A Review of the Early Late Neolithic Period in Denmark: Practice, Identity and Connectivity

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Abstract

The focus of this study is the early part of the Late Neolithic Period in Denmark with particular emphasis on impact from the European Bell Beaker culture in the final centuries of the third millennium BC. The history of research is briefly reviewed and the published evidence of domestic and ritual practices and of material expressions are discussed in some detail. The underlying intention is to provide a preliminary conclusion useable as a framework for describing future research potentials and aims.

Flint daggers and various other things and materials enriched with symbolic meanings, culture and knowledge were exchanged over northern central Europe and Scandinavia, but were differentially received locally. The specific cultural and social situation in northern Jutland – associated with a marked concentration of Beaker elements – can best be understood as dependent on a series of internal conditions such as rich sources of high quality flint as well as on interaction with a wider Late Neolithic realm in southern Scandinavia and with late Bell Beaker and affiliated groups in western Europe.

A scenario of competing social identities is presented in which strategies were closely coupled to appropriation of new kinds of material culture and in some measure also new cultural and social practices. External impulses were continuously translated into a local cultural language. Future research into Beakers may benefit from an interpretive approach that combines analyses of archaeological data with social theories about the role of material culture in social practices, identification strategies and cross-cultural connectivity.

Introduction

Some forty years have passed since C. J. Becker's seminal review of the Late Neolithic Period in the 1964 volume of Tor. Becker's intention was to draw attention to this rather neglected period in Danish prehistory, and retrospectively, he had some measure of success. Subsequently, research did intensify and the level of empirical knowledge did increase, resulting in an improved understanding of Late Neolithic culture and society, notably in regard to the role of metals in the renewal of social practices at the threshold of the Bronze Age. Seen from the perspective of future research, it might prove useful at present to outline the history of the research and to gather some of the bits and pieces of empirical data from published sources. The present article seeks to do precisely that. Its foremost concern is the Beaker phenomenon, and only second-

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arily Late Neolithic Culture as the context into which Beakers were adopted. It provides an outline of the history of the research and reviews basic material patterns in order to expand and strengthen the foundation on which interpretation should rest. The overall assessment then provides a background for defining some of the questions and problems that future research confronts, and these are pinpointed throughout the text and addressed in the concluding comment.

Today it is becoming widely accepted that a material culture of Bell Beaker derivation characterised northwestern Denmark in the late third millennium BC, whilst material culture in central and eastern Denmark remained relatively Beaker-free and thus more indigenously Late Neolithic. This situation is a relatively recent development considering the fact that Danish research in 'Bell Beakers' can be traced back at least to the 1940s. Certain spectacular material forms of foreign origin were, it seems, adopted rapidly around 2350 BC and instituted as a highly visible contrast to a local material tradition. Discussions and tentative social interpretations of these material expressions have recently been presented (Vandkilde 1996, 279 ff.; 295 ff.; 2001), however, resulting in a desire to deal with the subject in more detail and thus to re-examine, on the basis of published sources[2], the general cultural attachment of Beakers.

The following account focuses upon Denmark. However, the Scandinavian and European setting is also considered, inasmuch as Beakers and the Late Neolithic form part of a much larger network of culture. Emphasis is on the early part of the Late Neolithic Period, c. 2350–1950 BC, prior to the final breakthrough of a metal-based culture in northern Europe.

A practical remark

Of more practical consequence is the rough distinction between Bell Beakers and Beakers employed in this review, which thereby follows in the footsteps of Ebbe Lomborg (1975, 21). Although the division is not always clear-cut it is nevertheless useful. The terms Bell Beaker and Bell Beaker Culture refer mostly to assemblages with pan-European pottery of a distinct bell-shape with either All-Over-Corded or so-called Maritime decoration. Beakers and Beaker Culture, by contrast, more generally refer to the BB-derived material culture across time and space, and more specifically to pottery derived from, and thus not entirely identical to, Bell Beakers.

The Danish material belongs predominantly to the Beaker category[3], and it is but one of several local Beaker pottery styles derived directly or indirectly from the classic Bell Beaker form in Europe. This terminology is used differently in the Dutch tradition, in which 'Beakers' is a much broader concept encompassing the Corded Ware/Protruding Foot Beakers, Bell Beakers, and various local Bell Beaker derivations.

A Historiography of Research into Beakers in Denmark

Basic discussions

In his classic study of the Jutish Single Grave Culture published in 1945, P.V. Glob (1944, 87 ff.) parenthetically mentioned the pre-

2 For example Aarup Jensen 1972; 1984; 1986; Apel 2001; Asingh 1987; Boas 1986; 1991; Ebbesen 1977; Fabech 1986; Glob 1944; 1952; Johansen 1986; Liversage 1989; Liversage/Singh 1985; Lomborg 1973; 1975; Simonsen 1983; Skov 1969/70; 1982; Wincentz Rasmussen 1990; Vandkilde 1996. For new advances in absolute chronology see Vandkilde 1996,163 ff.; Vandkilde et al. 1996.

3 The vessel from Kirke-Helsinge on Zealand may be classified as a genuine Bell Beaker of the Maritime variety (see illustration in Glob 1952, no. 484).

sence of Bell Beaker-like pottery, i. e. curved-angular beakers with a decoration of zones and/or panels with metopes and triglyfs. At that time their numbers were limited to less than ten pots (groups K1–2), not counting the more subtle external influences detectable in some of the straight-walled beakers (rest of group K). Due to vague find contexts, the precise chronological position of these Bell Beaker-like pots was difficult to establish. Glob (ibid. 89) dated them tentatively to the Upper Grave Period, which is the latest phase of the Single Grave Culture, the Jutish version of the European Corded Ware Culture. He likewise noted a geographical attachment to northern Jutland, although this was not exclusive (ibid. 89–90 fig. 63). Historiographically speaking, Glob's classification constituted a moment of importance by marking the entry of Beaker material culture on the scene of archaeological research.

In the 1950s and 1960s the academic discourse in Denmark dealt only sparingly with Beakers – then classified as Bell Beakers – no doubt due to the small number of finds. Quite typical of the times, it was asked whether or not the presence of these 'Bell Beakers' meant the existence of a proper culture equivalent to a specific ethnic group of people. In this way a Bell Beaker people was potentially added to the already existent assortment of Neolithic peoples in Denmark, each represented by their characteristic pottery or burial style: Funnel-Beaker people, Single-Grave People, and Pitted-Ware People camouflaged as 'cultures' (Glob 1952, 60 f.). The underlying ideas were that distinct material differences corresponded to ethnic dissimilarities and that the appearance of foreign material styles implied the arrival of a new people. Becker (1954, 80), however, argued that the few 'Bell Beaker' objects hardly legitimised an interpretation as a separate people. In contrast to Becker, but still in the spirit of the times, Johannes Brøndsted (1957, 309 f.) interpreted the material evidence in terms of still another wave of migration into Denmark from central Europe during the final Middle Neolithic period. Corded Ware tribes in northwestern Germany were simply forced northward into the Danish Isles by migrating bands of Bell Beaker people in central Europe.

The realisation that something Bell Beaker-like existed in Denmark began to accelerate well over twenty-five years ago with the publication of the Myrhøj settlement (Aarup Jensen 1972). The Myrhøj site – situated close to the Limfjord in Himmerland – helped to specify the typological and chronological position, inasmuch as Beaker pottery appeared here in quantities in a distinct Late Neolithic setting with pressure-flaked flint daggers of a lanceolate shape. The pottery at Myrhøj still retained some resemblance to Upper Grave pottery, thus indicating a date within the earliest Late Neolithic.

Most pottery forms occurring at Myrhøj had been classified previously by Glob and attributed to his B3 and K1–6 groups, which he had dated to the Upper Grave Period prior to the onset of the Late Neolithic. Already in 1959 Becker corrected the dating of B3-beakers to the Late Neolithic Period (Becker 1957). However, Glob's K-group – consisting of curved-angular beakers and straight-walled beakers often with a Bell Beaker-like ornamentation – still represented a dating-problem, but could now be correctly dated through the Myrhøj site (Aarup Jensen 1972). Klaus Ebbesen (1977) has subsequently suggested that some of the beakers of Glob's E, L and P groups also rightly belong in the Beaker tradition of the early Late Neolithic Period.

