

ACTA ARCHAEOLOGICA LUNDENSIA
SERIES IN 8°, NO. 40

CENTRALITY – REGIONALITY

THE SOCIAL STRUCTURE OF SOUTHERN
SWEDEN DURING THE IRON AGE



UPPÅKRÄSTUDIER 7

ALMQVIST & WIKSELL INTERNATIONAL

Wayland

An Essay on Craft Production in the Early and High Middle Ages in Scandinavia

Johan Callmer

Abstract

Although the development of craft production largely follows an evolutionary pattern from simple to complex, it is necessary to differentiate between crafts requiring exclusive, profound knowledge and high skills, and crafts which are mainly a specialization of the kind of production normally pursued in a self-sufficient household. A characteristic feature of some highly qualified crafts in this period is that local demand is at such a low level that permanent local production is improbable. The solution to this problem of maintaining a very high level through frequent work is mobility, either permanent or during parts of the year. The crafts that are interesting in this connection are fine smithing, weapon smithing, casting and working of bronze, gold and silver, glass working and combmaking. The problematic relationship between the local power elite and the skilled craftsman is epitomized in the saga of Wayland. The political elite had to accept the relative freedom of the craftsman. Some of these crafts continued in the urban communities of the 11th century and later. They made up the core of the medieval urban craftsmen.

Johan Callmer, Institut für Geschichtswissenschaften, Ur- und Frühgeschichte, Hausvogteiplatz 5–7, D-10117 Berlin, Deutschland

Work and craft

Craft production is a form of production of commodities which plays an important role for the definition of several social and economic systems. Craft production has often been crucial in the discussion of the emergence of the earliest urban communities. Opinions on the importance of the role of craft production have differed and sometimes stood in sharp opposition to each other. It has often been said that craft can only develop when society generates a surplus which makes it possible to set individuals or groups of people who have a special gift for or mastery in

producing complex artefacts, free from subsistence production. Craft products of this character are often regarded as exclusive and it is assumed that groups dominating society have an interest in controlling both the production and the products and even the craftsmen¹ personally. Through this control it becomes possible for these dominating groups in society to expand their political influence in the local society and they can also develop and maintain bilateral connections with other dominating groups in other regions. All this is of course a rather abstract

historical construction which, with certain variations, is part of several different materialistic and evolutionistic schemes for the progressive change of society from simplicity to complexity and from egalitarianism to hierarchy. Archaeology has often explicitly or implicitly used these models for explanations of change in society.

There is after all good reason to accept and appropriate this basic idea about change in a general way. At the same time, we must draw attention to the fact that the concepts used are vague and that the causality between different parts of the constructions could be called into question. Here archaeology has one of its most rewarding tasks to make clear and go deeper into concepts and relationships since archaeology primarily treats material culture. Many forms of production can be studied in detail by archaeology because production often means installations and above all waste material. The essential parts of this sphere of human culture are situated completely or almost completely beyond the scope of written history, both for chronological reasons and because early written sources hardly pay any interest to craft production until in the late medieval period. Through studies of production contexts and through analysis of tools, production waste and finished products, archaeology can reconstruct the conditions of craft production, its organization, its material, its technology, its quality and its traditions. Within some limits, the importance and the place in society of craft production can be ascertained.

The study of craft production and its material traces not only demands intensive inquiries into the artefact material with conventional archaeological absolute and comparative methods but also far-reaching cooperation with a number of different natural sciences.

Alternatively, the archaeologist can her/himself learn certain methods of preparation and analysis but for more profound and complex studies of any size it is necessary that specialists in the natural sciences, especially in technology and engineering, are incorporated in the project right from the preparatory stage. It is sad to see that interest in studies of craft production with this aim has been very weak in recent years. With its structural likeness to parts of processual archaeology, the question at issue has been viewed in a negative light and declared outdated. The close connections between material studies in archaeology and scientific theory and method has often led to a stigmatization of these studies. They were labelled scientific and declared unacceptable for the archaeology of today, still dominated by post-modern thinking.

The concept of craft is of course fundamental, and not even in archaeology is this an unambiguous concept. Is the work of craftsmen the production of a certain artefact with a certain perfection? Where must we draw the boundary between craft production and other forms of production, especially production in the ordinary local household? What is specialized production? In archaeology there has been much uncertainty about these problems. Very well executed artefacts of bone, antler and ivory from Palaeolithic sites, for example, no doubt are mostly classified as "fine examples of craft production". A survey of traditional cultural artefacts in ethnographical collections generally shows us a very high standard of workmanship and a very deliberate design. Very often we are confronted with complex products which demand many hours or days to finish. A closer look, however, reveals considerable variations with this regard. It can also be concluded from the vast majority of ethnographical studies that one of the aims

of the fieldwork which, according to taste, were to be executed, and right badly executed, be assumed that the community could be uppermost. Variations in the often been balanced services and the existence of such ethnographical societies. It is differences are never. In these terms craft production. This material artefacts which understood as a part of the term craft, resting, but it is an aim of defining during important of social stages state that specialized necessarily material impetus to develop already been material others too (specialized production) relative increase in in most households increase in quality. We can see that of craft production this purpose has been on the side. Our language, as we have seen, of an object of a craft without organization of

of the fieldwork was to find the artefacts which, according to European and American taste, were the most beautiful and well executed, and not carelessly or even downright badly executed material things. It may be assumed that not everybody in a social community could produce all things on the uppermost technical and aesthetic level. Variations in talent between individuals have often been balanced through the exchange of services and products. Confirmation of the existence of such systems is often found in ethnographical descriptions of traditional societies. It is also clear, however, that some differences are hardly overcome in this manner. In these connections we often find the term craft production used for "good" production. This means that the production of artefacts wholly or to a certain extent is understood as craft production. This meaning of the term craft production is not uninteresting, but it cannot form the basis for our aim of defining the role of craft production during important phases of the development of social stages. It may also be important to state that specialized production need not necessarily mean craft production. One impetus to develop specialized production has already been mentioned, but there are several others too (see below). Most forms of specialized production only mean a quantitative increase in forms of production executed in most households. Sometimes a certain increase in quality is achieved but not always. We can see that the problem with a definition of craft production which could be used for this purpose has both a linguistic and a semantic side. Our language, like most modern languages, as we have seen, designates the production of an object of a certain quality made by hand as craft without really considering the form of organization of the production process.

The problem with an appropriate definition of the concept of craft production cannot be solved by the additional remark that the production is a form of handicraft. The understanding of the craftsman as producer and craft production is diverse for several reasons. Our ideas about conditions in prehistoric and early historical times are certainly strongly influenced by conditions in our own time, with handicraft as a small and irrational niche alongside the vastly dominating industrial form of production. The emphasis of historical socio-economic models on the creation of a surplus of production as a prerequisite for the emergence of craftsmen erroneously sets the focus on the available time for craft production as a deficit in early traditional societies. For societies of that type, of varying complexity and with or without hierarchies, we cannot maintain that there was not enough time for craft production. It is often well documented that people in traditional societies have considerable resources of time at their disposal and that there is seldom too little of it. The development towards time as a shortage is very late, beginning only tentatively in the Late Middle Ages. If we consider craftsmen and artisans for whom we have a rather good documentation, that is, from the 16th and 17th centuries in different parts of the world, it is obvious that during this early pre-industrial phase they quite often did run a small farming unit that could secure their subsistence. Written sources indicate that artisans and craftsmen usually organized their economy in this way, at least from the Late Middle Ages. This does not touch on the question of ownership, which of course is important in this connection. We stand before the question whether craftsmen and artisans were dependent or independent social and economic actors. In China during the Tang-

period many craftsmen were slaves but in Europe the conditions were different. The quite rare sources for early medieval² conditions, mainly from the Merovingian, realm show us that both forms of social position were encountered and that the variations in the degrees of dependence were quite considerable (Claude 1981). Whether the craftsmen were organized, for example, in guild societies, is not known but cannot be ruled out. When the written sources become more numerous during the high medieval period, many artisans and craftsmen were free individuals and frequently organized in corporations.

