

Sounds of Viking Age Scania

Form and Functions of Sound Tools from Järrestad, Löddeköpinge and Uppåkra

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Abstract

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This article deals with the sound and music of Viking Age Scania, primarily based on instruments and tools that can be interpreted as sound-making. The aim is to give a brief background to recent research, its sources, problems and methods.

A study of sound tools in Järrestad and Uppåkra, two central Viking Age places in Scania, follows. The result is discussed and compared to finds from Löddeköpinge, also a central place in Scania. In the archaeological material from these three places, there are pellet bells, buzz bones and finds that could possibly be a bell, a tuning peg for a lyre, an animal call and different kinds of flutes. All three places were of great importance during the Viking Age and all of the sound tools mentioned above could most likely have been produced there or have been introduced to the places via their great networks of contacts.

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Introduction

To investigate sounds produced by man in the Viking Age, musical instruments and sound tools are a good starting point. Although they can only reveal a certain part of all sounds, they do have the advantage of archaeological preservability. It can sometimes be difficult to distinguish between actual musical instruments and sound tools, i.e. whether or not an instrument was used to produce music or merely sound without musical intent. On the other hand, both types can definitely qualify as sound tools, and henceforth musical instruments will also be defined as sound tools.

Sounds have several important functions to us humans, and we produce sounds according to our needs. Producing sound can simplify everyday life in many ways. Labour could be eased by singing songs that created a work

rhythm unifying the workers. Rhythms could also be produced by the pounding of axes and other tools, thus making work run more smoothly. In the daily work with the animals on the farm, *kuling*, strong, high-pitched calls, were a good way to bring in or direct cattle. Occasionally intentional sounds of caution were necessary, for instance to bring attention to falling timber, loose cattle, etc. Also in war and battle, sounds were used to warn, coordinate and signal.

From the Viking Age there are both pictures and literary evidence of cultic as well as poetic song (see for instance Teviotdale 1992, p. 179; Lund 2002, pp. 22 f.). According to descriptions in the Old Norse sagas, there was dancing to well-known music at traditional weddings (Näsström 2002, p. 78), and it is reasonable to assume that music was played at other important rituals too. The music could

mark the different stages in the ritual and point to magical meaning. The Viking Age runes could be considered magical as well, and the reading them out loud was a part of the Viking Age sound (e.g. Waller 2006, p. 38). Some sounds and instruments could have a protective function, such as babies' rattles. There is also the myth about Gunnar in the snake-pit, who protected himself from the snakes by playing his harp.

Music in some form or other is likely to have existed in all social classes. It is tempting to believe that the sound tools were more sophisticated in the higher social classes, e.g. lyres, and simpler amongst simple people. Sound tools may also have filled another function, namely to signify wealth and status. Furthermore, sound tools were most likely used for entertainment and to create sounds just to have something nice to listen to.

In the Nordic region, or in areas where Nordic settlements have been confirmed, at least some 600 Viking Age finds have been made of definite or possible sound tools (Lund 1997, p. 35). A majority of these finds are rattle instruments, bells, and possibly jew's harps. Remains of string instruments, such as bridges and tuning pegs for lyres, have also been found. There are also bone flutes and animal horns with finger holes and bone whistles, a wooden pan flute and reed instruments made of bone or wood, wooden trumpets and bronze horns, buzz bones and bull-roarers.

There are no finds at all of drums from the Viking Age, although from the Stone and Bronze Ages there are finds that could be drums. It is reasonable to believe, though, that drums of some sort existed during the Viking Age as well.

Sources and source criticism

Because sound cannot be preserved archaeologically, there are inevitably some problems with the sources, but even so it is not impossible to research Viking Age music and sounds

(see e.g. Schneider 1986, p. 197; Nettl 2004, p. 118).

It can be assumed that the archaeological finds of sound tools by and large are discarded items or items lost by mistake. The question, then, is whether these finds are representative of Viking Age music making, and also how they may have deteriorated from the time they came to be in the soil up to this day.

The possibility for preservation is crucial for which finds we may use as sources. The better part of all objects that have ever existed have stood a very slight chance of being preserved for the future, especially objects made from organic materials such as wood. The finds of instruments are few in comparison with other types of prehistoric finds. Music archaeologist Cajsa S. Lund lists five possible reasons for this (here freely interpreted from Lund 1979, p. 98; 1981, p. 247; 2002, p. 20):

- 1) Sound-creating activities with sound tools played a small part in prehistoric times. More likely the use of voices dominated.
- 2) Sound tools need not have been constructed specifically for musical or even sound-making purposes.
- 3) Finds may have been falsely interpreted or not interpreted at all. Archaeological finds labelled "other" or "unknown" may be sound tools.
- 4) Sound tools are still in the ground – new excavations will result in new findings.
- 5) Most of the prehistoric sound tools have been lost forever, as they were presumably made from parts of plants and other perishable materials.

Viking Age music was probably rejected as pagan when the Vikings were Christianized, which further complicated the preservation of Viking Age music. However, the more profane genres of Viking Age music may not have been as threatened or as despised by the Church. Some of this music may well have lived on in popular form into the Middle Ages

or longer (Lund 2002, p. 19).

Literary evidence of music during the Viking Age is primarily non-Nordic, for instance Roman or Arabic. Here we may note for instance the writers Ibn Fadlan and Ibrahim Ibn Ahmad at-Tartuski of the 10th century. The German priest and historian Adam of Bremen visited the Nordic countries during the 11th century and gave his "view" of its music.

Many of the written Nordic sources, stories and narratives were actually produced during the early Middle Ages, after Christianity had been introduced. One might therefore say that this literary evidence of Viking Age sounds was written by persons not describing their own culture, but the unknown and unfamiliar, and often in comparison with later and seemingly superior and more palatable music.

From the Viking Age there are visual representations of sound tools that may be used as historical sources. Although images with motifs related to music were not created with future historians in mind, and these images thus may be influenced by factors such as the artist, the commissioner, the medium, and the artistic tradition (Teviotdale 1992, p. 179), they can still give us information about the sound tools in question. The fact that these pictures tell us more about the age's pictorial art than about its music does not mean they are not still useful for research on sound tools (see e.g. Kristensen 1994, p. 34).

