

# *Hørup - a specialised workshop site from the Roman Iron Age and Early Migration Period on Zealand*

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## INTRODUCTION

During the last 10-15 years many new Iron Age sites have turned up in Denmark in the wake of the very extensive use of metal detectors by amateur archaeologists. This situation has, however, also given museums the opportunity of pointing out to these amateur archaeologists known sites with a potential for interesting finds where the museums themselves have not had the resources to carry out the often very time consuming metal detector surveys. Hørup is just such a site. It has been known since the end of the 1950s, when a local amateur archaeologist carried out a small excavation. The main products of this excavation were large quantities of bones and an amount of pottery dating from the transition between the Pre-Roman and Early Roman Iron Age (Liversage 1980). The farmer who cultivated the land on which the site lies has picked up artefacts from time to time and in 1970 he found a bronze finger ring that was handed in to the National Museum. Otherwise the finds, which mostly comprise pottery, remained in his private collection. In 1992 the museum Færggården visited the site and it was then discovered that dense occurrences of culture layer containing pottery, bones and burnt stones had been ploughed up. This prompted the museum to initiate a systematic metal detector survey of the site, a task that was carried out over a period of four years by a local amateur archaeologist. Archaeological excavations extending over three seasons followed up this survey, but so far only a limited part of the preserved culture layer has been investigated.

The locality has its name from the small village of Hørup, which lies between Frederikssund and Slangerup in Northern Zealand (Fig. 1). The site itself lies on an even, southwest-facing slope about 500 m southeast of the village. To the south, there is a damp area of water meadow and bog that is drained via a stream, the Græse, which runs into Roskilde Fjord 5 km west of the site (Fig. 2).

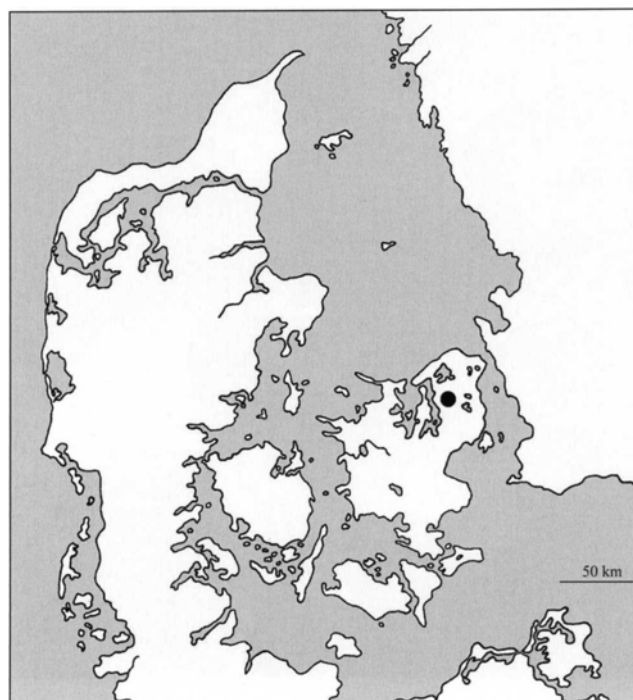


Fig. 1. The location of the specialised workshop at Hørup.

## THE METAL DETECTOR FINDS

The metal detector survey quickly gave results and even now, seven years later, new finds are still turning up, although their number has decreased significantly with time. Some of the metal detector finds have been plotted in relative to two points in the property boundary, which delimits the site to the west. These plots, along with observations made at the site, show that the find intensity is greatest within an area of about 75 x 75 m, but that the whole find area has an extent of about 20 000 m<sup>2</sup>.