Myrhøj was a genuine breakthrough for Beaker research. Jens Aarup Jensen's excavation and excellent publication of the Myrhøj

settlement triggered off several new discoveries of Beaker sites, especially settlements (e.g. Simonsen 1983; Boas 1986; Asingh 1987; Liversage 1989; Skousen 1997/98). Even today, Myrhøj, with its three sunken-floor houses, is a key site because of the unusually large number of remains comprising different materials. It became gradually clear that most domestic sites with Beakers showed a geographical attachment to northern Jutland around the Limfjord and on the Djursland peninsula, and also a chronological attachment to an early part of the Late Neolithic Period (Lomborg 1975; Ebbesen 1977; Simonsen 1986; Vandkilde 1990).

Tentative social interpretations

At the threshold of the 1990s the realisation of a fairly constrained geography for Beakers in Denmark invoked tentative interpretations of a social kind. In harmony with the general theoretical discussions of the time the earlier mistake was avoided of identifying archaeological culture with ethnic groups. Archaeological 'culture' was rather used in a neutral manner as a descriptive term for distinct material culture similarities in geographical space. It was realised that material similarities carry little meaning in themselves, but have to be interpreted through their various contexts. Explanations were accordingly sought in the particularity of northern Jutland during the later Neolithic, especially a monopoly-like situation concerning the exchange of flint daggers (Wincentz Rasmussen 1990; Vandkilde 1990). Furthermore, the chronological relationship of Danish Beakers to western and central Europe was specified to the developed Beaker sequence and the Early Bronze Age, respectively (Wincentz Rasmussen 1990; Vandkilde 1990 contra Lomborg 1975).

In the mid 1990s an integrated interpretation was presented which reconsidered the Danish Beakers in their immediate as well as broader cultural context. This study was based on a reorganisation of the archaeological data, in particular the early metal objects (Vandkilde 1996). Northern Jutland was portrayed as an exceptional region with a large-scale production and distribution of flint and with an accumulated wealth of metal items and Beaker symbols. The unusually varied repertoire of grave constructions in the region, and the often personified display of prestige, were taken as evidence of an exceedingly competitive social situation. This state of affairs was thought to be rooted in the preceding Single Grave Culture. It was also related to an advantageous position close to abundant resources of high-quality flint, in addition to new persuasive fashions of social behaviour in Europe. The Beaker presence was, arguably, connected to this complexity of factors[4]. Northern Jutland was as a result regarded as one of several local developments of the western European Beaker phenomenon (ibid. 279 ff.; 295 f.). This way of comprehending the Danish Beakers accords fairly well with European interpretative archaeology of that period (cf. Shennan 1976; 1977; 1982; 1986; Sherratt 1987).

It was becoming increasingly evident that stereotypic explanations of Bell Beakers as a pan-European phenomenon of either a migrating people (e.g. Childe 1958; Sangmeister 1963; 1972) or the symbolic display of social superiority among the elite of indigenous people (e.g. Burgess/Shennan 1976) are somewhat inadequate. More precisely, the nature of Beakers as simultaneously local, regional and European obviously has to be considered. Re-

4 This narrative has recently been remediated by Jørgen Jensen (2001, 505 ff.) in the first grand volume of 'Danmarks Oldtid'.

cently, the present author presented an interpretation of Beakers within a theoretical framework inspired by the French Annales School, whose leading member was Fernand Braudel (Vandkilde 2001; cf. also Lewthwaite 1987). The Annales approach, developed within the neighbouring discipline of history, operates with durative structures on three different temporal levels. In particular, Annales is known for its emphasis on historical structures (*les structures*) on the local or situational level (*événement*), in addition to the medium-term (*conjoncture/moyenne durée*) and the long-term reproduction of the same structures (*les longues durées*). Besides, an effort is made to synthesise history from a holistic or contextual point of view (*histoire à part entière*)(see Carelli 2001, 13 f. with references). What we archaeologically perceive as the Beaker group in northern Jutland was accordingly explained as a series of partly coinciding events on the local and regional level (*conjoncture*), which in a grand historical perspective contributed to the gradual modification of the *longue durée* structure of the European Beaker phenomenon. Society was generally described as competitive with increased status rivalry. A variety of human actions and activities – innovative and traditional, profane and ritual – created the social structure specific to northern Jutland and contributed to the transformation of the structural and historical components of the Beaker phenomenon on a European scale (Vandkilde 2001). This view is in accordance with a multiple perspective of interpretation – clearly needed, but the Braudelian concept of structure is unnecessarily static and deterministic.

Concluding remarks

The above history of Beaker research demonstrates with clarity that an increase in the available data is one precondition for new insight. Incorporation of social theory, however, is another precondition. It is only when combining data and theory that a fertile platform is made for producing knowledge, which in turn is a precondition for new relevant inquiries, and so forth. A vast potential exists for gaining genuine insight into Beakers as a particular and at the same time widespread, cultural phenomenon. The reason is twofold: theoretical developments in archaeology have only just begun and detailed primary studies of Beaker material culture in context still await.

Recent Late Neolithic Studies and Trends

Denmark

Myrhøj became historiographically significant also in a more general sense. From then on the discussion of Beakers became inevitably connected to the Late Neolithic Period. Almost contemporary with the Myrhøj publication, and some ten years after Becker's appeal in Tor (1964), Ebbe Lomborg published 'Die Flintdolche Dänemarks' (1973), which is still a major source of Late Neolithic Culture in Denmark. Here he classifies and chronologically orders the Late Neolithic hallmark, the pressure-flaked flint dagger, into types and subtypes, hence continuing Sophus Müller's studies (1902) in the same field. An excellent overview of Late Neolithic burial customs accompanied Lomborg's presentation of flint

daggers. It should for source-critical reasons be noted that only graves containing flint daggers are included in Lomborg's analysis of the burials. In addition, the chronological relationship with contemporaneous cultures in central and western Europe was competently sketched out and even today broadly holds true although a later adjustment of the Beaker component proved less applicable in detail (Lomborg 1975).

Lomborg's chronological division of the Late Neolithic into the LN A–C sub-phases did not remain uncontested. Several scholars have remained sceptical towards the middle phase, LN B, which is defined on the basis of flint daggers of types II and III (Madsen 1978; Wincentz Rasmussen 1990; Rassmann 1993; Vandkilde 1996; Apel 2000; 2001). Flint dagger types I and II appear to be geographically separated, but broadly contemporaneous, whereas the main break in the dagger sequence seems to occur between types III and IV. By consequence, the present author has suggested dividing the Late Neolithic Period into an earlier period, LN I (flint dagger types I–III), and a later period, LN II (flint dagger types IV–V). This bipartite division with type III as transitional is used below.

The periodization into LN I–II certainly suits the chronological ordering of metal objects (Vandkilde 1996), but it might well be too crude for understanding changes in for instance flint axes, pottery and houses. Sticking to the Lomborg-division into three phases will on the other hand not promote understanding. Rather, new chronological insight will emerge from future studies in pottery, as suggested already by pilot studies of especially later Single Grave pottery (Simonsen 1986; cf. also Hansen 1986; Hvass 1986). The latter studies suggest that regional variations in pottery style might continue into the Late Neolithic (cf. Simonsen 1986, 149 f.) perhaps corresponding to regional differences in grave constructions and burial customs[5].

Houses and settlements have recently received more attention than other Late Neolithic find categories, and this relates to the fact that these structures – in contrast to other Late Neolithic remains – are being excavated on an increasing scale. The earlier lack of settlement evidence is thus now being compensated for. In fact, Poul Otto Nielsen (1997, 16 ff.; 2000, 156 ff.) has been able to overview and assess the southern Scandinavian long-houses. These all have a single row of roof-bearing posts, and are with or without sunken floors in what was presumably the byre in the east end of the house. Per Ethelberg (et al. 2000, 165 ff.) has similarly attempted to generalise house features in southern Jutland. These surveys of the settlements relate to and expand on earlier publications of settlements (e.g. Simonsen 1983; Boas 1986; 1991; Ethelberg 1986).