The archaeology of music and sound

The branch of archaeology called music archaeology is concerned mainly with the intentional sounds people made, on the basis of archaeological finds, as well as with when, how and why they made them. No matter which area within music archaeology one is dealing with, the meaning is "not to reconstruct music for analysis and performance, but to reconstruct contexts in which musical activity and associated objects had significance" (De-

Woskin 1998, p. 103). These issues have been discussed in an interdisciplinary collaboration by researchers from fields such as music, archaeology, history, anthropology, ethnology, etc.

Lund has described research in music archaeology in the Nordic area before 1970. According to Lund, many important individual contributions have been made, but they have not been gathered in one and the same research tradition. One exception is the bronze lurs, which have received much attention, particularly compared to other sound tools (Lund 1979, pp. 96 f.).

In 1971, Lund made inventories of selected Nordic archaeological archives to investigate known sound tools and to discover possibly overlooked sound tools (Lund 1979, p. 97). The results of the inventories are compiled and discussed in her undergraduate thesis of 1972. Ways to further broaden exploration of ancient Nordic music were suggested in the thesis:

1. to systematically explore all the Nordic archives of prehistoric finds;
2. to reappraise and/or supplement archaeologists' interpretations of the finds;
3. to attempt to interest archaeologists in a broadened concept of music and thus stimulate attention to all types of objects with sound-making abilities;
4. to present to researchers of music a source material so substantial that it might stimulate research in prehistoric Nordic music on the "music side" as well;
5. to popularize the field and its issues to gain information about finds from the public (Lund 1979, p. 97).

Due to the problems of distinguishing between music and sound, "sound archaeology" might be a better term than "music archaeology" (see for instance Moberg 1986, pp. 238 f.). Apart from music archaeology the subject

has also been called “archaeomusicology”, or “palaeomusicology”, or “historical ethnomusicology” (Buckley 1998, p. 10) and when researching sound in larger architectural and landscape structures, “archaeoacoustics” (e.g. Scarre & Lawson 2006).

The preserved sound tools cannot themselves disclose what they sounded like during their “lifetime”, even if they are well preserved today. Neither do they reveal why or how they may have been used. But copies, reconstructions, reconstruction ideas and models allow us to investigate the ring, the tone, and the technical possibilities of the tools (Lund 1987, 2002, p. 23). Furthermore, it becomes easier to interpret fragments of or damaged sound tools, if one has seen a reconstruction of the tool in question or a well-preserved specimen (Tamboer 2002, p. 238). Catherine Homo-Lechner gives several examples of problems that may occur when reconstructing instruments. Homo-Lechner speaks of pitfalls in reconstructing from an object, a text or an image and also lists three areas of source criticism: technical authenticity, pertaining to research on materials and techniques of reconstruction; intellectual authenticity, having to do with the function of the instrument and its context, meaning the risk of reconstructing a sound tool that in fact was not a sound tool but has been interpreted as such, and the risk of placing an object in the wrong context; and sound authenticity, dealing with the problem of making an instrument live, when we do not know how it was really used or how it was played (Homo-Lechner 1998, pp. 35–49).

Sound tool criteria

Obviously there are issues in sound archaeology concerning the interpretation of archaeological material. Many objects generate sound, but need not have been used as sound tools (e.g. Lawson 2004, p. 63). There are two extreme positions in the view of sound tools: One is that all objects must be interpreted

as sound tools because they generate sound when hit against something or blown into; the other is not to consider any object a sound tool as one cannot say for sure that it was purposely used to create sound. A happy medium is to start out with the shape of the artefact and compare it to previously defined sound tools. Iegor Reznikoff suggests that evidence can be supplied by texts of the time, marked signs or ornaments that relate directly to the sound and obviously acoustic special features (Reznikoff 2006, pp. 77 f.).

Two systems for categorization of music-archaeological finds have been suggested, one being instrument type, and the other based on probability of use. The probability system is based on the categorization of instruments into five groups on a descending scale concerning the probability that an object was used as a sound tool (Lund 1981, p. 247). The categorization of instruments of different types relies on acoustic principles in line with the general scientific classification of instruments drawn up by Hornbostel and Sachs in 1914. It contains four main groups, all of which are represented in the music-archaeological material and has the following subgroups according to Lund (1981, p. 247):

- I. Idiophones
Rattles (e.g. pellet bells)
Scrapers
Percussion instruments
Bells
- II. Membranophones (drums)
- III. Chordophones
Lyres
- IV. Aero phones
Bull-roarers and buzz bones
Flutes (end-blown flutes,
and block and duct flutes, e.g.
recorders)