Among the identifiable metal detector finds, fibulae and fragments of these are the most common artefact type with a total of about 50 specimens (Fig. 3). These fibulae give an approximate time span for the site. The earliest fibulae date from the Early Roman Iron Age, phase B2, and the latest are from the Early

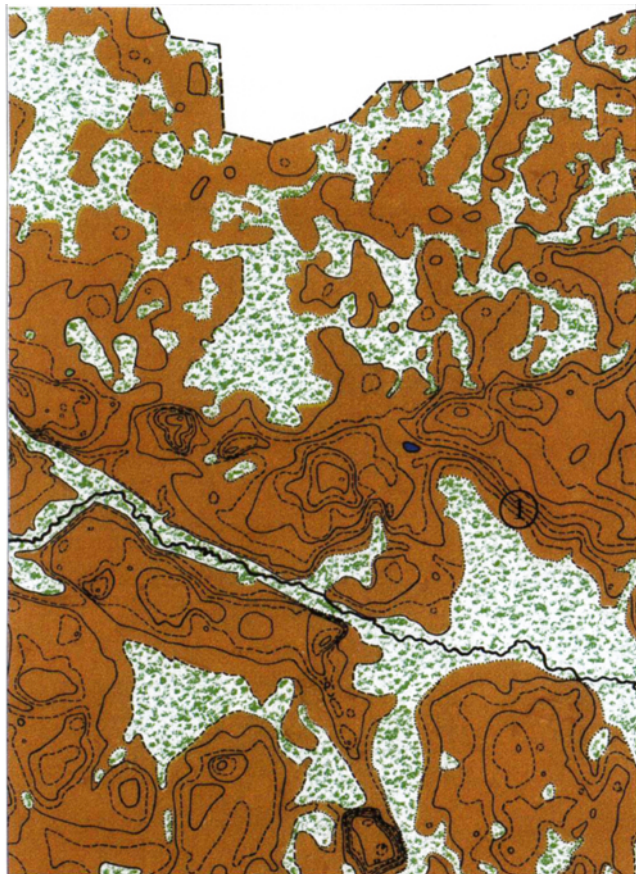


Fig. 2. Topographical map showing the landscape around Hørup (1).

Germanic Iron Age (Fig. 4). In other words, there was intensive activity at the site for about 350 years. Other finds suggest that the site may have started even earlier. For example, as mentioned above, Liversage dates the pottery from Hørup to the transition between the Pre-Roman and the Early Roman Iron Age (Liversage 1980). Metal artefacts are, however, first a significant presence from the Early Roman Iron Age and the site seems to have been at its height in the Late Roman Iron Age. Some of the fibulae from the earliest horizon indicate contacts with East German and Polish areas; examples include a Prussian variant of an eye fibula and several spiral-cased fibulae. There are, however, also fibulae, which must be presumed to be of domestic, possibly local, origin. The latter are one-sectioned fibulae with broad strap-shaped bows. On four of these there are remains of soldered-on thin silver foil on the bow and on a further two there are traces of the soldering metal, which suggests that they too have been clad with silver. The silver cladding here was decorated with various geometric designs such as herringbone patterns and circles.

It has not been possible to demonstrate the same foreign contacts in the later fibulae, with the exception of a single example whose place of origin should probably be sought in the area of the Elbe and a provincial Roman enamelled disc-shaped brooch. It is a characteristic of the Late Roman Iron Age fibulae that they all, without exception, have a fixed foot. Not one has a turned foot, a feature that is otherwise common in surrounding areas. The latest fibulae from the site, from C3 and the Early Germanic Iron Age, are remarkable in that they are all in the form of fragments – most commonly comprising just the foot and possibly a little of the bow. This should perhaps be interpreted as they represent scrap metal from fibulae and intended to be melted down.

The fibulae provide a good dating framework for activities at the site, i.e. from the Early Roman Iron Age B2 until the Early Germanic Iron Age. There are no finds, which can be dated to the Late Germanic Iron Age, but there are, however, two finds from the Viking Age - a weight with flattened poles and the arm from a set of scales. There is, though, nothing to suggest that the site continued uninterrupted up into Viking times. The two Viking Age finds must be presumed to come from separate and independent settlement of a more modest character. All the other metal finds from the site fit very well into the dating frame provided by the fibulae (Fig. 5).



Fig. 3. A small selection of brooches from the site. All but one found by metal detector. Scale ca. 1:2.