Some attempts at the classification of craft production have taken their point of departure in where the work was carried out. Is work carried out in the rooms where people live or is there a special workshop building? During the 18th and 19th centuries craft production was mostly carried out in special workshops where special installations and tools were set up. Pictures of artisans at work from the 15th and 16th centuries show us that there was a longer tradition. These observations could be used to support an evolutionist model of the development of craft production over time. This way of looking at the development has probably influenced the well-known scheme of Büchner from *Hauswerk* to *Handwerk* (Hauser 1972). The close connection of the activities to a separate workshop is, however, hardly something general. If we widen our scope a little it becomes obvious that craft production for a long time also was carried out in the dwelling where the producer lived. It is rather the special character of the production that dictates the establishment of a separate workshop or not. Then both security risks and the need for free space play important roles.

Among the numerous crafts we know from medieval written sources, a considerable

number have their roots in activities which we know very well from the agrarian society and form of production. What we here find is, as already noted above, a form of specialization which sharply differs from a number of activities which will interest us more and which almost never or indeed never are executed in the far more numerous agrarian households outside towns and specialized settlements. If we want to try to grasp the earlier history of these crafts, the early and high medieval continental written sources again become important. The picture we can make out, however, hardly supports the idea that these forms of specialized production were directly derived from the ordinary agrarian households. On the contrary, it is in the secular and ecclesiastical manor organizations, sometimes in specialized settlements (e.g., potter's villages) and of course in the urban communities that we find several crafts of this type. The necessary background for this form of specialized production is rather the existence in the first millennium AD of large, social units with a complex organization. In the Merovingian period many urban communities experienced a total or partial regression, but the other forms of organization continued. Manors in both the Merovingian and Carolingian periods included the organization of a range of well-defined specialized tasks in this manner. Especially well known are the organizations of Carolingian ecclesiastical manors, but there is no reason to assume that the organization structure of secular estates was basically different. We still know too little about contemporary estate organizations in adjacent parts of Europe to decide whether conditions there were similar. Spectacular discoveries during the last few years of very extensive complex sites with residences for the regional political elites and

with many other functions make some of the activities derived from agrarian households in a different manner (Callmer 1981). Here is the organization and there is a difference between activities at the numerous manor units with regard to A background organization of activities the amassment of The change could on organization necessarily – a already remarked

Producers and

The difficulties of the problem result of the employment of a form of production organization. This is something else. It is the exclusivity of other parts of society play a role in the society. Consequently, homogeneity, which generally offers, the influence of own time and of one word and that it can mean prove production process qualitative assessment is a pre-industrial allows craftsmen

with many other central social and religious functions makes it most likely that at least at some of the biggest of these specialized activities derived from ordinary tasks in an agrarian household were organized in this manner (Callmer 1997). The important thing here is the organization of certain activities, and there is basically no other very great difference between the majority of the activities at the centres and those at the numerous more or less "ordinary" agrarian units with regard to this part of production. A background to this change in the organization of activities of the kind described in the amassment of a surplus is questionable. The change could very well exclusively touch on organization including perhaps – but not necessarily – a slight qualitative increase as already remarked (cf. above).

Producers and production

The difficulties in coming closer to the core of the problem have not become less as a result of the emphasis on craft production as a form of production as well as a form of organization. The core of the concept is something else. Most essential in our opinion is the exclusivity of the activity in relation to other parts of society. Only then can craftsmen play a role in the process of transforming society. Consequently the impression of homogeneity, which the word craft production generally offers, is utterly false. Partly under the influence of patterns of thought of our own time and our culture, we are left with one word and three different meanings. First, it can mean proven dexterity in a pre-industrial production process; in its essence this is a qualitative assessment. In the second place it is a pre-industrial form of production which allows craftsmen to specialize in the produc-

tion of a certain product or in a certain part of a complex process of production. In the third place it denotes pre-industrial production which is exclusive and which has recourse to a capital of knowledge which is profound and which is rare in the vastly dominating agrarian social units of society. This exclusivity and this monopoly of profound knowledge (at least relatively) is a very significant aspect of craft production because it contradicts the simple evolutionist notion, just referred to, of the development of craft production as based on the procurement of a surplus, impending specialization and a separate organization. The urban communities of the Middle Ages had craftsmen both of this exclusive kind and those who simply specialized in some sort of production which was also an organic part of a normal agrarian social unit, but which the urban form of life made it possible and sometimes also desirable to cultivate separately. Historians have had difficulties in realizing these profound differences because the written sources so often present these craftsmen and artisans side by side in urban communities, monasteries and larger estates in a confusing manner, and they have seldom tried to see deeper into the diverse origins of the different activities. It must not be forgotten that we also can maintain that from quite early on there was a certain specialization of production depending on diverse talents and aptitudes and on the uneven access to certain scarce materials in the world. These are two constant factors to reckon with, and they may carry the germ of the development of separate treasures of knowledge, but they need not necessarily do so. It also seems very likely, as we have seen, that there were producers quite early on who wielded exclusive profound knowledge that was vital to society. In the Roman Iron Age and in the Early Middle

Ages their importance increased. We think it is fruitful to view these periods separate from the immediately preceding periods (Late Bronze Age, Pre-Roman Iron Age and Early Roman Iron Age) when metallurgy was more widely practised, albeit on a technically much lower level.

In Scandinavian archaeological research Christophersen's view of the development of craft production in the Viking Age and in the High Middle Ages has been especially influential (Christophersen 1980), despite the fact that this study examines the very strongly specialized combmaker's craft. His thesis does not include a discussion of whether this specific craft required special talents and profound and exclusive knowledge. The study results in a strongly evolutionist sketch of the development of the combmaker's craft in Late Viking Age and high medieval Lund (southern Sweden) from domestic production with sporadic visits of itinerant craftsmen with their connections to the "natural hinterland of the town", via production for specific customers to market production. A basically similar view of the emergence of combmaking from domestic production in the Viking Age has been presented by Mikkelsen (1994). For reasons of principal this model is unlikely, and especially for combmaking these ideas lead in the wrong direction. The processing of antler from red deer and to some extent elk (possibly a little reindeer as well) for the production of composite combs, as early as the end of the Roman Iron Age, if not before, can be understood as a highly specialized craft which may indeed completely lack roots in any branch of domestic production.

Before we proceed to a characterization of the diverse relevant crafts, it is necessary to come even closer to a definition of what an exclusive specialized craft is during the Early

Middle Ages is. It is probably appropriate, as already argued, to approach the core of the concept from the attributes of dexterity and exclusive knowledge, especially the latter. A special talent must of course always be at hand, but its importance must be viewed relatively. A certain specialization is, as we have seen, not infrequently present in traditional societies. It may be individual but it may also comprise family and descent group. This form of specialization need not mean that the production has the character of craft production, as we have also already stressed. What can be learnt from the character of the working process? To some extent craft production, like all forms of specialization, is always one-sided and monotonous. This does not mean, however, that the same craftsman only performs one craft. An important qualification is that craft production is executed continuously and with a certain intensity. As pointed out, this hardly rules out the possibility that other tasks may also have been performed by the craftsman. Deep and exclusive knowledge is probably the most important criterion. This means that craft production in this narrower but more significant meaning is a production which is only known and mastered by a minor (often even a minimal) part of the population. The products are not primarily consumed by the producer but disposed of either in an open system through some form of trade or turned over within a closed organization such as a major estate, a petty kingdom or some even bigger political unit. It is, as already stressed, well known that precisely this exclusive and profound knowledge of a certain production process has been kept for themselves by craftsmen and artisans. Expert knowledge has been more or less secret and has only been accessible to those initiated into a production group. It is

important that certain craft only gain a certain moment. It is common and accepted knowledge that once a craft is only carried on by a few. The latter may be present at so many places. Finally, there are crafts that have developed from general knowledge into specialized crafts. This is more general.

No doubt production conditions were made all the more much desired and their own disposition of various forms of groups. In very small parts of virtual self-sufficiency part of Europe until traditional agriculture some well-defined craftsmen were a such as tailors, smiths. It is likely that the specialization is late and the development in the urban environment overwhelming. Production means that the role of the producer is very limited in production in non-urban milieu marginal? This could be and the correct answer is and no. The role of the early medieval and important. In conclusion and historical research and craft production is estimated. The production supply

important that a description of this kind of a certain craft only indicates the situation at a certain moment. Knowledge may become more common and accessible to everybody, but knowledge that once was common may be lost and only carried on by a small and closed group. The latter may be the case with bronze casting present at so many Late Bronze Age settlements. Finally, there are crafts which indeed emanate from general knowledge but which turn into specialized craft production separated from this more generally shared information.

