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**GAMING ARTEFACTS OF THE VIKING
HOMELANDS AND NORTHWEST EXPANSION:
A STUDY OF TAFL GAMES**

Alexandra Sperr

Thesis submitted in fulfilment of requirements for the Degree of Master of Philosophy,
Department of Archaeology, University of Glasgow, September 2005

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*I can play at tafl,
Nine skills I know,
Rarely forget I the runes,
I know of books and smithing,
I know how to slide on skis,
Shoot and row, well enough;
Each of two arts I know,
Harp-playing and speaking poetry.*

- *Earl Rognvaldr Kali of Orkney* (Gordon, 1957, 155)

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Chapter 1: Introduction

The Vikings

Between the 8th and the 11th Centuries, the people we know today as Vikings figure prominently in the history of Europe as raiders and pillagers; they ransacked monasteries, and invaded much of North-west Europe and the Frankish Empire from their homelands of Norway, Sweden and Denmark (Sawyer, 1997, 1).

The name “Viking” is derived from these early raids; in medieval Scandinavian languages, a *vikingr* was a pirate or a freebooter who sought wealth either by ship-borne raids on foreign coasts, or by accosting peaceful seafarers near to the homeland (Simpson, 1980, 9). Not all people from this time were marauding thieves, indeed many people stayed at home as farmers, fishermen, huntsmen, craftsmen and traders. To contemporary writers, the people of Scandinavia were known as “Norsemen” or “Northmen”, and it is from this that the term “Norse” is derived (Graham-Campbell, 1994, 39).

Historically, the “Viking Age” conventionally begins in 793 A.D., with the first recorded attack by a Norwegian fleet on the undefended monastery at Lindesfarne. The early raids on monasteries appear to have been motivated by pure piracy, fuelled by the ease at which riches could be taken (Graham-Campbell, 1994, 38).

Towards the second half of the 9th century however, the Vikings turned from piracy to colonization. The Swedes expanded east to south-west Finland, to the southern and eastern Baltic, and across Russia to Byzantium. The Danes focused on France and England, and the Norwegians began to settle in north-west Europe, focusing on northern Scotland, and travelling as far as Iceland and Greenland (Graham-Campbell 1994. 38-39).

When the Vikings expanded into north-west Europe, they took with them skills and crafts from their homelands, as well as a distinctive material culture.

This study focuses on one particular area of Viking material culture; the evidence associated with pastimes. In particular, the artefacts connected with board or *Tafl* games.

Tafl Games

The Old Norse word “*Tafl*” (pronounced *tabl*) literally means ‘table’, and is now commonly used in reference to a variety of tactical board games (Murray, 1952, 56).

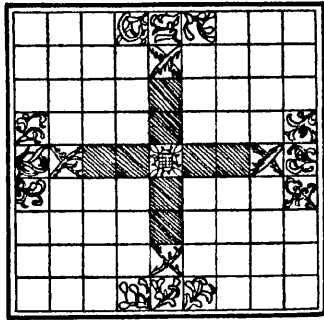
The Sagas refer to a number of *Tafl* games, such as *skak-tafl* (or check-table, thought to refer to chess), *kvatru-tafl* (thought to be similar to modern backgammon), *hala-tafl* (thought to be similar to fox and geese), *hrae-tafl*, *hnót-tafl*, *freys-tafl*, and *brannan-tafl*. (Bohémond de Nicée, internet resource, 2001, 1).

Perhaps the most recognised prefix to *tafl* today is *hnefa* – meaning king in Old Norse (Murray, 1952, 60). *Hneftafl* was played in Scandinavia as early as 400 A.D., and was taken by the Norsemen to Iceland, Ireland and Britain (Murray, 1952, 56).

The Rules of Play

Archaeologically, there is no evidence to indicate exactly how the *tafl* games were played. The sagas suggest that they were games of skill; but give no hints as to the rules of basic game play.

The chance discovery of a diary account by the Swedish botanist Carl Linneus, by H. J. R. Murray however, sheds a little light on how one of the *tafl* games may have been played:



In 1732, Linneus travelled to Lapland as part of his studies. Whilst visiting the Alpine Lapps, Linneus observed a game being played called *Tablut*.

Figure 1.0. The Tablut board that Linneus observed and sketched. (Bell, 1979, 77)

In his diary, he wrote the rules of play, and sketched the embroidered reindeer skin board on which the game was being played (Bell, 1979, 77). The rules of play, as described by Carl Linneus, are outlined in Appendix 2. Unfortunately, Linneus does not describe the shape or style of the gaming pieces used with the tablut board.

Aims and Objectives of this Study

This study focuses on the artefacts associated with board and table games of the Viking and Late Norse expansion westwards; on gaming pieces and boards found in the Viking homelands and in Iceland, Ireland and Britain.

In theory, any small object could have been utilised as a gaming piece; pebbles and shells for example could easily have been used. For the purposes of this study however, a gaming piece is defined as an object specifically made for the use of board games.

The main objective of this study is to compile a detailed, near comprehensive collection of the known gaming pieces and gaming boards from throughout north-west Europe. By focusing on the styles of the gaming pieces, and the contexts in which they were found, a demographic picture can be built of the people who actually played the *tafl* games.

The aims of this research are to determine whether *tafl* games were primarily male or female pastimes, and whether they were present across the social spectrum from the poor to the affluent. Early research into the nature of *tafl* gaming artefacts was carried out by Jan Petersen (Petersen, 1914, 75-92). His work focused on determining whether the *tafl* games were present across the social spectrum. Norwegian scholars had pointed out, as early as the first half of the 20th century, that gaming pieces predominantly occur in wealthy graves. The statistical results of Petersen's thesis seem to confirm this (pers comm. Adolf Fridriksson).

The many different forenames of *tafl* found in the sagas implies that each of these games was distinctive enough to require a particular design of gaming board and therefore distinctive gaming pieces; these different games may be reflected in varying styles or types of pieces and boards.

The precise aims of this study are:

- To compare and contrast the many different styles of gaming piece and board, to determine links between the styles and materials.
- To study the context in which the gaming pieces are found, in order to determine whether this type of gaming was gender specific.
- To examine the artefacts found associated with the gaming pieces to determine whether wealthy individuals owned different gaming sets to the less affluent persons.
- To determine the importance of games and the occurrence of gaming artefacts throughout Viking Age northwest Europe.

Chapter 2: Methodology

A detailed artefact study of the known gaming evidence from throughout north-west Europe was carried out. 154 gaming pieces or gaming sets (representing at least 788 individual pieces) were researched, as well as 22 gaming boards and 11 gaming dice. This research involved visiting the museums and archaeological organisations where the gaming pieces were stored. The museum visits were limited to available funding, and so in most cases, only the national museum of each country was visited, rather than the many regional and local museums. The impact of these limitations is such that the gaming pieces included in this study correspond to a small percentage of those known to have been found. The data represents a near complete study of British and Icelandic pieces, and perhaps as little as 30% of Scandinavian artefacts. Viking age gaming artefacts have also been recovered from the Faeroe Islands, Greenland, Germany, and Eastern Europe, which have not been included in this study.

A limitation of only being able to study the pieces held in the national museums in each country is that in many cases, the data may only represent the iconic or best known collections of pieces, rather than the less grand or less complete sets which may be stored in regional museums or archaeological research units. Therefore it must be taken into consideration that this study does not represent a complete catalogue of all known gaming pieces, and represents only a fraction of those known to have been found throughout the Viking world.

The following museums and archaeological organisations were visited:

- The Tankerness House Museum, Orkney, Scotland.
- The Kelvingrove Art Gallery and Museum, Glasgow.
- The National Museum of Scotland, Edinburgh.
- The National Museum of Ireland, Dublin.
- The British Museum, London.
- The Museum of National Antiquities, Stockholm.
- The National Museum of Denmark, Copenhagen.
- The National Museum of Iceland, Reykjavik.
- Fornleifastofnun Islands, Reykjavik.
- The Historical Museum, Oslo.
- The Viking Ship Museum, Oslo.
- The University of Oslo, Oslo.

At each museum, where access to the artefacts was possible, the pieces were studied and photographed. This artefact study concentrated on the material, size, style and decoration of the playing piece, in order to gain a better understanding of how gaming pieces differ from any other small objects. Where gaming pieces were unavailable for study, the museum catalogue and notes were consulted.

As mentioned in the introduction, for the purposes of this study, a gaming piece is defined as an object specifically made for the use of board games. Recognising gaming pieces in the archaeological record can be problematic. In most cases, gaming pieces are identified by being part of a collection or full set, where there is a group of similar shaped pieces perhaps found with a gaming board or dice. When pieces are found in isolation, they can be identified by the size (perhaps fitting nicely into the hand or between fingers), the shape (smooth, perhaps worn with use, or comparable to pieces found in sets), decoration or markings, or even by a worked side which enable the piece to sit stable on a flat surface. Exceptions to these rules are anthropomorphic or zoomorphic pieces. When found in groups they can be easily be considered gaming pieces, however, when found in isolation, the pieces can be interpreted as figurines or statuettes, as well as king or hnefi pieces of a gaming set. For these reasons, anthropomorphic and zoomorphic pieces were researched with caution, and are not concluded as being gaming pieces unless they were clearly found in relation to either similar objects or other definite playing pieces.

The deposition contexts of the gaming pieces were then studied – using the original site reports where possible, in order to gain a better understanding of where the pieces were found, and what the pieces were found with. This data was then brought together into a central database of gaming pieces (listed in this study with the prefix GP), boards (B) and dice (D) (*Appendix 1*), under the headings of origin (the site of discovery); the material of which the piece was made; dimensions; the shape or style; and decoration of the piece. The gaming pieces were then analysed according to these groupings, in order to identify any similarities or patterns in the manufacture and form.

Where complete gaming sets were found, the numbers of playing pieces were considered in order to gain a better understanding of how many playing pieces were required for a certain game.

Many of the Norwegian gaming pieces researched were previously studied by Steinar Kristensen, as part of his PhD studies at the University of Oslo. This information was

exchanged in the form of a database of basic details including measurements and site of discovery. In most cases, these pieces were unavailable for study by the author as the Historical Museum in Oslo was undergoing renovation and the installation of a new exhibit at the time of visiting. The Norwegian gaming pieces which were seen and studied by the author are indicated in the references column of the gaming pieces database with “**HM**”, specifying that those particular pieces were researched at the Historical Museum, Oslo. All other Norwegian gaming pieces that do not have “**HM**” or “**VSM**” in the references column of the gaming pieces database, were researched using photographs and information supplied by Steinar Kristensen.

Chapter 3: Complete Gaming Sets

In this chapter, a complete gaming set is defined as a substantial number of playing pieces found in a secure context. The gaming sets are discussed initially by order of the country of origin. The materials, manufacture and design of the playing pieces are then examined, and finally the owners of the gaming sets are considered.

Three case studies, featuring nine burials from the settlement of *Birka* in Sweden, a burial from *Balnakeil* in Scotland, and a boat burial from *Île de Groix* in France, examine the individuals buried with gaming sets in greater detail.

Scotland

The Scar Boat Burial, found on Sanday, Orkney, was the final resting place of three individuals: a man, an elderly woman and a child or adolescent. The relationship of the trio is unknown.

Twenty-two bone whalebone gaming pieces were found next to the man's feet.

Figure 3.1. (right) Scar gaming set, image taken from Dalland & Owen, 1999, 127.



The pieces were discovered in a tight cluster, suggesting that they were originally held in a bag or box. They are spherically shaped with flat bases, and each has a conical shaped hole in the centre of the base.

Although the pieces vary in size, two pieces are significantly larger; one of these has a corroded iron pin inserted into the centre of the top. There was no gaming board discovered at Scar, though it is unlikely that a wooden board would have survived (Dalland & Owen, 1999, 1-4) (*Gaming piece database entry 5; gaming piece database entries abbreviated to GP from this point onwards*).

Westness Cemetery. A set of twenty-five highly polished whalebone gaming pieces was discovered in a male burial at the Westness Cemetery on Rousay, Orkney. Twenty-four of these pieces are uniformly spherical in shape with flat bases, and conical holes in the centre of the bases.

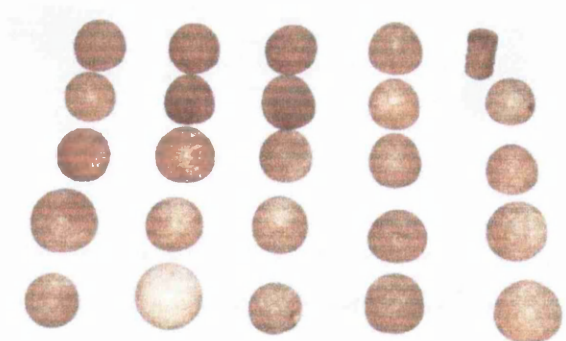


Figure 3.2. (left) Gaming set discovered at the Westness Cemetery. Photograph taken by A. Sperr at the National Museum of Scotland, Edinburgh

One piece is of a completely different form. Found on its own, one might assume that this object were a bead or broken handle shaft; however found with a set of gaming pieces it suggests that the piece

was a gaming piece. Perhaps it was not specifically designed or manufactured as such, but utilised none the less. The piece in question is cylindrical with a large hole through the centre; it has been turned and worked using a lathe, and is not finished in the same manner as the spherical pieces.

The pieces were found in a compact cluster to the left of the man's remains (Kaland, 1987, 308-317) (GP 7).

The Lewis Hoard. An enormous ivory hoard containing 92 gaming pieces was found at Uig Bay, on the island of Lewis in the Outer Hebrides. Of the ninety-two known pieces from the Lewis hoard, eighty-two are held at the British Museum in London, and only eleven are in The National Museum of Scotland in Edinburgh.

Figure 3. 3. (right) Ivory warder, part of the Lewis hoard. Photograph taken by A. Sperr at the British Museum, London.



The hoard consists of fifty-nine anthropomorphic figurines: eight kings, eight queens, sixteen bishops, fifteen knights, twelve rooks or warders, as well as nineteen dome-shaped pieces, fourteen plain discs, and one belt buckle. Each of the figures is unique – there are no two perfect matches in the set and great care and attention has been paid to every single detail. Although each type seems to follow a certain plan, the facial features and clothing and decoration are such that they are distinguishable from one another.

The Lewis hoard has been subject to a great deal of debate since its discovery prior to 1831. Their origin, purpose, age, owner and even the discovery of the hoard itself and the original number of pieces in the hoard are somewhat of a mystery. Based on the style of the carvings however, the Lewis Hoard is thought to have originated in Scandinavia in the late 12th Century, and is undoubtedly Late Norse rather than Viking. Similar styled pieces

have also been found in Ireland, and Trondheim, and similar carvings have been found on a wooden door from Valtpófstaður, Iceland (Stratford, 1997, 41-44). (GP 11, 12, & 13).



Figure 3.4. (above) Ivory chess men and discs on display at the British Museum, London. Photograph taken by A. Sperr at the British Museum, London.

Case Study 1: The Balnakeil Boy

In May 1991, the remains of a Viking Age burial were discovered by chance close to the village of Balnakeil, Durness, Sutherland. A human skeleton was partially uncovered when severe storms blew sand from a dune. Shortly after discovery, the burial was excavated by Dorothy Low and Robert Gourlay (Low, Batey & Gourlay, in preparation).

The skeletal remains indicate that the individual buried at Balnakeil was an adolescent, aged between eight and thirteen years of age. The skeleton alone could not confirm the gender of the young person, however, together with the burial assemblage the evidence pointed to the individual as being male. Closer examination of the bones suggests that the boy was 146-154cm tall. Also, the boy's right arm and shoulder (the right clavicle, humerus and ulna bones) seemed slightly enlarged compared to the same bones on the left hand side (Hallén, in preparation). In the human body, it is natural for one side of the body to be naturally slightly larger than the other (usually the dominant side); however the enlargement of the boy's right arm may be an abnormality. That is not to say that it would have been a disability, nor a disadvantage (pers comm. Patricia Sperr), it is also possible that the boy's arm bones grew as a result of training with the weaponry found in the burial. The cause of death is unknown as there were no fatal wounds found on the skeleton. A drowning accident or diseases are both thought possible (Low, Batey & Gourlay, in preparation).

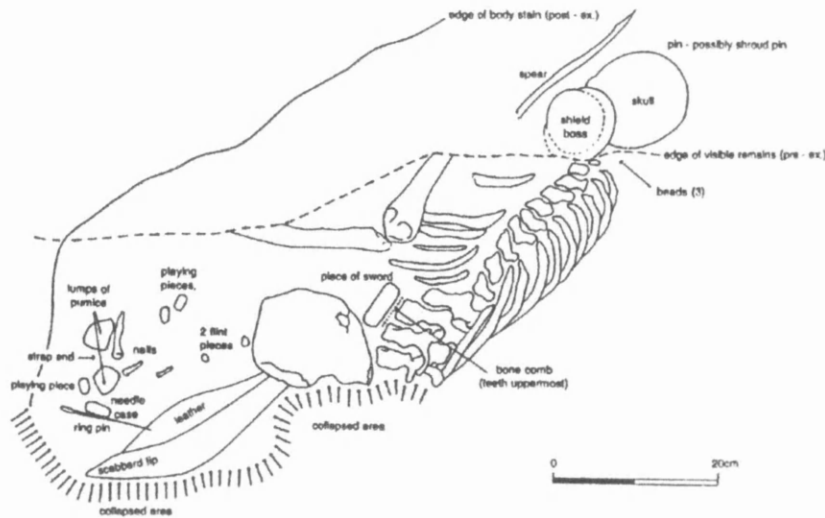


Figure 3.5. Pre-excitation plan of the Balnakeil burial, image taken from (Low, Batey & Gourlay, in preparation)

The boy was laid to rest on his right side, with a wide range of objects surrounding him. Adult weaponry and tools including a sword and scabbard, spear, shield, knife, fishhook and needles were discovered. Personal items such as a penannular brooch, antler comb, fragments of a pendant, and an amber bead were found close to the body. A set of fourteen conical-shaped gaming pieces were discovered in a tight cluster were recovered from the area of the boy's legs, suggesting that they had been placed in the burial in a bag or pouch. The pieces were found exposed close to the surface of the burial, which may indicate that there could have been more pieces, now lost.



Figure 3.6. Balnakeil pieces, showing holes with bone pins. Photograph taken by A. Sperr at the National Museum of Scotland.

These gaming pieces were initially identified as acorns! They are extremely uniform in shape and size: with an estimated original height of 2.0cm and 1.1cm diameter. Each piece probably had a flat base, and several have the remains of pegs, which presumably extended past the base. Iron corrosion and staining of the pegs led to the initial theory that the pegs were iron, however on closer inspection it is concluded that the pegs are in fact bone, and are stained as a result of a neighbouring iron object. The pieces may have been made from

the points of antlers; the material is compact enough for polishing, the core is porous enough to accommodate the bone pegs. The pieces were probably smoothed and polished (Paterson, 1998, entry 17) (*GP 14*).

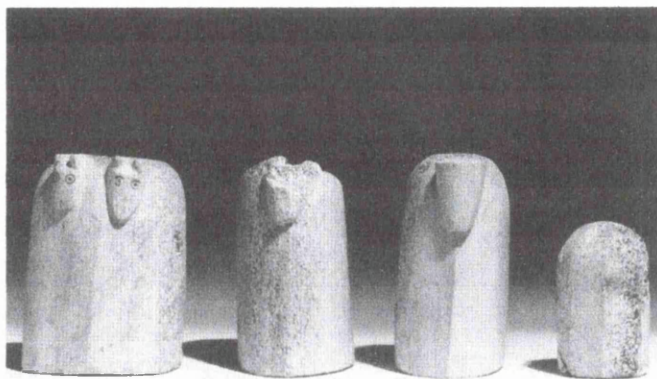
The grave goods buried with the boy are unusual in that the weaponry is of full size, strange that they were buried with such a young boy. The enlarged right arm supports a theory that the boy may have trained with full sized weapons, perhaps given large weapons after coming of age into adulthood. A favourite pastime of children would have undoubtedly been those in which they imitated grown ups, in particular play-fighting (Foote & Wilson, 1989, 189). Examples of training or toy weaponry have been found throughout the Viking world; a wooden toy sword handle was found at York, England, (Morris, 2000, 2420, Catalogue number 9044), and a toy wooden sword was found at Staraja Ladoga, in Russia (Sawyer, 1997, 153). Other objects placed in the grave are also usually associated with an adult, suggesting that the boy was perhaps advanced, or that he had adult responsibilities.

England

Witchampton, Dorset. A group of chessmen, which represent more than one set, were discovered in the foundations of a building. Several of the pieces were found on the floor layer in the corner of a rectangular building, another group of the same set were discovered on the other side of the wall outside the house (Dalton, 1926, 77).

It is unclear exactly how many pieces were found, though early accounts state that more than one chess set (i.e. more than 32 pieces) were found.

Figure 3.7. (right) Animal headed chess pieces from Witchampton, Dorset. Image taken from Riddler, 1998, 10.



At least eight pieces are mentioned by Dalton, including at least three principal pieces (presumably pieces other than pawns). All of the pieces were carved from whalebone, probably the flipper bone (Dalton, 1926, 77); those pieces found within the house are naturally white in colour. The pieces found

outside the building have been purposely blackened in a fire, seemingly to distinguish them from the naturally coloured pieces.

Two fragments of the principal pieces have capital letters and simple knot-work designs deeply incised into the surface. This, together with the animal styled pieces suggests that they were Anglo-Saxon or Viking in origin. (GP 44)

Ireland

Lough Sewdy. A set of 20 copper-alloy mounted bone gaming pieces was discovered in a grave at the cemetery at Lough Sewdy, Co. Westmeath, in the Republic of Ireland.



Figure 3.8. Lough Sewdy gaming set. Photograph taken by A. Sperr at The National Museum of Ireland

The degree of preservation is widely variable. Seven of the pieces have the remains of bone held within the metal, two pieces have bases, and three have metal pins intact. Of the entire set, there appears to be only one single piece mostly intact, with bone and pin. It consists of a finely carved, smoothed and polished conical shaped piece of bone, held by three prongs between a circular flat base and a rounded crown shaped head. Each prong is decorated around the edges by a line of small dots stamped into the surface. This pattern is repeated around the edge of the base and also around the neck below the head.



The two other pieces with intact pins have no traces of bone, but indicate that the central pin was inserted through the bone rather than attaching to the base.

Figure 3.9, (left): playing piece with long pin, possibly a king piece, found at Lough Sewdy. Figure 3.10, (right), the second of the two pieces found at Lough Sewdy with longer pins. Both images taken by A. Sperr at The National Museum of Ireland.



The pins on both of these pieces are significantly longer than that of the mostly intact piece with a length of 6.0cm and 5.2cm, compared to approximately 4.1cm.

The decoration of these two pieces is also slightly different. The more intact of the two, which has the remains of the three prongs, has small, extra points in-between the prongs –

making more of a zigzag design. A thin line also accompanies the row of dots around the edges.

The second has similar dot patterns, though only one prong remains intact. Both of these pieces have a small 'stud' type protrusion on the top of the head. No gaming board was found with the pieces. (GP 21)

Norway

Oslo. Eleven hemispherical bone gaming pieces were found in a male inhumation burial at Oslo, Norway. Each piece appears to have been manufactured using a lathe, as turning marks are visible.

Figure 3.11. Bone gaming set from Oslo, Norway. Photograph taken by S. Kristensen: private collection.



Of the eleven pieces, two are slightly more spherical than hemispherical. All of the pieces have flat bases with a small conical shaped hole in the centre of the base (Kristensen, in preparation). (GP 132). Other items found in the burial include a sword and spearhead, and 3 bone dice.

Gile, Oppland. At least 10 badly damaged hemispherical gaming pieces were recovered from a cremation burial at Gile, Østre, Oppland. Each piece was probably highly polished and smoothed.



Figure 3.12. Cremated bone gaming set from Gile, Oppland, Norway. Photograph taken by S. Kristensen: private collection.

The burial may have belonged to an adult female, based on the objects found, which include iron needles, glass beads, an iron key and hinge pieces or mounts that may belong to a box, the iron fixing from a pendent, a strike-a-light, an iron hook, iron strap ends and a small knife (Kristensen, in preparation). (GP 138).

Ustad, Hurum, Buskerud. Fifteen spherical gaming pieces with flat bases and two bone dice were discovered in this inhumation burial. The grave is thought to have belonged to an adult male.

Figure 3.13. Bone gaming set from Ustad, Buskerud, Norway. Photograph taken by S. Kristensen: private collection.



Each of the gaming pieces has a small hole in the centre of the base, and was probably manufactured using a lathe (Kristensen, in preparation). (GP 139).

Skogsfjord, Vest Agder. Fifteen hemispherical bone playing pieces were found in a cremation burial at Skogsfjord. The pieces are in good condition considering the way in which they were deposited, and show evidence that the set was once polished. The shape of the pieces suggests that they may have been cut from the naturally rounded ends of bones. One piece has a square shaped hole in the top, with the remains of iron inside, and may be the king piece (figure 3.15) (GP 143). Other items found in this burial include a sword, glass beads, an iron latch, a brass chain, iron spear head and iron knife (Kristensen, in preparation).



Figure 3.14. (left) Cremated gaming set from Skogsfjord, Norway. **Figure 3.15.** (right) playing piece with square hole. Both photographs taken by S. Kristensen: private collection



Holbø, Vågå, Oppland. Fourteen spherical gaming pieces with small conical shaped holes in the base were found in this inhumation burial at Holbø.

Figure 3.16. (right) Bone gaming set from Holbø. Photograph taken by S. Kristensen, private collection.



The pieces are in excellent condition and have concentric turned marks suggesting that they were made using a lathe or turning device. Each piece is polished, and all are of near identical shape and size.



Figure 3.17. (left) detail of a bone gaming piece, showing turn marks from Holbø. Photograph taken by S. Kristensen, private collection.

The individual in this grave was buried with a wide range of tools and weaponry including an iron sword with ornamented hilt, an iron shield boss, iron spear, iron hammer, tongs, rasp, iron stake, and a steatite vessel with an iron handle (Kristensen, in preparation). The grave goods and skeletal remains indicate that the individual was an adult male. (GP 150).

Larvik, Vestfold. This set of fourteen amber gaming pieces was found in a burial near the town of Larvik, Vestfold.

Figure 3.18. Eight of the fourteen amber pieces found at Larvik. Photograph taken by A. Sperr at the Historical Museum, Oslo.



The pieces are all made from bright red/ orange coloured translucent amber, and are circular in shape with cylindrical sides and a rounded top. They were found in an inhumation burial belonging to an adult male. (GP 153)

Sweden

Vendel IX. 20 bone or horn gaming pieces were discovered in boat burial IX, at the cemetery of the Church of Vendel, Northern Uppland. Of these, 19 are of a hemispherical shape with flat bases.



Figure 3.19. (left) Gaming set from Vendel, burial IX. Photograph taken by A. Sperr, at the Museum of National Antiquities, Stockholm.

One piece has the corroded remains of an iron pin inserted into the centre of the top. The pieces vary in size, though seven pieces (including the piece with the iron pin) are of a similar larger size than the remaining thirteen.

The individual buried in Vendel IX was male and extremely wealthy; he was buried with two horses and two large dogs, as well as a wide range of objects including an iron sword, shield boss, spear head, knife, arrows, a whetstone, iron axe, a range of iron tools, iron hooks, bronze decorated bridle, a bronze band, a bronze chain, Arabic coins, a cooking pot and a comb and case (Stolpe, 1927, 34-3). (*GP 99 & 100*).

Långtora, Uppland. A collection of twenty-six gaming pieces was discovered in a chamber burial at the cemetery of Långtora, Uppland, Sweden. The individual buried at Långtora was a wealthy male, buried with a horse and a dog. Thirteen pieces were spherical in shape with flat bases and of light blue/aquamarine coloured glass; one of which is decorated with a darker blue spiral. Six pieces are of a similar shape, but made from dark green glass, four rounded spherical pieces with flat bases were made from bone, one dome shaped piece of soapstone, one jet/obsidian/ black glass piece of a cylindrical shape with a rounded top and slightly tapering sides, and one anthropomorphic piece (with body and ball shaped head, similar to Birka 644, 523) of light blue glass with darker blue stripes. The gaming pieces were found in the area of the man's legs. Other items found in the burial at Långtora include an iron sword with a silver inlaid handle, equestrian bridle mounts and buckles, an iron knife, ringed pin (Arbman, 1936, 89-98). (*GP 101-106*).



Figure 3.20. Gaming set from Långtora, Uppland. Photograph taken by A. Sperr at the Museum of National Antiquities, Stockholm

Case Study 2 – Birka

The Swedish settlement of Birka is situated on the north coast of the island of Björkö (Birch Island), in Lake Mälaren, Sweden.



Figure 3.21. Map of central Sweden showing the geographical position of Birka, Taken from Ward, 2001

Established in around 800AD (Graham-Campbell, 1989, 96), Birka was a seasonal centre of trade and manufacture and was one of the largest market trading towns in Scandinavia. During the winter, Birka was accessed over the frozen lake with ice-skates or sledges; during the summer months when the water levels dropped, access was via trade ships.

The town of Birka itself was divided into plots, with passageways flanked by ditches. Each plot may have had several outbuildings, workshops or stores as well as the dwelling house. The buildings were timber framed, with wattle and daub walls. The town was defended by a small hill top fort on the southern edge, and by an enclosing earthen wall or rampart (Graham-Campbell, 1989, 96).

The major source of Birka's wealth probably came from the fur trade; sealskins, walrus hides, professional traders shipped reindeer skins, bearskins and otter fur to Birka. Other manufacturing activities such as leather working, iron-working, and bone and antler carving are also known at Birka (Fitzhugh & Ward, 2000, Vol. I, 105).

Situated at the point where the water routes from the south and east converge, Birka was visited by traders from both Western and Eastern Europe. An artificial harbour was built on the eastern side of the island, known as *Salviksgropen* (Graham-Campbell, 1989, 96).

An area of 'black earth' lies at the centre of Birka – soil darkened by its contents of organic remains from two centuries of intense continual occupation.



The cemetery at Birka lies to the east of the town, just outside the towns rampart defences.

Figure 3.22. Hemlanden cemetery showing burial mounds, taken from Ward, 2001.

An area now covered in trees, known as *Hemlanden* (Graham-Campbell, 1989, 96), was the final resting place for the inhabitants of

Birka, and travellers and traders to the town. There are an estimated 3000 burials at Hemlanden – the vast majority of which are probably pre-Christian or pagan burials. It is the largest known cemetery in the Viking world, and to date, almost half of the burials have been excavated (Graham-Campbell, 1989, 96)

Excavations at the Hemlanden Cemetery

Investigations into the Hemlanden cemetery at Birka began in the late 19th century by the German archaeologist, Hjalmer Stolpe. Of the 3000 burial mounds, Stolpe fully excavated and recorded 1,200 graves. The grave finds at Birka are dated to between 800 and the late 10th century (Foote & Wilson, 1989, 209)

A great deal of information about the trade of luxury goods has come from excavations at Hemlanden: links to other Scandinavian kingdoms as well as western Asia, the Lapps, and Europe are demonstrated in the range of imported pottery, weaponry, bronze vessels, jewellery, silks, furs and coins. Domestic utensils and luxury items have been recovered from the burials at Birka, and in particular, a great number of complete gaming sets and recreational items were found.

Twenty-two burials from Birka contained gaming artefacts; this case study concentrates on nine burials in which complete gaming sets were found.

Grave 644

A large chamber burial (length 2.55m, width 1.85m, depth 1.65m – 1.8m) with the remains of two individuals; one male and one female, laid to rest possibly in a seated position.

Figure 3.23. Grave plan showing gaming pieces in top right corner, surrounding spearhead. (Arbman, 1940, 222)

On the female side of the burial the following items were found; two hair grips made of gilded bronze with inlaid silver and riveted edges, iron buttons and needles - one button with a rivet in the middle and four big animal buttons, small round hair clips – gilded with geometrical incisions, a gold bangle, embroidery made from silver thread and gold sheet metal, four Arabian coins, several ornaments made of antler/horn, a strike a light, iron knife with a bronze covered scabbard, the remains of some leather pouches with some thin silver clasps. In this leather pouch were two round bronze covered iron weights approx. 1.5cm, and a comb made of horn, which was riveted with iron rivets.



The man was buried with a clasp made of bronze with animal head terminals; the needle of which was made of bronze with silver and copper ornamental inlaid stripes, a sword, a spear head which was decorated at the end with iron rivets, several arrowheads, two small iron rings, an iron axe, an iron knife with copper ornamental rivets, several belt ornaments made from iron, fragments of iron handles, the ends of which were twisted, a horn comb (probably for horse), a wooden oak box. Inside was a scale made of bronze, the weights also of bronze, different sized iron weights, a glass cup, fragments of glass mirrors, and twenty-seven glass beads, and in the corner of the burial chamber, a set of glass gaming pieces (Arbman, 1940, 221-226).

Twenty-two glass pieces were found on the male side of the burial; twenty of these were spherical in shape with flat bases, two were of anthropomorphic design. They were all made from a light sea green coloured glass, with a moulded spiral slightly raised from the surface, of darker blue or purple glass. Three dice carved from bone were also found; each was heavily worn, only in one example were the markings clearly visible. Ring-and-dot-spots were used to indicate the numbers 3, 4, 5, and 6 on four long faces on the rectangular die (*dice database entry 50: dice database entries abbreviated to D from this point onwards*).



Figure 3.24. Gaming set from Birka grave number 644. (Arbman, 1940, plate 148)

The grave assemblages in this pre-Christian burial show that the couple were wealthy. The presence of scales and weights indicates that they may have been traders. The gaming pieces were linked to the male (*GP 91 & 92*).

Grave 750

This burial contained a double chambered grave, covered by a large mound (14.0m in length, 1.5m in height, and a depth of 2.25m). One chamber contained the remains of a horse, and above this, in a chamber almost three times the size, were found a great many grave goods but very few human remains. The assemblage suggests that the burial was that of a male and a female (the presence of masculine tools and weapons, and of feminine jewellery and items supports this). The couple were buried with a range of domestic and luxury items; tools such as an axe, a hammer, an iron rasp, iron bucket, strike-a-lights, iron knives, iron chain, several iron nails, iron hinges and iron brackets were found.



Figure 3.25. (left) Grave assemblage from burial 750. (Arbman, 1940, 268)

An iron sword with silver and copper ornamentation, iron spearhead, scissors, iron buckle, iron rings and pins, a silver ringed pin, belt buckle, gold bracelet, remains of linen, small sheets of silver, a silver cross, carnelian beads decorated with gold foil, silver beads, pieces of glass mirror, bronze bowl, remains of a leather pouch containing several silver coins from the east, a glass cup, iron brackets presumably for a gaming board, and twenty-six glass pieces, along with the deteriorated remains of a wooden gaming board (Arbman, 1940, 300-310). The gaming set

was found in the bottom left corner of the burial, next to the remains of a bucket. Though not conclusive, the gaming pieces are likely to have belonged to the man in this burial, as they were found closer to the masculine objects.

Figure 3.26 (right). Glass gaming set from burial 750. Photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm



Of the twenty-six gaming pieces, twenty-five are spherical and of near identical size and shape; seventeen are light blue in colour, eight are dark green. The last piece is of an entirely different form and is anthropomorphic; it is made from light green glass and is decorated using dark blue glass. (GP 64 & 65).

The pieces were discovered in a small pile surrounded by small iron nails (presumably from a box that they were all held in), within a near rectangular pattern of larger iron nails and brackets. It is thought that these iron fragments and nails belonged to a wooden gaming board that had since perished (Arbman, 1940, 306).

Grave 624

This grave contained a well built stone burial chamber, buried beneath a mound of round stones. Only a few fragments of skull survived of the human skeletal remains.

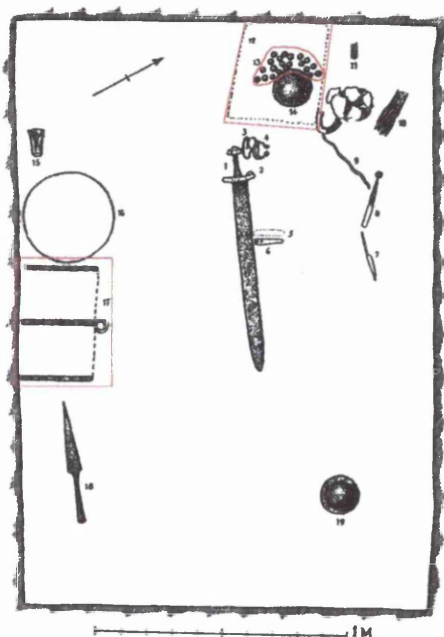


Figure 3.27 (above). Grave plan from burial 624. (Arbman, 1940, 206) Gaming pieces were found within a rectangle of iron nails – possibly a board (top right). Pieces of iron mounts with an iron ring and hinges are also thought to be a gaming board (middle left).

Grave goods found in burial 624 included; an iron sword; possibly damaged before deposition, a spearhead, two shield bosses, three gold plated shield rings, a brooch, the upper thigh bone of an ox with the ends sawn off, fragments of silk, fragments of a leather pouch, iron knives, iron nails, iron bucket, iron hinges thought to be part of a gaming board, and twenty-seven bone playing pieces. The gaming pieces were found in the top right corner of the chamber, the board was found on the opposite side near to the middle left side (Arbman, 1940, 205-207). The assemblage suggests that the occupant was male, and may have been a warrior and perhaps a traveller.

Twenty-seven bone gaming pieces were laid close together within a rectangle of iron nail and hinge fragments; again, presumable the remains of a wooden gaming board. Each playing piece is spherical in shape with a flat base, six of these pieces are slightly smaller, and have small conical shaped holes in the centre of the base. Another piece is slightly larger the others and has a gilded bronze “hat” secured in place with an iron pin. (GP 66 & 67)



Figure 3.28. (above) Gaming set from burial 624; **Figure 3.29,** (above, right) king piece with bronze gilded hat. Both photographs taken by A. Sperr at the Museum of National Antiquities, Stockholm,

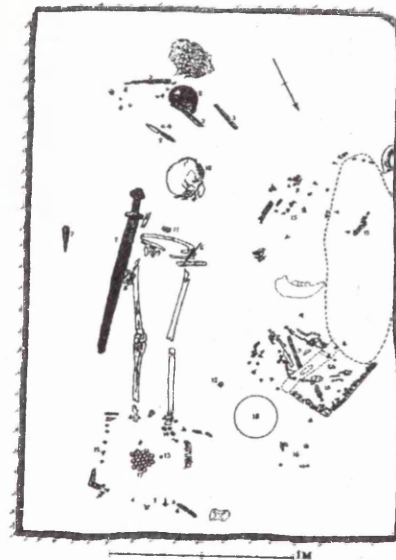
Birka 886

Grave number 886 was covered with a large mound made of sand and stones, 2.9m in length, 2.0m wide and 1.65m deep. The individual in this grave 886 is thought to have been male, based on the grave goods found.

Figure 3.30. Birka 886 grave plan, taken from Arbman, 1940, 345.

The grave assemblage included: an iron sword with silver and copper inlaid handle, a wooden shield with iron handle, iron nails, an iron knife, tweezers, iron weights, fragments of an ice pick, and two silver coins.

There is also some evidence to suggest that the grave may have been disturbed, though no more details on this are given. (Arbman, 1940, 344-345).



The gaming evidence from Birka 886 was found in a tight cluster, within a rectangle of iron fragmented brackets and nails; the gaming pieces were placed on top of an iron and wood gaming board (Arbman, 1940, 344-345). The set comprises of twenty-five pieces made from bone, spherical in shape with a flat base. Twenty-one of these pieces have a small irregular shaped hole in the centre of the base. Although the pieces vary slightly in size, they are all of a near identical round ball shape and have been highly polished and smoothed. However, three of the pieces are slightly different; one has been stained black (*figure 3.34*), and is small by comparison to the rest of the set. A small area of damage

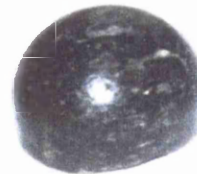
shows that the piece has been thoroughly dyed, using a wax or a resin, and for a purpose, as it has been expertly coloured (pers comm. Ulrik Skans, Museum of National Antiquities, Stockholm); another piece has a small iron pin inserted into the top (front, centre *figure 3.31*, and *figure 3.32*) and is slightly larger than the others. By comparison to the rest of the set, this piece may be the king piece; a further irregular piece is made from Elk antler (front, left in *figure 3.31*). This piece has not been finished to the same standard as the rest of the set and has a slightly more upright shape, with tool marks visible around the sides. It has a circular hole in the centre of the base. (*GP 68 & 69*)



Figure 3.31 (above), gaming set from grave 886, the three pieces on the front row are (from the left) Elkhorn piece, king piece, and black piece. Image taken by A. Sperr at The Museum of National Antiquities, Stockholm.



Figure 3.32 (left), birds eye view of the king piece, with iron nail inserted into top. Figure 33 (right) Stained gaming piece. Both images taken by A. Sperr at The Museum of National Antiquities, Stockholm.



Fragments of iron corner mounts were also found beneath the gaming pieces, and are thought to have belonged to a wooden gaming board (*figure 3.34 and 3.35*). Three of these corner pieces were recovered, as well as over twenty iron nails and a few other fragments of iron that are thought to be part of a hinge mechanism. The most intact corner piece shows that the frame was at least 2.7cm in depth. Wood fragments found corroded to the iron suggest that the board itself was approximately 1.1cm in depth with a raised wooden frames surrounding it, held within the iron mounts. Since the tallest of the gaming pieces found with the board is 1.8cm, it is feasible that the pieces may have fitted within the board once folded. Fragments of fabric were also found on the iron mounts, which may indicate that the board and pieces were placed inside a textile bag. The textile fragments are of a fairly common type of fabric found at Birka, and could in fact be part of the individuals

clothing (pers comm. Mari-Louise Franzén, Textile specialist, Museum of National Antiquities, Stockholm).

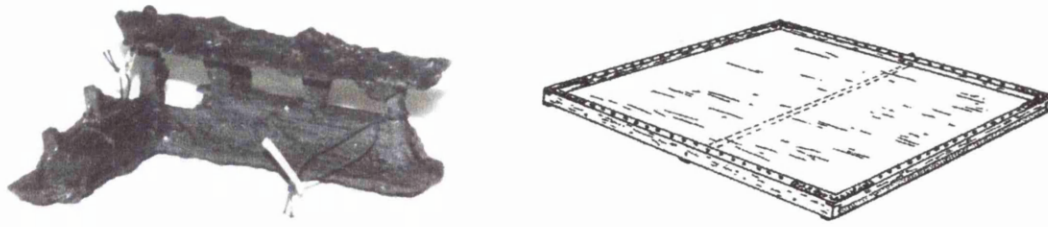


Figure 3.34 (left) iron corner mount of gaming board from grave 886; image taken by A. Sperr at the Museum of National Antiquities, Stockholm. **Figure 3.35** (right) reconstruction of gaming board, taken from Arbman, 1940, 344.

Birka 20

The individual placed in this burial was cremated in situ, on a pyre, and covered with a circular mound of sand and stones; 14.4m in diameter, with a height of 1.8m. Neither the human remains nor the grave goods found in grave 20 indicate the gender of the individual buried. Objects found (though badly damaged) include; a broken pot with grooved decoration, a wooden bowl, comb fragments, a few iron nails, a few beads, a clasp or brooch, fragments of an estimated thirty-five bone gaming pieces and two dice (GP 70).

Due to the nature of deposition, the gaming pieces are extremely fragmented and fragile. Each piece appears to have been of a similar size and shape, and was probably turned using a lathe.

Curiously, one piece survived almost completely un-burnt (front, left in *figure 3.36*). This piece is 1.8cm tall, 1.9cm diameter across the base, and is highly polished. It is spherical in shape and has a flat base with a small hole in the centre. One fragment has the remains of a bronze pin inserted into the top (*figure 3.37*) and another piece has a small patch of corroded iron on one side, probably from contact with an iron object in the burial. The two dice reported to have been found in grave 20 were much too fragmentary to obtain any information.



Figure 3.36. (above left) burnt gaming pieces from grave 20. **Figure 3.37,** (above right) king piece with pin in top. Both photographs taken by A. Sperr at the Museum of National Antiquities, Stockholm.

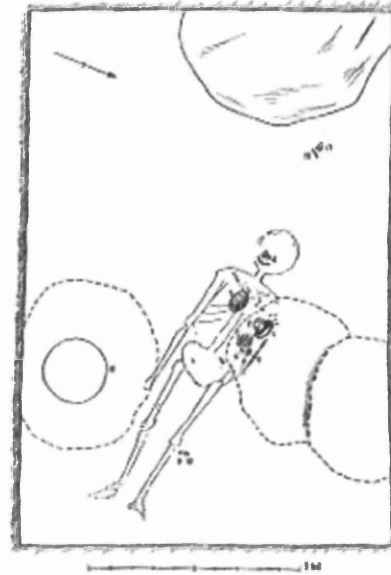
Little can be understood of the individual placed in grave 20, as so few grave goods were recovered. A lack of tools and weaponry may indicate the occupant was female, though this is not conclusive.

Birka 523

A large stone chamber was built to house the individual placed in grave 523. The chamber was then covered with a large mound made of stones, 2.5m long and 1.8m high.

Figure 3.38. (right) Plan of Birka grave 523. Taken from Arbman, 1940, 158.

Grave goods found in burial 523 include; two bronze oval brooches, a silver buckle or pin, a silver necklace, amber and glass beads, several pieces of silver edge and corner mounts that may have belonged to a wooden box – hinges and a padlock were also found, gold and silver wire, pieces of sheet silver, a stack of wooden bowls, a large wooden bucket with iron handle, containing several carved pieces of wood including a dragonhead, a bronze spoon or ladle, a needle box with needles, and a leather pouch containing twenty glass gaming pieces (Arbman, 1940, 157-160). (GP 93 & 94).



Of these twenty glass gaming pieces (*figures 3.39 and 3.40*), five are made from dark blue glass, roughly spherical in shape with small circular notches in the centre of the top. A further fourteen pieces were made from a light blue glass, also near spherical in shape with flat bases and decorated with moulded, slightly raised spirals of a darker blue or violet coloured glass. The final piece was also of light blue glass, and is of a similar simple anthropomorphic design as in Birka grave 644 and 750. This piece has been decorated with a spiral of dark blue glass, which has also been used to depict eyes and a nose. The pieces were found in a tight cluster on the left hand side of the inhumation, between the arm and the body. No remains of a gaming board were found.

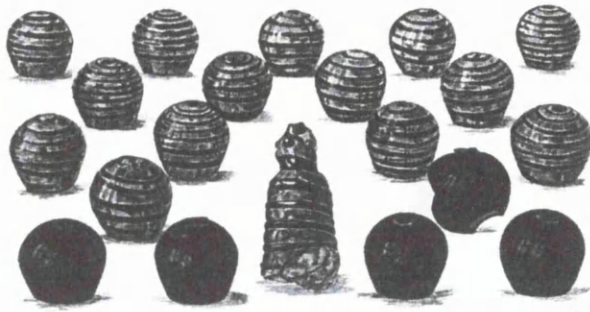


Figure 3.39, (above) glass gaming set from Birka grave 523 – 13 blue glass pieces with spiral decoration are seen here, there were originally 14 pieces. Photograph taken from cabinet display at the Museum of National Antiquities, Stockholm, by A. Sperr.

Figure 3.40 (left) illustration of grave 523 gaming set, showing pieces in more detail. Taken from Arbman, 1940, Plate 148.

Based on the grave goods found in burial 523, in particular the pair of oval brooches and other items of jewellery, the individual is thought to have been a wealthy female. Silver and gold wire and sheet metal could be indicative of a silversmith, though it may also have been a cash of wealth. Domestic items such as the wooden bowls, utensils, bucket and needles, suggest that she was responsible for a home or family, and was probably a resident at Birka rather than a visitor.