Apart from the fibulae, no artefact groups among the metal detector finds are represented by more than a few examples. On the other hand, the range of types from the site is wide and varied. In the following the most important metal detector finds will briefly be mentioned:

A bi-conical gold breloque from which the loop is missing. This is, as yet, the only gold artefact found at the site.

Nine coins have been recovered; the earliest is a large bronze coin, a sesterce, minted under Hadrian (Sabina) (117-136 AD) (Fig. 6). This is followed by seven denarii, three Antonius Pius (138-161 AD), one Faustina I (140-161 AD), two Commodus (180-192 AD), and finally one unidentifiable specimen. The last coin is a siliqua, also with a broken loop; it was minted under Valentinian I (364-367 AD)<sup>1</sup>.

A small piece of silver foil with riveted-on chequered gold foil comes from the mount at the mouth of a sword scabbard (Fig. 7). The fragment has been compared with the scabbard mounts from a magnificent scabbard found in Nydam Bog<sup>2</sup>, and the pieces are so very similar that they must be presumed to have originated from the same workshop. The piece

can be dated to the Late Roman Iron Age C3.

This small fragment of scabbard mount is not the only weapon find from the site. Other parts of swords and sword scabbards include a cast bronze pommel which terminates in two animal heads (Fig. 8), a U-

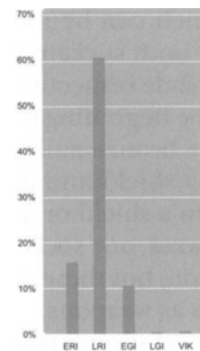


Fig. 4. The relative distribution of the fibulae from Hørup. ERI - Early Roman Iron Age, LRI - Late Roman Iron Age, EGI - Early Germanic Iron Age, LGI - Late Germanic Iron Age, VIK - Viking Period.

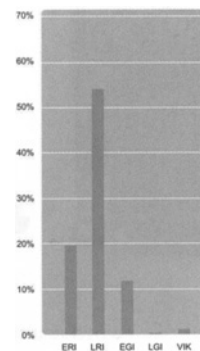


Fig. 5. The Relative distribution of all finds.

<sup>1</sup> All the identifications of the coins were carried out by the Royal Collection of Coins and Medals at the National Museum, and museum curator Helle Horsnæs is thanked for the information.

<sup>2</sup> Thanks to museum curator Flemming Rieck, the National Museum's Centre for Maritime Archaeology, for permission to carry out a detailed comparison with the artefacts from Nydam Bog.



Fig. 6. One roman bronze sesterce and two silver denarii. Scale ca. 1:1.

shaped bronze ferrule and an animal-shaped bronze foil mount which originally has been pelta-shaped and has been affixed lowermost on the scabbard of a sword. The latter is decorated with punched ornamentation in Sösdala style and dates from the Early Germanic Iron Age. Finally, there is a small strap end mount, which, according to observations made on the Illerup material, comes from a sword set.

Other weapons which can be mentioned include two iron arrowheads, both socketed, but with a leaf-shaped and a narrow blade respectively. There is also a short iron spur from the beginning of the Late Roman Iron Age. A decorative bronze nail with a silver covering is possibly from a shield and a bronze edge fitting comes either from a shield or a sword scabbard. Finally, there are two axes, one socketed axe, and one broken. Both are of iron, but these could equally well be ordinary work axes as weapons.

A circular bowl-shaped silver button decorated with



Fig. 7. The small fragment of a sword scabbard mount to the right is from Hørup. The intact mount to the left was found in Nydam Bog. Scale ca. 1:1.



Fig. 8. Cast bronze pommel from the final phase of the site, 5th century AD. Scale 1:1.

gilt spiral carving and niello probably comes from a magnificent buckle similar to finds from Nydam II and Ejsbøl (Ørsnes 1988, Taf. 57). Among other more simple buckles mention must be made of a small bronze example with a triangular anchor plate. Both buckles date from the Early Germanic Iron Age.

