

The Germanic Iron Age and Viking Age in Danish Archaeology

A survey of the literature 1976–1986

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INTRODUCTION

It is, of course, an impossible task to survey in a few pages all the results presented and the new ideas put forward during the last 10 years on the Late Iron Age in Denmark (in Danish terminology covering the Germanic Iron Age and the Viking Age, *i.e.* the 5th–11th centuries A.D.). A quick selection of relevant literature in *Nordic Archaeological Abstracts* covering publications during 1974–1986 yielded c. 750 relevant titles. Naturally, not all of these are really important, but all are relevant in one respect or another. This last phase of Danish prehistory has previously – apart from the Viking Age – been rather neglected, due to the paucity of finds. Research in Norway and Sweden has always been more lively, due to the richer finds of both the Germanic Iron Age and the Viking Age in these countries. The general impression of the last 10 years of Danish Late Iron Age and Viking Age research is, however, one of growing interest and steady progress.

Reasons for this change in Danish archaeology can be found in the new methods and theories adduced by the New Archaeology and its successors. This has increased interest in social transformation, where the protohistoric Germanic and Viking periods have some advantages over earlier prehistory; the processes of state formation, in particular, are a challenge. Contacts to English and American archaeology and to social anthropology have also focused archaeologists' attention on exchange and trade systems, on craft specialisation, economic and political centres, and urbanisation; again this period, which encompassed embryonic and early towns, was an obvious research field. Traditional contacts with the archaeology of Norway and Sweden are important stimulants, as well as the challenges offered by Continental, primarily German, scholars, who are continuously making considerable contributions to the study of the Scandinavian Late Iron Age.

The methodological breakthrough most important for the new stimulus of Late Iron Age research was, however, the large settlement excavations initiated by C. J. Becker. Here a new and important material was explored, mostly comprising Viking Age sites. The Early Germanic Iron Age is also represented, but the Late Germanic Iron Age is still a weak link. The excavations in 1970–76 in Ribe, when urban remains of the 8th century were found, resulted in new interest in the process of urbanisation, also among scholars unaccustomed to a social anthropological perspective.

Starting with the sensational date of the earliest rampart of Danevirke to A.D. 737, new dendrochronological results have stimulated a reappraisal of Danish Viking Age history that is far from concluded. Dendro-dating has given archaeologists a tool that will sometimes give more precise results than can be obtained from the sparse written sources.

CHRONOLOGY

Oscar Montelius's periodisation (1885–97) is still in use, but the absolute datings of this periods VI–VIII have been adjusted according to new results (Lund Hansen 1988b surveys the chronological problems of the Roman and Germanic Iron Ages).

The definition and dating of the transition between the Late Roman (per. V) and Early Germanic (per. VI) Iron Age is still problematic, and consequently we still employ Montelius' dating, c. A.D. 400, which is probably too late. There is no consensus about how to subdivide the Early Germanic Iron Age in Scandinavia, and the source material makes this a Norwegian task. In Denmark, a ceramic chronology is under development (S. Jensen 1978; 1986b; Ethelberg 1986) and several important pottery assemblages await publication, such as Vor-

basse and Sejlflod (S. Hvass 1983; J. N. Nielsen 1982; 1987; Ringtved 1988).

The absolute dating of the transition between the Early and the Late Germanic Iron Age is controversial. The date c. 575 given by Mogens Ørsnes 1966 is thought by some to be a generation or two too late (*e.g.* Arrhenius 1983 & Høilund Nielsen 1987, who both prefer a date in the 1st half of the 6th century), but others accept a late chronology (*e.g.* Hines 1984 and Welch 1987).

A functioning subdivision of the Late Germanic Iron Age into three phases was presented in 1966 by Ørsnes, and a recent reevaluation of this relative chronology using multivariate correspondence analysis resulted largely in a confirmation (Høilund Nielsen 1987).

Pottery was omitted by Ørsnes and Karen Høilund Nielsen, being extremely rare in Late Germanic Iron Age graves. The settlements of the period are still very few, and the pottery is very difficult to date, but work is going on to solve this annoying problem (S. Jensen 1986b; S. Nielsen 1985), and a seminar on this chronological topic was organised by Palle Siemen in 1987 in Esbjerg.

The chronological boundary between the Late Germanic Iron Age and the Viking Age was difficult to define and date for Montelius, and still is. The excavations in Ribe of urban layers containing much pottery, dating sceattas, and moulds of Late Germanic Iron Age and Viking Age jewellery are of significant importance in this connection (Bencard 1979; Bendixen 1981; S. Jensen 1986a; Frandsen & Jensen 1988). Becker is of course right when he recommends (1986: 143) that archaeologists await full publication – in principle, but there can today be little doubt that the archaeological Viking Age, *sensu* Montelius' per. VIII, started before the Vikings sailed to Lindisfarne in A.D. 793.

It is a paradox that the rich find materials in Sweden and Norway have still not resulted in a firm, subdivided relative chronology of the Viking Age. Most scholars still refer to the loose and today outmoded concepts '9th century', '10th century' and '11th century' as used by Jan Petersen in his famous publication (1928). An attempt to present a new chronology based on grave finds has been presented by Johan Callmer (1977), but his subdivision into 9 phases supported by a bead seriation has not won acceptance. Recently, Ingmar Jansson (1985, 1987) has presented a full argument for his earlier subdivision of the Viking Age into three phases, Early Viking Age (= Early Birka Age), Middle Viking Age (= Late Birka Age), and Late Viking Age (for a critical appraisal, see Capelle

1986), and he has given absolute dates according to primarily Danish archaeological results.

Most important for all those working with Viking Age chronology is Jansson's observations on the copying of bronze ornaments, because they raise doubt about the possibility of ever reaching a fine subdivision of the period based on bronze jewellery. This is further emphasised by the new dendro-datings of the style-denominating finds at Mammen and Jelling, not made when Jansson wrote. They are so close to each other in the 3rd quarter of the 10th century that a chronological separation of the two styles seems a dubious affair. The lack of a good Viking Age chronology is a serious drawback in the study of the profound social transformation of the period.

Where to place the end of the Viking Age and the beginning of the Scandinavian Middle Ages is also a controversial question. The disappearance of the oval brooches, *i.e.* the end of Scandinavian women's traditional dress, at the end of the 10th century would be a limit in accordance with Montelian chronological methods. Surprisingly, Montelius used instead the Conversion of Sweden c. A.D. 1050, which in Denmark ought to correspond to c. A.D. 960, and is most unpractical. A dividing line between 'prehistoric' and 'Medieval' archaeology, placed where a domestic written record, disregarding the runestones, starts to flow, *i.e.* at the end of the 11th century or c. A.D. 1100, is not convenient, being completely detached from the material evidence. Moreover, there are great difficulties in defining a periodic transition in the 11th century in archaeological terms, because well-dated find complexes of this century are very rare outside urban Lund (Mårtensson 1976). The stratified ceramic sequence of urban Viborg (Krongaard Kristensen 1982; 1988) will be helpful in this respect, and the rural sites Gl. Hviding and Vilslev investigated at Ribe are important, due to both house types and pottery (S. Jensen 1987a).

THEORY AND METHODS

Most achievements that can be labelled theoretical or methodological news are treated below in connection with the relevant subject of study. Only more general works are mentioned here.

The book by Jørgen Jensen (1979; 2nd rev. ed. in Engl. 1982) has been most influential as an alternative to the dominant views on the Scandinavian Late Iron Age based on traditional European archaeological thinking. Jensen

advocates an anthropological perspective on an internal and continual social evolution. The greatest shortcoming of the book is, in my view, that Denmark is treated in isolation from the rest of Europe.

An interesting sequel to Jensen's presentation of Danish prehistory is the attempt by the legal historian Ole Fenger (1983) to delineate prehistoric and Viking law in Denmark (cf. criticism by N. Lund 1985a).

The book on Viking Age Denmark by Klavs Randsborg (1980) must also be mentioned here. It raises many new questions and tries to approach the answers with new methods and new source combinations. Its stimulating effect on Scandinavian Viking Age research (archaeology, that is) can already be noticed, but the lasting impact cannot yet be evaluated, since it has not so far been taken up for serious discussion by Danish scholars (except in a critical note by N. Lund 1985a; cf. Becker 1986: 143).

In an important contribution to the archaeological source-criticism, Evert Baudou (2nd ed. in Engl. 1985) discusses the effect of later agricultural history on the archaeological record. After this no one should use distribution maps of any archaeological phenomenon on Denmark without first paying attention to his argument.

New methods have been adopted to permit the handling of large amounts of data. In analyses of chronological seriation or social stratification, multivariate correspondence analysis has demonstrated its efficacy (T. Madsen 1984; 1986; Høilund Nielsen 1987).

The dendro-revolution in Viking Age chronology has already been touched upon. Hopefully, the thermoluminescence dating of pottery and fired stone will prove to give equally important results, once the sources of error are controlled (Mejdahl 1985).

Archaeometric prospecting methods (Møller *et al.* 1984) have certainly a future in Late Iron Age research, since the settlements are so difficult to locate by ordinary reconnaissance. Phosphate mapping, for instance, ought to be more systematically tested; the results from Germany, Norway and Sweden have often been rewarding. One reason why Late Iron Age settlements are so difficult to locate is the rapid destruction of the pottery, as demonstrated in a brilliant study by Stig Jensen (1985).

The use of metal detectors is naturally a problem when they are in the hands of amateurs, but many important discoveries made by amateurs have come to the museums. The most important finds have been made in the Gudme area, where Henrik Thrane (1987a) could re-

cently produce a statistical analysis of Late Iron Age finds before and after the introduction of metal detectors, demonstrating that there were many finds from the Late Iron Age, in areas where earlier very few finds were known. A conclusive demonstration of the usefulness of metal detectors in settlement archaeology has been presented by S. Jensen (1987b). It is necessary to sample the topsoil before it is stripped away to obtain the small metal artefacts that both date and characterise the sites.

ARCHAEOLOGY AND OTHER HUMANISTIC DISCIPLINES

Onomastics

Place-name research is not firmly integrated into Danish settlement research, as noted by Olaf Olsen some years ago (1975). There are naturally great difficulties involved in using place-names in an archaeological context, but they cannot be ignored by the archaeologist as a source for understanding the cultural landscape and social organisation. In Swedish settlement research, onomastics play a much greater part, exemplified by studies in early territorial organisation (Andersson & Göransson 1983). In Denmark, an archaeologist has with some success used place-names to discuss the problem of settlement continuity (H. Nielsen 1979; cf. Kousgård Sørensen 1981), and this matter has been in continued focus for some time, cf. the proceedings of a symposium ed. by Vibeke Dalberg *et al.* 1984, in which Stefan Brink emphasised the importance of distinguishing between the concepts site continuity and settlement continuity (cf. also Brink 1988). In any case, the so-called early names *-lev*, *-løse*, *-inge*, *-hem*, and *-sted* evince a considerable number of continuously settled resource areas, and the so-called late names *-by*, *-tofte*, *-torp*, *-bølle*, etc., the changing settlement pattern of the Late Iron Age and Middle Ages.

John Kousgård Sørensen (1978) and Bent Jørgensen (1980) have discussed territorial administration in the Danish Viking Age on the basis of place-names; this evidence ought to receive far more attention in the current archaeological debate on regionality and political territories (see below on the significance of theophoric place-names at Gudme). In the study of communication, too, the onomastic sources might be useful, as indicated by studies by Bent Jørgensen (1979) and Bente Holmberg (1980). Research in communication and transport will be discussed below, and when looking for Iron Age ports and harbours it should not be forgotten that place-names

may furnish valuable indications (e.g. Snekkebjerg at Fribrødre Å, Skamby Madsen 1984; 1987).

Runology

In *Runes and their origin*, a text-book that will be consulted again and again, Erik Moltke (1985) published the results of a lifetime of research. Marie Stoklund has taken over after Moltke. Runology in Denmark is in a somewhat tenuous position today, nevertheless, due to an almost non-existent recruitment of new students. This is, of course, partly explained by the low accession of new finds. In the last 10 years, only two new runestones, have been published (Stoklund & Moltke 1979; Knudsen & Thuesen 1988), and few runic inscriptions on small objects have been found. Runes are, however, so important for the understanding of Danish Iron Age societies that it is absolutely necessary that a continuous specialist study be maintained.

The use of runestones by Randsborg (1980) in social and political analysis has triggered off a new interest in runestones as documents. An important contribution was recently presented by Birgit Sawyer (1986; 1988).

One crucial point in Randsborg's interpretation is that the absolute datings suggested by Jacobsen & Moltke 1942 of the relative phases, early (= Helnæs-Gørlev and pre-Jelling), Jelling, and post-Jelling stones, are correct (for the most recent presentation, see Moltke 1985). The necessary reevaluation of runic chronology is not a matter for archaeologists, but one that requires a philological competence, and in a forthcoming paper, Stoklund opens the discussion with an examination of the relative and absolute chronology of the Jelling and post-Jelling stones.

A stimulating paper by a new archaeologist on old runes was written by the late Carl-Axel Moberg (1985), who recommends that archaeologists study the introduction and use of runes in their archaeological context.

Numismatics

Coins and non-monetary currency are not unusual small finds in Late Iron Age contexts. For a numismatic study, adequate training in this field is needed, which few archaeologists have. But they can contribute considerably to numismatics with respect to both chronology and function by treating coin finds in the archaeological context.

The most conspicuous development in the study of

the media of exchange in the Late Iron Age is the discovery that sceat coins were used in South Scandinavia in the 8th century (Bendixen 1984; Callmer 1984). From the context of the coins found at Ribe and Åhus, it can be deduced that they were used in trade, the implication being that a kind of market economy was introduced at some places much earlier than anyone had imagined 20 years ago. D. M. Metcalf, the numismatist, has even advanced the hypothesis that the so-called Wodan/monster sceattas were minted in Ribe or elsewhere in Denmark (1984; cf. the rejection by Malmer & Jonsson 1986, the cautious comments by Bendixen 1986 and Frandsen & Jensen 1988, and the reply by Metcalf 1986).

The new sceat finds were made in Ribe by the time the dendro-dating of the first Danevirke to A.D. 737 was published (H. H. Andersen *et al.* 1976). In this new archaeological light, Alcuin's odd story about the missionary Willibrord's visit to a Danish King Ongendus in the early 8th century was suddenly of significant interest (Skovgaard-Petersen 1981).

A monetary market, a nucleated trading station, a fortified border, a king – suddenly it was obvious to all that the necessary prerequisites for the Viking Age could be studied in the 8th century! This is one of the most exciting archaeological revelations in many years.

The introduction of sceattas did not mean, however, that a Scandinavian market had developed. A long time was to pass before a Danish coinage was firmly established. When Islamic silver started to flow into the Baltic in the 9th century, silver bullion became more important than minted currency in most parts of Scandinavia until the end of the Viking Age (a convenient research survey is presented by Steuer 1987b). Birgitta Hårdh has made several studies of the south Swedish silver hoards (most recently in 1978), and a corresponding study of hack-silver in the area of present-day Denmark is a desideratum.

Brita Malmer has contributed a long series of important papers on Viking Age coinage and monetary circulation (cf. Malmer 1985). Recently, Becker has launched a series of papers on a complicated numismatic material (1981; 1985) that changed Danish history. He gives a new and detailed version of the struggle between the Norwegian Magnus and the Dane Svend Estridsen over the Danish throne during the 1040s.

With these new results, it should be possible to give a new outline of the monetary history of Denmark during the 8th to 11th centuries. But the exciting new discoveries at Smøringe in Bornholm and Gudme in Fyn remind

us that it should not be forgotten that there also existed money in the Early Germanic Iron Age. Old denars were evidently still in use alongside Late Roman solidi as some kind of special-purpose money (Kromann 1987). A new study of Danish solidus finds is needed to bring the evidence on the level with recent Swedish results (Herschend 1980; Kyhlberg 1986).

History

There are, apart from Jordanes, Procopius, Gregor of Tours, and the Venerable Bede, no written sources relating to Scandinavia in the 5th to 7th centuries, and even in the 8th century and the Viking Age, the written evidence is scarce and difficult. In an excellent text-book written by Inge Skovgaard-Petersen (1977), the sources are presented and interpreted in a traditional historical perspective. However, Erik Ulsig, the historian, is probably right when he at a symposium in 1986 said that historians cannot continue to scrutinise the old sources and find new aspects without the support of other disciplines. And indeed, new data have demonstrated the ability of archaeology to make a rereading of the sources rewarding.

Already mentioned is the new edition of the sources relevant to the port and market at Ribe (Skovgaard-Petersen 1981). The dendro-datings of Danevirke, the Kanhave Canal (A.D. 726, unpublished, information by Else Roesdahl), the bridge over Raving Enge (c. A.D. 979, Ramskou 1980) and the Trelleborg forts (A.D. 980/981, Bonde & Christensen 1984; H. Andersen 1984) provide arguments for a reappraisal of the Danish Viking kingdom, centred on the role of Harald Bluetooth (e.g. N. Lund 1980; Randsborg 1980; Roesdahl 1980 & 1987b; H. H. Andersen 1984; Hoffmann 1984; Weibull 1984; P. H. Sawyer 1988). The controversy about the so-called Swedish dynasty of Hedeby in the early 10th century has certainly also received new impetus from archaeological discoveries (N. Lund 1982 *vs.* Moltke 1986; cf. Laur 1983; H. H. Andersen 1986).

H. H. Andersen has, inspired by the new chronological data and by a publication by Michael Müller-Wille (1976a, see also Ellmers 1980), tried to reconstruct the royal lineages in Viking Denmark and to identify the graves on pagan royalties (1986, cf. Müller-Wille 1983a). He maintains that Denmark was a united realm long before King Harald Bluetooth. Skovgaard-Petersen discusses in a paper (forthcoming) the Viking kingship of Denmark,

and has a more pessimistic view on the possibility of obtaining a clear picture from the written sources.

The archaeological investigations at Danevirke, Hedeby, Ribe, Jelling, Raving Enge, Kanhave Canal and the Trelleborg forts demonstrate today without any doubt that the social and political organisation of Denmark was much more sophisticated in the 8th-10th centuries than believed only a few years ago. For example Erik Lönnroth, the historian, described the Scandinavian kingdoms as "concentrations of seapower rather than territorial dominions, and their fiscal organization was that of a self-supplying body of mercenary troops rather than a properly constituted state" (1963:364). I doubt whether he would now apply this sentence to Viking Age Denmark, while another historian, Niels Lund, seems prepared to admit that "one might attribute state organization to the king who in 737 built the first Danevirke" (1985b:108).