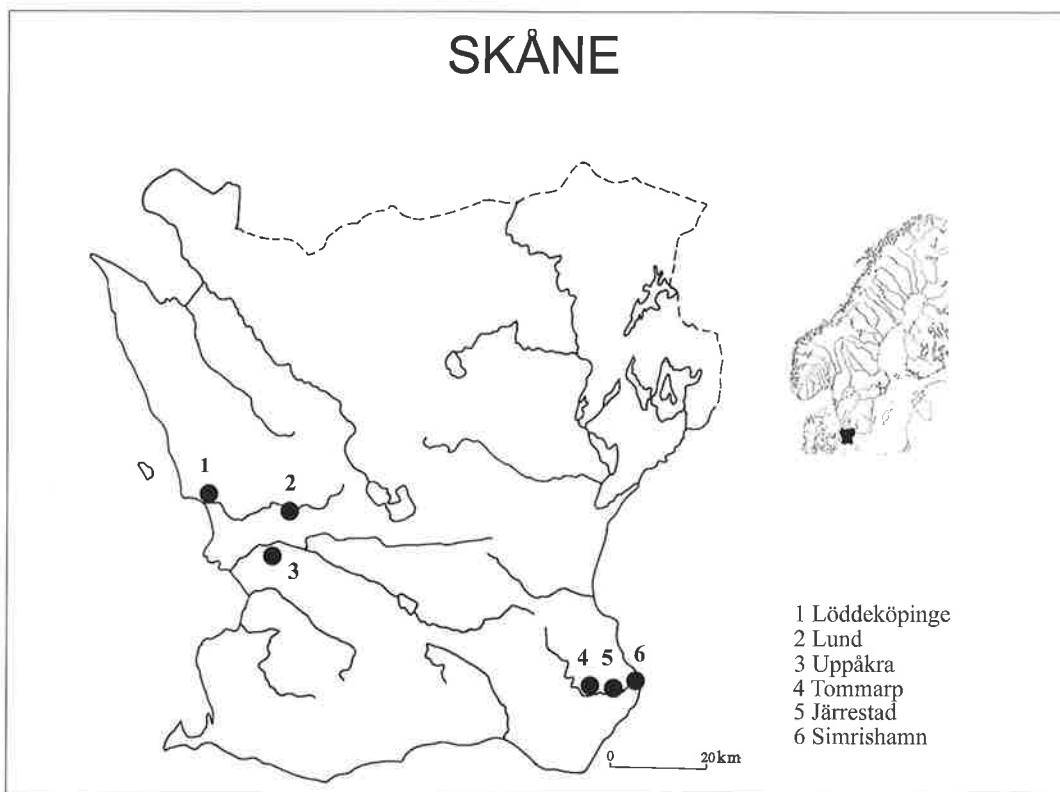


Fig. 1 Map of Scania with the sites marked. Drawn by Bengt Almgren.

Animal horns, wooden trumpets,
bronze lurs (trumpets)
Megaphones (voice amplifiers)
Reed instruments (e.g. bagpipes,
hornpipes)

For a more detailed description and illustrations of music archaeological finds, see a selection of Lund's works: 1981, 1987, 1998, 2002. An alternative system with more detailed criteria has been proposed by d'Errico & Lawson (2006, pp. 51–54).

In this work, a simpler approach has been adopted that the author considers is better suited for archaeology in general. Here, finds have been interpreted as certain, possible or undetermined sound tools.

Presentation of the sites at Järrestad, Löddeköpinge and Uppåkra

There is more than one explanation for the occurrence of, or lack of, sound tools at these sites. From an archaeological point of view these sites are important, displaying deep cultural layers, and many finds have been unearthed by the excavations.

All three sites were central during the Viking Age and had specific functions making each important to its region. The sites may have been religious, political or administrative central points. There is evidence of much craftsmanship and trade, and many people frequented these areas. Although the sites are similar in some ways, they also differ from one another; Löddeköpinge in particular dif-

fers from the other two sites. Järrestad and Uppåkra very probably had cultic functions, whereas Löddeköpinge was a secular place. After Christianization, Uppåkra and Järrestad lost their importance and new sites with obvious Christian connections became important instead. Löddeköpinge, on the other hand, adapted to the new religion and continued to be a site of significance.

Järrestad

Archaeological results from the Iron Age in Järrestad and eastern Scania (Fig. 1) show that four new hall buildings were raised continually during the period 600–1050 AD. During the 7th century a magnate's farm was established that by and large was preserved until the end of the Viking Age. The centre of the magnate's farm consisted of the hall and a connecting enclosed area with additional buildings (Söderberg 2003, p. 17). The material from around 550–700 AD points to the fact that large areas were quickly taken into use for various activities and that the remaining buildings consisted of some post-built houses and one sunken-floor hut. The settlement can be linked to an Iron Age aristocracy through the find of a counter punch used to make gold-foil figures (Söderberg 2003, p. 128).

Around the year 700 AD a new hall with side house and a palisade were raised and stood until the mid-10th century. Söderberg hypothesizes that this structure was in fact complex in nature and adhered to cross-regional ideological currents connected to a mythical cosmology and ruler ideals (Söderberg 2003, p. 156).

Around the year 800 AD the site was rearranged due to the construction of a new building. Changes in the hall area began approximately 950 AD when a new hall was raised in a different fashion, using a new building technique that has not been fully explained. This hall was to be the last in order and in the middle of the 11th century the traces end

(Söderberg 2002, p. 34).

Preservation conditions varied in the area. The material is quite rich and diverse. The finds were encountered primarily in sunken-floor huts and wells. A great deal of the metal finds were encountered in the topsoil (Söderberg 2002, p. 18). The remains of crafts are limited. However, artefacts as well as waste are present in a large number of structures spread over time, which indicates that there was indeed specialized craftsmanship during the entire period.

Per Lagerås' interpretation of the rural economy is that the area's riches were not based on its own production of crops. Animal keeping seems to have been more important than farming, although stabling facilities cannot be confirmed (Lagerås 2003, p. 266).

The pottery at Järrestad differs from pottery at other sites in Scania, suggesting that Järrestad had other contacts (Brorsson 2003, pp. 363–369).

The magnate's farm was destroyed during the 11th century when a new power structure was established in the area and Simrishamn and Tommarp became new central points.

Uppåkra

Uppåkra is located at the centre of the Lund plain, the south-western tableland of Scania, where the highest point is the present-day Uppåkra Church (Fig. 1). Several times since the 1990s, parts of the settlement have been excavated and the material found sets Uppåkra apart from other Iron Age settlements in southern Scandinavia. The settlement area has been geographically defined by the metal detector finds and measures approximately 1100 metres from north to south and 600 metres from east to west, and is inclined from the north to the south. The site is proven to have had functions tied to it during a period of around a thousand years, suggesting a continuity not found at other Iron Age sites in southern Scandinavia (Helgesson 2002, p. 45).

Uppåkra must have had a vast communications network and may well have served as a gathering place where people met, traded and exchanged experiences (Andersson 2001, p. 71; Helgesson 2002, p. 61). Materials such as bone and horn were used at the site. Melting pots, moulds and moulding waste point to iron extraction as well as production of metal and precious metal objects. There are also other objects most likely not produced at the site, but brought by outside contacts (Helgesson 2002, p. 54).

The finds consist mainly of household material, animal bone, predominantly from the most common pets, being the most dominant category of objects (Lindell 1999, p. 18). Also, a small number of bones from dog and horse as well as from a few species of wild birds and fish have been identified (Nilsson 2001, p. 89). After the offal, pottery constitutes a major category of finds. A large number of iron objects have also been found using metal detection, but many of them are so fragmented or corroded that identification has not been possible (Lindell 1999).