Small personal items include four bronze sewing/darning needles, a bronze bead, a bronze spindle whorl, an ear-pick with a spiral handle and a loop, a strap end mount, a hairpin with a rhomboid head, a bull-headed mount for a drinking horn, a couple of finger rings, mounts from knives and, finally, a bronze key. All of these artefacts can be dated to within the time span given by the fibulae.

With regard to artefacts linked with workshop activities, mention can be made of seven lead or bronze weights, in addition to the Viking Age weight already mentioned (Fig. 9). The weights are predominantly tablet-shaped; some of them are equipped with vary-



Fig. 9. Three of seven weights from Hørup. Two of bronze and one of lead. Scale ca. 2:1.

ing numbers of circular impressions, whereas others are blank. There are iron knives of various sizes – from very small, with a blade length of around 4 cm, to large knives with a blade length of over 20 cm. A leatherworker's/shoemaker's knife with a semi-circular blade and the tang located on the central axis was also found, along with two iron chisels. There are also various waste products from bronze casting and bronze working; lumps of melted bronze, wholly or partially cut-up bronze ingots, hammered-out bronze items, cut-up sheet bronze work (a vessel?) and sheet bronze with rivets, possibly all refuse from a tinker.

Over and above this is a series of more-or-less unidentifiable small artefacts and fragments of bronze, which should possibly be interpreted as bronze scrap. This includes an almost completely melted down bronze fibula, showing that fibulae were melted down at the site. Accordingly, it was assumed, in advance of the excavation, that workshop activity had taken place at the site. This assumption was based not only on the artefacts found by metal detector but also on a series of finds and observations made during reconnaissance of the field. The ploughed-up culture layer contained abundant slag and cattle horn cores with saw marks, both of which indicate the presence of workshop activities.

#### THE EXCAVATION

The intensive detector survey of the field enabled an impression to be gained of where the concentration of finds was greatest. It was here that the first trial trenches and the first small excavation field were laid out in 1994. A 25 m long trial trench, supplemented by core sampling, showed that the culture layer was, in some places, more than 1 m thick. In the culture layer there were dense occurrences of red-fired clay, concentrations of fire-shattered stones, accumulations of refuse from a bone worker and a bronze caster as well as many scattered single finds. Surprisingly, there were relatively few metal finds, in comparison with the many metal detector finds from the field. This is often seen with metal detector sites when an archaeological excavation is subsequently instigated. The author has carried out a small calculation to demonstrate the actual relationship between metal finds resulting from the metal detector surveys and corresponding finds resulting from the excavation. To date, about 2 000 m<sup>2</sup> of the site has been uncovered (Fig. 10). Judging

from the distribution of the metal detector finds and the colour of the earth in the plough soil, the site is estimated to extend over an area of c. 20 000 m<sup>2</sup>, i.e. at most 10% of the site has so far been exposed. Of the exposed area, only a part corresponding to about 150 m<sup>3</sup> has been excavated and riddled. This figure should be compared with the calculated volume of the culture layer for the whole site which is c. 10 000 m<sup>3</sup>. The metal detector survey has, in contrast, covered all 20 000 m<sup>2</sup> in the course of a number of years during which the plough soil, which is about 25 cm thick, has been turned several times by cultivation. The majority of the metal artefacts have accordingly been found in this way, i.e. an area of about 20 000 m<sup>2</sup> has been investigated to a depth of about 0.25 cm, giving a volume of about 5 000 m<sup>3</sup> (or about 50% of the culture layer) which has been searched with a metal detector. Seen in this way it is clear that more metal artefacts were found per investigated m<sup>3</sup> by excavation than by metal detector survey.