At the same time, the 8th century evidence makes it clear that Viking society can no longer be explained by a retrogressive application of written sources to Scandinavian Medieval society, mostly later than the 12th century. Late Iron Age society, including the Viking kingdoms, can better be understood in its contemporary European context and by use of historical analogy (Näsman 1988a), and a similar opinion is expressed by Patrick Wormald (1982).

In an archaeological perspective, Peter Sawyer's *Kings and Vikings* (1982) makes too little out of the archaeological material. This plays a more prominent part in his popular Danish Viking history (1988). Niels Lund's contribution to Danish social history (1980) is almost entirely based on the fragile written evidence and his views on archaeological sources are quite depressing for an archaeologist.

Historians have paid little attention to the Scandinavian Germanic Iron Age, but Wood's short survey of the Merovingian North Sea (1983) has to be mentioned. In a Scandinavian perspective his emphasis on the importance of Danish power in the North Sea in the 8th century is interesting.

It must, however, not be forgotten that many archaeologists are far too uninformed in the continental and insular history of the 5th-11th century and that they often use written sources in an uncritical way and without consulting a historian. Knowledge about, for instance, the historical situation in Europe during the 4th-6th centuries is necessary for any Scandinavian archaeologist

wanting to contribute to the history of these centuries in Scandinavia, and the study on tribal societies by Reinhard Wenskus (1977), the survey of England from the Roman to the Norman period by P. H. Sawyer (1978), and the history of the Goths by Herwig Wolfram (1988) are good examples of indispensable reading.

ARCHAEOLOGY AND SCIENCES

The long tradition of co-operation with the natural sciences has been especially rewarding in earlier prehistoric periods, but contributes little to solve a number of problems in Late Iron Age and Viking Age contexts. But there are both economic and organisational difficulties involved, and the situation today in Denmark cannot at all be compared to that of Norway, Sweden, England or northern Germany, where archaeologists and scientists together work in a number of well-organised interdisciplinary projects (for instance Kossack *et al.* 1984; Jankuhn *et al.* 1984). It is a great handicap for Danish archaeologists in discussions with colleagues from neighbouring regions not to be able to quote relevant Danish investigations of climate, vegetation, soils, cultivation techniques, etc. A number of investigations have, however, been performed and published.

Vegetational history and climate

The most important work in the period is a paper by Aaby (1976) on cyclic climatic variations reflected in Danish raised bogs. The changes occurred at intervals of c. 260 years, and in the period relevant here a change to moister and/or colder conditions is seen in the 5th century and again around A.D. 1000, which means that the change expected in the 8th century is lacking. The climatic deterioration in the 5th century could partly explain the decreasing number of 6th-7th century finds, not only in Denmark, but also in other parts of North Europe. The lack of a climatic change in the Late Germanic Iron Age could contribute to the growth of European societies in the 7th-13th centuries, but the deterioration around 1000 cannot be found in the archaeological record. Randsborg (1980; 1981) uses these results and observations made in the Greenland ice-cap (Dansgaard *et al.* 1975) in a rather detailed model of correlation between climate and settlement, while J. Jensen (1982) reaches an opposite conclusion: "Comparison of these climatic fluc-

tuations with the archaeological record shows surprisingly little analogy", but his time perspective is longer, it should be pointed out.

An attempt to make use of the climatic changes observed and the evidence of pollen analysis is presented by Lotte Hedeager (1988a). She doubts whether the climatic changes necessarily meant an agrarian crisis and suggests instead that land-use changed to meet the new conditions. The growth of the beech forests in the Late Iron Age consequently does not necessarily mean a decrease in population.

The lack of pollen-analytical support in Danish settlement archaeology is a serious obstacle preventing an understanding of land-use and a reconstruction of the cultural landscape. Fortunately, an initiative has recently been taken to procure pollen-analyses of a series of characteristic Danish landscapes and it is to be hoped that some of these can be situated close to excavated settlements.

Only one analysis has been made in direct connection with an archaeological investigation, at Vorbasse (Brorson Christensen 1981), but the material used and its context could give only a rather vague picture of the surrounding landscape. A number of analyses of bogs have been made, but they are unfortunately situated far from well investigated Late Iron Age settlements, for which reason the information they give in a Late Iron Age context are of a rather general character (*e.g.* Th. Andersen *et al.* 1983; S. Th. Andersen 1985; Odgaard 1985; Aaby 1985).

There is furthermore some uncertainty about the interpretation of pollen diagrams indicating the human influence on vegetation. Does a decrease in human impact mean that cultivation was reduced, or that land-use changed? Co-operation between archaeologists and palaeobotanists is needed to solve this intricate problem.

Carbonised grain is an important source in the study of agricultural practice, but few macro-fossil analyses have been made in Late Iron Age contexts. Most important is a study of grain found at Fyrkat by Hans Helbaek (1977). He finds it most probable that the rye found in Fyrkat was imported, and not cultivated in Denmark. Analyses of corn from Øster Ålum, Jylland (Rowley-Conwy) and Ejstrup, Jylland (D. Robinson & K. Kjer Michaelsen 1989) seems, however, to imply that rye was cultivated as a main crop already in the Late Germanic Iron Age, and samples from a Late Roman Iron Age site at Kose, Schwansen (Kroll 1987) and a Late Roman-Early Ger-

manic Iron Age site at Esbjerg, Jylland (Robinson & Siemen 1988), indicate that its cultivation as a separate crop was established as early as that period in south Jylland, barley still being the most important summer-sown cereal. These rye finds may imply that a rotation of winter and summer sown crops was introduced in a more efficient production. The Hedeby material is published by Karl-Ernst Behre in what may be the handbook of Viking Age plant food (1983). He finds very little evidence of trade in vegetable food (*i.e.* the surroundings must have provided for the urban inhabitants).

Probably the introduction of a winter crop is part of the expansion of agricultural production that was necessary to support urbanisation and state formation. Whether it also implies the introduction of a two-field system, succeeding the one-field cultivation of the Early Iron Age, is still a matter of discussion. Whatever the case, sampling of macro-fossils is a valuable tool in the study of Iron Age cultivation.

Charcoal found in settlements is another type of macro-fossil that bears information about the landscape, and also informs us about wood technology, but wooden remains preserved in wet layers as at Hedeby are more informative, *e.g.* Eckstein (1977), who is able to identify 27 species. Information on wood technology may also be derived from corroded metal objects in graves (Wagner 1978).

Physical anthropology and osteology

In the acid soils of most of Denmark human bones are seldom preserved in graves. What is preserved has now been published in a large monograph (Sellevold *et al.* 1984), but 9 skeletons from 4 sites dating to the Early Germanic Iron Age and 30 skeletons from 11 Late Germanic Iron Age sites are, of course, not representative samples. 320 Viking skeletons from 38 sites can, however, give a reliable picture of the physical stature of the population. In addition, a special study has presented the pathology of Danish skeletons (Bennike 1985). The large population buried in the 11th century at Löddeköpinge, Skåne, is not included in the Danish studies, but the 1431 skeletons there give an interesting insight into a Danish parish shortly after the Conversion (Persson *et al.* 1984).

Palaeozoology and osteology

It is a great handicap to Danish archaeological study of Late Iron Age economy that animal bones are usually not

preserved in rural settlements. This is easily seen in the literature, in which publications of materials from the water-logged layers of Hedeby dominate, a paper by Strömberg (1981) on rural sites in Skåne being an exception. The Hedeby papers will not be separately listed, as they are all to be found in the series *Berichte*, but it may be mentioned that volumes on fish (10, 1977), dogs (13, 1978), pigs (15, 1980), and cattle (17, 1982) have been published, and one on birds is in preparation.

The significance of animal bones is evident, which can be illustrated by the attempt by Randsborg (1980) to use statistics of bone fragments to characterise different settlement types. In spite of my scruples about the representativity of some of his selected samples, I think that his find that the material allows rural and urban sites to be distinguished from each other is important. This observation helps us to understand the relation between rural production and urban consumption. It will be interesting to see how the materials of 8th century Ribe and 11th century Viborg fit into his diagram (publication in preparation by Tove Hatting).

SURVEYS

Apart from the popular books by Lone Hvass (1980) and Hedeager (1988b), there is no written survey of the Germanic Iron Age in Denmark, and the explanation is simple. The source material has been too meagre to tempt any scholar or publisher. In fact there is no textbook to replace Brøndsted's survey (1963), which, however, is completely outdated. The chapters in Hedeager's book are the best summary available. On the Continent and in England, the situation is different (*e.g.* the Anglo-Saxons: Campbell *et al.* 1982 and Ahrens 1978; the Alamanni: Christlein 1979; the Lombards: Menghin 1985; the Franks: Périn & Feffer 1987 and Feffer & Périn 1987).

German archaeology offers a number of outstanding research surveys that often directly involve the South Scandinavian area. Suffice it to mention the publications by *Deutsche Forschungsgemeinschaft* (Kossack *et al.* 1984 and Jankuhn *et al.* 1984), which provide good, concise information. They are a must for any Iron Age archaeologist working on the North Sea.

There is, in contrast, no shortage of surveys of the Viking Age. Randsborg's book is already mentioned. Roesdahl's more systematic survey of Denmark (1982) is necessary reading – being the only handbook with refe-

ces. Viking specialists, too, will often find reason to consult it, so it is a pity that it is out of print – P. H. Sawyer's new popular Viking history of Denmark (1988) or Roesdahl's own new Nordic survey (1987a) are no substitutes. A work edited by Joachim Herrmann (1982) is also popular, but is valuable as an attempt to draw the Slavic, Baltic, and Finno-Ugrian peoples around the Baltic into a discussion that is often too Anglophile and focused on the North Sea region.

TRADE & EXCHANGE OF GOODS

One of the most important approaches for understanding the social development of the Late Iron Age is to study trade or the exchange of goods. J. Jensen's book mentioned above made most Danish archaeologists familiar with the concepts presented by Karl Polanyi, *i.e.* reciprocity, redistribution, treaty trade, and market economy, and a similar theoretical background is found in Randsborg's Viking book. In the popular book by Hedeager (1988b), her research is summarised and many interesting issues raised.

For an elaborate model, based on anthropological theory and archaeological data, see Richard Hodges' survey of *emporium* along the North Sea and on the Baltic (1982). It is almost inevitable that a survey of this kind should include controversial points (see review by Astill 1985), and as a Scandinavian, one can sometimes see that Hodges is not too well informed on Nordic archaeology (and his use of written sources is criticised by English and German historians). But he gives a stimulating overview and a model against which to test new Danish discoveries, for instance, the new port found at Lundeberg, Fyn (Thomsen 1987; 1988).

Together with Whitehouse, Hodges has tried to reappraise the famous Pirenne thesis once again and, as a matter of course, their study (1983) includes a discussion on trade between the North Sea and the Baltic, and the central position of Hedeby. It is odd to note that they largely accept Bolin's 50-year-old discussion of Pirenne. His ideas have been relinquished by most Scandinavian scholars, and recently Jansson concluded (1987) that "the idea of an 'inter-continental' east-western trade route via Russia and Scandinavia should in all probability be abandoned". A model emphasising plunder, and tribute, and not trade and exchange, has been advanced by P. H. Sawyer (1982; cf. Lindkvist 1988).

Among many useful contributions by the German archaeologist Hayo Vierck to the study of the connections between Western and North-Eastern Europe, the paper on Staraja Ladoga (1983) is perhaps the most interesting. According to him, long-distance trade in the pre-Viking period was characterised by an indirect distribution of luxury goods, and middlemen and itinerant polytechnic craftsmen were the main agents. The increasing specialisation of the crafts and the concentration of trade innucleated sites are important elements in the development towards a market economy, with direct long-distance trade, early towns, and specialised merchants as a result during the Viking Age (cf. also the concise survey by Steuer 1987a). These thoughts are not unfamiliar to those who work on the problems of pre-Viking Ribe (*e.g.* Bencard 1979; Brinch Madsen & Nielsen 1984; Frandsen & Jensen 1988), but what about the 400 years older Lundeberg? Another contribution to this discussion is based on the 8th century trading port at Åhus (Callmer 1982), but applicable also to Dankirke-Ribe and Gudme-Lundeberg.

The perspective of Hodges & Whitehouse is conspicuously English and, thinking of the substantial results presented by archaeologists working in Scandinavia, around the Baltic and in the Soviet Union, a welcome alternative could be a joint publication by Scandinavian, Finnish, German, Polish, and Soviet archaeologists on the interaction of the different ethnic groups in the area between the North Sea and the Black Sea – the time is ripe for a northeast European synthesis to balance the northwest bias.

The Polanyi terminology is now found inadequate by many scholars. In a recent contribution to the theoretical discussion, Berta Sjernquist (1985) tries to find alternative concepts and to construct a new framework for understanding prehistoric exchange. Focus has again to be on the find material and its contexts, *e.g.* glass vessels in the Germanic Iron Age (Straume 1987 & Näsman 1984a; 1986). Glass shards are now found in many Danish settlements (Stavad in Jylland, Lundeberg and Gudme in Fyn, Næstved in Sjælland, Gårdlösa in Skåne, and Sorte Muld in Bornholm), demonstrating that the lack of glass vessels in Danish Late Iron Age graves is unrepresentative of the true picture – Denmark was an important distributor of wealth, also after the Roman Iron Age (cf. Lund Hansen 1987, 1988a).

The contribution by Hines to the question of the relations between Scandinavia and Anglo-Saxon England in

the Early Germanic Iron Age is interesting in this context, and I quote: "The North Sea in the 5th and 6th centuries seems to have been a web of routes for migration, trade and the diffusion of craftsmen's skill" (Hines 1984: 278).

It is, anyway, clear that the character of trade changed during the Late Iron Age; in the Early Germanic Iron Age, luxury exchange dominates; in the 8th century, the first evidence of long-distance trade in cheaper commodities can be observed; and through the three Viking centuries trade in simple household utensils such as pottery, soapstone vessels, whetstones, and quernstones grew considerably (Resi 1979; Myrvoll 1985; Steuer 1987a). This archaeological evidence of bulk cargo transport indicates that also essential subsistence commodities were now traded (cf. Clarke 1985; Crumlin-Pedersen 1985a; 1987a; 1987b: 227).

It is probable that the 8th century increase of trade and the development of a more sophisticated exchange system was stimulated by the Merovingian impact on the North Sea region, and especially the Frisians are in focus as entrepreneurs (Wood 1983; Hodges & Whitehouse 1983; Ellmers 1985; Näsman 1986; Verhulst 1987). Consequently early Ribe, Hedeby South and Åhus are very important sites for understanding how Danish society reacted to this external influence. Obviously, a network of trading stations or gateways was now needed to meet the new situation, but is 4th-7th century Lundeberg something similar?

Curt Weibull (1977) and others postulate that trade with West and East Europe was the background for the plundering raids and piracy of the Viking Age. This idea presupposes that a developed trade network existed before the first Viking raids, A.D. 789 on Wessex and 793 on Lindisfarne. Style analysis (e.g. Ørsnes 1966) and studies of imports (e.g. Näsman 1986) demonstrate close relations to the Merovingian and Anglo-Saxon kingdoms as early as the 6th-8th centuries. The sites investigated at Ribe, Hedeby South and Åhus now provide indisputable evidence of organised trade before the Viking Age. This, I believe, is one of the most important contributions to Late Iron Age archaeology of the 1970s and 1980s. The start of the Viking Age was not so abrupt an event as the popular view often implies.

Viking Age trade is treated in numerous books, and to avoid a wearisome listing, only a few will be mentioned here. Still going strong is Herbert Jankuhn's Hedeby publication, now in its 8th edition (1986). A popular

book ed. by Jansson (1983) and the proceedings of a symposium in Visby (ed. by Lindquist 1985) give good surveys of Viking trade in the Baltic, an area too neglected by Danish archaeologists. P. H. Sawyer (1982) points in fact to the western bias in Viking research and he tries, as does Randsborg (1980), to compare events in the North Sea and the Baltic (see also Roesdahl 1987a, who devotes 81 pp. to West Europe and only 18 pp. to the Viking expeditions into East Europe). Danish archaeologists are, however, in general too unfamiliar with the archaeology of Germany, Poland, and the Baltic and Russian Soviet Republics. The studies by Michael Andersen (1984) on the West Slavic imports is consequently most opportune. The interaction between Scandinavians and the West and East Slavs is a most important task for future research, Zak's survey (1977) being a starting-point.

An example of the relevance of an eastern perspective in Danish Viking Age research is a paper by Bálint (1981) on the Arabic dirhams. His description of a primitive economy in Scandinavia and the Slav area and the discussions by Randsborg (1980), P. H. Sawyer (1982), Hodges & Whitehouse (1983), Noonan (1985), and others raise the question, whether it is feasible to see both Viking Scandinavia and the Slav regions as peripheries of a Carolingian hegemony in the West and a dominant Caliphate in the East (the maps in Steuer 1987b are illuminating). From both quarters, one could imagine that Scandinavians and Slavs obtained not only silver and luxuries but also knowledge of military strategies, social and economic administration, etc. Part of the impetus of the Scandinavian state formation certainly came from these contacts, and the differences in the Danish and Swedish trajectories may be explained by variations in influence sources.

URBANISATION

The *emporium* mentioned above, Lundeberg, Dankirke, Ribe, Hedeby South and Åhus, are not to be characterised as towns, but as more or less transient centres of trade and production. In their variation, they mirror important traits of the origin of the Medieval town in non-Roman Europe. They demonstrate changes in the nature and form of human settlements and evidently also in social structure. As Clarke & Simms (1985) happily put it: "The processes that lie behind the origin and early growth of these towns were evolutionary by their nature, but revolutionary in their effect."

Clarke & Simms suggest the term proto-town be used

to cover periods before the chartered town is established, *i.e.* all towns are in fact proto-towns, so long as they can be studied only in the archaeological record. In Danish practice, this implies all pre-Viking centres and all Viking 'towns' (cf. O. Olsen 1975, who differentiates between *by* and *købstad*). For the archaeologist viewing the subject from the perspective of the Roman and Germanic Iron Ages, this is no problem. On the contrary, it relieves him/her of the pressure of historical definitions of towns. In the following, proto-town will be used to mark the distinction between the urban centres of the Late Iron Age and the true towns of the Middle Ages. Space does not allow an attempt to deploy Clarke's & Simms' four subcategories: trading settlements, stronghold settlements, cult settlements, and market settlements, but they present an obvious approach to understanding the diversity and parallelism between sites like Dankirke, Lundeborg, Gudme, Sorte Muld, Ribe, Åhus, Hedeby, Århus, the Trelleborgs, Odense, Viborg, Løddeköpinge, etc.