No doubt people who lived under traditional conditions in earlier days to great extent made all they needed themselves. Certain much desired artefacts and materials not at their own disposal could be acquired through various forms of exchange with other social groups. In very substantial measure, this form of virtual self-sufficiency was alive also in our part of Europe until the 19th century. In the traditional agricultural society of those days some well-defined and officially accepted craftsmen were already represented long ago, such as tailors, shoemakers and professional smiths. It is likely, however, that this classification is late and influenced by the development in the urban communities. Does this overwhelming dominance of domestic production mean that the role of craftsmen and the role of the products of craftsmen were very limited in pre-urban society and later in non-urban milieus? Maybe they were even marginal? This conclusion is certainly rash, and the correct answer is probably both yes and no. The role of craft production in the early medieval and high medieval periods was important. In contemporary archaeological and historical research the role of the craftsmen and craft production are probably underestimated. The strongly specialized craft production supplied early medieval society

with a wide range of both functionally important and symbolically loaded artefacts, which the local agrarian social units had no capacity to produce. These commodities became distributed to diverse parts of society according to various patterns. At the same time as it is important to stress the importance of the artefacts, it is necessary to realize that the consumption of products was extremely slow. Some artefacts had been inherited or had in some other way followed from one generation to the other. In this connection, it is relevant to pose the question how many brooches, mounts, combs, beads, buckles, spears, swords and so on there were in the villages, groups of farms and solitary farms. How many artefacts of all these types must be produced anew each year because older artefacts had been deposited in graves or sacrificed at religious sites or lost in some other way? How many had to be produced anew simply because they did not correspond to contemporary values? No matter how we count, the figures remain low. It is very difficult to reach a reasonable relationship between consumer and producer if we presuppose a very close permanent connection between them in the local community. A model of the organization of craft production with small-scale, stationary regional craftsmen has been suggested by Zachrisson (1960) and Carlsson (1983; cf. also Jansson 1981). Certain empirical support for this model may also be found among Finno-Ugric groups in the Eastern European forest zone (Golubeva 1984). However, it is much more difficult to argue for it when considering conditions in Scandinavia during the early medieval and high medieval periods (cf. Callmer 1994). For large parts of Scandinavia small settlement regions divided by very wide zones of uninhabited woodland were characteristic. Parts

of southern Scandinavia were more densely settled, but here too the settled regions were limited and woodlands were extensive. Large concentrations of population are relatively few. Under such conditions local production is often problematic. It seems most unlikely that a craftsman could keep up his mastery on an acceptable level if he or she, for example, only produced one or two brooches per year. Exactly how long interruptions could be allowed is of course impossible to state but regularly recurrent opportunities to execute the craft many times a year are a prerequisite. The logical assumption that a majority of these craftsmen to a certain extent led an itinerant life requires a couple of additional considerations. Naturally, this is very much a result of the empirical data, which have become available from a number of sites, mainly from the 7th century and later. Despite increasing mobility in our time, a model that includes an itinerant existence involves a problem of credibility. Where would such a person live is without doubt the first spontaneous implicit question. The concept of a home (of whatever type it may be), which plays a central role in our personal philosophy, hardly existed for medieval people. When there is something comparable it is not so generally positive and laden with emotion as in our time. The family group at that time was a much wider concept and the number of personal belongings was not overwhelmingly great. To many persons we know of from medieval written sources (admittedly socially a very restricted selection of mostly high-status individuals), mobility was not so unusual and it was often very positive and not at all something negative. Neither to these persons, nor to the craftsmen who interest us here was this mobility equal to wandering about more or less aimlessly. Primarily two probable variants of an itinerant

existence can be discerned. In the first place the person in question can move from place to place in an unbroken succession of visits. A person living under these conditions of course cannot run a farm of his own on the side (however small) but is completely dependent on the support he or she can receive through the exchange of services or through gifts, exchange or trading. In the second place, the itinerant craftsman disposes of a homestead of his or her own, where at least a part of the family lives permanently. From this base longer or shorter expeditions could be undertaken. According to which criteria these two patterns could be discussed in the archaeological material is difficult to say. Production waste (the best archaeological indicator) should appear both on the homestead site in the second case and at the places of temporary residence in both cases.

The archaeology of the craftsman

In order to extract more knowledge from the archaeological evidence about this, in our opinion, very important part of the population formed by the specialized craftsmen, one can study both the artefacts (products) and the production contexts (installations and waste material). It is of prime importance to classify artefacts and production milieus according to the question whether knowledge of the production process for these artefacts was generally known and mastered by a majority of persons in local society, or if we see evidence of acts which required exclusive skill and knowledge which only a small and closed circle was familiar with. This also means that all parts of the production process in all its different stages must be reconstructed (Fig. 1). Here the scientific investigations are highly relevant. The goal, however, is not the

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establishment of these data but the further reconstruction of the production as a complicated mental process. It is of the utmost importance to arrive at an understanding of how this knowledge could be learnt, how it could be maintained and how it could be further developed and refined. The reconstruction of the production must also comprise conclusions concerning the organization of the work executed.

In this connection there is no room to enter into this reconstruction work in detail over the whole spectrum of different potential crafts. Let us instead have a look at some crafts of diverse character which can give us a certain idea of the difficulties and also the possibilities when we turn to this way of work. These different crafts may also shed light on variations both with regard to the level of sophistication and to the organization of the production. It may be appropriate to start with two very different potential crafts, which have a close relationship to ordinary production practices in the local community. In the Scandinavian production of pottery after the Migration Period there is hardly any reason to speak of specialization until the end of the Viking Age, and then only on a very small scale. Pottery was produced in many agrarian social units and was mainly of low quality. Some Scandinavian pottery from a number of trading places might possibly suggest a vague form of specialization, but we still lack the appropriate studies of the relevant material. From the end of the 10th century there are some finds of pottery of Slavonic type which also could form the basis for a similar investigation. During the 11th century it is likely that Stamford pottery was produced at Lund under conditions similar to craft production (Larsson 2001). Otherwise it is very uncertain whether any part of the

production of pottery in the high medieval period could be understood as a specific craft.

Through the numerous finds of artefacts with a direct connection to the production of textiles, above all spindle whorls and loom weights, this production has been very visible in the archaeological material. As a consequence of lacking problem-related questions about the character of textile production, this large body of material could not give any information about the degree of specialization in textile production. Only through the important work by Andersson (1996) could various levels of sophistication in the working tools be discerned. Really fine thread qualities were spun only as an exception at "ordinary" agrarian settlements. It seems as if the production of high-quality garment cloth and decoration ribbons was restricted to a small number of localities, often of the trading place type. Some types of other specialist tools for textile work are also exclusively known from such places. There is much to suggest that the production of textiles had several different levels. It is of great interest that the working methods themselves were not so different in a specialized milieu from those in an ordinary settlement. It is without doubt the case that, at least from the middle part of the Early Middle Ages, we find a distinct specialization and a tendency to the emergence of a craft character in textile production and the making of dress for display purposes. Further work involving more integrated studies of the tools of production, the products and the production milieus is necessary to solve the problem of the different levels of professionalism in textile production. As noted above, the high-quality textile production is based on the commonly well-known textile working traditions during the early medieval period. The introduction of the horizontal loom and its

