Rune Edberg
Arkeografiskt centrum, Uppsala
rune.edberg@protonmail.com
ORCID 0009-0001-4070-5115

The Common Man's Game. Interpreting Archaeological Finds of Dice and Gaming Pieces from Sigtuna, Sweden

Abstract

This article reviews all known finds of dice and gaming pieces from the settlement layers (occupation deposits) of Sigtuna, Sweden (AD c. 980 – c. 1300). The oldest dice, two items, are of rectangular Iron Age type, while all later dice are cubic. The majority are made from bone, antler, and walrus ivory. Nearly half exhibit a dice pip arrangement of 6+5 / 4+3 / 2+1. The 'modern' arrangement, where opposite faces always add up to 7, is less frequent. Both arrangement patterns co-existed from the 12th century. Onion-shaped gaming pieces from the 11th century layers testify to board games, as does the single find of a *hnefatafl* board. Finds of chess pieces indicate that chess was introduced in the 12th century. Over half of the gaming pieces are of antler. Other materials used are walrus ivory, bone (including whalebone), and glass. Simple gaming pieces made from wood and the points of elk-antler tines are evidence of gaming by ordinary people. The view, taken by some Scandinavian scholars, that Viking Age and early medieval gaming mainly was a pastime among people in society's elite is thus challenged and refuted.

Keywords: Sigtuna, dice, gaming pieces, *hnefatafl*, chess, antler tines, walrus ivory

Introduction

Dice and gaming pieces are common finds in mid–late Iron Age burials and settlement deposits, as well in settlements of the Middle Ages. These finds remind us that human existence was not merely a matter of survival, but also of living a life full of ideas, desires, and habits. The present article presents and discusses such items recovered from Sigtuna, Uppland province, Sweden, throughout more than a century of archaeological investigations and stored in the collections of the Sigtuna Museum (Fig. 1). A small number of finds from Sigtuna held by the Swedish Historical Museum in Stockholm have also been examined, thus ensuring the inclusion of all previously and newly identified archaeological finds from Sigtuna that belong to these finds categories. The finds date to the period c. AD 980–1300.[1]

The purpose of this study is to challenge the view that gaming was mainly a pastime of an elite within society, an opinion which has recently been floated in Scandinavian archaeology (see below). The method adopted here is to review carefully and with an open mind the totality of the town's archaeological finds, looking not only for the clearly identifiable but also for possible simpler, gaming paraphernalia.

Dice

Dice and games using dice are known from antiquity down to the present. Dice as we know them today had

[1] Johnny Karlsson, osteologist, Swedish Historical Museum, contributed ocular identification of the objects of bone, antler and tusk. Anders Söderberg, curator, Sigtuna Museum, made the finds in the museums's collection available for study and assisted with photography. Olle Heimer, archaeologist, previously Sigtuna Museum, was consulted for the dating of finds from as yet unreported excavations. Archaeologist Uaininn O'Meadhra translated this text from Swedish. For a comprehensive report (in Swedish) with photos of all dice and gaming pieces, see Edberg, Karlsson, Söderberg 2022.