There are many objects that distinguish themselves through high quality, or provenance or by being unique. These may be gold and silver objects, imported objects, ornamented weapons or exclusive jewels such as button-on-bow brooches. These status objects could indicate a ruling elite in Uppåkra (Helgesson 2002, p. 62). Gold-foil figures and glass shards in the material indicate where central parts of the settlement may have been, as well as the location of the hall. As is the case in Järrestad, the hall in Uppåkra was rebuilt in several stages and this site also shows evidence of manor-type buildings as well as smaller units (Larsson 2007, pp. 7, 9).

By the end of the 10th century Uppåkra lost its importance and the Christian city of Lund was founded not far away.

Löddeköpinge

In Löddeköpinge in western Scania (Fig. 1) there is a complex of settlement remains dating from the late Iron Age and the early Middle Ages. Excavations began at Vikhögsvägen in 1965 and in the 1970s parts of the village were excavated as well. Since then, several other excavations have been undertaken, e.g. in 1990 and 1996 (Svanberg & Söderberg 2000).

About 800 metres south-west of present-day Löddeköpinge Church lies Vikhögsvägen, a part of the complex, consisting mainly of sunken-floor huts. It has been interpreted as a seasonal trading site from 800 AD to 900 AD. After that the activities appear to have ceased (Helgesson 2002, p. 73; Söderberg 2000, p. 292). The location also functioned as a production site, as can be seen in the finds. The finds also indicate that certain repairs, for instance boat repairs, were carried on at the site. However, there is no evidence of any extensive specialized craftsmanship.

One settlement with sunken-floor huts, albeit on a smaller scale, has been found at the mouth of the stream and it is considered to have been active during roughly the same time period as the trading site at Vikhögsvägen (Söderberg 2000, p. 292). Yet another settlement that has been dated to 800–1100 AD surrounds the present-day Löddeköpinge Church. The cultural layer, a sunken-floor hut and post-holes that could indicate long-houses have been investigated there.

Judging from the finds at Löddeköpinge, textiles were the most important product. This probably had to do with the large demand for sailcloth, the increase in production of which was due to the change in power structure, leading to increased demand for sailcloth and clothes for house-carls (Andersson 2000, p. 187; Svanberg 2000, p. 258). Some finds of dross and raw iron indicate some small scale of metal craft at the site. Wood craft is indicated by a drill, and prickers possibly indicate

leather craft. But apart from textile craft, the majority of the activity seems to have consisted of common farm crafts (Svanberg 2000, p. 87).

According to Svanberg, the social elite were clearly present at Löddeköpinge, something which can be seen in the finds of more exclusive objects. The finds reveal a farm area, or several, where the Viking Age people were in frequent contact with people in other areas, enabling them to equip their homes with objects that were more upscale than those encountered at other sites in western Sweden (Svanberg 2000, pp. 97, 258).

Because sea voyage was so important during the Viking Age, the mouth of the river Lödde Å, and the settlements there came to play an important part as gateways to the western Scanian landscape with its densely populated settlements. It was therefore crucial to the social elite of the Viking Age in general and to the changing royal power of the late 10th century especially, to control and profit from the activities here (Svanberg 2000, p. 258).

Outside the village is an extensive early cemetery, which may have been one of the first of its kind in Scania, signifying Christianization. Shortly after the mid-10th century there was an evident expansion within the village area in Löddeköpinge. The areas surrounding Löddeköpinge and Borgeby no doubt constituted a bridgehead in the building of the new royal and ecclesiastic spheres (Svanberg & Svanberg 2000, p. 314).

New finds of sound tools

The aim of this work was to go through the material from Järrestad and Uppåkra to see if there are in fact objects that could be sound tools, though the archaeologists have not interpreted them as such. The result is discussed and compared to finds from Löddeköpinge. The three sites in question display different

types of sound tool finds. In the Järrestad material there is a pellet bell, in the Uppåkra material there are several pellet bells, buzz bones, flutes and other less definitive finds, in the Löddeköpinge material there are buzz bones and a pipe. The dissimilarities in the results may have to do with the nature of the sites, but also with excavation procedure, whether detectors have been used or not, and how much of the site has been excavated.

Pellet bells

The pellet bell is a kind of bell with a marble rolling around freely inside it, creating a sound as it hits the casing, instead of a clapper. Often the pellet bell is spherical with small round holes or slits.

In the Uppåkra material there are eight pellet bells. They are detector finds that lay in the surface soil near the hall. As the pellet bells are so differently shaped it is difficult to measure them in a uniform way. The measurements given here refer to the pellet bells at their longest, which could be either height or width.

Pellet bell number 1 is made of a thin, probably round, metal disc that has been cut into at the edges to form tips. The tips have been bent in and partially cover one another. The pellet bell has five holes functioning as sound openings. Any one of the openings may also have been used to fasten a string to it. At its longest it measures 2.8 cm. Pellet bell number 2 much resembles number 1, as does number 3, except that the latter is more damaged (Fig. 2).

Pellet bell number 4 is different. It has no overlapping tips, the surface is even and solid except for one sound opening at the top. It has probably had the shape of a small bell. In contrast to the other pellet bells, this one has no hanger, but it probably had one. It measures 2.4 cm, and would have been about 1.5 cm in diameter had it still had its original shape.

Pellet bell number 5 is more advanced than the others. It has a sturdy hanger and its original

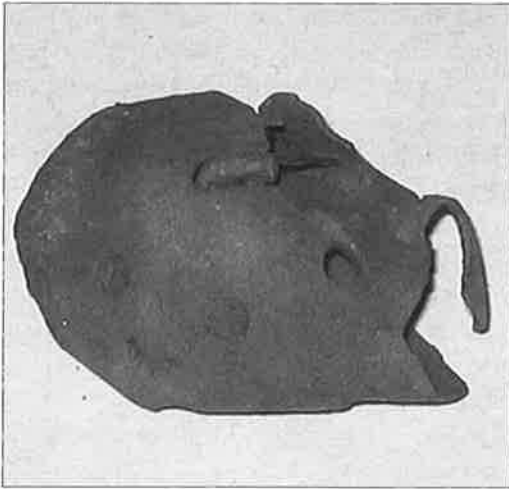


Fig. 2 Pellet bell no. 3 (LUHM 31000 fnr. 1690).