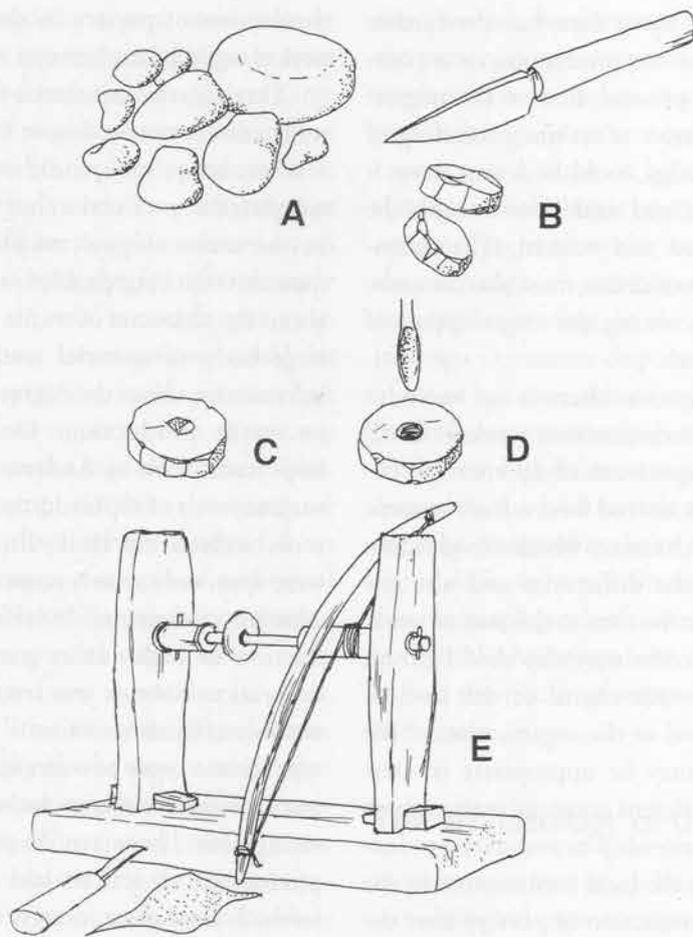


Fig. 1. Amber working. This craft is not commented on in the text but shares many characteristics with antler working. The process of antler working at first glance seems to be quite easy. Contemporary amber workers however certify the expert knowledge necessary to judge and work this special material. First the amber must be carefully sorted in order to exclude brittle and cracked pieces (A). Amber is very tricky when cutting it (B). The perforation requires a firm but light hand and good tools (C, D). Finishing the beads and other amber products involves the use of a turning lathe and special tools, abrasives and polishing material (E).

connection with professional weaving is still very incompletely known. It is most likely that this new loom type meant a stronger tendency to craft production in urban communities and special milieus such as monasteries in the 11th and 12th centuries. However in the ordinary agrarian households as well, this technological innovation had its breakthrough in the 12th century without any perceptible professionalization. This is of course to a large extent

a result of the organic integration of textile production in the self-sufficient agrarian economy.

Observations on the working of iron (for lack of space here the primary iron production has to be omitted) are very interesting as a complement to those concerning textile production, especially while there are many basic technical concepts common to diverse forms of forging. Here too it may be fruitful to consider several different levels of quality, and

the complexity supports this a reckon with a domestic prod production on specialized cr production of high level. Esp and lancehead level of profess processes inclu rent carbon co sophisticated r pose very profo Further on the nent used mus the optimal hi pons, composi chosen, steel o many times w the smith cou quality of the j nents. The pr end with this w produced mus shape and ex Through these of shafts, hilts be balanced (pe important part Only through process could v be produced, er through armo production of v supposes a grou craftsmen work small number in Scandinavi especially durin earlier, of high blades) and lan

the complexity of the relevant source material supports this approach. Tentatively we must reckon with at least three different levels: domestic production and adaptations, local production on an intermediate level and highly specialized craft production. Parts of the production of cutting weapons was on a very high level. Especially the production of swords and lanceheads and spearheads shows a high level of professionalism. Complex production processes including plaited staves with different carbon content and separate edges plus sophisticated methods of tempering presuppose very profound knowledge and experience. Further on the processing of the steel component used must be highlighted. To produce the optimal high-quality steel for these weapons, composite packages of different, well chosen, steel qualities must be forged very many times with great care. The mastery of the smith could also be measured by the quality of the joints between various components. The process of production does not end with this work by the smith. The weapons produced must be ground and whetted to shape and extremely carefully polished. Through these stages, including the addition of shafts, hilts and guards, the weapon must be balanced (perhaps the most significant and important part of the work) (Mäder 2001). Only through this very long and complex process could weapons of the highest quality be produced, enabling deadly thrusts and cuts through armour, cartilage and bone. The production of weapons on this high level presupposes a group of several master smiths and craftsmen working together. There was only a small number of weapon smiths on this level in Scandinavia. The voluminous import, especially during the Viking Age but also earlier, of high-quality swords (partly only blades) and lanceheads to Scandinavia from

the Rhine-Maas regions would have been unnecessary and impossible if high-quality weapons had been available in large numbers locally in Scandinavia. It is unlikely that the majority of all cutting weapons were imported in this manner from Western Europe, and probably all weapon axes and many lanceheads and spearheads and some swords are of Scandinavian production. Also, the production of a number of cutting tools with a high-quality steel core (especially three-component package forging) could be brought into the discussion of the different levels of iron working. Some of these tools, such as certain knives, are produced with mastery (Arrhenius 1970) and could indicate a level of quality of work which we cannot expect at the majority of the settlement units in these periods. The competence to execute simple forging must have been well known to many of the local population. This level of knowledge primarily concerns simple tools, mounts, rivets and nails through the reworking of old iron objects or through the processing of imported rods. It is an important task for archaeological research to develop a methodology for the qualitative judgment of these very different products of forging.

Casting non-ferrous metals, primarily bronze and similar alloys, but also silver and gold, for the production of brooches, other items of jewellery, mounts, ornaments and so on is a complicated process (Fig. 2). As already noted, we must make a distinction between the relatively simple bronze technology of the Bronze Age and that of the periods treated here. The available metal, which consisted either of domestic scrap metal or imported metal, must be carefully studied so that their special character can be certified because we never meet pure metal and very seldom standard alloys. The imported metal likewise often consisted of scrap of very heterogeneous origins.

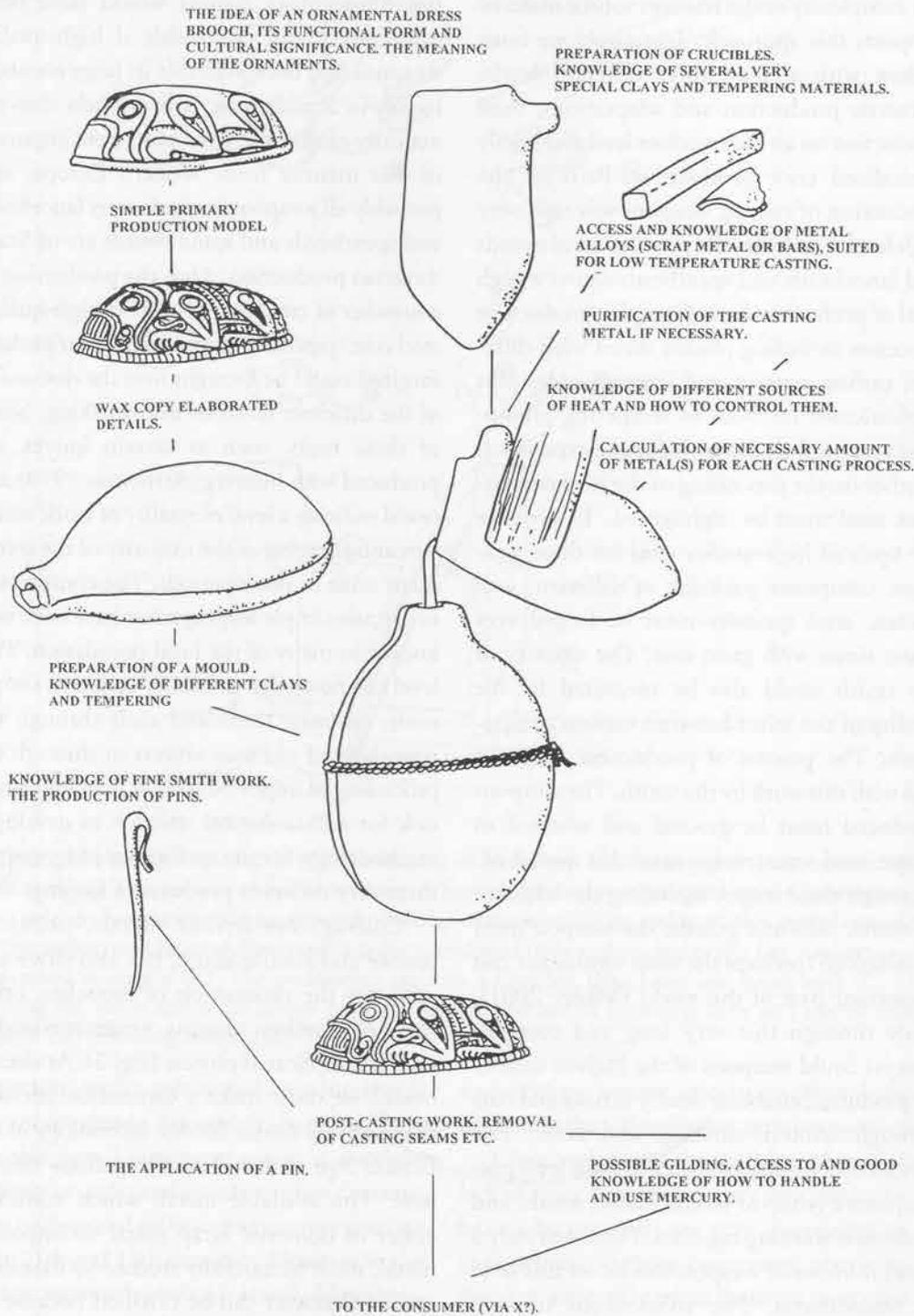


Fig.2. Bronze casting. Work with non ferrous metals is very complex and the production of high quality metal work requires a wide range of different expert knowledge. From the Migration Period onward the quality of the products with only few exceptions is excellent.