A recent survey of flint mining activities in northern Jutland (Becker 1993) adds considerably to our knowledge of this specific field and therefore potentially to our understanding of the relationship between high-quality flint resources, settlement organisation and the materialization of a particular northern Jutish region. A recently excavated settlement at Bejsebakken adjacent to a major flint mining area suggests some kind of dynamic between the mining of flint and nearby settlements (Sarauw in press).

Reintroduction of metallurgy is inevitably tied to the Late Neolithic Period. It has fairly recently been examined in its entirety, taking into account the immediate and more remote cultural context – i.e. materials and features other than metal objects (Vandkilde 1996). It is noteworthy that a tentative metallurgy based on

5 The results of the Thy Project and David Liversage's concluding examinations of sequences of Beaker settlements at Lodbjerg Klit (cf. Liversage 1989) are awaited with anticipation in regard to the establishment of a pottery chronology, as well as to a whole range of questions of a social and economic kind.

gold hammering, and probably also copper casting, characterises LN I (ibid.).

A series of other objects and features has also been examined. Becker has drawn attention to the pressure-flaked flint spearheads with a toothed edge (Becker 1956), which date to the middle of the Late Neolithic. They may have had practical functions relating to the hunting of porpoise (Andersen 1971–96). Lomborg (1959) has studied miniature daggers and strike-a-lights. Nielsen (1974) has examined the so-called feeding knives showing pressure-flaking technique used on a blade pre-form. Ebbesen (1983, 25 f.) has presented a typology of pressure-flaked spearheads and separated some Late Neolithic flint axe types (Ebbesen 1986). Peter Vang Petersen (1993) has recently published an excellent presentation of the repertoire of flint axes, chisels and pressure-flaked flint objects, including their dating, insofar as this is possible without a primary analysis. Dress ornaments in different materials have likewise been examined (Ebbesen 1983; 1995; 2004; Schiellerup 1991). In addition, singular burial sites and specific, often regionally constrained, types of grave constructions have been published (e.g. Liversage 1964; Sørensen 1981; Ebbesen 1983; Fabech 1986; Schiellerup 1991; Hansen/Rostholm 1993; Hansen 1993/94 with references). Lomborg' s 1973 study is, however, still the most recent serious attempt to obtain a general overview of Late Neolithic grave constructions.

Norway, Sweden and Germany

Publications of Late Neolithic material culture outside Denmark are central to this review primarily because they represent a broader context into which the Danish evidence needs to be inserted. Several studies may be mentioned. With Lomborg's results as his point of departure, H. J. Kühn (1979) has surveyed Late Neolithic Culture in Schleswig-Holstein, in particular flint daggers. Knut Rassmann (1993) has made an important general contribution to our understanding of the Late Neolithic in the lowlands of north-eastern Germany. Jörn Jacobs (1991) has included aspects of Late Neolithic Culture in his survey of Corded Ware Culture in Mecklenburg-Vorpommern. Bergliot Solberg (1994) has assessed the considerable import of flint daggers to western Norway. Besides, Christopher Prescott has on several occasions discussed the Norwegian evidence, which demonstrates close contact with Jutland (Prescott/Walderhaug 1995; Prescott 1995 a; 1995 b; 1996).

The Swedish contribution is fairly extensive. Mats Malmer (1962) has, although parenthetically, included the Late Neolithic in Sweden in his 'Mittelneolithische Studien'. In several Scanian studies, Märta Strömberg (1952; 1971 b; 1975; 1983/84) has drawn attention to the varied nature of Late Neolithic burial customs based on the three categories of flat grave cemeteries, the reuse of passage graves, and the building and reuse of gallery graves. A good overview of the distribution of gallery graves in Sweden is available in B. O. H. Johansson's article (1961, 8), which shows a particularly marked concentration of these in south-western Småland. The middle Swedish gallery graves have, moreover, inspired young scholars working within an interpretative framework: Curry Heiman (2000), Björn Nilsson (2003) and Peter Skoglund (2005).

Through a systematic analysis of the settlements at Fosie IV Nils Björhem/Ulf Säfvestad (1989) have considerably improved on our

understanding of Late Neolithic settlement size and circulation patterns in western Scania. This work also draws together Scanian settlement data published, for instance, by Strömberg (1971 a; 1991/92). Björhem has synthesised the evidence in a zone model of the human occupation of the cultural landscape (in Rudebeck et al. 2001, 37)(cf. fig. 3). Jenny Holm, Eva Olsson and Eva Weiler have recently made a synopsis as regards east central and western Sweden (Holm et al. 1997; also Weiler 1994). Per Lekberg (2000) has initiated a contextual study of the often neglected, but very large group of simple shaft-hole axes. They are analysed from a life-cycle point of view and as evidence of an agricultural expansion during the Late Neolithic Period. Per Karsten's (1994) intensive study of sacrificial rituals connected to Neolithic flint items in Scania should also be mentioned, since it includes the Late Neolithic Period.

Lastly, Jan Apel (2000; 2001) has studied the production and consumption of flint daggers throughout northern Europe from a combined technological and social perspective. Apel concludes that Scandinavian flint daggers were consumed over a very large region from the lower Rhine in the west to Pomerania in the east, and from central Germany in the south to southern Norway in the north. In more rare cases, flint daggers even occur outside this region (Apel 2001, 328). It is surely significant that Beaker material culture is found mainly in the western part of this region as pockets of Beaker Culture or, to put it otherwise, in association with the production and consumption of type I flint daggers.

Concluding remarks

Most studies provide partial or fragmentary evidence in that they focus upon a limited geographical region, singular sites, and/or a selected category of material culture. Funerary rituals, pottery, sacrificial depositions, pressure-flaked flint items other than daggers, amongst others, still lack comprehensive study or updating[6]. Few studies attempt to integrate these materials into social syntheses of local, regional and super-regional relevance. Interpretations have generally remained at a low level, but much less so in Sweden and Norway than in Denmark and Germany.

Lomborg's thesis from 1973 was the first more wide-ranging study of Late Neolithic Culture and still provides a good overview of flint daggers and burials with flint daggers. Notably, Karsten's study of Scanian offerings of flint objects still lacks a Danish counterpart. Nielsen's (2000) recent synopsis of the settlement material is, on the other hand, valuable in drawing together this find category. Furthermore, studies of metal items and flint items, by Vandkilde (1996) and Apel (2001) respectively, are fairly exceptional in seeking to unite the small-scale with the large-scale in an empirical as well as interpretative sense. Based on published sources, the following sections attempt to assess early Late Neolithic Culture and Beakers.

Outline of Late Neolithic Chronology

The Late Neolithic Period may be divided into an early phase and a late phase based on flint daggers, as described above (fig. 1). LN I and II differ markedly from each other. LN I still relates to the pre-

6 'Arkæologiske Udgravninger i Danmark' (AUD) with access to newly excavated sites and finds provides a good starting point. So does the national database of antiquities (DKC), which has not been consulted for the present study.

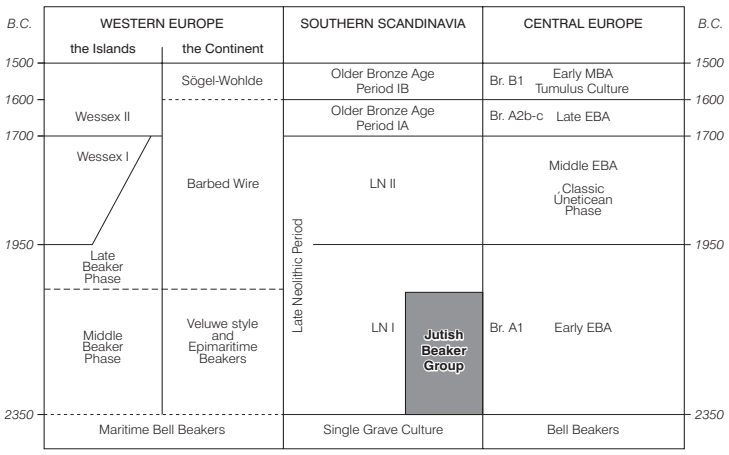


Fig. 1. Chronological relationship between southern Scandinavia, central and western Europe, including Beaker cultures, in the late 3rd and first half of the 2nd millennium BC.
Abb. 1. Chronologische Beziehungen (einschließlich der Becherkulturen) zwischen Südskandinavien, Mittel- und Westeuropa im späten 3. Jt. und der ersten Hälfte des 2. Jt. v. Chr.

ceding Neolithic periods, whereas LN II is more closely attached to the earliest Bronze Age. A relatively large number of radiocarbon dates exists for the later Neolithic in Denmark, and these have recently been archaeologically and statistically assessed, hence allowing for qualified suggestions as regards beginning and end points of phases and periods and their floruit (Vandkilde 1996; Vandkilde et al. 1996).