Fig. 3 Pellet bell no. 6 (LUHM 31000 fnr. 2848).

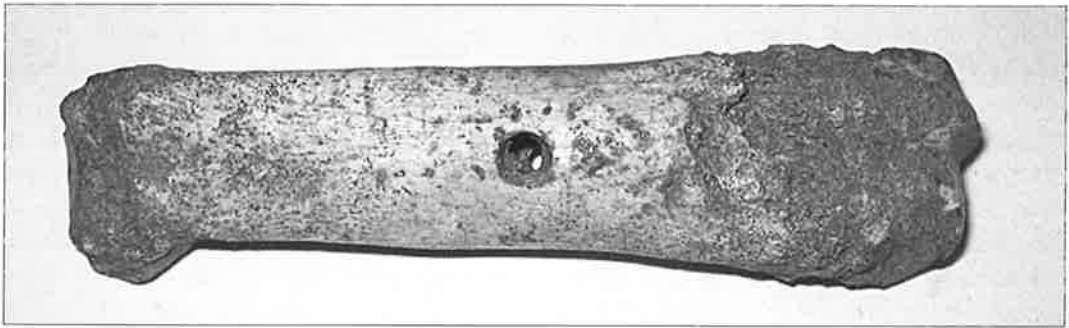


Fig. 4 Buzz bone no. 4, 8 cm (LUHM 31251 fnr 4689).

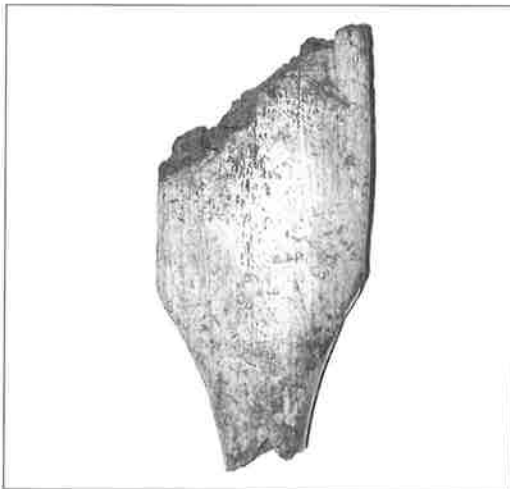


Fig. 5 Possible fragment of a bell, the handle is 2.7 cm wide (LUHM 31000. fnr. 4208).



Fig. 6 Possible tuning peg for a lyre, 4.9 cm (LUHM 31251 fnr. 7781).

shape was probably spherical. Four slits run along the middle of the pellet bell forming three callosities. It still has a small pebble inside, which means it still functions as a pellet bell. It measures 2.7 cm at its longest.

Pellet bell number 6, too, resembles number 1 (Fig. 3). The top part has probably been hammered out, whereas the bottom part consists of tips bent in to make a sphere. In its present condition it looks as though someone has pried it open to get at the contents. It has five sound holes at the top, one at the centre and the other four in a circle around it. Eight slits radiate down the sides from the centre sound hole, indicating that the manufacturing technique was quite advanced. Possibly this pellet bell was intended as a status symbol.

Pellet bell number 7 is of yet another kind. It is robust and has a solid hanger with "ears" that presumably held it in place. The body is not quite round, but consists of tips bent in to form a sphere. It is bigger than the other pellet bells and still has a pebble within to make it sound. A sound hole is located by the hanger. Pellet bell number 8 is smaller and appears to have had the shape of a small bell. It has a moulded hanger that probably went down into the body of the bell holding the clapper inside. It has one hole, in all likelihood a sound hole.

In the Järrestad material there is a flattened white metal pellet bell. One can see four holes that continue down one side of it. On the other side it has been cut into tips that can be bent in to make a sphere. This pellet bell resembles pellet bells number 1–3 from the Uppåkra material. The context of this bell, however, cannot be traced by looking at the report or the list of finds. It had not been noted that this object was in fact a pellet bell.

A large part of the metal finds in Järrestad were encountered during metal detector surveys of the topsoil (Söderberg 2002, pp. 34, 37). Possibly the pellet bell was found there. That there are no pellet bells at all in the Löd-

deköpinge material may be due to the fact that metal detectors were not used during the excavations in 1976 and 1979. It does not seem like detectors were used during later excavations either. In Uppåkra, though, metal detectors were used and the pellet bells, among other things, were found.

The pellet bells found at Uppåkra and Järrestad may have had different and/or varying functions. Today the pellet bell is considered mainly a children's toy, or a sound tool to bring attention to a horse-drawn carriage, or something to stop the cat from catching birds. In a wider historical perspective, however, the pellet bell often signified status and was used for ornamentation.

It is quite possible that the pellet bells from the Uppåkra and Järrestad material were indeed fastened to clothes serving as status symbols and/or ornamentation to call attention to the person wearing them. It is also possible that the pellet bells may have been parts of cult objects. Catholic priests use pellet bells during communion to signify the transformation of the wine and bread into the blood and body of Christ. It is unlikely that a cult object was lost, as these objects tend to be handled carefully. However, as in the case of the tuning peg, it is possible that several pellet bells once hung together. If one pellet bell had fallen off it may not have been handled carefully.

Buzz bones

Buzz bones are made out of bone, most commonly the metatarsal bone from a pig, with a hole drilled or carved out in the middle. By stringing two bands through the hole, twinning them tightly around the bone, and then repeatedly pulling outward on the bands one can create a buzzing sound.

In the Uppåkra material there are five pig's-bone buzz bones with a hole through the middle making them usable as buzz bones, and three bones with unfinished holes. The latter three were probably intended to be made into

buzz bones and they indicate the occurrence of processed pig's bone.

Buzz bones 1 and 4 (Fig. 4) were found in the same rich layer as many of the finds that are representative of everyday life, but where also other, more prestigious, finds have been made, such as cut amber, glass, pearls, gold objects, coins and rosary beads made out of antler. Buzz bone number 2 was found in a similar layer, in which some 16 gold-foil figures were also discovered. The gold-foil figures indicate that the buzz bone was found near the hall.