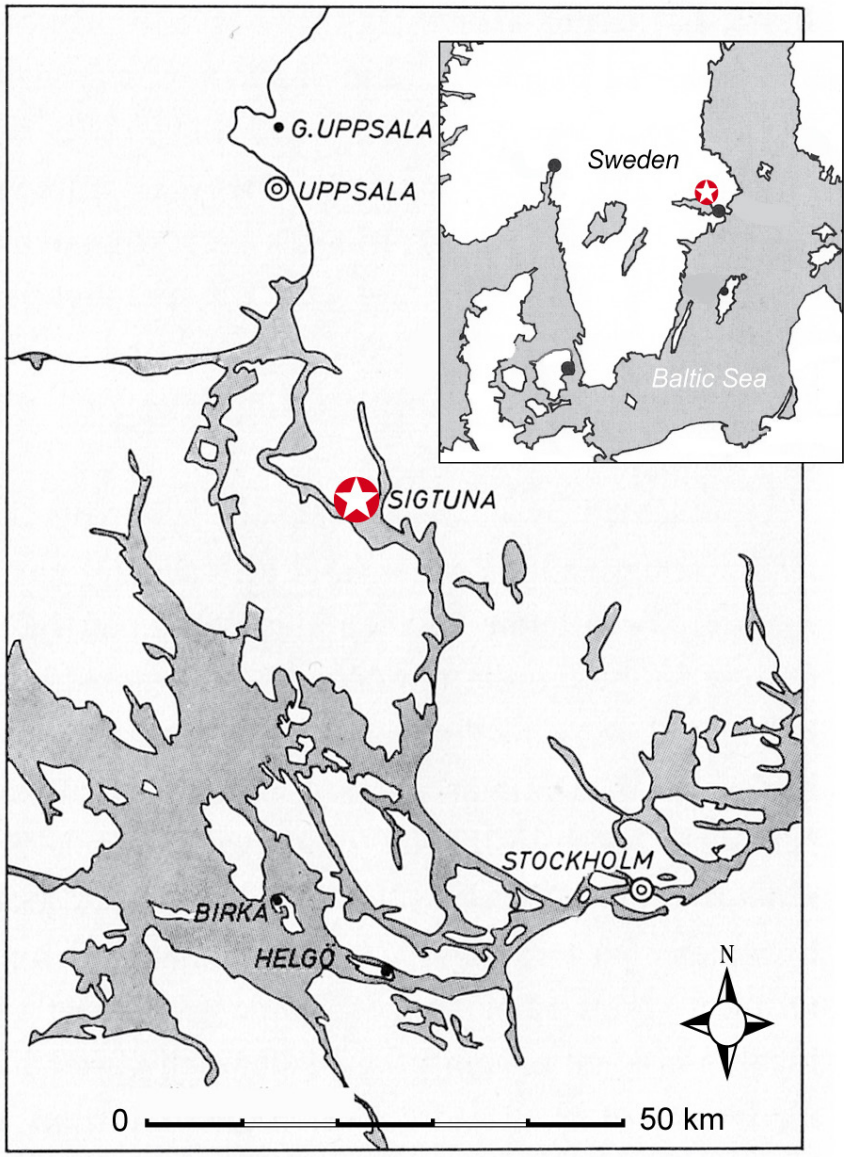

Fig 1. Sigtuna's geographical position at Lake Mälaren, close to prehistoric hotspots like Birka and Uppsala.

predecessors, especially the so-called knucklebones or astragals, hoof-joints of sheep. These should be considered a separate category and are not treated here. Even if dice can look different over time, identification is generally indisputable: they carry a numerical arrangement of dots, termed 'pips' (or 'eyes').

An examination of the Sigtuna Museum finds database revealed 122 entries for 'dice'. This included items recorded as probable dice, dice rough-outs, unfinished dice, etc. On further inspection, it was determined that the majority of such entries were more appropriately interpreted as craft working waste, and thus were excluded from analysis. The collections in the Swedish Historical Museum do not contain any dice from Sigtuna.

When the vetting process was completed, 86 finds remained accepted as dice. Of these, 78 are preserved intact and 8 in part. With a few exceptions, the dice are of a cubic form with pips on all six faces. Four additional finds have the pips clearly begun but not completed, and these were classified as unfinished dice. This makes a grand total of 90 finds. While the dice from Sigtuna have been recovered over a period of more than a century, 71 of the 90 finds (79%) come from excavations conducted between the years 1988 and 2006 in the central areas of the town. The two sites that produced the larg-

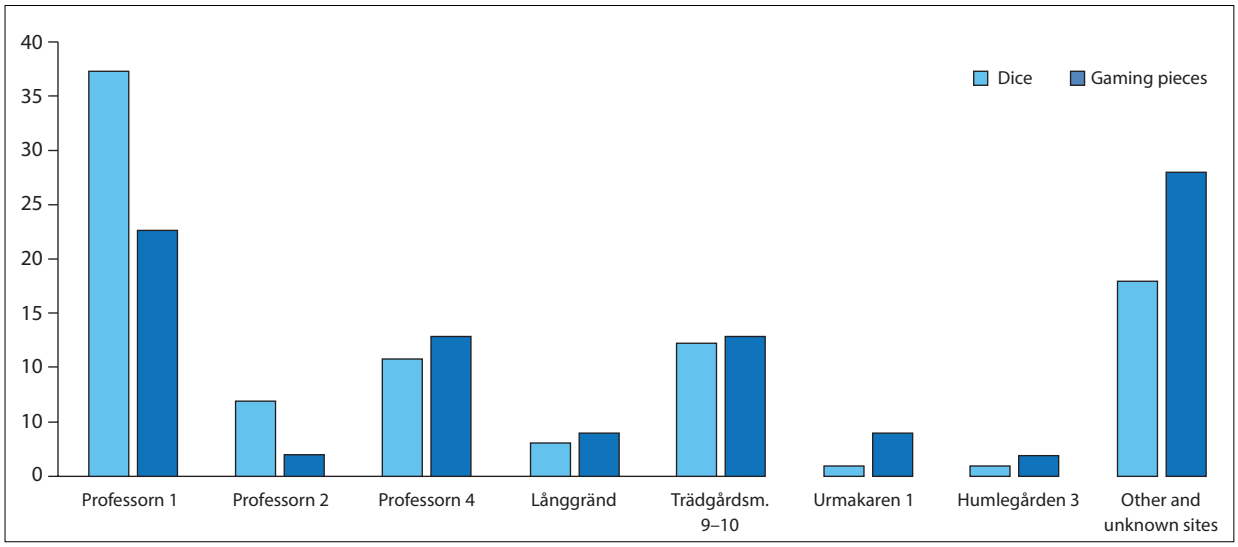

Fig. 2. Numbers of dice and gaming pieces from the different archaeological sites in Sigtuna (diagram by R. Edberg).

est numbers of dice are now processed and published in report form: Professorn 1 excavated in 1999–2000, with 37 dice,[2] and Trädgårdsmästaren 9–10, excavated in 1988–1990, with 12 dice.[3] This means that most of these dice have firm stratigraphical dating. It is mainly thanks to these excavation reports detailing stratification, layer dating, and find contexts that it has been possible and meaningful to conduct the present analysis of the town's gaming finds (Fig. 2).

A further number of dice come from archaeological excavations where find contexts have yet to be processed. This concerns mainly the finds from excavations in the 1990s at Professorn 2, Professorn 4, and Långgränd – a total of 22 dice. These sites do, however, have broad stratigraphical dating. Finally, there are some stray Old Finds and others lacking specific provenance, which cannot be dated.