From the Upper Grave Period of the Single Grave Culture only seven dates exist. This is unfortunate since it complicates an estimation of the end of the Single Grave Culture. There is considerable agreement between the end of the Bottom Grave Period–Ground Grave Period and the beginning of the Upper Grave Period, the transition being c. 2460 BC. At the opposite end, the latest Upper Grave dates overlap with the Late Neolithic Period: the total duration of the Upper Grave Period apparently being between 2460–2130 BC whereas the Late Neolithic Period begins at c. 2350 BC.

Whether this overlap is real or merely due to the few Upper Grave dates not being representative cannot be decided at present. However, as suggested below, it is likely that a 'Single Grave tradition'[7] continued for a while in the remainder of Denmark, after the onset of the Late Neolithic Culture in northern Jutland. Some degree of overlap in absolute dating should thus be anticipated. Well over thirty radiocarbon dates have been recorded from LN I. The beginning of LN I can thus be firmly dated to c. 2350 BC, at the same time indicating the gradual disappearance of the Single Grave Culture. LN I lasted around 400 years, until c. 1950 BC, whereas LN II concluded around 1700 BC. Most early dates, however, derive from Beaker sites in northern Jutland, suggesting that Beakers belong predominantly in the earlier LN I. It may then initially be asserted that Beakers date to LN I, and especially to an early part of this first Late Neolithic period.

LN I Material Culture

Geography

A distinct Late Neolithic material culture is widely distributed in southern Scandinavia, in addition to northern Germany – Schleswig-Holstein, Mecklenburg-Vorpommern, and the Elb-Weser triangle – and central Scandinavia including southern Norway and

7 'Single Grave tradition' here should not be taken too literally, since the cultural affiliation of MN B in central and eastern Denmark is largely unexplored.

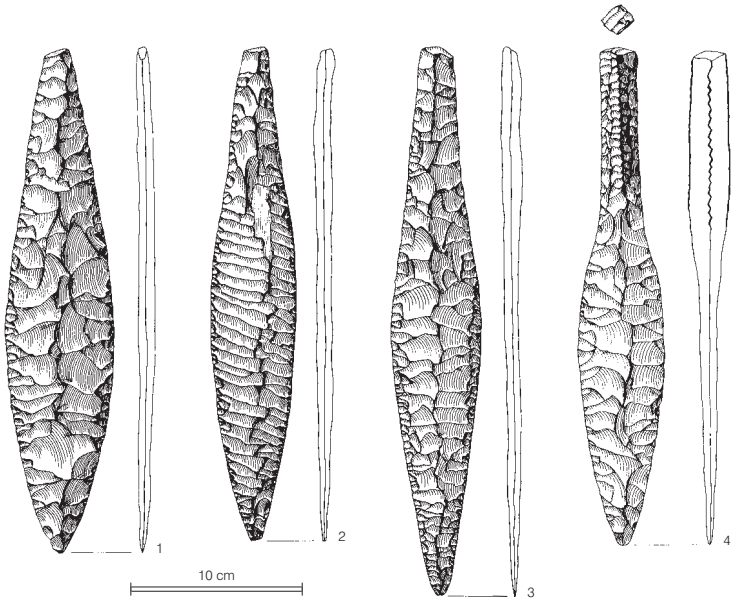


Fig. 2. Pressure-flaked lanceolate flint daggers dating to LN I. 1 Subtype Ib (the most numerous dagger type in northern Jutland). 2 Subtype Ic (primarily from burials in northern Jutland). 3 Type II (primarily eastern Denmark). 4 Type III (even distribution, transitional to LN II) (after Vang Petersen 1993).
Abb. 2. Flächenretuschierte lanzettförmige Flintdolche des Spätneolithikums I. 1 Variante Ib (der häufigste Dolchtyp in Nordjütland). 2 Variante Ic (vorwiegend aus Gräbern in Nordjütland). 3 Typ II (vorwiegend im östlichen Dänemark). 4 Typ III (gleichmäßige Verbreitung, Übergang zu Spätneolithikum II) (nach Vang Petersen 1993).

central Sweden. This region shares material similarities in regard to pressure-flaked flint objects[8], burial customs, the first metallurgy, sacrificial rituals often connected to watery places, and the style of dress, pottery and houses. However, the uniformity in cultural expression exists mainly on a general level, and some material culture traits – such as house building styles – extend into a wider central European realm. Within this major region of Late Neolithic Culture variations in the relative frequency of, and thus the combination of, material symbols denote differences in cultural identity. These differences must have been obvious – though not merely with an restrictive effect on action and cognition – to people crossing cultural boundaries. The following brief account is based mainly on Danish evidence, but with modifications it is applicable to the whole area of Late Neolithic Culture.

Flint items

The pressure-flaked repertoire of flint items includes two completely new weapon types, the dagger (fig. 2) and the spearhead. It also includes a functional improvement of the arrowhead, which is now small and triangular, most often with a distinctly concave basis; or much more rarely, it is barbed and tanged. It is conceivable that these new weapon forms had functions and symbolic meanings related to the presentation of social identity in the fields of gender, rank and warfare. The complex technological knowledge related to the making of flint daggers must have taken some time to acquire, since particularly the finishing stages of manufacture demanded a very skilled craftsman in advanced flint-knapping and pressure-flaking techniques (Olausson1997, 274 ff.; Apel 2000; 2001, 24 ff.). Especially the parallel-retouched subtype IC is technically demanding and time-consuming to create (see fig. 2, 3).

Apel (2001, 42; 323 ff.) has convincingly argued that an institutionalised apprenticeship system must have existed which was based on the acquisition and transfer of practical and intellectual knowledge through generations. It is thus likely that craftsman-

8 See illustrations and comments on the phenomenon of pressure-flaked flint items in Glob (1952, nos. 495 ff.), Lomborg (1973), Ebbesen (1983; 1986), Vang Petersen (1993, nos. 91 ff.; 204 ff.). For daggers outside Denmark see studies by Agthe (1989), Kühn (1979), Rassmann (1993), Weiler (1994), Solberg (1994), von Carnap-Bornheim/Salac (1996), and Apel (2000; 2001) with further references.

ship was transmitted by inheritance in certain families living in the vicinity of abundant resources of high-quality flint. Debbie Olausson's (1997) examinations indicate that flint knapping activities, particularly the manufacture of daggers, reflect a relatively low degree of craft specialisation, probably in the form of a division of labour between households.

The introductory phase of the manufacture and use of flint daggers, around 2350 BC, must all in all be characterised as a period of social change. However, assessed in a temporal perspective flint daggers and their technologies hold a strong notion of material reproduction of the same form; hence they were important components in habitual activities that in the long run served to reproduce society rather than change it.

Pottery, metals and dress accessories

Late Neolithic pottery is lacking in ornamentation, variability and sophistication (e.g. Schiellerup 1991, 48 ff. with references), notably excepting northern Jutland. The plain pottery known from burials and settlement sites does not exhibit creative efforts and must have held connotations entirely different from, for instance, flint daggers and metal objects. The ware often has a rough texture, the pot wall is often thick, pot shapes are simple, and decoration, if any, consists of incised or impressed 'barbed wire' patterns, horizontal grooves or ridges in addition to an applied thick horizontal band below the rim. The subject is difficult due to the fact that Late Neolithic pottery is insufficiently studied, and so far chronological groupings are not distinguishable.

