Medieval Motala

Economic Resources, Stakeholders and Urbanization

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Abstract

Motala in western Östergötland is one of the places discussed in connection with urbanization, although it was not formally a town in the Middle Ages. It has a favourable geographical location, in a bay where Lake Vättern flows into Motala Ström. Several major medieval landowners had interests in mills and permanent fishing installations in and around Motala. Historical sources from around 1400 mention some 40 plots, making the place stand out from the surrounding countryside. One source records craftsmen as plot tenants: a smith, a sword grinder and a shoemaker.

Recent years' excavations have uncovered a 14th-century forge and extensive remains of the manufacture of iron, bronze and copper objects. Together with written records, the results show that metals were processed here, mainly during the second half of the 14th century, when Motala can be compared in certain respects with places like Jönköping, Nyköping and Norberg.

Introduction

Research on towns in Scandinavia in recent years has devoted increasing attention to places which were a part of urbanization but were never granted formal town charters (Anglert 2006; Brendalsmo *et al*. 2009; Andersson 2015; Anglert 2017). Motala in western Östergötland has been discussed as one of these places where urbanization is particularly clear in the 14th century (Lindeblad 2008, 69ff.). It has a favourable location as a natural harbour in a bay of Lake Vättern, with opportunities for communications both locally and regionally (Fig. 1). The river Motala Ström, with its falls, gave good conditions for water mills and unusually rich fishing. North of Motala the landscape has extensive areas of forest with medieval mining districts, while the highly fertile plains begin to the south. Several big landowners in the Middle Ages had interests in and around Motala, for example, the Ulv family, Bo Jonsson (Grip), the bishop of Linköping, and Vadstena Abbey. On the other hand, the king and the crown did not invest in Motala during the Middle Ages, and this has previously been suggested as one of several reasons why the place did not receive

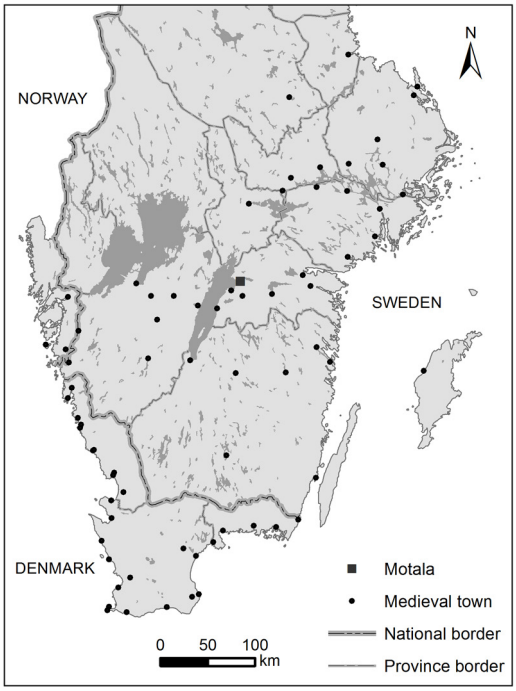

Fig. 1. Medieval towns within the boundaries of present-day Sweden. The map shows the borders of the medieval kingdom and the provinces. Map and graphics: Alf Ericsson, Arkeologerna, SHMM.

a town charter then (Lindeblad 2008, 114ff.).

The town was not the subject of any attention in archaeological research until the present century, when large-scale excavations began. The archaeological material from the Middle Ages includes remains of extensive metal craft, a fishing installation in Motala Ström, stone buildings from the Late Middle Ages and parts of a road network in use from the Iron Age to the Middle Ages (Carlsson 2004; Lindeblad 2008; Lindberg 2013; von Arbin 2017; Lindberg & Lindeblad 2017; Stibéus ms). The results of the excavations, especially concerning the remains of extensive metal craft, together with new extensive research in the written sources, means that new questions can be asked in relation to earlier research. In this article the main source material is the new archaeological findings, historical maps and written sources. The latter exist in large amounts, and together with the maps they have been thoroughly studied as part of the archaeological projects (Ericsson 2017).

Motala – a district centre in the borderland

The meaning of the place-name *Motala* is not entirely clear, but the first element is the dialect word *mot,* a meeting of ways. As far back as prehistoric times the place was an important crossroads. This was where the main road between Östergötland and Närke crossed Motala Ström. Before the construction of the Strömbron bridge and its medieval predecessor there was almost certainly a ford here. Several main roads met at Motala. One led to Vadstena, another to Skänninge and a third to Husbyfjöl, today's Borensberg. Motala has been an important junction for communication for a very long time, and it is described as a significant transit point for further transports eastwards (Lindeblad 2008, 69ff.; von Arbin 2010, 83; Ericsson 2017).

Motala is at the centre of the district of Aska (Sw. *Aska härad*), more specifically beside Motala Ström, which in the Middle Ages was called by the normal word for a river (*Motala å*), flowing from Lake Vättern to Lake Boren. The river channel is just over four kilometres long with a drop of 15.5 metres. Before the construction of Motala power station there were several rapids and falls here which powered water mills, sawmills, forge hammers and fulling mills (Fig. 2). In addition there were numerous fishing installations. Motala was formerly known for its rich fishing. The catch mainly consisted of brown trout (*Salmo trutta*) and eel (*Anguilla anguilla*). The former had its main spawning grounds in Motala Ström (Ericsson 2017).

In the Middle Ages the bridge over Motala Ström was called *Motala bro* (Motala

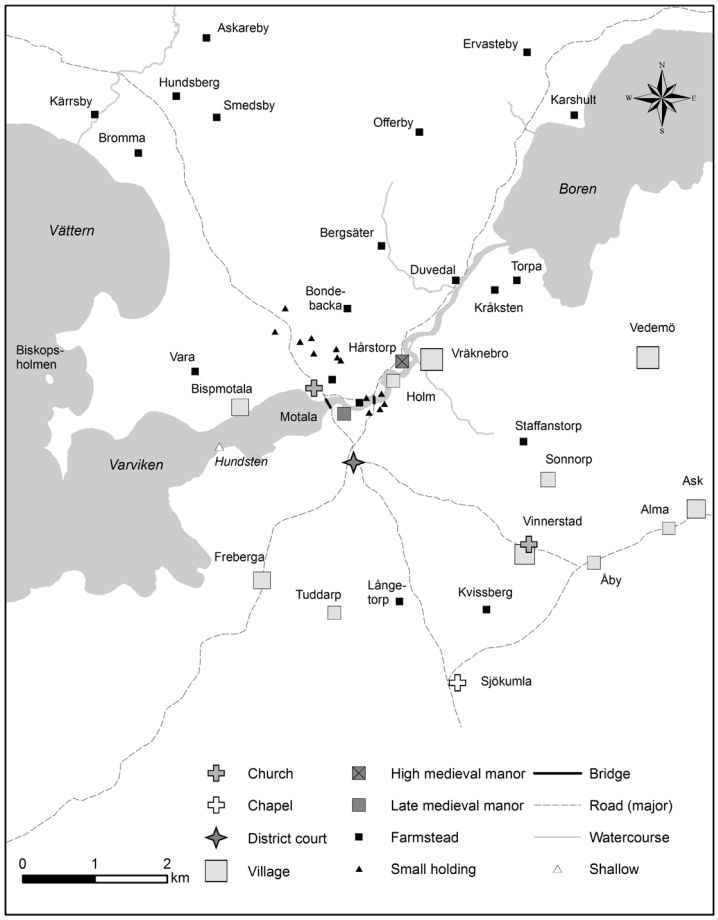

Fig. 2. Settlement and road network in and around Motala in the Middle Ages. In the early 16th century a deserted settlement is mentioned on Biskopsholmen. Fishing was regulated from the Hundsten shoals and further east to lake Boren. The size of the squares is proportional to the size of the villages. The courses of the roads are marked on maps from the 17th and 18th centuries, but are probably largely unchanged since the Middle Ages. Map and graphics: Alf Ericsson, Arkeologerna, SHMM.