The proto-town of Ribe was probably the most important trading centre of South Scandinavia in the 8th century, and the localisation of the site on the north bank of the river, opposite the medieval town clustering around the cathedral, is a great achievement of Danish urban archaeology (Bencard 1979). The archaeological evidence of the later *vicus*, where Ansgar was allowed by King Haarik to build a church c. A.D. 860, is unfortunately very slight, and most scholars agree that Hedeby probably took over as the leading centre in the early 9th century.

Hedeby South was in the 8th century not comparable to Ribe, but seems to have been a rather modest trading place. It must, however, be remembered that the shore area has not been investigated at this site. It is from the written sources, the archaeological evidence, and the earliest dendro-dates obvious that it was King Godfred who 'founded', *i.e.* reorganised, the proto-town of Hedeby in A.D. 808, and for that purpose he moved merchants from the Slavic *emporium* Reric, still not localised in north-east Germany, to Hedeby. Despite the fact that Reric had paid taxes to the king, he obviously found it better to move the trading station to Danish territory. Certainly this was a great and brave action in the face of the mighty Charlemagne, and obviously Godfred was aware of the dangers, for at the same time he ordered the southern border of his kingdom to be fortified, in reality a refortification of Danevirke.

Indirectly, Godfred's decision probably also moved activities from Ribe, and consequently Hedeby grew to be the most impressive proto-town of Viking Scandinavia. The textbook by Jankuhn (1986) is the most comprehensive survey of the long archaeological research there, and under the editorship of Kurt Schietzel, new results are continuously being published in the series *Berichte*, in which Schietzel himself has discussed the research status concerning Hedeby (1981; cf. Jankuhn *et al.* 1984). The end of Hedeby in the mid-11th century and the transfer of its activities to the town of Schleswig/Slesvig symbolise in a way the transition from the Viking proto-towns to the Medieval town. The causes of this shift remain obscure, but it is sometimes explained by the end of the long-distance transit trade (*e.g.* Randsborg 1980), sometimes by more practical things such as harbour facilities and new types of ship (*e.g.* Roesdahl 1982).

An important question is the relation of the proto-town to its hinterland. Proto-towns have to be understood as rooted in and interactive with the surrounding landscape and a relatively dense population was needed to support the proto-town (S. Nielsen 1983). This problem has been neglected far too long – also in studies of the Medieval chartered town – and for instance Hedeby seemed for many years to have been founded in a no man's land, as a transit trading station. Recent surveys of the surroundings have revealed a dense settlement pattern (Müller-Wille & Willroth 1983; Willroth 1987; Müller-Wille 1988), and the relation between Hedeby and the rural settlement is one of the objectives of the excavations at Kosel in Schwansen/Svansen (Meier 1987). The recent study of the settlement pattern in the Ribe area will inevitably contribute to our understanding of the Germanic Iron Age manor at Dankirke and the proto-town and chartered town of Ribe (S. Jensen 1984).

Imported Mayen lava quernstones, and Norwegian soapstone vessels and schist honestones, are regularly found at Viking Age rural sites, and a quantitative study of this material would undoubtedly give a deeper understanding of the exchange between countryside and proto-towns.

The evidence of other Danish Viking proto-towns is summarised by Randsborg (1980) and Roesdahl (1982). The research project *Middelalderbyen* has on its programme some of the towns that began as proto-towns, and of these, the series has presented Ribe (I. Nielsen 1985), Viborg (Krongaard Kristensen 1987) and Odense (A. S. Christensen 1988); Århus and Roskilde are in pre-

paration and Lund has been published in the corresponding Swedish series (Andrén 1980; 1984). In these volumes, the pre-Medieval evidence is summarised and discussed. It is to be hoped that it will be possible to synthesise these results in a form provoking archaeologists, historians, historical geographers and others to discuss the urbanisation of Denmark in a broader context, including the interaction of urban centres with their surroundings. The thesis by Andrén (1985) on Danish medieval towns is one starting-point, and the approach found here – comparison and generalisation – is necessary if we are to reach results of interest beyond the local topographical issues. In fact, the time and space of comparison in Danish research must widen to include all non-Roman Europe and the whole Late Iron Age; the urbanisation of the Slav regions, for instance, are important as a parallel but somewhat different trajectory.

COMMUNICATION & TRANSPORT

Parallel to the development of trade, an increase in transport capacity must be presupposed, but the source material is only to some extent willing to answer our questions.

The study of land transport is poorly developed, hampered by the idea that most transport went by water. In fact, any study of cultural regionality indicates that open water divided, whereas land held together, for which reason land communication ought to be investigated in greater detail. Recent results demonstrate that this is an important and rewarding research field, with wide implications for our understanding of society (Schou Jørgensen 1988).

During the last ten years, a number of important sites have been excavated (a gazetteer of roads and bridges is presented by Schou Jørgensen 1988), *e.g.* the road system crossing a stream at Risby, Sjælland, where also wooden parts of various vehicles were found (Schou Jørgensen 1977). The river crossings investigated in Stevns, Sjælland, are important for the understanding of the Late Roman Iron Age centre there and its later development (Hansen & Nielsen 1979). Remains of a very impressive wooden bridge were found crossing Raving Enge, and the dendro-date c. 979 places it in the reign of Harald Bluetooth (Ramskou 1980). Remains of another bridge were damaged when a gas pipeline was laid down at Skindersbro, Jylland, but a dozen posts could be saved and dendro-dated to the 990s, c. 1070 and later (Iversen & J. Nielsen 1987). It is important that provincial museums

follow contractors' work at old river crossings in the future.

Schovsbo has published a monograph on carts and waggons (1988) and his results will be important in future discussions about the role of land communication in the economic and social development of the Danish countryside. He also gives a survey of Iron Age roads.

Landlubber archaeologists are today more aware than some years ago of the considerable advances made by maritime archaeology and acknowledge fully the importance of studying ships and shipping. Our knowledge about boats and ships of the Germanic Iron Age is still poor, but those of Viking Age are fairly well known today.

It is evident that the 4th century ships found in the Nydam bog represent the vessels used in Danish waters. The Gredstedbro ship, Jylland, is ¹⁴C-dated to the Late Germanic Iron Age, but good finds from the Germanic Iron Age are still so rare that we have to rely on the 6th century Gotland picture stones when discussing the introduction of the sail in Scandinavian navigation (Crumlin-Pedersen 1987a).

Most important is the development in the Viking Age of a range of specialised cargo-ships alongside the famous war-ships. The new find of a merchantman wrecked in the harbour of Hedeby in the 11th century is exciting, for its cargo capacity has been calculated to c. 40 tons. Early Viking ships may have carried 15–18 tons and the capacity of one of the 10th century Skuldelev ships is estimated to be c. 25 tons. The datings of these ships indicate a rapid growth in transport capacity during the Viking Age (Crumlin-Pedersen 1985a; 1987a; 1987b: 227), which corresponds to the changes in trade commodities mentioned above. And as Schovsbo has pointed out, the growing long-distance trade by sea must have provoked more land transport.

The excavation in the port of Hedeby ranks among the most significant achievements in recent years (Schietzel & Crumlin-Pedersen 1980; cf. Jankuhn *et al.* 1984). The recovery of a wooden quay structure reminiscent of that in Dorestad gives good evidence of the elaborate shipping facilities of a major Viking port.

But we have also to reckon with a diverse typology of smaller Late Iron Age ports along the coast to serve the inland settlements, not least because of the need of internal traffic in Danish waters, *e.g.* at Skuldelev, Sjælland (Liebgott 1979) and Fotevik, Skåne (Crumlin-Pedersen 1984). This is now becoming manifest in Dan Carlsson's investigations of ports in Gotland (1987), so it will be in-

teresting to follow the harbour project on Fyn conducted by Crumlin-Pedersen. His astounding prediction that the port of the centre at Gudme, SE Fyn, might be located at Lundeberg (Crumlin-Pedersen 1987a) proved to be correct in a rescue excavation in 1986 (Thomsen 1987). This new site with its very rich material indicating trade and crafts in the Late Roman and Germanic Iron Age will furnish new information in the debate on the character of trade and craft organisation in the 3rd-7th centuries A.D.

Because of its wide implications, the 11th century shipyard excavated on Falster (Skamby Madsen 1984; 1987) is important; ship remains and pottery indicate a Wendic colony.

CRAFTS & TECHNOLOGY

The study of handicrafts and production is important for the understanding of the economic and social processes of the Late Iron Age. The interaction with urbanisation and agro-production are of significant interest.

In the Early Germanic Iron Age, craft production was obviously associated with magnate residences, such as Helgö in the Swedish province of Uppland. In Denmark, similar patterns can be observed at Dankirke, Jylland (Thorvildsen 1983) and Gudme, Fyn (Thrane 1987a; 1988). In the Gudme region, the port of Lundeberg, mentioned above, is a new phenomenon in this early period, a seasonal port with craft production, but as similar sites seem to occur in large numbers on Gotland (see above), it is likely that such ports are more common than so far believed.

In the light of present evidence, it is difficult to see the significant differences between 4th-5th century Lundeberg and 8th century Ribe and Åhus. This indicates that the new craft organisation, developing in proto-towns like 9th century Hedeby with their more permanent structure, was preceded by a long phase when many craftsmen were detached from rural production, but still depended on a structure of magnate centres. How urbanisation developed from these Germanic Iron Age roots is a fascinating problem for discussion in the years to come. Finds indicating the presence of craftsmen in the Viking fort of Fyrkat (Roesdahl 1977) and at the magnate farm in the Vorbasse village (Hvass 1980) demonstrate continued bonds between crafts and the upper echelon, parallel to the urban production.

The manufacture of jewellery in the Germanic Iron

Age is still characterised by the unique pieces made; no two brooches are exactly alike (Axboe 1984; Näsman 1984b). By examining tool marks, it has been possible to study the work of one jeweller (Benner Larsen 1984), and one may hope that further studies along these lines can contribute to our understanding of craft organisation.

In the Viking Age, jewellery is usually much more standardised, but this is not the effect of an industrialised mass production, but the result of a developed copying technique (Jansson 1985). This bronze-casting technology could be studied in detail based on the excellent finds made in Ribe (Brinch Madsen 1984). It is obvious that the lower quality and larger quantities of Viking jewellery indicate changes in the organisation of production, distribution, and consumption.

A problem that deserves more attention is the supply of iron in the Late Iron Age. The slag-pit shaft furnace is clearly not in use after the 6th century, but whether iron was later on imported from Norway and Sweden or an as yet unknown furnace type replaced the shaft furnaces in the Late Iron Age is an unsettled question (Voss 1986). A long series of ¹⁴C-dates of seemingly uninteresting slags would be an appropriate tool to solve this problem, as demonstrated by a Swedish study (Magnusson 1986).

In the field of textile and dress research considerable results have been reached. New finds and revaluations of old finds have given us a deeper insight into the production and supply of cloth. A catalogue and survey have been presented by Lise Bender Jørgensen (1984; 1986), and the excellent dress finds made in the harbour of Hedeby have been published by Inga Hägg (1984), who gives us a new and vivid picture of Viking costume, including animal masks! Shoes and other leather products are primarily known from urban deposits: so Hedeby (Groenman-van Waateringe 1984), Ribe and Viborg.

In Denmark, with mostly acid soils, bone and antler is only rarely preserved until the Late Iron Age, when the thick urban deposits create better preservation conditions. The Ribe material is interpreted as evidence of itinerant comb-makers serving the market there (Ambrosiani 1981). Also the larger and later Hedeby material is seen as remains of seasonal activity (Ulbricht 1978). An attempt to group bone and antler waste in the late Viking town of Lund, Skåne, into three phases of craft organisation (simple household production, itinerant specialists, and developed market production) has been made in order to study the relation between craft specialisation

and urbanisation (Christophersen 1980). Criticism has been raised on the background of the Lund material (Wienberg 1982; Ryding & Kriig 1985), and it can be stated that Christophersen's model does not take into consideration the very long process of development between Lundeberg and Lund, but his work is still the only bid to understand the early urban craft organisation.

Certainly the new materials of Ribe and Åhus (prelim. notes by Bencard 1979 and Callmer 1984) will result in new studies of the development of craft organisation. Good references to European research are given by Hodges (1982), and in a number of German publications (Jankuhn *et al.* 1983; Jankuhn *et al.* 1984; and Kossack *et al.* 1984).

SMALL FINDS

Numerous grave and settlement finds have been published, Roesdahl's publication (1977) of the artefacts found in the fort and cemetery of Fyrkat being the best example, while large monographs on specific artefacts are rare, *e.g.* Bender Jørgensen's on textiles (1986). Above, some imported artefact types were mentioned in the discussion about trade and exchange, and other small finds were touched upon in the section on handicrafts and technology. Suffice it here to note some more important contributions to artefact studies. The catalogue of Viking artefacts exhibited in London in 1980 is a useful introduction to its subject (Graham-Campbell 1980).

Women's brooches hold a special place in Late Iron Age chronology, and some publications deserve mention. Cruciform brooches are the most common Early Germanic Iron Age brooch type in Denmark. The publication by Joachim Reichstein (1975) includes a detailed discussion of the chronology of the period, but the typology used is difficult to apply in practice. A complete study of the Danish and South Swedish finds is a desideratum. At all events, it is obvious from Reichstein's distribution maps that Denmark in the Early Germanic Iron Age belonged to a North Sea interaction zone. A more functional classification system is used by Mechthild Schulze (1977) in her study of cross-bow brooches.

The dress ornaments of the Late Germanic Iron Age were studied in the thesis of Ørsnes (1966), and in a recent paper on the Bornholm women's graves Høilund Nielsen (1987) could use Ørsnes's typology with only

minor adjustments. The jewellery distribution now demonstrates that Denmark was part of a large South Scandinavian region including South Swedish provinces on the Baltic.

The Viking Age jewellery has been dealt with in Sweden in the publication of the Birka finds (Arwidsson 1984), and the monograph on the oval brooches by Jansson (1985) has already been mentioned. An up-to-date publication of the Danish finds would fill a long-felt need.

Gold is characteristic of the Early Germanic Iron Age, evincing the close contacts to Germanic troops along the Roman *limes* (Herschend 1980; Kyhlberg 1986). The use of metal-detectors has in recent years resulted in a rapid growth in the number of gold finds, most conspicuous at Gudme on Fyn (Thrane 1987a). As part of a larger study on the gold-finds of Denmark, so important for the understanding of the social and economic development in the period, a paper on the representativity of the material and another on weight-systems have been published by Eliza Fønnesbech-Sandberg (1985; 1988).

The iconographic catalogue of all Nordic gold bracteates edited by Karl Hauck (1985; 1986) will without any doubt be a cornerstone in the study of these exciting pictorial pendants, and from his long series on their interpretation I have selected a paper on the Gudme finds (1987). He concludes that there existed a sacral kingship in Fyn, and suggests that Gudme was a *villa regalis*. When reading Hauck certain stanzas of Beowulf inevitably come to my mind.

Hauck's brave theses call for an archaeological discussion about the character of the Gudme centre and other contemporary core areas in South Scandinavia (cf. Thrane 1988), *e.g.* archaeological and onomastic studies of other sites with similar cult-indicative place-names (cf. Kousgård Sørensen 1985). Undoubtedly, the possible cult centres also performed administrative functions, for which reason they are of interest even to the profane archaeologist.

There is no firmly established ceramic typology of the Late Iron Age, and this is a serious problem in settlement archaeology, for most sites are ploughed down and only a little pottery is normally found. The great number of new sites gives, however, reason for some optimism, since house typology and ceramic studies are mutually supportive. But too many undocumented datings are advanced in short papers. Some relevant papers on Early Germanic Iron Age ware were referred to above, and the im-

portant and well-dated ceramic stratigraphy of 8th century Ribe has also been mentioned. We eagerly await the publications now in preparation.

Archaeologists are also beginning to have a firmer chronological grip on the so-called Baltic ware, earlier known as Slav pottery. The problem of the origin of this pottery is complicated – imports, migrations, itinerant Slav potters or a Danish-Slav acculturation? (Gebers 1981; Hedeager 1982; M. Andersen 1984).

STYLE STUDIES

This topic is not in the focus of new archaeologists, and when they try to use its information they are not always very successful. The best that can be said about Arne B. Johansen's attempt (1979) to see animal style in a social context is that he has pointed out the importance of that aspect (cf. the critical comments following Johansen 1981 by Böhme, Magnus, Ilkjær & Lønstrup, and Horn Fuglesang).

The use of numerous style concepts is heavily criticised by Lennart Karlsson (1983), and of course it is ridiculous that he is able to list c. 100 'styles', and a reconsideration of the archaeological style concept is obviously needed. Karlsson's own survey of the stylistic development between 400 and 1100 is unfortunately conventional; only the style names being left out, and his chronology is too crude. The long lines of stylistic change he is able to follow are, however, a very positive contribution.

The major opus by Günther Haseloff on Salin's style I (1981) will for a long time be the standard reference. His discussion on the origin of the Nydam style and its development to style I emphasises that Denmark, primarily Jylland, was an innovative region in the Early Germanic Iron Age. It is a challenge to Danish archaeology to accept or reject this idea, and a publication of all Danish objects representing Nydam style and style I is a natural way to go. The chronological relation of the sequence Sösdale style – Nydam style – style I – style II is also discussed (Näsman 1984b).

The style II-III (Vendel styles A-B-C-D-E) has in South Scandinavia been treated by Ørsnes (1966), and at present Høilund Nielsen is working on style development in the Late Germanic Iron Age. A handy review of current research concerning Salin's styles I-II-III is given by Haseloff (1984).

Signe Horn Fuglesang has published a large number

of studies on Viking Age styles (*e.g.* 1980, 1981, 1982, and forthcoming), where she considers the feasibility of the various Viking style concepts and when confirmed, their definition. The traditional scaffold of the Oseberg-Borre-Jelling-Mammen-Ringerike-Urnes style sequence seems to me more and more shaky. The new dendro-datings of the Jelling and Mammen graves support earlier suspicions that the different styles largely overlapped. We desperately need new style definitions that consider social contexts, technology, workshop areas, etc. (cf. also Jansson 1985).

SETTLEMENTS AND CULTURAL LANDSCAPE

Following the initiative of Becker in the 1960s, Danish settlement archaeology has made tremendous progress and ranks today, when focusing on house function and intra-settlement structures, among the best in the world. The seminars on settlement studies organised by Thrane in Odense have contributed to the high level, with annual information exchange and debate.

In Denmark, excavations of dwelling sites have given the most significant results, while interdisciplinary projects aiming at understanding the cultural landscape are lacking, mainly because of the source situation. In the cultivated Danish landscape, traces of past land-use are rare, and remains of field systems dating to the Late Iron Age are extremely sparse (Ramskou 1981; Steensberg 1983). A lucky find of a wooden ploughshare dendro-dated to the early 9th century found at Gl. Hviding, Jylland (S. Jensen 1987a) gives, however, indirect evidence of a developed cultivation technique.