Birka 524

The person in this burial was placed in a stone chamber, covered with a mound 2.2m in length, 1.5m width, and 1.8m deep. Items buried with the individual included an iron sword with a wooden handle decorated with silver and copper strips, a fighting axe, an iron shield with two handles, several spearheads, part of a woven gold cuff bracer or bangle, gold foil beads, silver Arabic coins, bronze ringed pins, gilded iron knives, several strike-a-lights, a bronze bowl, a wooden bowl, and fifteen amber gaming pieces (Arbman, 1940, 160-161).

The gaming pieces were found in a tight cluster, and were probably held in a bag or pouch. Three of the pieces are made from bright red amber, the rest are from a bright translucent yellow/orange type of amber. Each piece is similar in shape; nine have a spherical shaped top on a cylindrical base; five are more dome-shaped though these may just be more worn. One piece is markedly taller than the rest, and is marked with a cross deeply incised over the piece, with another deeply incised ring circumnavigating the piece. It stands 2.9cm high, and 2.7cm in diameter. The rest of the gaming set varies slightly in size between 2.0-2.3cm in diameter, and 1.7-2.4cm in height. (GP 97).



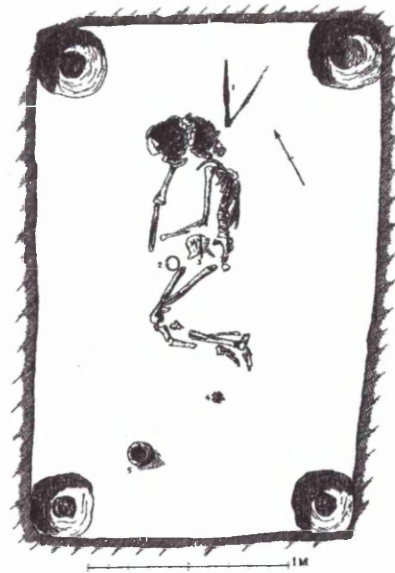
Figure 3.41. (above) Amber gaming set from grave 524, king piece is on the far right. Image taken from Arbman, 1940, Plate 149.

The range of weaponry found in this burial strongly suggests a wealthy male probably a warrior. The use of amber as gaming pieces is quite unusual at Birka; amber is fossilised solidified tree resin, and is known to hold a small static electrical charge. Amber beads and amulets are commonly found in burials at Birka and throughout the rest of Scandinavia.

Birka 986

The individual in this burial was placed inside a large stone chamber, and covered with a 2.6m long, 1.15m high mound of large stones. At each corner of the burial there were round indentations, up to 20cm in depth. The purpose or cause of these indentations is unclear.

Figure 3.42 (right), Birka 986 grave plan, taken from Arbman, 1940, 413.



The grave goods found in burial 986 include a spearhead – found upright, an iron knife, a clay pot, a neck-band, an ornate iron ring clasp, and two iron weights; one of which is covered in bronze.

Seventeen Elk antler gaming pieces were found in a tight cluster were found below the feet, and were probably placed within a bag or pouch (Arbman, 1940, 412-413).

The gaming pieces are roughly conical in shape and are of similar sizes. Six of these are decorated with double grooves carved into the surface extending from near the base to the top of the upper portions; each has a conical shaped hole in the centre of the base. One

piece is almost three times the height of the others with a decorated body and ball shaped head. The remaining ten pieces are of a same form but are not decorated. Six of these ten pieces have a conical shaped hole in the centre of the base (*GP 77 & 78*).

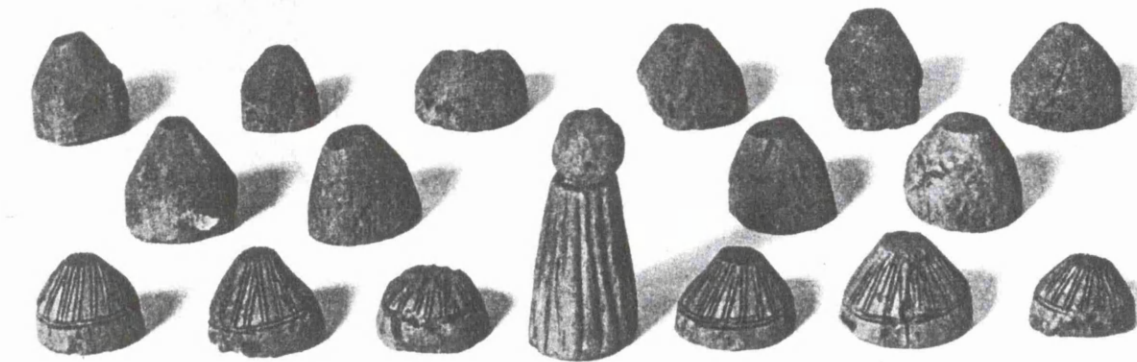


Figure 3.43 (above), Elk horn gaming set from burial 986, image taken from Arberman, 1940, Plate

The gender of the individual in this burial was determined by skeletal remains and by the grave goods as male. The weights imply that he may have been a trader at Birka.

Birka 581

A stone chamber with two compartments was built to hold the remains of a man and two horses in grave 581. The double chambered tomb was covered with a large mound, measuring 3.5m in length, 1.8m wide and 1.75 metres high.

Figure 3.44. (right) Birka 581 grave plan, image taken from Arberman, 1940, 189.

The first compartment contained the remains of the man, with a second cell beneath the man's feet for the horses. Grave goods from this burial include an iron sword, an iron knife, an axe, a quiver of iron arrowheads found with silver and copper wire – probably used to hold the arrow heads to the wooden shafts, two shield bosses, a ringed pin, a brooch, a horn comb, silver coins, a large iron bowl – found perforated with an upright spearhead, pieces of a glass mirror, a set of stirrups and various pieces of horse bridles, horse shoe nails, three horn dice, and twenty eight horn gaming pieces (twenty-seven survive) (*GP 95 & 96*).



At the bottom of the grave beneath the man's feet, fragments of iron mounts and several iron nails were found. It is possible that these pieces belonged to a wooden gaming board, though none of these pieces survive today (Arbman, 1940, 188-190).



Figure 3.45. (above) Gaming set from grave 581. Photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm.

The gaming pieces were found in a tight cluster between the man's arms and his body – as though he were holding them between his forearms and abdomen. They were probably placed in the burial inside a bag or box. The pieces are in poor condition, with only three intact enough to obtain measurements. They were probably all of a similar size and spherical shape with a pointed top, ranging between 1.6-1.7cm in height, and 2.0-2.2cm in diameter. Each piece has a hole in the centre of the base. There is evidence to suggest that each piece was made using a lathe, and the set was probably highly polished. One piece (possibly the king) is slightly smaller than the rest of the set, and has an iron pin inserted into the centre of the top. This piece is 1.3cm tall, and 2.0cm in diameter.

The three dice are also in a poor condition. They are all cuboids and are made of horn. The first die (a) has ring-and-dot-spots showing the number 5 on opposite square ends, the numbers on the rectangular sides are too worn to determine. Die (b) has the numbers 1 and 5 on opposite square ends, with possibly the number 4 on one of the rectangular faces – again, the die is too worn to determine the other numbers. The final die, (c), has the numbers 5, 6, 2, on rectangular faces and unidentifiable numbers on the other faces (D 581).



Figure 3.46. Horn dice from grave 581, from left to right, a, b, and c. Photograph taken by A. Sperr at the Museum of National Antiquities, Stockholm.

The individual in burial 581 was a wealthy male; probably a horse rider and warrior capable of wielding a variety of weapons. The position of the gaming pieces in this burial suggests that the gaming pieces may have been placed in a bag or pouch, and attached to the belt.

Denmark

Vesterberg near Goting, Isle of Föhr. The cremated remains of the individual from this burial were placed in an urn, in an earlier barrow. The sex of the individual is unknown as there were not sufficient skeletal remains or grave goods to determine gender.

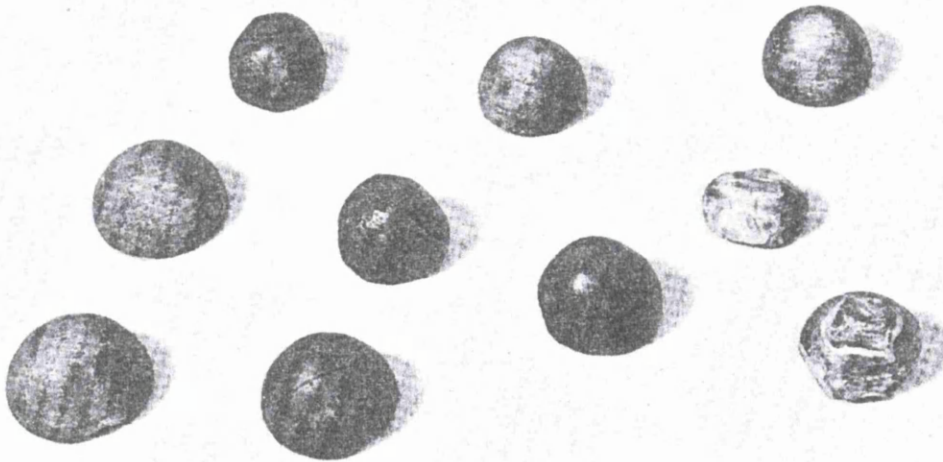


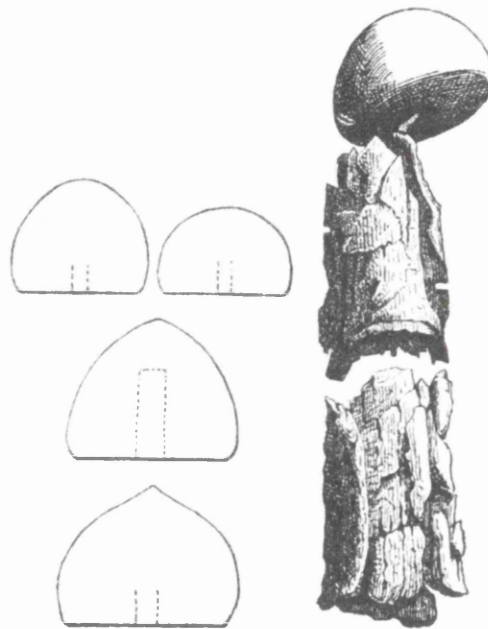
Figure 3.47. (above) Bone and equine tooth gaming pieces from Vesterberg urn grave. Image taken from Ramskou, 1950, 171.

The only items found inside the urn were a fire-steel, and fifteen gaming pieces: nine bone, four amber, and two equine teeth. The larger amber piece is incised with a large irregular cross. The pieces are now lost and only documentary evidence survives (GP 53).

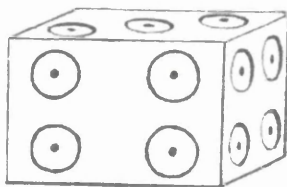
Case Study 3 - Île de Groix, Brittany, France

Coastal erosion of the small isle of Île de Groix led to the chance discovery of the only known Viking Age boat burial in France. Two amateur archaeologists, Du Chatellier and Le Pontois, excavated the burial. The ship, a vessel between 11m and 13m, was dragged up to the headland, past four vertical stone slabs (possibly used to mark the route of the procession). A smaller vessel inside the longship was also found. After cremation, the ship was covered with a mound measuring 5m in height, and 20m in diameter. The Île de Groix burial was an exceptionally rich cremation grave containing two individuals, one adult and one adolescent, dating to the first half of the 10th century. A set of 19 bone playing pieces was found associated with the adult male. The gaming pieces were found with 2 dice. Although each piece was damaged by the fire, they survive relatively intact.

Figure 3.48. (right) playing pieces from Île de Groix. Image taken from du Chatellier & le Pontois, 1908-09, 150.



The pieces were turned on a lathe and are similar in size, but vary slightly in shape, ranging from spherical to slightly dome shaped and droplet shaped. Each piece has a hole in the centre of the base; one of these is attached to an iron rod, which was in contact with (possibly part of) an auger found in the grave (du Chatellier & le Pontois, 1908-09, 149). Another piece has fragments of iron in the base hole. (GP 45).



Although the dice were badly damaged during cremation, the ring-and-dot-spot markings are still visible.

Figure 3.49. (left) Île de Groix die, taken from du Chatellier & le Pontois, 1908-09, 149.

The numbers of the dice are (figure 3.49) 1,3,4,4,5,6 (1 and 4 on smaller faces) and 1,2,3,4,5,6 (1 and 2 on smaller faces). (Die database entry 2).

Other items found associated with the man include two swords and a bronze scabbard chape, eight arrowheads, four lance heads, between fifteen and twenty-four shield bosses, two axe heads, six iron belt buckles, two spurs, three bronze mounts, a bronze buckle and

strap end, two silver hooked tags, remnants of gold and silver threads and textile remains, two bronze bowls, an iron cauldron with chain, two iron buckets, a bronze animal headed mount; and tools comprising an anvil, hammer, pliers, drill fragments, sickle, whetstone, an auger, an iron knife, scissors and two iron bodkins. Dog and bird bone were also recovered.

The burial at Île de Groix is exceptional as it is the only known Viking Age boat cremation found outside the Viking homelands (Foote & Wilson, 1970, 407). The range of weapons found associated with the man suggests that he was an accomplished warrior, perhaps even a chief. The assemblage also suggests links with France and Ireland (Müller-Wille 1978, 68-9), though its closest links are with mounds found at Myklebost in Norway (Musset, 1965, 124). Price suggests that the burial was contemporary with an invasion of Brittany in 919-937, based on the Norwegian background and traditional pagan style of burial (Price, 1989, 72/390).

Iceland

Brimnes, nineteen bone gaming pieces were found in this 9 - 10th century male burial. The grave was part of a pagan cemetery excavated in 1908.



Figure 3.50 (above) Gaming set from Brimnes, Iceland. Photograph taken by A. Sperr at The National Museum of Iceland, Reykjavik.

Each gaming piece is polished, and droplet shaped with a flat apex. They all have flat bases; eight have small holes roughly centred in the base, a further eight have deeply incised crossed lines cut into the bases and no holes (GP 125).



Figure 3.51 (left). Brimnes gaming set, showing the undersides of the pieces. Photograph taken by A. Sperr at The National Museum of Iceland, Reykjavik.

The remains of a horse, a dog's head, a small whetstone and several pieces of iron were also found in the burial (Eldjarn & Fridriksson, 2000, 163-166)

Baldursheimur, Skuktustadahreppur. The discovery of the Baldursheimur grave, in the S - Þingeyjarsýsla district of Iceland, prompted the establishment of the National Museum of Iceland (Magnússon, 1987,31). A set of twenty-four droplet shaped cattle bone pieces with slightly pointed apexes, an anthropomorphic whalebone king piece, and a rectangular bone die were found in this 10th century male inhumation burial. Each of the playing pieces has a small hole in the centre of the base (*GP 129 & 130*).



Figure 3.52. (above) Baldursheimur gaming set, with die and king piece. Image taken from Eldjarn & Fridriksson, 2000, 419.

The die is made from cattle or horse bone, hollow, and is marked with single dots on 4 of the 6 sides (*D 7*).

The Baldursheimur figure may depict the Viking god Thor; a similar figure made of bronze was found at Eyuarland in Iceland; the figure is seated, holding onto a trefoil shaped object which is interpreted as Thor's hammer (Eldjarn & Fridriksson, 2000, 419)



Figure 3.53. (left) Baldursheimur bone figure, image taken from Eldjarn & Fridriksson, 2000, 419.

Figure 3.54 (right) bronze figure from Eyuarland, Iceland, taken from Eldjarn & Fridriksson, 2000, 419



Site Name	Type of Deposit	Gender	Age	Material	Contents of Set (not inc. king piece)	Ratio	King	Board	Dice	Database Ref.
Birka 750, Sweden	double inhumation burial, male and female, with horse,	male	adult	glass	25 spherical pieces	17 light blue: 8 dark green : 1 king	1 anthropomorphic	iron brackets and nails	none	64, 65
Birka 624, Sweden	inhumation burial	male	adult	bone	26 spherical bone pieces	26 spherical: 1 king	1 spherical with gilded bronze hat	iron nail and hinge fragments	none	66, 67
Birka 886, Sweden	inhumation burial	male	adult	bone	24 spherical pieces	21 spherical: 1 king: 1 black: 1 elk horn	1 spherical with iron pin in centre	iron corner mounts and nails	none	68, 69
Birka 986, Sweden	inhumation burial	male	adult	Elk horn	17 conical pieces	10 undecorated: 6 decorated: 1 king	1 anthropomorphic	none	none	77, 78
Birka 644, Sweden	double inhumation burial, male and female	male	adult	glass	20 spherical pieces	20 light green: 2 kings	2 anthropomorphic	none	3	91, 92
Birka 523, Sweden	inhumation burial	female	adult	glass	19 near spherical piece	13 light blue: 5 dark: 1 king	1 anthropomorphic	none	none	93, 94
Birka 581, Sweden	inhumation burial	male	adult	bone	26 droplet shaped with pointed top	26 : 1 king	1 droplet shaped with iron pin in centre	fragments of iron may belong to a board	3	95, 96
Birka 524, Sweden	inhumation burial	male	adult	amber	15 - 14 near muffin shaped	14 amber: 1 king	1 cylindrical with domed top, incised with a cross and ring	none	none	97
Birka 20, Sweden	cremation burial	probably female	adult	bone	35 spherical pieces	34 spherical: 1 king	1 spherical with iron pin in centre	none	2	70
Vendel IX, Sweden	inhumation: boat burial	male	adult	whalebone	20 hemispherical pieces	19 pieces: 1 king	1 hemispherical with iron nail	none	none	99, 100
Långtorna, Sweden	inhumation burial	male	adult	glass, bone, steatite, jet/obsidian	19 spherical glass, 4 spherical bone, 1 cylindrical jet, 1 spherical domed steatite,	13 blue: 6 green: 1 king: 4 bone: 2 stone	1 anthropomorphic	none	none	101, 102, 103, 104, 105, 106
Vesterberg, Denmark	cremation burial: urn grave	male?	adult?	bone, amber, horse tooth	15 spherical pieces	9 bone: 4 amber: 2 horse tooth	none	none	none	53
Brinnes, Iceland	inhumation: boat burial	male	adult	whalebone	19 droplet shaped pieces	19 bone pieces	none	none	none	125

Baldurshelmur, Iceland	inhumation burial	male	adult	whalebone	23 droplet shaped pieces, 1 die	24 droplet: 1 king: 3 die	1 anthropomorphic	none	3	129, 130
Oslo, Norway	inhumation burial	male	adult	bone	11 hemispherical pieces	11 pieces	none	none	none	132
Gile, Norway	cremation burial	female?	adult	bone	10 spherical pieces	10 pieces	none	none	none	138
Ustad, Norway	inhumation burial	male	adult	bone	15 spherical pieces	15 pieces	none	none	none	139
Skogsfjord, Norway	cremation burial	male	adult	bone	15 hemispherical pieces	15 pieces	none	none	none	143
Holbø, Norway	cremation burial	male	adult	bone	14 spherical pieces	14 pieces	none	none	none	150
Larvik, Norway	inhumation burial	male	adult	amber	12 hemispherical pieces	12 pieces	none	none	none	153
Sear, Orkney, Scotland	triple inhumation: boat burial	male	adult	whalebone	22 spherical pieces	22: 1 king	spherical with iron nail	none	none	5, 6
Westness, Orkney, Scotland	inhumation burial	male	adult	whalebone	24 spherical pieces	24: 1 king	cylindrical	none	none	7, 8
Lewis, Outer Hebrides, Scotland	hoard	~	~	walrus ivory and teeth	59 anthropomorphic, 14 discs, 19 pawns	6 kings: 5 queens: 13 bishops: 14 knights: 10 bishops: 19 pawns: 14 discs	6 anthropomorphic	none	none	11, 12, 13,
Balnakeil, Scotland	inhumation: boat burial	male	adolescent	bone	14 conical pieces	14 pieces	none	none	none	14
Lough Sewdy, Ireland	inhumation burial	male?	adult	copper alloy mounted bone	18 conical shaped with metal pins	18: 2 kings	2 conical with longer pins and more decoration	none	none	21
Witchampton, England	settlement	~	~	whalebone	8 zoomorphic figures and fragments	4 white: 4 black, and other fragments	3 black	none	none	44
Ile de Groix, France	double inhumation: boat burial	male	adult	bone	19 spherical pieces and 2 dice	19 pieces	none	none	2	45

Table 1. Chart showing the details of the complete gaming sets discussed in this chapter.

Chapter 3: Discussion

Of the twenty-seven gaming sets discussed in this chapter, twenty-five were found in pagan Viking burials, and two in buried hoards. The pagan tradition of burying one's personal artefacts relates to the belief that they would be needed in the afterlife, and the inclusion of gaming pieces in the grave assemblage demonstrates the importance of gaming or entertainment to the individual they were buried with.

The three case studies chosen for extended discussion in this chapter help to demonstrate the nature of the people that were laid to rest with complete gaming sets. Details of each of the complete gaming sets researched and discussed in this chapter are displayed in Table 1.

Case Study 1: The Balnakeil Boy. The fourteen gaming pieces found in this burial were the only set of pieces discussed in this chapter thought to have belonged to a juvenile; all other sets were found in the burials of adults. Curiously however, this boy, aged between 8 and 13 years of age (Hallén, in preparation), was given an adults burial. He was buried with full sized weaponry, and as discussed previously, may have had an enlarged arm and shoulder as a result of this. For whatever reason, this child was regarded as mature, and as such was buried with items more commonly found associated with adults. This suggests rather strongly that complete gaming sets were usually owned by adults; perhaps the games that were played required more skill and thought than those played by children, or perhaps children were more accustomed to using less expensive stones or shells as pieces.

Case Study 2: Birka. The nine burials at Birka found with complete gaming sets are all thought to have belonged to wealthy residents of Birka, as opposed to travellers to the town. The striking similarities in the form and design of the glass playing pieces found in Birka grave 750 (*gaming piece database entries (abbreviated to GP- from this point onwards) 64 & 65*), grave 644 (*GP 91 & 92*), and grave 523 (*GP 93 & 94*), suggest that these sets in particular, were made locally, perhaps by a single manufacturer.

Case Study 3: Île de Groix. This ship burial is the only known cremated boat burial known outside the Viking homelands (Foote & Wilson, 1970, 407), and is thought to have been contemporary with an invasion of Brittany in 919-937 (Price, 1989, 72/390). The evidence suggests that this burial belonged to a Viking raider or warrior, perhaps even a chief, but someone away from home. The gaming piece found attached to an iron rod or auger, suggests that the individual in this burial was engaged in making gaming pieces, perhaps as a pastime while at sea.

Ownership of Complete Sets

Of the twenty-five gaming sets found in Viking pagan burials, at least twenty-two are known to have belonged to wealthy and even extremely wealthy individuals. The presence of complete sets in affluent burials suggests that purpose made or specialised gaming sets were an expensive luxury.

The two sets of pieces not found in burials are the Lewis set (*GP11, 12, & 13*), and the Witchampton set (*GP44*). These were both found hoarded, or buried, perchance for safekeeping. The size and content of the Lewis hoard suggests that it belonged to an ivory trader, who perhaps buried the hoard whilst travelling.

Chapter 4: Incomplete Sets,

Stray Finds and Small Groups of Gaming pieces

This Chapter focuses on the gaming pieces found in small groups or as single finds, not instantly associated with other gaming pieces. These include small groups of gaming pieces found in Viking Age burials, and pieces found on Viking Age settlements.

Four case studies, featuring a gaming piece from the Viking Age settlement on the *Brough of Birsay*, Orkney Scotland; the *Gokstad Ship Burial*, Norway; anthropomorphic figures from *Roholte* and *Trønning*, Denmark; and a playing piece from *Steinbogi*, Iceland, demonstrate the varying ways in which complete gaming sets may have become broken up.

Scotland

Case Study 1: Brough of Birsay

The Brough of Birsay is a tidal island in the Bay of Birsay, on the North-West Coast of the Orkney Mainland.

Figure 4.1. (right) Aerial view of the settlement on the Brough of Birsay, Image: Crown Copyright RCAHMS



The Brough is accessible during low tide via a modern concrete track across the natural causeway of exposed rocks (Morris, 1989, 285). Sitting opposite the originally attached Point of Buckquoy, Birsay is at present, uninhabited.

Archaeological Background

Archaeological work on Birsay began in the 1930s, though much of this earlier work is unpublished. Between 1956 and 1961, S.H. Cruden excavated the Brough. Investigations concentrated on the buildings, which lie to the west of the church. From 1974 onwards, excavations on previously undisturbed areas of the island were carried out by C. Morris and J. Hunter (Curle, 1982, 13-15).

Viking Age of Occupation

The extensive remains of a Viking period settlement are clearly visible on the Brough – the most prominent feature of which is the 12th century church and enclosure that dominates the site and represents the final stage of Norse building activity. Traces of a 7th to 8th Century Pictish settlement remain beneath the Viking age structures as evidence of an initial foundation on the Brough. Pictish symbol stones and an enclosure suggest a religious focus in this early community (Morris, 1989, 12). The arrival of the Norse in the 9th Century is marked by an extensive settlement of dwelling houses and barns - many of the structures have internal furnishings of hearths, benches, and drains still visible (Ritchie, 1986, 3). The process of building and rebuilding on the Brough spanned over four centuries, and resulted in the complicated maze of walls and drains still visible today. During the Viking period, Birsay was considered to be the political and ecclesiastical centre of the Earldom of Orkney (Morris, 1989, 12).

Gaming Evidence

An antler playing piece was found beneath one of the stone seats in the North-East corner of the church (Curle, 1982, 89). This piece is conical, with an acorn shaped terminal, and stands at 3.7cm tall. There are three evenly spaced rings carved into the neck of the piece, just below the terminal. This piece has been worked, smoothed and polished to a fine standard. The socket in the centre of the base is conical in shape (*GP 1*).



Figure 4. 2. (right) Antler gaming piece from the Brough of Birsay. Image taken from Curle, 1982, 110

This stone disc was found unstratified at Birsay, though it is thought to be associated with the Viking period of occupation. Carved from sandstone, this disc is smooth and almost perfectly circular in shape. The diameter is 2.4cm, and it is 0.6cm thick. Discs of all sizes are a relatively common find throughout Viking and Norse sites, and were used as pot lids as well as gaming pieces. There are no decorative markings on the disc (*GP 2*).



Figure 4.3 (left); gaming disc from the Brough of Birsay. Photograph taken by A. Sperr at the Tankerness House Museum, Orkney.

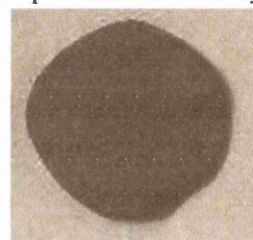
A whalebone gaming board was also found at the Brough of Birsay (*number 5 in the gaming boards database*), and is discussed in detail in Chapter 5.

Howe, Orkney Several stone discs were found at Howe; two of these in particular are thought to be gaming pieces.

No distinct Viking phase of activity has been identified at Howe, though early investigations may have disturbed structural evidence. A glass linen smoother is the only definitive Norse object recovered from Howe, though two stone gaming boards found in rubble layers are thought to have originated from dwellings associated with phase 8; probably from the 6th/7th centuries, possibly as late as the 9th – comparable finds from similar sites are said to be of mid-Norse date (Ballin-Smith, 1994) (One of these boards is discussed in Chapter 5, and is *number 1 in the gaming board database: abbreviated to B from this point onwards*).

Figure 4.4 shows a thin sandstone disc, 0.3cm thick and 2.6cm in diameter. It is roughly circular in shape, and has been worked and smoothed. A few scratches are visible on the surface, though there are no distinct decorative markings (*GP 3*). Compared to the many other stone discs found at Howe, this piece is much more worked and smoothed, and is of a more reasonable size to play games with.

Figure 4.4. (right) Howe gaming disc; Photographs taken by A Sperr at The Tankerness House Museum)



Another disc found at Howe is extremely well polished. It is 2.1cm in diameter and 0.5cm in thickness, and circular in shape. It is made from a harder type of stone, and is very smooth to touch (*GP 4*). Both stone discs were probably made locally from stone widely available on Orkney.

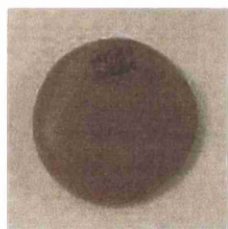


Figure 4.5. (left) Howe gaming disc; Photographs taken by A Sperr at The Tankerness House Museum)

Jarlshof, Shetland A number of artefacts associated with gaming were found at Jarlshof, including two stone gaming boards (discussed in Chapter 5: *B5* and *B7*), and a highly polished bone die (discussed in Chapter 6, *GP 1*). A highly polished bone or antler playing piece was found in a midden west of house number seven. It is 2.3cm tall, with a 1.5cm base at its widest point.



The piece is conical in shape with a two-tiered terminal – rather like a small head and an enlarged neck. There is a hole in the centre of the base, and two incised rings around the lower ‘neck’.

Figure 4.6. (left) Jarlshof playing piece, Image taken from Hamilton, 1956, plate XXXVII.

The gaming piece appears to have been intact when found, with only a few minor chips and scratches. (*GP 9*)



Two rectangular slate objects found associated with House 3 are also thought to be used for gaming. Though not recorded in the databases, they are worth mentioning as part of the Jarlshof description.



Figure 4.7 (left) and 4.8 (right) Slate tally sticks from Jarlshof, both images taken from Hamilton, 1956, plate XXXVII.

The first (*figure 4.7*) is 5.7cm in length, and 1.9cm wide. On one face, a rectangular grid of 3 lines by 9 lines has been incised, making 18 squares. The object seems to have been broken, and is probably a piece of a larger object as the grid appears to be incomplete towards one end. This was found in the paving level of the central floor. The other slate object (*figure 4.8*) is 5.1cm long and 1.9cm wide. The incised lines in this case however do not form an enclosed grid; a longitudinal medial line with 4 horizontal lines crossing it at relatively equal distances – creating 8 cells. Again, this appears to be a fragment of a larger object, and may not be complete. This was found in the yard area of House 3. Both pieces are thought to be tally sticks (Hamilton, 1956, 153); objects used to keep the score between two players over consecutive games. They may have been used in conjunction with small pebbles or pieces, moved along the cells, to show which player was in the lead.

Drimore Machair, South Uist A bone or ivory playing piece was found within the occupational debris from within a house at Drimore Machair, on the island of South Uist, Outer Hebrides. The gaming piece is conical in shape, with a height of 1.8cm tall, and a base diameter of 2.1-2.3cm. A hole has been drilled or bored into the base measuring 5.5mm in diameter and extending 8.5mm up into the piece may have been for a peg. The surface is smooth, and appears to have been well worked – perhaps made using a lathe, and may have been polished (*GP 10*).

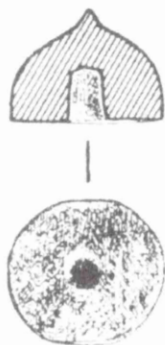


Figure 4.9, (left) gaming piece from Drimore, Image taken from Maclaren, 1974, 17.

England

York During the Viking Age, York was a thriving and busy market town - home to craftsmen and traders. Many gaming artefacts were recovered from excavations in the Viking Age town of Jorvik, including a wooden gaming board (*gaming board database entry 9*), which is discussed in Chapter 5. Gaming pieces in a range of shapes and materials were found.

Four wooden pieces were found during excavations of a row of dwellings at 16-22 Coppergate. Each is fragmented and cylindrical in shape. *Figure 4.10* shows a cylindrical piece with cross-hatch decoration around the lower half, and parts of a knot work design around the top. The base is worked and the piece has been polished and smoothed (*GP 24*). The piece is 3.0cm in height and 2.2cm in diameter.

Figure 4.10 (right). Cylindrical wooden piece from York, Image taken from Morris, 2000, 2351.

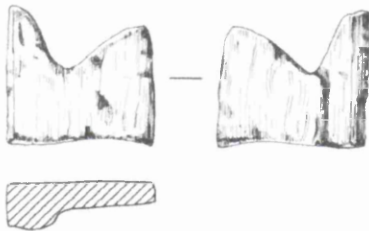
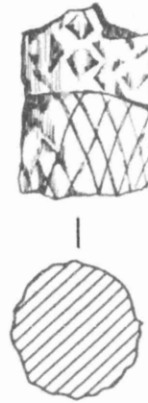


Figure 4.11 is a wooden object also found at 16-22 Coppergate. It is 3.7cm tall, 3.5cm in width, and 0.9cm thick. The flat edges of the piece suggest that it may have been cubical, and may even have been a die (*GP 25*).

Figure 4.11. (left) Wooden piece from York, Image taken from Morris, 2000, 2351.

Figures 4.12 and *4.13* are both cylindrical wooden pieces from York. *Figure 4.12* is smoothed on the base, and partially smoothed on the top. It is 2.8cm in height, 2.0 – 2.3cm in diameter, and is decorated around the side with light arched incisions. (*GP 26*). The wooden piece in *Figure 4.13* is decorated with several different patterns of incised lines and cross-hatching. There are two deep incisions on opposite sides of the piece, and the base is smoothed. This piece is clearly broken from a larger object, though may have been cut down to make a gaming piece. It is 1.3cm in height, and 2.4cm in diameter (*GP 27*).

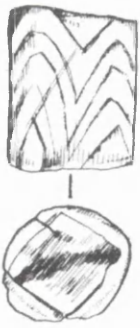
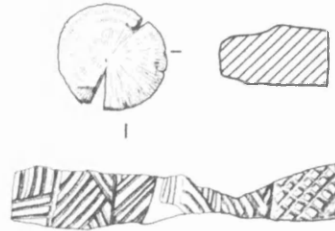


Figure 4.12 (left). Cylindrical wooden piece from York, **Figure 4.13** (right) decorated wooden piece, also from York. Both images taken from Morris, 2000, 2351.



Eight dome shaped chalk playing pieces were recovered from beneath the floor layers of a wattle and daub building at York (**Figure 4.14**).

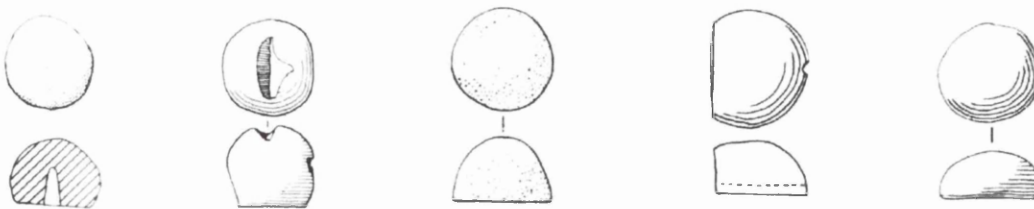


Figure 4.14, (left) eight dome shaped chalk pieces from York. Image taken from Mainman & Rogers, 2000, 2565

The pieces are extremely regular, ranging in height between 1.8 – 2.0cm, and 1.7 – 2.0cm in diameter. One of the pieces is stained or coloured with a red ochre, and another piece has traces of staining (Mainman & Rogers, 2000, 2565–2567). Since the pieces were

found within the floor layers, it is possible that they were hidden or stashed away and forgotten about (GP 28).

Five bone playing pieces were found within the floor layers of another wattle and daub building at York. Each piece is hemispherical in shape, and has been worked, smoothed and polished

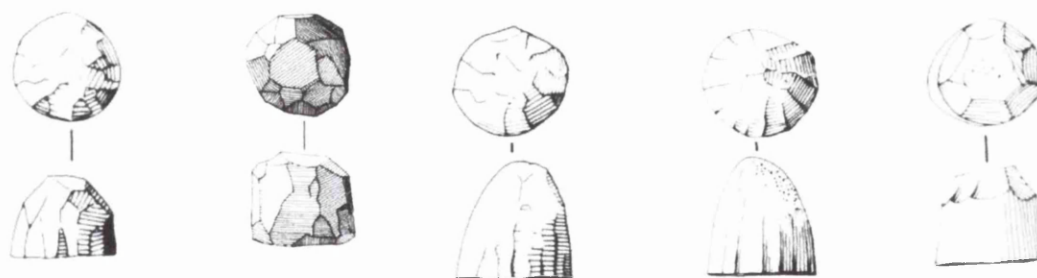


Figures (from left to right) 4.15, 4.16, 4.17, 4.18, and 4.19. Bone playing pieces from York. Images taken from Mainman & Rogers, 1999, 1982. (Gaming pieces database entries: 29, 30, 31, 32, and 33 respectively)

The shape of the pieces and the grain of the bone cut suggest that some of the pieces may have cut from the naturally rounded ends of cattle bone (the epiphysis), providing the basic shape of the playing piece.

The size and shape of the playing piece in *Figure 4.15* suggests that it may have been cut from the end part of a long bone. It is 2.0cm in height, 1.18cm in diameter, and has been smoothed (*GP 29*). *Figure 4.16* shows a bone playing piece with a deep notch in the top, and in the side. Though these notches may be damage to the piece, the incision in the top may also have been used to identify this piece from the others. It is 1.7cm tall and 1.9cm in diameter (*GP 30*). The playing piece in *Figure 4.17* has a conical shaped hole in the centre of the base, extending more than half way up inside. The piece is 1.4cm in height, and 2.05cm in diameter, and is smoothed (*GP 31*). *Figure 4.18* is a rounded piece with a faint single line incised around the circumference near the base. It may have been cut from the epiphysis of a long cattle bone (*GP 32*). *Figure 4.19* is also a rounded playing piece that appears to have been cut from the epiphysis of a cattle bone. The piece has not been obviously worked or smoothed, other than the base (*GP 33*).

The following five antler (possible red deer) (Mainman & Rogers, 1999, 2043) playing pieces were found near to a tenement building at York. Each of the pieces is roughly dome shaped with flat tops and flat bases.



Figures (from left to right) 4.20, 4.21, 4.22, 4.23, and 4.24. Antler pieces from York. Each Image taken from Mainman & Rogers 1999, 1982. (Gaming pieces database entries 34, 35, 36, 37, and 39 respectfully)

It is unclear whether these five pieces were found in close proximity to one another, though the similarity in form and shape suggests that they are all part of the same group. Tool and cut marks are clearly visible, though two pieces (*figures 4.22 and 4.23*, *GP 36 and 37*) have been partially smoothed. Each of the five pieces is similar in size: (from left to right) 0.9cm, 2.4cm, 2.0cm, 2.1cm, 1.5cm in height, and 1.3cm, 2.65cm, 2.0cm, 2.05cm, 1.85cm in diameter. The shape and size of these antler pieces suggests that they may have been made from the tips of an antler.

Another antler piece found at York was found in the same area. It is 2.1cm in height and 2.0cm in diameter. The piece is droplet shaped with a pointed top, and has been smoothed and highly polished. There are no decorative markings, though the concentric shallow incisions suggest that the piece was turned on a lathe. There is a conical shaped hole in the centre of the base (GP 38).

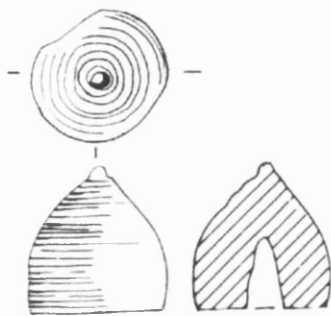


Figure 4.25. (left) Antler playing piece from York. Image taken from Mainman & Rogers, 1999, 1982.

Figure 4.26 shows a disc shaped antler piece, also found in the same area as the six previously mentioned antler pieces. It is circular in shape, and is 3.77cm in diameter and 1.47cm thick. The top is decorated with a slightly raised edge and a raised centre. There is a conical shaped hole in the centre of the top. This piece also appears to have been worked using a lathe (GP 40).

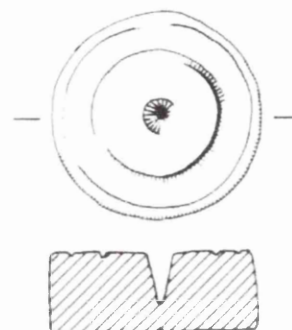


Figure 4.26. (right) Antler disc found at York. Image taken from Mainman & Rogers, 1999, 1982.



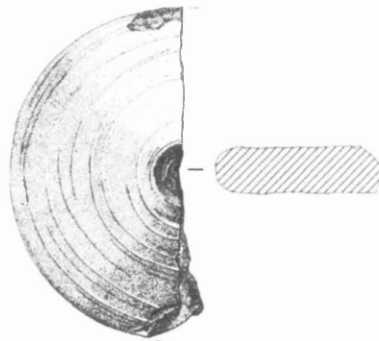
A fragment of a shale dome shaped gaming piece, found in a deposit in front of a tenement building at York is shown in *figure 4.27*. This piece is 3.4cm tall, and 1.9cm in diameter. The base is smoothed but scratched, and the sides are also smoothed with deep incisions, which appear to be a natural feature of the stone (GP 41).

Figure 4.27 (left). Shale gaming piece from York. Image taken from Mainman & Rogers, 2000, 2567.

Another shale gaming piece found at York was discovered behind a tenement building.

Figure 4.28 (right). Shale gaming disc found at York. Image taken from Mainman & Rogers, 2000, 2567.

The piece is fragmentary with roughly half of the piece represented. It is disc shaped, and measures 4.9cm in diameter and is 0.7cm thick. The top is decorated with uniform concentric circles, suggesting that a lathe or compass type tool was used. It is also suggested that this piece may in fact have been a lid, possible from the Roman Period, utilised in the Viking Age (Mainman & Rogers, 2567) (GP 43).



The final gaming piece found at York to be discussed in this Chapter, is a jet piece. It is roughly hexagonal and dome shaped, and stands 1.9cm tall, with a diameter of 1.6 – 1.8cm.



Figure 4.29. (left) Jet playing piece found at York. Image taken from Mainman & Rogers, 2000.



This piece was found in a medieval deposit in the backyard area of the tenement building that figure 4.27 were found near. It is heavily worked and has been well polished (GP 42).

Ireland

Dublin During the Viking Age, Dublin was also a centre of trade and manufacture, similar to York. Many gaming pieces have been recovered from excavations at Dublin, in a range of materials.

This walrus ivory playing piece (figure 4.30) was found during excavations at Fishamble Street. It is 2.2cm tall, 2.9cm in diameter across the widest point, and 2.2cm diameter across the base. This piece has been smoothed and highly polished, and has a small conical shaped hole (0.3cm in diameter) in the centre of the base (GP 15).



Figure 4.30. (left) Ivory gaming piece from Fishamble Street, Dublin. Photograph taken by A. Sperr at The National Museum of Ireland.

This walrus ivory gaming piece (*Figure 4.31*) was also found at Fishamble Street. It is droplet shaped with a flat apex and flat top. The top is decorated with a carved ring and marigold motif. It is 3.3cm tall, 3.4cm in diameter around the widest point, and 2.4cm in diameter across the base. The piece is highly polished, and has a conical shaped hole (0.5cm in diameter) in the centre of the base (*GP 16*).

Figure 4.31. (right) Ivory gaming piece from Fishamble Street, Dublin. Photograph taken by A. Sperr at The National Museum of Ireland.



A similar shaped piece (*Figure 4.32*) recovered from High Street is made from walrus ivory, and is 2.2cm in height, 2.1cm in diameter across the widest point, and 1.3 cm across the base. The top is decorated with a ring and a cross with a small dot in the centre. The piece is highly polished, and has a tapered hole (0.5cm in diameter) in the centre of the base (*GP 18*).



Figure 4.32 (left) ivory playing piece from High Street, Dublin. Photograph taken by A. Sperr at The National Museum of Ireland.

This worked piece of walrus ivory (*Figure 4.33*) was found nearby the playing pieces, and is a similar size. It is thought that this is a rough out, showing the early stages of the gaming piece manufacturing process. It is 2.3cm tall, and 3.4cm in diameter, and has been shaped into a near droplet shape. A large split in the base may indicate why this piece was never completed (*GP 19*).

Figure 4.33. (right) Walrus ivory rough out, from High Street, Dublin. Photograph taken by A. Sperr at The National Museum of Ireland.



Figures 4.34 (left) and *4.35* (right) show a dome shaped playing piece with a flattened top and slightly concave base.

Figures 4.34 (left) and **4.35** (right) glass playing piece from Fishamble Street, Dublin. Both photographs taken by A. Sperr at The National Museum of Ireland.



The piece is made from an opaque material that may be glass. It appears to be black glass swirled with dark grey. The surface is smooth, with a slightly dull patina. The base (*Figure 4.35*) is rough, as though the glass was placed on a rough surface when cooled. It is 1.3cm in height and 2.2cm across the base (*GP 17*).

Kilmainham and Islandbridge, Dublin Four whalebone gaming pieces were recovered from the cemeteries at Kilmainham and Islandbridge. It is unknown from which cemetery they originated, or indeed from which particular burial. There is also little information regarding the burial from which they came – whether male or female, warrior or tradesman.



Figure 4.36, whalebone playing pieces from the cemeteries at Kilmainham and Islandbridge. Photograph taken by A. Sperr at The National Museum of Ireland.

Two of the pieces are spherical in shape; the other two are slightly irregular and more dome shaped though rounded. The pieces range in height between 2.0 – 2.2cm and 2.0 – 2.3cm in diameter. Each has a small (0.6cm diameter) conical shaped hole in the centre of the base. Though rather rough to the touch now, there are small patches suggesting that they were once polished.



Figure 4.37 (left) shows the underside of the pieces. As one can see, the grain of the bone indicates that the pieces were cut from a larger piece of bone, and were probably made using a lathe (GP 20).

Figure 4.37 (left) Playing pieces from Kilmainham & Islandbridge, showing the underside of the pieces. Photograph taken by A. Sperr at The National Museum of Ireland.

Strokestown, Co. Roscommon Two gaming pieces were found within the remains of a crannog dating to the Viking Age at Strokestown.



Figure 4.38 (left) shows a droplet shaped ivory piece, 2.1cm tall, 2.9cm in diameter across the widest point and 2.6cm across the base.

Figure 4.38 (left) Ivory playing piece from Strokestown. Photograph taken by A. Sperr at The National Museum of Ireland.

There is a conical shaped hole, 0.3cm in diameter, in the centre of the base, and the piece is highly polished. Faint remains of concentric circles on the surface, especially near the top, suggest that it was made using a lathe. The dark brown colour of the piece indicates that it may have been stained or dyed, as usually ivory is light in colour, though it may also be the natural aged colour of the ivory (GP 22).

This bone piece (Figure 4.39) was also found at Strokestown. It is 3.4cm in height, 2.0cm in diameter around the widest point, and 1.3cm in diameter at the top and base.

Figure 4.39 (right) bone playing piece from Strokestown. Photograph taken by A. Sperr at The National Museum of Ireland.

The piece is hollow, and was probably once polished (GP 23).



Norway

Prestegården, Akerhus Four spherical shaped bone playing pieces were recovered from a male burial at Prestegården.



Figure 4.40, (left) playing pieces from Prestegården, Norway. Photograph taken by S. Kristensen, Private collection.

Other objects found include a few iron tools and utensils (Kristensen, S. 2001 - present, in preparation). Each of the four bone pieces is spherical in shape, and highly polished and smoothed. The pieces range in height between 1.8 – 2.2cm, and

between 2.6 – 2.9cm in diameter. Each piece has a small hole, roughly in the centre of the base (GP 131).

Østby N., Rakkestad, These seven spherical bone playing pieces were found in an inhumation burial. The pieces range in height between 1.3 – 2.1cm, and 2.1 – 2.5cm in diameter.

Figure 4.41, (right) playing pieces from Østby, Norway. Photograph taken by S. Kristensen, Private collection.



Each piece has a flat base and a small hole in the centre of the base. Other items found with these pieces include glass beads, and fragmentary items made of brass and bone (Kristensen, S. 2001 - present, in preparation) (GP 133).

Skari, Oppland, Gran, These four fragments of bone gaming pieces were found in a cremation burial, along with a bronze arm ring, a decorated piece of bone and a handle from a box (Kristensen, S. 2001 - present, in preparation).