Bridge) or *Stora bron* (Great Bridge) (Fig. 5). The location is identical to the present-day Strömbron. The bridge is first recorded in 1374, when a person called *Birger vid bro* (Birger by the bridge) on several occasions was witness to property transfers at the district court (SDHK 10587–95), but it must be older than that, since this bridge was not the only fixed link across the river. In 1383 there is a mention of a smaller bridge, *Långspång* (Long Footbridge, SDHK 12365) a little further downstream. Motala Bridge was about 110 metres long, making it one of the longest bridges in medieval Sweden (Friberg 1957, col. 248f., Fig. 19).

For the local administration of justice in the Middle Ages, and also for taxation, the province of Östergötland was divided into 18 districts called *härader* (roughly equivalent to the English *hundred*). Each of these had its regular site where the court assembled. The court of Aska was moved from Sjökumla to Motala at the start of the 1370s. There are several indications that the medieval assembly site was at the southern edge of Motala, beside a crossroads where there was also a place of execution (Lindeblad 2008, 70ff.; fig. 2).

By the 12th century at the latest there was settlement along the north side of the river. The land assessment in *attungar* units which was introduced at this time is known from Bispmotala, Motala village and Hårstorp (Ericsson 2012). As further evidence, Motala's Romanesque stone church, from the early

13th century, was beside the road east of Bispmotala. A road from the Iron Age and the Middle Ages has been excavated there. Moreover, there are occasional finds from the Iron Age from the north side of Motala Ström (Lindeblad 2008, 70ff.; fig. 2; Lindberg 2013).

If we consider a larger landscape section, the settlement north of Motala Ström is much younger than that on the southern side, at least on a general level. Both the antiquities and the place-name types suggest that the southern area was settled during the Iron Age at the latest, while the northern settlement came about through medieval land clearance of the common land (Sw. *häradsallmänning*) belonging to the district of Aska, where the Godegård mining area was also established during the Middle Ages. In other words, there was a great difference between the settlements north and south of Motala. This is evident, for example, in that there are medieval towns, Vadstena and Skänninge, to the south of Motala but no towns at all immediately to the north (Fig. 1). Likewise, the vast majority of Romanesque churches are found in the small parishes on the plain to the south, whereas there are few medieval churches in the forest to the north. For western Östergötland, it appears that Motala Ström was a distinct boundary between two very different cultural landscapes (Gardelin 2006, 22, fig. 5; Lindeblad 2008, 70ff.).

Advanced metal craft in the 14th century

The results of recent years' archaeological excavations at Motala Ström show that extensive and (in part) advanced metal craft was pursued here during a relatively limited period, mainly in the 14th century (Lindberg & Lindeblad 2017). It has been shown, partly through archaeometallurgical analyses (Grandin *et al*. 2017), that the metal craft was complex and can be divided into two main categories: work with iron and work with copper and copper alloys. The amount of finds is extensive, the biggest category being just over 230 kg of slag.

The excavation was conducted on the south side of Motala Ström, a couple of hundred metres from the medieval Motala Bridge (Figs. 3, 5). In the 16th century King Gustav Vasa founded a Crown estate in Motala. The manor was located at the southern bridge abutment, corresponding to the site of the late medieval Vadstena Abbey manor of Motala Gård (Ericsson 2017). On the site of the manor there are remains of a large, well-built stone cellar. In recent years the cellar and an area around it have been excavated. The results show that settlement here predates the Crown estate and can be traced back at least to the late medieval period (Stibéus ms).

The excavation area measured about 5900 m^2 (Fig. 3). Within this area, structures were investigated which can be associated with metal craft. There were no dwelling houses in the excavated area, but a number of contemporary wells, finds and animal bones together indicate that there was habitation in the vicinity of the excavated area (Lindberg & Lindeblad 2017).

The remains that can be linked to metal production were concentrated in two areas, but refuse from metalworking was found over virtually the whole excavated area. The ^{14}C dates associated with metal craft are within the span 1270–1440 (cal. 2 σ). The seven medieval coins from the excavation are likewise mostly dated to the 14th century. Based on our interpretation of what is known at present through the archaeological evidence from Motala, there is nothing to indicate medieval metal craft before the 13th century (cf. Svensson 2014, 2015). If anything, the accumulated picture after the processing and interpretation of the data suggests that it arose