The classification of dice by material is as follows: 19 examples (21%) of bone, 38 examples (42%) of antler, 15 examples (17%) of either bone or antler – closer identification indeterminable by ocular examination alone, 15 examples (17%) of walrus ivory (i.e. walrus tusk). Bone, antler, and walrus tusk thus dominate by 97%. Only three dice are of entirely different material: one example each of jet, amber, and clay.

Walrus ivory occurs in the earliest levels in Sigtuna (c. 980–990) in the form of a gaming piece from the Urmakaren 1 site. Four additional gaming pieces in that Arctic material with firm stratigraphical dating come from the first half of the 11th century. However, the earliest dice in walrus ivory in Sigtuna with a firm date appear in the 12th century. This comes from the Trädgårdsmästaren 9–10 site, which also produced craft working waste in the same material (Fig. 3). Johnny Karlsson has observed that this is the same period when the import of reindeer and Atlantic cod from northern Norway is in evidence.[4]

Pips are fundamental to dice, and the Sigtuna material exhibits variations in their arrangement.

Accordingly, the dice have been sorted into four type groups in this study. Fragmentary or unfinished dice (12 examples) cannot be assessed in this regard, leaving 78 examples distributed as follows (Fig. 4):

A. Total number of pips = 21, arranged as 6+1 / 5+2 / 4+3, where the sum of opposite faces is always seven: 21 examples (27%)

B. Total number of pips = 21, arranged as: 6+5 / 4+3 / 2+1, in numerical sequence around the dice: 40 examples (51%).

C. Total number of pips = 21, arranged differently from A or B: 9 examples (12%).

D. Total number of pips other than 21: 8 examples (10%).

Two dice stand apart from the rest: one each from Professorn 1 and Trädgårdsmästaren 9–10. Both are rectangular and considerably larger than all other dice from Sigtuna. The first, of antler, measures 29×21 mm with pips on the longer faces only: 6+5 / 4+3. The second,

[2] Wikström *et al.* (ed.) 2021.
[3] Wikström (ed.) 2011.
[4] Karlsson 2016a, 2016b, 91–95.

Fig. 3. Unfinished dice and waste cut-offs in walrus ivory. Trädgårdsmästaren 9–10, c. AD 1175–1200 (source: Sigtuna Museum).

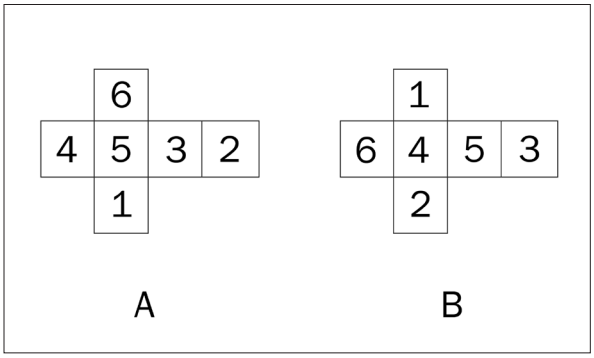

Fig. 4. Slightly more than half of the intact dice, 40 of 78, had pip arrangement B. The arrangement A, where the sum of the opposite faces always amounts to 7, was represented by slightly more than a quarter (drawing by R. Edberg).

of whalebone, measures 33×23 mm with pips on five faces: 6+4 / 5+3 on the long face, 2 on one short face. The dice from Professorn 1 dates to 1015–1030, and that from Trädgårdsmästaren 9–10 to 1025–1050 (Fig. 5). These are thus the oldest dice in Sigtuna with firm dating. Only one other dice is stratigraphically dated to the 11th century, namely that from the Granhäcken site. That dice belongs to group D together with the two just mentioned, and is clearly rectangular, but in size, 14×11 mm, it fits in with the younger cubic dice. These fall within the range of 6–16 mm; the majority being 9–11 mm.

These rectangular dice hark back to a tradition from the Vendel and Viking periods represented by, for example, those found at Birka, both in graves (Bj 551, 644) and in the Black Earth settlement (find numbers SHM 5208: 1798, 1709).[5] In a study from Lund, an early town contemporary with Sigtuna, two – the same number as in Sigtuna – of the 52 reported dice were of this rectangular mid-late Iron Age type (of which one is well-dated to 1000–1050).[6]

Type A, as defined above, is the dice pattern still in use today. Does type B represent a different, older tradition? This is difficult to establish, since both types occur in Sigtuna throughout the whole of the Middle Ages. The oldest cubic dice of type A with a firm stratigraphical dating comes from the Trädgårdsmästaren 9–10 site, where it is dated to 1175–1200. Concerning type B, one example, from the Professorn 1 site, is dated to 1160–1200. The arrangement of pips for type C seems more random. Concerning type D, two of the three rectangular dice have pip numerals 1 and 2 placed at opposing short ends, one has blank short ends, while

[5] Lindquist 1984.

[6] Spjuth 2012.

Fig. 5. The two oldest dice found in Sigtuna are of mid–late Iron Age type. Left, Trädgårdsmästaren 9–10, c. AD 1025–1050; right, Professorn 1, c. AD 1015–1030. L. 33 and 29 mm (source: Sigtuna Museum).

the remaining six dice in that group all exhibit differing pip arrangements.