In east central Sweden and western Sweden, barbed wire decoration characterises the period 2460–1990 BC, whereas pots with a thickly applied clay band – so-called *vulst* in Danish – date to the period 1950–1780 BC (Holm et al. 1997, 220). Whether the ceramic sequence in central and eastern Denmark holds similar traits remains to be examined.

Various types of slate pendants, amber beads, bone dress pins, and amber and bone buttons frequently occur (see Glob 1952). They imply together with finds of loom weights the adoption of European-style woven wool clothes kept together by pins and buttons in contrast to the earlier usage of clothing made of leather and plant fibres (Bender Jørgensen 1992, 114; Ebbesen 1995; 2004).

Indeed, the Late Neolithic Period is increasingly characterised by the manufacture and utilisation of metal, but it is only from the onset of LN II that metallurgy became an integrated part of social life. The first introduction of metallurgy in Denmark is nevertheless intimately related to the Beaker representation (see below). These early metal objects usually ended their life-cycle by being deposited ritually in watery places or near the burials of ancestors, but only occasionally did they form part of these interments.

Houses, landscape and settlements

Two-aisled timber houses with and without a sunken floor form a characteristic constituent of Late Neolithic Culture in Denmark (Nielsen1997, 16 ff.). Similar houses characterise the remainder of southern Scandinavia (e.g. Björhem/Säfvestad 1989) and at least

parts of central Scandinavia (Johnson/Prescott 1993; Jan Apel pers. comm.) and lowland northern Germany (Zich 1993/94). In Denmark this mode of building houses is clearly rooted in a Middle Neolithic tradition (Nielsen 1997, 24 ff.; 2000).

The dispersed settlement pattern of the Older Bronze Age is apparently rooted in the Late Neolithic Period (Nielsen 2000, 163), as is the specific settlement organisation of single farms occupying a fairly large territory with basic subsistence resources and the family burial ground (cf. Mikkelsen 1996). In the Malmö region of southwestern Scania, the Late Neolithic Period is radically expansive seen in a general Neolithic perspective, not least after 2000 BC when the coastal zone became permanently settled and settlements multiplied in the main inland zone not far from the coast line (fig. 3). It remains to be seen whether a similar settlement expansion took place in Denmark. Growing population density and the expansion of settled land as assessed from large find quantities and find distributions characterise the Late Neolithic Period (Mathiassen 1948, 83; Jensen 1982, 139 fig. 40; Skårup 1985, 387; 398; Berglund 1991, 117; 177; 225 f.; 250), hence constituting evidence of intensified economic activity. This is generally confirmed in pollen diagrams, mostly from Jutland. Large areas of forested land were cleared to be used for pasture and the growing of cereals during the Single Grave Culture and in the Late Neolithic Period. The deforestation was accompanied by minor climatic changes with increased humidity (Andersen 19992/93, 75 f.).

A remarkable conclusion is that Late Neolithic house building styles were shared over large areas of northern and central Europe (Nielsen 2000,161 f.). Towards the transition to LN II some farm houses became extraordinarily large, and it is conceivable that this relates to the emergence of a new flamboyant life style among the elite, who in the quest for metals, among other things, participated in power networks extending over large parts of Europe north of the Alps (Vandkilde 1996).

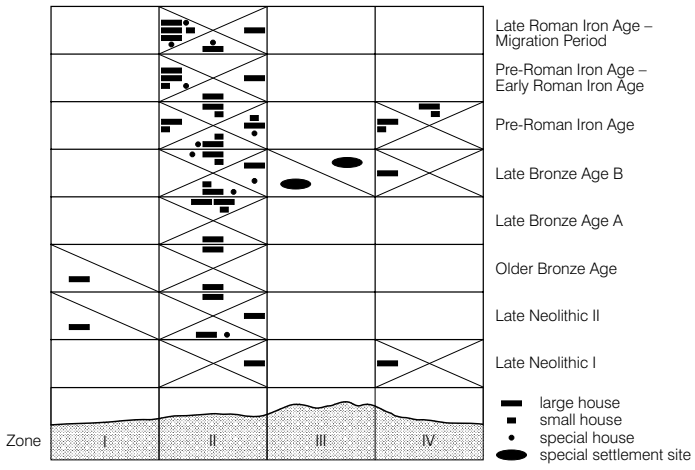


Fig. 3. Settlement patterns through time in the four zones defined by Nils Björhem for the Malmö region in Scania. Note the quantitative and qualitative difference between LN I and LN II (after Rudebeck et al. 2001).
Abb. 3. Siedlungsmuster vom Spätneolithikum I bis in die Völkerwanderungszeit in den von Nils Björhem für die Region um Malmö in Schonen definierten Zonen I–IV. Zu beachten ist der quantitative und qualitative Unterschied zwischen Spätneolithikum I und II (nach Rudebeck et al. 2001).

Sacrificial rituals

In LN I metal depositions are in absolute minority compared to flint depositions, but this relationship changed at the transition to LN II. From the onset, the ritual practice of depositing metalwork closely follows the traditional practice depositing flint artefacts: both materials divide into single depositions, one-typed and multi-typed hoards and both are predominantly associated with wetlands. Likewise, a clear structure exists in which the quantity and quality of the deposited objects gradually increase from single depositions to multiple hoards. Moreover, single depositions were widespread, whereas multiple hoards were the rarest and most exclusive group (cf. Karsten 1994, 49 ff.; 183; Vandkilde 1996, 33 ff.; 259 ff.; 1999 a).

A flint hoard from a bog area at Flade near Fredrikshavn in northern Jutland (Hatt/Schreiber Pedersen 2000) belongs to the rare group of multiple hoards in LN I. This particular deposition illustrates the variety of implements in LN I: the lanceolate pressure-flaked flint dagger, the asymmetrical pressure-flaked sickle, the hollow-edged flint chisel, various types of broad-edged flint axes, and the round-butted shafthole axe of green stone. The extraordinary character of the Flade hoard is emphasised by the presence of parallel-retouched flint daggers of subtype IC (ibid.). The sacrificial activities in wetlands are, it seems, intensified in LN I and this might also be true for the less well-known group of house offerings (Karsten 1994; Björhem/Säfvestad 1989, 57 ff.; 108).

The cultural meanings of sacrificial rituals need not be commented on here in any detail – the interpretative literature is vast. However, liminal places, transitional rites, gifts to the gods, potlatch and prestige building easily come to the mind. The durative and repetitive character of the acts should be noted, with time lines reaching far back into the early Late Neolithic. The habitual character of these acts emphasises their reproductive effect on culture and society. It is often forgotten that what we have are merely fragments of rituals – i.e. the final act of a flow of activities, in which several people may well have participated. Moreover, the deposited objects surely carried various connotations of meaning during their life time (cf. Vandkilde 2000): an interesting aspect is thus that through the transitory ritual this materialised memory of the past was converted into immaterial history.

Burial customs[9]: perceptions of death and the human body

Burials may be carried out as routine actions confirming society 'as the way things should be done' , or they may be strategic actions questioning the very foundation of society, but in both cases they classify as political statements. Late Neolithic customs are locally varied. The variation typically emerges from three main tomb categories: the first two comprise open constructions of passage graves and grave cists – the latter consisting of gallery graves of flat stone slabs, and more rarely, it seems, of wood. The third category comprises closed constructions of stone coffins and earthen graves. The last-mentioned category often has a stone bedding for what was presumably a trunk or coffin made of wood planks, in addition to a covering of field stones. Chronologically, all three categories seem to exist throughout the Late Neolithic Period.

9 The description of Late Neolithic burial customs builds mainly on Becker 1936; Ebbesen 1995, 250 ff.; Hansen/Rostholm 1993; Hansen 1993/94; Kjær 1910; Lomborg 1973, 96 ff.; Strömberg 1952; 1983/84; Schiellerup 1991; Edenmo 2000; Simonsen 1978; Sørensen 1981.