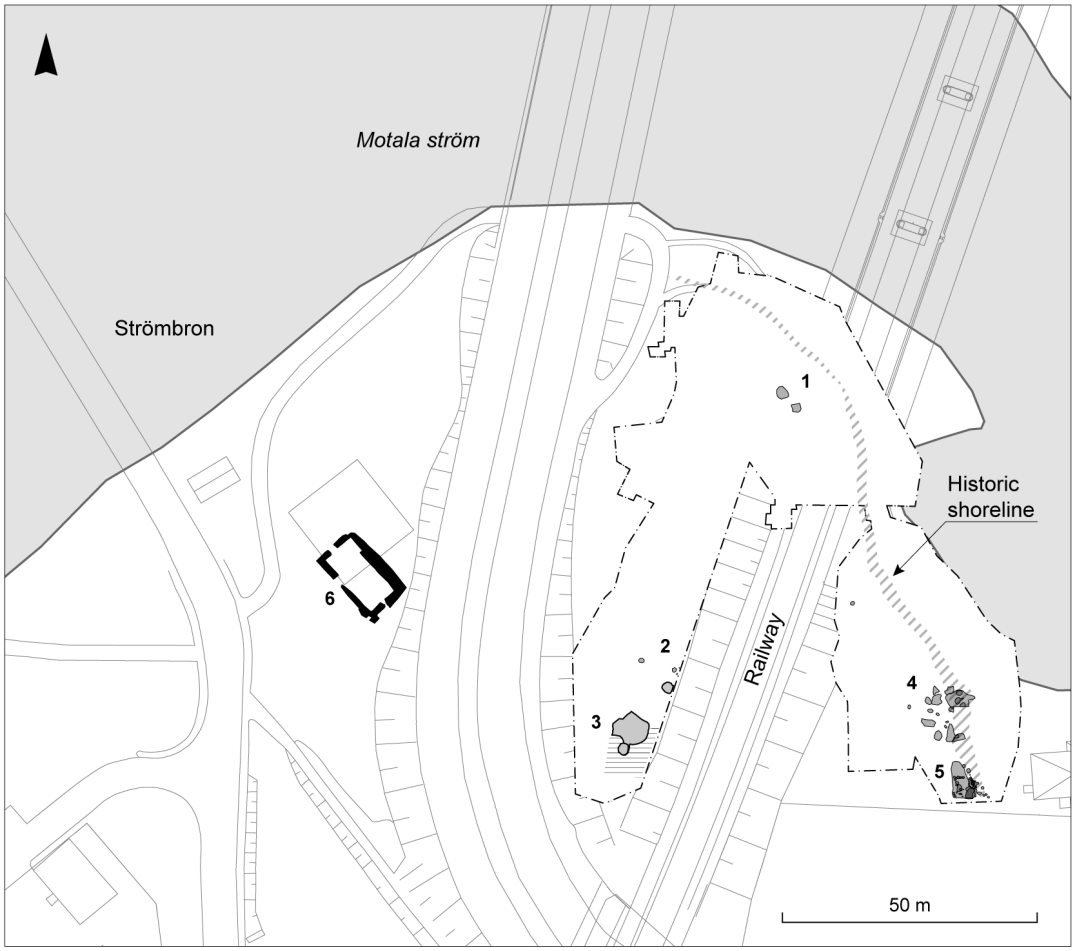

Fig. 3. Plan of the archaeological excavation of the site with metal craft. 1. Pits, perhaps connected to bone crafts. 2. Pits with refuse from metal craft. 3. Wells and area with cultural layers, perhaps a courtyard. 4. Area with pits and layers connected to metal craft. 5. Forge. 6. Stone cellar. Graphics: Henrik Pihl, Arkeologerna, SHMM.

even later, during the 14th century, probably the latter part.

On the eastern side of the headland the excavation revealed a post-built forge with a stone hearth and a preserved wooden anvil stock. Charcoal from layers under the stone foundation has been dated to the period 1290–1420 (cal. 2 σ) and an anvil stock has been dated to the start of the 1390s (Edvardsson & Linderson 2017). Around the hearth in the forge there were roughly 40 kg of slag with over 50 more or less whole pieces of smithing hearth bottom scale. Outside the forge there was a refuse layer containing, among other things, iron blanks and large amounts of slag. North of the forge were the remains of work with copper and copper alloys: two casting hearths as well as pits and occupation layers with casting refuse.

In the western part of the excavated area there was likewise a concentration of features associated with metal craft, especially pits and wells with large quantities of refuse.

Unfortunately, there were no clear indications of plot divisions. The excavation uncovered three medieval wells, which could

possibly be indications of plot division. Radiocarbon dates showed that two of them were contemporary, but one well may also have succeeded the other in a large farmyard. Ignoring the wells, we probably excavated parts of at least two, perhaps three plots. Distances and the nature of the terrain suggest that the forge and the remains in the western part of the excavated are were probably not located in the same plot.

Based on an analysis of selected objects, different categories of metal craft are attested in the material (Grandin *et al*. 2017). We have also analysed the production methods, the quality and to some extent the provenance of the metals. In the material there are objects representing: hammered ironware, multi-metal craft, copper casting and also bronze alloying and casting

Hammered ironware and multi-metal craft

The iron used in the forge has been interpreted as blast-furnace iron, with mined ore as the raw material. In the forge it was worked to a large extent using steel. The finds include iron blanks, much of this in the form of band iron. The analyses show that several of these blanks are of steel. From the western part of the excavation area there is also a softer iron that is more likely to be associated with iron from bloomeries. This type of iron is absent from the area around the forge, which suggests that we may be dealing with different types of craft, possibly also different craftsmen using different raw materials.

The use of steel indicates the manufacture of edged tools. Iron blanks were probably made here too. Naturally one can also envisage weapon manufacture, especially bearing in mind the sword grinder who is mentioned in the 1380s (see further below). However, there is nothing to indicate this in the finds, although there are preforms for knives, a preform for a fire-steel and an iron brooch.

The material from the excavation also displays several signs that there was advanced work with both iron and copper alloys. This kind of work is termed multi-metal craft, and can involve iron objects decorated with copper alloys or copper-plated (Grandin *et al*. 2017). As regards the objects in our material, there is a padlock where both metals occur and an artefact that also displays multi-metal craft, a so-called *schmeltzkugel*, which may have been used to make a weight with a core of iron and a casing of copper alloy.

Medieval smiths and their work can be divided into different categories, depending on the context in which they worked: town smiths, farm or village smiths, and smiths at castles and monasteries (Karlsson 2015b, 72ff.). The material from the excavation in Motala most resembles the production carried on in towns or at castles and monasteries, with more advanced and varied craft work than what was done in rural settings where they made and repaired what was needed on the farm or in the village.

Somewhat surprisingly, the archaeometallurgical analyses also found evidence of copper casting, in that pure copper was discovered in casting refuse of copper, some of it in a piece of moulding flash. Casting in copper does not appear to have been particularly common during the period, although it did occur. Craft work with pure copper was however pursued elsewhere, for example, in a metal workshop from the 13th century in Åhus, but it is suggested that it was used there for inlays in iron (Schmidt Sabo & Cardell 2000, 19).

The analyses of the copper alloys, together with a previously unknown type of large, flat crucible (Fig. 4) (Stilborg 2017), also show that bronze was alloyed on the site. The more common type of smaller crucibles also occur in the material. Moulds, on the other hand,

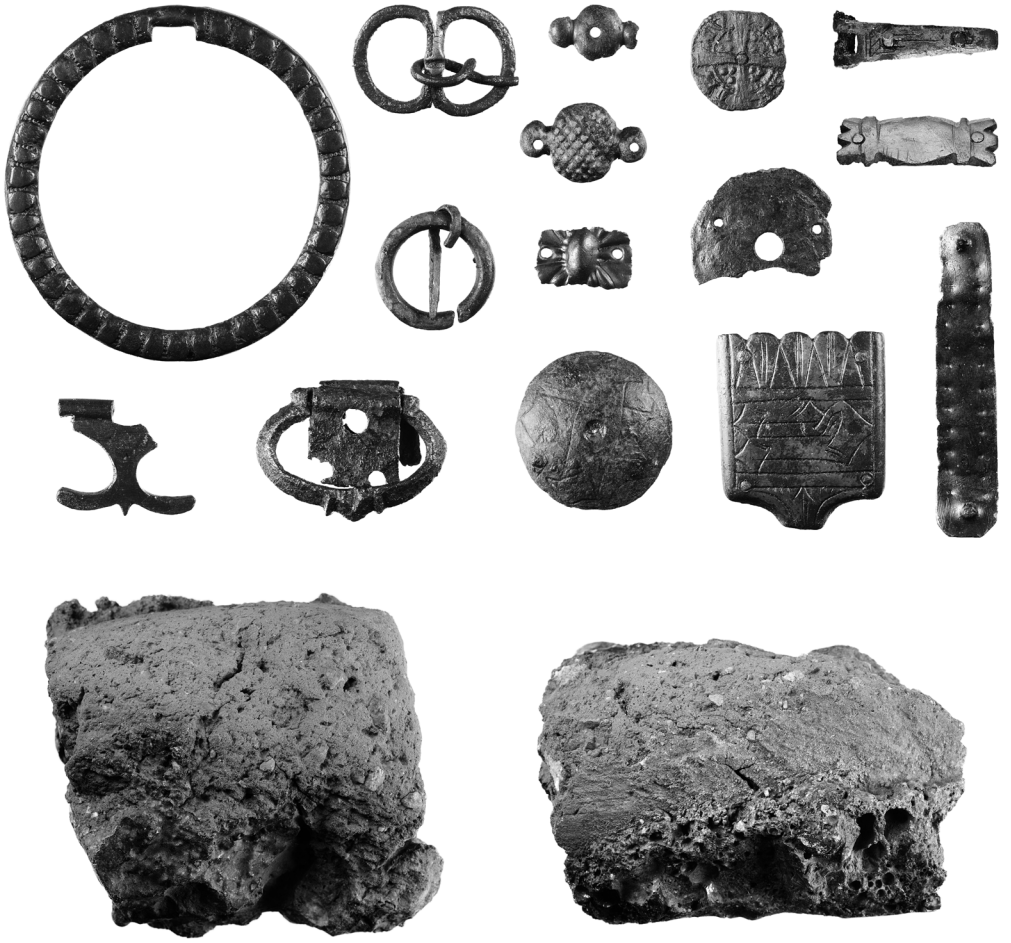

Fig. 4. A selection of the almost 100 small objects of copper or copper alloys from the excavation east of Motala Bridge. At the bottom in the picture there is a crucible used to alloy bronze. Photo: Peter Zetterlund, Arkeologerna, SHMM.

are absent, but the occurrence of moulding flashes, sprues and clippings shows that bronze objects were cast in the excavated area.