Buzz bone number 3, however, was found in a layer indicative of a simpler environment, perhaps a workshop environment without living quarters. The buzz bones seem to have existed in all manner of environments.

In the Löddeköpinge material surveyed by Lund there are nine buzz bones that are from the settlement area. Their context cannot be traced further than to say that about half of them are settlement area finds, and the other half are settlement area finds *and* either floor, fill or stone fill. According to Svanberg, though, they are from the southern part of the village plot, and not from the settlement at Vikhögsvägen or the northern part of the village plot (Svanberg 2000, p. 118 and sources cited there).

Yet another four buzz bones from Löddeköpinge have been found during later excavations. These buzz bones can probably be dated to the 10th or 11th century, but could possibly be even older (Svanberg 2000, p. 118). One of these buzz bones was found in a fill, in which there was also a bone needle, another in a floor layer together with a comb of horn, bone needles and some pottery.

Buzz bones are the most commonly found sound tools. They are relatively easy to make, it suffices to drill a hole through the middle of the bone and to run two pieces of thread through it. However, the hole must be situated at the bone's exact point of balance in order to make the buzz bone work correctly

(Lund 1979, p. 103, 1998, p. 20).

Metatarsal bone of pig was probably quite easy to come by at the settlements. The buzz bone is an easy tool to use, even for children. The sound is a buzzing and one cannot manipulate the pitch to create a melody. For that reason, it can be assumed that buzz bones were used as children's toys, but they may also have been used in cultic or religious ceremonies. The buzz bones appear to have been brought to England, at least to York, by the Vikings (Svanberg 2000, p. 117). Buzz bones are now a well known type of find in medieval cities, where a great number have been found, exemplified by the city of Lund, where seven have been found, and by Sigtuna, where some 30 have been found. The buzz bones found in Sigtuna were then thought to be children's toys (see Svanberg 2000, p. 117 and sources cited there). According to Lund, Nordic archaeologists have thought bones of this kind to be buttons or amulets (Lund 1979, p. 105). It could well be that the buzz bones filled several functions during their lifetime.

Flutes

At Uppåkra an end-blown flute has been found. It is made out of bone but has been carved out to such an extent that it is difficult to say what kind of bone. The flute is 8.2 cm long and has a crack in it.

It is highly likely that other flutes and flute types have existed in Uppåkra and at the other sites. It is also very likely that wooden flutes and pipes existed, especially those ones made from elder which is hollow and easy to work with. In this case the fact that the material is easy to work with often means it is perishable, which is why we cannot hope to encounter wooden instruments of any numbers from the Viking Age. Bone flutes, however, can be expected.

Possible bell

In the Uppåkra material there is a top part

of what may possibly be a bell with a hanger (Fig. 5). Like the pellet bells at this site, this is a detector find. The handle is 2.7 cm wide. However, this object may also have had some other function, or functions, for instance that of part of a lid for a container.

Bells may well have existed in earlier cultures capable of handling metal. There is a bell from Gotland encountered in a stray find. That bell is dated to somewhere between 0 and 400 AD, measuring 7 cm in height (Lund 1987, p. 24).

The possible fragment of a bell found at Uppåkra could have been part of a bell of roughly the same size as the one from Gotland, judging from the size of the handle but the shape of the bell was different. Considering the size of the bell, it could not have been heard from as far away. Hence, it could not have functioned to summon many people over large areas. But it could have been used by sales persons to bring attention to their goods, in cultic contexts, or as a status symbol.

Bells are instruments that require advanced manufacturing skills. Being able to handle metal does not necessarily mean one is aware of the characteristics of a bell. The bell fragment from Uppåkra appears to be lathed, hence the striations. Perhaps it was not moulded properly and cracked, leaving the fragment. In any case we do not know if it was manufactured in Uppåkra or if it was brought there by traders.

Possible tuning peg for a lyre

There is a bone object found at Uppåkra interpreted by the excavation leader Karl-Magnus Lenntorp at the Department of Archaeology at Lund University as a possible tuning peg for a lyre, which seems reasonable (Fig. 6).

The object is broken off at both ends and the remaining piece could be the part between the handle and the hole where the string is fastened or tied round. The context for this find cannot be traced from the reports or lists of finds.

There were lyres in Germany during the 5th to 7th centuries, and remains of several lyres in various shapes have been found in graves in Germany and England, for instance at Sutton Hoo where a fragmented lyre was found. Similar lyres with six strings have been depicted in artwork of that time. In an English manuscript from the 8th century there is a depiction of King David playing the lyre. Lyres belonged to aristocracy (Bischop 2002, pp. 223 ff.) and so the possible tuning peg from Uppåkra could signify the presence of a warrior elite at the site, something that seems reasonable considering the character of Uppåkra.

Lyres are mentioned in Old English poetry, and in context of the hall, as accompanying poems. According to Graeme Lawson, who has done extensive research on the lyre, the instrument is strongly associated with so-called warrior culture through many grave finds, especially if a find indicative of a lyre is encountered in a hall building (Lawson 2006, p. 94). In the hall at Tissø in western Zealand, in Denmark, a tuning peg made of bone, measuring 5.5 cm, has been found. This one is richly ornamented, in contrast to the possible tuning peg from Uppåkra.

It is possible to build replicas of lyres since there are enough finds and sufficient knowledge. The material and construction and the repairs that have been made on some of the finds seem to indicate that lyres were important objects with important functions. The fact that the shape of the lyre remained the same for so long suggests strong tradition in the manufacturing of lyres. Through reconstructions it is known that even if a lyre is played as powerfully as possible, the sound does not travel very far. A lyre would not be detectable during a noisy party in a hall (Lawson 2006, p. 94).

Possible animal call

Yet another instrument made from bone has been encountered in Löddeköpinge, and it

has previously been interpreted as a whistle. It is probably an animal call, it emits a sound that resembles that of some sort of animal, thus attracting the animal. It has a slit at one end and two sidewise holes. The object is 9.6 cm long and was discovered from a floor layer in which loom weights and spindle whorls were also found. The finds just mentioned are indicative of textile production to lesser or greater extent. It could be that the object interpreted as a whistle was used somehow in textile production. An object similar to this one, only shorter, has in fact been interpreted as a textile implement (see Vésteinnsson 2000, p. 167).