Figure 4.42, (left) playing pieces from Skari, Norway. Photograph taken by S. Kristensen, Private collection.

The playing pieces are extremely damaged; though they seem to have been spherical in shape, with holes in the centre of the base. Due to the fragmentary nature of the pieces, exact sizes are unknown (GP 135).

Vidarshov, Vang, Hedmark, The remains of an individual were found within a large burial, grave goods included fragments of a dagger, pieces of flint, and three bone playing pieces.

Figure 4.43, (right) playing pieces from Vidarshov, Norway. Photograph taken by S. Kristensen, Private collection.



Two of the pieces were found in the centre of the grave, the third was found in the northwest corner. (Kristensen, S. 2001 - present, in preparation).

Each of the three pieces is spherical in shape, two of these are fragmented, and each has a hole in the centre of the base. It is unclear if the pieces were polished. The most complete piece is 2.1cm in height and 1.4cm in diameter (GP 136).



Grevegg, Trogstad, Østfold, Norway This double burial contained the remains of a man and a woman.

Figure 4.44, (left) playing pieces from Grevegg, Norway. Sandstone piece on left; amber piece on right. Photograph

Two playing pieces were found amongst the man's grave goods, which also included an iron sword, steatite bowl, a bronze strap end, an iron hoop, iron hook, iron knife, iron

rings, and oval shaped buckle, various fragments of bone and antler objects, and pieces of charcoal. (Kristensen, S. 2001 - present, in preparation). The amber piece (Figure 4.44) is conical shaped and measures 1.6cm in height and 2.0cm in diameter. It has been polished, though tool marks are still clearly visible. The amber is a deep yellow/ orange colour and is opaque. There is no hole in the base.

The sandstone piece appears to be a natural pebble with a slightly worked base. It is 1.5cm in height and approximately 1.8cm in diameter. Aside from the flattened base, there are no other markings or worked areas (Both pieces: GP 137).

Blaker, Sorum, Akerhus, These five spherical shaped bone playing pieces were found in a Viking Age burial at Blaker.

Figure 4.45, (right) playing pieces from Blaker, Norway. Photograph taken by S. Kristensen, Private collection.

The pieces range in height from 1.3 – 1.9cm, and in diameter from 2.2 – 2.4cm. Two of the pieces appear to have been polished, though the others were probably polished too. Each piece has a small hole in the centre of the base (GP 140).



Gran, Oppland Two highly polished bone playing pieces were found in a burial at Gran,



Oppland. The two pieces are spherical in shape with flat bases. Each has a small hole in the centre of the base. The pieces are 2.0 and 2.4cm in height, and 3.3 and 3.6cm in diameter respectively (GP 141).

Figure 4.46, (left) playing pieces from Gran, Norway. Photograph taken by S. Kristensen, Private collection.

Gjulem Nordre, Rakkestad, Østfold This clay gaming piece was found in a burial along with several other items. It is 1.3cm in height and 2.9cm in diameter, and has no hole in the base. The piece is broken roughly in half, no other pieces were found in the burial (GP 142).



Figure 4.47, (right) playing piece from Gjulem Nordre, Norway. Photograph taken by S. Kristensen, Private collection.

Alm, Østre, Hedmark These two bone playing pieces were found in a round burial. The grave probably belonged to a male, grave goods included: a steatite urn, a shield boss, fragments of iron, a spear head or dagger, and stirrups (Kristensen, S. 2001 - present, in preparation). The two playing pieces are 2.0 and 1.7cm in height and 2.1 and 2.3cm in diameter respectively.



Figure 4.48, (left) playing pieces from Alm, Norway. Photograph taken by S. Kristensen, Private collection.

Each is highly polished and has been turned on a lathe. They are both droplet shaped with flat tops and bases, it is unclear if they have holes in the base (GP 144).

Berg, Hedmark A spherical shaped bone playing piece with a flat base was found in this burial, along with iron arrowheads and a bone die (D8).

Figure 4.49, (right) playing piece from Berg, Norway. Photograph taken by S. Kristensen. Private collection.

The playing piece is 2.1cm tall and 3.2cm in diameter, with a small hole in the centre of the base.

It is highly polished and was probably made using a lathe (GP 145).



Bjerke, Larvik, Vestfold This clay gaming piece is 2.2cm tall and 2.7cm in diameter. The base is slightly convex, with no hole.

Figure 4.50, (left) playing piece from Bjerke, Norway. Photograph taken by S. Kristensen. Private collection.

It is spherical in shape and has been polished (GP 146).

Burum, Råde, Østfold A single fragmented gaming piece was found in this cremation burial along with an iron latch and a round disc of burnt clay, found in two pieces (Kristensen, S. 2001 - present, in preparation).

Figure 4.51, (right) playing piece from Burum, Norway. Photograph taken by S. Kristensen. Private collection.

The playing piece is made of bone, with a flat base, and is 2.0cm tall and 2.2cm in diameter. The piece is badly damaged, and it is unclear if there was a hole in the base (GP 147).



Løten, Hedmark These three playing pieces were found in a Viking Age burial. Though fragmented, they were spherical in shape and highly polished.

Figure 4.52, (left) playing pieces from Løten, Norway. Photograph taken by S. Kristensen. Private collection.

One piece has been stained or dyed a dark brown/ black colour, and is 1.6cm tall and 2.6cm in diameter. Of the other two pieces, the more intact piece is 1.2cm tall and 2.4cm in diameter (GP 148).

Opstad, Tune, Østfold These four playing pieces were found in a small pyramid shaped cluster (Kristensen, S. 2001 - present, in preparation).

Figure 4.53, (right) Pieces from Opstad, Norway. Photograph taken by S. Kristensen, Private collection.



Each piece is spherical shaped with a flat base, and were polished. The pieces are 1.9 – 2.2cm in height and 3.1 – 3.4cm in diameter. At least two of the pieces have a small hole (0.4cm in diameter) in the centre of the base (GP 151).



Mellem Ror, Rygge, Østfold Five gaming pieces were found in a cremation burial along with a chisel, an iron latch, and pieces of slate.

Figure 4.54, (left) Pieces from Mellem Ror, Norway. Photograph taken by S. Kristensen, Private collection.

Though the pieces were badly damaged by fire, they still retain the basic spherical shape with flat bases.

Each has a hole roughly in the centre of the base. The more intact pieces are 1.8 – 2.1cm in height and are all 2.4cm in diameter (GP 152).

Case Study 2: The Gokstad Ship Burial

The Discovery

A large, grand ship burial was discovered in a mound of blue clay near to a group of farms named Gokstad, near the town of Sandefjord in Vestfold, Norway, in around 1880 (Nicolaysen, 1882, 1).

The name Gokstad is from the Old Norse word *Gaukstaðir*, which originates from *gaukr* (cuckoo) and *staðr* (a dwelling or farm). There were several farms in the area with this name, one of which contained a large hillock or mound, known locally as “the king’s mound”. Many old stories surrounded this mound – where it was said that a king and all his treasures were buried. It was these old stories that made the sons of the farm that the mound belonged to, curious enough to dig into the mound early 1880, when the ground was still frozen (Nicolaysen, 1882, 2-5).

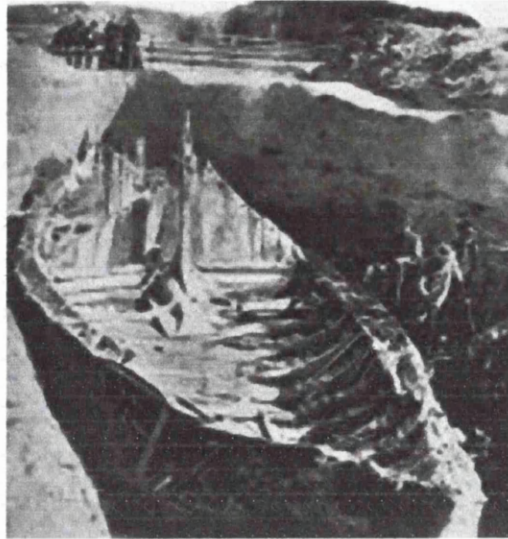
The Directors of the Antiquarian Society soon learned of this, and organised for the excavation of the mound to be suspended. An agreement was come to whereby the site

would be thoroughly excavated on the 27th April, when Nicolaysen would return for a closer examination of the mound. After deciding how best to deal with the task at hand, Nicolaysen and his team began excavations the following day.

Excavation of the Gokstad Ship

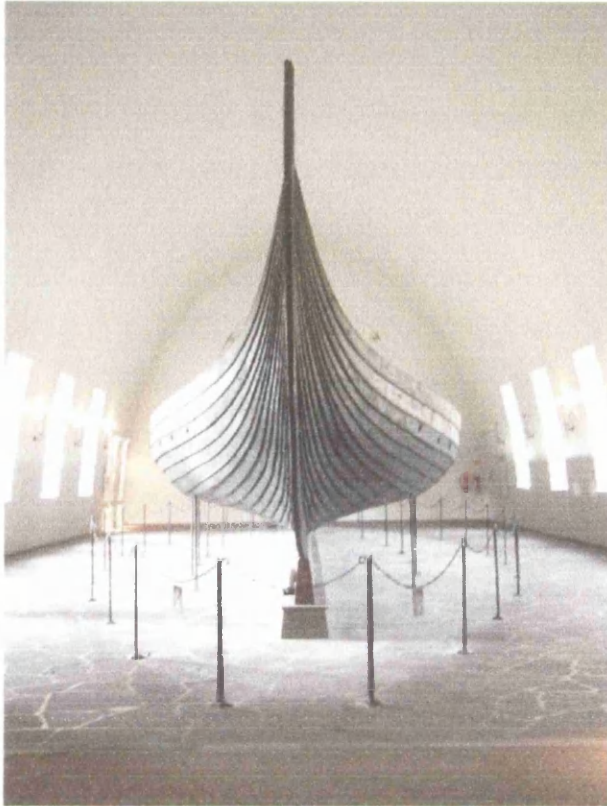
Successive ploughing over and around the mound made it impossible to know how large it was originally, though before excavation it stood at 50m long and 43m wide. It was roughly oblong in shape, although it may have been circular before the ploughing took place.

Figure 4.55. (right) *Excavation of the Gokstad Ship burial.*
Image supplied by The Viking Ship Museum, Oslo, Norway.



The stern of the ship was found after the second day, and the sepulchral chamber was discovered soon after. A cut and loose soil found leading to the vessel from the east, suggests that the sepulchral chamber had been previously disturbed, perhaps by earlier excavations or by treasure hunters.

Once the soil surrounding the vessel was removed, the ship was raised and cleared underneath. It was found to have been supported upright by round thick logs laid at intervals against the upper part of the ship, presumably in order to steady the ship before being covered with earth. The ship was then cut into two parts for transport down to Lahelle on the Tönsbergfjord, where it would be transported via steam tug to Christiania for investigation and better protection. At first, a team of horses were used to slowly drag the pieces of the ship; however, the uneven pulling by the horses caused concern and it was eventually dragged to Lahelle using winches alone. On the 15th July, the two parts of the Gokstad ship complete with all of its internal contents, were transported by the tug to Christiania for closer inspection. (Nicolaysen, 1882, 7)



The vessel buried at Gokstad was built between 895 – 900A.D. and was certainly an ocean sailing craft that had actually been used before burial. The ship itself measures 23.3m long, 5.2m wide and 2.0m deep. The keel was made from a single piece of oak, which provided the vessel with added strength (Sawyer, 1997, 187).

Figure 4.56. (left) The Gokstad Ship. Image taken by A. Sperr at The Viking Ship Museum, Oslo, Norway.

The remains of thirty-two shields, with traces of yellow and black paint were found on either side of the ship, two next to each oar-port, which may indicate a crew of the same number. The remains

of the central mast and fragments of cloth that may have been the sail were also found. Pieces of a heavily rusted iron object and iron ring are thought to be an anchor and chain. (Nicolaysen, 1882, 30-36)

As well as many other items associated with the working and sailing of the ship itself, the burial also contained a great number of objects of weaponry, transport, and everyday life. Many fine examples of metalwork were recovered including several fine lead mountings, fine gilt bronze strap ends and ornate buckles, and horse bridle pieces. Other, more mundane objects of everyday life were also found including hooks, iron nails and a large iron cauldron. The remains of twelve horses, six dogs, one peacock, three smaller faering boats, and the carved wooden sides of a sledge were also found.

Nicolaysen also found evidence to suggest that the sepulchral chamber had been broken into not long after burial. Indeed, many items one would expect to find in such a grand burial are missing; for instance weaponry and jewellery. Also many items laid in the chamber were smashed up. Though customary during the Viking period to occasionally bend or break items buried with the deceased, a wooden sledge in the Gokstad ship was found smashed and deposited in two separate areas; suggesting that the chamber had been violently disturbed (Nicolaysen, 1882, 46 & 53).

Human Remains

The burial chamber contained the incomplete skeleton of a man. Dr. Jacob Heiberg – a Professor of anatomy at the University of Christiania, examined the remains. He estimated that the man would have been approximately 6' 3" – or 242 cm tall. If this is correct, the man would have been extremely tall – especially for the Viking Age. The skeletal remains also indicate that the individual must have suffered from rheumatoid arthritis in life – especially in the left knee, which may have made walking difficult. The man may also have had rheumatism of the muscles; this together with the arthritis in almost all of the joints suggests that he may have suffered from pain for some time. There was no evidence pointing to how the man may have died – so whether he was killed in battle or in an accident, or simply died of old age or disease remains unknown. His age was estimated at around 50 years, though he may have been older (Dr. Heiberg, J. in Nicolaysen, 1882, Appendix IV).

The Gaming Evidence

Only one single gaming piece was found within the sepulchral chamber associated with a double sided gaming board (Discussed in Chapter 5, *B 19*).

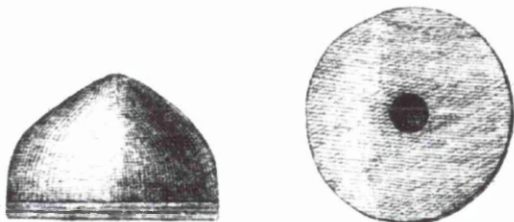


Figure 4.57. (left) *The Gokstad Ship playing piece.*
Image taken from Nicolayson, 1882, Plate IX.

The playing piece is carved from dark horn, and is spherical in shape, with a gentle point at the top.

The regularity of the piece suggests that it may have been expertly made, and

turned on a lathe. Two incised lines are visible around the bottom of the piece, and a small tapered hole lies in the centre of the base. The exact dimensions are not mentioned in Nicolaysens' report, however from the scale drawing the piece is estimated as 1.5cm in height, and 2.1cm in diameter. There is a hole in the centre of the base, 0.4cm in diameter. In such a grand burial, one might expect a complete set of playing pieces to have been buried along with the gaming board. Since the burial is thought to be that of a chieftain or king, it is possible that the single playing piece represents a king piece. As mentioned previously, the Gokstad Ship is thought to have been disturbed shortly after burial. Since no weaponry or jewellery was discovered, Nicolayson concluded that grave robbers may have removed these items (Nicolayson, 1882, 53). If this were the case, then it would also

possible that grave robbers stole pieces from the gaming set, perhaps leaving one piece behind by accident (*GP 154*).

Sweden

Birka 52a These four amber playing pieces were found in an inhumation burial at the Birka cemetery, in grave number 52a. The pieces are between 1.4 – 1.8cm in height, and 1.8 – 2.0cm in diameter. Three of the pieces are roughly spherical in shape with flat bases, the fourth is more dome-shaped and also has a flat base. A clay vessel, bronze ring, and iron rivets were also found in burial 52 (*Arbman, 1940, 19*) (*GP 71*).



Figure 4.58 (above) Four amber playing pieces from Birka grave 52a. Photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm.

Birka 1035 This cremation burial was covered with a low mound. Two gaming pieces were found; one made of bone, the other of glass. The bone piece is hemispherical in shape, with a flat base. It measures 1.2cm in height, and 1.7 – 1.9cm in diameter. The base has a diamond shaped hole in the centre of the base, 0.3 by 0.5cm. The piece has a deep incision across the top, and another slightly shallower incision perpendicular from the deep cut, and has been damaged by fire (*GP 72*).



Figure 4.59, (left) burnt bone piece from Birka grave 1035. Photograph taken by A. Sperr at The Museum of National Antiquities

The glass playing piece is fragmented, with roughly half of the piece remaining. It is approximately 2.3cm in height, and 1.5cm in diameter. Made of an emerald green glass, this piece is almost cylindrical in shape, widening towards the top, with a flat base. There are shatter marks visible all over the piece, indicating that it was exposed to high temperatures (*GP 73*). Other items found in burial 1035 include a shield boss, a bronze

buckle, fragments of a knife, bronze fittings, silver wire, fragments of a bronze chain, a bronze plated needle case, three iron rings, a whetstone of schist, a horn comb and sheath, and a rock crystal bead (Arbman, 1940, 432-434). The types of grave goods found in Birka burial 1035 suggest that the interred was male.

Figure 4.60. (right) glass gaming piece from Birka grave 1035. Photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm.



Birka 150 Fragments of bone playing pieces were found in this cremation burial.

Figure 4.61. (right), cremated playing pieces from Birka grave 150. Photograph taken by A. Sperr at The Museum of National Antiquities



It is unclear exactly how many there may have been originally, though there were at least four pieces and a king. The most intact fragment indicates that the pieces were round in shape with flat bases, at least 2.3cm in diameter. Two of the fragments also indicate that the pieces had holes in the base (GP 74).



The bone king piece found in Birka 150 is fragmented, and is 3.0cm tall. It has a square base and tapers up to a spherical head, approximately 1.5cm in diameter. There is a circular hole in the centre of the base. The piece was probably polished (GP 75). Other items in burial 150 include a strike-a-light, eleven rock crystal beads, a blue glass bead, a yellow glass bead, a spearhead, hazelnut shells, whetstones, and various fragments of bronze and iron objects (Arbman, 1940, 64)

Figure 4.62 (left) bone king piece from Birka burial 150. Photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm.

Birka 754 At least nine fragmented playing pieces were found in burial 754. Made of bone, the pieces are badly damaged. The pieces that could be measured are 1.7 – 2.1cm in height, and 1.3 – 2.5cm in diameter. The more intact pieces have holes in the centre of the bases, either circular or ellipse shaped. Six of the pieces are stained or dyed black, using a resin, which has soaked right through the bone. The pieces were smoothed and polished, and probably made using a lathe (GP 76). Other items found in Birka grave 754 include a clay vessel, a strike-a-light, bronze strap ends, an iron spearhead, an iron knife, iron nails, and three glass beads (Arbman, 1940, 274-275)



Figure 4.63, (above) playing pieces from Birka 754. Photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm.

Birka 996



These fragmented bone pieces were found in a cremation burial.

Figure 4.64, (left) Fragments of cremated bone playing pieces found in Birka grave 996. Photograph taken by A. Sperr at The National Museum of Antiquities, Stockholm.

They were found with fragments of a bone comb, a clay vessel, a fragment of a blue glass bead, iron rivets, iron stirrups, and lumps of iron slag (Arbman, 1940, 419). These fragments represent at least six playing pieces, probably spherical in shape. The pieces are too fragmentary to obtain measurements of the playing pieces (GP 79).

Birka 112 There were three separate burnt patches found within this burial mound.

Figure 4.65 (right) fragments of glass gaming pieces, Birka grave 112. Photograph taken by A. Sperr at The National Museum of Antiquities, Stockholm.

A group of fragmented glass playing pieces were found in patch B, along with a bone gaming piece, remains of a clay pot, over a hundred iron rivets, a few iron nails, bronze fittings, pottery sherds, and pieces of a horn handle (Arbman, 1940, 51-52). Though listed by Arbman as six gaming pieces: “all are fire damaged, 5 are dark green, and one of them is in very good condition – diameter. 2.2cm, the other fragments are light blue with dark blue



spirals” (Arbman, 1940, 52), the remains seen today at The Museum of National Antiquities, Stockholm, make up about three pieces. These fragments have specks of blue, violet and aquamarine coloured glass, but are now too fragmentary to obtain measurements (GP 83). One intact piece surviving (Figure 4.66), however, is black in colour (though this may be a very dark green). It is cylindrical in shape with a rounded top. The base is damaged, so the height is estimated as 2.1cm (GP 80).

Figure 4.66 (right) glass gaming piece, Birka grave 112. Photograph taken by A. Sperr at The National Museum of Antiquities, Stockholm.



A bone gaming piece (Figure 4.67) was also found in burial 112. It is spherical in shape with a slightly pointed top, 1.5cm in height and 2.2cm in diameter (GP 81). The playing piece is broken, exposing an iron pin inserted into the side, 0.7cm in length, with a square head (0.2 x 0.3cm). The piece was polished and there is no hole in the base.



Figure 4.67 (left) bone gaming piece, Birka grave 112. Photograph taken by A. Sperr at The National Museum of Antiquities, Stockholm.

It is unclear whether the two larger of the three patches represented separate burials, however, items recovered from patch A included two bronze mounts, a bone comb, a bronze ring, silver wire, iron rivets. The third burnt patch was considerably smaller, and contained glass coloured beads, an implement made of deer horn, iron nails and rivets, an iron knife and pottery sherds (Arbman, 1940, 51-52).

A piece of bone also found in burial 112 was originally listed as a piece of a bone handle, though it is now thought that it may in fact be a playing piece.

Figure 4.68 (right) possible bone gaming piece, Birka grave 112. Photograph taken by A. Sperr at The National Museum of Antiquities, Stockholm.



The piece has a rounded cylindrical body with three deep bands around the top. It is decorated on the side with an elaborate pattern of arcs, lines and dots. The piece is 2.2cm in height and 1.1cm in diameter around the base. There is a hole in the base that extends internally up to the top, just below the three bands. Eroded patches on the outside of the piece around the holes suggest that the piece was attached to a string or rope, and may in fact be some form of toggle (GP 82).

Birka 8 Fragments of three bone playing pieces found in this cremation burial were also found with fragments of what may be a bone die (D3, discussed in Chapter 6). Although the pieces were badly damaged by fire, they appear to have been rounded in shape, and have small holes in the bases (GP 84).



Figure 4.69 (left) three bone gaming piece, Birka grave 8. Photograph taken by A. Sperr at The National Museum of

Birka 75 The remains of at least two bone playing pieces recovered from a cremation burial are shown in Figure 4.70.

Figure 4.70 (right) fragments of two bone gaming pieces, Birka grave 75. Photograph taken by A. Sperr at The National Museum of Antiquities, Stockholm.



The pieces were probably rounded in shape, with flat bases. One of the pieces may have been stained black (GP 85).

Birka 860a This double inhumation burial contained the remains of two females (Burials A and B) beneath a large mound. Both women were buried with a rich assortment of grave goods. This grave contained a two bronze oval brooches, a three-armed bronze brooch, a bronze arm ring, seven beads including a rock crystal bead, an amber bead, yellow and red, and dark blue glass beads, a pair of iron scissors, an iron knife, an iron key, and a single amber gaming piece (Arbman, 1940, 335).



The gaming piece is near spherical in shape with a flat base. It is made from deep orange/ red amber, and is 1.7cm in height, and 2.0cm in diameter.

Figure 4.71 (left) amber gaming piece, Birka grave 860a. Photograph taken by A. Sperr at The National Museum of Antiquities, Stockholm.

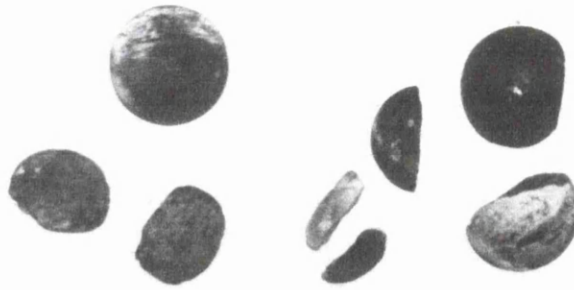
Though now slightly rough on the surface, the piece was smoothed and polished (GP 86).

Birka 1142 Fragments of at least six spherical bone gaming pieces were found in this double cremation burial. Other items found in the burial include a clay vessel, schist whetstones, iron spurs, bronze fittings, an iron key, an iron bucket handle, an iron utensil or tool, and fragments of a bone comb (Arbman, 1940, 471). Four of the six pieces have

been dyed or stained black. Of these, two are mostly intact, and are 1.9cm in height, and 2.1 and 2.9cm in diameter.

Figure 4.72 (right) cremated bone gaming pieces, Birka grave 1142. Photograph taken by A. Sperr at The National Museum of Antiquities, Stockholm.

The uncoloured pieces are 1.6-2.1cm in height, and 2.0-2.6cm in diameter. Each of the playing pieces has small circular shaped holes in the centre of the base, ranging from 0.3 – 0.7cm in diameter (GP 87).



Birka 917 The cremated remains of nine gaming pieces were found in this cremation burial, along with a belt buckle and strap ends, bronze sheet metal, iron nails and rivets, schist whetstones, fragments of a bone comb, a strike-a-light, pottery sherds, and a horse tooth.

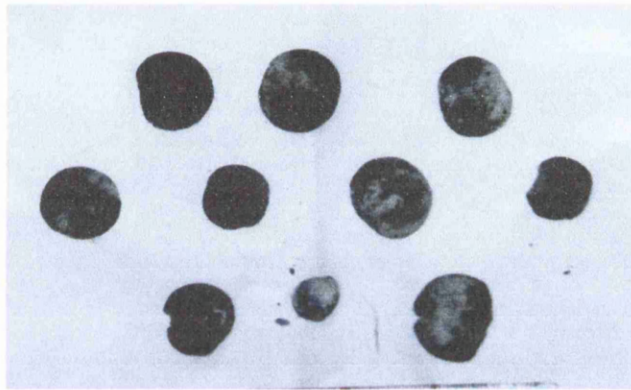


Figure 4.73 (above, right) bone gaming pieces, Birka grave 917. Photograph taken by A. Sperr at The National Museum of Antiquities, Stockholm.

The gaming pieces are spherical in shape with no holes in the bases. They range between 0.7-1.1cm in height, and 1.5-2.2cm in diameter. The pieces appear to be largely unworked, and may even have been cut from the rounded ends of animal bones (GP 88).

Birka 324 Three horse tooth gaming pieces were recovered from this cremation burial, however only one survives today in The Museum of National Antiquities, Stockholm.

Figure 4.74 (right) horse tooth gaming pieces, Birka grave 324. Photograph taken by A. Sperr at The National Museum of Antiquities, Stockholm.



The piece is fragmented, 2.1cm in height and approximately 2.2cm in diameter. The top has been rounded and polished (GP 90). Other items found in the burial include a bronze band decorated with triangular stamps, an iron key, Thirty-five glass beads in various colours and designs, iron nails and rivets, pottery sherds, and a strike-a-light (Arbman, 1940, 92-93).

Birka 80a A spherical shaped bone gaming piece was found in this cremation burial, along with iron nails, metal fittings, glass and bone beads, a belt buckle and strap ends, fragments of horn implements, iron rivets, cherry stones, and pottery sherds (Arbman, 1940, 33).

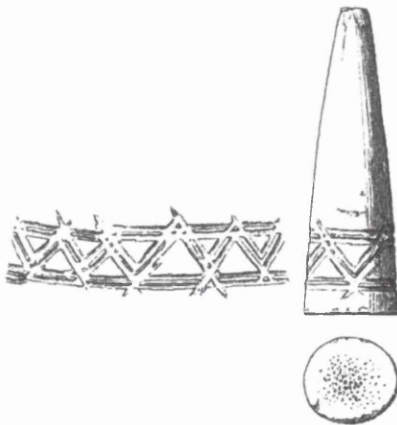
Figure 4.75 (right) bone gaming piece, Birka grave 80a. Photograph taken by A. Sperr at The National Museum of Antiquities, Stockholm.

The gaming piece is 1.2cm in height and 1.4cm in diameter, and has a hole right through the piece, 0.4cm in diameter. Although the piece is similar to other gaming pieces found at Birka, the hole through the piece suggests that it may also be a bead (GP 89).



Denmark

Arhus Søndervold Three gaming pieces were found at the Viking Age town and harbour of Arhus Søndervold, on Jutland, Denmark.



A pointed antler piece was found beneath a paved street. It is 4.4cm in height and 1.4cm in diameter across the base. It is decorated a third of the way up with a band of incised lines and triangles.

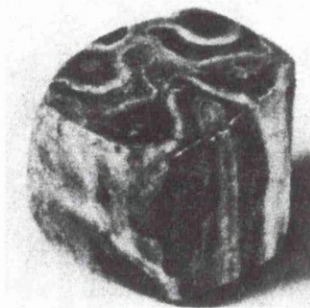
Figure 4.76 (left) antler gaming piece from Arhus Søndervold, Denmark. Image taken from Anderson, 1971, 212.

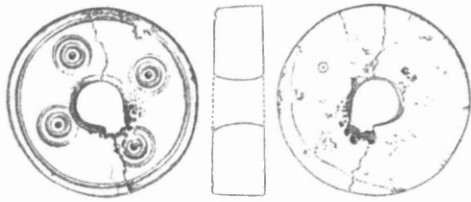
The shape of the piece suggests that it may have been made from the tip of an antler from a royal stag (Anderson, 1971, 212) (GP 46).

A horse tooth piece (Figure 4.77) was discovered in the same area as the antler piece. The piece is approximately 1.7cm in height, and 1.8cm in diameter.

Figure 4.77 (right) equestrian tooth gaming piece from Arhus Søndervold, Denmark. Image taken from Anderson, 1971, 212.

It is cube shaped, and has been smoothed and highly polished (GP 47).





The final piece discovered at Arhus Sønder vold is an ornamental disc of deer antler. It is 3.3cm in diameter and 0.9cm thick, with a hole in the centre of the piece.

Figure 4.78 (left) antler gaming disc from Arhus Sønder vold, Denmark. Image taken from Anderson, 1971, 212.

The disc is decorated around the edge with a deep incised circle, another four ring and dot spots are incised evenly spaced around the central hole (*GP 48*).

Case Study 3: Anthropomorphic Figures from Trønning and Roholte

Trønning, Kundby This stray find was discovered in the Parish of Trønning. It is made of gold, and is thought to be a chess piece. The piece is extremely detailed, with the hair, clothing and facial features made from gold filigree work. It is 1.95cm tall, and 1.5cm in diameter at its widest point. The piece is hollow, and slightly damaged at the back. Else Roesdahl suggests that the clothing and hair indicate that the figure is female, and possibly a queen (Roesdahl, 1975, 76). However, on closer inspection, the figure appears to be more masculine, with the perhaps clerical robes (*GP 50*).

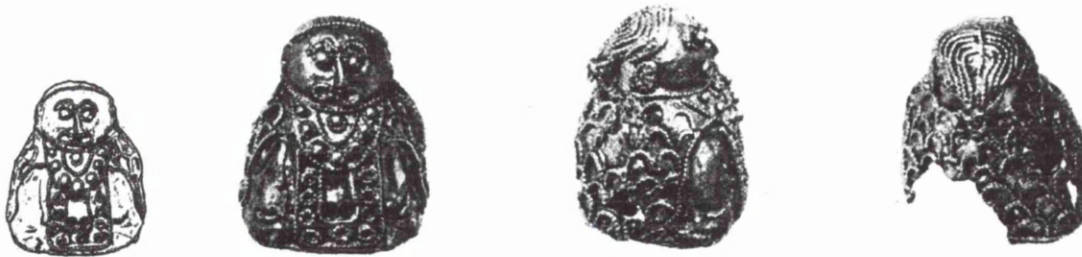


Figure 4.79 (above) gold figure from Trønning, Kundby. Image taken from Roesdahl, 1975, 75.



Fedet, Roholte This amber figurine was found in a field near to the mouth of the Præstø fjord (Roesdahl, 1990, 186). The piece is made from bright red amber, and is expertly carved and shaped. The figure depicts the top half of a man, gripping the end of his beard. The figure is bald, with his eyes closed (though they may just be worn). There are two small drilled holes in the back of the head. It is thought that the piece may have originally sat on a small plinth, now lost (Roesdahl, 1990, 186) (GP 61).

Figure 4.80 (left) Amber figure from Fedet, Roholte, Denmark. Image taken from Roesdahl, 1990, 187

Both figures are stray finds, with no fixed context, but are thought to have been made during the Viking Age. Each of the figures is thought to be chess piece, inadvertently dropped or lost. It is also possible that the pieces were buried deliberately or hoarded, for safekeeping or to be collected at a later date.

Ribe Jutland, During the Viking Age, Ribe was a large Viking port and centre of trade, similar to Birka in Sweden and York in England. At least seven amber gaming pieces were found in the town, associated with a bronze-caster's workshop (Botfeldt & Brinch-Madsen, 1970-76, Vol. 3, 102). Each piece is made from bright orange/ red amber. The pieces vary in size from 0.7-1.6cm in height and 0.7-2.2cm in diameter (GP 54 – 60).



Figure 4.81 (above) outlines of amber playing pieces from Ribe, Denmark. From left to right, Gaming piece database entries: 54, 56, 57, 58, and 60. Images taken from Botfeldt & Brinch-Madsen, 1970-76, Vol. 3, 106-108.

K. Friis Johansen of the Danish National Museum excavated Tjærborg, Ribe A Viking Age urn cemetery in the Tjærborg Parish, Ribe County. Several pottery urns were unearthed in a large field during ploughing. The urns, which were used to hold the burnt bones and antiquities, were not protected by mounds or stones (Ramskou, 1950, 165).

Urn Grave 6 This crude rounded clay pot urn contained burnt bones, some iron fragments, an iron knife, a conical spindle whorl of baked clay, a firesteel, and a hemispherical gaming piece made of bone (Ramskou, 1950, 166). The bone gaming piece is 3.4cm in diameter, and approximately 1.2cm in height. The piece appears to have been polished, and may have been cut from the naturally rounded end of a long animal bone (*GP 51*).

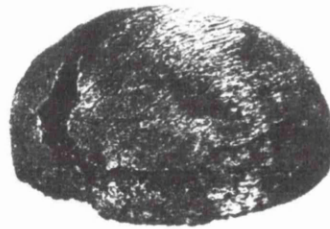


Figure 4.82 (right) bone playing piece from Urn grave 6. Image supplied by The National Museum of Denmark, Copenhagen.

Urn Grave 12 The remains of this individual were placed in a large round bottomed clay pot, along with an iron knife and a bone gaming piece (Ramskou, 1950, 167). The playing piece is 2.6cm in height and 3.5cm in diameter. It is spherical in shape with a flat base and a slightly flattened top. The piece may have been smoothed and polished (*GP 52*).

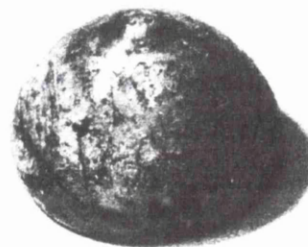


Figure 4.83 (left) bone playing piece from Urn grave 12. Image supplied by The National Museum of Denmark, Copenhagen.

Trelleborg, Grave 99 Trelleborg is one of the four known Viking Age ringforts. Situated near Slagelse on the island of Sjælland, Trelleborg was the first of the ringforts to be investigated. The surrounding topography suggests that much effort was put into levelling the site before construction (Sawyer, 1997, 163). Just outside the western entrance to Trelleborg lies a large cemetery. Most of these burials belong to young men, though a few belong to women and children, indicating the presence of families at the ringfort (Arbman, 1965, 32).

Grave number 99 is thought to have belonged to an affluent woman, based on the grave goods found.

Figure 4.84 (right) bone playing piece from grave 99 at Trelleborg. Image supplied by The National Museum of Denmark, Copenhagen.



The grave goods recovered from burial 99 include an iron knife, handles from a wooden box, glass beads, a pair of iron scissors, a range of glass beads, a pair of oval brooches, two amber gaming pieces, and a bone playing piece (Bødtker Petersen & Woller, 1989, 301). Only the bone gaming piece survives today. It is droplet shaped with a flat base, and is 0.7cm in height, and 2.6cm in

diameter. There is a small hole in the centre of the base, and the piece appears to have been well polished (*GP 63*).

Iceland

Hvítárholt, Hrunamannahreppur, Árnessýsla The Viking Age farming settlement at Hvítárholt was excavated during the years 1962-67. Ten houses were investigated and were found to be dwelling houses, with a few associated barns and byres (Magnússon, 1973, 6-19).



A sandstone gaming piece (*Figure 4.85*) was found in the remains of house number eight. It is 1.9cm in height and 2.7cm in diameter across its widest point.

Figure 4.85 (left) Sandstone gaming piece from Hvítárholt, Iceland. Photograph taken by A. Sperr at Fornleifastofnun Islands.

The piece is smoothed and well worked (*GP 107*).

Hrossatungur, Þjórsárdalur Valley Two stone gaming pieces were found in the remains of a building at the Hrossatungur farmstead.

One piece is droplet shaped with a rounded top, and is made from red sandstone. It is 1.6cm in height, 1.6cm in diameter across the base, and 2.0cm in diameter across the widest point.

Figure 4.86 (right) Red sandstone gaming piece from Hrossatungur, Iceland. Photograph taken by A. Sperr at Fornleifastofnun Islands.



There is a small hole in the centre of the base that tapers up towards the top, approximately 0.5cm in diameter and 0.4cm deep. The piece has been smoothed, but is unpolished (*GP 108*).



Figure 4.87 shows a stone or chalk piece which is dome shaped, and although damaged, is well smoothed. It is 2.65cm in diameter and approximately 1.9cm in height.

Figure 4.87 (left) stone gaming piece from Hrossatungur, Iceland. Photograph taken by Gísladóttir, G, at The National Museum of Iceland, Reykjavik.

There is a small hole in the centre of the base, 0.39cm in diameter (*GP 109*).

Skallakot, Þjórsárdalur Valley The farmstead at Skallakot consisted of a large bow sided building, with two adjoining smaller buildings. Six gaming pieces were found amongst the remains in the interior of the main building. The Viking Age long house was built in around 900A.D. and abandoned before the volcanic eruption in 1104. The site was originally excavated in 1939, and was re-excavated in 2001(Gísladóttir, 2004).



This dome shaped sandstone piece has a flat base, and has been smoothed and polished. It is 2.8cm in height, and 3.0cm in diameter. It is made from light coloured soft sandstone (GP 110).

Figure 4.88 (left) stone gaming piece from Skallakot, Iceland. Photograph taken by Gísladóttir, G, at The National Museum of Iceland, Reykjavik.

This red sandstone piece is conical in shape with a flat base and flattened apex. It is 2.3cm in height and 2.4cm in diameter across the base. Tool marks are visible around the sides of the piece, though it has been smoothed or worn down slightly (GP 111).



Figure 4.89 (right) red sandstone gaming piece from Skallakot, Iceland. Photograph taken by Gísladóttir, G, at The National Museum of Iceland, Reykjavik.

A similar conical shaped red sandstone playing piece found at Skallakot is shown in *Figure 4.90*. It is 1.8cm in height and 1.6cm in diameter across the base.



Figure 4.90 (left) red sandstone gaming piece from Skallakot, Iceland. Photograph taken by Gísladóttir, G, at The National Museum of Iceland, Reykjavik.

A few tool marks are visible on this piece, though it is also slightly worn (GP 112).

This obsidian or jet gaming piece is spherical in shape with a flat base. It is 2.4cm in height and 2.4cm in diameter. The piece has been smoothed and polished (GP 113).



Figure 4.91 (right) obsidian gaming piece from Skallakot, Iceland. Photograph taken by Gísladóttir, G, at The National Museum of Iceland, Reykjavik.



This sandstone piece is spherical in shape and is well smoothed. It is 2.3cm in height, and 2.3cm in diameter.

Figure 4.92 (left) sandstone gaming piece from Skallakot, Iceland. Photograph taken by Gísladóttir, G, at The National Museum of Iceland, Reykjavik.

The base is uniformly flat and well worn (GP 114).

The final gaming piece discovered at Skallakot is carved from sandstone and is conical in shape with a flat base and flattened apex.

Figure 4.93 (right) sandstone gaming piece from Skallakot, Iceland. Photograph taken by Gísladóttir, G, at The National Museum of Iceland, Reykjavik.



It is 1.8cm in height and 1.8cm in diameter across the base.

There is a hole (0.2cm in diameter) in the centre of the base.

Though well worn, a few tool marks are still visible around the sides (GP 115)

Of the six gaming pieces found at Skallakot, three are conical in shape, and three are spherical. The pieces range in colour, with two red sandstone, three lighter yellow coloured sandstone, and one made of a black stone. Only one of the pieces has a hole in the centre of the base. The varying shapes and colours of the pieces suggest that they were perhaps not all intended for the same game.

Skeljastaðir, Þjórásdalur Valley A broken red sandstone playing piece was found in the remains of a Viking farmstead at Skeljastaðir. It is 1.6cm in height, 1.9cm in diameter



across the base, and 2.0cm in diameter at its widest point.

Figure 4.94 (left) sandstone gaming piece from Skeljastaðir, Iceland. Photograph taken by A. Sperr at Fornleifastofnun Islands.

The piece is droplet shaped with a flattened apex, and has been smoothed or worn (GP 116).

Case Study 4: Steinbogi, Mývatn This bone gaming piece was found in a Viking Age midden, associated with a small farm in the Mývatn District. The site overlooks the Laxá River. The farm building and midden were excavated in 2002 as part of a rescue mission prior to their removal by highway construction (Brewington et al, 2004, 2)

Figure 4.95 (right) haddock bone gaming piece found at Steinbogi, Iceland. Photograph taken by Thomas McGovern of NABO.



The gaming piece is shaped in a similar manner to a modern day chess pawn. It is 3.2cm in height, and has an oval shaped base, 1.1-1.5cm in diameter. The lower part of the piece is conical in shape, slightly tapering at the base. The upper portion rises to a raised annular ring, with another smaller conical shaped piece, topped with a spherical shaped head. The piece is carved from the cleithrum bone of a haddock. This bone in particular is one of the thickest, largest bones in the skeleton of a haddock (pers. comm. T. McGovern). Damage to the head and a large split extending down the piece may indicate how the gaming piece came to be discarded into the midden (GP 117).

Sveigakot, Mývatn Fornleifastofnun Islands excavated a large farmstead with several other associated building found at Sveigakot from 1999. These investigations have produced a substantial collection of well preserved artefacts from the Viking Age. Seven gaming pieces were discovered at Sveigakot, over successive excavations between 2001 and 2004.



This irregular shaped stone gaming piece was found during the 2001 excavations.

Figure 4.96 (left) stone gaming piece found at Sveigakot, Iceland. Photograph taken A. Sperr at The FSI, Reykjavik. The image has been edited in order to highlight the incised design.

The base has been flattened, and the piece appears to have been smoothed, though it was probably made from a naturally water worn pebble. It is 2.2cm in height, 1.5cm in width, and 2.4cm in length across the base. One side of the piece is lightly incised with a three armed design, made up of six lines (GP 118).

A light coloured yellow sandstone gaming piece was also found during the 2001 excavations. It is droplet shaped, with a slightly flattened apex. This piece is 2.0cm in height, 2.0cm in diameter across the base, and 2.4cm in diameter across the widest point. There is a small conical shaped hole, slightly off centre in the base, 0.2cm in diameter. The hole extends no more than is 0.2cm into the piece. Tool marks are visible around the piece (GP 119).



Figure 4.97 (above, right) sandstone gaming piece found at Sveigakot, Iceland. Photograph taken A. Sperr at The FSI, Reykjavik.



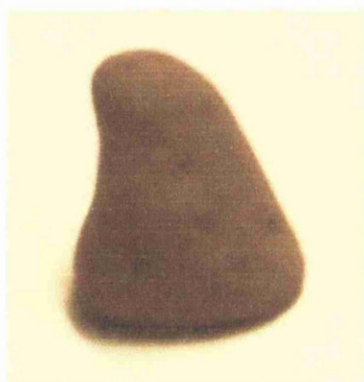
This red sandstone piece has only been significantly worked on the base. It is 2.3cm in height, 3.8cm in diameter across the base, and 4.1cm in diameter across the widest point (GP 120).

Figure 4.98 (left) sandstone gaming piece found at Sveigakot, Iceland. Photograph taken A. Sperr at The FSI, Reykjavik.

Figure 4.99 is a steatite gaming piece, probably shaped from a natural pebble. It is 2.0cm in height, 2.7 by 2.5cm across the base and approximately 1.7cm in diameter across the widest point. The piece is irregular in shape, and has been significantly worked on the base; the top has been slightly smoothed (GP 121).



Figure 4.99 (right) soapstone gaming piece found at Sveigakot, Iceland. Photograph taken A. Sperr at The FSI, Reykjavik.

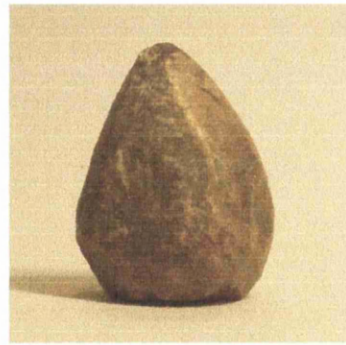


This playing piece is made from red sandstone, and is shaped rather like a gnome's hat. It is 1.9cm in height and 1.7cm in diameter across the base. Again, only the base appears to have been significantly worked at the piece was probably made from a naturally smooth pebble (GP 122).

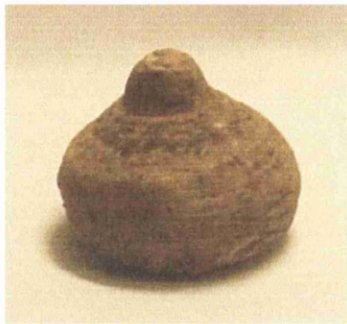
Figure 4.100 (left) sandstone gaming piece found at Sveigakot, Iceland. Photograph taken A. Sperr at The FSI, Reykjavik.

An angular teardrop shaped fishbone gaming piece was found in the floor surface of one of the buildings at Sveigakot. It is made from a haddock's cleithrum, as with the gaming piece from Steinbogi.

Figure 4.101 (right) fishbone gaming piece found at Sveigakot, Iceland. Photograph taken A. Sperr at The FSI, Reykjavik.



The piece is 2.8cm in height and approximately 1.4cm in diameter across the roughly triangular shaped base. Tool marks are clearly visible all over the piece, though it has been highly polished (GP 123).



The final gaming piece found at Sveigakot is made from bone. It is droplet shaped with a pronounced top. The piece is smoothed, though appears not to have been polished.

Figure 4.102 (left), bone gaming piece found at Sveigakot, Iceland. Photograph taken A. Sperr at The FSI, Reykjavik.

There are also many shallow incisions circumnavigating the piece, indicating that it may have been made using a lathe. It is 1.8cm in height, 2.3cm in diameter across the widest point, and 2.0cm in diameter across the base. A small hole in the base (slightly off centre) is 0.5cm in diameter (GP 124).

Each of the stone gaming pieces discovered at Sveigakot were found in post or stake holes. The two bone pieces were found in floor deposits. The varying shapes and sizes of the Sveigakot pieces also suggest that they were probably not all from the same gaming set.

Papey, Island off the East Fjords This Viking Age longhouse at Papey was excavated in 1971.

Figure 4.103 (right), stone gaming piece found at Papey, Iceland. Photograph taken A. Sperr at The National Museum of Iceland, Reykjavik.



A red sandstone gaming piece was found within the longhouse, in floor deposits (Baldvinsdóttir, 1990, 151). The piece is 2.4cm in height, 2.5cm in diameter across the base, and 3.4cm in diameter across the widest point. There is a 0.6cm diameter hole in the base, slightly off centre, approximately 0.3cm deep. The piece is droplet shaped and has been well smoothed or worn (GP 126).

Smidjuskógar A steatite gaming piece was found in this Viking Age longhouse. The piece is cylindrical in shape, and is 1.3-1.8cm in height. It is slightly oval and is 2.1-2.3cm in diameter across the base. The slightly curved shape of the base and the top suggest that it



may have been made from a fragment of another object; perhaps even the edge of a bowl or vessel (GP 127).