In order to obtain a better impression of the complicated situation regarding the culture layer, some large areas were exposed in 1995 and investigated either the same year or in 1996. As mentioned above, a total of about 2 000 m<sup>2</sup> was exposed, but due to the thickness of the culture layer it was not possible, within the financial limits of the project, to excavate the whole of the exposed area down to the subsoil. The excavation concentrated on investigating some of the very obvious features and structures, which were apparent

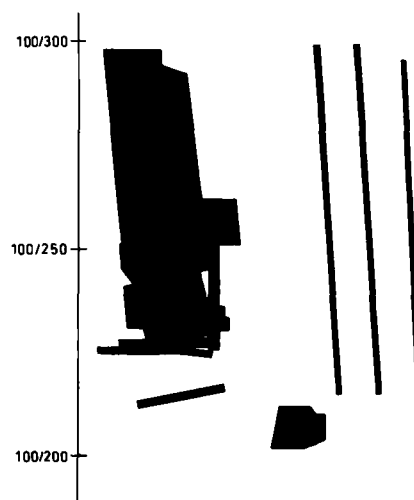


Fig. 10. The area of excavation.

in the culture layer. Of these, large patches of burnt and unburnt clay were among the most spectacular. The patches of clay proved to cover several different feature types. In an area where a small field had been placed because large quantities of burnt clay had been ploughed up, it became apparent that the clay came from partially ploughed-up ovens. Immediately after the plough soil had been removed, there was a continuous clay surface comprising partially red-fired, partially unburnt yellow clay. With further cleaning of the surface this dissolved into several oval patches of predominantly burnt clay. Each patch measured about 1 x 1.5 m and represented the base of an oven. The oven bases were constructed of head-sized granite boulders in between and over which clay had been laid. The clay was fired red and showed signs that the base of the oven had occasionally been re-covered with a new layer of clay. Around one of the ovens there were clear traces of branches, which are interpreted as remains of the dome-shaped upper part of the oven. Within this small field the remains of a total of six ovens were uncovered. On the larger fields a further oven of the same type was excavated but it was not so well preserved. It was not possible to establish the function of the ovens as no artefacts or other material were found around them, which were not also found elsewhere on the site. The ovens belong to the Roman Iron Age phase of the site and probably the Early Roman Iron Age. At least, half a vessel of Early Roman Iron Age type was found on the edge of one of the ovens. It has not been possible to find parallels to these ovens from the Roman Iron Age elsewhere in Denmark. There are, however, ovens of the same type from a much later date; these have had uses, which include baking.

Another type of feature incorporating clay comprised small forges. These consisted of approximately circular clay plates about 10 cm in thickness and with a diameter of 50-60 cm. The central part of each clay plate was totally red-fired while the outer edge consists of unburnt clay. Small concentrations of burnt stones, generally rather smaller than a fist, along with vitrified clay, sometimes with the impression of a bellows hole, were found around the plates. Presumably

the clay plates were originally bowl-shaped but ploughing and levelling out at the site has led to only the base of the bowl-shaped forges still being preserved.

A last occurrence of red-burnt clay was found spread over a large area but it was not possible to interpret its function. It is possibly the levelled-out remains of some clay structure.

In the largest field a fence ditch was investigated. It was about 1 m broad and of variable depth. Postholes were found in the base of the ditch and in some cases it was possible to detect the postholes already in the fill of the ditch. Generally, it was difficult to recognise the postholes in the very heterogeneous culture layer. The fence ditch clearly divides the site up into areas with different functions, such that all the occurrences of burnt clay, ovens and forges were found to the south of it. North of the fence a single large clay pit was investigated. Otherwise it was cooking pits and similar features in particular which were found in this area.

Roasted bog iron was found all over the site, not as hard concreted lumps but in the form of powder or fine granulate. These occurrences, together with the abundant plano convex slags, have led to the idea that iron smelting may have been carried out on the site. However, neither iron-smelting furnaces nor blocks of tap slag have been found to confirm this. A quantity of forging waste was recovered with the aid of a magnet. Together with the Plano convex slags this shows that forging was a significant activity at the site. A series of analyses have been carried out on the slags. By comparing the trace elements in the slags with those in one of the knives from the site it could be established that this knife was made of the same kind of iron, as there was traces of in the slag<sup>3</sup>.



Fig. 11. Nearly intact crucible from Hørup. Scale 1:1.

<sup>3</sup> These analyses were kindly carried out by civil engineer Vagn F. Buchwald, who is thanked for permission to reproduce the information.