A study of finds from Trondheim, Norway, a contemporary town to Sigtuna, records 20 dice, of which 11 contain pip arrangements similar to Sigtuna's type A. In the Trondheim study this was even considered 'the correct configuration', while three dice are recorded as having 'incorrect' pip placements, and the remainder are undetermined.[7] By contrast, in Sigtuna, type A represents only 27% of the 78 completely preserved dice, while the different yet equally regular type B arrangement of pips is almost twice as common. In other words, Sigtuna's medieval gamers would seem to have held a different view from Trondheim's on what constituted a 'correct' dice! Even though the Trondheim study material is small by comparison to Sigtuna's, it appears that even there pip arrangement was not a chronological feature: the three oldest, stratigraphically dated to 1150–1125, all have pips as in type A. The three exceptions belong to 1275–1325, a phase which also included eight 'correct' examples. In a different Norwegian study of dice, from medieval Bergen, 21 of the 30 examined examples were considered 'modern' (equivalent to Sigtuna group A). Of the remaining 9 dice, 8 showed a consistently different arrangement comparable to Sigtuna type B, and the researcher argued, quite reasonably, that this digression could as easily have been intentional as mistaken.[8]

The quality of craftsmanship of the Sigtuna dice varies considerably. Some examples are carefully worked with symmetrically placed pips, while others seem rather carelessly cut. A few are not absolutely cubic but slightly irregular or have slanted faces. The great majority of the dice from Sigtuna have pips formed as a circle with a central dot. Only three have pips formed as dots without circles or as shallow depressions. The ring-and-dot motif is a very common decorative element on contemporary combs, and these dice can be understood as products of the same craft-working environment. The variation apparent among the Sigtuna dice in terms of material, shape and pip arrangement would seem to indicate dispersed local manufacture. Game-playing in medieval times (as today) was a popular pastime in which exotic objects and material might be considered pleasing and prestigious, but not in any way vital nor even a feature of day-to-day entertainments.

Gaming Pieces

It is not difficult to identify dice in an archaeological context. They have pips. Even if considerable variation in dice form can be traced over time, there can be no doubt about the nature of the object when found. Gaming pieces, on the other hand, present a much more complex case. What makes an object a gaming piece?

[7] McLees 1990, 77–80, 238–241.

[8] Koksvik Lund 2010, 51.

Fig, 6. Onion-shaped gaming pieces of walrus ivory, dated c. 980–1000 and 11th century. H. (L-R:) 14, 30, 17 and 25 mm (source: Sigtuna Museum).

Already during excavation, the field archaeologist is confronted with a dilemma: is this a gaming piece? Register or dismiss? This is especially the case in urban excavations such as Sigtuna where the settlement layers are packed with every possible kind of decaying domestic and craft-working waste.

The underlying problem, of course, is that board games can be played to the fullest satisfaction with either finely carved pieces in exotic materials or the simplest of objects at hand, such as unworked stones, potsherds or mussel shells – a category that can never be archaeologically recognised with certainty as gaming pieces. A stone that is carefully rounded by polishing might be a tooled artefact, but was it used as a gaming piece? How to tell? Furthermore, any self-evident accompanying gaming boards were often sketched directly in the ground, leaving no trace. The simplest and safest solution for identifying a gaming piece is to limit one's choice to known archaeological and ethnographical analogies. This, however, has the negative effect of excluding all possible alternatives that, with a little imagination, might have been considered to have once served as a gaming piece. This more generous mindset was applied in the present study, but even so, after careful source-critical assessment, only 88 objects were accepted of the 238 original database entries listed as gaming pieces and counters. This includes one piece from the Swedish Historical Museum collection in Stockholm.

The number of gaming pieces from Sigtuna (88) compared to the number of dice (90) is remarkably low in relation to other excavated contemporary towns. For example, Trondheim produced 450 gaming pieces but only 20 dice.[9] However, those gaming pieces were mostly made of soapstone or wood. In Sigtuna, soapstone does not occur at all as a raw material for craft-working, and wooden objects are, in general, poorly preserved. These conditions, rather than cultural variation, are the most likely cause of such a discrepancy. In general terms, dice can be seen both as gaming pieces in their own right (casting dice) and as generators of chance within other games. This means that the question of what games dice represent cannot easily be answered. However, it would be rather tempting to speculate that with Sigtuna we are more often dealing with the game of hazard rather than games of skill, in contrast to the Norwegian sites.

The Sigtuna study showed clear changes in the shape and design of the gaming pieces over time. Firstly, pieces of mid-late Iron Age type are completely lacking. Secondly, the oldest Sigtuna pieces, from the decades around the millennium shift, AD 1000, are of two types: on the one hand 'onion-shaped', of which 6 are in walrus ivory (Fig. 6), and on the other hand carved 'men' and 'counters' in wood. Five of these survive (Fig. 7:a,b). The gaming pieces that appear alongside 12th-century finds resemble chess pieces, which is not remarkable since it is known that chess arrived in Scandinavia at that time (Fig. 8.) The 11th-century onion-shaped type now disappears, and flat circular gaming counters in different materials emerge to continue throughout the whole of the medieval period.

Unique among the Sigtuna finds is a gaming piece of whalebone and copper alloy stratigraphically dated to c. 1050–1075. It has a central metal pin that extends beyond the base, where it has been cut off (Fig. 9). A rather similar find is known from Dublin. Finds in Ireland of gaming boards with holes for inserting pegged gaming

[9] McLees 1990.