In Sweden, and also in Norway, agrarian history and studies of the cultural landscape hold a prominent position, and a number of interdisciplinary projects could be mentioned, *e.g.* the now current project at Gårdlösa, Skåne (Stjernquist 1981). The contributions by historical geographers have been of decisive importance for the development of Swedish settlement archaeology (*e.g.* Widgren 1983); nothing of the sort is seen in Denmark. One of the significant results is the elucidation of the concept of continuity in the analysis of the rural landscape. Earlier archaeologists centred their opinion about social development on site continuity-discontinuity, but now we speak of continuity at different levels: site, settlement and region, as well as of continuity of cultivation (Becker 1977). This has been most useful in the discussion about

the so-called crisis of the Early Germanic Iron Age (Carlsson 1984; Näsman & Lund 1988). In Denmark, it seems as if the continuity problem has been solved, *i.e.* many settlements permanently used the same resource area since the 4th century and often still do so today. A settlement discontinuity strongly supported by the evidence is the exception, like the hiatus during the 6th-7th centuries in Angeln and Schwansen (Willroth 1987).

The rich results of Swedish settlement archaeology are exciting and ought to inspire Danish archaeologists to find appropriate methods to attack the neglected study of the Late Iron Age agrarian system. Lacking preserved remains of ancient field systems, an ecological approach should be given priority, but so far very few studies of macro- and microfossils have taken place in Late Iron Age contexts (see above), and Denmark is underdeveloped when it comes to scientific analysis of Iron Age settlements.

The basis of Danish settlement archaeology is thus the dwelling sites, and the largest excavations have taken place at Vorbasse, where a periodically moving village can be followed from the late Celtic Iron Age until the early Middle Ages, when it became stationary in its present position (S. Hvass 1983; 1987a). Settlement continuity is a fact, but it is still a matter of debate whether the development constituted a steady increase in production and population or whether there were serious fluctuations. It is especially important that settlements of the 3rd-7th centuries have been found at Vorbasse and Nørre Snede. The publication of preliminary village plans (S. Hvass 1988) – four phases at Vorbasse and five at Nørre Snede (cf. Egeberg Hansen 1988) – demonstrates a rather stable number of farms.

The lack of finds in Denmark dating to the Germanic Iron Age has normally been interpreted as an expression of a more or less dramatic crisis, and various hypotheses have been put forward to explain the phenomenon (the discussion is surveyed by Näsman 1988b). Today there is reason to play a waiting game in this topic; an easy explanation of all observed changes in the 4th-7th centuries is not in evidence, but the suggestions presented by Hedeager are a starting-point (1988a).

New settlement sites are found each year, and it is most satisfying to note that evidence has also been wrested from the clay soils of east Jylland and the islands. Especially the many sites found when the gas pipelines were laid down have changed the picture, but Late Iron Age sites are still grossly underrepresented (Näsman 1987). A

source-critical test performed in Jylland (S. Jensen 1985) has clearly demonstrated that the settlements are difficult to find due to the destruction of the pottery of this period in cultivated fields. New prospecting methods must be found, and aerial photography (used with remarkable results in the Ribe area) and phosphate mapping ought to be employed more systematically.

The main traits of house typology (Näsman 1983), and farm and village structure (S. Hvass 1985b; 1988) during the Early Germanic Iron Age and the Viking Age are today well documented, but the Late Germanic Iron Age is still problematic. There are houses of this period represented at Vorbasse (S. Hvass 1987a; 1988, Nørre Snede (Egeberg Hansen 1988), Foulum (Jensen & Willemoes 1982) and other sites. A good example of a house that typologically ought to be from the 7th-8th centuries is, for instance, found at Ragnesminde, Sjælland, but the available ¹⁴C- and TL-datings say Roman Iron Age! (Mahler 1985).

The many preliminary papers on Vorbasse published by Steen Hvass have been an invaluable contribution to the development of Danish settlement archaeology, and more notes on other *well-dated* houses must be published if we are within a reasonable time to solve the problems. But what we need most is a publication of a methodologically stringent analysis of all already known well-defined house-plans of the 3rd-8th centuries.

A funny example on the relevance of source-criticism is the debate on the Late Iron Age pit-houses in Skåne. Leif Chr. Nielsen (1981a) and following him Tom Ohlsson (1982) suggested that in east Denmark (including Skåne) pit-houses were used as dwellings, in contrast to Jylland, with dwellings in long-houses and workshops in pit-houses. This opinion was based on many years of excavations in Skåne where crop-marks (= pit-houses) have been excavated, and not until the recent introduction of the technique of stripping off large areas of top-soil, did the post-holes of long-houses appear (Björhem *et al.* 1983; T. Christensen 1983; Tornbjerg 1985; Rønne 1986). Evidently settlement structure in Late Iron Age Denmark was fairly similar in the west and east (including Bornholm, Watt 1983). The most spectacular houses illustrating an architecture very remote, indeed, from pit-houses have been excavated at the famous Viking site of Lejre, Sjælland (T. Christensen 1987). One house is 48 m long and 11 m broad, covering a floor space of 500 square m.

The recent excavations at Gl. Hviding and Vilslev, Jyl-

land, are important contributions to the discussion about house development between the Viking and Middle Ages and dendro-dated wells and rich small finds make them fix-points (S. Jensen 1987a). These houses emphasise again the strong connection between Danish house-building tradition and the development in north Germany (Zimmermann 1981) and Drenthe (Waterbolk 1982).

Much research is needed before we can profit fully from all these new excavations (cf. surveys by J. Lund, S. Hvass and L. Hedeager, all 1988), but it can already be concluded, as J. Jensen (1982) and Randsborg (1980) have done, that the production of the single farm must have increased considerably. More people must have worked on each farm, *i.e.* a socially significant division of labour has taken place. Many people were now without proprietary rights, and the distribution of power was more uneven. The preconditions were created for the growth of an aristocracy based on land. This process obviously started in the Late Roman Iron Age and Early Germanic Iron Age (Donat 1985; 1987; Hedeager 1987; 1988a-b). In the Viking Age, the development had gone further and the concept magnate farms has been used by Randsborg (1980) to characterise large farms at Vorbasse and Omgård (L. Chr. Nielsen 1981b).

A project in Fyn has aimed at elucidating the history of the medieval (11th-15th centuries) village. One question was when the villages of the Middle Ages were founded. The results are presented in two monographs, and it is concluded that the historical villages were permanently occupied from between the late 10th and the early 12th century (Grøngaard Jeppesen 1981 & Porsmose 1981) and that settlements were earlier moved at irregular intervals. A similar result was reached on Stevns in Sjælland (Hedeager 1982). Concensus about the origin of the medieval village has not been reached, however. It is still possible to question whether it is reasonable to apply results from Fyn to other parts of Denmark (see important criticism in Callmer 1986).

An alternative hypothesis is that conditions varied considerably in different parts of the country, and that we have to reckon with a long phase between the Late Germanic Iron Age and the Early Middle Ages, when settlements for various reasons either moved or stayed pat.

A case to the point is the village at Sejlflod, northern Jylland. Within an area of c. 425 x 360 m, a settlement existed with only short dislocations from the Early Iron Age to Viking Age (J. N. Nielsen 1982; 1987; and the

popular exhibition pamphlet J. N. Nielsen & Rasmussen 1986). Also in Bornholm, similar long continuous use of a settlement site is known, *e.g.* Sorte Muld (= Black Earth) (Watt 1987; 1988).

The medieval settlement pattern was possibly not introduced within one or two generations all over the country, and it is perhaps reasonable to explain its origin as a long process of adaptation of traditional land-use to a new mode of production with its roots in early medieval West Europe.

Myrdal (1988), the economic historian, has studied this process in the perspective of farming technology and has presented a model of cyclical co-variation between technological innovations and social change that is a challenge to archaeologists.

GRAVES AND RELIGION

One of the causes of the earlier limited interest in the Late Iron Age is that the rich burial customs of the Roman Iron Age ceased rapidly in the 4th-5th centuries. Graves of the 6th-8th centuries and very rare (except on Bornholm where a rich funerary ritual continued throughout the pagan period (for instance a new site, L. Jørgensen 1987). In the 10th century, rich graves are again more common but restricted to a limited social group.

A survey of Viking Age graves is given by Roesdahl (1982). A number of papers on smaller excavations have been published, but it is difficult today to review Germanic Iron Age grave customs.

Some larger cemeteries with graves dating to the Early Germanic Iron Age have, however, been excavated in recent years. The cemetery at Hjemsted, Jylland, contained 88 inhumations, 35 of which date to the Early Germanic Iron Age, 17 are Late Roman and 6 Early Roman Iron Age; 28 are undated (and probably most of them are late). The orientation was E-W. The grave goods consist of dress accessories, pottery and wooden buckets (Ethelberg 1986).

At Sejlflod in northern Jylland, another larger burial ground has been investigated, and more than 300 men and women were inhumed in E-W oriented graves during c. 200 years of the 4th-5th centuries. The grave goods are similar to those found at Hjemsted, but some are richer (J. N. Nielsen 1982; 1987; J. N. Nielsen *et al.* 1985; J. N. Nielsen & Rasmussen 1986). The material of this cemetery is large enough to make a social analysis rewarding (Ringtved 1988), and the possibility of relating graves to

settlement makes the site most interesting. A full publication must be given high priority.

In a few graves at Sejlflod, glass vessels or shards were found, and at Stilling in central Jylland a polished beaker with a Greek inscription "Drink and you will live well" was found (N. H. Andersen 1977). In general, however, imports disappear from the graves around A.D. 400, but, as already stated above when trade was discussed, this does not mean that glass and bronze vessels were no longer brought to Denmark.

Late Germanic Iron Age cemeteries are extremely rare outside Bornholm (Høilund Nielsen 1987). Lindholm Høje at Ålborg, Jylland, a large cemetery well known for its many ship-settings, is preserved thanks to a cover of wind-blown sand. Here a continuous use from the Early Germanic Iron Age to the Viking Age has been established. Most of the 589 graves are cremations, for which reason the grave goods are effectively fragmented (Ramskou 1976). In an excavation for the natural gas company at Søndervang at Horsens, Jylland, a number of shallow pits were found filled with fire-cracked stones and some charcoal. In the stone fill, some few splinters of burnt bone were found, and in two graves, beads and brooches dating to the Late Germanic Iron Age. The ornaments had evidently not been on the pyre. If this type of cremation was common in Denmark, it may explain why so few graves are known today (O. Madsen 1987). Cremation pits are found i Skåne, too (Strömberg 1982), but well equipped inhumations are also known from the early part of the period (Larsson 1982), reminiscent of nearby Bornholm.

All the same, based on the rich results of settlement research, it is today safe to conclude that graves, because of the funerary ritual, are a bad source for understanding Late Germanic Iron Age society in South Scandinavia outside Bornholm.

Only one cemetery of the early and middle Viking Age has been uncovered, at Overhornbæk, Jylland (B. H. Nielsen *et al.* 1986). The graves are inhumations with rather poor equipment, *e.g.* dress ornaments or a single weapon.

In a series of papers, Müller-Wille has studied primarily the rich 10th century graves: horsemen's graves (1978a), richly furnished graves (1978b), royal graves (1983a), graves with blacksmith's tools (1983b), graves with a waggon-body as coffin (1985), and chamber-graves (forthcoming). The points of departure are the ship-chamber grave at Hedeby (1976a) and the cemetery at

Thumby-Bienebek (1976b; 1987). These papers summarise this rich and important material in an excellent way, and a conception of an exalted atmosphere among the upper echelons of Danish Viking society emerges. Obviously something had changed in the late 9th century that released a social display in funerary ritual that had been superfluous for about 600 years.

The cemetery excavated at Stengade, Langeland, illustrates very well the great distance between the rich graves (here at the smaller burial ground Stengade I) and the burials of common people (Skaarup 1976), most of which probably pass unnoticed when touched by ploughing or contractors' work.

The explanation of the 10th century rich interments is a matter of lively debate. Randsborg (1980) presented a developed model in which he tries to explain the graves as an expression of the relationship of the dead to the 'Jelling' kings, primarily their military obligations along the borders of the state. This has been questioned, and horsemen's graves situated in 'the wrong place' have been used as counter-evidence (L. Chr. Nielsen 1984; Stoumann 1984).

Another interpretation is given by Roesdahl (1982; 1983), who suggests that they are evidence of the Valhalla belief of men (and women) in the royal retinue. For chronological reasons, she rejects the connection to only the Jelling kings, and certainly the ship-chamber grave at Hedeby, c. 900 A.D., holds a significant position in the understanding of the warrior graves. Ellmers has given a vivid picture of the role of beliefs in Odin and Valhalla in the Danish court ceremonies (1983), and his idea that the three men buried in the Hedeby grave were a king and his cupbearer and groom is in fact convincing. H. H. Andersen's work on the royal graves gave reason to the re-excavation of the mounds at Mammen (Iversen & Vellelev 1986; Iversen *et al.* forthcoming) and Søllested (H. H. Andersen 1987).

If it is a Valhalla cult that is expressed in the grave ritual of these rich graves, it is of interest to discuss the background. The use of a Valhalla ceremony at the Danish court may be seen as an attempt to legitimise a new dynasty internally and to strengthen and characterise Danish kingship in relation to external threats. The same pattern can be discerned when the so-called Jelling dynasty takes power. Still it was a pagan kingdom and the long discussion about the Germanic 'sacral' kingship is far from concluded as evinced by a paper (forthcoming) by Schjødt, the historian of religion.

It is to be wished that the interdisciplinary research project now initiated by the Nordic humanistic research councils will be successful in establishing a new understanding of pagan religion. Undoubtedly, collaboration between archaeologists, historians, and historians of law, religion and literature will give new results, and archaeological data on funerary rituals and their changes during the Iron Age are a rich and largely unexploited source.

Interest in the Jelling grave and the so-called Jelling dynasty is exaggerated in Danish archaeology. H. H. Andersen (1986) puts the Jelling monuments into perspective, when he states that the monuments are in the tradition of the earlier dynasty represented by the ship graves at Hedeby and Ladby (Ladby has recently been discussed by Thrane 1987b). Andersen's thesis about this dynasty is now supported by the new dendro-datings of the Jelling mounds, indicating that King Gorm died c. 958/59 and not in the 930s as some have believed the written sources indicated. The excavations in Jelling Church have revealed a series of wooden predecessors, the earliest probably built by King Harald Bluetooth in the 960s or 970s (Krogh 1983). In a chamber in the church, the bones of a secondarily buried man were found, possibly the remains of Gorm translated by Harald from the pagan mound to a Christian burial. Only rarely is archaeology so close to writing personal history (H. Andersen 1988 doubts the interpretation, however).

The Hedeby and Jelling graves probably lay close to the start and end, respectively, of the rich funerary customs. The Mammen chamber that is dendro-dated to 970/71 contained the remains of a man, but without the full weaponry of the warriors' graves of the earlier part of the century (a re-publication including a paper by H. Andersen on the dendro-date is in preparation, Iversen *et al.* forthcoming). It is probably significant that the cemeteries at Trelleborg and Fyrkat do not include rich weapon graves (Roesdahl 1977; 1982). The small cemetery at Søndre Onsild, close to and more or less contemporary with Fyrkat, contained no rich graves, but a couple of graves with axes (Roesdahl 1978). In the last phase of pagan funerary ritual, an axe sufficed as symbol of rank (Trotzig 1985), the Mammen axe being one of the most splendid. The rich Hørning chamber-grave must also be mentioned as one of the latest rich graves, dated by Voss to c. A.D. 1000 (forthcoming). The interpretation of iron mountings and nails as remains of a waggon body indicates that pagan ritual was followed in the funeral, as do the rich grave goods. That the relatives of the buried wo-

man soon adopted the new state religion is demonstrated by the wooden church built on the site of the levelled barrow in the 11th century.

The Christian graveyards of the 11th century are only rarely met with in archaeological non-urban contexts, the best example being the Löddeköpinge cemetery in Skåne (Cinthio 1980; Persson *et al.* 1984), where 1431 inhumations in wooden coffins have been excavated (the estimated number is c. 2500 graves). Traces of a wooden church with two *patronus* graves were found in the enclosed graveyard. A new era had begun.

The conversion of Scandinavia is discussed by the Swedish archaeologist A. S. Gräslund in a number of papers (1985; 1987 & forthcoming) and was the subject of an interdisciplinary symposium in 1985 (Sawyer *et al.* 1987), where Roesdahl led the archaeological session. For the archaeologist working with grave finds, the great difficulty is to distinguish between graves arranged according to genuine pagan rituals (if something of the kind existed after centuries of contact to Christian regions), rich pagan graves influenced by Christian beliefs, poor pagan graves, and graves of Christians. Is the occurrence of Christian symbols in a grave evidence of a Christian convert? a pagan with a souvenir from abroad? or a syncretic religious conception? This theme was one of several discussed at a Mammen symposium in 1987 that was based on the new dendro-datings (publication ed. by Iversen *et al.* forthcoming). The Mammen man was buried in a grave chamber, the timber of which was cut in the winter of A.D. 970/71, that is to say some years after the Conversion of Denmark by King Harald. He was unquestionably of the ranks from which the king's retinue was recruited, but was he still pagan? Was the burial ceremony a protest against the Christianisation? Is the grave an expression of syncretism? Was he a prominent Christian buried by pagan relatives? The problem will probably never be solved, but the confusion marking the scholarly discussion illustrates very well the mental state of the late 10th century.

WARFARE

Iron Age Denmark is often presented as a peaceful rural society, which undoubtedly fits very well the current view on Danishness and makes it easy for the Danes today to identify with their cultivating, producing and consuming forefathers and -mothers. In fact the archaeological record tells a quite different story, in which the dangers of

war and violence were important factors of daily life. It is consequently reasonable to suggest that warriors and army leaders played a significant role in the development of the Danish kingdom, perhaps even the decisive one.

In the Early Germanic Iron age, the last large offerings of spoils-of-war took place. The custom is restricted to Danish territory and south Sweden, and the first finds date to the late 2nd century A.D. and the last to c. 500 A.D. They are evidence of successful defence against incursive enemies, and most bogs have been used more than once, for example the famous Nydam bog, where three offerings took place in the Late Roman Iron Age and a fourth in the 5th century. This cult continuity demonstrates the presence of a stable military organisation in these areas and the, at times, enormous number of weapons in one single offering gives an indication of the number of troops involved in the battles.