Large heaps of stones, comprising fist-sized fire-shattered pieces of granite, were investigated at two places within the excavated area. The largest of these heaps included ten round hammer stones and abundant Plano convex slags. The round hammer stones have sometimes been interpreted as simple hammers used in the working of the iron bloom, so this heap possibly represents a refuse dump from a smithy.

Among the less spectacular workshop areas are those associated with bronze casters. Concentrations of melted drops, scrap bronze and crucible fragments have been found in two places, but actual traces of the workshop constructions have not been found. The crucibles were of two different types; there was an almost intact crucible of eggcup form (Fig. 11), but only half the size, as well as a number of fragments of larger crucibles. Some of the crucibles were equipped with a small lug. Only one definite example of a mould was found and it was not possible to ascertain with absolute certainty what had been cast in this mould. It may have been used to cast bronze spurs. In the light of the relatively large number of metal artefacts at the site it is frustrating not to be able to identify a single type, which, with certainty, was produced in the excavated metal workshops.

It appears that bone worker worked together with the bronze caster, or at least their waste products were found together in the same two areas of the site. The bone worker utilised bone from large mammals, horns of cows and goats as well as antler from red deer, elk and roe deer. The waste products from these species are found in varying quantities, with cow's horn and red deer antler being the most common raw materials. The cow's horn itself is not preserved at the site but the horn cores, on the other hand, are (Fig. 12). With their clear kerfs these show how the horns were sawn prior to being worked. The bone worker produced a varied selection of products of which we probably have only found a limited range. Combs were made in the workshops, comprising both single and three-layered examples (Fig. 13). The latter were assembled with iron rivets, which is an unusual feature for Zealand. As a curiosity, it can be mentioned that none of the three-layered combs found locally in graves was assembled with iron rivets but with rivets of bronze. In addition to combs, several forms of needle or pin were manufactured; some of these had been turned on a primitive lathe. The preserved heads from broken pins include a turned example with a figure-of-eight-shaped head, one with a four-sided head decorated with criss-cross-



Fig. 12. Examples of the several hundreds of cow horn cores that have been worked at the site. Scale ca. 2:3.

sed hatching and one like a darning needle with an eye (Figs. 14-15). A turned spindle whorl of antler or bone, presumably the latter, was also found; it was decorated with concentric circles around the hole. Various simple bone bodkins and some pieces very reminiscent of Pre-Roman and Early Roman Iron Age bone spearheads made from the metatarsii of sheep or goat were also recovered. The examples from Hørup are, however, generally smaller and have a chisel-like edge instead of a point. A fragment of a branch from a red deer antler can also be presumed to have been a product of the bone worker at the site. There are also a number of other artefacts of unknown function but produced with great skill by the bone worker.

Despite the fact that the dating framework for the site, judged from the fibulae found by metal detector, extends from the Early Roman Iron Age B2 until the Early Germanic Iron Age, none of the artefacts recovered from the culture layer can be dated securely to the latter period. It must therefore be presumed that the most of the culture layer from the Germanic Iron Age has been ploughed off and only part of the Roman Iron Age layers is still preserved. The investigated features can then very probably all be assigned to the Roman Iron Age, although it is difficult to distinguish the Early and Late Roman Iron Age features from one another.

Even though some quantities of pottery and bones, as well as a few glass beads, were occasionally recovered during the metal detector surveys, these find groups