Figure 4.104 (left), steatite gaming piece found at Smidjuskógar, Iceland. Photograph taken A. Sperr at The National Museum of Iceland, Reykjavik.

Grimstaðir This walrus tooth gaming piece was found at Grimsstöðum á Fjöllum, a short distance from the Grimstaðir farm (National Museum of Iceland Catalogue collection notes, A: 2739)



Figure 4.105 (right), walrus tooth gaming piece found at Grimstaðir, Iceland. Photograph taken A. Sperr at The National Museum of Iceland, Reykjavik.

The piece is 1.8cm in height, and 2.5-2.7cm in diameter.

It is droplet shaped with a flat base; the base has a hole, 0.4cm in diameter, slightly off centre. The piece is cracked and slightly damaged. It is highly polished, and may have been made using a lathe (GP 128).

Chapter 4: Discussion

Incomplete Gaming Pieces and Stray Finds

Each of the one hundred and eighty three gaming pieces discussed in this chapter have in common the fact that they have somehow become separated from a larger set of pieces.

The four case studies demonstrate some of the many ways in which gaming pieces may have come to be discovered either on their own or in small groups:

Case Study 1: Brough of Birsay: An antler gaming piece (GP 1) was found beneath one of the stone seats in the North-East corner of the church itself (Curle, 1982, 89). This gaming piece is expertly carved by a skilled individual, and would probably have belonged to a set of similar quality pieces. As it was found beneath a stone seat, the most plausible explanation for this piece being found alone as that it was dropped by accident, and may have rolled beyond reach.

Case Study 2: The Gokstad Ship Burial: A single gaming piece (GP 154), found in a grand burial of an affluent individual, perhaps even a chieftain or king. In such a wealthy burial, one might expect to find a whole gaming set, with pieces and board, however a double sided gaming board is found with a solitary piece. There are two possible explanations for this: either all but one of the gaming pieces were taken by grave robbers when the burial was broken into, or only one gaming piece was buried. If the later were true, there may be a deeper significance in burying a single piece, for example if the king piece was buried with the king. Or perhaps the individual himself was in the process of making the gaming set at the time of death.

Case Study 3: Anthropomorphic Figures from Trønning and Roholte: Both of these pieces are thought to be chessmen, and are both undoubtedly prestige items. One would imagine that pieces of this standard must have come from gaming sets of similar quality. The Roholte man (GP 61) may be a king belonging to an amber set containing simpler pieces, for example similar to the amber pieces from York (GP 28, 29-31) or Birka grave 860a (GP 86). Since both pieces were stray finds, there are no clues as to how they became deposited. Based on the quality of the pieces however, it seems implausible (thought not impossible) that they were both simply dropped and not recovered. Another possible explanation is that the pieces were hoarded: buried beneath the ground as either ritual deposits or for safekeeping, and not recovered.

Case Study 4: A Gaming Piece from Steinbogi, Mývatn: This fishbone gaming piece (GP 117) was found in a midden associated with a farmstead. A large split extending down one side, perhaps breaking when the piece was being made, damages the piece. This strongly suggests that the piece was deliberately discarded onto the rubbish heap.

Other Methods of Deposition

Based on the number of single pieces found on settlements, it would appear that the most common way of deposition was for the pieces to be dropped or discarded. Some of the less worked pieces (in particular stone pieces from Sveigakot, Iceland, (GP 110 and GP 121)) may have even been made for single use, where natural pebbles or stones have been utilised for game playing rather than specifically manufacturing pieces.

Other small objects may also have been utilised as gaming pieces, for example the stone disc from York (*GP 43*) that may in fact be a lid, or the bone piece from Birka grave 112 (*GP 82*) which may actually be a toggle.

Another rather obvious way in which complete gaming sets may be broken up, though not demonstrated in any of the four case studies, is by the nature of deposition: in particular cremation burials. For example, Birka grave 112 contained hundreds of tiny fragments of shattered glass (*GP 83*), and Birka grave 75 contained several fragments of badly damaged gaming pieces (*GP 85*). In fact, most of the Birka burials in this Chapter were cremation burials, and contained an undeterminable number of pieces. The preservation of such pieces depends a great deal on their position within the pyre, and on the temperatures reached during cremation.

Small groups of gaming pieces were also deposited in inhumation burials. Burials from Mellem Ror (*GP 152*) and Blaker (*GP 140*) in Norway both contained five intact, undamaged playing pieces. These pieces are probably not for two opposing players, but the correct number for one person. Perhaps the individuals in these burials were laid to rest with a set of gaming pieces on the premise that they would find a worthy opponent in the afterlife with his or own gaming pieces too.

Chapter 5: Gaming Boards

Intact gaming boards from the Viking Age are few and far between in comparison to gaming pieces. This may be for a number of reasons. In many cases, the boards may have been made from a perishable material such as wood, which may not survive in all conditions. Also one does not actually need a gaming board; simply scratching the gaming table into a soft stone or into the ground would suffice; gaming pieces are easily portable, whereas a gaming board may be cumbersome.

This chapter looks at the few known purpose made gaming boards from Viking Europe. Two case studies: A stone gaming board from Jarlshof, Shetland; and a wooden gaming board from Ballinderry, Ireland, demonstrate the differences between purpose built boards and make-shift gaming tables.

Scotland

Howe, Orkney, Scotland This stone was found in amongst a pile of rubble at the settlement of Howe. The stone is 19.0cm in length, 14.6cm wide and 1.8cm thick. It appears to be a naturally smooth and flat stone that has been utilised as a board. The gaming surface is made up of an incised grid of seven vertical and seven horizontal lines (making thirty-six cells).

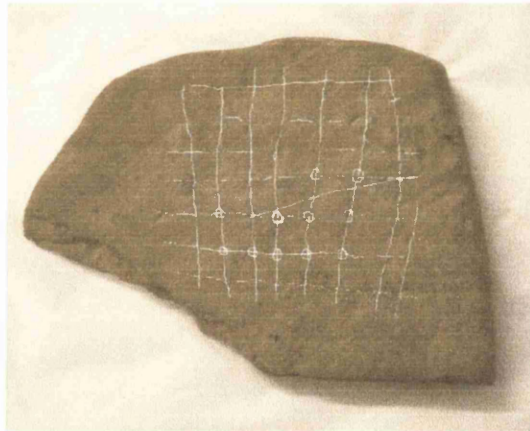
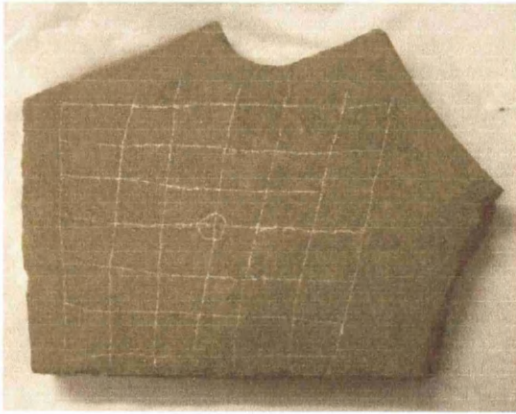


Figure 5.1. (above) Stone gaming board from Howe, Orkney. Photograph taken by A. Sperr at The Tankerness House Museum, Orkney.

At least 11 of the intersections are circled (*Gaming board database - B 1*).

Buckquoy, Orkney, Scotland Three stone gaming boards were found at Buckquoy, on the Viking Age farmstead.

The first (*B 2*), is 23.5cm by 17.5cm, and 2.2cm thick, and is carved on a naturally flat piece of flagstone. The gaming surface consists of an incised grid of seven vertical and seven horizontal lines (making thirty-six cells). The central intersection is circled. There are no decorative markings, and the reverse is unmarked. This piece was found in a midden associated with the farm building.



The gaming surface consists of an incised grid of seven vertical and seven horizontal lines (making thirty-six cells). The central intersection is circled.

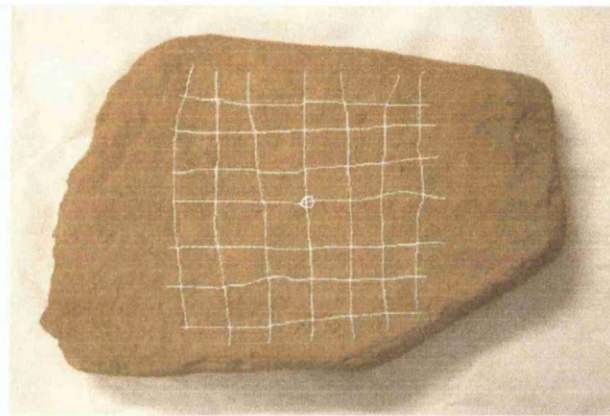
Figure 5.2. (left) Stone gaming board from Buckquoy, Orkney. Photograph taken by A. Sperr at The Tankerness House Museum, Orkney.

This piece was found in a midden associated with the farm building. The stone is 25.3cm by

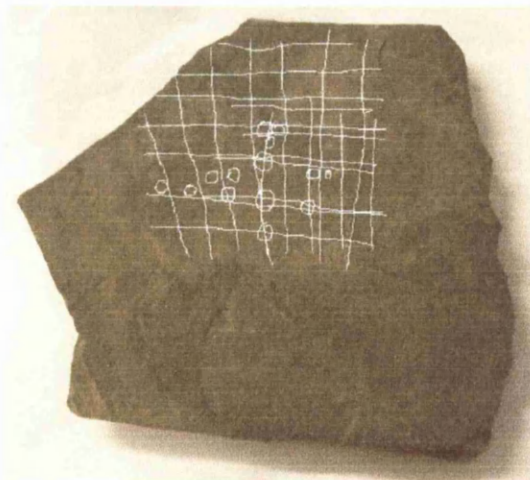
17.2cm, and 2.4 - 2.8cm thick

This sandstone gaming piece (*B 3*), and was found unstratified. The stone is 25.3cm by 17.2cm, and 2.4 - 2.8cm thick.

Figure 5.3. (right) Stone gaming board from Buckquoy, Orkney. Photograph taken by A. Sperr at The Tankerness House Museum, Orkney.



The gaming surface is an incised grid of seven vertical and seven horizontal lines. The central intersection is circled.



Another flagstone board, found unstratified, was also found at Buckquoy. It is 19.0cm by 17.0cm, and 2.2cm thick

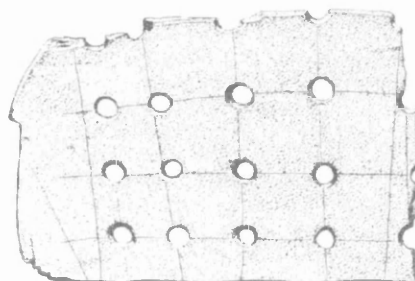
Figure 5.4. (right) Stone gaming board from Buckquoy, Orkney. Photograph taken by A. Sperr at The Tankerness House Museum, Orkney.

The gaming surface is an incised grid of seven vertical and seven horizontal lines, with additional lines incised over. The central intersection is circled.

The gaming surface is overdrawn with another small grid of vertical and horizontal lines, with ringed intersections and circles (*B 4*).

Brough of Birsay, Orkney, Scotland This perforated whalebone object from the settlement on the Brough of Birsay is thought to be a gaming board for use with gaming pieces with pegs (B 5).

Figure 5.5. (right) Whalebone gaming board from Birsay, Orkney. Photograph taken by A. Sperr at The Tankerness House Museum, Orkney.



The board is 6.2cm by 9.2cm, and approximately 0.3 - 0.5cm thick. It is an incomplete board with five vertical rows intersected by four horizontal rows; irregular sized holes are carved at the intersections. The whalebone is worked and smoothed on the upper surface only, with no decorative markings. It is unclear how large the piece may have been originally. Two gaming pieces were also found at Birsay (GP 1 and GP 2).

Red Craig, Orkney, Scotland This naturally flat, smooth red sandstone gaming board was found at the farm settlement of Red Craig, on Orkney. It is 12.0cm - 17.8cm by 15.6cm - 18.0cm, and is approximately 1.2cm thick.

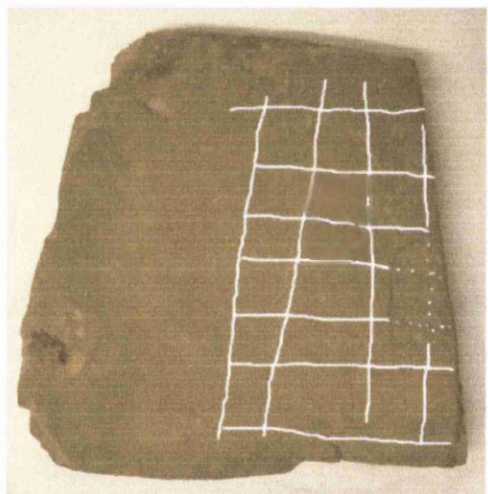
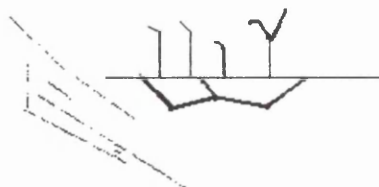


Figure 5.6. (left) Stone gaming board from Red Craig Orkney. Photograph taken by A. Sperr at The Tankerness House Museum, Orkney.

There is a fragment of corroded iron is attached to the top edge of the upper surface, which may have formed some sort of handle, though it seems more likely that board was laid next to iron on deposition. The gaming surface is lightly incised and consists of four vertical lines intersected by seven horizontal lines (twenty-four cells visible) (B 6).

There is a small incised picture just to the left of the gaming surface. It is unclear as to what this is meant to represent, though it could be a boat (Colleen Batey, pers. comm.) or an animal or beast (Anne Brundle, pers. comm.) or could simply be an idle doodle or scribbling made while the game was in play.

Figure 5.7. (right) Detail of the incision on the stone gaming board from Red Craig Orkney. Image drawn by A. Sperr at The Tankerness House Museum, Orkney.



Case Study 1: The Jarlshof Gaming Board

The site of Jarlshof is situated on the southern tip of the Shetland Islands. The isolation has earned the Shetlands the epithet of “The edge of the world” (Hamilton, 1956, 8) understandably, as they lie about 100 miles from the northern tip of the Scottish Mainland, and 200 miles from the Norwegian coast. The Norwegian domination is reflected today in thousands of place names on Shetland, as well as in the local dialect and the material culture. (The name ‘Jarlshof’ was coined by Sir Walter Scott in the early 19th century, and is not an authentic Viking Age name.) A rectangular double-sided slate gaming board was discovered in the lower slope peat ash midden (*B* 7), associated with phase III of the settlement, and was dated to the later 9th century, based on stratigraphical investigations. The board was found in four fragments, with at least one major fragment missing. When pieced together, the board is 12.7cm by 8.2cm.

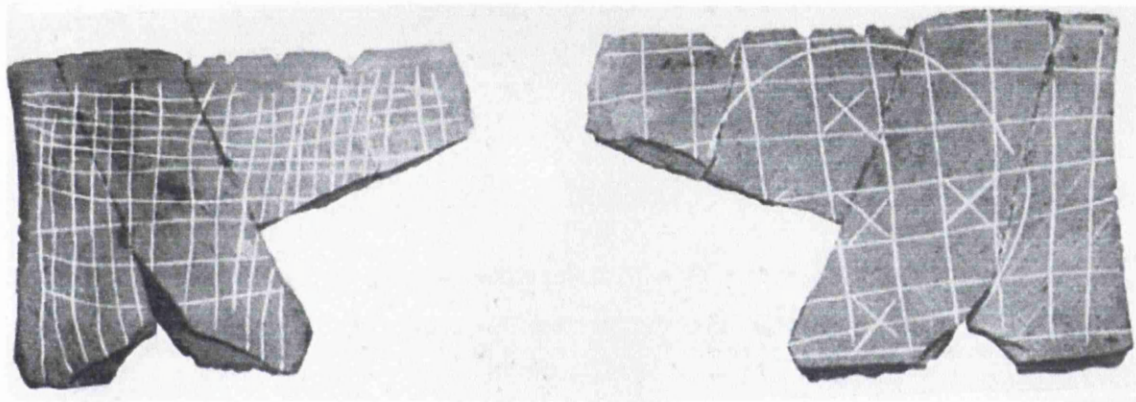


Figure 5.8. (above) Stone gaming board from Jarlshof, Shetland. Image taken from Hamilton, 1956, 145.

On one side, seven horizontal lines, and ten vertical lines, making a nine by six squared grid, divide the surface. Four of the central squares are marked with a cross and then ringed with a circle – which is 7.6cm in diameter. The central crossed square is surrounded by unmarked squares, and the three remaining crossed cells are to the right, top and bottom of the central square. The missing fragment probably completes the symmetry of the board by providing a crossed square to the left, within the ring. Twenty vertical lines and ten horizontal lines, making a nine by nineteen squared grid, divide the reverse side of the board. The gaming surface is crude, and the lines appear to have been scratched into the surface somewhat lackadaisically as the cells on the nine by nineteen grid are irregular in size. None of the lines on this side of the board are particularly straight, and may indicate that the board was drawn with some haste – or rather the board was made for personal use. The side with the nine by six ringed grid is drawn with more precision – the squares are more or less equal in size, and the lines are much more straight and perpendicular to one

another. The raw appearance and manufacture of the board suggests that the intentions behind the creation of the object were to simply play a game, rather than for trade. It is possible that the board was discarded after breakage – which may also explain how it made its way into the midden.

Another incised stone from Jarlshof, also thought to be a gaming board is shown in *figure 5.9*. It is approximately 19.2cm by 10.8cm, and is 0.6cm thick. The gaming surface is a crude grid of six vertical lines intersected by five horizontal lines, with other scratches or lines over the top.

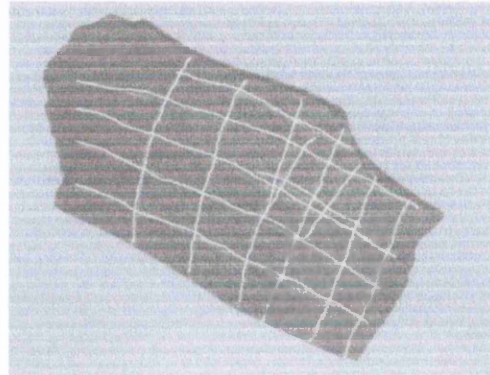


Figure 5.9. (right) Stone gaming board from Jarlshof, Shetland. Image taken from Hamilton, 1956, 145.

The fragment has nine cells, though board is broken (*B 8*).

Several other inscribed pieces of slate were found at Jarlshof – perhaps even providing a pastime in itself. A bone gaming piece (*GP 9*) was also found at the site.

England

York, England A section of a wooden gaming board was found in a dump or backfill behind a tenement house.

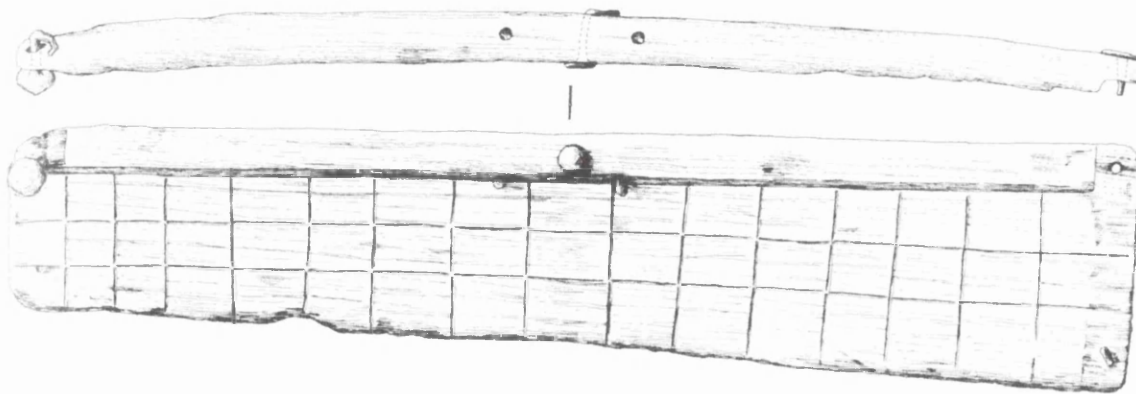


Figure 5.10 (above) wooden gaming board from York. Image taken from Morris, 2000, 2350-2351.

The piece is 10.9cm in width and 48.1cm in length. It is a composite board, and was probably originally made of separate planks of wood, held together with wooden edging, and riveted and glued with some sort or resin. The gaming surface is made up of fifteen

vertical lines, intersected by (on this fragment, two horizontal lines) A fifteen by fifteen grid would make 225 cells (B 9).

Ireland

Downpatrick, County Down, Ireland

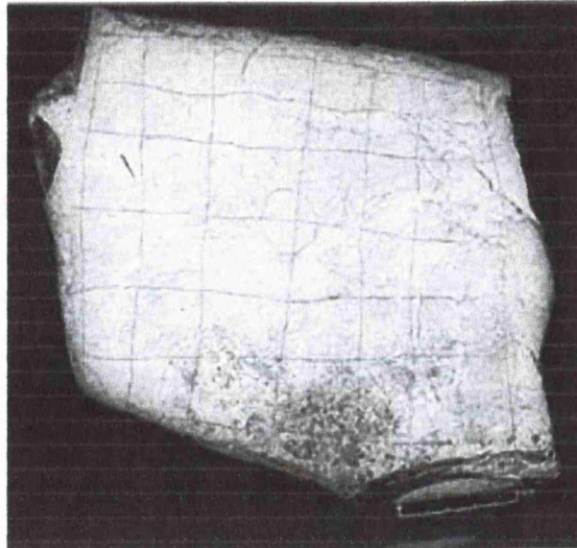
This double sided stone gaming board was found in a midden associated with a 12th century Benedictine monastery.

Figure 5.11 (right) Downpatrick stone gaming board.
Image taken from Hall, 2001, 1-5.

The stone is 18.0cm by 22.0cm and 2.5cm thick, and is naturally smooth and flat.

The gaming surface shown in figure 5.11 measures 16.0cm by 13.0cm, and consists of a grid of seven by seven lines, making

thirty-six cells. The reverse (not shown) has an eight by eight grid, measuring 11.3cm by 11.0cm, and containing forty-nine regular cells. The central intersection in both grids is circled. (B 10)



Case Study 2: The Ballinderry Board

Ballinderry No. 1, Co. Westmeath

In 1932, a timber crannog or lake dwelling was excavated at Ballinderry, Co. Westmeath, in the Republic of Ireland. The many objects recovered from the crannog provide an excellent picture of life on a rural settlement between the late 9th and 11th centuries. A great range of objects from everyday utensils and tools, to a sword with a silver hilt, a fine silver kite brooch, and an ornate gaming board were recovered from within the Ballinderry structure. The size of the crannog and the richness of the objects suggest that it was home to a prosperous farmer or local land owner, possibly even royalty, who could afford a few luxury items (O'Sullivan, 2000, 36, information also collected at the National Museum of Ireland, Dublin)

A Gaming Board from Ballinderry

The carved wooden gaming board (Figure 5.12) was found in the flooring of the crannog and is square in shape with two handles. It is carved from a single piece of oak. The square

frame measures 24cm by 23.5cm, and is 2.0cm – 2.4cm thick. The raised outer frame is 0.8cm at its lowest point, and 1.1cm at its highest, and is 1.8 – 2.4cm in width, but is generally even. The four corners of the frame are raised further – approximately 0.3 – 0.5 cm above the four central pieces of the frame. The corner pieces are carved with the same interlaced design, whereas the side panels have a triangular style pattern with a dotted border, and the top and bottom panel have another interlaced pattern enclosed by a tight border of carved beads. These designs are thought to be 10th - century pattern, suggestive of manufacture in the Isle of Man (Bell, 1979, 46). The board is symmetrical along an axis running through the handles.

The central area within the frame is 20cm by 19.6cm, and is raised further with two ‘dug out’ strips at the sides with handles, 0.3cm deep. Approximately 8.0cm in from the left hand side at the top, and 7.8cm in from the right at the bottom, there are semi-circular notches cut into the gaming surface. The gaming surface itself is 18cm by 19.6cm, with 49 small holes picked or bored right the way through the board. Arranged in a seven by seven grid, each hole is roughly of the same size, with a diameter of 0.4cm – 0.5cm. Two concentric incised rings, of 2.7cm and 2.9cm diameters, circle the central hole. The central hole is slightly off centre within the rings. The four corner holes are enclosed with a single incised quarter – circle arcs. The rings around the central hole are very even and regular, suggesting that a tool similar to a compass was used. The arcs around the four corner holes are much less neat, and have been drawn free-hand.



Figure 5.12. (above) The Ballinderry gaming board, top view, Photograph taken by A. Sperr at The National Museum of Ireland, Dublin.



Figure 5.13. (above) The Ballinderry gaming board, reverse view, Photograph taken by A. Sperr at The National Museum of Ireland, Dublin.



The first handle is 7.2cm in length, 4.6cm in width at the widest point, and 3.4cm thick.

Figure 5.14. (left) The Ballinderry gaming board: handle, Photograph taken by A. Sperr at The National Museum of Ireland, Dublin.

It has been carved into the shape of a human face and neck, with little detail on the face other than a nose, two round eyes, a mouth, and a pointy chin or beard. The head is covered by a headpiece or hat.

The handle at the opposite end is significantly smaller – it is 3.5cm in length, 2.5cm in width, and 2.1cm thick. This handle is also carved into a figure of what appears to be an animal of some sorts, perhaps a cat.

Figure 5.15. (right) The Ballinderry gaming board, animal headed handle, Photograph taken by A. Sperr at The National Museum of Ireland, Dublin.

It has two round eyes (which have been incised into the surface, rather than carved as in the opposite handle), and a rounded triangular shape mouth. There is a collar carved around the neck of the figure, and on the back towards the top of the head, there are two well worn bumps that look like ears.



The style of border decoration on the gaming board is a striking knotwork design, which has been likened to the style found on many objects from the Isle of Man (Murray, 1952, 60), and also that of Dublin (Graham-Campbell, 1994, 65). Both Dublin and the Isle of Man are known to have been centres of trade and manufacture – it is likely that the board was imported to the site. No gaming pieces were found at the site (B 11).

Fishamble Street, Dublin A double sided stone gaming board was found during excavations at Fishamble Street in Dublin. The board was incised into a naturally flat and smooth stone measuring 31.4cm by 26.2cm and 3.2cm in thickness (B 12)

The gaming surface on the upper side is 13cm by 18cm grid, with eight vertical lines and eight horizontal lines forming a Nine Men's Morris style table.

The reverse side may be another gaming board; incised is an irregular square with triangles on two sides dissected by a central incised line. The central square has two overlying crosses dividing it, making eight small triangular cells, with four larger cells to the left and right.

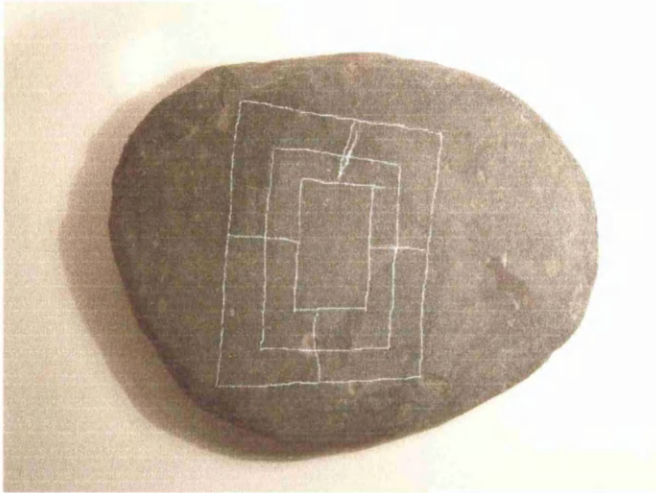
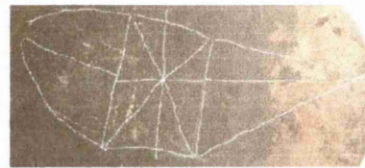


Figure 5.16. (left) Stone gaming board from Fishamble Street and **Figure 5.17** (below) the reverse side. Photograph taken by A. Sperr at The National Museum of Ireland, Dublin.



Denmark

Brandstrup, Viborg County, Denmark The metal edging and rivets of probably composite board of iron and wood was found in a 10th century cavalry grave at Brandstrup, Viborg County. The board is estimated as having once been 30cm by 60cm, and may have had hinges in the middle allowing the board to fold (Lavrsen, 1960, 90-105) (B 13).



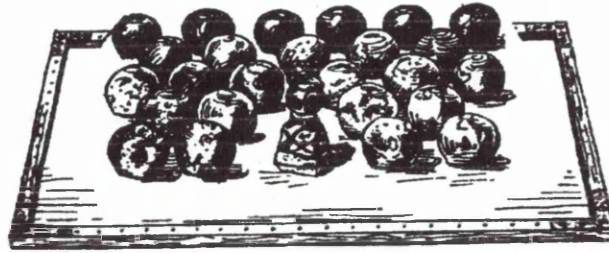
Figure 5.18. (left) Metal fittings from Brandstrup. Image taken from Lavrsen, 1960, 90-105

Sweden

Birka grave 750, Sweden Iron brackets, nails and rivets found in this burial are thought to have belonged to a wood and iron gaming board similar to the image in figure 5.19, and associated with a gaming set (GP64 and 65).

Figure 5.19. (right) Gaming board from Birka grave 750. Image taken from Arbman, 1940, 272.

No other information about this board is available due to the fragmentary condition of the fittings (B 14).



Birka grave 886, Sweden Over twenty pieces of the remains of an iron frame with a loop or handle, along with a number of nails were found in Birka grave 886 along with a set of gaming pieces (GP 68 and 69).

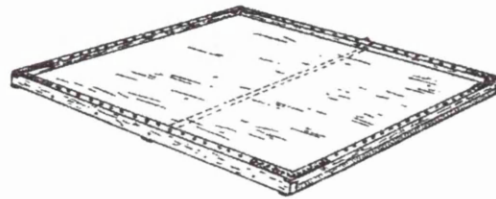
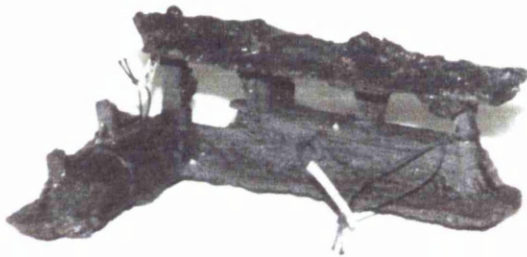
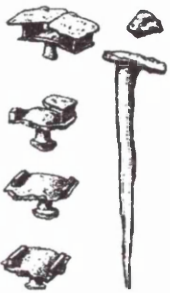


Figure 5.20. (above left) bracket from gaming board, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm. **Figure 5.21** (above, right) reconstruction of gaming board from Birka grave 888. Image taken from Arbman, 1940, 345.

Remains of wood and fabric were found in the iron corrosion. The dimensions of the board are unknown though the board may have been approximately 2.7cm thick (B 15).



Birka grave 58b, Sweden Four iron mounts, and a few iron nails are all that remain from the possible gaming board to have been found in Birka burial 58b.

Figure 5.22. (left) Rivets of a possible gaming board, burial 58b. Image taken from Arbman, 1940, 43.

These pieces are thought to have been part of a gaming board by comparison to other similar pieces found in other Birka graves (Arbman, 1940, 22) (B 16).

Birka grave 624, Sweden Several pieces of iron mount, with an iron ring or handle, and possible hinge pieces and nails are all that remain from this possible gaming board found in grave 624 at Birka. Remains of wood were found in iron corrosion.



Figure 5.23. (right) Rivets from a possible gaming board from burial 624. Photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm.

It is estimated to have been approximately 30.0cm by 20.0cm. (B 17). The board is associated with GP 66 and 67.

Birka grave 581, Sweden Fragments of iron corner and edge mounts, and several round headed iron nails are thought to have belonged to a composite board, found in the same burial at Birka as GP 95 and 97, and D 5.

Årby Boat Burial, Raskobil, Uppland, Sweden This wooden gaming board was found in a female boat burial on the shores of Lake Mälär. The board is 37.0cm in length, 15.8-17.0cm wide, and 0.9 - 1.6cm thick.

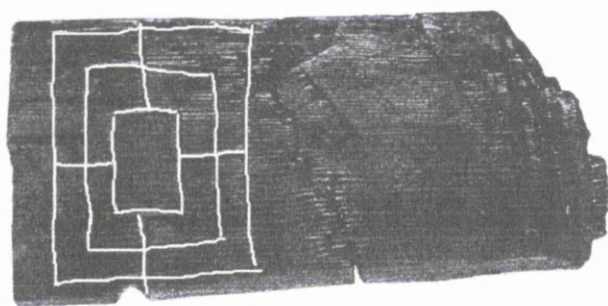


Figure 5.24. (left) Gaming board from the Årby Boat Burial. Image taken from Arbman, 1940, in Greenhill & Roberts, 1993, 35.

The gaming surface is on almost a half of the upper surface of the board. Eight vertical lines intersected by eight horizontal lines, making a Nine Men's Morris board. The remains of a horse and a dog were also found in this burial, next to the boat. A wooden bowl and a carved wooden dragons head (possibly from the prow of the boat) were also found (B 20).

Ockelbo, Kyrka, Sweden This large rune stone, now lost, depicts two seated men playing a board game. The carving depicts a square board with the corners marked and linked to the central square; no gridlines can be seen (B 22).

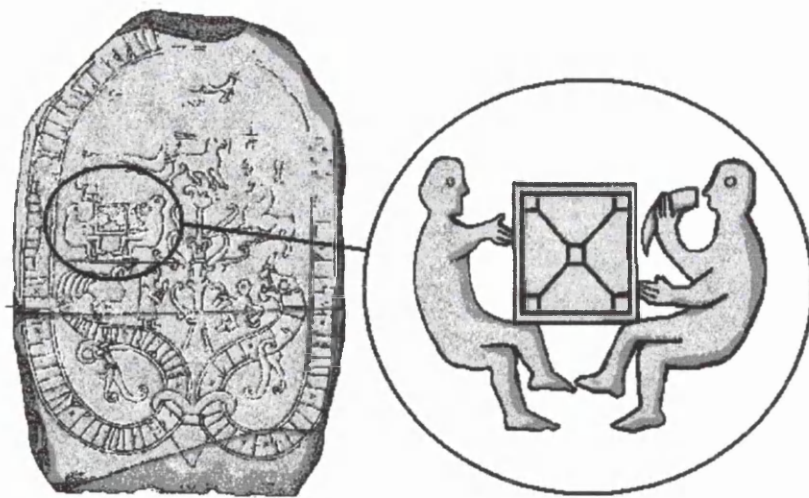


Figure 5.25. (above), Ockelbo stone, with gaming board and men enlarged.. Image taken from Ward, 2005 www.vikinganswerlady.com.

Denmark

The Ladby Boat Burial, Fyn, Kølstrup, Denmark Metal fittings and corner pieces found in this boat burial are thought to represent a composite iron and ash wood gaming board.

The Ladby cavalry grave boat burial is the most well known Danish ship burial.

The individual buried at Ladby was an extremely wealthy, and was buried with eleven horses, three - four dogs, riding equipment, fine quality textiles, weaponry and a wide range of domestic objects (Sørensen, 2001, 172-178).



Figure 5.26. (left) Iron corner fixings from a gaming board found at Ladby, Image taken from The National Museum of Denmark's photograph collection



Little information of the dimensions of the board can be determined from the iron fittings, as only corner pieces survive. However, remnants of ash wood found corroded to the iron indicates that one or more wooden boards were held in an iron frame, with rivets extending from top plate to bottom (Sørensen, 2001, 102) (B 21).

The ship was covered with a large burial mound, with the ships mast standing upright, and probably poking through the mound to the surface.

Figure 5.27. (right) Ladby ship prow: photograph taken by A. Sperr of a picture on display, at The National Museum of Denmark, Copenhagen.



The prow of the ship was thought to be shaped like a horses or beasts head curls of iron found may have belonged to the beast's mane.

Norway

Gokstad Ship Burial, A double sided wooden gaming board was found in the Gokstad ship burial (B 19), along with a single gaming piece (GP 154). The section of board is 60.5cm in length and 30.0cm in width. The gaming surface is made up of a grid of at least 14 x 14 double incised lines; certain pieces in the grid are highlighted with incised knotwork designs.

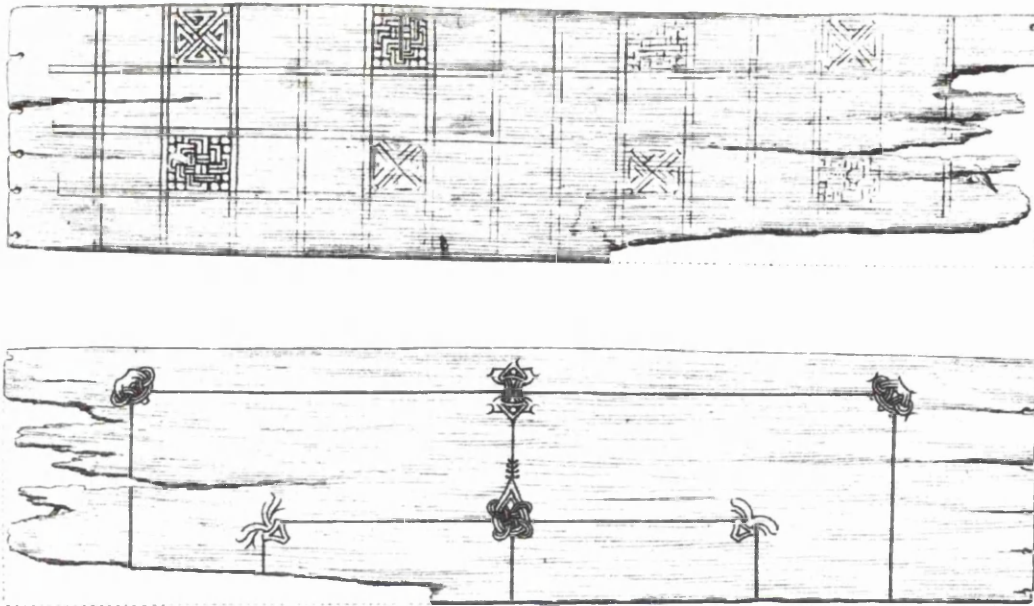


Figure 5.28. (above) Gokstad gaming board; Image taken from Nicolaysen 1882, Plate VIII.,

The reverse side has a Nine Men's Morris style board incised, with designs carved into the intersections.

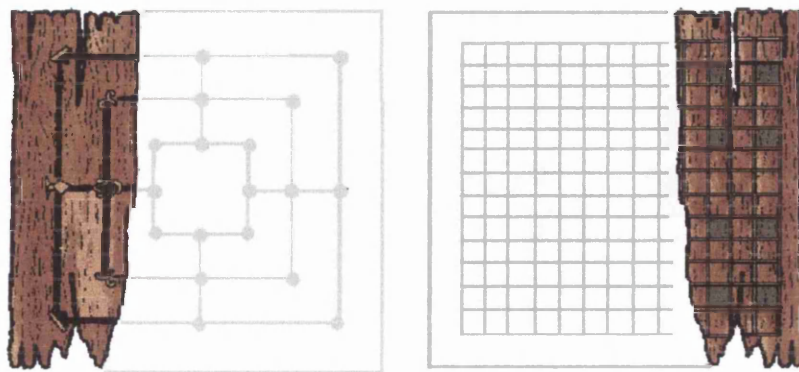


Figure 5.29. (right) Gokstad gaming board reconstruction; Image taken from www.vikinganswerlady.com

The board has been well worked, and may have been part of a composite gaming board, held in wooden frame.

Chapter 5: Discussion

Simple gaming boards Case study 1: The stone boards from Jarlshof (*B 7 and 8*), are examples of simple gaming boards made from locally available material. The gaming surfaces have been scratched into the surface of soft stone. That is not to say that the boards were necessarily disposable or only intended for single use, indeed stone would have been an ideal gaming surface: readily available, cost effective, and sturdy.

Similarly, gaming boards from Howe (*B 1*), Red Craig (*B 6*), Buckquoy (*B 2, 3, 4*), Fishamble Street in Dublin (*B 12*), and the stone board from Downpatrick (*B 10*), are all gaming boards made from naturally flat smooth stones, which were probably used time and time again. These boards were most likely to have been made by an individual for his or her own personal use. The Årby boat burial board (*B 20*) is carved onto one side of a polished piece of wood, perhaps a utilised broken plank.

The Howe board (*B 1*), the three Buckquoy boards (*B 2, 3, and 4*), the Red Craig board (*B 6*) and the Downpatrick board (*B 10*) all have a 7 x 7 grid gaming surface, and may all have been made for the same or similar games.

Purpose made gaming boards Case study 2: The Ballinderry Board (*B 11*), discusses probably the most well known gaming board. It has been expertly carved, and would have undoubtedly been used with a quality set of playing pieces. The Ballinderry board, Gokstad board (*B 19*), York board (*B 9*), and Brandstrup board (*B 13*) are all more likely to have been made by skilled craftsmen either as trade or as gifts or commission pieces.

Of the fourteen intact gaming boards discussed in this Chapter (fragmentary boards where only metal fittings survive are not included), only two boards have holes, the other gaming surfaces are made up of incised grids where gaming pieces would have been placed whether on these intersections or in the cells. The whalebone board from the Brough of Birsay (*B 5*), and the Ballinderry board (*B 11*) are the only boards to have holes at the intersections of the gridlines. These boards may have been intended to be used with gaming pieces with pegs in the bases, to prevent the pieces from falling off the board (similar to modern day travel scrabble, where the pieces are magnetic to allows game play in car journeys)

A curious note is that of the nine gaming boards found in burials, four gaming boards; The Ladby board (*B 21*), The Årby board (*B 20*), Birka 58b rivets (*B 16*), and the Brandstrup

board (*B 13*) were buried with no gaming pieces. This may indicate that the pieces were made of a perishable material or that perhaps the pieces were simple small objects such as pebbles and were not picked up during early excavations.

Chapter 6: Gaming Dice

Though there are many fine examples of gaming dice found throughout the Viking world, the dice chosen for discussion here are those found associated with gaming pieces already researched for this study. Although the focus of this study is gaming pieces and boards, the dice found associated with playing pieces are more likely to have been part of the game. Dice may also have been used for gambling, without recognised playing pieces.

Scotland

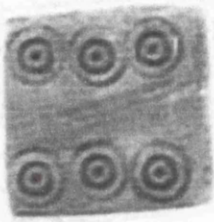


Figure 6.1. (above) bone die from Jarlshof, Shetland. Image taken from Hamilton, 1956, Plate XXXVII.

Jarlshof, Shetland, Scotland This polished bone die was found at Jarlshof in Shetland. The die has a slightly irregular cube shape and measures 1.7cm by 1.5cm by 1.8cm. The numbers are incised into the dice with double ring and spot dots: one small dot surrounded by two concentric circles. Each of the six sides is highly polished and marked; this die has the numbers 3, 4, 4, 5, 5, and 6. (D 1) Other pieces found at Jarlshof are a two slate gaming boards (D 7 & 8) a whalebone gaming piece (D 9), and two slate tally sticks (briefly discussed in Chapter 4: Incomplete sets, and discussed in greater detail in Chapter 7:

Discussions).

France

Île de Groix, Morbihan, France Two rectangular bone dice were found with a set of nineteen spherical bone gaming pieces (D 45) in the Viking Age ship burial at Île de Groix (discussed in detail in case study 3, Chapter 3: Complete Gaming Sets). Both dice are made from whalebone; the exact dimensions of the pieces are unknown. The numbers

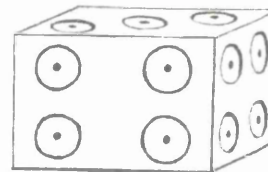


Figure 6.2. Bone die from Île de Groix, France. Image taken from Chatellier & le Pontois. 1908-9, 150.

are carved into the die with single ring and dot spots; the numbers on the first die are 1, 3, 4, 4, 5, and 6, with the numbers 1 and 4 incised on the smallest of the six faces. The second die has the numbers 1, 2, 3, 4, 5, and 6; with the numbers 1 and 2 incised on the smallest of the six faces (Price, 1989, 72/390 and Chatellier & le Pontois, 1908-9, 150-2) (D 2).

Sweden

Birka Grave 8, Sweden The cremated fragments of possibly two bone dice were found in grave 8 at Birka, where the remains of at least three gaming pieces were also found (*GP*

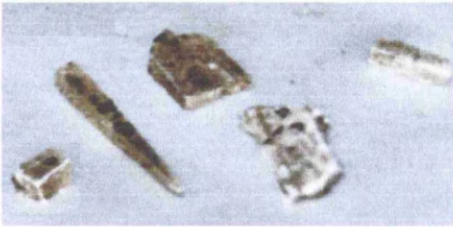


Figure 6.3. (above) Fragments of a bone die from Birka Grave 8. Photograph taken by A. Sperr at The Museum of National Antiquities,

84). Although no information about the size or exact shape of the pieces can be determined from these fragments, they are thought to have been dice based on double incised edgings on the corner pieces (similar to Birka 644 (below), *D 4*), and the remains of what may be the edge of a single ring and dot spot on one fragment (*D 3*).

Birka Grave 644, Sweden,



Figure 6.4. (above) Three bone dice from Birka Grave 644. Photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm.

These three deer antler or horn dice were found in Birka grave 644, along with a set of twenty spherical glass, and two anthropomorphic glass gaming pieces (*GP 91 & 92*). Birka grave 644 is discussed in greater detail in Chapter 3: Complete gaming sets, as part of case study 2: Birka.). The dice are rectangular in shape, the most intact piece (*Figure 6.4*, middle) is and 3.8cm by 2.4cm by 2.4cm. Each of the three dice is marked with double ring and dot spots, and the numbers are the same on each piece; 1, 2, 3, 4, 5, and 6, with 1 and 2 on the smallest of the six faces. Though the pieces are damaged and heavily worn, incised lines surrounding each face on each of the three are barely visible, framing the ring and dot spots (*D 4*).

Birka Grave 581, Sweden, Three bone gaming dice were found in burial 581, along with a set of twenty-seven droplet-shaped gaming pieces (*GP 94 & 95*), and fragments of a gaming board (*B 18*). Birka grave 581 is discussed in greater detail in Chapter 3: Complete gaming sets, as part of case study 2: Birka.).



One die (*Figure 6.5*) measures 2.9cm by 2.1cm by 2.2cm, and is rectangular in shape.

Figure 6.5. (left) Bone die (a) from Birka grave 581. Photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm.

The double ring and dot spots on this die are badly worn, though two of the rectangular faces may be a 3 and a 6. The two square shaped smaller faces both have the number 5 on them.



The dimensions of this die (*Figure 6.6*) are 2.7cm by 2.3cm by 2.0cm. It is roughly rectangular shaped.

Figure 6.6. (left) Bone die (b) from Birka grave 581. Photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm.

The double ring and dot spots are also well worn, though the numbers 6, 5, and 2 can be seen on three of the longer faces.



The final die from Birka 581 is 3.0cm by 1.9cm by 2.0cm, and is rectangular in shape.

Figure 6.7. (left) Bone die (c) from Birka grave 581. Photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm.

The double ring and dot spots show the numbers 4 and 2 on the longer faces, and 1 and 5 on the smallest faces. The markings are too worn to determine on the other faces. (Birka 581 dice a, b, and c; *D 5*).

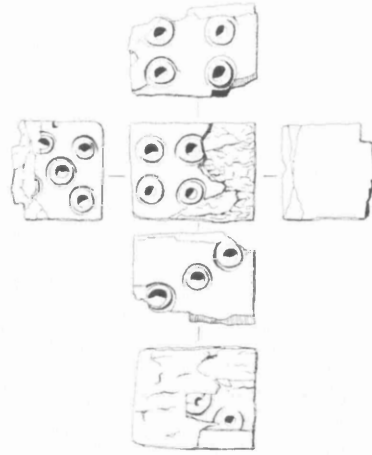
England

York, England An ivory gaming die was found during excavations at 16-22 Coppergate in York. The piece measures 2.0cm by 2.9cm by 2.1cm, and is rectangular in shape.