Fig. 7a, b. Wooden gaming pieces from the 11th century. H. (L-R:) 53, 60 and 27 mm. The circular pieces are 42 and 45 mm in diameter, respectively (source: Sigtuna Museum).

Fig. 8. Chess pieces of walrus ivory, dated c. 1100–1230. H. (L-R:) 14, 30, 17 and 25 mm (source: Sigtuna Museum).

pieces have figured in discussions on whether pegs were a functional adhesive feature, to facilitate playing with a board resting on one's knees or aboard ships in rough seas. Alternatively, the type could illustrate a specific Irish tradition where the vast majority of gaming pieces were provided with pegs.[10]

Deciding what is, or is not, a gaming piece is rather problematic regarding the relatively large numbers of sawn-off ends of elk-antler tines ('points') which at this time show up in the find material. These are variously registered across the different Sigtuna excavations as either craft-working waste or gaming pieces / possible gaming pieces, etc. In the present study, those points that show some evidence of being worked into a rounded form or other clear attempts at secondary shaping have been included (Fig. 10). Wedge-shaped points, with a sharpened tip but lacking other reworking, are excluded. This decision finds particular support in an observation made by Ingrid Ulbricht when examining craft-working waste in Hedeby, where she found the sharpened point of a tine *in situ*, still hammered into another antler tine. As a result, she interpreted such points, especially if they showed hammer marks, as wedges for splitting the raw antler material; rounded points, however, required a different explanation.[11] It cannot, of course, be proven that such tine endings were employed as rudimentary gaming

[10] Barton-Murray *et al.* 2012.

[11] Ulbricht 1978, 50, Taf. 27.

Fig. 9. The Irish gaming piece with upper and lower copper-alloy mounts held together by a heavy pin that protrudes broken-off at the base (break visible at lower right). H. 27 mm. C. 1050–1075 (source: Sigtuna Museum).

Fig. 10. Examples of simple gaming pieces made from elk tines, suggested as having served as the poor man's chessmen. H. 30–40 mm. 12th, 13th and 14th centuries (photo by R. Edberg).

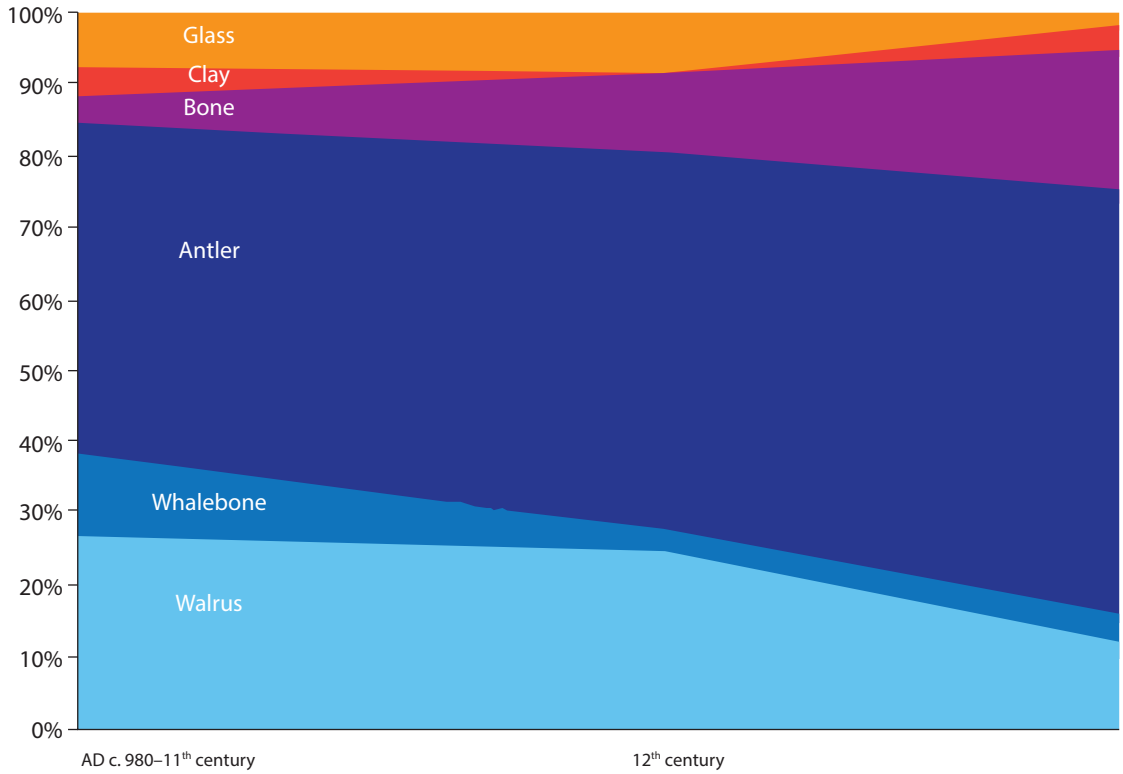

Fig 11. Row material of dice and gaming pieces from Sigtuna. In Sigtuna walrus ivory was used for 25% of the dice and gaming pieces from the later 10th to early 12th centuries. Whalebone occurs from the earliest layers down to the 13th century. Over time, simpler materials became more common – mainly cattle bone and elk antler. Diagram based on 45 dice and 48 gaming pieces, in all 93 objects with firm stratigraphic dating. Objects of wood are not included (diagram by Johnny Karlsson).

pieces, but neither should it be excluded. The most frequently used material for gaming pieces in Sigtuna was antler, 49%, followed by walrus tusk/ivory 18%, bone (other than whalebone) 9%, whalebone 8%, wood 6%, clay 3% and glass 2% (Fig. 11).