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Only in the 8th century did imported ingots become more numerous. When necessary, different components must be blended. Lead, for example, could be added to make the casting metal more fluent. The making of a mould is always complicated and the production of a mould requires special knowledge, for example, to prepare suitable clays for the outer and inner shells. This is something very different from the normal ceramics technology of the period (cf. above). Very significant is the control and mastery at the moment of casting. For this a crucible is also necessary and the production of crucibles is not uncomplicated. The clay must have a special composition and is often built up with more than one layer. The tempering should be pure quartz. The volume must be well adjusted to the amount of metal used. Unnecessary contact with air must be avoided. Any slag and impurities must be removed and the metal kept at an ideal temperature. Both too high and too low temperatures give very negative effects. For the whole casting process, control of the source of heat must be total. The preparation of the cast artefact requires a number of small quality tools. If gilding is desired in the form of fire gilding – which dominates from the 6th–7th centuries – we touch on a most demanding method. Mercury must be imported, probably from Spain or possibly from Central Europe. Whoever works with mercury must know how to protect himself from the highly toxic gases released during the process.

An equally high level of dexterity is required in connection with the production of beads of glass, which we may assume took place during these periods in Scandinavia. The glass is primarily imported, which, as in the case of non-ferrous metal alloys, requires a well-developed expertise in judging the

qualities of the glass and how they change when heated. Glass was imported in various forms, from shards (broken vessels and panes), cullet and tesserae to staves and rods. Especially demanding is the judgement of diverse glass materials, which are meant to be combined, for example, in a polychrome bead. The different characteristics are definitely not the same but have to be considered. Among the archaeological finds we find ample evidence of an excellent mastery in the combination and handling of different glass materials. The production comprises a long series of different stages (Fig. 3). After the shaping and decoration of the glass bead comes the annealing, which must proceed slowly and under full control. The technical side of the work requires a full competence to judge temperatures. The production of beads consequently demands a high degree of mastery and above all qualities of judgement and swiftness of action. The prerequisite for these qualities is experience. Both metal casting and glass working demand complex sources of heat. The constructions used may have been rather similar, although of course there are some special requirements for each craft. There is good reason to go further and investigate the close connections between forging, metal casting and glass working. With a slight twisting of the original term we could call these crafts “pyrotechnical”.

Among the highly specialized crafts we should also count combmaking already from the Late Roman Period, as noted above. At that time this highly specialized production technique, which is characteristic of Scandinavia as well as of large parts of continental Europe (from the end of the Viking Age also of large parts of Eastern Europe), developed very rapidly. The raw material for these combs is red deer antler and to a certain but probably not large extent elk antler (occasional reindeer

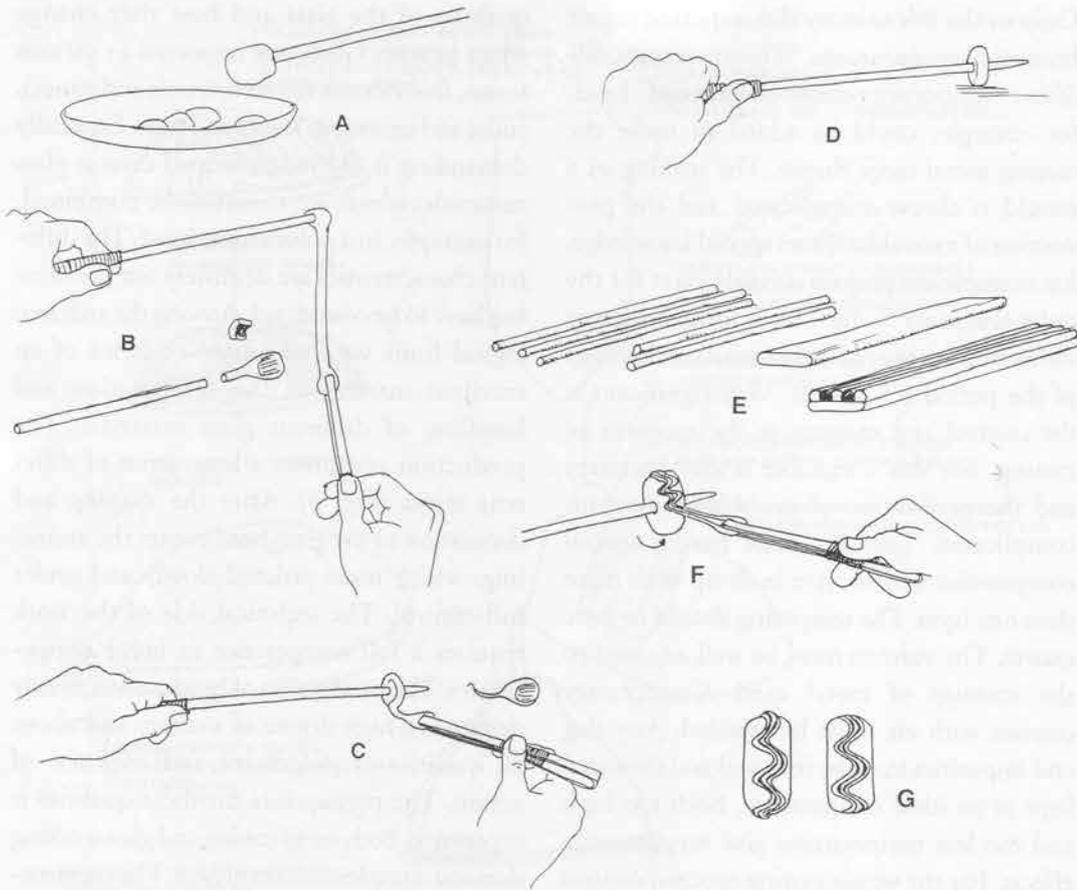


Fig. 3. Glass working / bead production. The question of whether an oven or some portable device like a blow lamp (or both) was used in bead production is not known. Primarily glass was always collected on the punty iron (A). Compared to modern methods of bead making the production of staves was important (B). Staves were used for the production of composite decoration rods (linear, cable or millefiori). Beads were produced by winding (C) and secondary shaping (D). Composite decoration rods were baked together (E) and drawn out to appropriate dimension. The application of a wavy pattern required a very high degree of control and dexterity (F). Later the decorated bead must be turned on a hard surface to become smooth. Last comes the important stage of annealing.

antler combs are also known). The production of these combs is extraordinarily meticulous, with a considerable number of components, the dimensions of which have to be thoroughly adjusted to each other (Fig. 4). This requires a very high degree of precision in the production process. A number of special tools must be used, such as precision saws, files, rasps and emery cloth and other abrasives. These tools were hardly in every man's possession. The

technique remained more or less unchanged until the gradual introduction of double combs of continental tradition in the 11th and 12th centuries. The choice of the raw material is very remarkable because no weighty reason can be put forward as to why bone which was available in plenty at every settlement site, was not used until the High Middle Ages. There is only a very slight comparative advantage for the use of antler and with a

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ACCESS TO GREAT QUANTITIES OF ANTLER, WHICH IN AN OPEN CULTURAL LANDSCAPE WAS AN ONLY RARELY FOUND MATERIAL.

