: www.skalk.dk

HERITAGE News

New book!

"En vikingafärd genom Ryssland och Ukraina", Sigtuna Museers skrifterie 8, Red. Rune Edberg

(“A Viking voyage through Russia and the Ukraine”, Sigtuna Museum’s article series no.8, Editor. Rune Edberg)

In 1994 and 1996, the reconstructed Swedish Viking Age ship “Aifur” made a voyage from Sigtuna on lake Mälaren in Sweden to the Black Sea port of Kherson in the Ukraine. The venture, called “The Holmgård Expedition”, was an attempt to navigate the passage “from the Varangians to the Greeks”, as described in the Russian Primary Chronicle.

The Holmgård Expedition 1994-1996 with the ship Aifur was the first Swedish Viking voyage on the Russian rivers, from the Baltic Sea to the Black Sea in our times. The book relates the story of the exciting adventure in texts and pictures, while providing an example of experimental archaeology at the same time. It gives us insights into the preparations before the expedition, its setbacks and successes. In addition to meeting places out of history, we also get to witness exciting encounters between people.

The book is written in Swedish with summaries in English and Russian.
The objectives of the network are:

• To develop and maintain the Council of Europe's Viking Routes project.

• To co-operate with schools, universities etc in the field of education and training in the study of the Vikings.

• To collect information of present Viking history activities, and to distribute information about Vikings and their history.

• To create a fund for The Annual Viking Management Prize to the best Cultural Heritage Management of Viking History.

In promoting these aims, VIKING HERITAGE has begun an information service for its members with the newsletter Viking Heritage Newsletter. It will organize conferences and seminars and act as a monitoring and advisory body on all issues relating to an enhanced understanding of the Viking history, operating at both international and national levels.

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