The Nydam find has now been supplemented by recent finds (Vang Petersen 1988) that are of great importance for the understanding of the Nydam-II finds and the question of *pars-pro-toto* offerings. The Illerup finds are treated in a number of papers, where the interpretation of the whole find group is discussed (*e.g.* Ilkjær & Lønstrup 1983; Ilkjær 1985; Lønstrup 1985), and the Ejsbøl find, including magnificent sword and belt fittings of the Early Germanic Iron Age, has now been published (Ørsnes 1988).

The interpretation of the big weapon offerings has been a subject of some debate, but today most scholars agree upon the hypothesis that they are sacrificed spoils-of-war. As such they tell us a lot about warfare in South Scandinavia that can be compared to battle descriptions in written sources about other parts of contemporary Europe, *e.g.* the Gothic wars of the 3rd-6th centuries. But the bog finds do not say that Scandinavia was more affected by war than areas that lack weapon finds. As most peoples of contemporary Europe seem to have had reason to thank their gods for victories by offering weapons taken from defeated hosts, the explanation of the custom in South Scandinavia must be peculiar to that area, and it seems probable that it is a unique combination of social structure, military and political development, and religious beliefs that resulted in the weapon offerings. To me, it seems to be pointless to try to find a functional/rational explanation apart from the obvious: they served to strengthen society in situations of stress, and in the long run they favoured the military leaders and the tribal heroes.

It is difficult to say where the hostile troops came from, but it seems probable that most conflicts were interregional, *i.e.* that the finds represent disputes over territorial rights and control of resources between neighbouring parties. It is suggested that an offering in the Thorsbjerg bog evinces an attack from as far away as the area between the Elbe and the Rhine (Ilkjær & Lønstrup 1982), and part of the booty of the Illerup votive deposit possibly derives from south-west Sweden or south-east Norway; and in these two cases raiding for booty and honour is a possible explanation.

In this perspective, the bog offerings are a source elucidating the probably bloody process when small tribal areas in South Scandinavia were forged into larger polities by internal rivalry and external pressure.

With my background in Swedish ring-fort research, I find it a mystery that so little is known about the defences of the Germanic Iron Age outside Bornholm. So far, only one modest stronghold is (uncertainly) dated to the period, Trælborg in Jylland (see the most recent survey of Scandinavian fortifications in Mildenerger 1978), but as an indication that more ring-forts once existed it is important. The Olgersdige (Olger's Dyke) at Haderslev, Jylland, is ¹⁴C-dated to the Late Roman Iron Age, and it was kept in repair into the Germanic Iron Age (Neumann 1982). An attempt to use this fortification in the tribal history of Jylland has been criticised (N. Lund 1984; Ørsnes 1984), but nevertheless the approach is legitimate: the ramparts are an important element in the study of a growing centralisation of defence. Parts of Trældiget at Kolding, Jylland, were excavated during the gas pipeline project (S. Hvass 1987b). The dating is still unknown, but that it is Iron Age is certain, and a relation to the wars evinced by the bog offerings seems reasonable for some of the ramparts. Trial trenches where ramparts cross wetlands could possibly provide wood for dendro-dating, and only precise datings can give them their proper place in the history of Danish Iron Age defence (most recent survey in Schou Jørgensen 1988). They will contribute directly to the study of internal conflicts and thus indirectly also to the discussion about political territories, but the great number of ramparts in Jylland compared to the two regional cultures discerned by Ringtved (1988) indicate that the relation is not a simple one – ramparts are not necessarily borders.

Blockades across navigable channels into the settled areas often include wooden parts and existing dendro-datings show that defences of this kind were built in the

Roman Iron Age until the 5th century, and then again in the 10th-13th centuries (Crumlin-Pedersen 1985b; 1987a). When more blockades have been dated, the military threat of various periods can be better understood.

Well suited war-ships were a necessary part of the logistics in the Danish archipelago and the finds yield valuable good data on the development from paddled canoes to sailing ships (see above).

Indirectly, too, the c. 570 m long Kanhave Canal crossing the island of Samsø offers evidence of naval skill in the 8th century. Warships stationed in the Stavns Fjord could easily control the channels passing Sjælland to the east and Jylland to the west. The small island is an unlikely base of long-distance trade, but its strategic position controlling the northern approach to the Belts could be used by a Danish navy.

The dendro-dating of the earliest line of the ramparts of Danevirke to A.D. 737 has, as mentioned above, contributed considerably to a renewed discussion about the Danish kingdom and its roots. This rampart is probably based on a long tradition and a developed strategic knowledge about how to defend larger areas. But the magnitude of the construction and its location indicates without much doubt that we are dealing with a royal initiative to secure the southern frontier of a Danish realm against enemies to the south: Slavs, Saxons and further away the Franks. During the period of the Carolingian and Ottonian hegemony, the Danevirke served its purpose with varying success several times and came to include the important proto-town Hedeby (H. H. Andersen *et al.* 1976).

A very interesting aspect of Danevirke is the number of warriors needed to man the parapet. Seventh century Danevirke I is c. 10 km long, and according to an old rule quoted by Mildenerger one man per five meters is needed to hold a wall; this gives 2,000 men plus reserves. Danevirke III, dendro-dated to A.D. 968, needs with its 14 km 2,800 men. This indicates that the 8th century kings had the possibility of mobilising armies as large as the mighty Viking king Harald Bluetooth.

For historians, the understanding of the terminology of the written sources is naturally central. The revived discussion about the meaning and age of the concepts *leding* and *lid* in the military organisation of Denmark in the Viking Age has obviously been stimulated by archaeological research both on land and at sea. It will be interesting to follow the continued debate on the character of the Viking levy. Rikke Malmros bases her paper (1986)

on a study of the scaldic poetry and gives a graphic description of an aggressive social order where history is the 'deeds of brave men' and where people and army are synonymous 'people in arms' (quotations from Wolfram 1988:7 about the Goths 500 years earlier). She is convinced that the kings Svend and Knud seized power in England using the *leding*. Niels Lund (1985b), cannot accept this reading of the Scandinavian sources, and using primarily the English sources, he maintains that the levy served only for defence and that the kings abroad acted as private leaders with their private *lid*. To me, the important thing is that England was conquered by a trained army organised according to European standards and based on an effective and national organisation of mobilisation, *leding* or not.

The importance of plunder and tribute for the development of a Danish kingdom and a nation of the Danes is emphasised by many scholars (*e.g.* Randsborg 1980; 1981; P. H. Sawyer 1982), and it is interesting to compare Thomas Lindkvist's discussion (1988) of the Swedish development, retarded about a century, in which the Swedish levy is given an offensive function.

The defences of the Viking Age are a popular subject in Danish archaeology. The frontier to the south was refurbished by King Godfred in A.D. 808 and again by King Harald in 968. Blockades across waterways are known in several places, *e.g.* at Skuldelev in Sjælland and Fotevik in Skåne (Crumlin-Pedersen 1984; 1985b). The 10th century ring-forts of the Trelleborg type have been in the focus of research, but sometimes the emphasis put on them, and especially on the effort by King Harald, is exaggerated (Wilson 1978) – the engineering talents of the builder of the Kanhave Canal and the first Danevirke are equally impressive.

The main contributions are the publication of the Fyrkat fort, Jylland (Olsen & Schmidt 1977; Roesdahl 1977). Here the two main lines of interpretation are presented. O. Olsen advocates the view that the forts mainly served as camps and bases for the raids and conquest of England and that they are associated with King Svend Forkbeard. Roesdahl, on the other hand, prefers to think they were built during the reign of King Harald Bluetooth, and that their main purpose was as royal strongholds in the control of the country and as royal centres of administration and production. This idea was originally proposed by T. E. Christensen (see research summary in his publication of the dendro-dating of Trelleborg, 1984; see also Stilling 1981).

Most commentators on the Fyrkat-publications favour Roesdahl's view (*e.g.* Randsborg 1980; P. H. Sawyer 1980), and after the dendro-dating of Trelleborg and Fyrkat to A.D. 980/981 the problem seemed solved: King Harald was the builder and the conquest of England can be left out as an explanation. O. Olsen has, however, provoked by the dendro-dating, revised the written sources about the date of King Svend's seizure of power and concludes that there is still a possibility for Svend (1980), but most scholars now accept the explanation that the fortresses were part of King Harald's struggle for power at the end of his reign. Roesdahl is now preparing the publication of the excavations in the largest fort, Aggersborg on the Limfjord. Her preliminary papers on the functions of Aggersborg reveal that some difficulties of interpretation still adhere to this fort (1981; 1986).

The ring-forts are impressive monuments of a specific political situation but are not representative of Viking Age defence. Their very short life-time is significant in that respect, and as Roesdahl says "they were not successful. But... they clearly demonstrate the great organizing ability and the resources of tenth century Denmark and its kings, which is the background of Swein's and Cnut's conquest of England. But the fortresses themselves had nothing to do with that" (1987b).

The weapon-graves of the 10th century must be viewed in a similar perspective. They do not represent the Viking army of Danish kings from Olaf to Harald, but, as indicated above, they mirror a certain political and mental situation in which the upper echelons needed to display their solidarity with the old pagan belief (Roesdahl 1983) or to the new social order of the kingdom (Randsborg 1980). Anyhow, these men represent the army leaders and ship commanders, and they were the king's men. The private warrior of the armies raiding western Europe is better studied in Norwegian and Swedish weapon graves.

In an interesting comment on a paper by Porsmose (1980), the Norwegian economic historian Lunden suggests that Danish (and Norwegian) state formation can be explained by a change of military technology that ended in making possible that monopolisation of military and political power we call state formation (= *rigsdannelse*). The role of warfare in social transformations is sketched by Kristiansen & Hedeager (1985) and, indeed, I believe that war for control of resources will be more accepted in years to come as part of the explanation of culture change.

CONCLUDING REMARKS

This brief review of published Danish research demonstrates that the archaeology of the 5th-11th centuries has made considerable progress during the last ten years – and that new finds and discoveries follow in an unbroken stream. The Danish Research Council for the Humanities has felt the need of an intermediary summary of research and supported a research programme *Fra Stamme til Stat i Danmark* (= From Tribe to State in Denmark). The papers discussed at a number of research seminars in 1984–1988, funded by this programme, have been revised and published in three volumes, on Iron Age society (Mortensen & Rasmussen 1988), on Viking Age Denmark and on the problematic Late Germanic Iron Age (Mortensen & Rasmussen forthcoming). In order to present the results of the programme to the international archaeological/historical audience, a survey in English of the development of South Scandinavia from tribal chiefdoms to a Viking kingdom is in preparation (by the present author).

Simultaneously, as these efforts are being made, Randsborg is publishing a review of the first millennium A.D. in Europe (forthcoming) and Hedeager is finishing a volume (1990) on social organisation and change in Iron Age Denmark up to the 7th century embodying the documentation and argumentation of her work, (cf. the Danish agricultural history 1988a and a popular synthesis, 1988b).

It is evident that these interim summaries will very soon be overrun by new discoveries and new interpretations made by a thriving Danish archaeology.

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This survey was written in December 1987. The systematic search for literature covers 1976–1986, but a number of papers from 1987 have been included if noticed. For literature that appeared during 1988, some papers have been included to replace earlier contributions if more easily found, considerably updated, or published in English or German. Some more important new works published in 1987–88 have also been included, but completeness has not been aimed at.

REFERENCES

- Only quoted literature is listed. For a full coverage of Danish literature, see *Nordic Archaeological Abstracts* 1974–, abstract sections 7 Germanic Iron Age and 8 Viking Age as well as 1 general and 11 multi-period abstracts.
- AABY, BENT 1976: Cykliske klimavariationer de sidste 7500 år påvist ved undersøgelser af højmoser og marine transgressionsfaser. *Danmarks Geologiske Undersøgelser. Årbog* 1974 (1976): pp. 91–104. Summary. – Version in Engl.: Cyclic climatic variations in climate over the past 5,500 years reflected in raised bogs. *Nature* 263, 1976: pp. 281–284.
- 1985: Norddjurslands landskabsudvikling gennem 7000 år. *Fortidsminder* 1985: pp. 60–84. Summary.
- AHRENS, CLAUS (ed.) 1978: *Sachsen und Angelsachsen*. Hamburg-Harburg.
- AMBROSIANI, KRISTINA 1981: *Viking Age combs, comb-making and comb makers in the light of finds from Birka and Ribe*. Stockholm (= Stockholm studies in archaeology 2, 1981).
- ANDERSEN, HARALD 1984: Ringborgenes alder. *Skalk* 1984/2: pp. 15.
- 1988: Gåden om Gorm. *Skalk* 1988/2: pp. 18–28.
- (forthcoming): Dendrokronologisk datering af Mammen-graven. In IVERSEN; NÄSMAN & VELLEVA (eds.).
- ANDERSEN, H. HELLMUTH 1986: Hedenske danske kongegrave og deres historiske baggrund. *Kuml* 1985 (1986): pp. 11–34. Summary. – [Version in Ger]: Vorchristliche Königsgräber in Dänemark und ihre Hintergründe – Versuch eine Synthese. *Germania* 65, 1987/1: pp. 160–173.
- 1987. Kongsgårdshøjen. *Skalk* 1987/4: pp. 9–13.
- ANDERSEN, H. HELLMUTH; H. J. MADSEN & OLFERT VOSS 1976. *Danevirke*. Copenhagen/Århus (Jysk arkæologisk Selskabs Skrifter 13/1–2). Zusammenfassung.
- ANDERSEN, MICHAEL 1984: Westslawischer Import in Dänemark etwa 950 bis 1200. *Zeitschrift für Archäologie* 18, 1984: pp. 145–161.
- ANDERSEN, NIELS H. 1977: Arkæologi langs den østjyske motorvej. *Kuml* 1976 (1977): pp. 199–219. Summary.
- ANDERSEN, SVEND TH. 1985: Natur- og kulturlandskaber i Næsbymolen Storskov siden istiden. *Fortidsminder* 1985: pp. 85–107. Engl. summ.
- ANDERSEN, SVEND TH.; BENT AABY & BENT V. ODGAARD 1983: Environment and man. *Journal of Danish Archaeology* 2, 1983: pp. 184–196.
- ANDERSSON, THORSTEN & SÖLVE GÖRANSSON (eds.) 1983: Äldre territoriell indelning i Sverige. *Bebyggelsehistorisk tidskrift* 4, 1982 (1983).
- ANDRÉN, ANDERS 1980: *Lund*. Stockholm (= *Medeltidsstaden* 26). Engl. summ.
- 1984: *Lund. Tomtindelning, ägostruktur, sockenbildning*. Stockholm. (= *Medeltidsstaden* 56). Summary.
- 1985: *Den urbana scenen: städer och samhälle i det medeltida Danmark*. Malmö/Bonn (= *Acta Archaeologica Lundensia. Ser. altera in 8°* 13).
- ARRHENIUS, BIRGIT 1983: The chronology of the Vendel graves. In J. P. LAMM & H. Å. NORDSTRÖM (eds.): *Vendel Period Studies*. Stockholm, pp. 39–70.
- ARWIDSSON, GRETA (ed.): *Birka II:1. Systematische Analysen der Gräberfunde*. Stockholm.
- ASTILL, G. 1985: Archaeology, economics and early medieval Europe. *Oxford Journal of Archaeology* 4/2, 1985: pp. 215–231.
- AXBOE, MORTEN 1984: Positive and negative versions in the making of chip-carving ornaments. In *Festschrift til Thorleif Sjøvold*. Pp. 31–42. Oslo (= *Universitetets oldsaksamlings skrifter, n.r. 5*).
- BACKE, MARGARETA *et al.* (eds.) 1985: *In honorem Evert Baudou*. Umeå (= *Archaeology and environment* 4).
- BALINT, CSANAD 1981: Einige Fragen des Dirhem-Verkehrs in Europa. *Acta Archaeologica Hungarica* 33, 1981: 105–131.
- BAUDOU, EVERT 1985: Archaeological source criticism and the history of modern cultivation in Denmark. In K. KRISTIANSEN (ed.) 1985: pp. 63–80. Copenhagen.
- BECKER, C. J. 1977: Problemer om bosættelsen i dansk jernalder. In H. THRANE (ed.): *Kontinuitet og bebyggelse*. Pp. 29–38. Odense (= *Skrifter fra Institut for historie og samfundsvidenskab* 22).
- 1981: The coinage of Harthacnut and Magnus the Good at Lund ca. 1040 – ca. 1046. In C. J. BECKER (ed.): *Studies in Northern coinage in the eleventh century*. Pp. 119–174. Copenhagen (= *Det kongelige danske videnskaberne selskab. Hist.-fil. skrifter* 9/4).
- 1985. Lund-Odense-Lund. Numismatiske bidrag til Danmarks historie i 1040'erne. *Hikuin* 11, 1985: pp. 175–182. Summary p. 333.
- 1986: Review of Else Roesdahl. Danmarks vikingetid. 1980. *Historisk tidsskrift* [Dan] 86/1, 1986: pp. 141–144.
- BEHRE, KARL-ERNST 1983: *Ernährung und Umwelt der wikingereitlichen Siedlung Haithabu*. Neumünster (= *Die Ausgrabungen in Haithabu* 8).
- BENCARD, MOGENS 1979: Wikingereitliche Handwerk in Ribe. *Acta Archaeologica* 49, 1978 (1979): pp. 113–138.
- BENDER, JØRGENSEN, LISE see JØRGENSEN, LISE BENDER.
- BENDIXEN, KIRSTEN 1981: Sceattas and other coin finds. In M. BENCARD (ed.): *Ribe excavations 1970–76* 1, 1981: pp. 63–101. Esbjerg.
- 1984: Finds of sceattas from Scandinavia. In HILL & METCALF (eds.) 1984: pp. 151–157.
- 1986: Skandinaviske sceattas-studier. *Nordisk numismatisk unions medlemsblad* 1986/4: pp. 72–74.
- BENNIKE, PIA 1985: *Palaeopathology of Danish Skeletons. A comparative study of demography, disease and injury*. Copenhagen.
- Berichte über die Ausgrabungen in Haithabu. Bericht* 1, 1969, – 21, 1984 (1985), continued. Ed. by K. SCHIETZEL. Neumünster.
- BJØRHEM, NILS; ULF SÄFVESTAD & STEN TESCH 1983: Var vikingen backstusittare? *Meta* 1982/4 (1983): pp. 32–35.
- BONDE, NIELS & KJELD CHRISTENSEN 1984: Trelleborgs alder. Dendrokronologisk datering. *Aarbøger f. Nord. Oldk. og Hist.* 1982 (1984): pp. 111–152. Summary.
- BRINCH MADSEN, HELGE. See MADSEN, HELGE BRINCH.
- BRINK, STEFAN 1984: Absolut datering av bebyggelsenamn. In DALBERG *et al.* (eds.) 1984: pp. 18–66. Summary.
- 1988: Folkvandringstida namn? In NÄSMAN & LUND (eds.) 1988: pp. 13–31.
- BRØNDSTED, JOHANNES 1963: *Nordische Vorzeit. 3 Eisenzeit in Dänemark*. Neumünster.