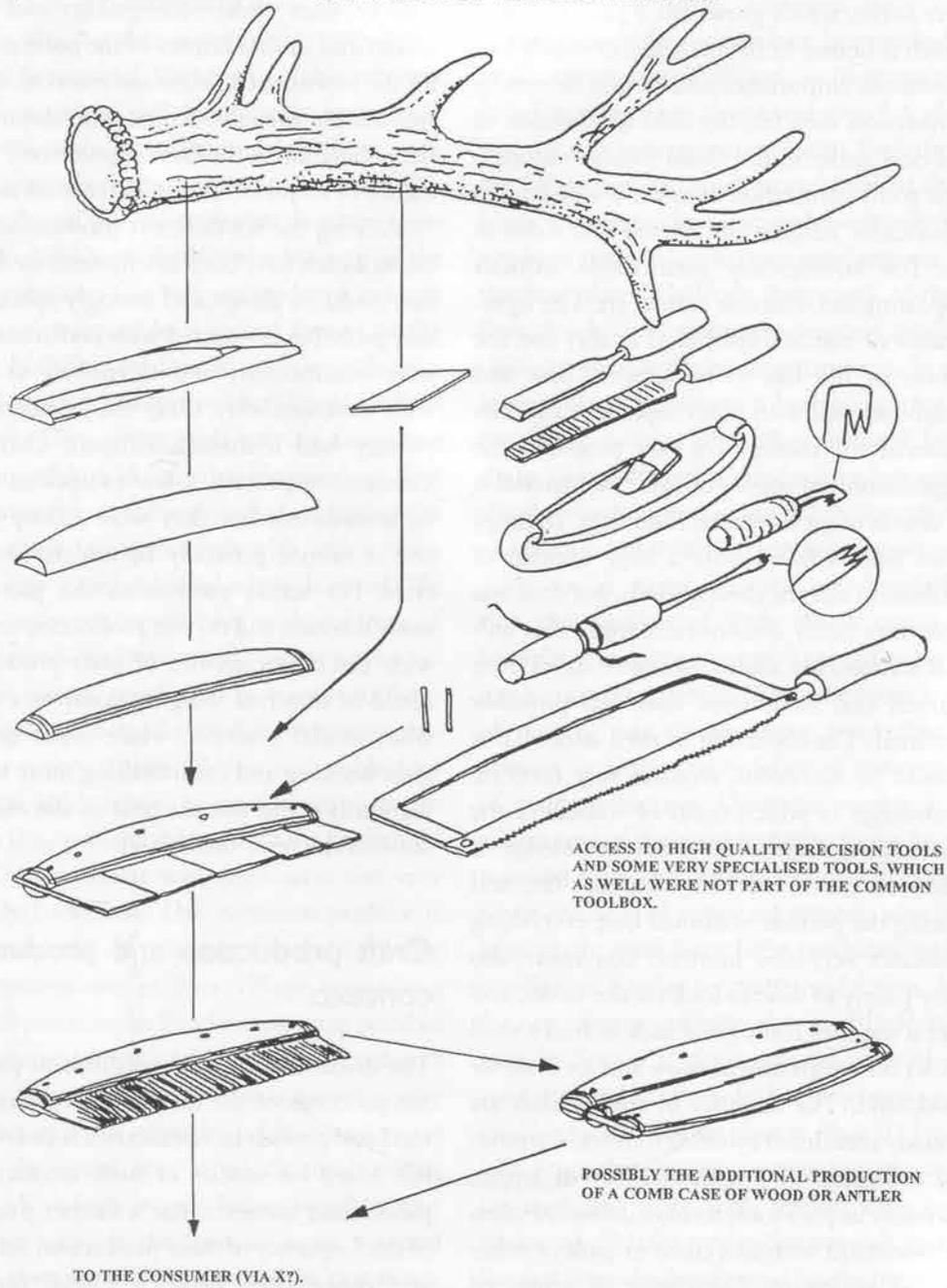


Fig.4. Antler working. In comb production both the technique and the tools and the choice of antler as material suggest activities of specialists with access to special resources, material and immaterial.

selection of the most suitable bone material this can be brought practically to nil. The red deer antler, which grows anew each year and which is bound to the male sex, certainly had a symbolic importance and should be seen in connection with fertility cults (cf. amulets of red deer antler in the Gallo-Roman culture). The godly connection of antler is well known from Celtic religion and the red deer is one of the few zoologically identifiable animals appearing in Germanic animal art. The significance of hair as a symbol of vitality and the power of life has to be stressed here and combines well with other aspects of this raw material for combs. For our problem, the organization of supply of this raw material is of course of great interest indirectly. To judge from lists of fauna from a large number of settlement sites of these periods, red deer was only very rarely consumed. Mostly this animal is altogether absent. Access to antler from hunted and slaughtered deer was probably minimal. The collection of shed antlers, if it should be successful, requires very intricate knowledge of which tracts of woodland the animals regularly visit. Such knowledge is above all connected with a hunter's life, and during the periods examined here everything indicates very few hunters. You must also have plenty of time to look for the antler, and still it requires really good luck to find a shed antler on the ground in snow and ice in dense woodland. The majority of shed antlers are quickly consumed by small rodents. Purposeful collection of a large number of antlers probably implies some form of delimited tracts of woodland such as a chase or park or other sort of enclosure. The choice of using red deer antler of all materials (hard wood could have been another good alternative to bone; cf. above) must also be seen in connection with the emergence of a special hunting culture

among the highest social stratum in Barbaricum. Thus we may suppose a close connection between these combmakers and royal estates and similar centres of the political elite for the procurement of the raw material. Antler was mainly available to the vast majority of the population in the form of purchased antler combs or exquisite examples received as gifts.

Among the six different production processes which have been briefly described here, five could be designated strongly specialized and probably connected with craftsmen who were continuously and intensively at work with their speciality. Only the production of pottery had a mainly different character. Concerning pottery, a few exceptions could be mentioned, but they were mostly vague and it cannot generally be understood as a craft. For textile production the picture is more distinct, and certain production milieus with the characteristics of craft production could be sketched. Forging occupies a somewhat similar position, while metal casting, glass working and combmaking more unambiguously stand out as crafts in the essential sense of the term (cf. below).

Craft production and production contexts

The discussion above of six different production processes of the early medieval and high medieval periods in Scandinavia is generalized but based on studies of both artefacts and production contexts. For a further precision of the frequency of these production activities and connections between special types of localities it is essential to have a closer look at these contexts within the potentially contrastive framework of a large body of material. In southern Scandinavia the province of Scania

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stands out as one of the most intensively excavated and studied regions (cf. Callmer 1995). The qualification of the material from Scania, that it is almost completely from settlements, is essential. Very considerable volumes of occupation soil have been examined. Unfortunately, occupation layers have only exceptionally been subject to excavation. When found (several examples) they have been removed deliberately with the blessing of the archaeologists. This very serious loss is in some way compensated by a special feature of the local building traditions, which include a number of sunken-featured buildings (*Grubenhäuser*). They occur with varying frequency but not seldom in considerable numbers. The vast majority of the archaeological finds stem from the occupation earth with which these buildings were backfilled when deserted. We are mostly concerned here with volumes of between one and seven cubic metres per house. Under normal conditions on a site a sunken-featured building, deserted for whatever reason, was very rapidly filled in with rubbish of various kinds from the immediate surroundings (i.e., probably the plot of the household unit). In a similar way, wells were also very rapidly backfilled. This common practice is so regular and ever-present that the similarity to prescriptions in later village regulations that all pits must be filled in as soon as possible so that the domestic animals will not come to harm is very striking. Consequently, the artefact material must be rubbish and waste from the social unit of which the house is part. Activities which leave tangible and distinct traces in the form of waste material must then be well represented in this material. From Scania more than one thousand excavated sunken-featured buildings from the early medieval and the high medieval periods (this house type is only rarely dated later than

the first half of the 12th century) are available from about sixty different sites. For the following discussion, however, only 650 sunken-featured buildings have been included as a consequence of difficulties of access and in a few cases poor documentation.³ A division of this source material into finds from the fill proper and finds from so-called floor levels in the sunken-featured buildings has not been undertaken for two good reasons. In the first place it is likely that many of these floor levels are rather products of wishful thinking than really existing contexts. In the second place the question here is not that of possible functions of sunken-featured buildings as buildings for production but quite simply whether production debris as evidence of a certain craft-related activity is present or not.

It can be stated from the very beginning that the number of finds which could be brought into connection with specialized craft production is very small. When the production of pottery was discussed we were able to observe an almost total deficit of indications of craft production. Domestic pottery is of course one of the most frequent finds. In the material from the sunken-featured buildings we of course find imported pottery, which at least partly must have been produced under conditions similar to craft production, but for our current question this is of little interest. In Scania so far a strongly specialized craft production of textiles has only been made credible for the trading place at Åhus II (Transval). From this site also some exclusive specialist tools for work with textiles have been recovered. Certain tendencies towards specialization have also been noted for the big settlement at Löddeköpinge (the Village) near the west coast of Scania (Andersson 2000).