Of the 88 gaming pieces from Sigtuna, 60 came from archaeological investigations in the central part of the town conducted between 1988 and 2000. Of these, 42 are from fully reported or otherwise carefully analysed excavations. Most prolific were Professorn 1 (23 examples)[12] and Trädgårdsmästaren 9–10 (13 examples)[13] (*cf.* Fig. 1). So, what games were played? The onion-shaped pieces might be considered to represent the popular Viking-Age game of *hnefatafl* and perhaps even other board games. King-pin pieces and others shaped to stand upright suggest a different sort of board game, including chess, while the disc-shaped counters indicate board games in general.

Find Spots and Social Aspects

The sites of the large-scale archaeological excavations which produced the majority of Sigtuna's gaming finds (Trädgårdsmästaren 9–10, Urmakaren 1, Professorn 1, 2 and 4, and Humlegården 3) all lie within the historical town centre. They either flank the same street or lie no more than a stone's throw from each other (Fig. 12). Homes, workshops, and various categories of booths lay clustered here in the town throughout the whole of the several centuries-long period of the present study.

While it can be assumed that gaming items moved around with their owners, it is obvious that some of the finds must have been lost in the ground during playing outdoors or indoors over earthen floors. Find clusters might still represent traces of primary activity, indicating the places where they were played. On one

[12] Wikström *et al.* (ed.) 2021.

[13] Wikström (ed.) 2011.

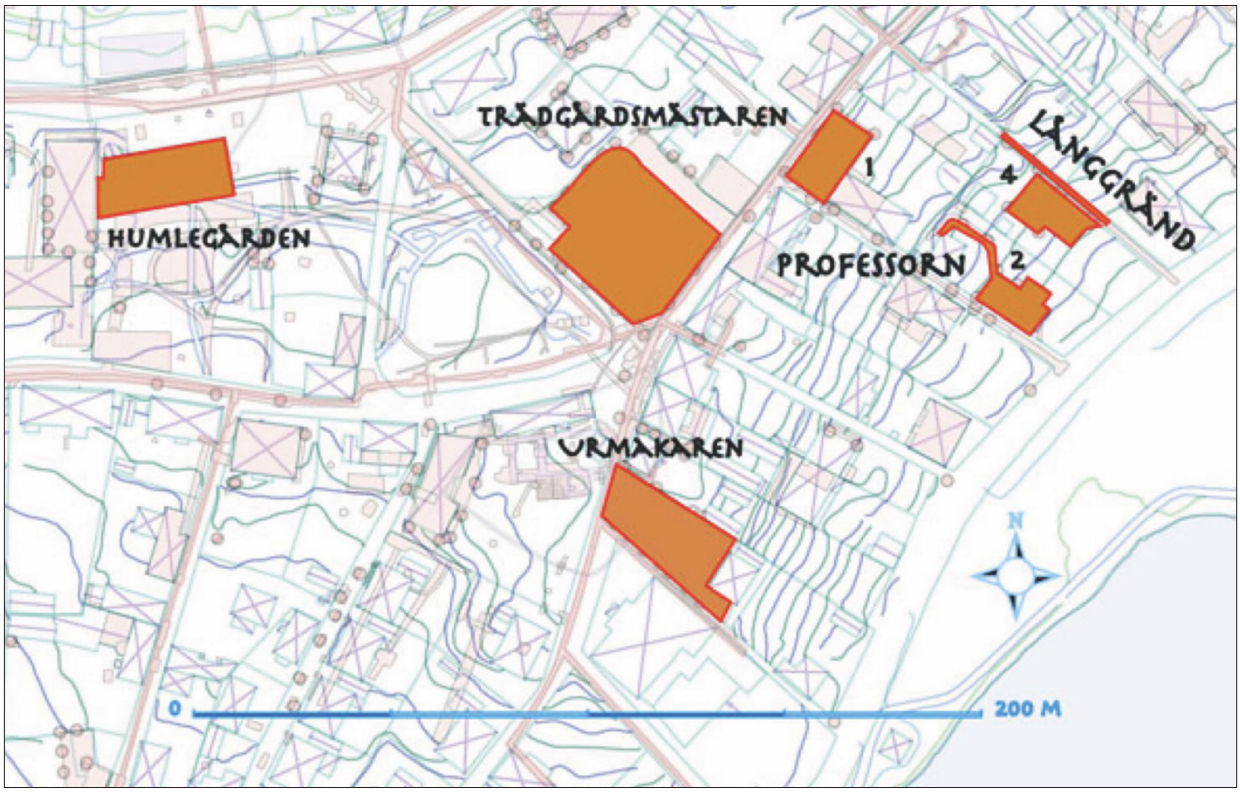

Fig. 12. The sites in central Sigtuna producing the most numerous finds of dice and gaming pieces (diagram by R. Edberg).

occasion, c. 1280, seven dice were left behind in a house fire and became imbedded in the ground that was flattened for rebuilding a new home. Dumping and house cleaning activities can result in objects getting moved into secondary or tertiary positions or becoming lost in archaeological background noise.[14] Thus, the general distribution of the gaming finds within this limited area might more likely be the result of preservation conditions, layer accumulation, or pure chance, rather than of any cultural behaviour patterns. An absence of gaming finds inside houses or laneways should obviously not be interpreted as indicating that games were never played in those locations.