The body of the deceased was normally arranged lying on its back in an extended position, but a contracted position (hocker) occurs occasionally. Material objects only sometimes accompany the dead person, and rarely in large quantities: flint daggers, arrowheads, spearheads, flint axes and chisels, and pottery are encountered together with dress accessories such as pins of bone and metal, buttons and beads of amber and bone, slate pendants, and copper/bronze rings. It is conceivable that specific types of objects, and their combinations, mediated social identities of rank, age and gender, but this is a very neglected field of research. Sometimes traces and spots of burnt materials, small pits with burnt material, and partly burnt skeletons are reported in Late Neolithic burials (Schiellerup 1991, 51; Hansen/Rostholm 1993, 117), and this obviously ought to receive more attention. Offering rituals associated with funerary and post-funerary situations equally deserve study.

The open constructions of passage graves and grave cists were burial chambers for recurring interments. The reuse of passage graves was perhaps the most frequent mode of burial during the Late Neolithic Period. The building of new megalithic grave cists, and the ideas and functions attached to them, must surely be assessed on the background of pre-existent megalithic constructions in the landscape. The latest burial was only kept individualised, and in order, until a new burial was instituted. The skeletal parts – and associated objects – were then swept into an ancestral bone heap at the rear of the chamber, merely pushed aside, or moved out of the chamber into a floor pit in the entrance section. Open constructions were usually covered by a barrow, and access was repeatedly gained through the temporarily sealed entrance section.

Closed constructions, by contrast, tend to be one-person graves, but double and multiple burials also occur. They were not meant to be accessed after closing. In Jutland, closed grave constructions were usually covered by a new barrow or inserted into an old one, thus continuing the burial custom of the Single Grave Culture. In eastern Denmark, closed graves occur more commonly in flat grave cemeteries, while in Scania they occur primarily in flat grave cemeteries. This is a continuation of the burial custom characterising the Scanian Battle-axe Culture, and frequently cemeteries initiated in the Battle-axe Period continue into the early Late Neolithic.

Based on the funerary evidence of burials in open and closed constructions, two overlapping cultural traditions in the perception of death and the human body may be outlined (cf. also Hansen 1993/94, 88). It should, however, be stressed that on the local level of geography they sometimes exclude each other and in other cases they co-exist, even on the same burial ground. In one tradition the human body is seen as having an autonomous existence only in life and in the liminal phase between life and death. Thereafter the human body becomes an indistinguishable part of the group of ancestors. This entanglement in the perception of the present and the past, and of the individual and the group, suggests that considerable importance is attached to group sociality. In the other tradition the human body is regarded as having an autonomous existence beyond death and in all eternity – i.e. each individual grave is the materialised remembrance of a personified ancestor. The display of personhood even in death among the latter tradition suggests that individual agency was a recognised part of society.

Flint production areas and distribution of pressure-flaked flint objects

Flint production and distribution are regionally biased. LN I is chronologically defined on the basis of pressure-flaked, lanceolate shaped flint daggers, which varies between daggers with and without pronounced hilt. The three main types (see fig. 2; Lomborg 1973) have partly different geographical and chronological positions within the LN I Period (Madsen 1978; Rassmann 1993, 26 ff.; Vandkilde 1996, 13 f.; Apel 2000; 2001).

In its Danish distribution, the type I flint dagger – without pronounced hilt and typologically the earliest – is prevalent in northern Jutland around the Limfjord and on Djursland. It thus coincides with abundant sources of high-quality flint in the same region and with intensive mining and utilisation of this flint (Becker 1993). Type II (including subtype ID) – with a faintly marked hilt – is roughly contemporaneous with type I, but began later. It may be said that the flint dagger of type II is preconditioned by type I, in the same way as type I is modelled on tanged flat copper daggers of Beaker type. Type I then served as a model for type II, which is prevalent in the southeastern part of Zealand including Møn and Falster, thus coinciding with the rich sources of flint in this region. Flint daggers of type III, which have a pronounced hilt, are typologically transitional to fishtail-hilted flint daggers of the LN II Period. Type III definitely dates from late in LN I, at the transition to LN II. Similar to later flint dagger types, type III has an even geographical distribution, although most hoards with this dagger type are situated in the southeastern flint region, suggesting this to be the main production area (cf. Lomborg 1973, figs. 25–28). However, the many type III daggers in Mecklenburg-Vorpommern and Scania should be considered too.

LN I flint daggers, and in particular hoards with such daggers, are then rather closely tied to two separate regions of high-quality primary flint in Denmark, one in northern Jutland and another in southeastern Zealand, Møn and Falster (fig. 4; 13). Apel's (2001, passim, fig. 9, 16–17) recent studies strongly suggest that these two regions produced the main bulk of flint daggers during LN I. From the production area in northern Jutland daggers were directly exchanged towards the north, across Skaggerak and Kattegat, into southern Norway and central Sweden, and towards the south, into southern Jutland and the entire north German lowland region. By contrast, from the production area in southeastern Denmark daggers went across the Øresund into Scania and central Sweden and across the Baltic into the north German lowlands (fig. 5; ibid.). It remains to be seen how areas of production and consumption conform and diverge in analyses of funerary rites, burial practices, sacrificial offerings, and the domestic domain; in short the immediate and wider context of flint daggers. Complex material patterns may be anticipated to emerge, which in turn will require quite a lot of intellectual labour to interpret.

The production area in northern Jutland is the first one to take up manufacture of lanceolate flint daggers (type I). The flint dagger of type I is a completely new material form without local antecedents in flint. The technique of pressure-flaking[10] was probably not autonomously developed in northern Jutland, but was eagerly adopted. Flint knapping expertise was surely present from an early date due to an old tradition in this region of exploiting the natural flint resources and of producing and distributing larger

10 The first pressure-flaked flint objects appeared in the latest Single Grave Culture (Corded Ware), but sparingly. So-called feeding knives, which probably served as daggers (Nielsen 1974), and slender willow-shaped tanged arrowheads (Vang Petersen 1993, nos. 121–122; Larsson 2000) represent the first experiments with this technique, which presumably reached southern Scandinavia from late Corded Ware and early Bell Beaker groups in central and western Europe. It is only with the onset of the Late Neolithic Period that pressure-flaking became really common, and this may relate to the adoption of the dagger fashion.

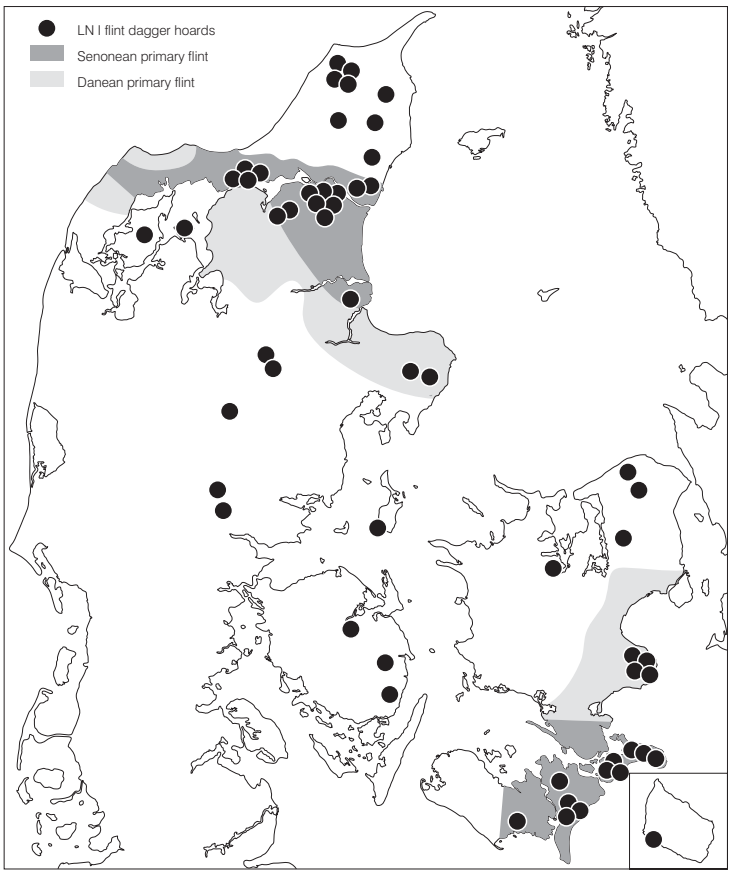


Fig. 4. Geographical distribution of LN I flint dagger hoards seen in relation to primary sources of flint (after Vandkilde 1996).
Abb. 4. Verbreitung der Horte mit Flintdolchen im Spätneolithikum I und ihr Bezug zu Flintvorkommen (nach Vandkilde 1996).