Medieval foundries can be divided into three main groups, based on what was cast: jewellery and other small objects, pots and bells. The material from Motala clearly belongs to the first category, as everything suggests that small objects were made here. It is above all in early medieval towns that foundries of this type have been discovered, although there are exceptions (Anund & Skyllberg 2003).

There is a large number of small objects made of copper or copper alloys, such as flower-like mounts, other types of mounts, pins, buckles and brooches in our material (Fig. 4). The majority of these are cast while others were pressed foils. The large number of small objects, several of which can be dated to the fourteenth century, and the fact that a couple of them appear to be unused and some were found together with other refuse, makes

it likely that a considerable proportion of the small objects were manufactured here. There are no buildings adjacent to remains associated with the work of copper and copper alloy, which indicates that the craft was performed in simple conditions (Lindberg & Lindeblad 2017).

The raw materials – origin and agents

As already mentioned, the analyses show that the iron used in Motala was made both in bloomeries and in blast furnaces. It was already known that both methods of iron production occurred side by side, and research has abandoned theories of linear development according to which the blast furnace replaced the older bloomery (Karlsson 2003, 426f.).

The bloomery as a method for producing iron has prehistoric roots in Östergötland; the oldest known furnaces in the province are dated to the Roman Iron Age. There are several examples showing that bloomeries continued to be used for producing iron in the Middle Ages. Bloomery sites which have been dated to this period are found in both northern and southern forest districts (Räf 2014, 50ff.). None of these, however, are in the immediate vicinity of Motala. We therefore do not know where the bloomery iron used in Motala was made, which makes it difficult to discuss which persons, or groups of people, were behind the manufacture.

In Östergötland the state of the archaeological evidence for dating the use of blast furnaces is very weak. It is possible that the blast furnace came into use in Sweden as early as the 11th century (Karlsson 2015a, 192). At present there is only one dated site from Östergötland, Tidingshyttan in the Godegård mining area, dated to 1170–1290 (cal. 2 σ). The first written evidence of smelting houses in the northern mining areas in the province is from the end of the 14th century and the 15th century (Hörfors 2005, 24; Björkhager 2008; Hörfors 2010, 21; Hörfors 2011, 24; Räf 2014, 50f.). As with mining in other provinces, it has been claimed that the early investments in the new technology came from members of the nobility (Skyllberg 2003, 167ff.; Hörfors 2010, 60).

The analyses of the copper used on the site show that it originated on the Continent (one or more sources). There can also be elements of more local raw material originating in the Bergslagen area further north in Sweden (Grandin e-mail 3 May 2017). Analyses of material from other, roughly contemporary, find places show that different types of copper ores were circulating at this time (Grandin 2017).

Godegård and Hyttehamn

At present no archaeological material from the mining districts, with blast furnaces, north of Motala has been excavated or analysed. On the other hand, there are personal links between ownership in Motala and the nearest mining district, Godegård. In 1369 Nils Abjörnsson (Sparre av Tofta) owned the Godegård manor (SDHK 7512). The same charter shows that, among much else, he also owned a mill in Motala. Nils Abjörnsson belonged to the family that owned the manor of Hårstorp in Motala, with the appurtenant plots occupied by craftsmen (see further below).

The location of the Godegård manor is unknown, but most likely it was beside the medieval church of the same name. A small-scale excavation conducted near the church uncovered remains of iron production, probably smithwork. One of the features was dated to 1220–1410 (cal. 2 σ) (Lindeblad & Stålbom 1997), which indicates that iron production was started at Godegård much earlier than the first written evidence from

1489 (Hörfors 2010, 21). Both the personal link between Motala and Godegård and the early archaeological dating make it fully possible that the blast-furnace iron from the excavation in Motala was delivered from Godegård.

Yet another contemporary iron production site of interest in this context is located on the western shore of Vättern, at Hyttehamn. A blast furnace was discovered here in 2000 and has been excavated (Karlsson 2010). It has been dated between the late 13th and the early 14th century. In view of the internal age of the wood it was concluded that the furnace was probably used during the first part of the 14th century (Karlsson 2010, 20). Without special consideration of the internal age, the calibrated dates (cal. 2 σ) correspond well to the dates obtained for the metal craft in Motala.

A quick survey of available analysis data unfortunately found no obvious links between the iron production at Hyttehamn and the iron in Motala (Grandin 2010; Grandin, e-mail 28 March 2017). All in all, however, only a small amount of material has been analysed and compared, so perhaps we should not entirely dismiss the possibility of a link between the two places at this stage. The geographical proximity, the accessibility and the possibilities for transports, along with the similar datings, are still interesting factors. Slightly later there are historically known links in that Vadstena Abbey had a manor (Sw. *avelsgård*) at Forsvik, near Hyttehamn. It is first recorded in the cadastre of the abbey in 1447, with a grist mill and sawmill. Ten years later there is also mention of a forge with a water-powered hammer (SFSS 245, 48, 95).

At all events, both the iron production in Hyttehamn and Godegård and the processing in Motala can be regarded as indications that there was extensive iron production in the region during the 14th century.

Mills and fishing installations in Motala Ström

Several individuals and institutions had economic interests in Motala, above all in grist mills and fixed fishing installations. At the end of the Middle Ages there were fifteen mills between Motala Bridge and Hårstorp (Fig. 5). There were actually more than that, since there could be more than one mill in a building (Sw. *kvarnhus*). The biggest was the mill in Holm belonging to Vadstena Abbey, which had three mills in the same building. In addition to this there were two grist mills and a sawmill located some distance downstream in Duvedal. The sawmills belonging to Vadstena Abbey in Duvedal and Forsvik are some of the earliest known in Sweden (Ericsson 2016).

The fixed fishing installations consisted of barriers in which a conical net (Sw. *lana*) was lowered in running water with its opening against the current, so that the fish would swim in or be washed in without being able to get out. There was also fishing with nets, seines and leisters. We have no information from the Middle Ages about how big the catches were, but from Gustav Vasa's Crown estate we have data from the mid 16th century showing that the yield was big: 5–12 tons of salted fish per year and 1.5–2.5 tons of dried fish. The catch mostly consisted of brown trout and eel (ÖgH 1554:24; 1560:16).