The numbers are incised into the surface of the piece with single ring and dot spots.

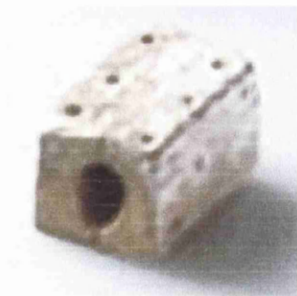
Figure 6.8. (right) Ivory die from 16-22 Coppergate, York. Image taken from MacGregor, Mainman, & Rogers, 1999, 1983.

The longer faces are marked with 4, 6, 3, and possible 5. One of the smaller faces is heavily worn and unmarked; the other has the number 5 (MacGregor, Mainman & Rogers 1999, 1982-3) (*D* 6). Wooden, bone, chalk, antler, shale, and jet gaming pieces were also found at 16-22 Coppergate (*GP* 24-43), as well as a wooden gaming board (*B* 9). (Mainman & Rogers, 2000, 2565-2567, and Morris 2000, 2350-2353).



Iceland

Baldursheimur, Skuktustadahreppur, Iceland This whalebone gaming die was found in a Viking Age male burial, along with a set of twenty-four droplet shaped bone gaming pieces and an anthropomorphic bone gaming piece (*GP* 129 & 130). The Baldursheimur gaming set is discussed in more detail in Chapter 3: Complete Gaming Sets.



The numbers on the die are incised with single dots, with the numbers 6, on four faces.

Figure 6.9 (left) Bone die from Baldursheimur, Iceland. Image taken from Fitzhugh & Ward, 2000, 182.

The die is rectangular in shape; the two smallest end faces are unmarked as the die is hollow.

Chapter 6: Discussions

Four of the six dice discussed in this Chapter were found in a burial where other gaming evidence was found, suggesting that the dice formed an important part of the game. Essentially, dice are portable random number generators, and would have introduced an element of chance into the game; perhaps to determine the number of spaces over a gaming board that a piece could move.

The rectangular shape of the dice means that the numbers on the smaller faces would be less likely to be topmost when the dice were rolled.

Chapter 7: Overall Discussions

Gaming Pieces

Material

A range of materials were used to make the gaming pieces in this study(chart 1). In some cases, the choice of material may have been limited to the local natural resources, and in turn, the type of material may have determined the shape of the playing pieces.

Pie Chart Showing the Relative Proportions of Materials used in Gaming Pieces

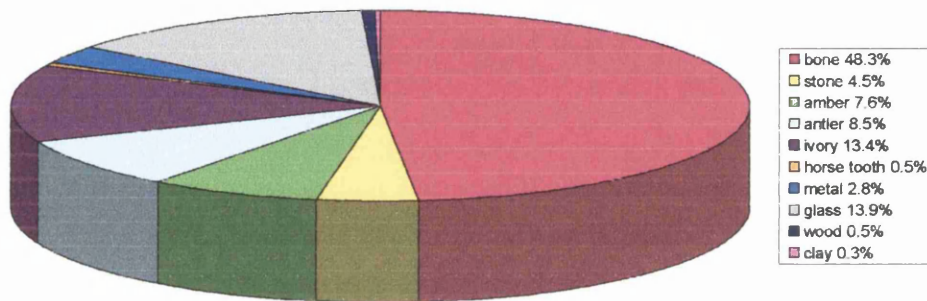


Chart 1. Pie Chart showing the proportions of material usage in gaming pieces, of the 736 gaming pieces researched.

The Pie chart above shows the relative proportions of materials used in the gaming pieces discussed in this thesis. The percentages relate to the numbers of individual gaming pieces in the gaming pieces database. As one can see, bone is by far the most common material used for gaming pieces. This may reflect the abundance of bone, or waste pieces large enough to be made into playing pieces. These results are only valid for the gaming pieces discussed in this study, as not all known gaming pieces were researched.

Bone is a natural resource and was readily available throughout Europe during the Viking Age. Bone is a porous material, which when stripped of muscle or flesh and dried, is relatively easy to carve using metal or stone tools. Of all the gaming pieces researched in this study, 48.3% are made of some sort of bone - gaming pieces made from cattle, whale, and fishbone are most common.

Where the type of bone has been determined, whalebone was found to be the most common type used for gaming pieces. (More than 48% of the bone pieces recovered

studied were identified as whalebone; approximately 3% were identified as cattle bone, and the remaining 49% of the bone pieces were not identified at all). This is probably due to the sheer size of a whale's skeleton and the volume of bone available when a whale was caught or beached. Whalebone playing pieces from Scar, Scotland, (*GP 5 & 6*), Westness, Scotland, (*GP 7*), Kilmainham, Ireland, (*GP 20*), Birka Grave 624, Sweden, (*GP 66 & 67*), and Vendel Grave IX, Sweden, (*GP 99 & 100*), are all spherical in shape with flat bases. The playing pieces from Sveigakot, Iceland (*GP 124*), and Brimnes, Iceland (*GP 125*), are droplet shaped, and the pieces from Witchampton, England (*GP 44*), and the king piece from Baldursheimur, Iceland (*GP 130*) are zoomorphic and anthropomorphic respectively. These varying shapes demonstrate the versatility of whalebone. Indeed the Baldursheimur king demonstrates the intricacy of work that could be achieved with whalebone, while the Brimnes set and the Witchampton pieces show how whalebone could be polished and smoothed to a high standard.

Cattle were frequently kept by Viking Age farmers, for both meat and for their hides and bones. Playing pieces from York, England (*GP 29, 32, & 33*) are spherical in shape, and appear to have been cut from the rounded ends of the femur, or other long bones. The Baldursheimur set, Iceland, (*GP 129*), are droplet shaped with pointed tops. Aside from the pieces cut from the ends of the long bones, there is no indication that this material determined the overall shape of the pieces for definite, though the width of cow bones probably limited the size of the pieces.

The fishbone playing pieces from Steinbogi, Iceland (*GP 117*), and Sveigakot, Iceland (*GP 123*) are both made from a haddock cleithrum bone; one of the thickest, densest of the haddocks bones (pers. comm. T. McGovern). The haddock lives close to the sea bed at depths of 30-300m, and are common to the North Sea, and south of Iceland (Dipper & Powell, 1984, 195). During the Viking Age, haddock were fished for food, and fish bones are a common find in Viking Age Icelandic middens. Both the piece from Steinbogi and Sveigakot are pointed; the Steinbogi piece is shaped like a modern day pawn, and tapers towards the top, and the Sveigakot piece is tear dropped shape, and also tapers towards the top. The shapes of these pieces may have been determined by the tapered shape of the haddock's cleithrum (Batey, 2003, 353).

Ivory is a hard substance of tusks from walruses, and is smoother and denser than bone. Of all the gaming pieces in this study, 13.4% are made from ivory. Gaming pieces from Fishamble Street, Dublin, Ireland (*GP 15 & 16*), High Street, Dublin, Ireland (*GP 18*), and

Strokestown, Ireland (*GP 22*), are droplet shaped with either pointed or flat tops. The Lewis hoard (*GP 11, 12, & 13*) contains pieces that are anthropomorphic, disc, and obelisk shaped. These varying shapes demonstrate the versatility of ivory. The intricacies of the pieces from the Lewis hoard show the differences in the level of detail that can be achieved with ivory. Each of the ivory pieces is smoothed and polished to a high standard. The level of craftsmanship shown in the manufacture of the known ivory pieces, suggests that ivory was a relatively rare commodity, and as such was exclusive to wealthy or affluent individuals.

Antler is a porous bony material, covered with a sleeve of horn, found in the branched horns of stags; only male deer grow antlers (Morris, 1984, 80). During the Viking Age, deer would have been hunted for food, hides, and for the antler and bone. 8.5% of the gaming pieces in this study are made from antler.

The shape of antler will have undoubtedly had an influence on the shape of gaming pieces, as the branched antler of a deer can only grow to a certain size. Complete antlers were sawn up and commonly used for combs (MacGregor, Mainman & Rogers, 1999, 1905). All of the playing pieces made from antler discussed in this thesis are made from deer antler, with the exception of Birka Graves 986 and 886, Sweden, which are thought to be made from Elk horn.

Two playing pieces from the Brough of Birsay, Orkney, Scotland (*GP 1*) and Jarlshof, Shetland, Scotland (*GP 9*) are both pawn shaped, tapering towards the top. Both pieces have been highly polished, and were probably made from the tips or tines of the antler. The size and shape of the playing piece from Århus Sønder vold, Denmark (*GP 46*), the gaming set from Birka Grave 986, Sweden (*GP 77 & 78*), four pieces from Birka 886, Sweden (*GP 68*), the gaming pieces from Balnakeil, Scotland (*GP 14*), and the carved pieces from York, England (*GP 30, 34, 35, 36, 37, & 39*) are all conical in shape, suggesting that they were also probably carved from the tips of antlers.

Two disc shaped pieces from York, England (*GP 40*), and Århus Sønder vold, Denmark (*GP 48*) are such a size (more than 3.0cm in diameter) that they were probably cut further down the antler branch from the tip; the round shape of the antler branches giving shape to the discs. A set of spherical pieces from Île de Groix, France (*GP 45*) were also probable made from the thicker shafts of antler.

Wood is a hard fibrous substance found in trunks and branches of trees or shrubs, and was readily available throughout Viking Europe. It was used for shipbuilding, timber framed houses, and for a variety of domestic objects. The only wooden gaming pieces discussed in this thesis are from York, England (*GP 24, 26 & 27*). Each of these pieces is cylindrical in shape, and is made from hazel wood. The shape and size suggests that they were made from small branches of hazel. The remains of wooden pegs were found within a set of antler playing pieces from Balnakeil, Scotland (*GP 14*). As wood was used for so many other purposes, the material would have had little to no influence on the shape of playing pieces. The scarcity of wooden playing pieces (0.5% of all the gaming pieces in this study are made from wood) may be due to the biodegradable nature of wood, and the varying preservation environments. Wood is best preserved in anaerobic conditions, such as in a bog or waterlogged soil.

Stone is the most abundant raw material found throughout the world, and has varying properties. Several different types of stone were used to make gaming pieces; 4.5% of the gaming pieces in this study are made from a type of stone.

Sandstone is a soft sedimentary rock, made from compressed sand. The different colours of sandstone reflect the different mineral content. Gaming pieces from Hvítárholt, Iceland (*GP 107*), Hrossatungur, Iceland (*GP 108 & 109*), Skallakot, Iceland (*GP 110, 111, 112, 113, & 114*), Sveigakot, Iceland (*GP 118, 120, & 122*), Papey, Iceland (*GP 126*), and Grevegg, Norway (*GP 137*) are all made from sandstone. Each of these sandstone pieces are either dome or spherical in shape; with the exception of a Sveigakot piece (*GP 122*), the piece from Papey, and the Grevegg piece, which are irregularly shaped, and may have been naturally rounded pebbles, only been worked to achieve a flat base. A piece from Skallakot, Iceland (*GP 115*) is roughly conical in shape, and has been heavily worked but unsmoothed. Though sandstone is a soft form of stone, many of these gaming pieces were probably made from sandstone pebbles, which were already naturally rounded in shape. Two of sandstone pieces are much more worked and formed than the simple dome or rounded shaped; Sveigakot (*GP 119*), and Skallakot (*GP 116*). Both of these pieces are droplet shaped, with pointed apexes and flat tops, and appear to have been carefully carved using sharp tools.

Steatite or soapstone is a type of grey talc, with a greasy feel. It was commonly used by the Vikings for domestic objects such as bowls, for the reason that steatite is soft but compact, and easily carved with metal tools. Gaming pieces from Långtora, Sweden (*GP 105*),

Smiðjuskógar, Iceland, (*GP 127*) and Sveigakot, Iceland (*GP 121*) are all made from steatite. The Långtora piece is dome shaped with a flat base, the Smiðjuskógar piece is roughly cylindrical in shape, and the playing piece from Sveigakot is irregularly shaped with a flat base.

Eight dome shaped gaming pieces were found at York, England (*GP 41*). These pieces were made from chalk, which is a powdery soft limestone made from fossilised marine invertebrates.

A dome shaped piece from York (*GP 42*), a disc shaped piece also from York (*GP 43*) and a spherical piece from Långtora, Sweden (*GP 104*) are all made from Jet. This type of stone is hard black lignite, which can be easily polished.

Shale is a soft rock that splits easily, resembling slate. A dome shaped gaming piece from York (*GP 41*) is the only shale piece to have been researched as part of this study.

The varying shapes and sizes of the stone playing pieces demonstrate the versatility and varying qualities of stone. Both soft stone and relatively hard stone were fashioned into specific shapes, which shows that the material itself would have had no bearing on the shapes of the gaming pieces; with the exception of the pieces which are largely un-worked, and those made from naturally rounded pebbles.

Amber is fossilised tree resin from submerged pine forests and has been much prized by man since prehistoric times. It can be found washed up on the southern Baltic and North Sea beaches, as lumps or nuggets in varying different sizes (East Anglia and south-west Jutland in particular) (Graham-Campbell, 1989, 104). It is found in a range of colours from bright scarlet red to orange, yellow and brown, and is usually translucent. 7.6% of the gaming pieces in this study are made from amber.

Several gaming pieces of varying shapes and sizes are known from Viking Age Europe. A conical shaped piece was found at Grevegg, Norway (*GP 137*), spherical and dome shaped pieces are known from Vesterberg, Denmark (*GP 53*), Ribe, Denmark, (*GP 54 – 60*), Birka grave 52a (*GP 71*), grave 524 (*GP 97*) and grave 860a (*GP 86*), Sweden, and Haithabu, Denmark (*GP 49*), and rounded disc shaped pieces were found at Larvik, Norway (*GP 153*). In most cases, the size and shape of the gaming pieces made from amber were

probably predetermined by the size and shape of the nuggets of amber available. Since amber was a prized commodity, it is unlikely to have been wasted.

The amber Roholte piece (*GP 61*) is anthropomorphic and depicts a bald headed man gripping his beard. The level of detail achieved in this piece suggests that it was made by a skilled craftsman; and also implies that amber may have similar properties to ivory, since other detailed anthropomorphic figures (the Lewis hoard (*GP 11, 12, & 13*)) are carved from this.

Clay is earth in very fine particles, tenacious and impervious, stiff and sticky, which when fired becomes hard and brittle. A hemispherical gaming piece from Gjulem nordre, Norway (*GP 142*) and a spherical piece from Bjerke, Norway (*GP 146*) are both made from fired clay. As clay can be moulded easily into any shape before firing, the shapes of these pieces were probably not predetermined by the material. Despite the ease at which clay can be worked, only 0.3% of the gaming pieces in this study are made from clay.

Glass is a hard and brittle substance, made by fusing sand with soda or potash etc. During the Viking Age, a great deal of glass was recycled from broken drinking vessels or small cubes intended for mosaics, as this was much easier than making glass from scratch. (Graham-Campbell, 1989, 102-103). Glass working was common in trade and manufacturing centres such as Birka in Sweden, and Ribe in Denmark. 13.9% of the gaming pieces in this study are made from glass.

Gaming pieces made from glass were moulded into shape rather than carved, so virtually any shape or colour would have been possible. This said however, all of the gaming pieces researched for this thesis is either spherical or anthropomorphic or pawn shaped, and are green, black or blue.

Gaming sets from Birka Grave 750 (*GP 64 & 65*), Grave 1035 (*GP 73*), Grave 112 (*GP 80 & 83*), Grave 644 (*GP 91 & 92*), Grave 523 (*GP 93 & 94*), Grave 710 (*GP 98*) and from Långtora, Sweden (*GP 101, 102, & 106*) all contain spherical shaped pieces; the Långtora gaming set, Birka Graves 750, 644, and 523 also glass king pieces, made from the same coloured glass as the spherical pieces.

The four burials that contain complete glass gaming sets are Birka 750 (*GP 64 & 65*), Birka 523 (*GP 93 & 94*), Birka 644 (*GP 91 & 92*) and Långtora (*GP 101, 102, & 106*). Each set is comprised of a number of spherical pieces with flat bases. In Birka grave 644, Birka grave 750 and Långtora; there are two distinct groups of light coloured pieces and

darker pieces. The king pieces in each of the four burials are anthropomorphic and made from light coloured glass, decorated with darker blue moulded glass. The sets from Birka 750 and Birka 523 are so similar that it is plausible that the same person may have made them – perhaps manufactured or traded at Birka. Also, in each of the four burials containing two different coloured glass pieces (Birka 523 (*GP 93 & 94*), 644 (*GP 91 & 92*), 710 (*GP 98*) and 750 (*GP 64 & 65*)), it is the group of light coloured glass that outnumber the dark set by almost 2:1. The significance of this is that these four sets may represent a standard type of glass set, for a game with uneven opponents playing pieces. This may even point to a single manufacturer working at Birka.

A single glass gaming piece found at Fishamble Street, Dublin (*GP 17*) is the exception to the spherical shaped pattern. It is dome shaped with a slightly flattened top, and is made from black and white coloured glass, swirled together to create a marbled effect.

Metal. The gaming set from Lough Sewdy, Ireland (*GP 21*) and a figurine from Trønning, Denmark (*GP 50*) are the only pieces found to be made in part or entirely of metal. The Lough Sewdy set are conical shaped bone pieces, mounted with copper alloy, with copper alloy pins in the bases. The copper alloy is both a decorative and functional part of these playing pieces. 2.8% of the gaming pieces in this study (taking into account the individual pieces from each set) are made from metal.

The figure from Trønning is made entirely from gold, which even today is a valued and expensive metal. The value of the material is reflected in the size and form of the piece; it is less than 2.0cm tall, hollow, and made from extremely thin gold sheet metal, decorated with tiny filigree details. The piece is extremely detailed, and was probably made by a skilled goldsmith.

Metal was also used to define or decorate gaming pieces. The king pieces from Birka Graves 581 (*GP 96*) and 886 (*GP 69*), Vendel IX, Sweden (*GP 100*), and Scar, Scotland (*GP 6*), are spherical shaped bone pieces with iron pins inserted into the tops. Playing pieces from Birka Grave 20 (*GP 70*) and 112 (*GP 81*) both have small iron pins inserted into the side; the purpose of which is unclear. Finally, the king piece from a bone gaming set found in Birka Grave 624 (*GP 67*) has a gilt bronze hat attached to the top of the piece.

Horse teeth: Gaming pieces made from horse tooth have been found at Århus Sønder vold, Denmark (*GP 47*), Birka Grave 324 (*GP 89*) and Vesterberg, Denmark (*GP 53*). In each

case, the size and shape of the piece was limited to the size and shape of the horse's tooth; the cube shaped piece from Århus Sønder vold is the most heavily worked and polished. The pieces from Birka and Vesterberg are all dome shaped, with flat bases and rounded tops and un-worked sides. Horse tooth gaming pieces make up 0.5% of the pieces in this study.

Differentiating Pieces and Defining the King

In many of the cases where more than a single gaming piece was found, one or more of the playing pieces have been made to look different from the rest. This has been achieved by using a different material; for example the set from Vesterberg, Denmark (GP 53) which contains nine bone, four amber, and two horse tooth pieces, and the Långtora gaming set (GP 101-106) which contains a number of glass pieces in two colours as well as a bone, jet, and steatite playing piece.

As mentioned previously, four king pieces are distinguished from the rest of the set either with iron pins inserted into the top (Scar, Birka 20, Birka 581, and Birka 886), or with a gilded hat as found in Birka grave 624.



King pieces with iron pins inserted into the tops: From left to right, **Figure 7.1**, Scar king piece, image taken from Dalland & Owen, 1999, 127, – all other photographs taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden. **Figure 7.2**, Birka Grave 886, **Figure 7.3**, Birka Grave 581, **Figure 7.4**, Vendel IX.

The king piece from Westness (GP 8), as mentioned in Chapter 3: Complete Sets, may not be the original king piece as it is of a completely different form and looks more like a bead or toggle.

In most cases, the king piece has been made to look more anthropomorphic than the other pieces in the set; either with recognisable facial features, or simply with a head and body. The king piece from Baldursheimur (GP 130) is made of a different type of bone to the rest of the set (perhaps whalebone is easier to carve than cattle bone), and is anthropomorphic. Aside from the king piece, none of the bone playing pieces is distinguishable within the set: it is possible that they may have been coloured or superficially stained – representing

two opponents playing pieces. No such colouration can be seen in any of the Lewis pieces (GP 11,12 & 13) in the British Museum or the National Museum of Scotland; early accounts of the discovery of the Lewis hoard do however state that several of the pieces were stained with a red colorant when discovered (Stapleton et al. in Stratford, 1997, 54).



*Anthropomorphic figures and king pieces: From top left to right: **Figure 7.5**, Glass king from Birka Grave 750 (Image copyright of the National Museum of Antiquities, Stockholm). **Figure 7.6**, Lewis kings and queens, Image taken by A. Sperr at The British Museum London. **Figure 7.7**, Whalebone figure from Baldursheimur, image taken from Fitzhugh and Ward, 2000, 182, Bottom row: **Figure 7.8**, Gold figure from Trønning, Image taken from Roesdahl, 1975, 75, **Figure 7.9**, Amber figure from Roholte, Denmark. Image taken Roesdahl, 1990, 187.*



*Anthropomorphic king pieces with no detail: From left to right, **Figure 7.10**, Glass piece from Långtorna, **Figure 7.11**, Glass piece from Birka Grave 523, **Figure 7.12**, Glass piece from Birka Grave 644, **Figure 7.13**, Bone piece from Birka Grave 150, and **Figure 7.14**, Elk horn king piece from Birka Grave 986. All photographs taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden, with the exception of **Figure 7.14**: image taken from Arbman, 1940-43, 149.*



Figure 7.15 (left) King piece with gilt bronze hat from Birka Grave 624 (photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm). Figure 7.16 (right), Amber king piece from Birka Grave 524, (Image taken from Arbman, 1940-43, 150)



The king piece from Birka 524 (GP 97) is marked with a deeply incised cross into the surface, similar to the way in which an amber pieces from Vesterberg (GP 53) is reported to have been marked. Stained gaming pieces have been found in Birka Graves 886 (GP 68), Grave 754 (GP 754), Grave 75 (GP 85), and Grave 1142a (GP 87), and Alm Østre, Norway (GP 144) and Løten, Norway (GP 148). Each of these pieces is made from bone, and has been coloured using some sort of wax or resin, which as soaked right through the bone, giving the pieces a waxy patina. The black playing pieces from Witchampton were purposely blackened in a fire, rather than with a pigment or dye (Dalton, 1926, 77).

Holes in the base: for a peg or not for a peg?

The vast majority of the playing pieces found throughout the Viking world have a small conical shaped hole in the centre of the base that is more often than not, interpreted as a socket for a peg; perhaps made of wood, which perished. Most of the playing pieces with base holes are spherical in shape and made from bone (for example the Scar set (GP 5), The Westness set (GP 7), Kilmainham & Islandbridge (GP 20), Birka Grave 20 (GP 75)). No remains of a peg have been found in any of these playing pieces. A playing piece found attached to an iron rod in the burial at Île de Groix suggests that the hole is as result of the manufacturing process, where the small piece of bone is held on a spike so that it can be worked. Of the 422 bone gaming pieces looked at as part of this study, 339 pieces (80 %) were found to have holes in the base. Of the 15 bone pieces that did not have base holes (4 %) at least 11 are thought to have been naturally hemi-spherical in shape and cut from the end of cattle bones, and two are made from fishbone. It is unclear whether the remaining 68 bone pieces (16 %) had holes in the base at all, as these pieces were either unavailable for study or were too fragile to handle.

Few of the stone, antler or horn pieces contained holes, and none of the glass, chalk, equine tooth or amber pieces had base holes, which perhaps suggests that the use of a lathe was limited to the type of material, and used primarily for shaping bone.

Playing pieces with pins are found at Balnakeil, Scotland (*GP 14*) and Lough Sewdy, Ireland (*GP 21*). The bone pieces from Lough Sewdy are capped with copper alloy mounts and rather large pins, suggesting that a deep gaming board would have been used. The Balnakeil set have the remains of bone pins in situ of a more reasonable length requiring a modest thickness of board.

The Gokstad gaming piece (*GP 154*), which has a hole in the centre of its base, was found with the Gokstad gaming board (*B 19*). This gaming board has no holes in the surface, which suggests that if the Gokstad piece were to have a peg, it would not have been possible to use with the board.

Numbers of pieces

In an incomplete gaming set or small groups of playing pieces, it is impossible to know how many if indeed any of the pieces are missing. Therefore this discussion concerning the numbers of playing pieces focuses on the pieces found in complete gaming sets, or those regarded as complete (*Table 2*).

The gaming sets from Île de Groix, France (*GP 45*) and Brimnes, Iceland (*GP 125*) both contain nineteen identical pieces, with no identifiable king piece. Similarly, gaming sets from Hølbo, Norway (*GP 150*) and Balnakeil, Scotland (*GP 14*) have fourteen playing pieces with no identifiable king. Gaming sets from Lough Sewdy, Ireland (*GP 21*) and Vendel IX, Sweden (*GP 99&100*) both contain twenty gaming pieces, though the Lough Sewdy set has eighteen playing pieces and two king pieces; the Vendel set has nineteen playing pieces and one king.

Gaming sets from Birka Grave 524 (*GP 97*), Vesterberg, Sweden (*GP 53*), Ustad, Norway (*GP 139*) and Skogsfjord, Norway (*GP 143*) all contain fifteen gaming pieces; The Skogsfjord and Ustad sets have fifteen identical pieces and no identifiable king piece. The Birka 524 set comprises fourteen pieces and one king, and the Vesterberg set is made up of nine bone, four amber and two horse tooth pieces.

The only two gaming sets with similar ratios of playing pieces to king pieces are those from Birka Grave 886 (*GP 68&69*) and the Baldursheimur set from Iceland (*GP 129 & 130*). Each of these sets has twenty four playing pieces and one king. The set from Birka 886 however, contains twenty-two spherical bone pieces, with a spherical elk horn piece, and a spherical bone piece that has been stained black. It is unclear if these two pieces were meant to be distinguished from the rest of the set.

Site Name	Material	Number of Pieces in Set	Ratio	King	Database Ref.
Birka 750, Sweden	glass	26	17 light blue: 8 dark green : 1 king	1 anthropomorphic	64, 65
Birka 624, Sweden	Bone	27	26 spherical: 1 king	1 spherical with gilded bronze hat	66, 67
Birka 886, Sweden	Bone	25	22 spherical bone: 1 king: 1 black: 1 elk horn	1 spherical with iron pin in centre	68, 69
Birka 986, Sweden	Elk horn	17	10 undecorated: 6 decorated: 1 king	1 anthropomorphic	78, 79
Birka 644, Sweden	glass	22	20: 2 kings	2 anthropomorphic	91, 92
Birka 523, Sweden	glass	24	23 droplet: 1 king	1 anthropomorphic	93, 94
Birka 581, Sweden	Horn	27	26 bone: 1 king	1 droplet shaped with iron pin in centre	95, 96
Birka 524, Sweden	Amber	15	14 amber: 1 king	1 cylindrical with domed top, incised with a cross and ring	97
Birka 20, Sweden	Bone	35	34 spherical: 1 king	1 spherical with iron pin in centre	70
Vendel IX, Sweden	Whalebone	20	19 pieces: 1 king	1 hemispherical with iron nail	99, 100
Långtora, Sweden	glass, bone, steatite, jet/obsidian	26	13 blue: 6 green: 1 king: 4 bone: 2 stone	1 anthropomorphic	101, 102, 103, 104, 105, 106
Vesterberg, Denmark	bone, amber, horse tooth	15	9 bone: 4 amber: 2 horse tooth	none	53
Brimnes, Iceland	Whalebone	19	19	none	125
Baldursheimur, Iceland	Whalebone	25	24 droplet: 1 king: 3 die	1 anthropomorphic	129, 130
Oslo, Norway	Bone	11	11 pieces	none	132
Gile, Norway	Bone	10	10 pieces	none	138
Ustad, Norway	Bone	15	15 pieces	none	139
Skogsfjord, Norway	Bone	15	15 pieces	none	143
Holbø, Norway	Bone	14	14 pieces	none	150
Larvik, Norway	Amber	12	12 pieces	none	153
Scar, Orkney, Scotland	Whalebone	23	22: 1 king	spherical with iron nail	5, 6
Westness, Orkney, Scotland	Whalebone	25	24: 1 king	cylindrical	7, 8
Balnakiel, Scotland	Bone	14	14 pieces	none	14
Lough Sewdy, Ireland	copper alloy mounted bone	20	18: 2 kings	2 conical with longer pins and more decoration	21
Ile de Groix, France	antler/ walrus tusk	19	19 pieces	none	45

Table 2. (above) Numbers and ratios of gaming pieces from the complete sets.

Aside from these similarities, there are no other patterns in the numbers of pieces, or ratios of pieces: kings. It is impossible to know whether these varying numbers of pieces represent several different games.

Gaming Boards

Twenty-two gaming boards were researched as part of this study. One of these is a pictorial reference to a game, found carved into the Ockelbo Kyrka rune stone (*B 20*). The scene depicts two men, seated, with a gaming table between them. One of the men is seen drinking from a horn (Jansson, 1981, 194-195).

Material

Stone Nine stone gaming boards were found at: Howe, Scotland (*B 1*), Buckquoy, Scotland (*B 2, 3, & 4*), Red Craig, Scotland (*B 6*), Jarlshof, Scotland (*B 7 & 8*), Downpatrick, Ireland (*B 10*), and Fishamble Street, Dublin, Ireland (*B 12*). Each of these gaming boards made use of naturally flat slabs or pieces of stone. The gaming tables were all scratched into the surface, using a sharp tool or perhaps another stone.

Wood Four gaming boards from: Gokstad, Norway (*B 19*), Årby, Sweden (*B 20*), York, England (*B 9*), and Ballinderry, Ireland (*B 11*) are made from wood. Only the Ballinderry board and the Årby board have survived intact; The Gokstad board and the York board are both portions of a larger board. The Årby board is incised into the surface of one half of a plank of wood, the other half perhaps left blank in order to place the discarded playing pieces on. The Ballinderry board is ornately carved, and consists of a wooden board held within a wooden frame, with handles at opposite ends. The Gokstad board and the York board both appear to represent an estimated quarter of the complete board. The York board has the remains of a wooden frame surrounding the wooden gaming table; remains of nail holes around the edges of the Gokstad board suggests that this may too have once had a frame around it. The purpose of these frames may have been to prevent gaming pieces from falling off the board if knocked, or may be purely decorative.

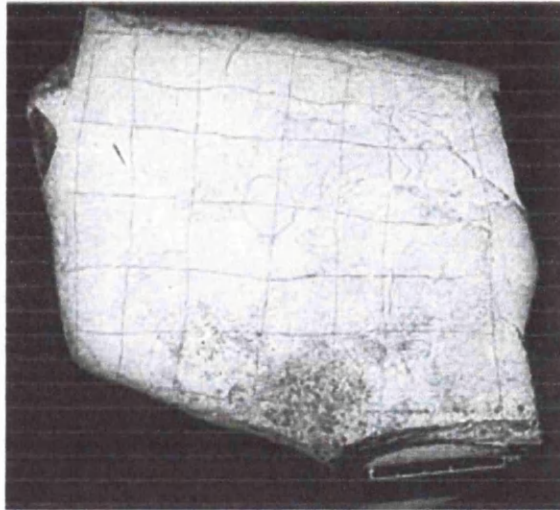
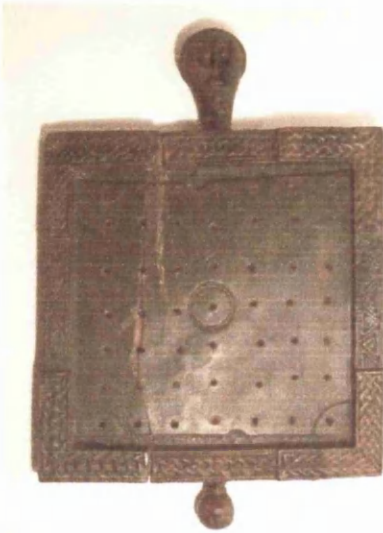
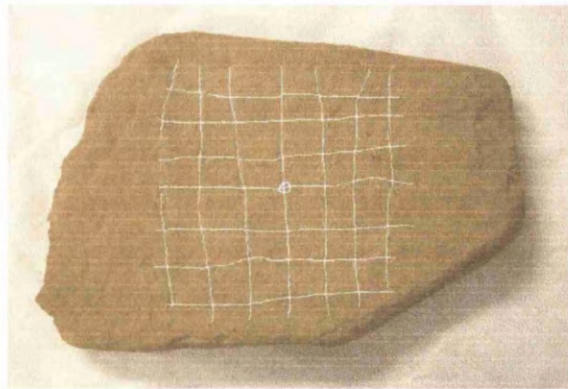
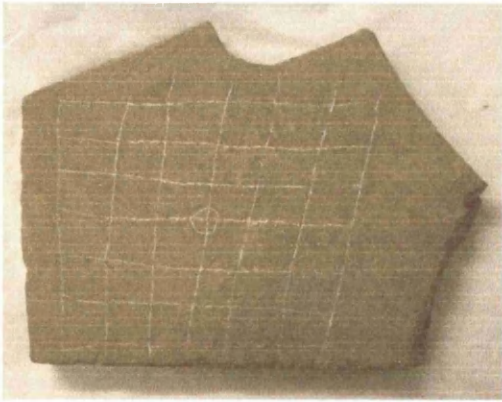
Whalebone A possible whalebone gaming board was found on the Brough of Birsay, Scotland (*B 5*). The board consists of a relatively thin, flat piece of whalebone, smoothed on the upper side, with holes drilled right through.

Metal Fixings or Mounts The fragmented remains of composite iron and wooden gaming boards were found in Birka Grave 750 (*B 14*), Grave 886 (*B 15*), Birka 58B (*B 16*), Birka 624 (*B 17*), Grave 581 (*B 18*), Brandstrup, Denmark (*B 13*), and Ladby, Denmark (*B 21*). The remains from Ladby, Birka 581, and Birka 886 are thick corner mounts with plates of iron riveted together by long metal pins. Iron fragments from Brandstrup and Birka 624, may have been folding gaming boards, as fragments of hinges were found along with iron mounts and rivets.

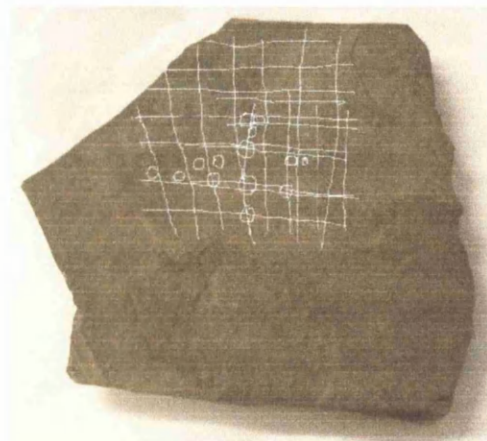
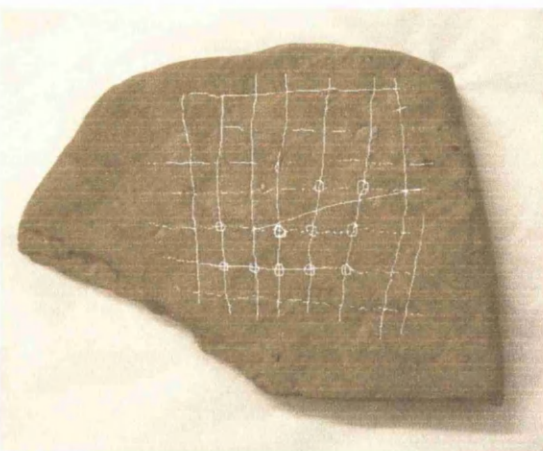
Gaming Surfaces

Two of the gaming boards found have holes drilled through the board; presumably for use with playing pieces with pegs (such at the Balnakeil set (*GP 14*) or the Lough Sewdy set (*GP 21*)).

Gaming boards from Howe, (*B 1*), Buckquoy (*B 2, 3, & 4*), Downpatrick (*B 10*), Ballinderry (*B 11*) and possibly the Red Craig board (*B 6*) all have gaming surfaces made up of a 7 by 7 grid of incised lines (or holes in the case of the Ballinderry board). Of these, the central intersection of lines is circles with an incised ring on the Ballinderry Board, two of the Buckquoy boards (*B 2 & 3*), and the Downpatrick board. The 7 by 7 grids on the Buckquoy board (*B 4*) and the Howe gaming board have several intersections circled in no obvious pattern. This Buckquoy board also has several other haphazard lines incised over the grid, which may have been drawn over the board at a later date, perhaps rendering the board useless. The corner holes of the Ballinderry board are also enclosed in incised quarter circles, similar to the picture of a gaming board on the Ockelbo rune stone.



Gaming boards with 7 by 7 grids, with the central intersection circled. From top left: **Figure 7.17**, Buckquoy board (BGP2), **Figure 7.18**, Buckquoy board (BGP3). Both images taken by A. Sperr at The Tankerness House Museum, Orkney. Bottom left: **Figure 7.19**, The Ballinderry board, Image taken by A. Sperr at The National Museum of Ireland, Dublin. **Figure 7.20**, The Downpatrick gaming board. Image taken from Hall, 2001, 1-5.



Gaming boards with 7 by 7 grids, with extra circled intersections and haphazard lines. **Figure 7.21**, (above, left) Howe gaming board. **Figure 7.22**, (above, right) Buckquoy board. Both images taken by A. Sperr at The Tankerness House Museum, Orkney.

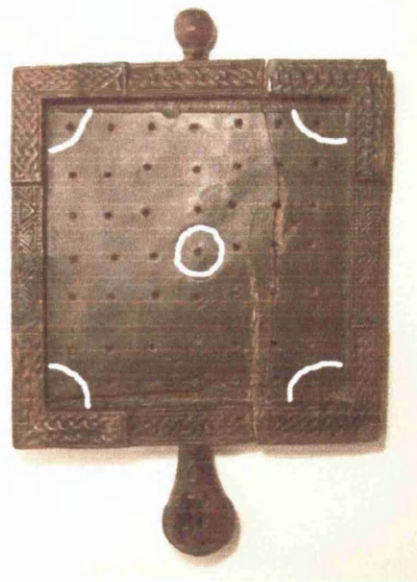
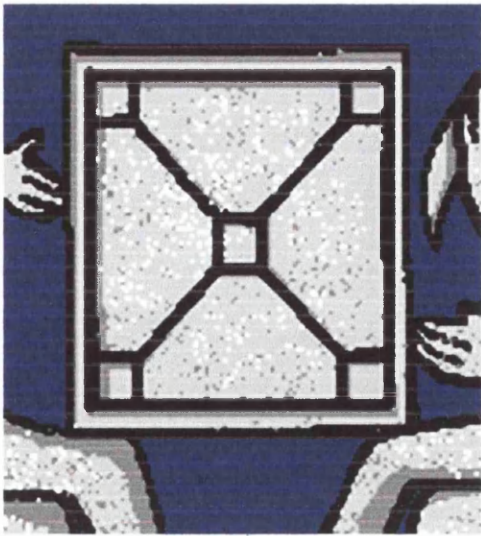
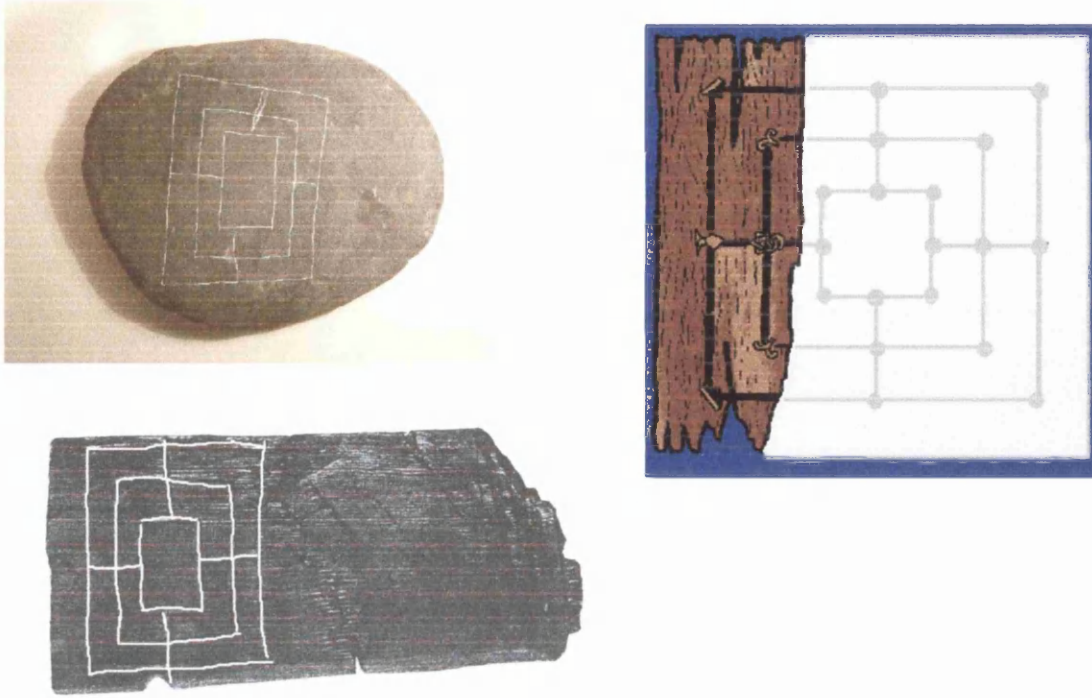


Figure 7.23 (above, left) Ockelbo gaming board, image taken from Ward, 2005, www.vikinganswerlady.com, Figure 7.24 (above, right) the Ballinderry board, edited to show the similarities with the Ockelbo board. Image taken by A. Sperr at The National Museum of Ireland, Dublin.

The gaming board from Gokstad (*B 19*), the stone Downpatrick board (*B 10*) and the stone board from Jarlshof (*B 7*) are both double sided, with different gaming surfaces on opposite sides. The stone Jarlshof board has a grid of 9 by 7 lines, with five alternate central cells marked with an incised cross, and then ringed with a large circle. The reverse side has a plain grid of 20 vertical lines intersected by 10 horizontal lines, making 200 cells and intersections.

The Gokstad board has a grid of (estimated) 14 by 14 intersecting lines, with 8 alternate cells decorated with knot-work designs. The reverse side has a nine men's morris board (see figures 7.25, 7.26, and 7.27), with symbols carved at the intersections of the lines. The Downpatrick board, as mentioned previously has a 7 by 7 grid with the central intersection circled on one side, and a grid of 8 by 8 incised lines on the reverse. The central cell on the reverse side is marked with a cross.

Nine men's morris tables are found on the gaming boards from Gokstad (*B 19*), Årby (*B 20*), and Fishamble Street, Dublin (*B 12*). This game is probably the most instantly recognisable due to its distinctive board, and is still commonly played today.



Nine men's morris gaming boards. **Figure 7.25**, (top, left) gaming board from Arby, Image taken from Arbman, 1940, (in Greenhill & Roberts, 1993, 36), **Figure 7.26**, (top, right) Stone board from Fishamble Street, Photograph taken by A. Sperr at The National Museum of Ireland, Dublin, Bottom: **Figure 7.27**, The Gokstad gaming board, image taken from Ward, 2005, www.vikinganswerlady.com

The varying styles of gaming boards undoubtedly reflect the different types of games that were played by the Vikings. It is altogether possible that certain boards could have been used for more than one game. Sadly however, not one of the intact gaming boards discussed was found with a set of gaming pieces securely associated. It is therefore impossible to assign a type of playing piece to a type of board: with the exception of generally pegged gaming pieces for gaming boards with holes, or perhaps simple stone boards with simple stone pieces, and ornately carved pieces with ornate gaming pieces.

None of these boards however, resemble the tablut board mentioned in Chapter 1, although the common factor between the board noted by Linneus, and these gaming boards is the grid of cells, and the marked central cell. The rules of play noted by Linneus however (as outlined in Appendix 2), indicate that the object of the game is to provide safe passage for the king from the central space, to one of the four corners (Bell, 1970, 78). The Ballinderry gaming board, the reverse side of the Downpatrick board (not pictured) and the picture from the Ockelbo stone all have the central space and the corner spaces marked, which may suggest similar objectives and game-play.

Dice and Tally Sticks

As mentioned in Chapter 6: Gaming Dice, the only dice researched for this thesis were those found in association with gaming pieces. Thirteen gaming dice in total were examined.

Material

Each of the thirteen gaming dice is made from natural resources: bone, ivory, antler or horn. Dice from Jarlshof, Scotland (*D 1*), Île de Groix, France (*D 2*), Birka Grave 8 (*D 3*), Birka Grave 581 (*D 5*), and Baldursheimur, Iceland (*D 7*) are all made from bone. With the exception of the Jarlshof die, which is roughly cubed shaped, each of these dice is cuboid in shape, and has four rectangular, and two square shaped faces. Three cuboid dice from Birka Grave 644 (*D 4*) are made from either horn or antler. A cuboid shaped die found at York, England (*D 6*) is made from walrus ivory. The Baldursheimur die appears to have been cut from a longer bone, and smoothed and polished into the cuboid shape.

Numbers and Decoration

The numbers of the dice from Jarlshof (*D 1*), Birka Grave 581 (*D 5*), and York (*D 6*) are all incised into the faces with double ring-and-dot spots. The spots are so uniform in shape and size, that some sort of tool, possibly a bow-drill (Kováts, 2003, 299), was undoubtedly used. The dice from Birka Grave 644 (*D 4*) and Île de Groix (*D 2*) have numbers incised with single ring-and-dot spots. Single dots were used to mark the faces of the Baldursheimur dice (*D 7*). This piece is cuboid, and has no markings at the opposing smallest faces.

The cuboid shape of the dice means that the numbers on the smaller faces would be less likely to be topmost when the dice were rolled.

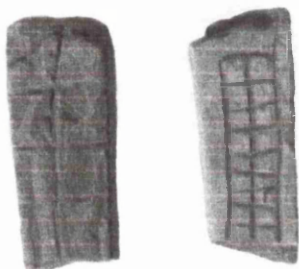
Table 2 shows the numbers incised onto the faces of each die. One of the die from Île de Groix (*D 2*), and the three dice from Birka Grave 644 (*D 4*) have the more conventional 1, 2, 3, 4, 5, and 6, on each face respectively.

Origin	Numbers (numbers on the smallest faces are in bold)	DGP
Jarlshof, Shetland, Scotland	3, 4, 4, 5, 5, 6	1
Île de Groix, Morbihan, France	1, 3, 4, 4, 5, 6, and 1, 2, 3, 4 5, 6,	2
Birka 8, Sweden	unknown; cremated remains	3
Birka 644, Sweden	Each of the three dice are the same; 1, 2, 3, 4, 5, 6,	4
Birka 581, Sweden	6(?), 2,2,3(?), 5,5 6,5,?,2, and unclear on small faces 4, 2(?),?, ?, 1, 5	5
Coppergate, York, England	3/5, 3, 6, 4, 5, (blank?)	6
Baldursheimur, Iceland	6, 3, -, -, blank, blank	7

Table 3. Numbers incised into the six faces of the dice.

All of the other dice where the numbers on each of the six faces is visible have repeated numbers; for example, the Jarlshof die has 3, 4, 4, 5, 5, and six. In the cuboid pieces the repeated numbers make certain numbers more likely to be rolled, as well as the numbers on the smallest faces less likely to be rolled.

Tally Sticks Two slate objects found at Jarlshof were recorded as tally sticks. Both pieces have simple grids, with two rows of cells. No further explanation of these pieces is given, however they are regarded as gaming objects by Hamilton (Hamilton, 1956, Plate XXXVII and 153).