The presence of traces of iron forging is of course of prime interest because so many

observations indicate the existence of several different levels including a specialized professional level. As we have argued above, basic knowledge of forging must have been widespread among all parts of society, while strongly specialized and high-quality forging must have been very exclusive and rarely encountered. In the present material it may be difficult to decide whether certain types of slag are evidence of forging or if they are connected with the primary extraction of iron from iron ore. There is, however, a great deal to suggest that the vast majority of the slag is slag from forging. If we consider in the first place simple quantitative data, it is striking to note a very strong variation of the volume of slag from different sites. A considerable number of sites have yielded no finds of slag at all whereas other sites only produce very small amounts of slag (less than one kilo). Only very few settlement excavations have resulted in slag finds in abundance. Unfortunately, more detailed data (especially qualitative) and very accurate information on weight are only available from a restricted number of mainly recent excavations. This circumstance of course restricts the possibilities of going into details, but the tendency in the material can very well be certified on the basis of summary information from a majority of the sites involved. A place like Löddeköpinge (the Village) with a very large number of structures excavated only has very few and weak indications of forging (Ohlsson 1980; Svanberg & Söderberg 2000). This must have been quite a big village, centrally placed in a densely settled region and with very good communications. The slag recovered from the nearby specialized settlement of Löddeköpinge/Vikhögsvägen (trading site?) is relatively small and almost exclusively concentrated in a small delimited sector of the excavated sur-

face (equal to a plot?) (Ohlsson 1976:112). This concentration of rather modest amounts of slag in a minor part of the area of the settlement is also characteristic of a number of other settlements. At Västra Karaby the finds of slag are concentrated in a rather small restricted area within the western sector of the settlement, whereas the eastern part yielded hardly any finds at all. Like Löddeköpinge/the Village, this must have been a considerable village-like settlement with a certain centrality in the region. The same conditions can also be noted in the case of the big coastal settlement at Östra Torp on the south coast of Scania. There finds of slag are only reported from the central part of the settlement, while they are completely lacking from the eastern part (Jeppsson 1995; Stjernquist 1988). More widespread and numerous occurrences of slag, as at Gårdlösa, are unusual (Stjernquist 1993). Also the extensive settlement at Valleberga/Stockholmsgården is rich in finds of slag (Strömberg 1961, 1971). In the latter case we probably have to do with a settlement with a relatively high status. This pattern suggests that forging was practised under very diverse conditions and with great variations of intensity. It seems to be a fact that intensive and continuous forging activity was not carried out at the majority of more or less "ordinary" agrarian settlements. There were settlements where forging was a minimal activity. Although qualitative investigations of iron products and slag are still lacking to a very large extent, it is probable that at the majority of sites there was forging on a qualitatively low level (cf. Müller-Wille 1977; Strömberg 1981; Englund & Grandin 2000). It is worth noting in this connection that the evidence for extraction of iron as well as forging is more numerous and above all more widely spread in the Roman Iron Age than later.

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There must have been a change in the organization of the processing of iron some time at the end of this period. Later craft-related forging on a qualitatively high level was probably primarily located at various centres (Söderberg 2001) and generally – beginning in the Late Vendel Period the Viking Age and the High Middle Ages – increasingly at trading sites and urban sites. The importance of the trading sites is strongly indicated by the large and wide masses of slag at Åhus II (Transval) dated to the 8th and 9th centuries.

Casting and other types of modifications and decoration work involving bronze (and related alloys), silver and gold stand out generally as much more exclusive than forging. This may be a partly erroneous conclusion when the production of high quality weapons is also considered (cf. above; this is however a production activity which has not yet been identified in the material). Finds of moulds from sunken-featured buildings come only from four localities. In all mould finds have only been collected from seven localities. A calculation based on the finds of crucibles does not change the picture. The number of find localities for crucibles is only six and the number of find units is very small. If we choose ingot as another diagnostic category we can add only one site. Finds of slag with bronze content do not change the picture at all. The material found at Dagstorp (Becker 1999; Kresten, Hjærtner-Holdar & Stilborg 2000), Västra Karaby (Callmer 1995), Löddeköpinge/Vikhögsvägen (Ohlsson 1976) and Östra Torp (Callmer 1995; Jeppsson 1995) indicate short spells of time for the production and a limited volume. In a decisive way only the trading site of Åhus II (Transval) stands out with finds of crucibles in 49% of the 148 sunken-featured buildings and moulds in as much as 67% of them.

Considering the find material, glass working has an even more exclusive character. Finds which unambiguously give evidence of the real production process are known solely from the twin localities of Åhus I (Yngsjö) and Åhus II (Transval). From other parts of southern Scandinavia there are a few very interesting observations which indicate short visits and a very restricted production. Observations of this kind come from Slöinge in the middle part of the province of Halland (Sweden) (Callmer 2001) and from Selsø in northern Zealand (Denmark) (Sørensen & Ulriksen 1995). Almost equally exclusive are localities with evidence of combmaking. If we consider the number of finds of this very characteristic and easily recognizable waste material, it is striking that we have so few observations. Large and distinct finds of debris from the processing of antler for the production of composite combs are known from only four localities. With an early dating (Late Roman Iron Age or Migration Period) there is a fairly large body of material from Uppåkra (Lindell 2001). The biggest collection was excavated at the 8th- and 9th-century site of Åhus II (Transval) and from the Late Viking Age and high medieval layer of the town of Lund (Christoffersen 1980; Ryding 1990; Callmer 1995). Relatively small amounts of antler waste were found at Ystad/Tankbåten (Strömberg 1978) and Valleberga/Stockholmsgården (Strömberg 1961). It is most remarkable that this material is lacking at a special coastal site (trading place?) like Löddeköpinge/Vikhögsvägen (Ohlsson 1976). Solitary and non-typical pieces of red deer antler on some sites like Rinkaby (Strömberg 1961) and Norra Lindholmen (Jacobsson 1978) cannot be claimed as evidence of comb production. Antler could be used and was, of course, also used for the production of some tools.

The study of these finds indicating craft production in the voluminous settlement material has corroborated some important hypotheses concerning the organization of these crafts and given an idea of their place in society. In this survey the chronology of the finds, until now, has not played any role. Also further on we will refrain from using a very tight absolute chronology, but a certain relative chronological order can help us understand how the organization of the craft production changes. In principle, an earlier system (A) and a later system (B) can be discerned for the early medieval period. Let us first consider the earlier system. Lately, a whole row of new observations have been made in Scandinavia of traces of production on a small scale. Often these finds are restricted to a small area, perhaps only to some pits on a settlement site. These unambiguous but – with regard to volume – very small finds indicate one or two short, occasional visits by craftsmen rather than occasional whims of the local population to produce something extraordinary. In our opinion it is more likely that the craftsmen were at work for a short time and later moved on to some other place. Also at regional centres we find traces of production. Unfortunately, we still know too little about production at these often big and complex settlements, but there is much to suggest that there were both similar short-term visits and much longer sojourns. Whether we also have really permanent craft activities at centres is not clear, but it is not completely unlikely. In the younger system (B) we find large production at trading places on the coasts or at river mouths. These sites do not form a homogeneous group but vary between non-permanent activities already in the Late Roman Iron Age (Lundeborg on Funen, Denmark) to more or less permanent activities at sites like Åhus II

(Transval). The A-type activities were very directly connected with the local elites (on different levels) whereas the B-type activities often must have been much more difficult to control or supervise. Through time the short-term visits which resulted in small deposits of waste material became less frequent. Without doubt the two systems were intertwined and the details of the activities changed only slightly. The gradual change from a dominance of system A to system B certainly means that the character of the craftsman as a social actor changed. His or her social role in general became more detached from the elites. However if the production at the centres decreased, it certainly did not stop altogether. Through the Middle Ages some elite residences maintained certain craftsmen.