Mills and fishing in Motala are first recorded at the end of the 13th century, but when we follow the dominant owners back in time via Ingeborg Ulvsdotter (Ulv) and King Magnus Eriksson, we end up in the Folkunga dynasty (Sw. *Folkungaätten*). It was people in this family, which later ruled the kingdom, who dominated land ownership in Motala and could thus lay claim to the rich resources of Motala Ström as early as around 1200 (Ericsson 2017).

Ingeborg Ulvsdotter controlled her resources in Motala from the manor of

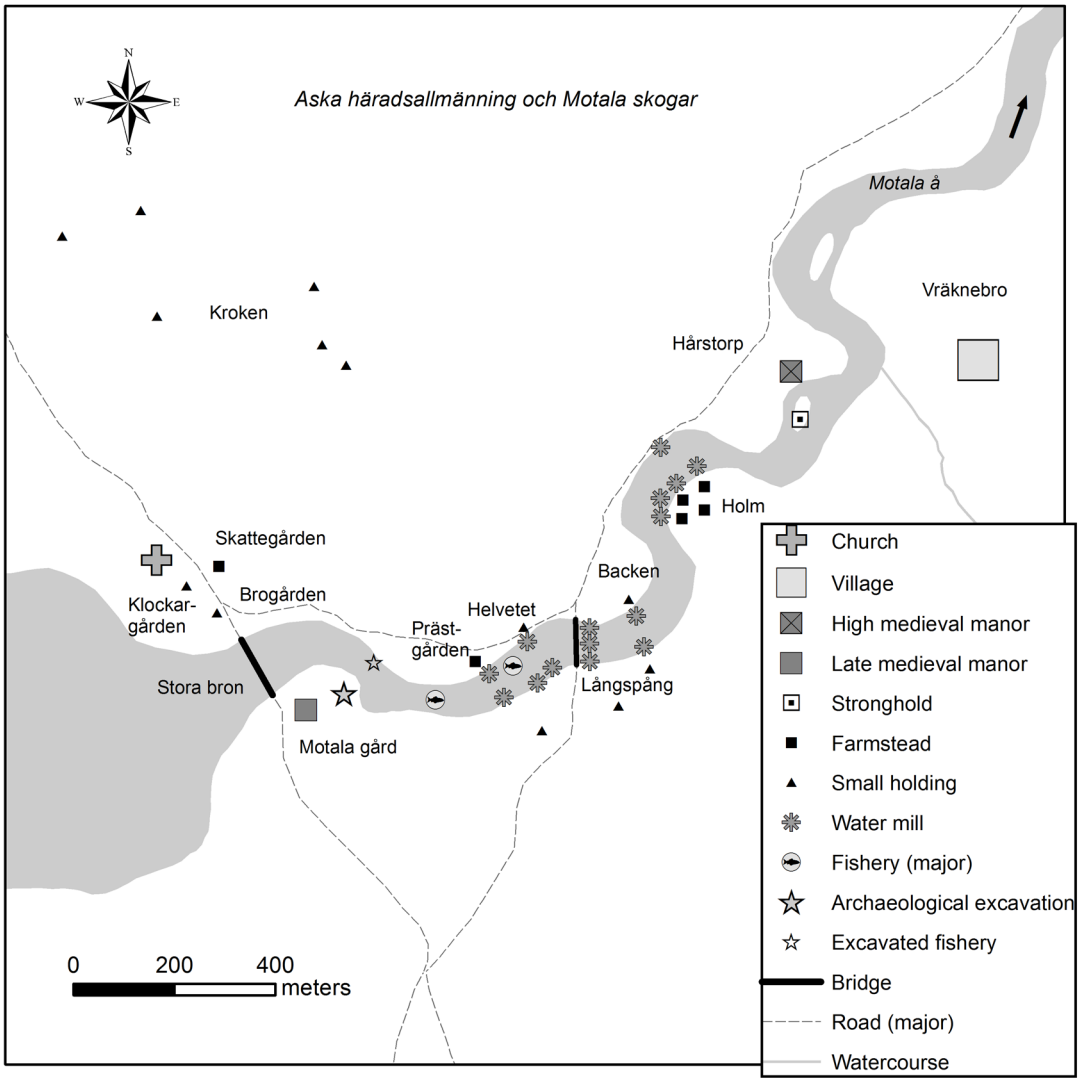

Fig. 5. Motala in the Middle Ages. There is evidence of Hårstorp as a manor in the 13th century, but it came to an end in the Late Middle Ages when Vadstena Abbey established a new manor south of Motala Bridge. Between the bridge and Holm there were several building plots along Motala Ström. Wooden piles in the excavated fishing installation have been dated, with ages ranging from *c.* 1100 to the mid 17th century. Map and graphics: Alf Ericsson, Arkeologerna, SHMM.

Hårstorp (Fig. 5). Around 1300 there was a fortified house here on an islet, probably a splendid building in keeping with the chivalrous ideal of the time. People from the highest stratum of society spent time at Hårstorp. There were also other stakeholders in Motala from early on as there were water mills and fishing installations belonging to manors which had no land beside Motala Ström. Such manors could be found in Vinnerstad, Hamra, Lagmansberga and Vadstena (Ericsson 2017).

Through a testamentary gift Abjörn Sixtensson (Sparre av Tofta) received Hårstorp and all pertaining to it from his wife Ingeborg Ulvsdotter. Karl Ulfsson (Sparre av Tofta)

then transferred the Hårstorp complex to Bo Jonsson (Grip) through an exchange. Before this, parts of the estate had been hived off through donations, some of it to Alvastra Abbey. In 1383 Bo Jonsson did an exchange with Vadstena Abbey, which thus acquired Hårstorp and all pertaining to it, and along with several other donations and purchases became the dominant owner in Motala during the Late Middle Ages (Ericsson 2017).

In Motala the abbey set up a manor (Sw. *avelsgård*) providing it with produce, managed under its own auspices with the help of paid staff and with corvée provided to varying extents by the surrounding tenants. As mentioned above, there are several indications that this was just south of Motala Bridge, in the same place as the manor of Gustav Vasa's Crown estate.

Besides Vadstena Abbey, the bishop of Linköping also had major interests in Motala, where he had the use of several mills and fishing installations by virtue of his office. The place-name *Bispmotala,* a contraction of *Biskopsmotala* (Fig. 2) likewise indicates that bishops owned land in the village, and from the early 16th century there is information about the bishop having a farm in Bispmotala (Kh 54, 217). But the bishop of Linköping was not the only landowner in the village. The first time Bispmotala is mentioned is in 1374, when Kristina Ormsdotter (Gumsehuvud) sold land in the village to Vadstena Abbey (SDHK 10581, 10586). Besides Bispmotala, there are also records showing that the small island now called Pariserholmen in the Motalaviken bay was formerly called Bispholmen and had buildings on it (Kh 54, 217).

Other stakeholders, but with smaller interests, were Alvastra Abbey, Skänninge Abbey (Dominican nuns), Vreta Abbey and Varnhem Abbey. Moreover, Motala church and Vinnerstad church owned land in Motala. Through Gustav Vasa's confiscation during the protestant Reformation the crown took over the resources held by churches and monastic institutions in Motala and established there a Crown estate, consisting of land belonging the north and south villages of Motala, Bispmotala and Vara. The Crown estate also held several grist mills, a sawmill and – not least of all – the fishing installations. Before this confiscation the crown held no land or other resources in Motala (Ericsson 2017).

Plots and plot-men

In a landscape perspective Motala distinguishes itself from the surrounding villages. Almost 40 plots are attested in the sources (charters) in the second half of the 14th century and at the start of the 15th century.