One possible use for these objects, if indeed they are parts of a game, are to perhaps keep score of consecutive games; used with small stones or counters, where when player wins a game, the piece is moved from one cell to the next.

Figure 7.28. (left) Two slate "tally sticks" from Jarlshof. Image taken from Hamilton, 1956, Plate XXXVII.

These are the only such objects known to have been found in associated with gaming pieces. Since the Jarlshof gaming piece (GP 90), stone gaming board (B 7), bone gaming board (B 8) and die (D 1) were all found in different contexts within the Viking Age settlement, and these objects were not found directly associated with any of the gaming objects, there is no evidence to suggest that they had anything to do with a game.

Similarities in Shape of Gaming Pieces

Hemi-spherical The most common type of gaming piece found throughout Viking Age Europe is the hemi-spherical shaped gaming piece, either made from glass, amber, or from antler or bone with flat bases and small conical holes drilled into the centre of the base (Figures 7.29-7.61). The regularity of some of the bone pieces (for example Scar, Scotland (GP 5), Westness, Scotland (GP 7), gaming pieces from Lindholm Høje, Denmark (GP 62), and Birka Grave 624 (GP 66 & 67), suggest that they were made by skilled craftsmen perhaps using a lathe, and may even indicate a handful of bone and antler workers manufacturing these pieces. A spherical shape may have been the simplest to achieve. The pieces are tactile, easy to pick up, and recognisable from other small objects.

(Following Page): Spherical shaped bone and antler gaming pieces. (Top row, left to right): **Figure 7.29.** Scar set (GP5) (Dalland & Owen, 1999, 127), **Figure 7.30.** Westness (GP7) Image taken by A. Sperr at NMS. **Figure 7.31.** Kilmainham and Islandhridge (GP20) Image taken by A. Sperr at NMI, **Figure 7.32.** Île de Groix set (GP45) (Chatellier & le Pontois, 1908-9, 150), **Figure 7.33.** Tjærborg piece (GP51), (Copyright, NMD), **Figure 7.34.** Vesterberg (GP53) (Ramskou, 1950, 172).

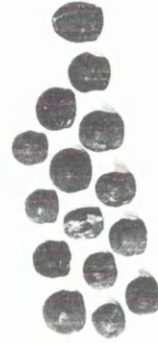
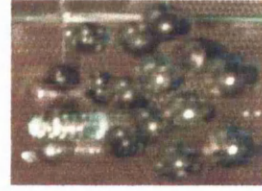
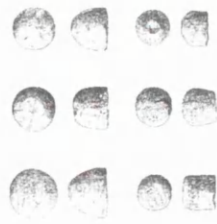
Second row: **Figure 7.35.** Lindholm Høje (GP62) (Nielsen, 1989, 33), **Figure 7.36.** Trelleborg 99 (GP63) (Granberg Ravn, 1989, 227), **Figure 7.37.** Birka 624 (GP66 & 67), Image taken by A. Sperr at MNA, **Figure 7.38.** Birka 886 (GP68 & 69), Image taken by A. Sperr at MNA, **Figure 7.39.** Birka 20, (GP70) Image taken by A. Sperr at MNA.

Third Row: **Figure 7.40.** Vendel IX (GP99) Image taken by A. Sperr at MNA, **Figure 7.41.** Långtora (GP103) Image taken by A. Sperr at MNA, **Figure 7.42.** Prestegården, (GP133) Image taken by S. Kristensen, Private collection. **Figure 7.43.** Oslo (GP134) Image taken by S. Kristensen, Private collection. **Figure 7.44.** Vidarshov (GP138) Image taken by S. Kristensen, Private collection. **Figure 7.45.** Ustad (GP141), Image taken by S. Kristensen, private collection.

Bottom Row: **Figure 7.46.** Blaker (GP142) Image taken by S. Kristensen, Private collection. **Figure 7.47.** Gran (GP143) Image taken by S. Kristensen, Private collection. **Figure 7.48.** Berg (GP147) Image taken by S. Kristensen, Private collection. **Figure 7.49.** Bjerke (GP148), Image taken by S. Kristensen, Private collection, **Figure 7.50.** Løten (GP150), Image taken by S. Kristensen, Private collection, **Figure 7.51.** Hølbo (GP152), Image taken by S. Kristensen, Private collection. **Figure 7.52.** Opstad (GP153) Image taken by S. Kristensen, Private collection, **Figure 7.53.** Mellem Ror, (GP154) Image taken by S. Kristensen, Private collection,



Spherical shaped bone playing pieces. Figures 7.29 – 7.53



Spherical amber and glass pieces: top row: **Figure 7.54**, Haithabu (GP49) (Jankuhn, 1937 – 39, 109), **Figure 7.55**, Birka 750 (GP64 & 65) Image taken by A. Sperr at MNA, **Figure 7.56**, Birka 860a (GP86) Image taken by A. Sperr at MNA, **Figure 7.57**, Birka 644 (GP91) Image taken by A. Sperr at MNA, **Figure 7.58**, Birka 523 (GP93) Image taken by A. Sperr at MNA.

Bottom row: **Figure 7.59**, Birka 524 (GP97) (Arbman, 1940-3, Plate 150), **Figure 7.60**, Birka 710 (GP98) (Arbman, 1940-3, Plate 147), **Figure 7.61**, Långtora (GP101- 106) Image taken by A. Sperr at MNA.

Droplet shaped pieces, similar to the spherical pieces were also common. These were probably made in much the same way at the rounded piece; either on a lathe, or held onto an auger (as with the piece found at Île de Groix (GP45)). The pointed shape enables one to pick up the piece with thumb and fore-finger, and may have been useful when the pieces were placed close together on a gaming board.



Droplet shaped pieces: top row, from left **Figure 7.62**, Drimore (GP10), (Maclaren, A. 1974, 17), **Figure 7.63**, Fishamble Street, (GP15) Image taken by A. Sperr at INM **Figure 7.64**, Strokestown (GP22) Image take by A. Sperr at INM **Figure 7.65**, Hvitárholt (GP107) Image taken by A. Sperr at FSI.

Second row: **Figure 7.66**, Hrossatungur (GP108) Image taken by A. Sperr at The NMI. **Figure 7.67**, Sveigakot (GP121) Image taken by A. Sperr at FSI. **Figure 7.68**, Sveigakot (GP125) Image taken by A. Sperr at FSI. **Figure 7.69**, Sveigakot (GP126) Image taken by A. Sperr at FSI.

Third row: **Figure 7.70**, Brinnes set (GP 127) Image taken by A. Sperr at NMI. **Figure 7.71**, Papey (GP128), Image taken by A. Sperr at FSI. **Figure 7.72**, Grimmstaðir (GP130) Image taken by A. Sperr at NMI.

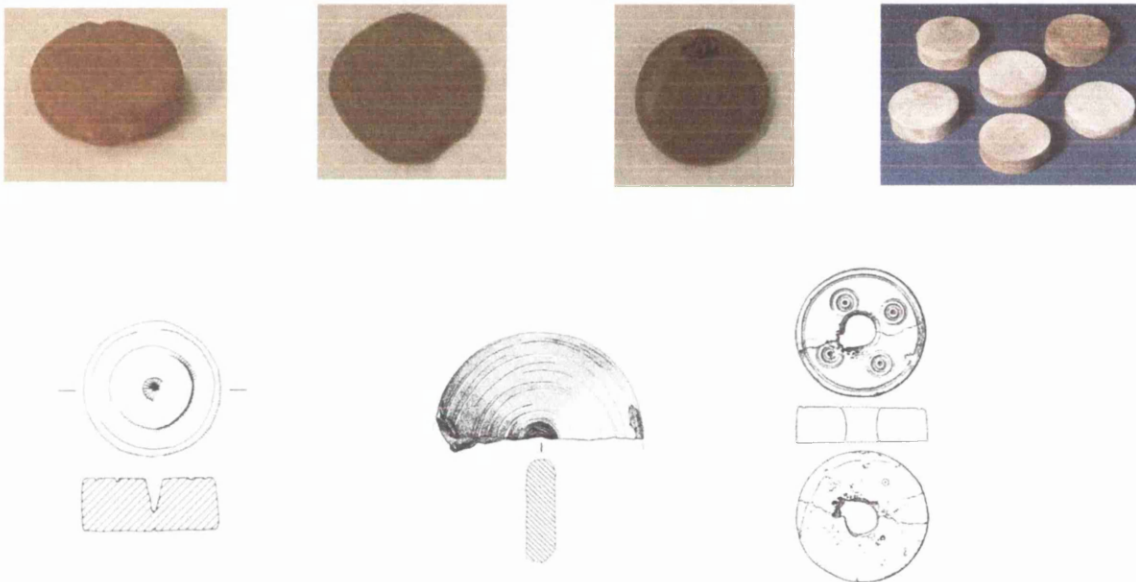
Bottom row: **Figure 7.73**, Baldursheimer set (GP131 & 132) (Eldjarn, & Fridriksson, 1999, 416) **Figure 7.74**, Gokstad (GP156) (Nicolaysen, 1882, Plate IX)

Droplet shaped with flattened apex: These pieces are similar in form to the droplet shaped pieces, with an extra ‘head’ at the top. As with the regular droplet pieces, the flattened apex pieces would have enabled the player to lift the gaming piece between thumb and fore-finger.



Droplet shaped pieces with flattened apex: From left to right: Figure 7.75. Fishamble Street (GP16) (photograph taken by A. Sperr at INM), Figure 7.76. High Street (GP18) (photograph taken by A. Sperr at INM), Figure 7.77. Alm Østre (GP146) (photograph taken by S. Kristensen, private collection), Figure 7.78. Loten (GP151) (photograph taken by S. Kristensen, private collection)

Disc: The shape of the disc pieces suggests that they may have been slid over the board using a finger, rather than picked up and moved.



Disc shaped pieces: Top row, from left to right. Figure 7.79. Brough of Birsay (GP2) Image taken by A. Sperr at THM. Figure 7.80 & 7.81 Howe discs (GP3 & 4) Image taken by A. Sperr at THM. Figure 7.82. Lewis discs (GP12) (Stratford, 1997, 26).

Bottom row: Figure 7.83. York (GP40) (Mainman & Rogers, 1999, 1983). Figure 7.84. York (GP43) (MacGregor, Mainman & Rogers, 1999, 1983). Figure 7.85. Århus Sønder vold (GP48) (Anderson, Crabbe, & Madsen, 1971, 212).

Provenance of Materials and National Patterns

Since relatively few gaming pieces are known from Iceland and Scotland, the pieces researched for this thesis make up a near comprehensive study. The data collected indicates that bone was the most common material used for gaming pieces in Scotland. In Iceland, most of the gaming pieces were made from stone. These trends may reflect the local

resources available rather than trade routes from the Viking homelands as amber playing pieces have only been found in Norway, Denmark and Sweden, close to where amber is washed up on the shores. Antler gaming pieces are known from Scotland, England, and Sweden, which may reflect the habitats and hunting of deer. Though wooden gaming pieces have only been found at York, this is probably a reflection of the preservation at York, as wooden gaming boards were found in Norway, England, Ireland, Sweden and Denmark.

Little can be concluded of the national or regional patterns of materials used for gaming pieces from Ireland, Norway, Denmark and Sweden, as a more comprehensive study of all the known gaming pieces would be needed. However, manufactured pieces for example the glass sets, are found close to trade and manufacturing centres (as in the glass sets from Birka, Sweden).

The Games the Vikings Played

As noted in Chapter 1, many different types of *tafl* games are mentioned in the sagas. These different games would have probably required a diverse range of boards, and therefore different types of gaming pieces. The only near intact gaming board found associated with a particular type of gaming piece is from the Gokstad ship burial. Here, a double sided gaming board (*B 19*) was found with a single droplet shaped playing piece (*GP 154*). In this case, droplet shaped pieces can be tentatively assigned to either gaming boards with grid of cells (where the playing pieces were presumably placed within the cells) or to the nine men's morris table (where the pieces were placed on the intersections of the lines), or both.

The *tafl* game observed by Linneus (as mentioned in Chapter 1), required uneven numbers of opponent's pieces and a king piece. The gaming sets from Birka are most likely to have been used for such a game; in particular, the antler set from Birka grave 986 (*GP 77 & 78*), and the glass gaming sets from Birka grave 750 (*GP 64 & 65*), and grave 523 (*GP 93 & 94*). In each of these three sets, there are two distinctive unequal groups of pieces and a king; the antler set from Birka 986 contains seventeen pieces; 10 undecorated: 6 decorated: 1 decorated king piece. The Birka grave 750 glass gaming set has 17 light blue: 8 dark blue: 1 dark green king, and the Birka grave 523 glass gaming set has 13 light blue: 5 black: 1 blue king.

The most distinctive playing pieces are the chessmen from Lewis (*GP 11, 12, & 13*) and Witchampton (*GP 44*). A standard chess set is comprised of two kings, two queens, two

bishops, two knights, two rooks, and eight pawns. Each of these pieces is characteristic and unique, as each of the pieces is moved in different ways across the board. Since chess is thought to have been introduced into England in the 11th century and into Scandinavia in the 12th century, the Lewis and the Witchampton sets may have been made slightly after the Viking Age (Murray, 1952, 56).

The shape of the disc playing pieces were probably slid over a gaming board from space to space, rather than lifted. This particular method of movement suggests that the pieces probably moved in straight lines, and may have been used for nine men's morris, or a game similar to draughts. The flat shape of the discs would have allowed the pieces to be stacked, if needed.

The use of the dice in board games remains a bit of a mystery. It is possible that the dice were used to select at random the number of spaces a piece could move within a game, perhaps adding a level of chance into an otherwise game of skill. The cuboid shape of the dice is also peculiar, since the momentum involved when throwing the dice would render the chances of the small ends facing upwards, near impossible, and yet cube shaped dice are no more difficult to produce than the elongated cuboid. It is also possible however, that the dice were used for a different purpose altogether; for example gambling.

Ownership of Gaming Pieces

Only the gaming pieces found in burials can give any information about the type of individuals who owned and played board games.

Gender Of the thirty gaming sets or pieces found in burials where the gender of the individual was securely determined, twenty-three of the burials belonged to males, more than 75%; only seven belonged to females. Although this thesis is not a comprehensive study of all known gaming pieces throughout the Viking World, the evidence collected does suggest that playing board games was primarily, but not exclusively, a male pastime.

Age Of the thirty-two burials where the relative age of the individual associated with gaming pieces could be determined, thirty-one were the burials of adults; the only set to have been found buried with an adolescent is the Balnakeil gaming set. This young person was given what can be considered as an adult burial. This suggests that these particular type of gaming pieces were played primarily by adults; implying that a greater level of

skill was needed than in children's games. It is also possible however, that children played these games without special gaming pieces, using pebbles or small objects instead.

Wealth Most of the complete gaming sets were found in burials belonging to affluent individuals; people buried with a large number of other valuable objects. For example, Birka Grave 644 (*GP 91 & 92*) and 750 (*GP 64 65*). Both of these burials contained the remains of two individuals; a male and a female. Both couples were buried with many grave goods, including weaponry, domestic objects, tools, and luxury items such as jewellery and the complete gaming sets made of glass. These glass gaming sets were probably purchased or traded at Birka, and not made by the owner.

Smaller groups and single gaming pieces are generally found in the not so grand burials. These few pieces may be token gestures, placed in the grave to represent gaming, when the individual did not own a complete set in life. Simple gaming pieces, for example the largely un-worked stone playing pieces found in Iceland at Sveigakot (*GP 118, 120, & 121*), were found within modest farmsteads, and suggests that the pieces were made by locally sourced stone pebbles and made by the owners. Rather predictably, the grander gaming sets or pieces are associated with more affluent or significant individuals.

Three of the finest gaming pieces researched in this study; The Lewis Ivory hoard (*GP11, 12, & 13*), the gold Trønning figure (*GP50*) and the Roholte Man (*GP61*) were found un-associated with settlement or burial, and may have been hoarded by the craftsmen for safekeeping before trading.

The gaming pieces, boards and dice discussed in this study demonstrate the wide range of gaming artefacts produced and used by the Vikings. The frequent occurrence of gaming artefacts in pagan graves show the importance of pastimes, as items placed in burials are thought to have been taken with the individuals to the afterlife.

As no complete gaming set has been found with an intact board to date, it is impossible to know exactly how each *tafl* game was played, and with how many pieces. With any luck, archaeologists will one day uncover a grave whose occupant was laid to rest with a complete set of gaming pieces, an intact, preferably stone gaming board, and a full comprehensive list of instructions and tactics. Only then will we know for certain exactly what a skill it was to be able to play *tafl*.

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Appendix 1. Gaming Artefact Database

The following databases contain the basic researched information for each individual piece or gaming set. Each record describes the origin and context within which the piece was discovered, as well as its form and decoration.

The information has been organised into three databases of: gaming pieces, gaming boards and dice.

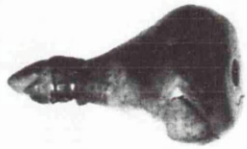


Where pieces have been found associated with boards or dice etc. this is indicated in the “associated with” column (Assoc.), where “board 4” refers to the gaming board database, entry number 4. The gaming pieces database and dice database are abbreviated to “piece” and “die” respectively.


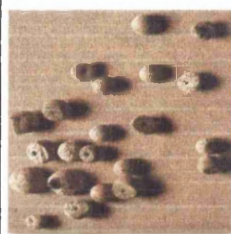
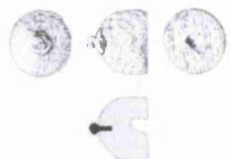


References for the texts used in the research are shown under the references column; the images accompanying each record are referenced in a separate images bibliography at the end of the chapter. Where information was collected in part or solely from research visits to the museums in which the pieces are stored, the museums have been abbreviated as follows:

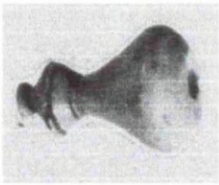
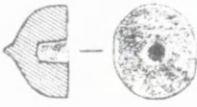


- **NMS** – The National Museum of Scotland, Edinburgh.
- **KM** - Kelvingrove Art Gallery and Museum, Glasgow, Scotland.
- **THM** – Tankerness House Museum, Orkney.
- **INM** – The National Museum of Ireland, Dublin.
- **TBM** – The British Museum, London.
- **NMD** – The National Museum of Denmark, Copenhagen.
- **MNA** – The Museum of National Antiquities, Stockholm, Sweden.
- **FSI** – Fornleifastufnun – Archaeological Research Organisation, Reykjavik, Iceland.
- **NMI** – The National Museum of Iceland, Reykjavik.
- **HM** – Historical Museum, Oslo, Norway.
- **VSM** – The Viking Ship Museum, Oslo, Norway.

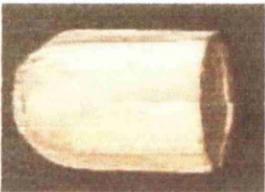



For example, “Dalland, & Owen, 1999, 127-129 and NMS”, indicates that the information for that entry was gathered from both a publication, and from research carried out at the National Museum of Scotland.






Gaming Pieces Database



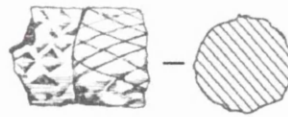
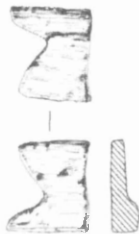
No.	PICTURE (and museum catalogue numbers, where possible)	ORIGIN	CONTEXT	SHAPE	MATERIAL	DIMENSIONS (cm)		HOLE IN BASE	COLOUR	DECORATION	ASSOC.	REFERENCES
						HEIGHT	WIDTH					
1		Brough of Birsay, Orkney, Scotland	settlement - church; found beneath a stone seat.	conical with acorn shaped terminal and flat base	antler	3.7cm tall	approx. 2.3	central, approx 0.4cm diam.	light yellow/brown	highly polished with 3 rings carved around neck	possible gaming board 5	Curle, 1982, 110 and THM
2		Brough of Birsay, Orkney, Scotland	settlement (unstratified)	disc	sandstone	0.6cm	2.4cm diam.	none	red	no markings or decoration		Curle, 1982, 89-1 and THM
3		Howe, Orkney Mainland, Scotland	possible settlement	disc	sandstone?	0.3cm	2.6cm diam.	none	red / grey	few light scratches, and two small dots close to edge	may be assoc. with board 1	Ballin-Smith, (ed) 1994, 188-189 and THM




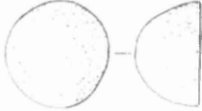
4		Howe, Orkney Mainland, Scotland	possible settlement	disc	stone	0.5cm	2.1cm diam.	none	dark grey	highly polished, regular and smooth	may be assoc. with board 1	Ballin-Smith, (ec 1994, 188-189 at THM
5		Scar, Sanday, Orkney, Scotland	boat burial with male, elderly female, and child of unknown sex	22 spherical with flat base	whalebone	range from 1.8 - 2.7cm	range from 2.1 - 3.4cm diam.	in each, centred and tapered	yellow / brown	highly polished and smooth, no other markings		Dalland, & Owe 1999, 127-129 at NMS
6		Scar, Sanday, Orkney, Scotland	boat burial with male, elderly female, and child of unknown sex	spherical with a flat base	whalebone	3.3cm	king piece 3.4cm diam.	centred and tapered though at a slight angle	yellow / brown	king piece has iron pin inserted into the top		Dalland, & Owe 1999, 127-129 at NMS
7		Westness, Rousay, Orkney	Viking age cemetery: female burial	24 spherical with flat base	whalebone	heights vary between 1.8 - 2.2cm	range between 2.1 - 2.7cm diam. At widest points	roughly centred, and tapered. Approx 0.3mm diameter in each.	orange / brown	highly polished and well finished, though no other decoration		Kaland, 1989, 303 317 and NMS
8		Westness, Rousay, Orkney, Scotland	Viking age cemetery: female burial	cylindrical with incised bands	whalebone	2.4cm	1.7cm	wide hole right through piece	orange / brown	carved grooves		Kaland, 1989, 303 317 and NMS

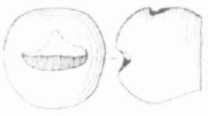

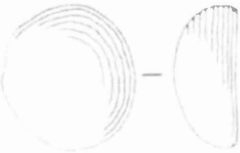
9		Jarlshof, Shetland, Scotland	Norse settlement	conical with two- tiered terminal and flat base	antler	2.3cm	1.5cm diam. At widest point	centre of base, tapered and deep, 0.4cm diam.	yellow / light brown	two incised rings around lower neck, highly polished and smooth	may be ass. With boards 7 and 8, and die 1	Hamilton, 1956, 102
10		Drimore Machair, South Uist, Western Isles, Scotland	Norse longhouse	droplet shaped, with flat base	bone / ivory	1.8cm	2.1 - 2.3cm	centred. 0.85cm deep 0.55cm diameter	~	highly polished, but no decorative markings		Maclaren, A. 197 9-18 and KM
11		Uig Bay, the Isle of Lewis, the Outer Hebrides	ivory hoard, no nearby settlement or burial	59 anthropomorphic figures	walrus ivory tusk or teeth	kings: 7.3 - 10.2cm, queens: 7.0 - 9.6cm, bishops 7.3 - 10.2cm, knights: 7.2 - 10.3cm, warders: 7.0 - 9.2cm	up to 5.5cm diam.	none, though the bases are polished flat	ivory / cream	elaborate and intricate carvings of facial features, clothing, weaponry and thrones. Also highly polished		Stratford, 1997, 69, and TBM
12		Uig Bay, the Isle of Lewis, the Outer Hebrides	ivory hoard / stray find	14 discs	walrus ivory tusk or teeth	1.5cm	5.5 - 5.6cm diam.	none	ivory / cream	incised circles around the edges of the discs, and highly polished.		Stratford, 1997, 69 and TBM

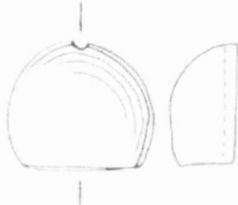

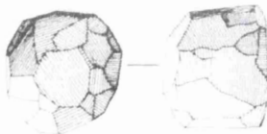
13		Uig Bay, the Isle of Lewis, the Outer Hebrides, Scotland	ivory hoard / stray find	19 irregular octagonal obelisk or pawns	walrus ivory tusk or teeth	3.5 - 5.8cm	~	none	ivory / cream	highly polished and smoothed, some have knot work style patterns, others have simple designs and some are left plain		Stratford, 1997, 69 and TBM
14		Balnakeil, Sutherland, Scotland	Viking age burial of a boy	14 conical pieces	antler with bone pegs	remarkably regular, 2.0cm	1.1cm	each piece is hollow all the way through; some still have remains of bone pins in place	light brown	each piece is smoothed and was probably once highly polished		Richardson, C (Unpublished), a Cowie & Richardson, 199 (Unpublished), a NMS
15		Fishamble Street, Dublin, Ireland	Viking age town, centre of trade and manufacture	droplet with flat base and pointed top	walrus ivory	2.2cm	2.9cm at widest point, 2.2cm base diam.	centre of base, 0.3cm diam.	brown / orange	no markings, but smooth and highly polished	board 12 found on same site	Bradley, 1984, 527, and INM
16		Fishamble Street, Dublin, Ireland	Viking age town, centre of trade and manufacture	droplet shaped with flat base, and flat top	walrus ivory	3.3cm	3.4 at widest point, 2.4cm base diam.	centre of base, 0.5cm diam.	brown / orange	decoration on flat top - double carved ring and marigold /Maltese cross design	board 12 found on same site	Bradley, 1984, 527, and INM

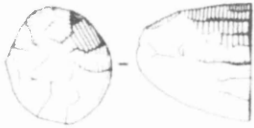
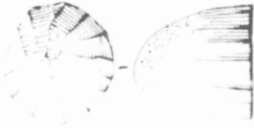
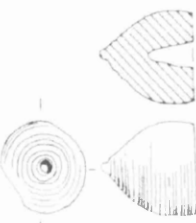
17		Fishamble Street, Dublin, Ireland	Viking age town, centre of trade and manufacture	dome shaped with flattened top and flat base	glass?	1.3cm	2.2cm diam.	off centre and damaged	black / white or cream	two colours of glass swirled together, possible glass covered stone	board 12 found on same site	Bradley, 1984, 27, and INM
18		High Street, Dublin, Ireland	Viking age town, centre of trade and manufacture	droplet shaped with flat base, and flat top	walrus ivory	2.2cm	2.1cm at widest point, 1.3cm base diam.	0.5cm centre of base and tapered	orange/brown	top is decorated with a ring and a tiny cross then a dot.		Bradley, 1984, 27, and INM
19		High Street, Dublin	Viking age town, centre of trade and manufacture	rough-out, similar size and shape to completed High Street piece	walrus ivory	2.3cm	3.4cm	none	light brown	many cut and chisel marks, made with sharp implement. Large split in base		Bradley, 1984, 27, and INM
20		Kilmainham & Islandbridge, Dublin, Ireland	Viking cemetery	4 spherical with flat bases	whalebone	range in height from 2.0 - 2.2cm	2.0 - 2.3cm base diam.	0.6cm diam., centred	light ivory / brown	well worn, but may have been highly polished. No other markings		O'Brien, 1998, 2021, and INM
21		Lough Sewdy, Co. Westmeath, Ireland	Viking cemetery	20 conical shaped bone with metal mounts	copper alloy mounted bone	range dramatically due to preservation from 4.1 - 6.0cm	most intact piece 2.4cm diam. at widest point	centred in those without complete or partial pins	bone - light brown to dark almost black, mounts are yellow / red copper, with tarnished green patches	two-tiered mounts with rings around lower neck, each mount has line of dots around edges and base. 2 much larger (king?) pieces have longer pins and extra points on mounts.		INM


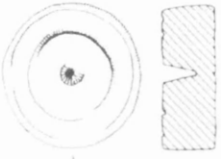

22		Strokestown, Co. Roscommon, Ireland	Crannog	droplet shaped with gently pointed top and flat base	ivory	2.1cm	2.6cm base diam. 2.9cm diam. at widest point.	roughly centred, 0.3cm diam.	dark brown	Nipple shaped tip has tiny piece of metal wire wrapped around it, piece is highly polished with slight split on one side.		INM
23		Strokestown, Co. Roscommon, Ireland	Crannog	vase or tear drop shaped with flat base and flat top.	bone	3.4cm	1.3cm base diam, 2.0 at widest point, 1.3cm diam. at top	right through piece, 0.8cm at top, 1.1cm diam. at base	light brown / mid brown	highly polished, no other markings		INM
24	 9033	York, England	Viking age town, centre of trade and manufacture	cylindrical	wood - hazel?	3.0cm	2.2cm diam.	none	~	broken at both ends, decorated with band of stamped triangles and band of incised cross-hatched lines		Morris, 2000, 235 2353
25	 9034	York, England	Viking age town, centre of trade and manufacture	rectangular	wood	3.7cm	3.5cm width, 0.9cm thick	none	~	V-shaped notch at top gives bifurcated shape		Morris, 2000, 235 2353


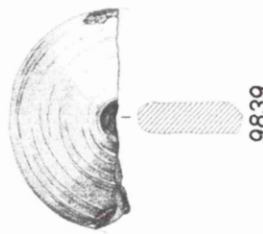
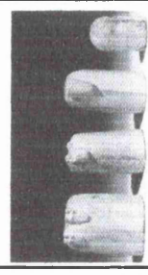
26	 9035	York, England	Viking age town, centre of trade and manufacture	cylindrical with flat base and slightly rectangular top	wood	2.8cm	2.3cm by 2.0cm	none	~	decorated with banded concentric arch pattern	Morris, 2000, 235-2353
27	 9037	York, England	Viking age town, centre of trade and manufacture	cylindrical	wood - hazel or alder	1.3cm	2.4cm diam.	none	~	though fragmented, piece is decorated with at least 5 bands of different patterns incised in different directions	Morris, 2000, 235-2353
28	 9752-9	York, England	Viking age town, found beneath floor layers of wattle building	8 domed, 2 pieces are slightly pointed	chalk	1.8 - 2.0cm	1.7 - 2.0cm	none	white/ brown	one piece is coloured using red ochre, and another piece has traces. It is unclear whether the staining formed a pattern, but some patches are thicker than others.	Mainman & Rogers, 2000, 2565-2567
29	 7104	Coppergate, York, England	Viking age town, found beneath floor layers of wattle building	hemispherical with flat base	bone, possibly made from a femur head	2.0cm	1.18cm	none	~	roughly shaped and smoothed on all surfaces, no decorative markings	MacGregor, Mainman, & Rogers, 1999, 198-1983


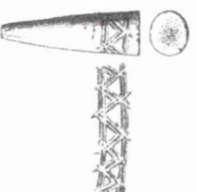
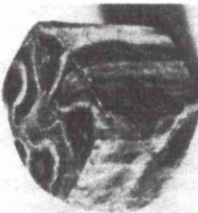
30	 7106	Coppergate, York, England	Viking age town, found beneath floor layers of wattle building	spherical with flat base, slightly damaged	antler	1.7cm	1.9cm	none	~	smoothed and highly polished, no decorative markings. Cut mark on top of piece.		MacGregor, Mainman, & Rogers, 1999, 1983 1983
31	 7109	Coppergate, York, England	Viking age town, found beneath floor layers of wattle building	near spherical with flat base	bone: burnt	1.4cm	2.05cm	drilled conical hole in centre of base	burnt	smoothed, no decorative markings		MacGregor, Mainman, & Rogers, 1999, 1983 1983
32	 7110	Coppergate, York, England	Viking age town, found beneath floor layers of wattle building	hemispherical with flat base	bone: probably cattle	0.95cm	1.9cm	none	~	no decorative markings, may have been made from a femur head		MacGregor, Mainman, & Rogers, 1999, 1983 1983

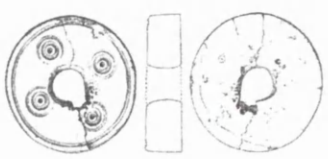
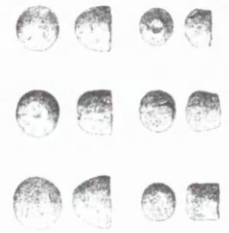

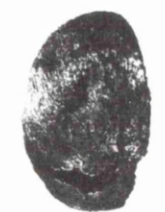
33		Coppergate, York, England	Viking age town, found beneath floor layers of wattle building	hemispherical with flat base	bone, made from femur head	2.24cm	1.86cm	none, base is flattened and smoothed	~	no decorative markings though piece is smoothed and polished		MacGregor, Mainman, & Rogers, 1999, 1983
34		Coppergate, York, England	Viking age town, found near tenement buildings	dome shaped with flat base	probably red deer antler	0.9cm	1.3cm	none	~	unsmoothed, heavily worked		MacGregor, Mainman, & Rogers, 1999, 1983
35		Coppergate, York, England	Viking age town, found near tenement buildings	cylindrical with rounded top	probably red deer antler	2.4cm	2.65cm	none	~	unsmoothed, heavily worked		MacGregor, Mainman, & Rogers, 1999, 1983




36	 7731	Coppergate, York, England	Viking age town, found near tenement buildings	dome shaped with flattened base	probably red deer antler	2.0cm	2.0cm	none	~	unsmoothed, heavily worked - tool marks visible		MacGregor, Mainman, & Rogers, 1999, 1983 1983
37	 7732	Coppergate, York, England	Viking age town, found near tenement buildings	dome shaped with flattened base	probably red deer antler	2.1cm	2.05cm	none	~	unsmoothed, heavily worked - tool marks visible		MacGregor, Mainman, & Rogers, 1999, 1983 1983
38	 7733	Coppergate, York, England	Viking age town, found near tenement buildings	rounded piece with pointed top - droplet shaped	probably red deer antler	2.1cm	2.0cm	conical hole in centre of base	~	piece is smoothed and probably made using a lathe. No decorative markings		MacGregor, Mainman, & Rogers, 1999, 1983 1983




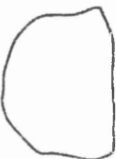
39		Coppergate, York, England	Viking age town, found near tenement buildings	roughly cylindrical with worked almost rounded top	probably red deer antler	1.5cm	1.85cm	none	~	piece is smoothed around body, tool marks visible at top of piece		MacGregor, Mainman, & Rogers, 1999, 1983
40		Coppergate, York, England	Viking age town, found near tenement buildings	discoid	probably red deer antler (pedicle?)	1.47cm	3.77cm	small indentation in centre	~	two incised concentric rings and a central drilled hole through half its thickness, reverse is worn smooth		MacGregor, Mainman, & Rogers, 1999, 1983
41		York, England	Viking age town, found in deposit in front of house.	conical form	shale	3.4cm	1.9cm	none	grey/black	piece is broken, roughly in half. It is decorated with irregular vertical incised lines		MacGregor, Mainman, & Rogers, 1999, 1983


42	 9840	York, England	Viking age town, found in medieval deposit, but thought to be of Viking age.	hexagonal with rounded top and flat base	jet	1.9cm	1.6 - 1.8cm base diam.	none	black	piece is highly polished and smoothed, but has no decorative markings		MacGregor, Maiman, & Rogers, 1999, 1983
43	 9839	York, England	Viking age town: found in deposit behind house	flat discoid	jet/ shale	0.7cm thick	4.9cm diam.	slight indent in centre, but no hole	black	disc has been lathe turned, several concentric circles on surface of piece. Broken; approx half remains.		MacGregor, Maiman, & Rogers, 1999, 1983
44		Witchampton, Dorset, England	settlement: some pieces found in corner of rectangular building; some found outside the building on the same side	zoomorphic: at least 8 pieces, and fragments of others	whale flipper bone	largest piece is approx. 10.6cm	largest piece approx. 5.0cm	none, bases flat	4 white pieces (1 bishop, 2 knights, 1 pawn) and fragments, 4 blackened pieces (3 poss. kings, 1 pawn) and fragments	highly polished and smooth, with carved animal heads and decorated with ring and dot spots and crosses.		Dalton, 1926, 7786, and Riddler, 1998, 10-11.

45		île de Groix, Morbihan, France	Viking age ship burial: 2 bodies - man and child; pieces found with man, grouped among the debris of a cauldron.	19 spherical with flat bases: damaged by fire. Some domed, some slightly pointed at top.	antler	1.5 - 1.95cm	1.75 - 2.45cm	central cylindrical hole, some circular, some squared: one piece still attached to auger	unknown	highly polished and smoothed, though no other decorative markings.	found with dice 2	du Chatellier, & Pontois, 1908 - 149-151, and Prie 1989, 10/328 - 92/415
46		Arhus Sondervold, Jutland, Denmark	Viking age town with harbour and defences: found under street.	conical, pointed towards top	point of an antler: royal stag	approx. 4.4cm	approx. 1.4cm diam.	none	unknown	decorated with rotating ornament band of double incised triangles		Anderson, Crabb, Madsen, 1971, 21 and NMD
47		Arhus Sondervold, Jutland, Denmark	Viking age town with harbour and defences: found in pit	cuboid	horses tooth	approx 1.8cm	approx. 1.7cm	none	unknown	highly polished and smooth, but no decorative markings		Anderson, Crabb, Madsen, 1971, 21 and NMD

48		Arhus Sønderovold, Jutland, Denmark	Viking age town with harbour and defences: unstratified	disc	deer antler	approx 0.9cm thick	approx 3.3cm diam.	central hole in disc, approx 0.7cm diam.	unknown	decorated around the edge with deep incised circle, another 4 ring and dot spots are incised evenly spaced around central hole	Anderson, Crabb, Madsen, 1971, 211 and NMD
49		Haithabu, Denmark	Viking age town, centre of trade and manufacture	6 playing pieces: 3 spherical with flat bases, 2 cylindrical with rounded tops, 1 spherical pointed towards top with flat base.	amber	range between 1.4 - 2.1cm	range between 1.8 - 2.6cm base diam.	none	deep orange / red	well worked, slight dimples in the tops of 3 of the pieces, otherwise no decorative markings	Jankuhn, 1937 - 3 109-110, and NMD
50		Trønning, Kundry, Denmark	unstratified - stray find	anthropomorphic	gold	1.95cm	1.5cm at widest point	damaged, unknown	gold	decoration of hair and garments suggest that the piece represents a female. Intricate decoration made with many tiny balls of gold.	Jorgensen, 1975, 7 and NMD
51		Tjærborg, Ribe, Denmark. Urn grave 6	Urn cemetery	hemispherical with flat base	bone, cremated	unknown	3.4cm	unknown	burnt	was probably highly polished before cremation, no decorative markings are visible	Ramskou, T., 1956 165-167 and NMD

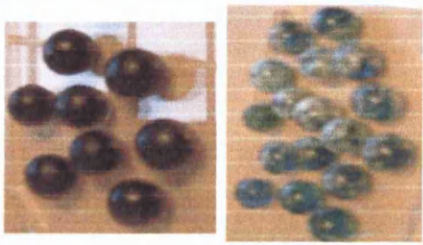
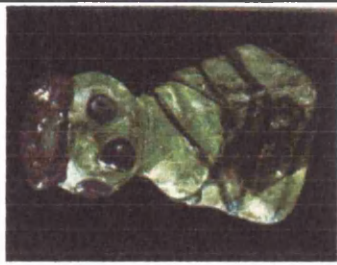
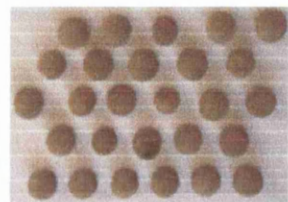
52	 C 16857	Tjærborg, Ribe, Denmark Urn grave 12	Urn cemetery	spherical with flat base and slightly flattened top	bone, cremated	possibly approx. 2.6cm	possibly approx. 3.5cm	unknown	burnt	was probably highly polished before cremation, no decorative markings are visible	Ramskou, T., 1952 165-167, and NMD
53	 pieces now lost; only documentary evidence survives	Vesterberg near Gøtting, Isle of Føhr, Denmark	Urn grave placed in an earlier barrow	15 spherical with flat bases (10 pictured), horse tooth pieces - dome shaped	9 bone, 4 amber, 2 horse teeth	pieces now lost, documentary evidence is all that remains	unknown	unknown	unknown	irregular cross incised in the top of one of the amber pieces, no decorative markings on any of the other pieces	Ramskou, T., 1952 170-172, and NMD
54	 D 3154	Ribe, Denmark	Viking age town, centre of trade and manufacture (Kunstmuseets Have excavations)	conical with flat base and rounded tip	amber	1.2cm	1.2 x 1.3cm base diam.	none	orange / red	un-worked cut base	Botfeldt, & Brinck Madsen, (Ed) 1977 76, 102-108, and NMD
55	no image available D 3155	Ribe, Denmark	Viking age town, centre of trade and manufacture (Kunstmuseets Have excavations)	irregular angular dome shape	amber	0.7cm	1.2 x 1.4cm base diam.	none	orange / red	irregular with four cut surfaces and one ground.	Botfeldt, & Brinck Madsen, (Ed) 1977 76, 102-108, and NMD


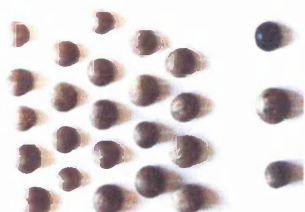

56	 D 2684	Ribe, Denmark	Viking age town, centre of trade and manufacture (Kunstruseets Have excavations)	conical with flat base and slightly flattened top	amber	1.0cm	~	none	orange / red	irregular shaped, unpolished or smoothed		Botfeldt, & Brinck Madsen, (Ed) 1977 76, 102-108, and NMD
57	 D 12469	Ribe, Denmark	Viking age town, centre of trade and manufacture (Kunstruseets Have excavations)	conical dome shaped with flat base and flat top	amber	1.6cm	0.7 - 1.6cm base diam.	none	orange / red	cut marks present, piece is polished and smoothed		Botfeldt, & Brinck Madsen, (Ed) 1977 76, 102-108, and NMD
58	 D 12540	Ribe, Denmark	Viking age town, centre of trade and manufacture (Kunstruseets Have excavations)	hemispherical with flat base	amber	1.0cm	1.5cm base diam.	none	orange / red	cut at base		Botfeldt, & Brinck Madsen, (Ed) 1977 76, 102-108, and NMD
59	no image available D 6433	Ribe, Denmark	Viking age town, centre of trade and manufacture (Dommerhaven excavation)	conical with flat base, roughly cut	amber	1.3cm	1.8cm	none	orange / red	no decorative markings, roughly cut		Botfeldt, & Brinck Madsen, (Ed) 1977 76, 102-108, and NMD
60	 D 5358	Ribe, Denmark	Viking age town, centre of trade and manufacture (Dommerhaven excavation)	irregular conical shape with flat base	amber	1.5cm	2.2cm base diam.	none	orange / red	traces of cutting, but no decorative markings		Botfeldt, & Brinck Madsen, (Ed) 1977 76, 102-108, and NMD




61		Roholte, Præsto Fjord, Denmark	stray find in a field	anthropomorphic	amber	4.7cm	approx. 2.4cm across base	none	deep red	carved with simple clean details, may represent the heathen gods Thor and Frey. Thought to have once been mounted onto (gold?) base indicating seated position. Figure is seen gripping his beard.		Roesdahl, 1990, 186-187, and NMD
62		Lindholm Høje, Denmark	Viking age cemetery: male burial	9 hemispherical with flat bases	bone	unknown	unknown	unknown	cremated?	smoothed and highly polished, though no decorative markings.		Neilsen, 1989, 32, 33, and NMD
63		Trelleborg, grave 99, Denmark	Viking Age burial, near to ringfort: female	droplet shaped with slightly flattened top and flat base	bone	0.7cm	2.6cm diam.	piece is said to be hollow - hole in base?	light yellow/brown	smoothed and highly polished, though no decorative markings.		Granberg Ravn, 1989, 218-227, and NMD

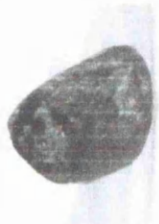



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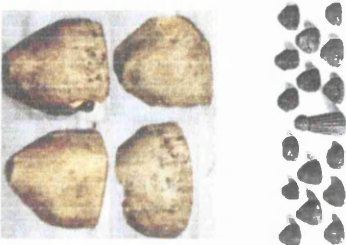
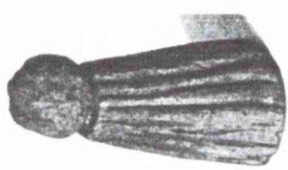

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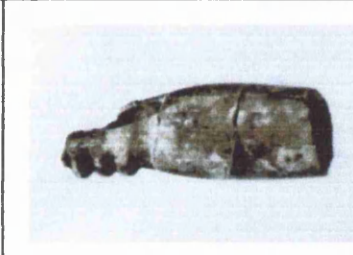

64		Birka, Sweden, grave 750	Viking age town, centre of trade and manufacture: double inhumation burial, male and female, pieces found with male	17 spherical with flat bases, 8 cylindrical with rounded tops and flat bases	glass	pieces extremely damaged, so only one of each colour was measured to represent the group (sizes v. similar) Blue: 1.9cm, Black: 2.1cm	Blue: 1.7cm base diam. Black: 1.5cm base diam.	none	17 bright sky blue translucent 8 opaque black	All pieces very fragile, blue more damaged (weaker / brittle glass?) smoothed and well made, black have small dimple on top. Blue have tiny bubbles within glass. No markings	pieces found on top of the remains of iron and wooden board 14	Arbman, 1940 – 4 267-272, and MN
65		Birka, Sweden, grave 750	Viking age town, centre of trade and manufacture: double inhumation burial, male and female, pieces found with male	anthropomorphic: body is roughly square up to the neck where it becomes cylindrical, head is spherical	glass	4.1cm	2.2cm x 1.8cm	none	lime green translucent body, dark blue translucent hat, eyes, nose, mouth, and body decoration	Dark blue glass has been laid onto the body for facial features and hat. The body is decorated with a continuous stripe. The front of the body is further decorated with 2 horizontal grooves.	pieces found on top of the remains of iron and wooden board 14	Arbman, 1940 – 4 267-272, and MN
66		Birka, Sweden, grave 624	Viking age town, centre of trade and manufacture: inhumation burial - male	26 spherical with flat base	whalebone	range between: 1.6 - 2.0cm	range between 1.7 - 2.1cm base diam.	roughly centre in each, 0.4cm - shape of hole ranges between round, diamond, square.	yellow / brown	each piece is near identical in size and shape to the next, patchy areas indicate that these pieces were probably highly polished	assoc. with board 17	Arbman, 1940 – 4 267-272, and MN




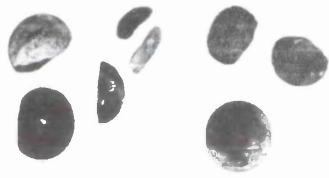
67		Birka, Sweden, grave 624	Viking age town, centre of trade and manufacture: inhumation burial - male	spherical with flat base and mounted hat	whalebone with gilt bronze hat	2.9cm	2.0cm base diam. Hat 1.9cm diam.	roughly centred, 0.4cm diam.	brown / gold	piece was probably highly polished, hat is decorated with interweaving arcs and is pointed with a flat top	assoc. with board 17	Arbman, 1940 - 4 205-207, and MN
68		Birka, Sweden, grave 886	Viking age town, centre of trade and manufacture: associated cemetery - inhumation burial - male	24 spherical pieces with flat bases: one of which is slightly more irregular with flat sides	bone: one piece dyed bone, irregular piece is elk horn	range between 1.5 - 1.8cm: black piece is 1.4cm: irregular 1.9cm	2.2 - 1.5cm base diam.: black is 2.0 x 1.9cm base diam. Elkhorn 1.6cm	roughly centred, range in shape, some circular, some rounded diamond: 0.5 - 0.6cm diam. 4 pieces have no hole.	light brown, one piece appears to have been dyed black with some sort of waxy dye or resin	patchy areas indicate pieces were once highly polished and smooth. Black stained piece is "expertly done for a purpose". Elkhorn piece not polished, cut marks visible - replacement piece?		Arbman, 1940 - 4 344-345, and MN
69		Birka, Sweden, grave 886	Viking age town, centre of trade and manufacture: associated cemetery - inhumation burial - male	1 spherical with flat base and remains of pin in top	bone / iron pin	1.9cm	2.3cm base diam.	0.4cm diam., rounded and central	light brown, pin is rusted	remains of polished surface and slightly discoloured area in circle around pin - remains of a hat piece similar to grave 624?		Arbman, 1940 - 4 344-345, and MN