Due to a large crack in the object it cannot in its present shape be used as an animal call. It stands to reason that an animal call that incurred such a crack could be used for something else instead.

Undetermined sound tools

There are a number of finds that could falsely have been interpreted as sound tools. They are brought up in this text to point to certain pitfalls in the search for sound tools.

In the Uppåkra material there is an object that has been labelled “bone flute (?), fragment” in the report. The object measures 8.8 cm and has been sanded and polished. It has man-made holes but is not actually a flute. However, it could well have been intended to become a flute. It resembles a flute except for the fact that it is not hollow.

Clearly the ends of the bone have been worked on with a sharp, pointed object, the intention being to hollow it out. One of the ends has a piece missing. Presumably it broke off during the process of hollowing out the bone. Both ends are rounded.

At one of the ends there is a hole, the incision, which can be found in every block and duct flute. In order for the block and duct flute to function, the chamber between the end into which you blow and the incision must

be sealed off so that only a small canal is left through which the air can travel to the sharp edge of the incision, the labium, that creates a distinct tone. Conceivably, whoever made this object chose to discard it when a piece of an end broke off. It may have been used as a toy, since it could not be properly used.

The object was found in a layer where bone and ceramics were also found. In the area, excavated in 1998, remains of stoves and hearths were discovered, indicating that the area was used for household activities such as cooking (Nilsson 2001, p. 89).

Lund mentions a horn artefact, “artefact of antler tines”, similar to the possible flute in Uppåkra. Similar objects have previously been interpreted by archaeologists to be flutes, but Lund places it at the bottom of her probability scale, saying that it is a tool but not a sound tool. Instead they are possibly saddle pins or textile implements (Lund 1979 p. 100; 1980 p. 260).

In my search for sound tools several undetermined finds of rattles, such as metal rings and objects with holes through them, were uncovered. These were, however, not examined further. In addition pieces of iron were found, which at a far stretch might be interpreted as pieces of a jew’s harp, but there is no scientific evidence of a jew’s harp having existed in Scandinavia before the Middle Ages (Kolltveit 1996, 2000).

In the Uppåkra material an artefact was discovered that may have been used as a bull-roarer (an object with a hole in it, to which one can tie a string to twirl around the object at different velocities, thus creating sound). The object may also have been a hanger of some kind. There are several artefacts like this one, which are not discussed further, as it is difficult to determine what they are.

Discussion

Hall buildings and the social elite

At Järrestad four hall buildings, raised continually during *c.* 600–1950 AD, were revealed. To the south of these buildings there was an area fenced off by a palisade, comparable to a similar such area at a magnate's farm at Tissø in western Zealand, Denmark. Lars Jørgensen writes about the word *hov*, which is used frequently in the Old Norse sagas, Eddas and in *Beowulf*, and could be a place of cult or at least a socially significant place that was integrated with the mansion (Jørgensen 2002, p. 234). Considering the halls in Uppåkra and Järrestad one can speculate about the idea of a *hov* and the possibility that they functioned as places of cult. Cult is often associated with music. The question is which type of music could have been played in these halls, something that is much more difficult for us to discover. It would be easier to hypothesize about the music played if the instruments and sound tools had been found in the vicinity of the hall. Pellet bells have been found near the hall in Uppåkra, but pellet bells have also been found some distance away and do not appear to be linked to the hall in particular. Rather, they appear to be linked to the people who dwelled near the hall.

According to Graeme Lawson, the bulging walls of the halls may have given them acoustic properties which straight walls would not have. Historic sources say the halls were used by the warrior elite to give speeches, something that requires good acoustics (Lawson 2006a:88). The hall in Uppåkra was probably too small for festivities, and more likely had other functions, but this does not mean acoustic properties were not still important. The importance of the hall in Uppåkra has been discussed. Some theories say the hall was indeed a site for feasts. Another theory says the hall was a place where the early Christian mission was carried on (Helgesson 2002, p.

61). But when the city of Lund was founded, Uppåkra lost its importance in this matter. Löddeköpinge distinguishes itself from other central places in Scania as it does not display the same village layout with the long-house as the dominant building. No hall like the ones found in Uppåkra and Järrestad has been found in Löddeköpinge. It is evident that a social elite existed in all three places. No doubt, persons in the social elite could have imported expensive musical instruments and could also have hired people to entertain.

The question is what instruments were for the social elite only. Or, to turn it around, what instruments were available to most people? Society was divided into bondsmen, free men and magnates, and these groups probably used instruments that were reserved for them respectively. (In the case of bondsmen it may be unwise to treat such a large group as one. Depending on a bondsman's tasks, his status, lifestyle and music making may have varied.) Some musical instruments may have existed in more than one social stratum. In England graves from the Viking Age have been discovered, in which the finds indicate that the person buried was a musician, who was given musical instruments to take with him (Lawson 2006b:5,8).

Craftsmanship at the sites

Söderberg proposes that of the people who permanently resided in Järrestad, some were linked to the main farm and others created their own households nearby. In Söderberg's opinion the surrounding farms existed in some sort of interdependence with the main farm. They were most likely farming people and possibly specialized in some craft (Söderberg 2003, p. 165). The craftsmen were probably bondsmen. Workshop areas, with traces of specialized craftsmanship, can be confirmed mainly by such finds.

In Uppåkra as well there are indications in the material that various kinds of production ex-

isted at the settlement (Lindell 1999, p. 21). According to Helgesson, skilled craftsmen were often bound to a site, a means for the ruling class in Uppåkra to safeguard production and to meet the demand for quality, and at the same time assuring a secure existence for the craftsmen who were normally itinerant (Helgesson 2002, p. 54).