The pattern for the system of organization which we have sketched for the earlier stage is, as noted above, characterized by, among other things, a rather strong connection with often very extensive and rich sites, which we have called centres, i.e. residences for regional and supraregional power elites. Are the theoretical models which regard the relationship between craftsmen and elites as fundamental and the craftsman on principle as dependent then accepted here? Or do we have a somewhat different opinion? Real evidence for the prolonged activities of a certain workshop attached to an aristocratic residence of any sort has not been put forward. On the other hand, we must again stress that we have fairly good evidence for itinerant craftsmen, who not only ambulated between centres, but were also at work at a settlement, albeit of certain rank, like Dagstorp/Särslöv and a rich coastal settlement like Östra Torp. Perhaps these movements of the itinerant craftsmen are movements inside a certain sphere of political power, but there is a great deal to suggest

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that mobility also includes several other spheres. Consequently, the pattern seems to be more complicated. Our observations brought together indicate the existence of craftsmen who moved during parts of the year between localities where preconditions and motivation for the activities existed. In these circumstances it is unlikely that the craftsmen were only slaves or lived their lives in a strongly unequal relationship of bondage to the power elites. However, it becomes evident that the two sides had many mutual interests to maintain good and very close relations. The status of highly qualified craftsmen may have been quite high in fact.

Wayland: deep knowledge and power

In the Old Norse language there is no common word known to us to designate the activities treated here. Being mainly a south Scandinavian phenomenon the non-existence is not so amazing. Only very seldom did craftsmen reach Western Norway not to speak about Iceland. It is however of great interest that the Anglo-Saxon language has the word *craft* to designate exactly this type of exclusive handicraft skills. Moreover, this word has another two very interesting meanings: power and magic. In this connection it also becomes interesting to consider the place and the role of the craftsman in Old Norse literature. The mastery of the skilled craftsman is regarded as something on the margin of an ordinary human's competence or even beyond. The master craftsman is quite often a non-human, an alien. Skilfully and exquisitely executed metal products, both weapons and jewellery, were often said to be the work of dwarves. The use of these objects by humans is generally connected with certain prerogatives and magic on the part of the

producer. Not infrequently the master producers in some way or other wish to retain control over their masterpiece through sorcery or curses, for example, the dwarf Andvari and the ring Andvaranautr in the Völsunga Saga. Producers of the finest items of craft in the myths can also be described as elves, that is, mythological and religious human-like beings with a certain godly status. Certain sacrifices, according to literary sources, were performed to regulate relations with the elves. Most interesting for us here is the Wayland myth. Wayland is of the kind of the elves and he is a master metallurgist (maker of both jewellery and weapons and armour). The central and certainly for us most significant part of the mythological biography of Wayland is his stay with Nidud, king of the Njarar. The king keeps Wayland by force at his residence and constrains his mobility radically by having his Achilles tendons cut. The freedom of movement and liberty of action so important for the lifestyle of Wayland is taken from him. Wayland's revenge is terrible and, as is well known, it is directed towards the offspring of the king, who are murdered (the exquisite jeweller makes drinking cups from the skulls of the two sons) or savagely raped. This means disaster and the downfall of the line of Nidud and perhaps for the dominion of the Njarar. At last Wayland escapes from the royal compound with bird's wings which he has constructed himself. This remarkable detail has something important to say about the status of Wayland. The only other mythological character who can appear in the form of a bird is Wodan, one of the most important gods. The Wayland myth was widely known in North-western, Northern and Central Europe. As a matter of fact, it is probably one of the most widely spread mythological motifs among the Germanic peoples. In our opinion,

this myth can contribute in a very important way to an understanding of the relationship between skilled craftsmen and leading representatives of the social elites. It is a directly didactic myth. It stresses both the importance of the skilled craftsmen and their exposure to the arbitrariness of power of local rulers. The main motif of the myth aims at drastically demonstrating necessary restraint in handling the skilled craftsmen. To demand complete submission and to establish serfdom leads to total catastrophe. It is most important to accept the independence of the craftsman and to reach a respectful agreement which is advantageous for both sides. The reason for this necessity is the importance of objects of great prestige which could only be produced by individuals wielding exclusive knowledge of how the specialized crafts could be executed with complete mastery. The existence of this relationship gives a welcome insight into power relationships of great complexity. It also shows us very clearly that the mostly simple models of power relationships in early medieval society are inadequate. Perhaps symbiosis and balance between craftsmen and rulers better describe the relationship. The ability to guarantee security and good preconditions for work, not infrequently including lodging and entertainment, was central for the local power elite. Failure to cope with these tasks meant political decline. Such relationships are reflected in some contemporary Western European law texts.

Conclusions

The strongly specialized craft production in Northern Europe discussed here emerges during the second half of the Roman Iron Age. Already quite early on, the three intrinsically very closely related pyrotechnical crafts

appear especially demanding: high-quality forging, casting and working non-ferrous metals and glass working. In all three cases we are confronted with very complex processes of production, which demand profound and extensive knowledge which can only be appropriated by a long time of learning from a very competent teacher and which can only be maintained as a result of intensive practice. This knowledge concerns the properties of the material, the changing character of the material throughout the process, different combinations of various materials, specialized tools and control of complicated sources of intensive heat. Already during this early stage, combmaking based (mostly) on red deer antler can also be recognized as a specific craft. The question whether textile production had the character of craft production is not resolved, but there are apparent tendencies in this direction especially during the Viking Age. During the whole early medieval period these crafts were further developed and carried on by a numerically rather small group of people who nevertheless occupied a key position in society of those days. They kept considerable parts of their knowledge secret and perhaps, like blacksmiths in many African cultures, they deliberately formed separate social units, never mixing with the rest of the population. Their connection with elite centres and residences is obvious, but they are not exclusive. Also a second-rank social stratum was directly in touch with these producers. Their relations with these higher strata of society were certainly not without problems. There is here an apparent tension between the will to control and the inner dynamics of these crafts. Mobility is often a precondition for the maintenance of the quality of the production on a high level. Mobility also fulfils a very important function in that it creates

positive conditions for technical knowledge. Ideological theoretical areas in which it is very difficult. However, the size of these areas is likely that a there were specialized and exclusive craft production but at this stage craft production characteristics described.

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positive conditions for communication so that technical knowledge, aesthetic values and ideological thinking can be transmitted. Still, it is very difficult to decide the size of the areas in which these craftsmen circulated. However, there is much to indicate that the size of these areas varied considerably. It is likely that at various centres and residences there were specialists who concentrated on and exclusively executed some household task, but at this stage this had very little to do with craft production. Taken together, these characteristics describe our system A.

At full breadth system B, with semi-permanent and permanent trading places, evolves at the end of the 7th and the beginning of the 8th centuries, although it is known on a smaller scale already from the end of the 4th century. The broad establishment of system B does not mean that the earlier system disappears. Rather, it looks as if some craftsmen seek a new social and economic role for themselves at the trading places. How intentional this process is can hardly be decided at the present stage of research. It is most likely that local and supraregional rulers played an important role, but it is at the same time very improbable that the process in its totality can be explained in this way. We do not find it likely that some ancient mastermind designed it all at one time. Places with these characteristics emerge from the British Channel in the west to the Eastern Baltic in the east in the course of not too many years. Craftsmen who no doubt were closely connected with traders in this new milieu produced goods, which along various routes – not only via the highest social strata – reached consumers at highly varying positions in society. The activities of these craftsmen reached their maximum during the first two centuries of the Viking Age (9th and 10th centuries). The activities were predo-

minantly, but not exclusively, concentrated at the semi-permanent and permanent trading sites. Some important centres, like Uppåkra and Gamla Uppsala, were also nodes in this network. The trading places were no doubt taxed by kings and other rulers (probably customary tithes), but it is very unlikely that they were capable of organizing and controlling the production and the trade and exchange in any thorough manner. For many of these craftsmen, the end of the 10th century must have meant a period of deep and severe crisis. Parts of the two systems had broken down and there may have been great difficulties in adjusting to new structures of dominating sites and as well to some new trading places. It is, however, a serious mistake to interpret the earliest appearances of these specialized crafts in the new milieu (which in several cases develop into medieval urban centres) as something completely new. The kernel of specialized craft production, as before, consists of high-quality forging, jewellery production and combmaking. Mobility is still a characteristic and thus a certain independence is most likely. Especially forging and combmaking in a distinct manner continue earlier tradition. Gradually more and more specialized variants of trivial household work are included as these urban sites develop into fully fledged towns in a socio-economic sense. Partly these forms of specialization were brought over from residence milieus of the early medieval centres, collapsing in the last decades of the 10th century and around AD 1000, to the emerging towns. For a long time, however, goldsmiths, fine smiths, armourers, sword smiths, sword dressers, brass casters and others form a most important and influential group of craftsmen in the medieval towns by virtue of their profound and exclusive knowledge.

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