- CALLMER, JOHAN 1977: *Trade beads and bead trade in Scandinavia ca. 800–1000 AD*. Lund.
- 1982: Production site and market area. *Meddelanden från Lunds univ. hist. mus. New. ser.* 4, 1981–1982 (1982): pp. 135–165.
- 1984a. *Sceatta problems in the light of the finds from Åhus*. Lund.
- 1984b: Recent work at Åhus. *Offa* 41, 1984: pp. 63–75.
- 1986: To stay or to move. *Meddelanden från Lunds universitets historiska museum New Ser.* 6, 1985–1986: pp. 167–208.
- CAMPBELL, JAMES; ERIK JOHN & PATRICK WORMALD 1982. *The Anglo-Saxons*. Oxford.
- CAPELLE, TORSTEN 1986: Besprechung von Ingmar Jansson. Ovala spännbucklor. 1985. *Offa* 43, 1986: pp. 381–384.
- CARLSSON, DAN 1984: Change and continuity in the Iron Age settlement of Gotland. In K. KRISTIANSEN (ed.): *Settlement and economy in later Scandinavian prehistory*. Pp. 129–153. Oxford (= *Brit. Arch. Rep. Internat. Ser.* 211).
- 1987: Äldre hamnar – ett hotat kulturarv. *Fornvännen* 82, 1987/1: pp. 6–18. Summary.
- CHRISTENSEN, ANEMETTE S. 1988: *Middelalderbyen Odense*. Viby. Summary.
- CHRISTENSEN, TOM 1983: Vindinge. *Romu* 1982 (1983): pp. 11–26.
- 1987: Lejrehallen. *Skalk* 1987/3: pp. 4–9.
- CHRISTIANSEN, TAGE E. 1984: Trelleborgs datering. *Arkæologisk datering. Aarbøger f. nord. old. og. hist.* 1982 (1984): pp. 84–110. Engl. transl.
- CHRISTLEIN, RAINER 1979: *Die Alamannen. Archäologie eines lebendigen Volkes*. Stuttgart. (2nd rev. ed. 1st ed. 1978).
- CHRISTOPHERSEN, AXEL 1980: *Håndverket i forandring*. Lund/Bonn (= *Acta Archaeologica Lundensia ser. prima in 4°* 13).
- CINTHIO, HAMPUS 1980: The Löddeköpinge investigation III. The Early Medieval cemetery. *Meddelanden från Lunds universitets historiska museum. N.s.* 3, 1979–1980: pp. 112–131.
- CLARKE, HELEN 1985: English and Baltic trade in the Middle Ages – an evaluation of the evidence. In LINDQUIST (ed.) 1985: pp. 113–120.
- CLARKE, HOWARD B. & ANNGRET SIMMS 1985: Towards a comparative history of urban origin. In CLARKE & SIMMS (eds.): *The comparative history of urban origins in non-Roman Europe*. Pp. 669–714. Oxford (= *Brit. Arch. Rep. Internat. Ser.* 255/1–2).
- CRUMLIN-PEDERSEN, OLE 1984: Fotevik. De marinarkæologiske undersøgelser i 1981 og 1982. In *Pugna forensis. Arkeologiska undersökningar kring Foteviken, Skåne 1981–83*. Pp. 7–68. Malmö.
- 1985a: Cargo ships of northern Europe AD 800–1300. In A. E. HERTEIG (ed.): *Conference on waterfront archaeology in North European towns 2*. Pp. 83–93. Bergen.
- 1985b: Ship finds and ship blockades AD 800–1200. In K. KRISTIANSEN (ed.) 1985: pp. 215–228.
- 1987a: Häfen und Schifffahrt in der Römischen Kaiserzeit sowie in der Völkerwanderungs- und Merowingerzeit Dänemarks. *Frühmittelalterliche Studien* 11, 1987: pp. 101–123. – For a version in Danish, see Havne og søfart i romersk og germansk jernalder. In H. THRANE (ed.): *Gudmeproblemer. (= Skrifter fra Historisk Institut. Odense Universitet 33)*. Pp. 68–91.
- 1987b: Aspects of Viking-Age shipbuilding. *Journal of Danish Archaeology* 5, 1986 (1987): pp. 209–228.
- DALBERG, VIBEKE *et al.* (eds.) 1984: *Bebyggelsers og bebyggelsesnavnes alder*. Uppsala (= *Norna-rapporter* 26).
- DANSGAARD, WILLI *et al.* 1975: Climatic changes, Norsemen and modern man. *Nature* 255, 1975: 24 ff.
- DONAT, PETER 1985: Siedlungsforschung und die Herausbildung des Bodeneigentums bei den germanischen Stämmen. *Zeitschrift für Archäologie* 19, 1985: pp. 155–168.
- 1987: Zur Herausbildung der frühmittelalterlichen Gehöftsformen im südlichen Nordseegebiet. *Studien zur Sachsenforschung* 6, 1987: pp. 23–54.
- DÜWEL, KLAUS *et al.* (eds.) 1987: *Untersuchungen zu Handel und Verkehr der vor- und frühgeschichtlichen Zeit in Mittel- und Nordeuropa. 4 Der Handel der Karolinger- und Wikingerzeit*. Göttingen (= *Abhandlungen d. Akad. d. Wiss. in Göttingen. Phil.-hist. Kl.* 3.F. 156).
- ECKSTEIN, DIETER 1977: Holzanatomische Untersuchungen an Befunden der frühmittelalterliche Siedlung Haithabu. *Berichte über die Ausgrabungen in Haithabu* 11, 1977: pp. 141–164.
- ECKSTEIN, DIETER & KURT SCHIETZEL 1977: Zur Dendrochronologischen Gliederung und Datierung der Baubefunde von Haithabu. *Berichte über die Ausgrabungen in Haithabu* 11, 1977: pp. 141–164.
- EGERBERG HANSEN, TORBEN. See HANSEN, TORBEN EGERBERG.
- ELLMERS, DETLEF 1980: Fränkisches Königszeremoniell auch in Walhall. *Beiträge zur Schleswiger Stadtgeschichte* 25, 1980: pp. 115–126.
- 1985: Die Bedeutung der Friesen für die Handelsverbindungen der Ostseeraumes bis zur Wikingerzeit. In LINDQUIST (ed.) 1985: pp. 7–54.
- ETHELBERG, PER 1986: *Hjemsted*. Haderslev. Zusammenfassung.
- FEFFER, LAURE-CHARLOTTE & PATRICK PÉRIN 1987: *Les Francs 2. A l'origine de la France*. Paris.
- FENGER, OLE 1983: *Gammeldansk ret*. Viby.
- FONNESBECH-SANDBERG, ELIZA 1985: Hoard finds from the Early Germanic Iron Age. In K. KRISTIANSEN (ed.) 1985: pp. 175–190.
- 1988: Vægtsystemer i ældre germansk jernalder. *Aarbøger f. nord. oldk. og hist.* 1988: pp. 139–160. Engl. summary.
- FRANSEN, LENE B. & STIG JENSEN 1988: Pre-Viking and early Viking Age Ribe. *Journal of Danish Archaeology* 6, 1987 (1988): 175–189.
- FUGLESANG, SIGNE HORN 1980: *Some aspects of the Ringerike style*. Odense.
- 1981: Stylistic grouping in the late Viking and early Romanesque art. *Acta ad archaeologiam et artium historiam pertinentia. Ser. in 8°* 1, 1981: 79–125.
- 1982: Early Viking art. *Acta ad archaeologiam et artium historiam pertinentia. Ser. in 8°* 2, 1982: 125–173.
- (forthcoming): The axehead from Bjerringhøj and the Mammen style. In IVERSEN; NÄSMAN & VELLEV (eds.).
- GEBERS, WILHELM 1981: Ostseekeramik auf den dänischen Inseln. In H. HINZ (ed.): *Kiel papers '80 from Fuglsang/Lolland*. Pp. 139–168. Copenhagen/Kiel.
- GRAHAM-CAMPBELL, JAMES 1980: *Viking artefacts*. London.

- GRÄSLUND, ANNE-SOFIE 1985: Den tidige missionen i arkologisk belysning – problem och synpunkter. *Tor* 20, 1983–1985: pp. 291–313. Summary.
- 1987: Pagan and Christian in the age of conversion. In J. E. KNIRK (ed.): *Proceedings of the tenth Viking congress 1985*. Pp. 81–94. Oslo (= *Universitetets oldsaksamlings skrifter*. N. r. 9).
- (forthcoming): Var Mammen-mannen kristen? In IVERSEN; NÅSMAN & VELLE (eds.).
- GROENMAN-VAN WATERINGE, WILLY 1984: *Die Lederfunde von Haithabu*. Neumünster (= *Berichte über die Ausgrabungen in Haithabu* 21).
- GRØNGAARD JEPPESEN, TORBEN. See JEPPESEN, TORBEN GRØNGAARD.
- HÄGG, INGA 1984: *Textilfunde aus dem Hafen von Haithabu*. Neumünster (= *Berichte über die Ausgrabungen in Haithabu* 20).
- HANSEN, ULLA LUND 1987: *Römischer Import im Norden*. Copenhagen.
- 1988a: Handelszentren der römischen Kaiserzeit und Völkerwanderungszeit in Dänemark. In HÄRDH *et al.* (eds.) 1988: pp. 155–166.
- 1988b: Hovedproblemer i romersk og germansk jernalders kronologi i Skandinavien og på Kontinentet. In MORTENSEN & RASMUSSEN 1988: pp. 21–35.
- HANSEN, TORBEN EGEBOG 1988: Die eisenzeitliche Siedlung by Nørre Snede, Mittelljütland. *Acta Archaeologica* 58, 1987 (1988): 171–200.
- HANSEN, VAGNER & HELGE NIELSEN 1979: Oldtidens veje og vadesteder, belyst ved nye undersøgelser ved Stevns. *Aarbøger f. Nord. Oldk. og Hist.* 1977 (1979): pp. 72–117. Summary.
- HÄRDH, BIRGITTA 1978: Trade and money in Scandinavia in the Viking Age. *Meddelanden från Lunds univ. hist. mus. New ser.* 2, 1977–1978 (1978): pp. 157–171.
- HÄRDH, BIRGITTA *et al.* (eds.) 1988: *Trade and exchange in prehistory. Studies in honour of Berta Stjernquist*. Lund (= *Acta Archaeologica Lundensia, Ser. in 8°* 16).
- HASELOFF, GÜNTHER 1981: *Die germanische Tierornamentik der Völkerwanderungszeit 1–3*. Berlin/New York.
- 1984: Stand der Forschung: Stilgeschichte Völkerwanderungs- und Merovingierzeit. In *Festschrift til Thorleif Sjøvold*. Pp. 109–124. Oslo (= *Universitetets oldsaksamlings skrifter*, n. r. 5).
- HAUCK, KARL (ed.) 1985: *Die Goldbrakteaten der Völkerwanderungszeit 1/1–3*. Munich (= *Münstersche Mittelalterschriften* 24/1:1–3).
- (ed.) 1986: *Die Goldbrakteaten der Völkerwanderungszeit 2/1–2*. Munich (= *Münstersche Mittelalterschriften* 24/2: 1–2).
- 1987: Gudme in der Sicht der Brakteaten-Forschung. *Frühmittelalterliche Studien* 21, 1987: pp. 147–181.
- HEDEAGER, LOTTE 1982: Settlement continuity in the villages of Stevns, South-East Zealand. *Journal of Danish Archaeology* 1, 1982: pp. 127–131.
- 1987: Empire, frontier and the barbarian hinterland: Rome and northern Europe from AD 1–400. In M. ROWLANDS; M. LARSEN & K. KRISTIANSEN (eds.): *Centre and periphery in the Ancient World*. Pp. 125–140. refs. pp. 141–153. Cambridge.
- 1988a: [Jernalderen]. In CL. BJØRN (ed.): *Det danske landbrugs historie* 1, 1988. Pp. 109–203. Copenhagen/Odense.
- 1988b: *Danernes land*. Copenhagen (= *Gyldendals og Politikens Danmarks historie* 2. Ed. by OLAF OLSEN).
- 1990: *Danmarks jernalder. Mellem stamme og stat*. Aarhus. Summary.
- HELBÆK, HANS 1977: The Fyrkat grain. In O. OLSEN & H. SCHMIDT 1977. Pp. [1–41].
- HERRMANN, JOACHIM *et al.* (eds.) 1982: *Wikingen und Slawen. Zur Frühgeschichte der Ostseevölker*. Neumünster/Berlin (DDR).
- HERSCHEND, FRANDS 1980. Två studier i öländska guldfynd. *Tor* 18, 1978–1979 (1980): pp. 33–294. Summary.
- HILL, DAVID & D. M. METCALF (eds.) 1984: *Seattas in England and on the Continent*. Oxford (= *Brit. Arch. Rep. Brit. Ser.* 128).
- HINES, JOHN 1984: *The Scandinavian character of Anglian England in the pre-Viking period*. Oxford (= *Brit. Arch. Rep. Brit. Ser.* 124).
- HODGES, RICHARD 1982: *Dark Age Economics*. London.
- HODGES, RICHARD & DAVID WHITEHOUSE 1983: *Mohammed, Charlemagne & the origin of Europe*. London.
- HOFFMANN, ERICH 1984: Beiträge zur Geschichte der Beziehungen zwischen dem deutschen und dem dänischen Reich für die Zeit von 934 bis 1035. In CHR. RADTKE & W. KÖRBER (eds.): *850 Jahre St.-Petri Dom zu Schleswig 1134–1984*. Pp. 105–132. Schleswig.
- HØILUND NIELSEN, KAREN. See NIELSEN, KAREN HØILUND.
- HOLMBERG, BENTE 1980: *Sednavne som kulturhistorisk kilde. En samfærdselshistorisk undersøgelse*. Copenhagen (= *Navnestudier* 19). Summary.
- HORN, FUGLESANG, SIGNE. See FUGLESANG, SIGNE HORN.
- HVASS, LONE 1980: *Jernalderen 1–2*. Copenhagen.
- HVASS, STEEN 1980: Vorbasse. The Viking-age settlement at Vorbasse, Central Jutland. *Acta Archaeologica* 50, 1979 (1980): 137–172.
- 1983: Vorbasse. The development of a settlement through the first millenium AD. *Journal of Danish Archaeology* 2, 1983: pp. 127–136.
- 1985a: Jernalderboplader. *Arkæologiske udgravninger i Danmark* 1984 (1985): pp. 18–24.
- 1985b: Viking Age villages in Denmark – new investigations. In LINDQUIST (ed.) 1985: pp. 211–228.
- 1987a: Vorbasse – Eine Dorfsiedlung während des 1. Jahrtausends n.Chr. in Mittelljütland, Dänemark. *Bericht der Römisch-Germanischen Kommission* 67. 1986 (1987): pp. 529–542.
- 1987b: Et lokalt Danevirke. In *Danmarks længste udgravning. Arkæologi på naturgassens vej 1979–86*. Pp. 376–378. Copenhagen/Herning.
- 1988: Jernalderens bebyggelse. In MORTENSEN & RASMUSSEN (eds.) 1988: Pp. 53–92. Summary. – For version in English, see The status of the Iron Age settlement in Denmark. I. M. BIERMA *et al.* *Archeologie en landschap*. [Festschrift to H. T. Waterbolk]. Groningen. Pp. 97–132.
- ILKJÆR, JØRGEN 1985: The weapon find from Illerup and its implications for the explanation of similar finds from Northern Europe. *Frühmittelalterliche Studien* 18, 1984 (1985): pp. 83–90.
- ILKJÆR, JØRGEN & JØRN LØNSTRUP 1982: Interpretation of the great votive deposits of Iron Age weapons. *Journal of Danish Archaeology* 1, 1982: pp. 95–103.