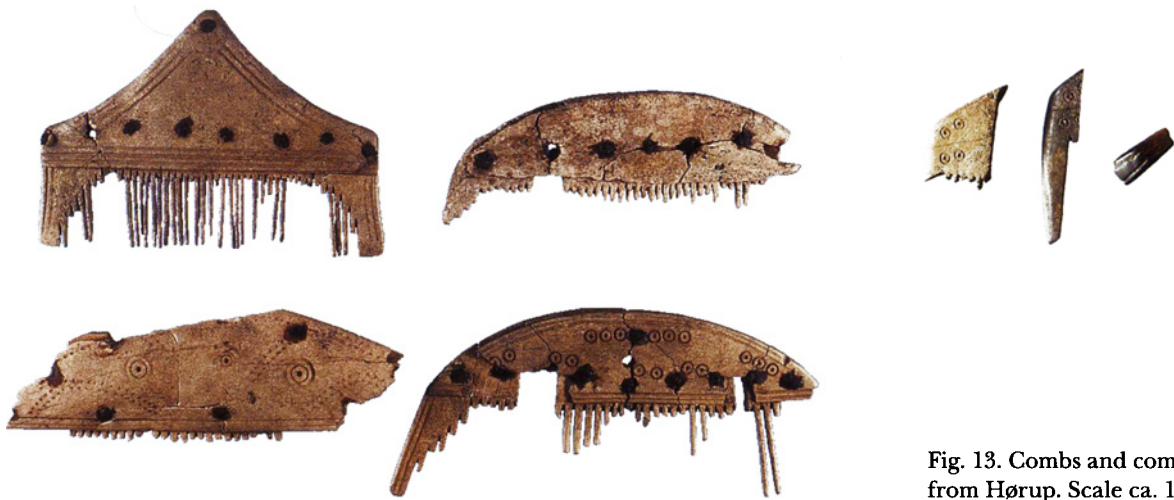


Fig. 13. Combs and comb fragments from Hørup. Scale ca. 1:2.



Fig. 14. Examples of the presumed products in the shape of various pins and needles manufactured by the bone workers at Hørup. Scale ca. 1:1.



were much better represented in the excavated material. The pottery has not yet been examined in detail but relatively large quantities were found during the excavation, comprising primarily undecorated pottery, which, on the basis of rim profiles, vessel forms and occasional decorated specimens dates from the Early to Late Roman Iron Age.

#### INTERPRETATION

The impression gained already after the first metal detector surveys, i.e. that workshop activity had taken place at the site, was confirmed in full during the excavations. Artefact groups not found during the metal detector surveys, i.e. primarily non-metallic artefacts, to a great extent augmented the testimony of the site.

The fact that bronze casting took place on the site was already strongly suggested by the finds of melted drops of bronze and bronze ingots prior to the excavation. With the excavation, these find groups were greatly increased and at the same time there were finds of crucibles and fragments of casting moulds, which contributed to the impression of the site as having had workshops. The excavation also revealed several forges in which the smelting of bronze presumably

had taken place. It is likely that silver and gold were also worked but this cannot be securely documented as these metals have only been recovered in the form of finished products. The Roman denarii can possibly be interpreted as raw materials intended to be worked further at the site.

The working of horn, antler and bone was already suggested by finds collected from the surface of the field prior to the excavation. As a result of the excavation, these workshop activities were also exceptionally well-documented. Similarly, it can be demonstrated that several products made in these materials have been produced in the workshops at Hørup. This applies first and foremost the single layered and three-layered combs of red deer antler as well as the bone needles and pins. Other bone and antler tools have also been found but these are only represented by a single example of each type. Of these types, mention can be made of a turned spindle whorl of bone or antler, a broken branch from a red deer antler, a decorated bone plate of unknown function, a trapezoid bone plate with two perforations etc. Sawn-off horn cores from cattle show that cow horn was also worked, but as this is not preserved nothing can be said of the products for which it was used.

As mentioned above, only a small part of the workshop area has been excavated and on this occasion no evidence was found of long houses, although it must be presumed that the workshop site was linked to a settlement in the vicinity. Judging from the trial trenches, it seems likely that this settlement should be sought to the north and northeast of the workshop area; here the culture layer is relatively thick and contains abundant bones, potsherds and cooking stones but lacks characteristic workshop refuse. In order to understand fully the role of the Hørup site in Iron Age society it is also important that this area too be investigated. However, in the first instance it is necessary to secure as much information as possible concerning the workshop area as the damaging effects of ploughing have clearly accelerated in recent years. The excavation also showed, in no uncertain terms, that even though the culture layer was in some places more than 1 m thick, the features and workshop refuse were almost always concentrated in the upper 10-20 cm of the undisturbed culture layer. This means that the continued ploughing of the field will, in the course of the next 10-15 years, probably have removed this important part of the culture layer forever.