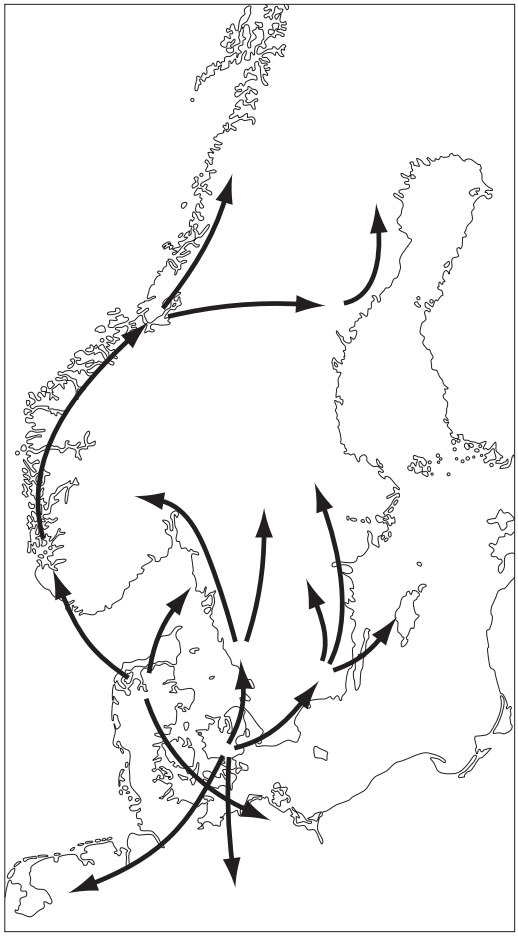


Fig. 5. Circulation of flint daggers from the two main production areas in Denmark to other parts of northern Europe during LN I (after Apel 2001).
Abb. 5. Ausbreitung der Flintdolche in Nordeuropa von den zwei Hauptproduktionsgebieten in Dänemark während des Spätneolithikums I (nach Apel 2001).

flint items. The dagger form itself clearly relates to a wider dagger idea that circulated among European communities in the later Neolithic and the Early Bronze Age. Singular daggers in flint and copper must have reached northern Jutland through exchange with western and central Europe from around the middle of the third millennium BC, hence inspiring an indigenous production of pressure-flaked daggers.

The primary production area, or core area, in northern Jutland presumably served as a model for the secondary production area in southeastern Denmark. Here a delayed production of similar daggers (type II, ID) was initiated somewhat later. Flint daggers of type II form a dagger style of their own, probably with a differing social meaning, inasmuch as their context is partly divergent. Notably, Beaker pottery does not accompany type II daggers, associations with arrowheads are infrequent, dress pins are different, etc. Such variations in associations and context really deserve to be more thoroughly investigated, since they relate to differences in cultural and social identity and in social practices.

Concluding remarks

The term 'Late Neolithic Culture' , and the above synopsis, may leave a false impression of cultural uniformity throughout Denmark, and northern Europe for that matter. However, as stressed above, and indeed already by Becker (1964), a uniform picture exists only on a general level. Lomborg (1973, 130 ff .) could show that burial customs were especially varied from region to region. He overestimated the super-regionality of flint dagger styles, which turned out to concur with two regional centres of flint manufacture. The archaeology hints at several dimensions of locally varied habits and practices. Reiterating a classic article by Fredrik Barth (1969), one future task will be to study the processes, actions and discourses which created, maintained and denied cultural identity within and across a larger Late Neolithic realm of culture (see below). The Beaker region in northern Jutland is – according to our present knowledge – a particularly spectacular deviation in cultural identification, which will be examined below in its broader Late Neolithic setting.

Outline of Beaker Chronology in Northern Jutland

The Danish version of Beakers must be understood as a relatively short-lived phenomenon. The Beaker-decorated pottery did not continue into the transitional phase to LN II, i.e. combinations with type III flint daggers do not occur. Possibly, Beakers did not outlive the production of type I daggers, which were manufactured during the major part of LN I. The stratigraphy of the Lodbjerg domestic sites in Thy, which are currently under publication, demonstrates that the Myrhøj stage of pottery was succeeded by a gradual dilution of Beaker shapes and ornamental patterns (Liversage 1989; Liversage/Robinson 1992/93, 44).

Beakers thus had their distinctive floruit in early LN I, and thereafter the specific emphasis on Beaker materiality gradually faded. Before the turn of the millennium the Beaker features had gone, their total duration being 200–300 years at the most. Such is the broad chronological outline, but a chronological subdivision of the Beaker sequence in Jutland still remains to be made.

The fairly unsuccessful attempts to divide British Beaker pottery into chronological groups (Kinnes et al. 1991; Case 1993 with references; Needham 1996) emphasise the importance of integrating a varied repertoire of Beaker finds from burials and settlements in future chronological analyses. The chronological investigation should obviously be combined with a search for local and regional groups. Regional differences in Beaker material culture may in the Danish case be anticipated between northwestern and northeastern Jutland including Djursland, which perhaps makes up its own local group (cf. figs. 6, A–B; 7; cf. also Boas 1986; Asingh 1987).



Fig. 6A. Selection of Beaker pottery from northern Jutland, mostly from settlements in the central Limfjord region. At the bottom right a Beaker from a burial at Ljørslev on Mors (after Aarup Jensen 1972; Lomborg 1975; Skov 1982; Simonsen 1983). Not to scale.
Abb. 6A. Auswahl von Becherkeramik aus Nordjütland, vorwiegend aus Siedlungen in der zentralen Limfjordregion. Unten rechts ein Becher aus einem Grab in Ljørslev auf Mors (nach Aarup Jensen 1972; Lomborg 1975; Skov 1982; Simonsen 1983). o.M.



Fig. 6B. Beaker pottery from the megalithic tomb of Bigum in Viborg County (after Lomborg 1975).
Abb. 6B. Becherkeramik aus dem Megalithgrab von Bigum in Viborg sn. (nach Lomborg 1975).

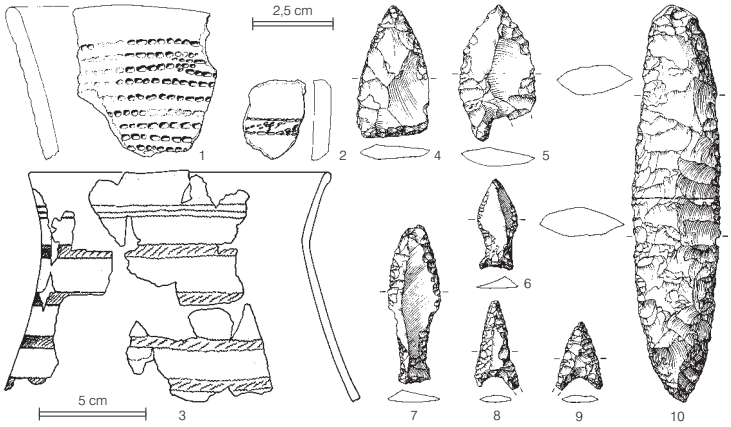


Fig. 7. Beaker pottery and associated pressure-flaked flint items from the settlement of Diverhøj, Djursland peninsula (after Asingh 1987).
Abb. 7. Becherkeramik und vergesellschaftete retuschierte Flintobjekte aus der Siedlung Diverhøj, Halbinsel Djursland (nach Asingh 1987).

Beaker Material Culture

Time-space patterns

Material culture of Late Neolithic character first appeared in the northern part of Jutland, in particular around the Limfjord and on the Djursland peninsula. This is suggested by the presence in this region of the (typologically) earliest pressure-flaked flint daggers and the earliest radiocarbon dates. Concurring traits are Beaker pottery and accompanying Beaker equipment (fig. 6–9). The appearance of Beakers in northern Jutland dates to around 2350 BC, thus coinciding with the beginning of the Late Neolithic Period in this region. Late Neolithic material culture presumably spreads from this core area to the remainder of Denmark, and to other regions in Scandinavia and northern Germany.