- 1983: Der Moorfund im Tal der Illerup-Å bei Skanderborg in Ostjütland (Dänemark). Vorbereicht. *Germania* 61/1, 1983: pp. 95–116.
- IVERSEN, METTE; ULF NÅSMAN & JENS VELLE (eds.) (forthcoming): *Mammen*. Højbjerg.
- IVERSEN, METTE & JYTTE NIELSEN 1987: Skindersbro. In *Danmarks længste udgravning. Arkæologi på naturgassens vej 1979–86*. Pp. 298–302. Copenhagen/Herning.
- IVERSEN, METTE & JENS VELLE 1986: Kammergravens alder. *Skalk* 1986/6: pp. 3–8.
- JACOBSEN, LIS & ERIK MOLTKE 1941–42: *Danmarks runeindskrifter 1–2*. Copenhagen.
- JANKUHN, HERBERT 1986: *Haithabu. Ein Handelsplatz der Wikingerzeit*. Neumünster. (8th ed.).
- JANKUHN, HERBERT *et al.* (eds.) 1983: *Das Handwerk in vor- und frühgeschichtlicher Zeit 2*. Göttingen (= *Abhandlungen d. Akad. d. Wiss. in Göttingen, Phil.-hist. Kl.* 3 F. 123).
- JANKUHN, HERBERT; KURT SCHIETZEL & HANS REICHSTEIN (eds.) 1984: *Archäologische und naturwissenschaftliche Untersuchungen an Siedlungen im deutschen Küstengebiet vom 5. Jahrhundert v. Chr. bis zum 11. Jahrhundert n. Chr. Band 2 Handelsplätze des frühen und hohen Mittelalters*. Weinheim.
- JANSSON, INGMAR (ed.) 1983: *Gutar och vikingar*. Stockholm.
- 1985: *Ovala spännbucklor*. Uppsala. Summary.
- 1987: Communications between Scandinavia and Eastern Europe in the Viking Age. In DÜWEL *et al.* (eds.) 1987: pp. 773–807.
- JENSEN, ANNA-ELISABETH & ANETTE WILLEMOES 1982: Foulum. *MIV* 11, 1981 (1982): pp. 20–47.
- JENSEN, JØRGEN 1979: *Oldtidens samfund. Tiden indtil år 800*. Copenhagen (= *Dansk socialhistorie* 1).
- 1982: *The Prehistory of Denmark*. London.
- JENSEN, STIG 1978: Overgangen fra romersk til germansk jernalder i Danmark. *Hikuin* 4, 1978: pp. 101–116. Summary pp. 159–161.
- 1982: Stengården. The problem of settlement continuity in later Iron Age Denmark. *Journal of Danish Archaeology* 1, 1982: pp. 119–125.
- 1984: Ribeegnen gennem 10.000 år – et bebyggelseshistorisk projekt. *Mark og Monte* 20, 1984: pp. 5–29.
- 1985: Hvad 100 km læhegn gemte. *Mark og Monte* 21, 1985: pp. 49–54.
- 1986a: Det ældste ribe – og vikingetidens begyndelse. In T. KISBYE & E. ROESDAHL (eds.): *Beretning fra Femte tværfaglige vikingesymposium*. Pp. 7–22. Højbjerg.
- 1986b: Et grubehus fra Darum. *Kuml* 1985 (1986): pp. 111–121. Engl. summ.
- 1987a: Gårde fra vikingetiden ved Gl. Hviding og Vilslev. *Mark og Monte* 1986–87: pp. 5–26.
- 1987b: Pløjelagsarkæologi/Plough-layer archaeology. *Arkæologiske udgravninger i Danmark* 1986 (1987): pp. 9–19.
- JEPPESEN, TORBEN GRØNGAARD 1981: Middelalderlandsbyens opståen. Odense (= *Fynske Studier* 11). Zusammenfassung.
- JOHANSEN, ARNE B. 1979: *Nordisk dyrestil – baggrunn og ophav*. Stavanger (= *AmS-Skrifter* 3). Summary.
- 1981: Nordic animal style – background and origin. *Norwegian Archaeological Review* 14/2, 1981: pp. 118–123. – Comments by H. W. Böhme & B. Magnus pp. 123–134 and by J. Ilkjær, J. Lønstrup & S. Horn Fuglesang in *Norw. Arch. Rev.* 15, 1982: pp. 96–114.
- JØRGENSEN, BENT 1979: *Stednavne og samfærdselshistorie*. Copenhagen (= *Navnestudier* 18). Summary.
- 1980: *Stednavne og administrationshistorie*. Copenhagen. (= *Navnestudier* 20). Summary.
- JØRGENSEN, LARS 1987: Festklædt. *Skalk* 1987/2: pp. 28–29.
- JØRGENSEN, LISE BENDER 1984: North European textile production and trade in the first millenium AD. *Journal of Danish Archaeology* 3, 1984: pp. 124–134.
- 1986: *Forhistoriske tekstiler i Skandinavien*. Copenhagen.
- JØRGENSEN, MOGENS SCHOU 1977: Risby-vejene. *Nationalmuseets Arbejdsmark* 1977: pp. 42–51.
- 1988: Vej, vejstrøg og vejspærring. Jernalderens landfærdsel. In MORTENSEN & RASMUSSEN (eds.) 1988: pp. 101–116. Summary.
- KARLSSON, LENNART 1983: *Nordisk form, om djuvornamentik*. Stockholm.
- KNUDSEN, SVEND AAGE & KAREN THUESEN 1988: Omstridt runesten. *Skalk* 1988/2: pp. 3–9.
- KOSSACK, GEORG; KARL-ERNST BEHRE & PETER SCHMID (eds.): *Archäologische und naturwissenschaftliche Untersuchungen an Siedlungen im deutschen Küstengebiet vom 5. Jahrhundert v. Chr. bis zum 11. Jahrhundert n. Chr. Band 1 Ländliche Siedlungen*. Weinheim.
- KOUSGÅRD SØRENSEN, JOHN, see SØRENSEN, JOHN KOUSGÅRD.
- KRISTENSEN, HANS KRONGAARD 1982: Keramiklagfølge ved Viborg Søndersø. *Hikuin* 8, 1982: 105–114. Summary pp. 253–254.
- 1987: *Middelalderbyen Viborg*. Viby. Summary.
- 1988: Udgravningerne ved Viborg Søndersø. *Hikuin* 14, 1988 [= Festskrift til Olaf Olsen], pp. 9–22. Summary p. 347.
- KRISTIANSEN, KRISTIAN (ed.) 1985: *Archaeological Formation Processes*. Copenhagen.
- KROGH, KNUD J. 1983: The royal Viking-age monuments at Jelling in the light of recent archaeological excavations. A preliminary report. *Acta Archaeologica* 53, 1982 (1983): pp. 183–216.
- KROLL, HELMUT 1987: Zur Bearbeitung der Pflanzenfunde der Ausgrabungen von Kosel, Schwansen (Kr. Rendsburg-Eckernförde). *Bericht der Römisch-Germanischen Kommission* 67, 1986 (1987): pp. 445–453.
- KROMANN, ANNE 1987: Die römischen Münzen von Gudme. *Frühmittelalterliche Studien* 21, 1987: pp. 61–73.
- KRONGAARD KRISTENSEN, HANS, see KRISTENSEN, HANS KRONGAARD.
- KYHLBERG, OLA 1986: Late Roman and Byzantine solidi. In A. LUNDSTRØM & H. CLARKE (eds.): *Excavations at Helgö 10. Coins, iron and gold*. Pp. 13–126. Stockholm.
- LARSEN, ERLING BENNER 1984: Værktøjsspor/på sporet af værktøj. *Kuml* 1982–83 (1984): pp. 169–180. Summary.
- LARSSON, LARS 1982: Gräber und Siedlungsreste der jüngeren Eisenzeit bei önsvala im südwestlichen Schonen, Schweden. *Acta Archaeologica* 52, 1981 (1982): pp. 129–196.
- LAUR, WOLFGANG 1983: Zur Schwedenherrschaft in Haithabu und neuere überlegungen zur Frühgeschichte des Schleswi-

- ger Raumes. *Beiträge zur Schleswiger Stadtgeschichte* 28, 1983: pp. 9–25.
- LIEBGOTT, NIELS-KNUD 1979: Telt, hytte, bod. In *Strejfflys over Danmarks bygningskultur. Festskrift til Harald Langberg*. Pp. 9–22. Copenhagen.
- LINDKVIST, THOMAS 1988: *Plundring, skatter och den feodala statens framväxt*. Uppsala (= *Opuscula historica Upsaliensia* 1).
- LINDQUIST, SVEN-OLOF (ed.) 1985: *Society and trade in the Baltic during the Viking Age*. Visby (= *Acta Visbyensia* 7).
- LÖNNROTH, ERIK 1963: The Baltic countries. In *The Cambridge Economic history of Europe III. Economic organization and policies in the Middle Ages*. Pp. 361–396. Cambridge.
- LØNSTRUP, JØRN 1985: Older and newer theories. The find from Thorsberg in the light of new discoveries. *Frühmittelalterliche Studien* 18, 1984 (1985): pp. 91–101.
- LUND, JØRGEN 1988: Jernalderbebyggelse i Jylland. In NÄSMAN & LUND (eds.) 1988. Pp. 139–168.
- LUND, NIELS 1980: Vikingetid. In N. LUND & K. HØRBY: *Samfundet i vikingetid og middelalder 800–1500*. Pp. 15–75. Copenhagen (= *Dansk socialhistorie* 2).
- 1982: Svenskevældet i Hedeby. *Aarbøger f. nord. Oldk. og Hist.* 1980 (1982): pp. 114–125. Summary.
 - 1984: Review of Olgerdiget. By hans Neumann. 1982. *Fortid og nutid* 31/2, 1984: pp. 155–156.
 - 1985a: Med Clío ad nye veje. *Fortid og nutid* 32, 1985: pp. 114–120.
 - 1985b: The armies of Swein Forkbeard and Cnut: *leding* or *lid*. *Anglo-Saxon England* 15, 1985: pp. 105–115. – For a version in Danish, see Lid og leding. In T. KISBYE & E. ROESDAHL (eds.): *Beretning fra Andet tværfaglige vikingesymposium*. Højbjerg: 1983. Pp. 23–49.
- LUND HANSEN, ULLA. See HANSEN, ULLA LUND.
- MADSEN, HELGE BRINCH 1984: Metal-casting. In M. BENCARD (ed.): *Ribe Excavations 1970–76* 2. Pp. 15–189. Esbjerg.
- MADSEN, HELGE BRINCH & LEIF CHR. NIELSEN 1984: Nørrø Vosborg. En kvindegrav fra ældre vikingetid. *Kuml* 1982–1983 (1984): pp. 181–195. Summary.
- MADSEN, JAN SKAMBY 1984: Et skibsværft fra sen vikingetid – tidlig middelalder ved Fribrødreå på Falster. *Hikuin* 10, 1984: pp. 261–274. Summary p. 356.
- 1987: Dänish-wendische Beziehungen am Schluss des 11. Jahrhunderts vom Fund einer Schiffswerft bei Fribrødreå auf Falster aus beleuchtet. In B. WIBERG (ed.): *Bistum Roskilde und Rügen*. Pp. 71–91. Roskilde: 1987.
- MADSEN, ORLA 1987: Sjældne grave. In *Danmarks længste udgravning. Arkæologi på naturgassens vej 1979–86*. Pp. 330–333. Copenhagen/Herning.
- MADSEN, TORSTEN 1984: Erfaringer med anvendelse af korrespondensanalyse. In L. SPANGE MORTENSEN (ed.): [7.] *Symposium i anvendt statistik, Århus 1984*. Pp. 315–329. Århus.
- 1986: EDB analyserne. In ETHELBERG 1986. Pp. 101–109.
- MAGNUSSON, GERT 1986: *Lågteknisk järnhantering i Jämtlands län*. Stockholm (= *Jernkontorets bergshistoriska skriftserie* 22).
- MAHLER, DITLEV L. 1985: Ragnesminde. *Journal of Danish Archaeology* 4, 1985: 164–167.
- MALMER, BRITA 1985: Circulation of monetary silver in the Baltic during the Viking Age. In LINDQUIST (ed.) 1985: pp. 185–194.
- MALMER, BRITA & KENNETH JONSSON 1986: Sceattas och den äldsta nordiske utmyntingen. *Nordisk numismatisk unionsmedlemsblad* 1986/4: pp. 66–71.
- MALMROS, RIKKE 1986: Leding og skjaldekvad. *Aarbøger f. nord. Oldk. og Hist.* 1985 (1986): pp. 89–139. Summary.
- MÅRTENSSON, ANDERS (ed.) 1976: *Uppgrävt förflutet för PKbanken i Lund*. Lund (= *Archaeologica Lundensia* 7).
- MEIER, DIETRICH 1987: Siedlungen eisenzeitlicher und frühmittelalterliche Siedlungen in Kosel, Schwansen (Kr. Rendsburg-Eckernförde). *Bericht der Römisch-Germanischen Kommission* 67, 1968 (1987): pp. 429–444.
- MEJDAHL, VAGN 1985: *A survey of archaeological samples dated in 1984*. Roskilde: Risø.
- MENGHIN, WILFRIED 1985: *Die Langobarden*. Archäologie und Geschichte. Stuttgart.
- METCALF, D. M. 1984: A note on sceattas as a measure of international trade, and on the earliest Danish coinage. In HILL & METCALF (eds.) 1984: pp. 159–164. – Version in Danish: Danmarks ældste mønter. *Nordisk numismatisk unions medlemsblad* 1985/1: pp. 3–10.
- 1986: Nyt om sceattas af typen Wodan/monster. *Nordisk numismatisk unions medlemsblad* 1986/6: pp. 110–120.
- MILDENBERGER, GERHARD 1978: *Germanische Burgen*. Münster.
- MOBERG, CARL-AXEL 1985: Old runes and new archaeologists. In BACKE *et al.* (eds.) 1985: pp. 229–234.
- MØLLER, JENS THYGE *et al.* (ed.) 1984: *Arkeologi og geofysiske sporingmetoder*. Copenhagen.
- MOLTKE, ERIK 1985: *Runes and their origin*. Copenhagen.
- 1986: Det svenske Hedebyrige og Danmarks samling. *Aarbøger f. nord. Oldk. og Hist.* 1985 (1986): pp. 16–28. Zusammenfassung.
- MONTELIUS, OSCAR 1895–97: Den nordiska jernaldernes kronologi 1–3. *Svenska fornminnesföreningens tidskrift* 9, 1895: pp. 155–274 & 10, 1897: pp. 55–130.
- MORTENSEN, PEDER & BIRGIT M. RASMUSSEN (eds.) 1988: *Fra stamme til Stat i Danmark. 1 Jernalderens samfund*. Højbjerg (= *Jysk arkæologisk selskabs skrifter* 22). Summaries.
- (forthcoming): *Fra Stamme til Stat i Danmark. 2-3*. Højbjerg (= *Jysk arkæologisk selskabs skrifter*). Summaries.
- MÜLLER-WILLE, MICHAEL 1976a: *Das Bootkammergrab von Haithabu*. Neumünster (= *Berichte über die Ausgrabungen von Haithabu* 8).
- 1976b: *Das wikingerezeitliche Gräberfeld von Thumby-Bienebek (Kr. Rendsburg-Eckernförde). I*. Neumünster (= *Offa-Bücher* 36).
 - 1978a: Krieger- und Reiter im Spiegel früh- und hochmittelalterlicher Funde Schleswig-Holsteins. *Offa* 34, 1977 (1978): pp. 40–74.
 - 1978b: Frühmittelalterliche Prunkgräber im südlichen Skandinavien. *Bonner Jahrbücher* 178, 1978: pp. 633–652.
 - 1983a: Königsgrab und Königsgrabkirche. *Bericht der Römisch-Germanischen Kommission* 63, 1982 (1983): pp. 351–412.
 - 1983b: Der Schmied im Spiegel archäologischer Quellen. In H. JANKUHN *et al.* (eds.) 1983: pp. 216–260.
 - 1985: Frühmittelalterliche Bestattungen in Wagen und Wagenkästen. In BACKE *et al.* (eds.) 1985: pp. 17–30.

- 1987: *Das wikingerzeitliche Gräberfeld von Thumby-Bienebek (Kr. Rendsburg-Eckernförde)*. 2. Neumünster (= *Offa-Bücher* 62).
- 1988: Hedeby und sein Umland. In HÄRDH *et al.* (eds.) 1988. Pp. 271–278.
- (forthcoming): Wikingerzeitliche Kammergräber. IVERSEN; NÄSMAN & VELLEV (eds.).
- MÜLLER-WILLE, MICHAEL & KARL-HEINZ WILLROTH 1983: Zu eisenzeitliche und frühmittelalterlichen Besiedlung von Angeln und Schwansen. *Offa* 40, 1983: pp. 275–320.
- MYRDAL, JANKEN 1988: Agrarteknik och samhälle under två tusen år. In NÄSMAN & LUND (eds.) 1988. Pp. 187–220.
- MYRVOLL, SIRI 1985: The trade in Eidsborg hones over Skien in the Medieval period. *Iskos* 5, 1985: pp. 31–47.
- NÄSMAN, ULF 1983: “Mellan skål och vägg”. Om järnåldershusets rekonstruktion. In OLAFSSON (ed.) 1983: pp. 191–220.
- 1984a: *Glass och handel i senromersk tid och folkvandringstid*. Uppsala. Summary.
- 1984b: Zwei Relieffibeln von der Insel öland. *Praehistorische Zeitschrift* 59/1, 1984: pp. 48–80.
- 1986: Vendel period glass in Eketorp-II, öland, Sweden. *Acta Archaeologica* 55, 1984 (1986): pp. 55–116.
- 1987: Hus, landsby, bebyggelse/House, village, settlement. In *Danmarks længste udgravning. Arkæologi på naturgassens vej 1979–86*. Pp. 69–86. In Engl. pp. 457–465. Copenhagen/-Herning.
- 1988a: Analogislutning i nordisk jernalderarkæologi. In MORTENSEN & RASMUSSEN (eds.) 1988: pp. 123–140. Summary.
- 1988b: Den folkvandringstida? krisen i Sydskandinavien. In NÄSMAN & LUND (eds.) 1988: pp. 227–256.
- NÄSMAN, ULF & JØRGEN LUND (eds.) 1988: *Folkevandringstiden i Norden. En krisetid mellem ældre og yngre jernalder?* Aarhus.
- NEUMANN, HANS 1982: *Olgerdiget – et bidrag til Danmarks tidligste historie*. Haderslev.
- NIELSEN, BJARNE HENNING; INGE KJÆR KRISTENSEN & ERNST STID-SING 1986: Vikingegravpladsen Kjølvejen. Undersøgelser i 1985. *Historisk Aarbog fra Randers amt* 80, 1986: pp. 5–16.
- NIELSEN, HELGE 1979: Jernalderfund og stednavnetyper. In H. THRANE (ed.): *Fra jernalder til middelalder*. Pp. 87–98. Odense (= *Skrifter fra Historisk Institut, Odense universitet* 27).
- NIELSEN, INGRID 1985: *Middelalderbyen Ribe*. Viby. Summary.
- NIELSEN, JENS N. 1982: Iron Age settlement and cemetery at Sejlflod. *Journal of Danish Archaeology* 1, 1982: pp. 105–117.
- 1987: Sejlflod. *Skalk* 1987/4: pp. 3–9.
- NIELSEN, JENS N.; LISE BENDER JØRGENSEN; ELMER FABECH & ELISABETH MUNKSGAARD 1985: En rig germanertidsgrav fra Sejlflod, Nordjylland. *Aarbøger f. nord. Oldk. og Hist.* 1983 (1985): pp. 66–122. Summary.
- NIELSEN, JENS N. & MARIANNE RASMUSSEN 1986: *Sejlflod – en jernalderlandsby ved Limfjorden*. Aalborg.
- NIELSEN, KAREN HØILUND 1987: Zur Chronologie der jüngerer Germanischen Eisenzeit auf Bornholm. *Acta Archaeologica* 57, 1986 (1987): pp. 47–86.
- NIELSEN, LEIF CHR. 1981a: Landsbyreguleringer og grubehuse. *Meta* 1981/1: pp. 2–12.
- 1981b: Omgård. A settlement from the Late Iron Age and the Viking period in West Jutland. *Acta Archaeologica* 50, 1979 (1980–81): pp. 173–208.
- 1984: Nogle grave fra yngre germansk jernalder og vikingetid i Sydvestjylland. *Mark og Montre* 20, 1984: pp. 38–48.
- NIELSEN, SVEND 1983: Nogle sider af bebyggelsemønstret og samfundsudviklingen i vikingetidens Danmark. In OLAFSSON (ed.) 1983: pp. 165–176.
- 1985: Karbyudgravningen på Mors. Med nogle betragtninger om den keramiske udvikling i yngre jernalder. *Aarbøger f. nord. Oldk. og Hist.* 1984 (1985): pp. 260–281. Summary.
- NOONAN, THOMAS S. 1985: The first major silver crisis in Russia and the Baltic c. 875 – c. 900. *Hikuin* 11, 1985: pp. 41–50.
- ODGAARD, BENT 1985: Kulturlandskabets historie i Vestjylland. *Fortidsminder* 1985: pp. 48–59. Summary.
- OHLSSON, TOM 1982: Om østdansk boplatstruktur. *Meta* 1982/2: pp. 21–24.
- OLAFSSON, GUDMUNDUR (ed.) 1983: *Hus, gård och bebyggelse. Föredrag från det 16 nordiska arkeologmötet, Island 1982*. Reykjavík.
- OLSEN, OLAF 1975: Nogle tanker i anledning af Ribes uventet høje alder. *Fra Ribe Amt* 1975: pp. 225–258.
- 1980: Tanker i tusindåret. *Skalk* 1980/3: pp. 18–26.
- OLSEN, OLAF & HOLGER SCHMIDT 1977: *Fyrkat. En jysk vikingeborg. I Borgen og bebyggelsen*. Copenhagen. Summary.
- ØRSNES, MOGENS 1966: *Form og stil. Sydskandinaviens yngre germanske jernalder*. Copenhagen. Zusammenfassung.
- 1984: Review of Olgerdiget. By hans Neumann. 1982. *Journal of Danish Archaeology* 3, 1984: pp. 222–226.
- 1988: *Ejsbøl I. Våbenopferfunde des 4.–5. Jhrh. nach Chr.* Copenhagen.
- PÉRIN, PATRICK & LAURE-CHARLOTTE FEFFER 1987: *Les Francs I. A la conquête de la Gaule*. Paris.
- PERSSON, OVE; EVY PERSSON; JESPER BOLDSSEN & HAMPUS CINTHIO 1985: The Löddeköpinge investigation 4. *Meddelanden från Lunds universitets historiska museum*. N.s. 5, 1983–1984: pp. 84–127.
- PETERSEN, JAN 1928: *Vikingetidens smykker*. Stavanger.
- PETERSEN, PETER VANG 1988: Nydam III et våbenoffer fra ældre germansk jernalder. *Aarbøger f. nord. Oldk. og Hist.* 1988: pp. 105–137. Zusammenfassung.
- PORSMOSE, ERLAND 1980: Bondesamfund og riksdannelse – driftsmåder og samfundsorganisation i middelalderens Danmark. In *Teknologi och samhällsförändring*. Pp. 54–82. Oslo (= *Studier i historisk metode* 15). Comments by I. Skovgaard-Petersen pp. 74–76 and K. Lunden pp. 77–81. Discussion p. 82.
- 1981: *Den regulerede landsby 1–2*. Odense.
- RAMSKOU, THORKILD, 1976: *Lindholm Høje. Gravpladsen*. Copenhagen.
- 1980: Vikingetidensbroen over Vejle å-dal. *Nationalmuseets Arbejdsmark* 1980: pp. 25–32.
- 1981: Lindholm Høje. A Danish Viking period field. *Tools & tillage* 4/2, 1981: pp. 98–109. Comments by Grith Lerche pp. 110–116.
- RANDBORG, KLAUS 1980: *The Viking Age in Denmark. The formation of a state*. London.
- 1981: Handel, plyndring eller landbrugseksponering – tre centrale aspekter af vikingetiden. *Historisk tidsskrift* [Dan] 81/1, 1981: pp. 205–218.