70		Birka, Sweden, grave 20	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial - female?	35 hemispherical with flat bases (though pieces are fragmentary and there may actually have been 33 pieces)	cremated bone	one complete piece intact: 1.8cm	1.9cm base diam.	0.4cm diam. ellipse shaped hole, centred	burnt bone - black / grey / white	pieces have been badly damaged during cremation, one piece has remnants of iron - possible remains of pin in side of piece, or may simply have been placed next to corroding iron	2 dice also found in grave, though pieces now too fragmented to obtain any info.	Arbman, 1940 - 47-8, and MNA
71		Birka, Sweden, grave 52a	Viking age town, centre of trade and manufacture: associated cemetery - inhumation burial	4 pieces: 3 spherical pieces with flat base, one slightly more upright with rounded top, flat base and flat side	amber	3 range between: 1.8 - 2.0cm base diam. : other is 2.2cm	3 range between: 1.8 - 2.0cm base diam. : other is 2.2cm	none	dark orange / brown: light orange: red / orange: orange with cream banding	3 pieces have been well worked and polished, one of these is almost mushroom shaped as it tapers in slightly round the middle: the regular piece has cut marks visible, and is not so polished		Arbman, 1940 - 47-8, and MNA
72		Birka, Sweden, grave 1035	Viking age town, centre of trade and manufacture: associated cemetery - cremation?	hemispherical with flat base	bone	1.2cm	1.7 x 1.9cm base (roughly oval)	diamond shaped, 0.3 x 0.5cm	appears burnt	deep incisions on top of piece: one straight across the length of the top, the other perpendicular to the side (though this may be a result of the labelling tag being too tight)		Arbman, 1940 - 47-8, and MNA





73		Birka, Sweden, grave 1035	Viking age town, centre of trade and manufacture: associated cemetery - cremation?	almost cylindrical, widens towards top, tapers to a smaller flat base	glass	est. 2.2 - 2.3cm	base diam. 1.5cm	none	emerald green, translucent: with shatter marks - exposed to high temp. during cremation.	damaged on one side: fragment missing. Slightly scuffed exterior though was probably smooth.	Arbman, 1940 - 432-433, and MN
74		Birka, Sweden, grave 150	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial - male?	4 spherical with flat base	bone	pieces too damaged to measure	possible 2.3cm base diam.	square or circular, possibly centred	burnt bone	fragments of bone too badly damaged to obtain any further information	Arbman, 1940 - 64, and MNA
75		Birka, Sweden, grave 150	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial - male?	anthropomorphic fragment with square body and rounded head	bone	3.0cm	1.5cm x ?	slight partial hole on edge on fragments base - roughly circular	white	approximately half of this piece remains intact, smoothed and probably highly polished, no visible decorative markings	Arbman, 1940 - 64, and MNA
76		Birka, Sweden, grave 754	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial - male	9 spherical with flat base	bone	only 2 intact enough to measure: 1.7 - 2.1cm	1.3 - 2.5cm base diam.	0.4 rounded, and 0.7 x 0.5 ellipse shaped.	burnt bone	6 of the 9 pieces may have been deliberately dyed or stained using a wax or resin. Pieces were probably polished and smoothed	Arbman, 1940 - 274-275, and MN

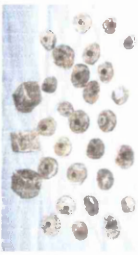
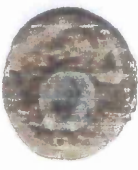
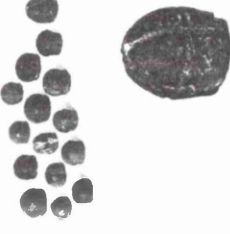

77		Birka, Sweden, grave 986	Viking age town, centre of trade and manufacture: associated cemetery - inhumation burial - male	4 cylindrical / conical with flat bases and tops, tapers towards top (16 pieces - others on loan from museum, 4 pictured)	elk horn	range between 1.3 - 1.7cm	2 intact range between 1.6 - 1.9cm base diam.	2 have no holes: one - circular hole in centre 0.3cm diam.; the other has a double hole 0.5cm total in length (two holes joined into one)	yellow / light brown	each piece is damaged and fragmented, some cut marks visible but no decorative markings. Of the 17 pieces, 13 have holes in the base.	Arbman, 1940 - 412-413, and MN
78		Birka, Sweden, grave 986	Viking age town, centre of trade and manufacture: associated cemetery - inhumation burial - male	1 anthropomorphic; rounded body with spherical head	elk horn	3.6cm	1.1 x 1.8cm	none	yellow / light brown	body is decorated with vertical incisions from neck down to base, neck has deep incision before head	Arbman, 1940 - 412-413, and MN
79		Birka, Sweden, grave 996	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial	6 (?) fragmented spherical with flat bases	bone	too badly fragmented and damaged to measure	too badly fragmented and damaged to measure	unknown	burnt bone	15 fragments of bone that make up 6 (possible more?) pieces, no markings visible as pieces too badly damaged	Arbman, 1940 - 419, and MNA

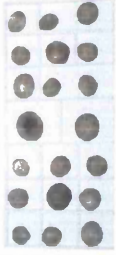



80		Birka, Sweden, grave 112	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial	badly damaged, cylindrical with flat base and rounded top	glass	2.0 - 2.1 cm estimated	unsure	none	opaque, black	piece is badly damaged, and chipped may have looked similar to pieces from Birka 1035 or 750	Arbman, 1940 - 41, 51-52, and MNV
81		Birka, Sweden, grave 112	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial	rounded droplet	bone	1.5 cm	2.2 cm base diam.	none	~	iron pin in side of piece, 0.7 cm in length, square shaped head 0.2 - 0.3 cm	Arbman, 1940 - 41, 51-52, and MNV
82		Birka, Sweden, grave 112	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial	rounded cylindrical body with 3 - 4 deep bands around top	bone	2.2 cm	1.0 cm base diam.	damaged hole in base, hole in side that stretches internally and has worn patch below, may have had string attached?	white / burnt	elaborate decoration on side of piece with lines, arcs and dots - may have been practice piece? Possibly more practical object like a toggle	Arbman, 1940 - 41, 51-52, and MNV
83		Birka, Sweden, grave 112	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial	3 possible spherical and box of fragments and chips that may make up	glass	too fragmentary and fragile to measure	too fragmentary and fragile to measure	unknown	flecks of dark blue, aqua blue, and purple	chips or fragments of similar pieces to Birka 644?	Arbman, 1940 - 41, 51-52, and MNV





84		Birka, Sweden, grave 8	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial	3 spherical with flat bases	bone	too fragmentary and fragile to measure	too fragmentary and fragile to measure	unknown	burnt bone	possible dice also found	found with dice 3	Arbman, 1940 - 43, and MNA
85		Birka, Sweden, grave 75	Viking age town, centre of trade and manufacture: associated cemetery	2 spherical, possible flat bases	bone	too fragmentary and fragile to measure	too fragmentary and fragile to measure	unknown	one piece natural upon cremation, one may have been stained or dyed black with a wax or resin before cremation	16 fragments of bone representing at least 2 pieces		Arbman, 1940 - 43-31, and MNA
86		Birka, Sweden, grave 860a	Viking age town, centre of trade and manufacture: associated cemetery - female burial	cylindrical with rounded edges	amber	1.7cm	2.0cm	none	deep red	slightly damaged and rough all over, though was probably smooth. No decorative markings		Arbman, 1940 - 4335-337, and MNA
87		Birka, Sweden, grave 1142a	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial	At least 6 spherical with flat bases	bone	natural: 1.6 - 2.1cm; black (2 intact) 1.9cm	natural: 2.0 - 2.6cm base diam.; black: 2.1 and 2.9cm base diam.	natural: 0.5 and 0.7cm diam.; black: 0.4cm diam.	4 dyed black, 2 natural	the stained black pieces have shiny patches that suggest that they had a polished lustre.		Arbman, 1940 - 4471, and MNA





88		Birka, Sweden, grave 917	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial	8 hemi/spherical with damaged but flat bases	bone	range between 0.7 - 1.1cm	range between 1.5 - 2.1 base diam.	none	burnt bone	pieces appear to be largely un-worked and cut from the rounded parts of the ends of animal bones, each has small dimple on top which is probably natural to the part of bone	Arbman, 1940 - 4357-358, and MNA
89		Birka, Sweden, grave 324	Viking age town, centre of trade and manufacture: associated cemetery - cremation burial	fragmented rounded top, flat base	equine tooth	2.0cm	piece damaged, approx. 2.2cm diam.	unknown	yellow /brown	piece is damaged and in 4 fragments, worked and highly polished horses tooth.	Arbman, 1940 - 492-93, and MNA
90		Birka, Sweden, grave 80a	Viking age town, centre of trade and manufacture: associated cemetery - inhumation burial	rounded with flat base and top	bone	1.2cm	1.4cm base diam.	right through piece - 0.4cm diam.	white - may have been pigmented?	possible gaming piece, though hole through middle suggests it could also be a bead	Arbman, 1940 - 433, and MNA

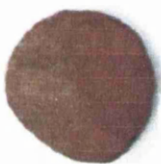



91		Birka, Sweden, grave 644	Viking age town, centre of trade and manufacture: associated cemetery - male	20 spherical pieces with flat bases and slightly wider towards the top	glass	2.3 - 2.4cm	approx. 1.6 - 1.8cm	none	light sea green glass with violet spirals	violet coloured spirals moulded around each piece inc. the king pieces	found with dice 4	Arbman, 1940 - 43, 221-226, and MNA
92		Birka, Sweden, grave 644	Viking age town, centre of trade and manufacture: associated cemetery - male	2 anthropomorphic with rounded bodies and spherical heads	glass	both 4.6cm	approx. 1.6 - 1.8cm	none	light sea green glass with violet spirals	violet coloured spirals moulded around each piece inc. the king pieces. Head damaged, so unclear if violet used to pick out facial features.	found with dice 4	Arbman, 1940 - 43, 221-226, and MNA
93		Birka, Sweden, grave 523	Viking age town, centre of trade and manufacture: associated cemetery - female burial	18 spherical with flat bases, the 5 black have small dimples on the top	glass	2.3 - 2.5cm	2.2 - 2.3cm	none	13 turquoise blue with dark blue glass striping: 5 opaque black pieces	decoration has been laid in by making a shallow groove around the exterior of the pieces, and then molten glass has been carefully poured or wound around		Arbman, 1940 - 43, 157-160, and MNA
94		Birka, Sweden, grave 523	Viking age town, centre of trade and manufacture: associated cemetery - female burial	anthropomorphic	glass	4.5cm	2.15cm	none	turquoise blue with dark blue decorative stripe and facial features	decorative stripe is one continuous band wrapped around the body up to the neck. The head is damaged, but the nose and eyes and the remains of a hat are still visible.		Arbman, 1940 - 43, 157-160, and MNA





95		Birka, Sweden, grave 581	Viking age town, centre of trade and manufacture: associated cemetery - male	26 droplet shaped piece with flat bases	bone	1.6 - 1.7cm	2.0 - 2.2cm	0.5cm diam., centred	light brown/ yellow	only 3 pieces were intact enough to be measured.	found with dice 5, and iron mounts that may belong to a board 18	Arbman, 1940 - 43, 188-190, and MNA
96		Birka, Sweden, grave 581	Viking age town, centre of trade and manufacture: associated cemetery - inhumation burial - male	droplet shaped with metal pin in top	bone / iron	1.3cm	2.0cm	nail in top - 0.6cm diam., hole in base 0.8cm diam.	light yellow/ brown, iron nail corroded	condition of pieces poor and degraded, may not be complete set	found with dice 5, and iron mounts that may belong to a board 18	Arbman, 1940 - 43, 188-190, and MNA
97		Birka, Sweden, grave 524	Viking age town, centre of trade and manufacture: associated cemetery - inhumation burial - male	15 spherical, tapering towards base	amber	pieces 1.7 - 2.4cm, king 2.9cm	pieces 2.0 - 2.3cm, king 2.7cm	none	3 red, the rest yellow/ orange	king piece is marked with cross grooves over top and around the middle.		Arbman, 1940 - 43, 160-161, and MNA
98		Birka, Sweden, grave 710	Viking age town, centre of trade and manufacture: associated cemetery - inhumation burial	8 spherical, tapering towards the base, flat bases	glass	approx. 1.8 - 2.9cm	2.1 - 2.4cm	none	dark green with black appearance, white detail	pieces decorated with a spiral of white glass moulded into each piece.		Arbman, 1940 - 43, 244-246, and MNA





99		Vendel, N. Uppland, Sweden	Boat grave cemetery - Vendel IX - male	20 hemispherical or dome shaped with flat bases, inc. king (see below)	whalebone	too fragile to measure, approx. 0.9 - 1.3cm	too fragile to measure accurately, approx. 0.7 - 2.1	hole in base of each, though not strictly centred, some are diamond shaped, some rounded.	light brown	no decorative markings, though were probably smoothed and highly polished.	Stolpe & Arne, 1927, 34-38, and MNA
100		Vendel, N. Uppland, Sweden	Boat grave cemetery - Vendel IX - male	dome / spherical with flat base and pin in top	whalebone / iron	too fragile to measure accurately, approx. 1.4cm	too fragile to measure accurately, approx. 2.2cm	hole in base, though not centred.	light brown / rusted pin	iron pin in top of piece, heavily corroded, no other decorative markings.	Stolpe & Arne, 1927, 34-38, and MNA
101		Långtora, Uppland, Sweden	Viking age warrior burial with horse - male	13 spherical with flat bases	dark blue glass	one intact: 1.6cm; striped piece: 2.2cm	2.1cm base diam. Striped: 1.7cm base diam.	none	translucent light blue, one is light blue with continuous dark blue stripe decoration wrapped around	all of the pieces are badly damaged and fragmented, and only one of the plain blue pieces remains intact, along with the near intact striped piece	Arbman, 1936, 89 98, and MNA
102		Långtora, Uppland, Sweden	Viking age warrior burial with horse - male	6 spherical ball shaped with flat bases	emerald green glass	all damaged, min. 1.8cm	min. 1.3cm	none	translucent emerald green (very dark), one might even be brown	each piece is badly damaged and chipped, appear opaque but are translucent on closer inspection	Arbman, 1936, 89 98, and MNA





103		Långtota, Uppland, Sweden	Viking age warrior burial with horse - male	4 rounded spherical with flat bases	bone	range between 1.9 - 2.5cm	range between 2.3 - 2.6cm	3 circular, 0.3 - 0.3cm diam. One has a hole shaped like a circle with a cut through it, 0.3cm diam. circle.	3 natural, one may have been stained or dyed black / brown - dye is not on base, just on upper surface	each piece has been highly polished. One piece has been stained black, and another has a green tinted patch, possibly laid next to copper?	Arbman, 1936, 898, and MNA
104		Långtota, Uppland, Sweden	Viking age warrior burial with horse - male	roughly cylindrical, tapering towards base, rounded top	jet / obsidian	1.9cm	1.5cm base diam.	none	black opaque	no decorative markings	Arbman, 1936, 898, and MNA
105		Långtota, Uppland, Sweden	Viking age warrior burial with horse - male	hemispherical, slightly dome shaped	steatite	2.0cm	2.5cm base diam.	none	grey / pink	slight damage to side, no decorative markings	Arbman, 1936, 898, and MNA
106		Långtota, Uppland, Sweden	Viking age warrior burial with horse - male	anthropomorphic	blue glass	3.8cm	1.8 base, 2.2cm at widest point	none	light blue, with dark blue spiral	spiral of dark blue glass moulded around piece, spherical head and rounded body, flat cylindrical neck coloured dark blue.	Arbman, 1936, 898, and MNA





107		Hvítárholt, Iceland	Viking Age settlement, house 8	onion shaped with flat top and flat base	sandstone	1.9cm	2.7cm at widest point, irregular circle shaped base - 2.0 x 2.4cm diam.	circular, 0.2cm in diam.	yellow	polished and smoothed, no decorative markings		Magnússon, 1973 19, and FSI
108	 A: 14913	Hrossatungur, Þjórásádalur, Iceland	Viking age farmstead	onion shaped with flat base	red sandstone	1.6cm	1.6cm base diam. ; 2.0cm diam. at widest point	0.5x0.6cm diam., tapers towards top, est. 0.4cm depth	brick red	worked but worn piece, may have been smoothed and polished but has eroded slightly and has uneven patina surface.		Gísladóttir, G. A 2004, and FSI
109	 1966.44:00	Hrossatungur, Þjórásádalur, Iceland	Viking age farmstead	roughly dome shaped with rounded apex	stone	2.65cm	~	0.39cm diam. roughly central	ivory / cream	well worked but unpolished		Gísladóttir, G. A 2004, and FSI
110	 13807	Skallakot, Þjórásádalur, Iceland	Viking age farmstead/ longhouse	dome shaped with flat base	light coloured sandstone	2.8cm	3.0cm	none	cream/ white	surface is smoothed, but full of holes (natural)		Gísladóttir, G. A 2004, and FSI





111	 13808	Skallakot, Djórsádalur, Iceland	Viking age farmstead/ longhouse	conical with flat base and flat apex	red sandstone	2.3cm	2.4cm diam.	none	red	surface is slightly worn but unpolished, tool marks visible	Gísladóttir, G. A. 2004, and FSI
112	 13809	Skallakot, Djórsádalur, Iceland	Viking age farmstead/ longhouse	conical with slightly rounded apex	red sandstone	1.8cm	1.6cm	none	red	slightly worn but unpolished, no decorative markings	Gísladóttir, G. A. 2004, and FSI
113	 13810	Skallakot, Djórsádalur, Iceland	Viking age farmstead/ longhouse	spherical with a slight dome shape and flat base	stone - residues of obsidian, conglomerate	2.4cm	2.4cm	none	grey/ black	smoothed and polished but no decorative markings	Gísladóttir, G. A. 2004, and FSI
114	 13811	Skallakot, Djórsádalur, Iceland	Viking age farmstead/ longhouse	spherical with flat base, slightly dome shaped	light sandstone	2.3cm	2.3cm	none	yellow	base is soft and well worn, piece is smoothed, no decorative markings	Gísladóttir, G. A. 2004, and FSI






115		Skallakot, Djórsádalur, Iceland	Viking age farmstead/ longhouse	conical with roughly flat apex	sandstone	1.8cm	1.8cm	0.2cm diam., central	ivory/ white	piece is soft and well worn, tool marks visible though smoothed. No decorative markings	Gísladóttir, G. A 2004, and FSI
116		Skeljastaðir, Djórsádalur, Iceland	Viking age farmstead	irregular onion shaped with conical point and flat base	red sandstone	1.6cm	1.9cm base diam., 2.0cm widest point diam.	none	brick red	well worked and polished, though tool marks are still visible	Gísladóttir, G. A 2004, and FSI
117		Steinbogi, Mývatn, Iceland	Viking Age longhouse/ farmstead, piece found in assoc. midden	pawn shaped	fishbone; haddock cleithrum	3.2cm	oval base: 1.1x1.5cm; 1.8cm width at widest point	none	yellow/ brown	piece is well worked though not smoothed, no other decorative markings	Brewington et al 2004, 2-4, and FSI
118		Sveigakot, Mývatn, Iceland	Viking Age farmstead / settlement. 2001 excavations	irregular spherical/ rounded shape	sandstone?	2.2cm	irregular oval 2.4 x 1.5cm base diam.: 2.8 x 1.7cm width	none	grey/ brown	carved and smoothed. Incised picture on side of piece: 6 lines in parallel pairs making a three leg design	Vésteinsson, ed. 2002, 24, and FSI






119	 SVK01-01	Sveigakot, Mývatn, Iceland	Viking Age farmstead / settlement. 2001 excavations	onion shaped with flat base and flat top	sandstone	2.0cm	1.9 x 2.0 base diam., 2.2 x 2.4cm width	conical shaped, 0.2cm diam. Off centre and irregular shaped	yellow / grey	worked piece with carving marks visible, no decorative markings	Vesteinsson, ed 2002, 24, and FSI
120	 SVK03-12	Sveigakot, Mývatn, Iceland	Viking Age farmstead / settlement. 2003 excavations	irregular hemispherical with flat base	red sandstone	2.3cm	3.8 x 3.7 base diam., 4.1cm width	none	red	Base has been worked and smoothed. Curve marks still visible, piece smoothed on one side	Vesteinsson, ed 2003, 1-9, 39, and FSI
121	 SVK03-52	Sveigakot, Mývatn, Iceland	Viking Age farmstead / settlement. 2003 excavations	cylindrical / drum shaped	steatite	2.0cm	2.0 x 2.4cm base diam.; width 2.5 x 2.7cm; top 1.5cm x 1.8cm	none	grey	worked soapstone, made from steatite vessel?	Vesteinsson, ed 2003, 1-9, 39, and FSI
122	 SVK03-44	Sveigakot, Mývatn, Iceland	Viking Age farmstead / settlement. 2003 excavations - found placed at base of group of stake holes	slightly tilted rounded conical - like a gnomes hat	sandstone	1.9cm	1.7 x 1.8 cm base diam. roughly circular	none	red	well worked and smoothed piece, may have been modified natural shape	Vesteinsson, ed 2003, 1-9, 39, and FSI






123	 SVK03-11	Sveigakot, Myvatn, Iceland	Viking Age farmstead / settlement. 2003 excavations	tear drop shaped with flat base	fishbone; haddock cleithrum	2.8cm	irregular circle 1.3 x 1.4 cm base diam.; width 1.9 x 2.2cm	none	yellow/ ivory	angular tear dropped shape with visible cut marks, pointed at top with flat base. Very dense material.		Vesteinsson, ed. 2003, 1-9, 39, and FSI
124	 SVK04-102	Sveigakot, Myvatn, Iceland	Viking Age farmstead / settlement. 2004 excavations	onion shaped with flat base and flat top	whale bone	1.8cm	2.0cm base diam.; width 2.3cm diam.	off centre, circular, 0.5cm diam.	yellow/ ivory	two cut marks on top of piece, less than 1mm deep		Vesteinsson, ed. 2004, and FSI
125	 A: 5968	Brinnes, Iceland	Viking age male boat burial	19 droplet shaped with rounded tops	whalebone	1.2cm (damaged) - 2.8cm	1.6cm (est.) - 2.5cm	holes off centre, in at least 7 pieces, conical, circular and irregular pointed shape	yellow/ brown	At least 7 of the pieces has a hole in the base, another 7 have no hole but deep crosshatch incisions, 1 piece has neither hole nor incisions.		Eldjam & Fridriksson, 2000 163-171, and NMI
126	 1985: 118: P55	Papey, Iceland	Viking age longhouse	onion shaped with flat top	stone	2.4cm	2.4 x 2.5cm base diam.	roughly circular, 0.5cm diam.	brown	piece is carved and smoothed, no decorative markings		Baldvinsdóttir, et 1990, 145-151, and NMI





127	 A: 10112	Smíðjuskógar, Iceland	Viking age farmstead	cylindrical / drum shaped with flat base and dimple on uneven flat top	steatite	1.3 - 1.6cm	irregular oval: 2.1 - 2.3cm base diam.	double hole (2 conjoined) 0.7cm x 0.6cm across double hole	dark grey / black on top	piece may have been burnt before deposition.	Eldjarn, 1949:549, and NMI
128	 A: 2739	Grimsstadir, Iceland	Viking age house	onion shaped, tapers to a point	walrus tooth/ ivory	1.8cm	irregular oval: 2.5 x 2.7cm base diam.	off centre, 0.4-0.5cm diam.	light yellow/ ivory	piece have been smoothed and highly polished, in poor condition now. No decorative markings	NMI
129	 A: 1	Baldursheimur, Skútvatnshreppur, Iceland	Viking age male pagan burial	24 onion shaped pieces, one die, one anthropological piece.	cattle-bone	~	~	roughly central	white/ ivory/ light brown	pieces have been smoothed and were probably one polished, too fragile to handle and measure	Fitzhugh, & Warren (eds) 2000, 182:183, and NMI
130	 A: 1	Baldursheimur, Skútvatnshreppur, Iceland	Viking age male pagan burial	anthropomorphic king piece	whalebone	~	~	none	light brown	carved figure of a man seated cross legged, gripping onto beard/ fork implement. May represent the heathen god Thor. Unclear whether this piece was found actually with gaming pieces in the burial	Fitzhugh, & Warren (eds) 2000, 182:183, and NMI

131	 c. 993	Prestegården, Asker, Akerhus, Norway	Viking age burial - male	4 spherical with flat bases	bone	1.8 - 2.2cm	2.6 - 2.9cm diam.	roughly central in the base of each piece	light brown	smoothed and polished, but no decorative markings	Kristensen, 2001, preparation, and HM
132	 c. 843	Oslo, Norway	Viking age burial	11 hemispherical with flat bases	bone	1.5 - 2.0cm	2.8 - 3.1cm	roughly central in the base of each piece, circular shaped holes	light brown	smoothed and polished but no decorative markings	Kristensen, 2001, preparation.
133	 c. 799	Ostby N., Østfold, Rakkestad, Norway	Viking age burial	7 spherical shaped pieces with flat bases	bone	1.3 - 2.1cm	2.1 - 2.5cm	roughly central, round holes in each	light brown	smoothed and polished but no decorative markings	Kristensen, 2001, preparation.
134	no image available c. 27269	Osthassel, Farsund, Vest Agder, Norway	Viking age burial	3 spherical pieces with flat bases	bone	1.0 - 2.4cm	1.5 - 1.7cm	unclear	~	probably smoothed and polished	Kristensen, 2001, preparation.
135	 c. 22841	Skari, Oppland, Gran, Norway	Viking age burial	4 hemispherical with flat bases (?)	bone	est. 1.0 - 2.2	est. 1.1cm	roughly central in each	white/ brown	pieces fragmentary so exact sizes unknown, smoothed, prob. Polished	Kristensen, 2001, preparation.

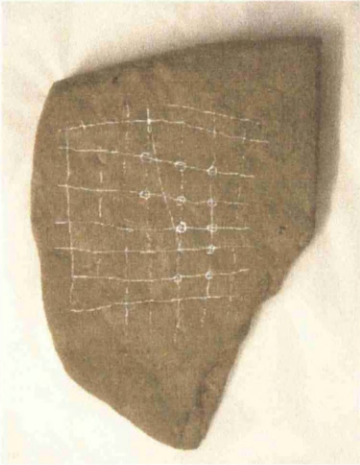
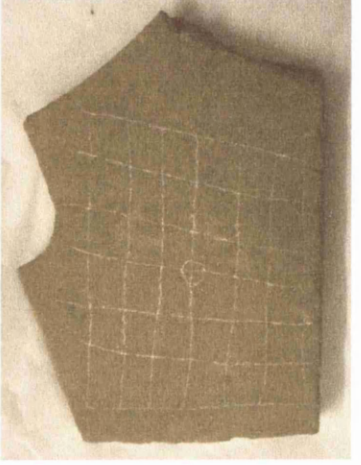
136	 c.30061	Vidarshov, Vang, Hedmark, Norway	Viking age burial	at least 3 spherical with flat bases	bone	2.1cm	1.3 - 1.4cm	roughly central, conical shape hole in each	light/ dark brown	pieces well worn, unclear if polished	Kristensen, 2001, preparation.
137	 c.35251	Grevegg, Trogstad, Østfold, Norway	Viking age burial - female	one conical shaped with flat base and flat apex, one irregular spherical with flat base	amber and sandstone	1.6cm and approx 1.5cm	1.7 x 2.0cm and approx 1.8cm	none	amber; deep orange; stone; yellow/ brown	stone piece appears to be a natural pebble that has been flattened on one edge. Amber piece is heavily worked - tool marks visible	Kristensen, 2001, preparation, and HM
138	 c.22762	Gile, Østre Toten, Oppland, Norway	Viking age cremation burial - female	10 spherical (?) with flat bases	bone	1.7cm (most intact piece)	3.0cm	possibly in each, roughly central	burnt	pieces badly damaged by fire, probably smoothed and polished when deposited	Kristensen, 2001, preparation.
139	 c.7200	Ustad, Hurum, Buskerud, Norway	Viking age burial - male	15 spherical pieces with flat bases	bone	2.3 - 2.5cm	2.0 - 2.7cm	slightly off centre, some central, hole in each	light brown	pieces were probably smoothed and polished, bases polished too	Kristensen, 2001, preparation, and HM
140	 c.548	Blaker, Sorum, Akerhus, Norway	Viking age burial	5 spherical pieces with flat bases	bone	1.3 - 1.9cm	2.2 - 2.4cm	large worn holes roughly central, conical shaped and deep	light grey/ brown	pieces were probably smoothed and polished	Kristensen, 2001, preparation.

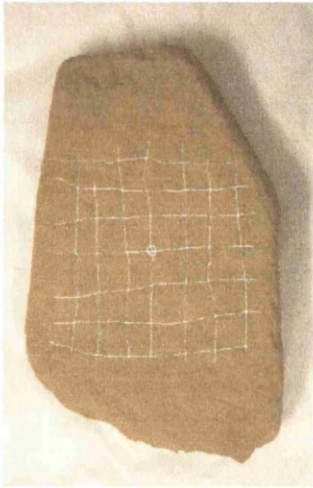
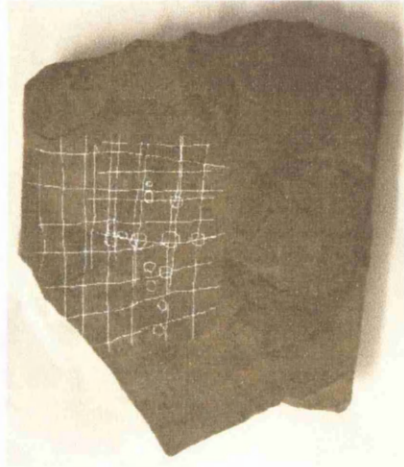
141	 c.2793	Gran, Oppland, Norway	Viking age burial	2 spherical pieces with flat bases	bone	2.0 and 2.4cm	3.3 and 3.6cm	central hole in centre of base, approx 0.4cm diam.	light brown	pieces in extremely good condition, highly polished, bases smoothed		Kristensen, 2001, i preparation.
142	 c.4041	Gjulem nordre, Rakkestad, Østfold, Norway	Viking age burial	damaged hemispherical with flat base	clay/pottery	1.3cm	2.9cm	none	yellow/cream	polished and smoothed		Kristensen, 2001, i preparation, and HM
143	 c.2704	Skogsjord vest, Mandal, Vest Agder, Norway	Viking age cremation burial - male	15 hemispherical pieces	bone	0.6cm (most intact piece)	1.7 - 1.9cm diam. (most intact piece)	unclear	burnt	pieces were probably smoothed and polished, one piece has a square heaped		Kristensen, 2001, i preparation.
144	 c.3875	Alm, Østre, Stange, Hedmark, Norway	Viking age burial	2 droplet shaped with flat bases and flattened apex	bone	2.0 and 1.7cm	2.1 and 2.3cm diam.	unclear	light brown and dark brown, perhaps stained or coloured	both pieces are highly polished, concentric ring incisions suggest they were manufactured on a lathe		Kristensen, 2001, i preparation, and HM
145	 c.9717	Berg, Løten, Hedmark, Norway	Viking age burial	spherical with slightly narrowing top and flat base	bone	2.1cm	3.2cm	double hole, one central, the other conjoined and off centre, conical shaped	light brown	piece was probably highly polished upon deposition. Base is smoothed		Kristensen, 2001, i preparation.

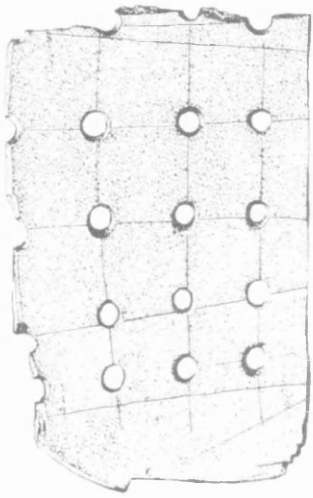
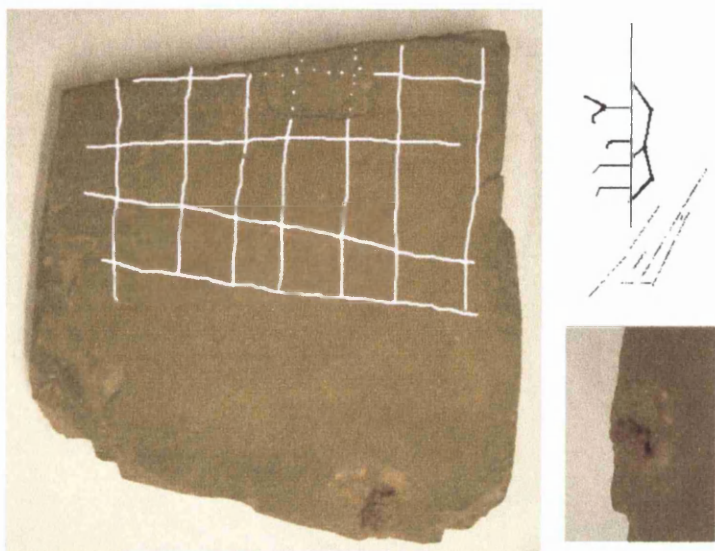
146	 c. 17819	Bjerke, Larvik, Vestfold, Norway	Viking age burial	irregular spherical with flattened base	clay	2.2cm	2.7cm	none, though base is slightly concave	cream/ dark patches	piece is made from a soft material and is well worn	Kristensen, 2001, preparation.
147	 c. 7701	Burum, Råde, Østfold, Norway	Viking age burial	damaged hemispherical with flat base	bone	2.0cm	2.2cm	unclear	light brown, possible burnt	piece was probably highly polished	Kristensen, 2001, preparation.
148	 c. 9679	Løten, Hedmark, Norway	Viking age burial	3 spherical (?) with flat bases	bone	1.2 - 1.6cm	2.4 - 2.6cm	unclear	light brown, one slightly darker, and one almost black	pieces highly polished, one has been stained or dyed, similar to Birka 886	Kristensen, 2001, preparation.
149	 c. 9569	Løten, Hedmark, Norway	Viking age cremation burial	6 droplet shaped with flat bases and flattened apices	bone	1.3 - 2.2cm	2.3cm (most intact)	unclear	burnt	concentric incisions on pieces suggest they have been made using a lathe, may have been polished too	Kristensen, 2001, preparation.
150	 c. 8659	Holbo, Vågå, Oppland, Norway	Viking age cremation burial - male	14 extremely regular spherical pieces with flat bases	bone	2.0 - 2.6cm	2.2 - 2.8cm	at least 8 pieces have a central conical shaped hole, approx. 0.5cm diam.	light brown/ beige	pieces are very smooth and well worked, may have been polished. Concentric incisions suggest that they may have been made on a lathe	Kristensen, 2001, preparation.

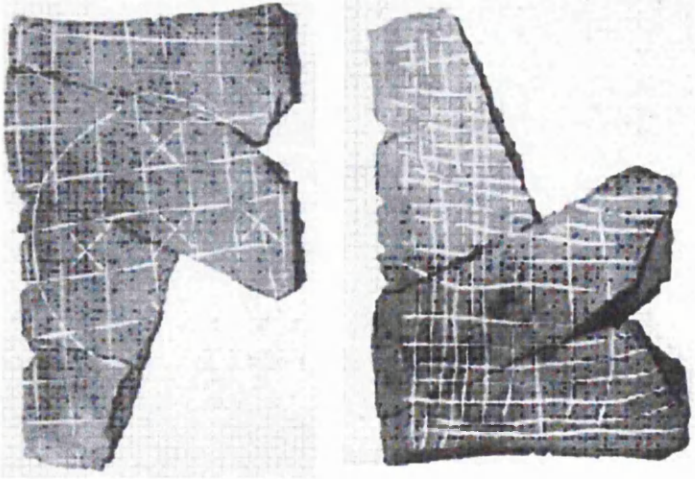
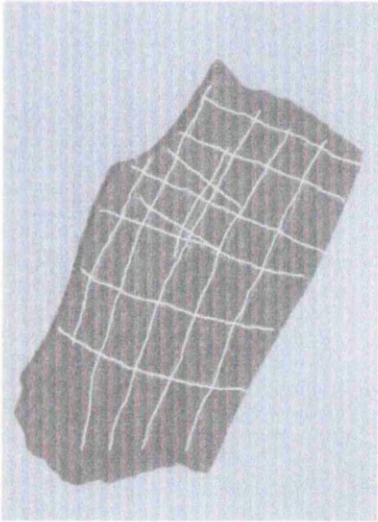
151	 c. 15923	Opstad, Tune, Østfold, Norway	Viking age burial	4 spherical pieces with flat bases	bone	1.9 - 2.2cm	3.1 - 3.4cm	at least 2 of the pieces have a roughly central conical shaped hole, approx. 0.4cm diam.	light brown/ beige	pieces were probably smoothed and highly polished	Kristensen, 2001, preparation.
152	 c. 18352	Mellem Ror, Rygge, Østfold, Norway	Viking age cremation burial	5 spherical (?) with flat bases	bone	1.8 - 2.1cm	2.4cm	roughly central, conical shaped	burnt	pieces have been badly damaged during cremation, may have been polished	Kristensen, 2001, preparation.
153	 c. 17819	Larvik, Vestfold, Norway	Viking age burial - male	12 hemispherical with flat bases	amber	~	3.1 - 3.7cm diam.	none	deep orange / red	pieces well worked but unsmoothed, tool marks visible	Kristensen, 2001, preparation, and HM
154	 c. 17819	Gokstad ship burial, Oslo Fjord, Norway	Viking Age ship burial, probably of a male king or chief	1 rounded piece with slightly pointed apex	bone	1.9cm	2.0cm	in centre of base, 0.4cm diam.	dark brown, possible treated with a wax or resin	piece is extremely well polished and regular, two incised bands circumnavigate the piece just above the base. The base is also smoothed and polished.	Nicolaysen, 188 46, and VSM assoc. with board 19

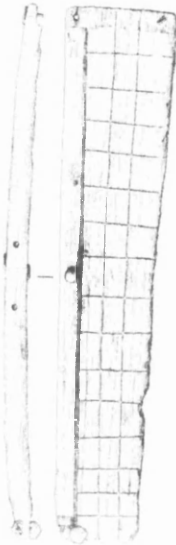
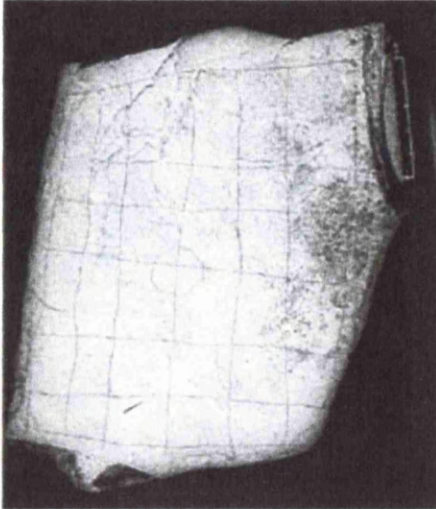
Gaming Boards

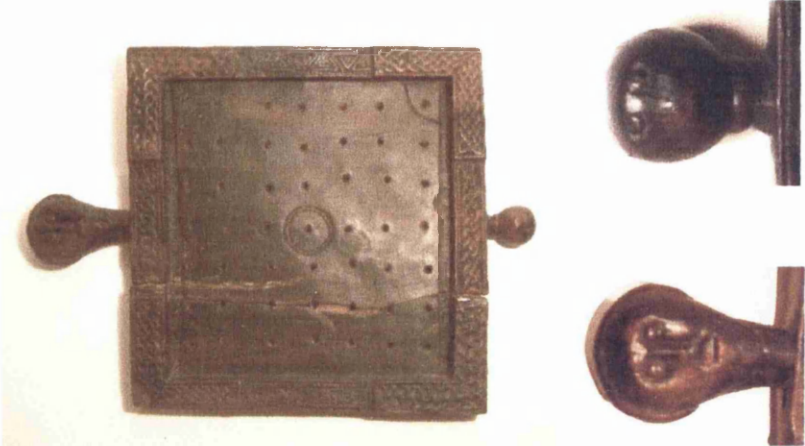
No.	PICTURE	ORIGIN	CONTEXT	MATERIAL	DIMENSIONS (cm)	GAMING SURFACE	DECORATION	ASSOC.	REFERENCES
1		Howe, Orkney, Scotland	found in rubble, at possible settlement	stone	width 14.6, length 19.0, thickness 1.8.	incised grid of 7 vertical and 7 horizontal lines (making 36 cells). At least 11 intersections are circled	the reverse of this board is also incised with crossing lines, making diamond shaped cells, though no clear gaming surface. Otherwise undecorated	may be assoc. with pieces 3, 4, & 5	Ballin-Smith, (ed) 1994, 188-189 and THM
2		Buckquoy, Orkney, Scotland	Norse farmstead: midden	flagstone	23.5 x 17.5, 2.2cm thick.	incised grid of 7 vertical and 7 horizontal lines (making 36 cells). The central intersection is circled.	no other markings on stone: reverse is also unmarked		THM

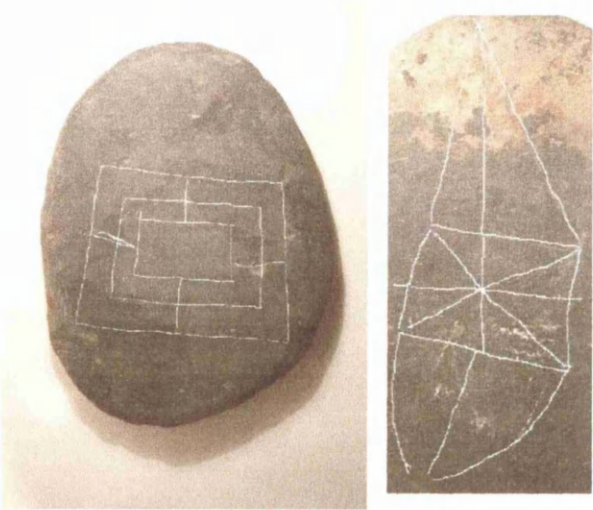
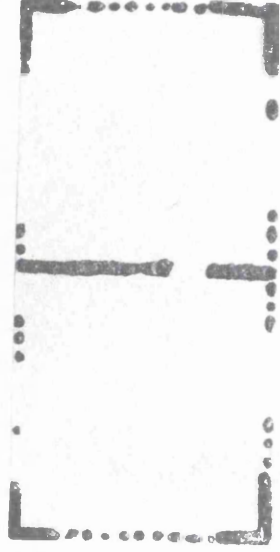
3		Buckquoy, Orkney, Scotland	Norse farmstead: unstratified find	sandstone	25.3 x 17.2cm, 2.4 2.8cm thick	incised grid of 7 vertical and 7 horizontal lines. Central intersection is circled	no other markings on stone: reverse is also unmarked		THM
4		Buckquoy, Orkney, Scotland	Norse farmstead: unstratified find	flagstone	19 x 17cm, 2.2cm thick	incised grid of 7 vertical and 7 horizontal lines, with additional lines incised over. Centre intersection circled.	The garning surface is overdrawn with another small grid of vertical and horizontal lines, with ringed intersections and circles.		THM

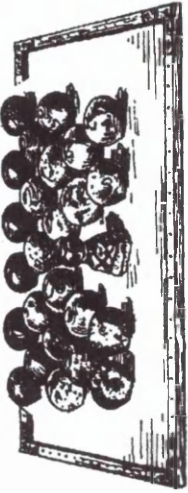
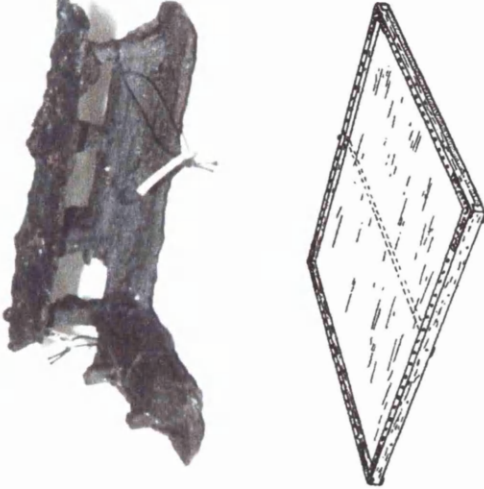
5		Brough of Birsay, Orkney, Scotland	found within the remains of a building next to the church	whalebone	6.2 x 9.2cm, approx 0.3 - 0.5cm thick	uncomplete board of 5 verticle rows intersected by 4 horizontal rows, with irregular sized carved holes at the intersections	gaming board is worked an smoothed on the upper surface only, no decorative markings. Unclear how large the piece may have been originally	found on same site as gaming piece 1	Curle, 1982, 89-1 and THM
6		Red Craig, Orkney, Scotland	Norse homestead	naturally flat, smooth red sandstone; a fragment of corroded iron is attached to the top edge of the upper surface	12.0 - 17.8cm x 15.6 - 18.0cm, approx. 1.2cm thick	the gaming surface scratched into the stone - 4 vertical lines by 7 horizontal (24 cells visible), if gaming surface were symmetrical, this board would represent almost half of the original board. A fragment of corroded iron (left, under main picture) to the left of the board may have formed some sort of handle, though it seems more likely that board was laid next to iron on deposition.	a small incised picture just to the left of the gaming surface (right, under main picture), unclear as to what it is meant to represent, could be a boat (Colleen Batey, per comm.) or an animal or beast (Anne Brundie per comm.) or could simply be an idle doodle or scribbling made while the game was in play		Morris, 1989, 21 221, and THM

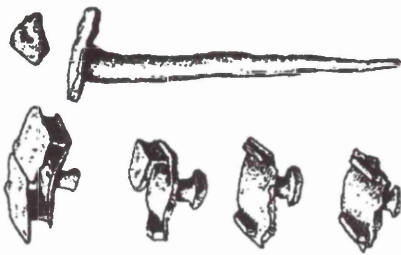

7		Jarlshof, Shetland, Scotland	Viking age farmstead; found in a peatash midden	slate	approx. 12.7cm x 8.3cm	double sided board - 9 vertical lines x 7 (?) horizontal lines, making 48 cells. 5 cells are marked with a cross, and circled with a large incised ring. On the reverse of the board there are approx. 20 vertical lines and 10 horizontal, making 200 cells, though the lines are very crudely drawn, and the cells are extremely uneven.	No decorative markings as such, though board is heavily marked with incisions.	May be associated with playing piece 9 and die 1	Hamilton, 1956, 145
8		Jarlshof, Shetland, Scotland	Viking age farmstead; found in a lower slope peat ash midden	slate	approx. 19.2cm x 10.8cm	crude grid of 6 vertical lines intersected by 5 horizontal lines, with other scratches or lines over the top. Piece shows 9 cells, though board is broken.	no decorative markings, reverse is unworked.	May be associated with playing piece 9 and die 1	Hamilton, 1956, 145, and NMS



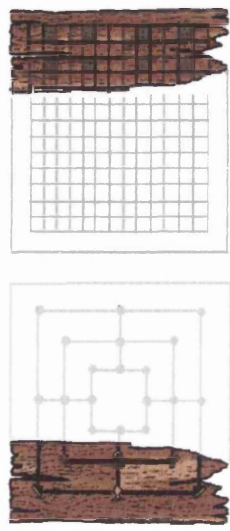
9		York, England	Viking age town and trading centre; found in dump or backfill	wood: oak	10.9cm x 48.1cm	15 x 15(?) cells	composite board, probably originally made of separate planks of wood, held together with wooden edging, riveted and glued with some sort of resin	May be associated with chalk pieces 28	Morris, 2000, 235-2351.
10		Downpatrick, County Down, Ireland	midden associated with 12th Century benedictine monastery	stone	18.0 x 22.0 x 2.5cm	side a. measures 16.0 x 13.0cm, 7 x 7 lines, (36 irregular cells); side b. - reverse (not shown) 11.3cm x 11.0cm, 8 x 8 lines (49 irregular cells)	The central crossing point on side a (pictured) is demarcated with an irregular circle, on the reverse side, the central cell is marked with a cross. No other decorative markings, but stone is smoothed - though possibly naturally.		Hall, 2001, 1-5