In connection with the great exchange in 1369 between Karl Ulfsson (Sparre av Tofta) and Bo Jonsson (Grip) there is a reference to plots and plot-men in Motala among the possessions of the manor of Hårstorp (SDHK 9394). The designation "plots and plot-men" (Sw. *tomter och tomtkarlar*) is unusual, but it occurs in the same charter in connection with Mjölby, which also had considerable flour-milling operations during the Middle Ages. A plot-man in this case appears to have been a person who occupied a plot belonging to a water mill. In normal cases he would be a miller, but there may also have been plots connected to major fishing installations. The forged Motala charters from the reign of Queen Margareta mention a fishery adjacent to a plot in Motala and state that a fee is paid for the plot (DS 2337, 2338). In other words, a plot-man appears to have been the holder of a plot which he leased or in some other way had the right to use.

In the large-scale land transactions in 1383 between Bo Jonsson (Grip) and Vadstena Abbey there is a record of 21 plots in Motala (SDHK 12365), and a document issued by

the king's court in 1405 mentions 16 plots (SDHK 16437). These must be different plots, because the latter document does not say anything about plots belonging to Vadstena Abbey. Among the owners, on the other hand, there are various nobles but also two parish churches (Motala and Vinnerstad).

In the deed of exchange from 1383 all the plots have a named holder, with the exception of a plot occupied by a widow. When several people have the same name they are distinguished by either a patronymic or a byname. The names of three individuals indicate where they live. One of them is called Birger and he lives by the bridge, that is, Motala Bridge (Great Bridge). Another is called Hemming, who lives in Kroken, a little way north of Motala Ström. Three bynames denote occupations. Jakob is a smith, Vaste is a shoemaker and Inge is a sword grinder. The first two of these occupations were not only found in towns but could also be practised in the countryside. The case of the sword grinder appears to be different, as this occupation is mostly associated with towns and castles. Presumably the reason these particular occupations are specified is that they differ from the other plot-men, most of whom must have been millers or fishermen.

There was probably also a beltmaker in Motala. A beltmaker was a person who made leather belts and straps, with the necessary metal buckles and mounts. A man named *Bryniolf bältare* ("beltmaker") witnessed a property transaction in 1374 at the court in Motala (SDHK 10541). Because such witnesses had to be residents of the district, he must have lived somewhere in Aska härad. Since this happened before the foundation of the town of Vadstena, the beltmaker probably plied his craft in Motala.

In the 1540s there are mentions of several small land holdings and plots in Motala. Among the plot holders were a shoemaker, two smiths and a cooper (ÖgH 1544:8). The cooper made barrels and other wooden vessels. The small land holdings recorded in 16th-century cadastres may be remains of the plots that existed in Motala in the 14th century. The plots in Motala were numerous, but they need not have been clustered or immediately adjacent to each other.

Concluding discussion

In many ways Motala had a favourable location, with several economic resources. Motala Ström and Vättern, with all that these waters could offer in the form of power, transport and fishing, was a fundamental condition for the interest in investing in Motala during the medieval period.

Motala's resources were utilized during the Middle Ages in a new and more palpable way than previously. It appears as if the unusually rich supply of migratory fish in Motala Ström began to be used in a new way around 1100, when a permanent fishing device was installed in the water (von Arbin 2017). The importance of fishing in the Middle Ages is seen in the many times it is mentioned in the medieval documents, but it is not until the 16th century that we find details of the size of the catches; they were big enough to be counted in tons.

Motala Ström also created good conditions for water-powered mills. Mills of this type are first mentioned in Motala at the end of the 13th century, but presumably they had come into use long before, at the start of the century (Ericsson 2016). The mills in Motala mainly appear to have been used to grind grain, but at the end of the Middle Ages a sawmill is also recorded. These activities were then pursued in Motala Ström up to the start of the 20th century, when the construction of a hydroelectric power station changed conditions radically.

Both the fishing installations and the

mills lasted for a relatively long time, but the same cannot be said about the metal craft that has been investigated. This varied and in part advanced craft is concentrated in the 14th century, especially in the second half of that century. From the same time the written sources provide information about both plots and specialist craftsmen. In other words, it seems that this period in the history of the place was particularly expansive.

The high nobility and the church were attracted to the resources

When it comes to ownership in Motala during the Middle Ages, two types of agents stand out as especially active – the high nobility and ecclesiastical institutions. Extant charters testify to transactions involving persons such as Bo Jonsson (Grip) and Abjörn Sixtensson (Sparre av Tofta) and his descendants. The sources also indicate that, further back in time, in the 13th century, it was members of the Folkunga dynasty who dominated land ownership in Motala. They had sufficient resources to mark their position in an unparalleled brick palace in Vadstena, and we know that a fishing installation in Motala belonged to the palace.

It is conceivable that the different agents who figure in the major land transactions had different incentives for their investments in Motala. Bo Jonsson (Grip), through his large possessions, stands out as a medieval property tycoon, with political ambitions and aims. His relatively brief ownership in Motala probably had other purposes than that of either Vadstena Abbey or the Ulv family. The latter two had more long-lasting interests in Motala.

As mentioned above, Vadstena Abbey exchanged property to acquire considerable lands in Motala in 1383. The abbey chose to establish one of its manors managed directly by the abbey, and not through a leaseholder in Motala. This manor was in all probability situated south of Motala Bridge. The aim of this and other similar manors (Sw. *avelsgårdar*) was to supply the abbey with important commodities not produced by ordinary leaseholders (Norborg 1958, 141ff.).

Construction work at Vadstena Abbey went on for a long period of time between about 1370 and the first decades of the 1400s (Andersson 1972, 59ff.). During this time it may be assumed that the abbey needed considerable quantities of building material, in the form of timber, stone and iron. The nearest route from the western plains to the areas in the north with their many rich resources went via Motala. At the same time, the fixed assets in Motala, that is to say, the resources of Motala Ström in the form of fish and water power, would have been of great interest. Vadstena also had a manor in the above-mentioned Forsvik, near Hyttehamn, where similar resources were available (SFSS 245, 48, 95).

Another important agent in Motala was the bishop of Linköping. A lasting memory of his interests in Motala is found in the place-names *Bispmotala* and *Bispholmen*. Several other places with similar names are known, for example Biskopsholmen in the nearby town of Skänninge, where the bishop moved from his manor in around 1270 (Stibéus 2013, 229ff.).

In a study of early ownership around Skänninge, Johan Berg has found a situation similar to that in Motala, that land ownership was dominated by the high nobility. This was particularly true of the central parts of the parishes, which in several cases were owned by aristocratic or royal dynasties in the Middle Ages (Berg 2013, 26f.). In Motala the first investments appear to have been made by the secular nobility, but through various transactions these properties were later owned by churches and monastic houses, a picture we again recognize from Skänninge (Berg 2013, 19ff.). Before Gustav Vasa, the crown had no interests in Motala.

From a place with urban features to an ordinary village

In the 14th and early 15th centuries Motala stood out from the surrounding rural landscape. The period is also distinctive by comparison with the village structure the place displays in the subsequent centuries.

Motala probably had a settlement structure with several cores (Lindeblad 2008, 91). It probably had a loose composition as regards plots with buildings, as indicated by 17th-century maps (Ericsson 2017). It is highly probable that the excavation which found the metal craft comprised one or more of the plots mentioned in the medieval charters. The owners of a major part of the plots were, until 1369, of the same family which also possessed the manor in Godegård, the mining distinct north of Motala.