Games, in particular board games, have received a fair amount of attention in the archaeological debate recently. The starting point lies with the gaming pieces and boards found in inhumation graves of the later Iron Age aristocracy. This concerns objects often made of exotic materials. Sometimes researchers have speculated, generalising from these finds, that gaming was a luxury activity, practiced by the elite and overlords – a conscious way of visibly setting them apart from those who needed to work. A classic sociological term for this phenomenon is 'conspicuous leisure', coined by well-known economist and sociologist Thorstein Veblen. Another idea, promoted a few years ago in a well-ventilated article concerning the gaming finds in Birka grave Bj 581, is that 'a full set of gaming pieces indicates knowledge of tactics and strategy'.[15] The deceased was identified, regarding the total martial nature of the grave goods, as a high-ranking officer. The concept aroused much attention, not least since scholarship as a rule does not view the relationship between the deceased and their grave content as mechanical, but as dependent on social factors, family traditions, and cultural codes. The majority of Birka scholars had interpreted this grave and other chamber graves in quite a different light, and many still do.[16]

Can a concept such as 'conspicuous leisure' assist our understanding of the Sigtuna gaming finds? To begin with, one must critically consider early historical and iconographical source material. This, by its nature, deals primarily with the activities and habits of the social elite. Archaeological excavations of elaborate inhumation graves where gaming objects of the highest quality are

[14] For definitions see Wikström *et al.* (ed.) 2021, 21.
[15] Hedenstierna-Jonson *et al.* 2017.
[16] Edberg 2019 with refs therein.

Fig. 13. Gaming board in alder-wood, from Trädgårdsmästaren 9–10, dated c.1050–75, incised with a grid of 11x11 squares, probably for *hnefatafl*. Size 33 x 45 cm (photo and emphasized markings by Sigtuna Museum).

included might be thought to confirm such sources. But looks can deceive. One critical observation to be aware of is that simpler Iron Age graves, as a rule, are cremation burials, where most grave goods get lost in the pyre. Still, in Sweden, gaming objects, including dice, do occur fairly often in these graves, and both sexes are represented.[17] Games were obviously played widely.

Finds from occupation layers might be expected to provide an alternative, more nuanced, and more complete picture. The early pieces in walrus ivory from Sigtuna – from the end of the 10th and the whole of the 11th centuries – seem rightly associated with the social elite of the town. When chess playing reached the town in the 12th century, the earlier onion-shaped pieces apparently became unfashionable and were replaced by often very elegant pieces that were intended to stand upright. The imported carved pieces or locally sculpted pieces made from imported raw materials that finally appear should generally be seen in the same context as the many other prestigious objects which occur in the town at the same time.

The Sigtuna material shows, however, that luxury items were in no way a vital component of gaming in the town. The already mentioned wooden pieces – 3 'men' and 2 'counters' from to a time before c. 1050 – are evidence that in early Sigtuna, games did not require access to exotic pieces of walrus ivory. With support of analogies from the studies in Lund, Trondheim, and Bergen already mentioned, these objects can represent many alternative types that have not survived. The offcut antler points showing evidence of secondary working, possibly primitive chess pieces, should be seen as additional evidence for gaming by the ordinary town folk in Sigtuna. The flat circular counters include some extreme examples, from the highly exclusive form of a polished counter in walrus ivory to the simple form of a rather clumsy copy in antler. The gaming board find occurs on the wooden baseplate of a barrel, which is incised with a pattern of 11×11 squares, each square measuring approximately 25 mm. It seems reasonable to interpret this as intended for *hnefatafl*. It can be dated by its find context to c. 1050–1075 (fig. 13).

In places where a rich and diverse written source material survives, such as classical Rome, we find a wealth of tales concerning a controlling gaming devil that holds sway over all sorts of people, from emperors to road sweepers, through the various games of hazard and skill they practiced. Insights into the many different gaming environments can be gleaned, as well as into how the innumerable bans were sidestepped.[18] Without drawing too close a comparison to ancient Rome, it is not unlikely that Viking and early medieval Scandinavian trading places and towns could exhibit similar circumstances, it is just that contemporary accounts are lacking. Sources also tell of intense gaming among Roman soldiers along Hadrian's Wall in the northwest to Syria's deserts in the east. They were confined to their camps, and if one were to speak of 'conspicuous leisure' in their case, it would have been when they were resting off guard, free to play. Notably, gaming pieces have also been found in Birka's so-called Garrison site.[19]

Chess with its metaphor of war and power, is commonly seen in the literature as the 'game of the overlord-

[17] Sandberg 1994.

[18] Carcopino 1984, 249–254 and refs. cited therein.

[19] Holmquist Olausson, Kitzler Åhfeldt 2002.

ing class'. Finds of exotic gaming pieces and boards seem to confirm this. Sometimes one hears the suggestion that chess was too advanced for ordinary folk.[20] Such ideas should perhaps be questioned because it is well-known today that anyone, regardless of social or economic status, who is interested enough, can learn the principles of the game in less than an hour. The board game as a concept was known and practiced in early medieval times, so any mental distinction compared to today should not apply. Gaming pieces and gaming boards can be as easily improvised for chess as for other board games, so why should just chess, once it had become known, have been the privilege of the elite?