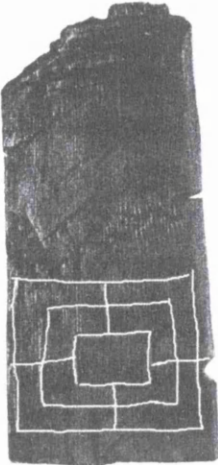
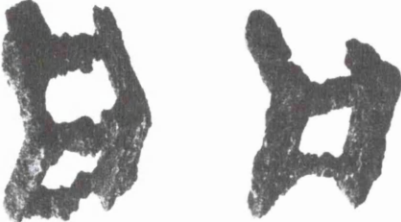
11		<p>Ballinderry, Crannog No. 1, Co. Westmeath, Ireland.</p>	<p>found beneath flooring of a timber house</p>	<p>wood: yew</p>	<p>24.0 x 23.5cm, and 2.0cm – 2.4cm thick. Raised outer frame is 0.8cm – 1.1cm above the gaming surface, and is 1.8 – 2.4cm in width; the four corners of the frame are raised further – approx. 0.3 – 0.5 cm above the four central pieces of the frame.</p>	<p>18cm by 19.6cm; 49 small holes picked or bored right the way through the board. Arranged in a 7 by 7 grid, each hole is 0.4cm – 0.5cm. The central hole is circled by two concentric incised rings, of 2.7cm and 2.9cm diameters. The central hole is slightly off centre within the rings. The four corner holes are enclosed with a single incised quarter – circle arcs</p>	<p>The corner pieces are carved with an interlaced design; side panels have a triangular style pattern with a dotted border, and the top and bottom panel have another interlaced pattern enclosed by a tight border of carved beads. The board is symmetrical along an axis running through the handles. The top handle depicts a human face; the lower handle appears depict and animals head, possibly a cat. Reverse is polished but undecorated.</p>		INM
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12		Fishamble Street, Dublin, Ireland	Viking age town, centre of trade and manufacture	naturally round, flat and smooth stone	31.4 x 26.2, 3.2cm thick	double sided board -13cm by 18cm grid, 8 vertical lines and 8 horizontal lines forming a 9 mens morris style table; unclear is reverse side is another gaming board; incised is an irregular square with triangles on two sides dissected by a central incised line. The central square has two overlying crosses dividing it, making 8 small triangular cells, with 4 larger cells to the left and right	no decorative markings	other gaming pieces found on same site, though may not be linked; pieces 15, 16 and 17	Bradley, 1984, 5 27, and INM
13		Brandstrup, Viborg County, Denmark	Cavalry grave - male	metal edging and rivets, probably composite board of iron and wood	30cm x 60cm - folding?	unknown	unknown: iron edging very corroded, no wood remains		Lavrsen, 1960, 96 105 and MNA

14		Birka 750	Viking age town, centre of trade and manufacture: male inhumation burial	iron brackets and also 25 iron nails	unknown	unknown	unknown	assoc. with pieces 64 and 65	Arbman, 1940 - 267-272, and MN
15		Birka, Sweden, grave 886	Viking age town, centre of trade and manufacture: inhumation burial	over 20 pieces of the remains of an iron frame with a loop (handle?), along with a number of nails; remains of wood and fabric found in the iron corrosion	unknown width and length, though board may have been approx. 2.7cm thick	unknown, though board thought to have had hinges or folding mechanism	unknown	assoc. with pieces 68 and 69	Arbman, 1940 - 344-345, and MN

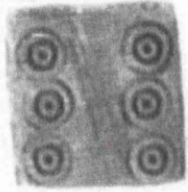
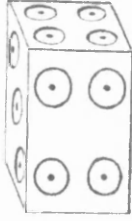

16		Birka, Sweden, grave 58b	Viking age town, centre of trade and manufacture; male inhumation burial	4 iron mounts, and a few iron nails; thought to be a gaming board by comparison to other similar pieces found in other Birka graves	unknown	unknown	unknown	Arbman, 1940 - 4 22, and MNA
17		Birka, Sweden, grave 624	Viking age town, centre of trade and manufacture; male inhumation burial	several pieces of iron mount, with an iron ring (handle?) and possible hinge pieces and nails. Remains of wood found in iron corrosion	complete nail suggests board was approx. 0.8cm thick. Estimated board size 30.0cm x 40.0cm	possible folding board, each side estimated 30.0cm x 20.0cm	piece of corner plate shows diagonal lines of small iron dots of approx 0.1cm diameter, spaced 0.5cm apart	assoc. with pieces 66 and 67 Arbman, 1940 - 4 267-272, and MN







18	no image available	Birka, Sweden, grave 581	Wealthy male cavalry burial	fragments of iron corner and edge mounts, and several round headed iron nails	unknown; fragments reported to have been found, though none of these pieces survives today.	unknown	unknown	pieces 95 and 96, dice 5 MNA	Arbman, 1940 43, 188-190, and MNA
19	  	Gokstad ship burial, Oslo Fjord, Nrway	Extremely rich boat burial	wood	The section of board is 60.5cm in length, and 15.0cm in width.	The gaming surface is made up of a grids of at least 14 x 14 double incised lines, certain pieces in the grid are highlighted with incised knotwork designs. The reverse side had a Nine Mens Morris style board incised, with designs carved into the intersections.	Board has been well worked, and may have been part of a composite gaming board, held in wooden frame.	assoc. with piece 154	Nicolaysen, 188 46, www.vikingansw.com lady.com and VSM

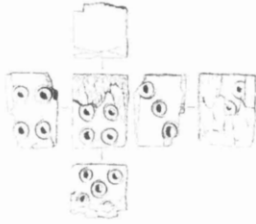

20		Arby boat burial, Rasbokil, Uppland, Sweden	Female boat burial on the shores of Lake Mälaren	wood	37cm in length x 15.8-17.0cm. 0.9-1.6cm thick	gaming surface is on almost a half of the upper surface of the board. 8 vertical lines intersected by 8 horizontal lines, making a 9 mens morris board.	board is polished, though appears to have been incised onto an existing object or plank of wood, damaged at opposite end to gaming surface, with a small notch on one side next to the game.		Arbman, 1940, (in Greenhill & Roberts, 1993: 35-36), and MNA
21		Ladby boat burial, Fyn, Kølstrup, Denmark	Male boat burial	four iron corner mounts with remains of ash wood, and fragments of ash wood that may have belonged to a second board		unknown	no decorative markings found on iron fragments		Sørensen, 2001, 102, and NMD

<div> </div>	<p>Ockelbo Kyrka,</p>	<p>Viking Age rune stone, now lost</p>	<p>picture of two men with gaming board</p>	<p>actual size of picture on stone is less than 20cm tall</p>	<p>carving depicts a square board with the corners marked and linked to the central square; no gridlines can be seen</p>	<p>the board itself is a simple representation and is undecorated</p>	<p>Jansson, 1981, 19 195, and Ward, C 2005 website</p>
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Dice

DB No.	PICTURE (and museum catalogue numbers where possible)	ORIGIN	CONTEXT	MATERIAL	DIMENSIONS AND SHAPE (cm)	NUMBERS	DECORATION	ASSOC.	REFERENCES
1		Jarlshof, Shetland, Scotland	Viking age farmstead, exact location unclear	bone	1.7 x 1.5 1.8cm, slightly irregular cube	3, 4, 4, 5, 5, 6	highly polished, the numbers are marked with double ring and dot spots	may be associated with slate boards 7 and 8, and playing piece 9	Hamilton, 1956, Plate XXXVII and NMS
2		Île de Groix, Morbihan, France	Viking boat burial	2 bone dice	unclear, rectangular	1, 3, 4, 4, 5, 6 (1 and 4 on smaller faces - pictured) and 1, 2, 3, 4, 5, 6 (1 and 2 on smaller faces)	numbers are incised in as ring and dot spots, no other markings on dice	bone gaming set, piece 45	du Chatellier, & le Pontois 1908 - 9, 149-151, and Price, 1989, 10/328 - 92/4
3		Birka 8, Sweden	Viking age town, centre of trade and manufacture: associated cemetery	5 fragments of bone (2 dice?)	unclear, right angle shape of fragments suggest cuboid shape	unknown	one edge fragment has incised lines along each side	playing pieces 84	Arbman, 1940 - 43, 3, and MNA

4	  	Birka 644, Sweden	Viking age town, centre of trade and manufacture: associated cemetery	3 deer/ antler horn	intact die is 3.8 x 2.4 x 2.4cm	6, 5, 4, 3, and 2, 1, on the smaller faces on each of the 3 dice	numbers are incised with ring and dot spots, faces may have been framed with incised lines, though pieces too damaged to see clearly	playing pieces 91 and 92, and gaming board 18	Arbman, 1940 – 43, 221-226, and MNA
5	  	Birka 581, Sweden	Viking age town, centre of trade and manufacture: associated cemetery	3 bone	a. 2.9 x 2.1 x 2.2cm, b. 2.7 x 2.0 x 2.3cm, c. 3.0 x 1.9 x 2.1cm	a. 6(?), ?, 3(?), and 5, 5 on smaller faces, b. 6, 5, ?, 2, and unclear on small faces, c. 4, 2(?), ?, and 1, 5 on small faces	numbers incised on with double ring and dot spots, pieces too damaged to identify any decorative markings.	playing pieces 95 and 96 and gaming board 18	Arbman, 1940 – 43, 188-191 and MNA

6		Coppergate, York, England	Viking age town, found in period 5B, 16-22 Coppergate	walrus ivory	2.9cm x 2.1cm x 2.0cm, though damaged by fire	3/5, 3, 6, 4, 5, (blank?)	numbers incised on with double ring and dot spots, piece highly polished, no decorative markings	playing pieces 24-43 found in similar area, though no direct links, also board 9 found nearby	MacGregor, Mainman, & Rogers, 1999, 1982-1983
7		Baldursheimer, Iceland	Viking Age male burial	bone	~	~	numbers incised with small drilled dots, piece smoothed and may have been polished	Playing piece 129 and 130	Fitzhugh, & Ward, (eds) 2000, 182-183, and NMI

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Gaming Pieces

Gaming Pieces Database Entry Number

1. Brough of Birsay playing piece, taken from: Curle, C. L. 1982, "*Pictish and Norse finds from the Brough of Birsay 1934 – 74*", Edinburgh: Society of Antiquaries of Scotland Monograph Series No. 1, page 89.
2. Brough of Birsay gaming disc, photograph taken by A. Sperr, at the Tankerness House Museum.
3. Howe gaming disc, photograph taken by A. Sperr, at the Tankerness House Museum, Orkney.
4. Howe gaming disc, photograph taken by A. Sperr, at the Tankerness House Museum, Orkney.
5. Scar gaming set, taken from; Dalland, M. & Owen, O. 1999, "*Scar, A Viking boat burial on Sanday, Orkney*", Tuckwell Press, Historic Scotland, page 127.
6. Scar gaming set - king piece illustration, taken from; Dalland, M. & Owen, O. 1999, "*Scar, A Viking boat burial on Sanday, Orkney*", Tuckwell Press, Historic Scotland, page 128
7. Westness gaming set; photograph taken by A. Sperr, at the National Museum of Scotland, Edinburgh.
8. Westness king piece; photograph taken by A. Sperr, at the National Museum of Scotland, Edinburgh.
9. Jarlshof playing piece; photograph taken from; Hamilton, J. R. C., 1956, "*Excavations at Jarlshof, Shetland*", Ministry of Works Archaeological Reports, No. 1. Small finds catalogue.

10. Drimore Machair piece, image taken from Maclaren, A. 1974, "A Norse House on Drimore Machair, South Uist", in *Proceedings of the Society of Antiquities for Scotland*, Vol. 3, 1974, page 17.
11. Lewis Ivory Hoard figures, both photographs taken by A. Sperr at the British Museum, London.
12. Lewis Ivory Hoard gaming discs, photograph taken from: Stratford, N., 1997, *The Lewis Chessmen and the enigma of the hoard*, The British Museum Press, page 26.
13. Lewis Ivory Hoard obelisk, photograph taken by A. Sperr at The British Museum, London.
14. Balnakiel gaming set, photograph taken by A. Sperr at The National Museum of Scotland, Edinburgh.
15. Fishamble Street piece: photograph taken by A. Sperr at The Irish National Museum, Dublin.
16. Fishamble Street glass piece: photograph taken by A. Sperr at The Irish National Museum, Dublin.
17. Fishamble Street piece: photograph taken by A. Sperr at The Irish National Museum, Dublin.
18. High Street rough-out: photograph taken by A. Sperr at The Irish National Museum, Dublin.
19. High Street playing piece: photograph taken by A. Sperr at The Irish National Museum, Dublin.
20. Kilmainham and Islandbridge gaming pieces: photographs taken by A. Sperr at The Irish National Museum, Dublin.
21. Lough Sewdy gaming set: photograph taken by A. Sperr at The Irish National Museum, Dublin.

22. Strokestown playing piece: photograph taken by A. Sperr at The Irish National Museum, Dublin.
23. Strokestown playing piece: photograph taken by A. Sperr at The Irish National Museum, Dublin.
24. York playing piece 9033, image taken from: Morris, Carole. A., 2000, "*Craft, Industry and Everyday Life: Wood and Woodworking in Anglo-Scandinavian and Medieval York*", The Archaeology of York – The Small Finds 17/13, Council for British Archaeology, page 2351.
25. York playing piece 9034, image taken from: Morris, Carole. A., 2000, "*Craft, Industry and Everyday Life: Wood and Woodworking in Anglo-Scandinavian and Medieval York*", The Archaeology of York – The Small Finds 17/13, Council for British Archaeology, page 2351.
26. York playing piece 9035, image taken from: Morris, Carole. A., 2000, "*Craft, Industry and Everyday Life: Wood and Woodworking in Anglo-Scandinavian and Medieval York*", The Archaeology of York – The Small Finds 17/13, Council for British Archaeology, page 2351.
27. York playing piece 9037, image taken from: Morris, Carole. A., 2000, "*Craft, Industry and Everyday Life: Wood and Woodworking in Anglo-Scandinavian and Medieval York*", The Archaeology of York – The Small Finds 17/13, Council for British Archaeology, page 2351.
28. York, eight chalk pieces 9752 - 9759, image taken from: Mainman, A. J., & Rogers, N. S. H., 2000, "*Craft, Industry and Everyday Life: Finds from Anglo – Saxon York*", The Archaeology of York – The Small Finds 17/14, Council for British Archaeology, pages 2565, 2566.
29. York bone piece No. 7104, image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, "*Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*", The Small Finds 17/12, Council for British Archaeology, page 1982.

30. York antler piece No. 7106, image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, "*Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*", The Small Finds 17/12, Council for British Archaeology, page 1982.
31. York bone piece No. 7109, image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, "*Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*", The Small Finds 17/12, Council for British Archaeology, page 1982.
32. York bone piece No. 7110, image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, "*Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*", The Small Finds 17/12, Council for British Archaeology, page 1982.
33. York bone piece No. 7111, image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, "*Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*", The Small Finds 17/12, Council for British Archaeology, page 1982.
34. York antler piece No. 7729, image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, "*Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*", The Small Finds 17/12, Council for British Archaeology, page 1982.
35. York antler piece No. 7730, image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, "*Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*", The Small Finds 17/12, Council for British Archaeology, page 1982.
36. York antler piece No. 7731, image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, "*Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*", The Small Finds 17/12, Council for British Archaeology, page 1982.

37. York antler piece No. 7732, image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, "*Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*", The Small Finds 17/12, Council for British Archaeology, page 1982.
38. York antler piece No. 7733, image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, "*Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*", The Small Finds 17/12, Council for British Archaeology, page 1982.
39. York antler piece No. 7734, image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, "*Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*", The Small Finds 17/12, Council for British Archaeology, page 1982.
40. York antler piece No. 7735, image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, "*Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*", The Small Finds 17/12, Council for British Archaeology, page 1982.
41. York shale playing piece No.9838, image taken from: Mainman, A. J., & Rogers, N. S. H., 2000, "*Craft, Industry and Everyday Life: Finds from Anglo – Saxon York*", The Archaeology of York – The Small Finds 17/14, Council for British Archaeology, page 2567.
42. York jet playing piece No.9840, image taken from: Mainman, A. J., & Rogers, N. S. H., 2000, "*Craft, Industry and Everyday Life: Finds from Anglo – Saxon York*", The Archaeology of York – The Small Finds 17/14, Council for British Archaeology, page 2567.
43. York jet/shale disc No.9839, image taken from: Mainman, A. J., & Rogers, N. S. H., 2000, "*Craft, Industry and Everyday Life: Finds from Anglo – Saxon York*", The Archaeology of York – The Small Finds 17/14, Council for British Archaeology, page 2567.

44. Witchampton chess set, images taken from: Dalton, O. M., 1926, "Early Chessmen of Whale's Bone excavated in Dorset", *Archaeologica*, LXXVII. Plate VI, and also from: Riddler, I., 1998, "When there is no end to a good game", *British Archaeology* – February No. 31, The Council for British Archaeology, page 10.
45. Île de Groix bone die, image taken from: du Chatellier, P., & le Pontois, L., 1908 – 9, "A ship-burial in Brittany", *Saga-Book of The Viking Club*, Society for Northern Research, Volume 6, page 150.
46. Århus Søndervold playing piece CAC; image taken from: Anderson, H. H., Crabb, P. J., & Madsen, H. J., 1971, "*Enbyarkaeologisk undersøgelse*", I Kommission hos Gyldendalske Boghandel, Nordisk Forlag, København, page 212.
47. Århus Søndervold cuboid playing piece BTH; image taken from: Anderson, H. H., Crabb, P. J., & Madsen, H. J., 1971, "*Enbyarkaeologisk undersøgelse*", I Kommission hos Gyldendalske Boghandel, Nordisk Forlag, København, page 212.
48. Århus Søndervold disc BO; image taken from: Anderson, H. H., Crabb, P. J., & Madsen, H. J., 1971, "*Enbyarkaeologisk undersøgelse*", I Kommission hos Gyldendalske Boghandel, Nordisk Forlag, København, page 212
49. Haithabu amber set, image taken from: Jankuhn, H., 1937 – 39, "*Die Ausgrabungen in Haithabu*", Ahnenerbe – stiftung verlag Berlin – Dahlem 1943, page 110.
50. Trønning, Kundby, gold figure, image taken from: Jørgensen, S., 1975, "*Oldtidsguld – Guld fra Nordrestsjaelland*", Holbaek Amts Sparekasse, 75.
51. Tjærborg burnt piece, Urn 6, image taken from The National Museum of Denmark photograph collection: catalogue number c.18647.
52. Tjærborg burnt piece, Urn 12, image taken from The National Museum of Denmark photograph collection: catalogue number c.19645.
53. Vesterberg set, image taken from: Ramskou, T., 1950, "Viking Age Cremation Graves in Denmark", *Acta Archaeologica XXI*, page 171.

54. Ribe amber piece, catalogue no. D3154, image taken from: Botfeldt, K., & Brinch-Madsen, H., (Ed) 1970-76, "Ribe Excavations", Volume 3, Sydjysk Universitetsforlag, Esbjerg 1991, page 106.
55. Ribe amber piece, D3155, No image available.
56. Ribe amber piece, catalogue no. D2684, image taken from: Botfeldt, K., & Brinch-Madsen, H., (Ed) 1970-76, "Ribe Excavations", Volume 3, Sydjysk Universitetsforlag, Esbjerg 1991, page 106.
57. Ribe amber piece, catalogue no. D12469, image taken from: Botfeldt, K., & Brinch-Madsen, H., (Ed) 1970-76, "Ribe Excavations", Volume 3, Sydjysk Universitetsforlag, Esbjerg 1991, page 108.
58. Ribe amber piece, catalogue no. D12540, image taken from: Botfeldt, K., & Brinch-Madsen, H., (Ed) 1970-76, "Ribe Excavations", Volume 3, Sydjysk Universitetsforlag, Esbjerg 1991, page 108.
59. Ribe amber piece, D6433, No image available
60. Ribe amber piece, catalogue no. D5358, image taken from: Botfeldt, K., & Brinch-Madsen, H., (Ed) 1970-76, "Ribe Excavations", Volume 3, Sydjysk Universitetsforlag, Esbjerg 1991, page 106.
61. Roholte figure, image taken from The National Museum of Denmark photograph collection: catalogue number c.24292.
62. Lindholm Høje 9 piece set, image taken from: Høilund Neilsen, K., "Lindholm Høje gravpladsen og Landsby", Udgivet af Selskabet for Aalborgs Historie og Aalborg Historiske Museum, page 32.
63. Trelleborg grave 99 single piece, image taken from The National Museum of Denmark photograph collection.

64. Birka Grave 750 playing pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
65. Birka Grave 750 king piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
66. Birka Grave 624 playing pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
67. Birka Grave 624 king piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
68. Birka Grave 886 playing pieces, photograph taken by A. Sperr, at The Museum of National Antiquities, Stockholm, Sweden.
69. Birka Grave 886 king piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
70. Birka Grave 20 playing pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
71. Birka Grave 52a amber playing pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
72. Birka Grave 1035 bone playing piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
73. Birka Grave 1035 glass playing piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
74. Birka Grave 150 bone playing pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
75. Birka Grave 150 king piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.

76. Birka Grave 754 playing pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
77. Birka Grave 986 elk-horn pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
78. Birka Grave 986 set, image taken from: Arbman, H. 1940 – 43, “*Birka I: Die Graber*” (2 Volumes), Kungl, Vitterhets Historie och Antikvitets, Akademien, Stockholm, plate 149. Also, Birka Grave 986 elk-horn king, image taken from: Arbman, H. 1940 – 43, “*Birka I: Die Graber*” (2 Volumes), Kungl, Vitterhets Historie och Antikvitets, Akademien, Stockholm, plate 149.
79. Birka Grave 996 fragmentary pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden
80. Birka Grave 112 glass pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
81. Birka Grave 112 bone piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
82. Birka Grave 112 bone piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
83. Birka Grave 112 glass piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
84. Birka Grave 8 bone pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
85. Birka Grave 75 fragmentary bone pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
86. Birka 860a amber piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.

87. Birka 1142a burnt bone pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
88. Birka 917 burnt pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
89. Birka Grave 324 equine tooth piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
90. Birka Grave 80a bone piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
91. Birka Grave 644 glass playing set, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
92. Birka Grave 644 glass kings, image taken from: Arbman, H. 1940 – 43, “*Birka I: Die Graber*” (2 Volumes), Kungl. Vitterhets Historie och Antikvitets, Akademien, Stockholm, plate 148.
93. Birka Grave 523 glass gaming set, photograph taken by A. Sperr of the pieces in a permanent display cabinet at The Museum of National Antiquities, Stockholm, Sweden.
94. Birka Grave 523 glass king piece, photograph taken by A. Sperr of the piece in a permanent display cabinet at The Museum of National Antiquities, Stockholm, Sweden.
95. Birka Grave 581 bone set, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
96. Birka Grave 581 king piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
97. Birka Grave 524 amber set, image taken from: Arbman, H. 1940 – 43, “*Birka I: Die Graber*” (2 Volumes), Kungl. Vitterhets Historie och Antikvitets, Akademien, Stockholm, plate 150.

98. Birka Grave 710 glass set, image taken from: Arbman, H. 1940 – 43, “*Birka I: Die Graber*” (2 Volumes), Kungl. Vitterhets Historie och Antikvitets, Akademien, Stockholm, plate 147.
99. Vendel IX gaming set, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
100. Vendel IX king piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
101. Långtora, Uppland, 12 blue glass pieces and spiral blue glass piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
102. Långtora, Uppland, 5 green glass pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
103. Långtora, Uppland, 4 bone pieces, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
104. Långtora, Uppland, jet/obsidian piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
105. Långtora, Uppland, steatite piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
106. Långtora, Uppland, anthropomorphic glass piece, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
107. Hvítárholt & Hlíð, Iceland, sandstone playing piece, photograph taken by A. Sperr at The National Museum of Iceland, Reykjavik.
108. Hrossatungur, Þjórsádalur, Iceland, red sandstone playing piece, photograph taken by A. Sperr at The National Museum of Iceland, Reykjavik.

109. Hrossatungur, Djórsádalur, Iceland, sandstone piece, photograph taken from: Gisladóttir, G. A., "*Gripir úr þórsárdað*", M. A. Thesis, Háskóli Íslands, Reykjavik 2004.
110. Skallakot, Djórsádalur, Iceland, light sandstone piece, photograph taken from: Gisladóttir, G. A., "*Gripir úr þórsárdað*", M. A. Thesis, Háskóli Íslands, Reykjavik 2004.
111. Skallakot, Djórsádalur, Iceland, red sandstone piece, photograph taken from: Gisladóttir, G. A., "*Gripir úr þórsárdað*", M. A. Thesis, Háskóli Íslands, Reykjavik 2004.
112. Skallakot, Djórsádalur, Iceland, light red sandstone piece, photograph taken from: Gisladóttir, G. A., "*Gripir úr þórsárdað*", M. A. Thesis, Háskóli Íslands, Reykjavik 2004.
113. Skallakot, Djórsádalur, Iceland, black stone piece, photograph taken from: Gisladóttir, G. A., "*Gripir úr þórsárdað*", M. A. Thesis, Háskóli Íslands, Reykjavik 2004.
114. Skallakot, Djórsádalur, Iceland, yellow sandstone piece, photograph taken from: Gisladóttir, G. A., "*Gripir úr þórsárdað*", M. A. Thesis, Háskóli Íslands, Reykjavik 2004.
115. Skallakot, Djórsádalur, Iceland, light sandstone piece, photograph taken from: Gisladóttir, G. A., "*Gripir úr þórsárdað*", M. A. Thesis, Háskóli Íslands, Reykjavik 2004.
116. Skeljastaðir, Djórsádalur, red sandstone piece, photograph taken by A. Sperr at The National Museum of Iceland, Reykjavik.
117. Steinbogi, Mývatn, bone gaming piece, photograph taken by Thomas McGovern, NABO, during the 2002 excavations at Steinbogi.

118. Sveigakot, Mývatn, SV01 043, stone playing piece – photograph edited to highlight decoration, photograph taken by A. Sperr at Fornleifastofnun Íslands, Reykjavík.
119. Sveigakot, Mývatn, SV01 685, sandstone playing piece, photograph taken by A. Sperr at Fornleifastofnun Íslands, Reykjavík.
120. Sveigakot, Mývatn, SV03 12, red sandstone playing piece, photograph taken by A. Sperr at Fornleifastofnun Íslands, Reykjavík.
121. Sveigakot, Mývatn, SV03 52, steatite playing piece, photograph taken by A. Sperr at Fornleifastofnun Íslands, Reykjavík.
122. Sveigakot, Mývatn, SV03 44, sandstone playing piece, photograph taken by A. Sperr at Fornleifastofnun Íslands, Reykjavík.
123. Sveigakot, Mývatn, SV03 11, bone/ tusk/ ivory playing piece, photograph taken by A. Sperr at Fornleifastofnun Íslands, Reykjavík.
124. Sveigakot, Mývatn, SV004 102, bone playing piece, photograph taken by A. Sperr at Fornleifastofnun Íslands, Reykjavík.
125. Brimness bone gaming set, photographs taken by A. Sperr at The National Museum of Iceland Reykjavík.
126. Papey stone piece, photograph taken by A. Sperr at The National Museum of Iceland, Reykjavík.
127. Smíðjuskógar, steatite piece, photograph taken by A. Sperr at The National Museum of Iceland, Reykjavík.
128. Grimsstaðir bone piece, photograph taken by A. Sperr at The National Museum of Iceland, Reykjavík.
129. Baldursheimer gaming set, image taken from: Eldjarn, K. & Fridriksson, A. 2000 “*Kuml og Haugfé*”, Mal og Menning, Reykjavík 2000, page 416

130. Baldursheimer complete set, image taken from: Eldjarn, K., & Fridriksson, A., 2000, (2. útgáfa), “*Kuml og haugflé sið á Íslandi*”, Mál og menning, Reykjavík 2000, page 419.
131. Prestegården, Asker, Akerhus, Norway, (Catalogue number c.993), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
132. Oslo, Norway, (c.843) photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
133. Østby N., Østfold, Rakkestad, Norway, (c.799), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
134. Østhassel, Farsund, Vest Agder, Norway (c.27269), No image available.
135. Skari, Oppland, Gran, Norway, (c.22841), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
136. Vidarshov, Vang, Hedmark, Norway (c.30061), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
137. Grevegg, Trøgstad, Østfold, Norway, (c.35251), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.

138. Gile, Østre Toten, Oppland, Norway (c.22762), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, "*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*", Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
139. Ustad, Hurum, Buskerud, Norway, (c.7200), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, "*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*", Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
140. Blaker, Sørumsdal, Akerhus, Norway, (c.548), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, "*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*", Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
141. Gran, Oppland, Norway, (c.2793), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, "*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*", Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
142. Gjulem nordre, Rakkestad, Østfold, Norway, (c.4041) photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, "*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*", Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
143. Skogsfjord vest, Mandal, Vest Agder, Norway, (c.2704), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, "*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*", Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
144. Alm, Østre, Stange, Hedmark, Norway, (c.3875), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, "*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*", Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.

145. Berg, Løten, Hedmark, Norway, (c.9717), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
146. Bjerke, Larvik, Vestfold, Norway, (c.17189), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
147. Burum, Råde, Østfold, Norway, (c.7701), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
148. Løten, Hedmark, Norway, (c.9579), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
149. Løten, Hedmark, Norway, (c.9569), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
150. Holbø, Vågå, Oppland, Norway, (c.8659), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
151. Opstad, Tune, Østfold, Norway, (c.15923), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.

152. Mellem Ror, Rygge, Østfold, Norway, (c.18352), photograph taken by Steinar Kristensen – private collection from Kristensen, S. 2001, “*Fra høvdingens hall til skomakerens stuebrettspill I norsk jern og middel alder*”, Hovedfagsoppgave ved IAKH, Universitetet Oslo, In preparation.
153. Larvik, Vestfold, Norway, (c.17819), photograph taken by A. Sperr at Historical Museum, Oslo, Norway.
154. Gokstad piece, image taken from Nicolaysen, N, 1882, “*The Viking Ship discovered at Gokstad in Norway*”, Alb. Cammermayer, plate IX.

Gaming Boards

Gaming Boards Database Entry Number

1. Howe gaming board: photograph taken by A. Sperr at the Tankerness House Museum, Orkney. Picture has been edited to highlight gaming surface.
2. Buckquoy gaming board (Buckquoy 90): photograph taken by A. Sperr at the Tankerness House Museum, Orkney.
3. Buckquoy gaming board (Buckquoy 91): photograph taken by A. Sperr at the Tankerness House Museum, Orkney. Picture has been edited to highlight the gaming surface.
4. Buckquoy gaming board (Buckquoy 92): photograph taken by A. Sperr at the Tankerness House Museum, Orkney. Picture has been edited to highlight the gaming surface.
5. Brough of Birsay whalebone board: photograph taken by A. Sperr at The National Museum of Scotland, Edinburgh.
6. Red Craig gaming board, photograph take by A. Sperr at The Tankerness House Museum, Orkney. Image has been edited to highlight gaming surface; 2 smaller images: left, detail of iron remains on board, also taken by A. Sperr, right, sketch of incised detail on board, from a wax rubbing made by A. Sperr at The Tankerness House Museum.
7. Jarlshof slate gaming board, image taken from: Hamilton, J. R. C., 1956, "*Excavations at Jarlshof, Shetland*", Ministry of Works Archaeological Reports, No. 1, page
8. Jarlshof slate gaming board, image taken by A. Sperr at The National Museum of Scotland. Picture has been edited to highlight the gaming surface.
9. York gaming board (9032), image taken from Morris, Carole. A., 2000, "*Craft, Industry and Everyday Life: Wood and Woodworking in Anglo-Scandinavian and*

Medieval York”, The Archaeology of York – The Small Finds 17/13, Council for British Archaeology, 2351.

10. Downpatrick stone gaming board, image taken from Hall, M. 2001, “*A Double-sided Hneftafl Board from Downpatrick; time consumed in an early Medieval Monastic Enclosure*”, www.downcountymuseum.com - in advance of the final publication of Downpatrick Cathedral. (viewed 16th March 2005), 1-5.
11. The Ballinderry gaming board, image taken by A. Sperr at The Irish National Museum, Dublin.
12. Fishamble Street stone gaming board, photographs taken by A. Sperr at The Irish National Museum. Images have been edited to highlight gaming surface.
13. Brandstrup board, image taken from: Lavrsen, J., 1960, “Brandstrup, En ryttergrav ra 10. århundrede”, *KUML Årbog For Arkæologisk Selskab 1960*, Universitetsforlaget I Aarhus, page 100.
14. Birka grave 750 gaming board, image taken from; Arbman, H. 1940 – 43, “*Birka I: Die Graber*” (2 Volumes), Kungl, Vitterhets Historie och Antikvitets, Akademien, Stockholm, page 269.
15. Birka grave 886 gaming board, top photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden. Lower image taken from Arbman, H. 1940 – 43, “*Birka I: Die Graber*” (2 Volumes), Kungl, Vitterhets Historie och Antikvitets, Akademien, Stockholm, page 345.
16. Birka grave 58b iron rivets, image taken from Arbman, H. 1940 – 43, “*Birka I: Die Graber*” (2 Volumes), Kungl, Vitterhets Historie och Antikvitets, Akademien, Stockholm, page 22.
17. Birka grave 624 iron mounts, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
18. Birka grave 581, no image available.

19. Gokstad gaming board, top image taken from; Nicolaysen, N, 1882, "*The Viking Ship discovered at Gokstad in Norway*", Alb. Cammermayer, 46. Lower image taken from; Ward, C., "Viking games, pastimes and recreation", Daily life, at www.vikinganswerlady.com , (last viewed 05.07.2005).
20. Årby boat burial gaming board, image taken from Arbman, H. 1933, "Der Årby fund", in Cederlund, C. O. (ed), 1993, "*The Årby Boat*", The Museum of National Antiquities/ Stockholm Monographs 2, Statens Historiska Mueum and Båtdokumentationsgruppen, page 35. Image has been edited to highlight gaming surface.
21. Ladby boat burial gaming board, images supplied by The National Museum of Denmark, Copenhagen; Museum Catalogue number L4.225, 46. (neg. nr. II 274).
22. Ockelbo rune stone, image taken from; Ward, C., "Viking games, pastimes and recreation", Daily life, at www.vikinganswerlady.com , (last viewed 05.07.2005).

Gaming Dice

Gaming Pieces Database Entry Number

1. Jarlshof die, photograph taken from Hamilton, J. R. C., 1956, “*Excavations at Jarlshof, Shetland*”, Ministry of Works Archaeological Reports, No. 1. Small finds catalogue.
2. Île de Groix bone die, image taken from: du Chatellier, P., & le Pontois, L., 1908 – 9, “A ship-burial in Brittany”, *Saga-Book of The Viking Club*, Society for Northern Research, Volume 6, page 149.
3. Birka 8 bone dice fragments, photograph taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
4. Birka 644 bone dice, all three photographs taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
5. Birka 581 bone dice, all three photographs taken by A. Sperr at The Museum of National Antiquities, Stockholm, Sweden.
6. York die (catalogue number 7890), image taken from MacGregor, A., Mainman, A. J., & Rogers, N. S. H., 1999, “Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York”, *The Archaeology of York – The Small Finds 17/14*, Council for British Archaeology, 1982-1983.
7. Baldursheimer die, Iceland, (catalogue number A,1), image taken from Fitzhugh, W. W., & Ward, E. I., (eds) 2000, “*Vikings, The North Atlantic Saga*”, Smithsonian Institution Press, 182.

Appendix 2: Rules of Tafl Games

As mentioned in Chapter 1, there is no archaeological evidence suggesting how the tafl games were played. There are a few clues as to how these games may have been played however, from various historical sources.

Tablut

The chance discovery of a diary account by the Swedish Botanist Carl Linneus, by H. J. R. Murray however, sheds a little light on how one of the tafl games may have been played.

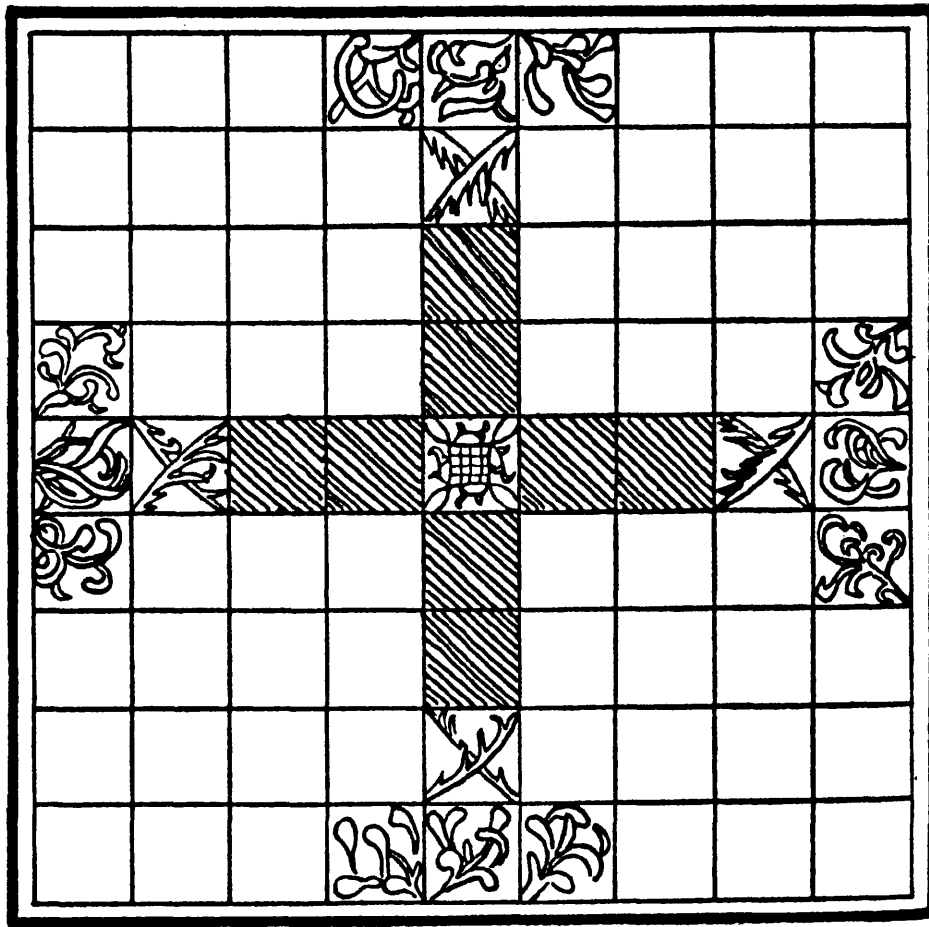


Figure 1. (above) *Tablut* gaming board observed by Linneus. Image taken from Bell, 1979, 77.

In 1732, Linneus travelled to Lapland as part of his studies. Whilst visiting the Alpine Lapps, Linneus observed a game being played called *Tablut*. In his diary, he wrote the rules of play, and sketched the embroidered reindeer skin board on which the game was being played (Bell, 1979, Vol. 1, 77).

4. The Swedes win if the king reaches any square at the periphery of the board. When there is a clear route for the king to a perimeter square the player must warn his opponent by saying 'Raichi!' When there are two clear routes he must say 'Tuichi!' This is the equivalent of 'Checkmate' in chess, since it is impossible to block two directions in the same move.

Of the gaming boards researched in this study, none exactly match the design observed by Linneus, though two of the Buckquoy gaming boards (*bdb2&3*), The Ballinderry board (*bdb11*), The Downpatrick board (*bdb10*), and the Ockelbo board (*bdb22*), all have the central cell or intersection marked.

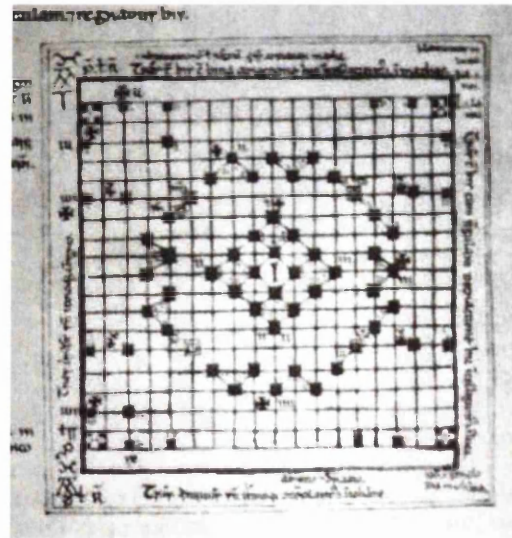
The Ballinderry, Downpatrick and Ockelbo boards have the four corner cells marked, which may indicate that the king must have to reach the corners rather than any cell on the periphery in order to win.

The 9 x 9 Tablut board would have been played using 9 Swedes, including the king: 16 Muscovites. In order to have a central cell, the number of rows and columns must be an odd number; e.g. 11 x 11, 13 x 13 etc.

Saxon Hneftafl

An English manuscript written during the reign of King Athelstan (A.D. 925-40) (*figure 4*) contains a diagram of the Saxon form of Hneftafl, which corresponds to a wooden gaming board found in a Roman Iron Age grave at Wimose, Denmark (Bell, 1979, Vol. 1, 79-80).

Figure 4. (right) part of a page from a 10th Century manuscript with a diagram of a Hneftafl board. Image taken from Bell, 1979, Vol. 1, Plate V.



The gaming board illustrated in the manuscript contains a grid of 18 x 18 cells with the corner cells marked with a cross; the gaming pieces are shown to have been placed on the intersections rather than the cells.

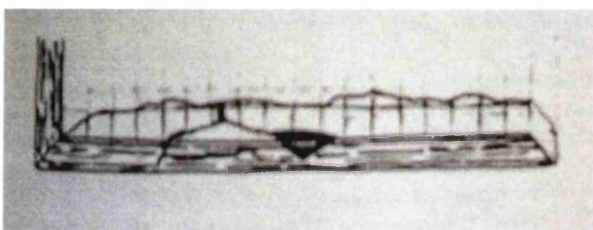
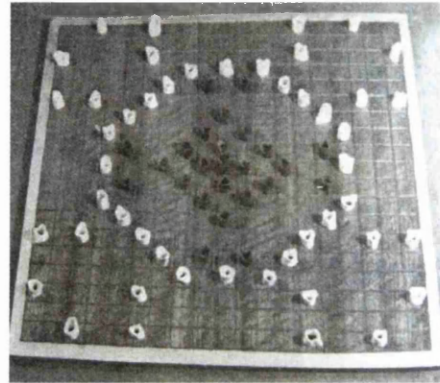


Figure 5. (left) drawing of the Wimose gaming board, taken from Bell, 1979, Vol. 1, 79.

The Wimose gaming board also consists of a simple grid of 18 x (estimated) 18 cells, with no visible cells marked (*figure 5*). The closest parallels to the Wimose board are the Gokstad board (*bdb19*) which consists of a grid of 14 x 14 cells, and the York gaming board (*bdb9*) which has a grid of 15 x 15 cells. The rules of Saxon Hneftafl are much the same as the rules for *Tablut* as observed by Linneus, in that the king must escape to the peripheral squares, the pieces are trapped and removed in the same way (Bell, 1979, Vol. 1, 80).

This form of Hneftafl with a grid of 18 x 18 cells is played with 48 ‘*hunns*’ (Bell, 1979, Vol.1, 80), and 25 opponents, including a *hnefi* or king.

Figure 6. (right) reconstruction of a Saxon Hneftafl board, using playing pieces made from mutton bones. Image taken from Bell, 1979, Vol. 1, plate XVIII)



By moving the pieces from the intersections to the cells, the game can be played on a grid of odd or even numbers of rows and columns.

The Gokstad gaming board (*bdb19*) has alternate cells marked, and may indicate starting positions of pieces, similar to Saxon Hneftafl.

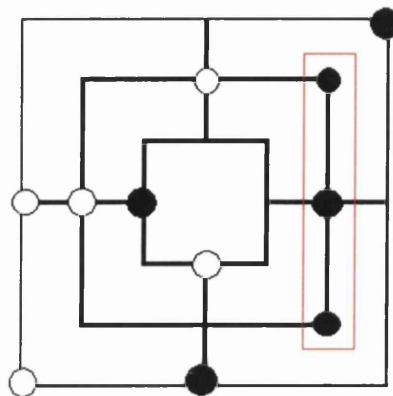
Nine Men's Morris

The earliest known nine men's morris board was found in a temple at Kurna, Egypt, dating to 1400-1333 B.C. (Bell, 1979, Vol. 1. 92). The game is also known as *merelles*, *muhle*, *morris* and *mill*, and is still one of Europe's most popular board games (Scarne, 1973, 532).

The following rules are taken from Scarne, 1973, 532;

The game is played with 18 pieces; each opponent starts with 9 pieces. Each player takes turns in placing a piece on the intersections. When each player has placed all of his or her pieces, play continues by alternate move. A piece may move to an adjacent vacant point on the same line.

Figure 7. (right) *Nine Men's Morris* board, edited to demonstrate the position of pieces and a mill. Board taken from Bell, 1979, Vol. 1, 93.



The object, both in laying pieces on the board and in moving them, is to get three pieces of one's own colour in a horizontal or vertical (not diagonal) line; such an arrangement is known as a *mill*. On making a mill, the player may remove any one adverse piece from the board provided that it is not part of a mill, unless there are no others on the layout. Once a piece is removed from

the board, it is dead and does not return to play. A mill may be opened by moving a piece to an adjacent point, and closed by moving it back. The player who is first to reduced to two pieces, or who is first to be unable to move in his turn, loses the game.

This distinctive gaming board was found on the reverse side of the Gokstad board (*bdb19*), the Årby board (*bdb20*), and on a stone board from Fishamble Street, Dublin (*bdb12*).

The Alfonso X Manuscript of the 13th Century describes a variant of nine men's morris using three cubic dice. During the entry phase, throwing certain combinations of numbers on the three dice enable a player to break an enemy mill, and remove opponents pieces. At the end of the entry phase, the dice were discarded and the game continued in the usual way (Bell, 1979, Vol.1, 94). These alternate rules may indicate a possible use for the three dice found in Birka grave 644 (*Db50*), and Birka grave 581 (*Db51*).

Three Men's Morris

This game is similar to nine men's morris; each player begins with 3 playing pieces. The game is essentially noughts and crosses, played on the intersections of a 2 x 2 board.

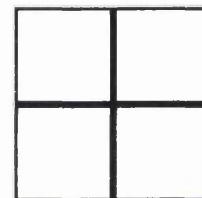
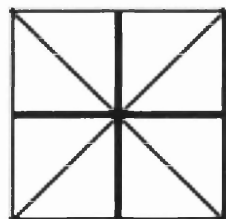


Figure 8. (right) Three men's morris board. Taken from Bell, 1979, Vol. 1, 92.



A second form of three men's morris consists of the 2 x 2 board with diagonal lines from each outer corner.

Figure 9. (left) Alternative three men's morris board. Taken from Bell, 1979, Vol. 1, 92.

The drawing on the reverse side of a stone gaming board from Fishamble Street, Dublin (*bdb12*) may represent this version of a three mens morris gaming board.

Figure 10. (right). Gaming board from Fishamble Street, Image taken by A. Sperr at the National Museum of Ireland.