Close to the excavation site are the remains of Gustav Vasa's Crown estate. Earlier research has presumed the existence of a manor in that area in the Late Iron Age/Early Middle Ages (Lindeblad 2008, 86ff.). At present there is no evidence of such an early settlement. Recent excavations shows that the earliest datings go back to Late Middle Ages and thus can be associated with the manor of Vadstena Abbey, a circumstance not noticed in previous research (e.g. Norborg 1958).

There is a great deal to suggest that some of Motala's expansion came in the second half of the 14th century, after the Black Death. The new archaeological results, together with the mention of plots with craftsmen in the late 14th century and the early 15th century, and the fact that Motala in 1370 took over the role as the seat of the court in the district, are all factors pointing in that direction. Earlier research has proposed that Motala was then a place that can be compared with Norrköping in eastern Östergötland. Norrköping became a town by the mid 14th century at the latest, and like Motala, Norrköping had extensive milling and fishing installations during the Middle Ages (Lindeblad 2008, 25ff.).

With the new excavations and research we can also notice parallels between Motala and towns close to mining areas, such as Jönköping on the southern shore of Vättern and Nyköping in Södermanland. They both functioned as processing sites for nearby mines. Another place worth mentioning as a possible parallel is Norberg in Västmanland, centre of a medieval mining district, which received town-like charters in the year of 1354 (Skyllberg 2003, 183ff.; Andersson 2010, 63ff.; SDHK 6705). Motala has neither any charters like this nor such obvious links to a production place for iron like Jönköping, Nyköping and Norberg, but here we have suggested that the iron refined in Motala may have been transported from Godegård to the north or from Hyttehamn, on the other side of Vättern.

However, there is an important feature missing in Motala, namely officially recognized trade and commerce. Jönköping, Norrköping and Nyköping were trading places long before they received town charters, as indicated by the early medieval place-name element *köping*, meaning trading or market place. Town privileges always regulated trade and commerce. This lack of tradition in trading, together with the fact that the stakeholders – as far as we know – made no effort to obtain royal charters, are two important reasons why Motala did not obtain urban privileges in the Middle Ages.

After the Black Death there were several changes with severe consequences in society. Even if the plague killed around half of the population, land rents were cut and many farms deserted, there was nevertheless some economic expansion (Myrdal 1999, 2003). One example of this is that, at the end of the 14th century and the start of the 15th, a number of new towns were founded in Sweden. These newly established towns differed significantly from those founded

previously, above all in that virtually all the younger towns lacked religious institutions such as monasteries, hospitals and convents (Ersgård 2016, 72ff.). Motala is thus more comparable to these new towns, which were based on handicraft and commerce, and not extractive institutions. During this period mining also underwent a change as production rose and became increasingly specialized. There are also examples of economic specialization in agrarian settings, for example, with smithwork or the fish trade, probably because of a decreasing supply of labour (Ersgård 2016, 72ff.).

The growth of Motala, especially in the 14th century, can generally be viewed against the background of the high medieval expansion. Motala can be regarded as urbanized, with distinct economic specialization, particularly metal production but also milling and fishing. Behind the growth lay, above all, investments made by stakeholders from the secular and spiritual nobility.

The decline of Motala in the Late Middle Ages probably has to do with the fact that Vadstena Abbey became the major landowner in Motala. Around 1400 the town of Vadstena was founded on land belonging to the abbey, just 16 kilometres away from Motala. Vadstena Abbey therefore had no interests in Motala becoming a town.

References

Archives

Riksarkivet (RA):
Kammararkivet (in RA):
ÖgH. Östergötlands handlingar

Linköpings stiftsbibliotek:
Kh 54. Linköpings domkyrkas pappersregister

SDHK. Svenskt diplomatariums huvudkartotek över medeltidsbreven (RA). Online, http://sok.riksarkivet.se/sdhk.

E-mail

Grandin, L. E-mail 28 March 2017.
Grandin, L. E-mail 3 May 2017.

Literature

Andersson, H. 2010. Järn, stad och statsbildning. *Hammare och fackla* XLI.

– 2015. Urbanization, Continuity and Discontinuity. In Baug, I., Larsen, J. & Samstet Mygland, S. (eds.), *Nordic Middle Ages – Artefacts, Landscapes and Society. Essays in Honour of Ingvild Öye on her 70th Birthday.* UBAS 8 2015.

Andersson, I. 1972. *Vadstena gård och kloster*. 1. *Text*. Stockholm.

Anglert, M. 2006. Landskapets urbanitet. In Larsson, S. (ed.), *Nya stadsarkeologiska horisonter*. Stockholm.

– 2017. Från "små land" till Småland – ett landskapsperspektiv på kyrklig framväxt och urbanisering i ett gränsområde. In Anglert, M. & Larsson, S. (eds.), *Växjö, Kalmar och Smålands tidigaste urbanisering*. Arkeologerna, Statens historiska museer. Stockholm.

Anund, J. & Skyllberg, E. 2003. I feodala och urbana kontexter. Metallhanteringen ca 1000–1600 e. Kr. In Berg, L., Forshell, H. & Söderberg, A. (eds.), *I gruva och grav. Metallhantering från bronsålder till nyare tid.* Stockholm.

von Arbin, S. 2010. En studie av medeltida Vättersjöfart med särskild inriktning mot transporter av järnprodukter. In Karlsson, C. & Ask, C. (eds.), *Hyttehamnsprojektet 2005–2008. Undersökningar av Hyttehamn med omnejd under åren 2005–2008. Arkeologiska undersökningar, inventering, analyser och historiska källor, RAÄ 176 i Undenäs socken, Karlsborgs kommun, Västergötland*. Jernkontorets Bergshistoriska utskott H79. Stockholm.

– 2017. *Fiskeanläggningar i Motala ström. Arkeologi Motala.* Arkeologerna, SHMM rapport 2017:120.

Berg, J. 2013. Skänninge i landskapet. In Hedvall, R., Lindeblad, K. & Menander, H. (eds.), *Borgare, bröder och bönder. Arkeologiska perspektiv på Skänninges äldre historia*. Stockholm.

Björkhager, V. 2008. *Medeltid vid Tidingshyttan. Arkeologisk förundersökning. RAÄ67. Tjällmo socken*. Östergötlands länsmuseum rapport 2008:68.

Brendalsmo, J., Eliassen, F.-E. & Gansum, T. (eds.). 2009. *Den urbane underskov. Strandsteder, utvekslingssteder och småbyer i vikingtid, middelalder och tidlig nytid.* Oslo.

Carlsson, T. 2004. *Arkeologisk slutundersökning. Mesolitikum och yngre järnålder på Strandvägen 1*. Riksantikvarieämbetet. UV Öst, Dokumentation av fältarbetsfasen 2004:2.

DS. Diplomatarium Suecanum (Svenskt Diplomatarium), huvudserien.

Edvardsson, J. & Linderson, H. 2017. Dendrokronologisk analys av prover från arkeologiska projekt Motala, Strandvägen. Nationella Laboratoriet för Vedanatomi och Dendrokronologi, rapport nr 2015:46. Kvartärgeologiska avdelningen, Lunds universitet. Bilaga 3. In Lindberg, S. & Lindeblad, K., *Medeltida metallhantverk vid Strandvägen. Arkeologi Motala.* Arkeologerna, SHMM rapport 2017:120.