Fig. 15. The bone workers may have had a broad variety of products like these examples. Left a fragment of a cheek piece of red deer antler, in the middle a spindle whorl of either bone or more likely antler, and right a handle of red deer antler. Scale ca. 2:3.

## CONCLUSION

Despite the fact that the Hørup site has been known to the museum world since 1959, it was first after the introductory metal detector searches in 1990 that the special character of the site became apparent. We have here an example of how metal detector archaeology can contribute to changing or augmenting our knowledge concerning the function and potential of well-known sites. The investigation also shows, however, the limitations of metal detector archaeology; the material recovered in this way is very uniform. The conclusion must therefore be that metal detector surveys are well suited for the selection of interesting sites for further investigation but are an inadequate basis alone, on which to draw far-reaching conclusions. Those that originally were apparent through metal detector surveys as the outline of a possible workshop site first became fully documented as the result of subsequent excavations, during which, completely new crafts such as bone working were demonstrated. With well-documented workshop activities as early as the Early Roman Iron Age, Hørup is one of the earliest specialised workshop sites in Southern Scandinavia. It is hard to imagine that the initiative for the establishment of a specialised workshop site at this time could have come from outside the confines of the highest echelons of the society. If other documentation for the presence of such a power elite is sought, for example in the form of graves or votive finds, there are a number of finds of this type from the area which are far above average (Sørensen 2000; Sørensen this volume).

That which, with the discovery of the workshop site at Lundeborg (Thomsen et al. 1993), came as somewhat of a surprise, i.e. that there were specialised workshop sites linked to regional centres of power and wealth already in the Roman Iron Age, is today something which we should expect to find in connection with all central sites from that time. Hørup, Uppåkra, Lundeborg and Østervang are just some of the examples of sites with workshop activities from the Roman Iron Age, which have been found or dug out of obscurity in recent years (Helgesson 1998; Thomsen et al. 1993; Tornbjerg 1998). Whereas power centres previously were primarily defined solely on the basis of wealth and imported grave goods (Lund Hansen 1987; 1991), in coming years we will probably see that the presence of workshop sites will also become a significant factor in defining and distin-

guishing power centres from the Roman Iron Age in Southern Scandinavia. If it is possible to locate the workshops where the prestige weapons and jewellery of the day were produced, this will present some exiting opportunities for the mapping of alliances and connections expressed precisely through the exchange of such prestige objects. Unfortunately, we have yet to reach this stage.

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## REFERENCES

- Hansen, Ulla Lund, 1987: *Römischer Import im Norden. Warenaustausch zwischen dem Römischen Reich und dem freien Germanien*. København 1987.
- Hansen, Ulla Lund, 1991: Himlingøje-undersøgelserne. Om baggrunden for Stevnsområdet's rige gravfund i yngre romertid. In J. Fabech & J. Ringved (eds), *Samfundsorganisation og Regional Variation. Norden i romersk jernalder og folkevandringstid*. Århus 1991.
- Helgesson, Bertil 1998: Vad är centralt? - fenomen och funktion; lokalisering och person. In L.Larsson & B. Hårdh (eds), *Centrale Platser Centrale Frågor*. *Archaeologica Lundensia* No. 28, Lund 1998.
- Liversage, David 1980: *Material and Interpretation. The Archaeology of Sjælland in the Early Roman Iron Age*. København 1980.
- Sørensen, S.A. in prep: Hørup - en sjællandsk værkstedspads fra romersk jernalder.
- Thomsen, Per et alii 1993: *Lundeborg - en handelsplads fra jernalderen*. Ringe 1993.
- Tornbjerg, Svend Åge 1998: *Arkæologiske udgravninger i Danmark* 1997, nr. 41. Det Arkæologiske Nævn. København 1998.
- Ørsnes, Mogens 1988: *Ejsbøl I. Waffenopferfunde des 4.-5. Jahrh. nach Chr.* Nordiske Fortidsminder Serie B Band 11. København.