It goes without saying, however, that novel and foreign gaming ideas do often reach the upper classes first. There is, however, rarely any significant delay before the idea filters down to lower levels and takes root there. As so often observed, mankind lives not just to survive, but also to live life. During the Iron Age and medieval times – precisely as today – gaming has always also been a pastime for common folk. So too in Sigtuna. Moreover, gaming lies within the nature of the urban scene, with its involvement in social meetings and exchange. In the commercial environment of the plots along the Main Street, gaming would certainly have been an important way to introduce, maintain and deepen relations, not infrequently with guests from far-off lands, even overcoming language barriers. The gaming board, utilizing the base of a barrel, offers a snapshot of everyday gaming in such an environment.

Conclusion

To sum up, this article reviews all known finds of dice and gaming pieces from the occupation deposits of the town of Sigtuna, Sweden (AD c. 980–c.1300). It indicates that the dice pip arrangement of 6+5 / 4+3 / 2+1, and the 'modern' arrangement pattern, in which opposite faces always add up to 7, co-existed from the 12th century. The pip arrangement is therefore no valid chronological indicator. Onion-shaped gaming pieces from 11th-century layers testify to board games, as does the single find of a *hnefatafl* board. Finds of chess pieces indicate that this game was introduced in the 12th century. Gaming pieces materials used were walrus ivory, bone, including whalebone, and glass. However, it is emphasised that numerous simple gaming pieces were also made from wood and the points of elk-antler tines, and are evidence of gaming by ordinary people. The view, held by some scholars, that Viking Age and early medieval gaming was mainly a pastime restricted to society's elite, cannot be sustained.

Bibliography:

Barton-Murray R., Johnson C. Riddler I. 2012, Gaming pieces of the Viking and medieval periods, in: G. Eogan, *The Archaeology of Knowth in the first and second millennia AD. Excavations at Knowth, 5,* Dublin, 423–427.

Carcopino J. 1984, *Dagligt liv i antikens Rom,* trans. N. Valmin, Stockholm.

Carelli P. 1998, Schack. Det medeltida feodalsamhället i miniatyr, in: *Metropolis Daniae. Ett stycke Europa. Kulturens årsbok,* Lund, 131–147.

Edberg R. 2019, Död amazon på Birka? En debatt, *Marinarkeologisk tidskrift* 3, 20–22.

Edberg R., Karlsson J., Söderberg A. 2022, *Spelföremål från Sigtuna. En undersökning av ett vikingatida och medeltida fyndmaterial,* Meddelanden och rapporter från Sigtuna Museum 65, Sigtuna.

Hedenstierna-Jonson Ch., Kjellström A., Zachrisson T., Krzewińska M., Sobrado V., Price N., Günther T., Jakobsson M., Götherström A., Storå J. 2017, A female Viking warrior confirmed by genomics, *American Journal of Physical Anthropology* 164, 853–860.

Holmquist Olausson L., Kitzler Åhfeldt L. 2002, *Krigarnas hus. Arkeologisk undersökning av ett hallhus i Birkas Garnison, RAÄ 35, Björkö, Adelsö sn, Uppland 1998–2000,* Stockholm.

Karlsson J. 2016a, Ben- och hornhantverk i Sigtuna – nätverk manifesterade i råvaruanvändning, *Situne Dei* 2016*,* 52–59.

Karlsson J. 2016b, *Spill. Om djur, hantverk och nätverk i Mälarområdet under vikingatid och medeltid*, dissertation, Stockholm University.

[20] e.g. Carelli 1998 and refs. therein.

Koksvik Lund G. 2010, *Spill i middelalderernes bysamfund. En arkeologisk analyse av spillmateriale fra Bergen,* Master thesis, Bergen University.

Lindquist M. 1984, Spielsteine, Würfel und Spielbretter, in: G. Arwidsson (ed.), *Birka II:1. Systematische Analysen der Gräberfunde,* Stockholm, 215–218.

McLees Ch. 1990, *Games people played. Gaming-pieces, boards and dice from excavations in the medieval town of Trondheim, Norway,* Riksantikvaren, Utgravningskontoret for Trondheim. Fortiden i Trondheim bygrunn: Folkebibliotekstomten, Meddelelser 24, Trondheim.

Sandberg M. 1994, *En rik man får spel? En undersökning av spelutensilier tillförda SHM mellan åren 1891 och 1983*, Master thesis, Uppsala University.

Spjuth O. 2012, *In quest for the lost gamers. An investigation of board games in Scania, during the Iron and Middle Ages*, Master thesis, Lund University.

Ulbricht I. 1978, *Die Geweihverarbeitung in Haithabu,* Die Ausgrabungen in Haithabu 7, Neumünster.

Wikström A. (ed.) 2011, *Fem stadsgårdar. Arkeologisk undersökning i kv. Trädgårdsmästaren 9–10 i Sigtuna 1988–1990*, Meddelanden och rapporter från Sigtuna Museum 52, Sigtuna.

Wikström A, Söderberg A., Roslund M. (ed.) 2021, *Hos herr Niklas och annat skrivkunnigt folk. Rapport från arkeologisk undersökning i kvarteret Professorn 1, Sigtuna 1999–2000*, Meddelanden och rapporter från Sigtuna Museum 63, Sigtuna.