Ericsson, A. 2012. *Terra mediaevalis. Jordvärderingssystem i medeltidens Sverige*. Uppsala. Accessible online: http://urn.kb.se/resolve?urn=urn:nbn:se:slu:epsilon-e-705.

– 2016. Mjölnare och sågmästare, vattendrivna kvarnar och sågar. In Gröntoft, M. (ed.), *Biskop Brasks måltider. Svensk mat mellan medeltid och renässans*. Stockholm.

– 2017. Motala under medeltiden. Skriftliga källor och historiska kartor. Bilaga 10. In Lindberg, S. & Lindeblad, K., *Medeltida metallhantverk vid Strandvägen. Arkeologi Motala.* Arkeologerna, SHMM rapport 2017:120.

Ersgård, L. 2016. Change, desertation and survival – an archeology of the late-medieval crisis. In Lagerås, P. (ed.), *Environment, Society and the Black Death. An Interdisciplinary Approach to the Late-Medieval Crisis in Sweden*. Oxford & Philadelphia.

Friberg, N. 1957. Bro. *Kulturhistoriskt lexikon för nordisk medeltid*, band 2, sp. 248–49.

Gardelin, G. 2006. *En värld av sten. Stenhuggarnas organisation i medeltidens Östergötland*. Lund Studies in Historical Archaeology 3. Lund.

Grandin, L. 2010. Analys av malm och slagg. In Karlsson, C. & Ask, C. (eds.), *Hyttehamnsprojektet 2005–2008. Undersökningar av Hyttehamn med omnejd under åren 2005–2008. Arkeologiska undersökningar, inventering, analyser och historiska källor, RAÄ 176 i Undenäs socken, Karlsborgs kommun, Västergötland*. Jernkontorets Bergshistoriska utskott H79. Stockholm.

Grandin, L., Hjärthner-Holdar, E. & Ogenhall, E. 2017. Metallhantverken vid Strandvägen i Motala. Analys av kopparlegeringar, järn och slagg. GAL Rapport 2015:07. Bilaga 11. In Lindberg, S. & Lindeblad, K., *Medeltida metallhantverk vid Strandvägen. Arkeologi Motala.* Arkeologerna, SHMM rapport 2017: 120.

Hörfors, O. 2005. *Hällestad bergslag. Atlas över Sveriges bergslag*. Jernkontoret Bergshistoriska utskottet Serie H119.

– 2010. *Godegårds bergslag. Atlas över Sveriges bergslag*. Jernkontoret Bergshistoriska utskottet Serie H 120.

– 2011. *Vånga och Risinge bergslag. Atlas över Sveriges bergslag*. Jernkontoret Bergshistoriska utskottet Serie H 121.

Karlsson, C. 2003. Bergsbruk. Nya samhällen, system och identiteter i det medeltida Närke. In Karlenby, L. (ed.), *Mittens rike. Arkeologiska berättelser från Närke.* Riksantikvarieämbetet Arkeologiska undersökningar Skrifter 50. Stockholm.

– 2010. Arkeologiska undersökningar 2005–2008. In Karlsson, C. & Ask, C. (eds.), *Hyttehamnsprojektet 2005–2008. Undersökningar av Hyttehamn med omnejd under åren 2005–2008. Arkeologiska undersökningar, inventering, analyser och historiska källor, RAÄ 176 i Undenäs socken, Karlsborgs kommun, Västergötland*. Jernkontorets Bergshistoriska utskott H79. Stockholm.

– 2015a. Ökad konsumtion av järn – en förutsättning för modernisering. Exemplet järnkonsumtion i medeltida åkerbruk. In Berglund, B. (ed.), *Järnet och Sveriges medeltida modernisering*. Jernkontorets bergshistoriska skriftserie 48. Halmstad.

– 2015b. *Förlorat järn – det medeltida jordbrukets behov och förbrukning av järn och stål*. Jernkontorets bergshistoriska skriftserie 49. Halmstad.

Lindberg, S. 2013. *Vägen till Varan. Drottninggatans föregångare och boplatslämningar i närheten*. Riksantikvarieämbetet, UV rapport 2013:48. Linköping.

Lindberg, S. & Lindeblad, K. 2017. *Medeltida metallhantverk vid Strandvägen. Arkeologi Motala.* Arkeologerna, SHMM rapport 2017:120.

Lindeblad, K. 2008. *Landskap och urbanisering. Östergötland ur ett centralortsperspektiv 700–1550*. Riksantikvarieämbetet Arkeologiska Undersökningar Skrifter 74/Lund Studies in Historical Archaeology 10.

Lindeblad, K. & Stålbom, U. 1997. *Nytt dubbelspår Godegård–Mjölby, Godegårds socken, Motala kommun, Östergötland. Arkeologisk utredning, etapp 2*. Riksantikvarieämbetet, rapport UV Linköping 1997:25.

Myrdal, J. 1999. *Jordbruket under feodalismen*.

1000–1700. *Det svenska jordbrukets historia*. Band 2. Stockholm.
– 2003. *Digerdöden, pestvågor och ödeläggelse*. Stockholm.
Norborg, L.-A. 1958. *Storföretaget Vadstena kloster. Studier i senmedeltida godspolitik och ekonomiförvaltning*. Lund.
Räf, E. 2014. *Blästbruk i Östergötland. En forskningsrapport*. Östergötlands museum, rapport 2014:34.
Schmidt Sabo, K. & Cardell, A. 2000. *Verkstäder i kvarteret Skatan, Åhus*. Arkeologisk undersökning Riksantikvarieämbetet UV Syd rapport 2000:85.
Skyllberg, E. 2003. *Södermanlands medeltida bergsbruk – en feodal angelägenhet*. Sörmländska handlingar 50.
SFSS 245. Vadstena klosters två äldsta jordeböcker. Utg. av A. Larsson. Uppsala 1971.
Stibéus, M. 2013. Biskopens gårdar i Skänninge. In Hedvall, R., Lindeblad, K. & Menander, H. (eds.), *Borgare, bröder och bönder. Arkeologiska perspektiv på Skänninges äldre historia*. Stockholm.
– In ms. Hertig Johans källare i Motala.
Stilborg, O. 2017. Gjutningen och den tekniska keramiken från Strandvägen 1 i Motala. SKEA Stilborg keramikanalys. Bilaga 2. In Lindberg, S. & Lindeblad, K., *Medeltida metallhantverk vid Strandvägen i Motala. Arkeologi Motala.* Arkeologerna, SHMM rapport 2017:120.
Svensson, A. 2014. Complex Metalworking in the Provinces, Rural Centres and Towns. Preliminary Results from the Project "Exclusive Metalworking in Rural Settings" Contextualized. *Lund Archaeological Review* 20.
– 2015. Kontextualisering av metallhantverk på landsbygden – arkeometallurgi och landskapsstudiemtodik. In Bodduum, S., Mikkelsen, M. & Terklidsen, N. (eds.), *Bronzestøbning i yngre bronzealderns lokale kulturlandskab.* Seminarrapport fra seminaret "Bronzestøbning i yngre bronzealders lokale kulturlandskab" afholdt i Viborg, 6 marts 2014. Yngre bronzealderns kulturlandskab vol. 5, 2015. Viborg Museum & Holstebro Museum.

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