- 1988: Byen, magten og jorden: Europa i det første årtusind. In: MORTENSEN & RASMUSSEN (eds.) 1988: pp. 9–19. Summary.
- (forthcoming): *The first millennium A.D.* Cambridge.
- REICHSTEIN, JOACHIM 1975: *Die kreuzförmige Fibel*. Neumünster (= Offa-Bücher 34).
- RESI, HEID GJØSTEIN 1979: *Die Specksteinfunde aus Haihabu*. Neumünster (= *Berichte über die Ausgrabungen in Haihabu* 14).
- RINGTVED, JYTTE 1988: Regionalitet. Et jysk eksempel fra yngre romertid og ældre germanertid. In MORTENSEN & RASMUSSEN (eds.) 1988: pp. 37–52. Summary.
- 1988: Jyske gravfund fra yngre romertid og ældre germanertid. *Kuml* 1986 (1988). Summary.
- ROBINSON, D. & K. KJER MICHAELSEN 1989: Early Viking Age plant remains from Ejstrup, Vendsyssel, Denmark. *Acta Archaeologica* 59, 1988 (1989): 223–228.
- ROBINSON, DAVID E. & PALLE SIEMEN 1988: A Roman Iron Age funerary deposit from Præstestien, southwestern Jutland, and the early cultivation of rye in Denmark. *Antiquity* 62, no 237: pp. 697–703.
- ROESDAHL, ELSE 1977: *Fyrkat. En jysk vikingeborg. 2 Oldsagerne og gravpladsen*. Copenhagen.
- 1978: Otte vikingetidigrave i Sdr. Onsild. *Aarbøger f. nord. Oldk. og Hist.* 1976 (1978): pp. 22–51. Summary.
- 1981: Aggersborg in the Viking Age. In H. BEKKER-NIELSEN; P. FOOTE & O. OLSEN (eds.): *Proceedings of the Eighth Viking congress, Århus 1977*. Pp. 107–122. Odense.
- 1982: *Viking Age Denmark*. London. - Ed. in Danish 1980: *Danmarks vikingetid*. Copenhagen.
- 1983: Fra vikingegrav til Valhal. In T. KISBYE & E. ROESDAHL (eds.): *Beretning fra Andet tværfaglige vikingesymposium*. Pp. 39–49. Højbjerg.
- 1986: Vikingernes Aggersborg. In F. NØRGAARD; E. ROESDAHL & R. SKOVMAND (eds.): *Aggersborg gennem 1000 år*. Pp. 53–93. Herning. Summary pp. 223–224.
- 1987a: *Vikingernes verden*. Copenhagen.
- 1987b: The Danish geometrical Viking fortresses and their context. *Anglo-Norman Studies* 9, 1987: pp. 208–26.
- RØNNE, PREBEN 1986: Gård på vandring. *Skalk* 1986/5: pp. 11–14.
- ROWLEY-CONWY, PETER 1990: Rye in Viking Age Denmark: new information from Øster Ålum, north Jutland. *Journal of Danish Archaeology* 7, 1988(1990): 182–190.
- RYDING, OTTO & STEFAN KRIIG 1985: Kammakeri i medeltidens Lund. *Populär arkeologi* 3/4, 1985: pp. 4–8 & 2.
- SAWYER, BIRGIT 1986: Vad säger runinskrifterna om arv och ägande? In T. KISBYE & E. ROESDAHL (ed.): *Beretning fra Femte tværfaglige vikingesymposium*. Pp. 39–56. Højbjerg.
- 1988: *Property and inheritance in Viking Scandinavia: the runic evidence*. Alingsås.
- SAWYER, BIRGIT; PETER SAWYER & IAN WOOD (eds.) 1987: *The Christianization of Scandinavia*. Alingsås.
- SAWYER, PETER H. 1978: *From Roman Britain to Norman England*. London.
- 1980: Review of Fyrkat 1. By O. Olsen & H. Schmidt 1977 – and Fyrkat 2. By E. Roesdahl. 1977. *Medieval Archaeology* 24, 1980: 275–278.
- 1982: *Kings and Vikings*. London.
- 1988: *Da Danmark blev Danmark*. Copenhagen (= *Gyldendals og Politikens Danmarkshistorie* 3. Ed. by OLAF OLSEN).
- SCHIETZEL, KURT 1981: *Stand der siedlungsarchäologischen Forschung in Haihabu – Ergebnisse und Probleme*. Neumünster (= *Berichte über die Ausgrabungen in Haihabu* 16).
- SCHIETZEL, KURT & OLE CRUMLIN-PEDERSEN 1980: Havnen i He-deby. *Skalk* 1980/3: pp. 4–10.
- SCHJØDT, JENS-PETER (forthcoming): Konge og religion i vikingetiden. Nogle overvejelser om det “sakrale kongedømme”. In IVERSEN; NÅSMAN & VELLE (eds.).
- SCHOVSBO, PER OLE 1988: *Oldtidens vogne i Norden*. Frederikshavn. Zusammenfassung.
- SCHULZE, MECHTHILD 1977: *Die spätkaiserzeitliche Armbrustfibeln mit festem Nadelhalter*. Bonn (= *Antiquitas* 3. Reihe 19).
- SELLEVOLD, BERIT JANSEN; ULLA LUND HANSEN & JØRGEN BALSLEV JØRGENSEN 1984: *Iron Age man in Denmark*. Copenhagen.
- SKAARUP, JØRGEN 1976: Stengade II. *En langelandsk gravplads med grave fra romersk jernalder og vikingetid*. Rudkøbing.
- SKAMBY MADSEN, JAN. See. MADSEN, JAN SKAMBY.
- SKOVGAARD-PETERSEN, INGE 1977: Oldtid og vikingetid. In [Gyldendals] *Danmarks historie 1. Tiden indtil 1340*. Pp. 16–209. Copenhagen.
- 1981: The written sources. In M. BENCARD (ed.): *Ribe excavations 1970–76* 1, 1981: pp. 21–62. Esbjerg.
- (forthcoming): Konge – småkonge – vasal. In IVERSEN; NÅSMAN & VELLE (eds.).
- SØRENSEN, JOHN KOUSGÅRD 1978: Toponymic evidence for administrative divisions in Denmark in the Viking Age. In T. ANDERSSON & K. I. SANDRED (eds.): *The Vikings*. Pp. 133–141. Uppsala.
- 1981: Stednavnene og bebyggelserne: ældre?, samtidige?, yngre? *Fortid og nutid* 29/1, 1981: 91–96.
- 1985: Gudhem. *Frühmittelalterliche Studien* 19, 1985: pp. 130–138.
- STENSBERG, AXEL 1983: *Borup A.D. 700–1400. A deserted settlement and its fields in South Zealand, Denmark*. Copenhagen.
- STEUER, HEIKO 1987a: Der Handel der Wikingerzeit zwischen Nord- und Westeuropa aufgrund archäologischer Zeugnisse. In DÜWEL *et al.* (eds.) 1987: pp. 113–197.
- 1987b: Gewichtsgeldwirtschaften in frühgeschichtlichen Europa. In DÜWEL *et al.* (eds.) 1987: pp. 405–527.
- STILLING, NIELS PETER 1981: Trelleborg-hypoteser. *Scandia* 47/1, 1981: pp. 29–65. Summary pp. 143–144.
- STJERNQUIST, BERTA (ed.) 1981: *Gårdlösa. An Iron Age community in its natural and social setting. 1 Interdisciplinary studies*. Lund.
- 1985: Methodische Überlegungen zum Nachweis von Handel aufgrund archäologischer Quellen. In K. DÜWEL *et al.* (eds.): *Untersuchungen zu Handel und Verkehr der vor- und frühgeschichtlichen Zeit in Mittel- und Nordeuropa. 1 Methodische Grundlagen und Darstellungen zum Handel in vorgeschichtlicher Zeit und in der Antike*. Pp. 56–83. Göttingen (= *Abhandlungen d. Akad. d. Wiss. in Göttingen Phil.-hist. Kl.* 3. F. 143).
- STOKLUND, MARIE (forthcoming): Runesten, kronologi og samfundsrekonstruktionen. In IVERSEN; NÅSMAN & VELLE (eds.).
- STOKLUND, MARIE & ERIK MOLTKE 1979: Runestenen ved Klejtrup sø. *MIV* 8, 1978 (1979): pp. 56–57.

- STOUMANN, INGRID 1984: En stormandsgrav fra vikingetid ved Grimstrup. *Mark og Montre* 20, 1984: 121–123.
- STRAUME, ELDRID 1987: *Gläser mit Facettenschliff aus skandinavischen Gräbern des 4. und 5. Jahrhunderts n. Chr.* Oslo.
- STRÖMBERG, MÄRTA 1981: Tierknochen und Wirtschaftsformen in südschwedischen Dörfern von der jüngeren Eisenzeit bis zum Frühmittelalter. *Offa* 37, 1980 (1981): pp. 122–128.
- 1982: *Ingelstorp. Zur Siedlungsentwicklung eines südschwedischen Dorfes.* Lund/Bonn (= *Acta Archaeologica Lundensia. Ser. in 4^o* 14).
- THOMSEN, PER O. 1987: Lundeberg 1. Havn og handelsplads fra 3. og 4. århundrede efter Kr. *Årbog 1986 for Svendborg & Omegns Museum* 1987: pp. 12–52. Summary.
- 1988: Undersøgelse af havn og handelsplads ved Lundeberg. *Årbog 1987 for Svendborg og Omegns Museum* 1988: pp. 17–29. Summary.
- THORVILDSSEN, ELISE 1983: Dankirke. Die Siedlung. *Reallexikon der Germanischen Altertumskunde* 5/3–4, 1983: pp. 47–60.
- THRANE, HENRIK 1987a: Das Gudme-Problem und die Gudme-Untersuchung. *Frühmittelalterliche Studien* 21, 1987: pp. 1–48.
- 1987b: The Ladby ship revisited. *Antiquity* 61, 1987: pp. 41–49.
- 1988: Import, affluence and cult – interdependent aspects? In HÄRDH *et al.* (eds.) 1988: pp. 187–211.
- TORNBERG, SVEND ÅGE 1985: Bellingegård: A Late Iron Age settlement site at Køge, East Zealand. *Journal of Danish Archaeology* 4, 1985: pp. 147–156.
- TROTZIG, GUSTAF 1985: An axe as sign of rank in a Viking community. In BACKE *et al.* (eds.) 1985: pp. 83–87.
- ULBRICHT, INGRID 1978: *Die Geweihverarbeitung in Haithabu.* Neumünster (= *Die Ausgrabungen in Haithabu* 7).
- VANG PETERSEN, PETER, see PETERSEN, PETER VANG.
- VERHULST, ADRIAN 1987: Der frühmittelalterliche Handel der Niederlande und der Friesenhandel. In K. DÜWEL *et al.* (eds.): *Untersuchen zu Handel und Verkehr der vor- und frühgeschichtlichen Zeit in Mittel- und Nordeuropa. III Der Handel des frühen Mittelalters.* Pp. 381–391. Göttingen (= *Abhandlungen d. Akad. d. Wiss. in Göttingen. Phil.-hist. Kl. 3. F.* 150).
- VIERCK, HAYO 1981: Imitatio imperii und Interpretatio Germanica vor der Wikingerzeit. In R. ZEITLER (ed.): *Les Pays du Nord et Byzance.* Pp. 64–113. Uppsala (= *Figura N.S.* 19).
- 1983: Ein Schmiederplatz aus Alt-Ladoga und der präurbane Handel zur Ostsee vor der Wikingerzeit. *Münstersche Beiträge zur Antiken Handelsgeschichte* 2, 1983/2: pp. 3–64. Summary.
- VOSS, OLFERT 1986: Jernudvindingsanlæg i Danmark fra forhistorisk og historisk tid. *Arkæologiske udgravninger i Danmark* 1985 (1986): pp. 25–30. Summary.
- (forthcoming): Hørning-graven. En kammergrav fra o. 1000 med kvinde begravet i vognfading. In IVERSEN; NÄSMAN & VELLE (eds.).
- WAGNER, PETER 1978: Ved-bestemmelser fra Sdr. Onsild-fundet med forsøg til en kisterekonstruktion. *Aarbøger f. nord. Oldk. og Hist.* 1976 (1978). pp. 57–86. Summary.
- WATERBOLK, H. T. 1982: Mobilität von Dorf, Ackerflur und Gräberfeld in Drenthe seit der Latènezeit. *Offa* 39, 1982: pp. 97–137.
- WATT, MARGRETHE 1983: A Viking Age settlement at Runegård (Grødby), Bornholm. *Journal of Danish Archaeology* 2, 1983: pp. 137–148.
- 1987a: Guldageren. *Skalk* 1987/2: pp. 3–9.
- 1987b: Guldmandenes parade. *Fra Bornholms Museum* 1986 (1987): pp. 67–78.
- 1988: Bornholm mellem romertid og folkevandringstid – status 1985. In NÄSMAN & LUND (eds.) 1988: pp. 257–272.
- WEIBULL, CURT 1977: De danska och skånska vikingatågen till Västeuropa under 800-talet. *Scandia* 43, 1977: 40–69. Zusammenfassung.
- 1984: Om det danska rikets uppkomst. *Scandia* 50, 1984: pp. 5–18. Zusammenfassung. pp. 105–108.
- WELCH, MARTIN B. 1987: Reflections on the archaeological connections between Scandinavia and eastern England in the Migration period. *Studien zur Sachsenforschung* 6, 1987: pp. 251–259.
- WENSKUS, REINHARD 1977: *Stammesbildung und Verfassung.* Cologne (2nd ed., 1st ed. 1961).
- WIDGREN, MATS 1983: *Settlement and farming systems in the Early Iron Age. A study of fossil agrarian landscapes in Östergötland, Sweden.* Stockholm (= *Stockholm studies in human geography* 3).
- WIENBERG, JES 1982: Review of Håndverket i forandring. By Axel Christophersen. *Meta* 1982/1: pp. 18–22. Reply by Christophersen, *Meta* 1982/4 (1983): pp. 21–30.
- WILLROTH, KARL-HEINZ 1987: Siedlungsarchäologische Untersuchungen in Angeln und Schwansen. *Bericht der Römisch-Germanischen Kommission* 67, 1986 (1987): pp. 397–428.
- WILSON, DAVID M. 1978: *Cival and military engineering in Viking Age Scandinavia.* Greenwich.
- WOLFRAM, HERWIG 1988: *History of the Goths.* Los Angeles. (Rev. Engl. ed. of 2nd German ed. 1980 (1st. ed. 1979): *Geschichte der Goten.* Munich).
- WOOD, IAN 1983: *The Merovingian North Sea.* Alingsås.
- WORMALD, C. PATRICK 1982: Viking studies: whence and whither? In R. T. FARRELL *et al.* (eds.): *The Vikings.* Pp. 128–153.
- ZAK, JAN 1977: Kontakte zwischen Skandinavien und Westslawen des 9.–11. Jahrhunderts n. Chr. im Lichte der archäologischen Quellen. *Offa* 32, 1975 (1977): pp. 48–53. Comments by H. Hinz & K. Struve pp. 54–56.
- ZIMMERMANN, W. HAIJO 1981: Die früh- bis hochmittelalterliche Dorfwüstung Dalem, Kr. Cuxhaven. In A. V. DOORSELAER (ed.): *De merovingische beschaving in de Scheldevallei.* Pp. 239–248. Kortrijk.