The site at Vikhögsvägen in Löddeköpinge was a production site. However, in the material no substantial evidence of specialized production can be found. This is another point on which Löddeköpinge differs from the other two sites. Although Löddeköpinge had a large output, the crafts were not as specialized as they were in Järrestad and Uppåkra. Could this have had to do with the halls: that it was safer for specialized craftsmen to settle in aristocratic environments like the ones in Järrestad and Uppåkra? Was Löddeköpinge not as wealthy as the other two sites? Perhaps Löddeköpinge was more common, while Järrestad and Uppåkra were characterized by cult. At any rate, there were craftsmen at all three sites and possibly musical instruments were manufactured. Even though Löddeköpinge displays simpler craftsmanship compared to Järrestad and Uppåkra, there is evidence of some small extent of metal craft, perhaps enough to manufacture pellet bells. Wood craft was also represented by a drill. The manufacturing of flutes and pipes was therefore possible. Prickers, possibly indicative of leather work, bring our thoughts to bagpipes. During excavations in the city of Lund in 1972, the "Pipe of Lund" was found. It is an intact pipe made from elder, measuring 19.7 cm with bevelled ends and four finger holes. It has been dated to around 1050 AD, or somewhat later, and was most likely part of a bagpipe.

Vegetation and preservation conditions

It would have been interesting to examine the vegetation at the three sites; the occurrence of elder and common reed, plants suit-

able for making sound tools, such as pipes and flutes (elder), and mouthpieces (reed). In the reports the information about the vegetation in the areas surrounding the settlements is limited. The area examined in Järrestad is situated in a hilly landscape, and topographically the examinations covered both crests and wetland (Söderberg 2002, p. 10). The settlements in Löddeköpinge were situated near the stream and the sea. Thus both the people of Löddeköpinge and the people of Järrestad had access to reeds and the means to make mouthpieces.

To determine whether or not there was elder at the sites is slightly more difficult. However, elder ought to have been a commonly occurring species, which makes flute manufacturing possible.

Preservation conditions varied greatly in the Järrestad area. On the plateau they were generally poor, except for features with culture-affected fill, e.g. sunken-floor huts and pits, that have been buried deeper. In the wetlands the conditions were more favourable and several wood artefacts have been recovered (Söderberg 2002, p. 34). The majority of the wood artefacts were secondarily used planks, but there are also bowls, a lid, and some non-descript objects from the wetlands (Söderberg 2002, p. 38). If instruments made from wood or bone ended up in the soil in the wetlands or in facilities with culture affected fill, they could well be in fair condition today. The contrary can be said for objects that ended up in the soil on a plateau. It could be that the preservation conditions at Järrestad were poor in general, as no wood or bone instruments have been found. On the other hand, there is a well preserved metatarsal pig's bone in the Järrestad material. This bone has not been worked on. According to Lagerås the agrarian economy in Järrestad was based on both tillage and animal husbandry. Järrestad's wealth, however, did not come from its own grain production (Lagerås 2003, p. 266). "The

substantial categories of animal bone ... will not be commented further in this context”, it says in the Järrestad report of 2002 (Söderberg 2002, p. 38). This indicates that bone has been preserved at Järrestad. Therefore it is odd that so many buzz bones have been recovered at Löddeköpinge and Uppåkra, and none at Järrestad.

The change of religion

Both Järrestad and Uppåkra lost their importance when a new power structure was established by Christianity. In Löddeköpinge there was no hall of importance to the heathen cult, like the ones in Järrestad and Uppåkra, which may explain why Löddeköpinge lived on when Järrestad and Uppåkra did not. In Löddeköpinge churches and graveyards could be established without competing with other religious buildings.

When it comes to religion and cult before Christianization, sources are scarce. There are no finds that can be connected to heathen religion in Löddeköpinge, which might be because they were destroyed by Christians. The Viking Age music, as well, may have been done away with by Christians as it represented heathen religion. From the Viking Age there is literary evidence of both cult and poetic song. It is possible that Viking Age music disappeared because of the changes brought on by Christianity, but other possible explanations have been put forward. In connection with the Christianization of the Scandinavian countries the imported Gregorian plainsong probably replaced heathen Viking music, although some of the Viking Age music have lived on in popular form well into the Middle Ages or perhaps even longer (Lund 2002, p. 19).

It is easy to believe that the heathen music was maintained longer in Uppåkra and Järrestad than in Löddeköpinge, which became a Christian site early on. However in Uppåkra there was much trade and communication

with travellers from far away. Furthermore there are artefacts closely associated with Christianity in the material. Therefore it is fully possible that Christian people resided in Uppåkra, and with them Christian music. Heathen music may have had competition from Christian music even in a place that was considered heathen. It is also possible that Christian music was adapted to heathen customs, and vice versa.

Conclusion

Within music archaeology, collaboration between music archaeologists and general archaeologists has been a troubling issue (Lund 1998; Scarre & Lawson 2006). Not all archaeologists have seen the necessity to search for traces of sound. Even if they did, it is a difficult task for archaeologists to determine whether their finds are in fact sound tools or something that can be related to sound at all. One suggestion from music archaeologists is to search for “sound remains” in places or buildings where sound may have been important. Some places are more suitable for sound activities than others (Scarre 2006). Through experimental research it can be established where sound has had the best acoustic conditions, and more experimental archaeology is therefore recommended (Watson 2006, p. 20). And in the words of Ian Cross and Aaron Watson (2006, p. 115): “an archaeology of sound will necessitate the application of detailed research techniques applied *in conjunction* with active and informed interpretation; the alternative is to risk hearing only echoes of ourselves.”

When dealing with different functions of sound, a good starting point may be tracing Viking Age sounds on the basis of the needs that would have existed, i.e. if sound was needed for practical, cultic or entertainment purposes. At central places like Järrestad, Up-

påkra and Löddeköpinge the need to signify status may also have existed.

This work has studied archaeological material from Järrestad, Uppåkra and Löddeköpinge, and the three sites in question display different types of sound tool finds, such as several pellet bells, buzz bones, flutes and other less definitive finds. The dissimilarities in the results may have to do with the nature of the sites, but also with excavation procedure, if detectors have been used or not, and how much of the site that has been excavated.

Different types of instruments and sound tools require different conditions to be manufactured, used and preserved. My investigation shows that different types of instruments were found at the three sites, but all three sites show that the people there had in fact the means to produce all the instruments or sound tools investigated here, with respect to material, craftsmanship and outside influences and contacts.

As more and more sound tools are discovered in many places, awareness of sound traces in archaeology will increase, and new discoveries await.

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