Central and eastern Denmark is receptive to Beaker material culture only in a general sense: the dagger fashion was adopted and to a limited degree also archer's equipment whilst Beaker pottery is, if not unknown, then at least uncommon. The domestic domain often has a curved drinking vessel, which is formally related to Bell Beakers, but without the characteristic ornamentation that would classify it as a proper Beaker (Wincentz Rasmussen 1990, 36 ff.). Thus not entirely devoid of Beaker influences this Late Neolithic zone in central and eastern Denmark evidently relates more closely to the early Únetice Culture across the Baltic Sea (ibid. 37 ff.). The Únetice connection intensifies considerably in LN II – a most important precondition for social transformation and innovations in metallurgy; in short, the actual beginning of the Nordic Bronze Age (Vandkilde 1996).

Beaker pottery

In Northern Jutland Beakers are combined with Late Neolithic Culture in ritual as well as domestic life, and the association of type I flint daggers with Beaker pottery is the most explicit illustration of such a fusion. The Beaker style of pottery mixes a definite local stamp with decorative and formal features which are clearly not indigenous and which tend to be applied only to the finest, thin-walled, hard-fired and polished ware (figs. 6, A–B; 7). Coarse and plain pottery, however, predominates the pottery pro-

duction: at Myrhøj, 67 % of the pottery is unornamented, 22 % has crude, circumferential, horizontal grooves, and only 11 % has Beaker ornaments. These are either incised, stamped with a dentated spatula, or cardium-impressed. Zone decoration with plain areas alternating with narrow hatched bands in Maritime fashion, or horizontal lines in AOO fashion, may cover the whole or part of the vessel. In the latter case, which is the most common, the zone decoration is interrupted by a 'picture frieze' , consisting of a serial pattern or a pattern divided into 'metopes' and 'triglyfs': interconnected hanging or standing triangles, vertical or oblique bars of hatched bands, lozenges arranged vertically or horizontally, multiple hatched zigzag bands, and so on, are combined into quite a varied design (Aarup Jensen 1972, 90 ff.).

Beaker patterns are applied to various fine vessels, predominantly conical cups (sometimes called straight-walled beakers) and curved beakers, which together deserve to be classified as Beaker pottery. The curved beakers with horizontal grooves or cord impressions around the upper part of the vessel (Glob's B group) may, more remotely, be counted among the Beaker pottery group. The specific ornamental design and the often quite angular profile of some of the curved beakers are paralleled in the pottery of other Beaker regions in western Europe, most specifically the Veluwe region at the lower Rhine. It is, however, a resemblance of a general kind, hence far removed from identicalness. The application of Beaker patterns to the conical cups, which have their origin in the Upper Grave Period (Simonsen 1986), helps to emphasise the autonomy and particular character of the Jutish Beaker group.

Common in settlement finds from this period in northern Jutland, Beaker pottery is thus thoroughly integrated in domestic life. More precisely, Beaker pottery seems more often present on settlements than not, but the percentage of Beaker pottery on each site remains low compared to plain and coarse-ware pottery. The specific qualities of the Beaker pottery contrasted with the much more frequent plain and coarse-ware pottery indicates deviating functions and meanings. This is also suggested by differences in context. Beaker pottery (including the B-group) also occurs in burials, although not as a regular component. In burials it either occurs unaccompanied or associated with type I flint daggers, in addition to arrowheads with a concave basis, and/or conical amber buttons with V-perforation (figs. 8; also 6, A–B; Fabech 1986, 59 ff. figs. 12–13; Wincentz Rasmussen 1990, 34 ff. figs. 6–7). These are contexts that otherwise deserve to be called Bell Beaker-affiliated. The restricted occurrence of Beaker pottery in settlements as well as burials suggests that it served as a kind of 'table ware' reserved for feasting and drinking rather than used in ordinary household activities.

Beaker pottery from settlements and burials does not differ much in appearance, and artefact associations also appear broadly similar. Detailed comparative studies are nevertheless needed in order to detect minor, but possibly significant differences. Vessels that combine a curved beaker shape with Beaker ornamentation are, for example, less common in burials than the conical cups with Beaker patterns, and studies are needed to explain this. Beaker equipment in burials is in need of a thorough analysis that takes into account the entire context of artefact associations and grave construction, in addition to the wider context of, for instance, the domestic sphere. Such an analysis is required in order to uncover details of chronology, function and symbolic meaning, ritual

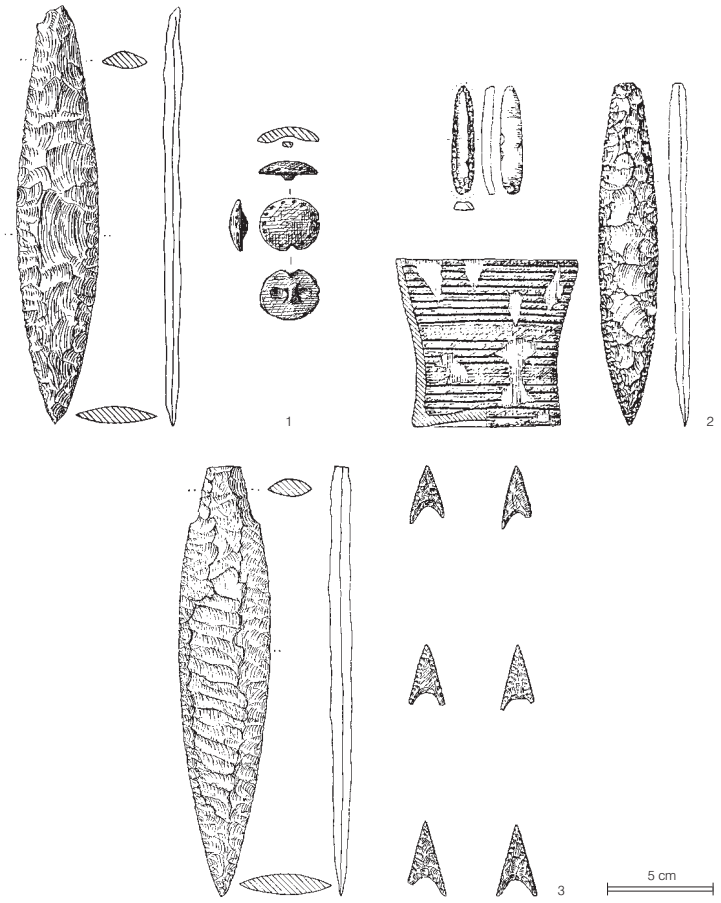


Fig. 8. Beaker burials from northern Jutland. 1 Fredsø in Thisted County with type I flint dagger and V-perforated amber button. 2 Rødding in Viborg County with zone-decorated conical cup, type I flint dagger, and retouched blade. 3 Borbjerg in Ringkøbing County with type I flint dagger and six triangular arrowheads with concave basis (after Lomborg 1973; Ebbesen 1977).
Abb. 8. Becherbestattungen aus Nordjütland. 1 Fredsø , Thisted sn., mit Flintdolch Typ I und Bernsteinknopf mit V-förmiger Durchbohrung. 2 Rødding, Viborg sn., mit zonenverzierter konischer Tasse, Flintdolch Typ I und retuschierter Klinge. 3 Borbjerg, Ringkøbing sn., mit Flintdolch Typ I und sechs dreieckigen Pfeilspitzen mit einziehender Basis (nach Lomborg 1973; Ebbesen 1977).

practice, and social structure. Skeletal remains are not as well-preserved as might have been hoped, thus making determinations of, for instance, age and gender difficult.

Beaker-affiliated objects

In addition to the described pottery, Beaker materiel objects include V-perforated amber buttons, which are known mostly from burials in northern Jutland, where they occur in combination with type I flint daggers (Wincentz Rasmussen 1990, 35 ff.; AUD 1999, no. 399).

A long and narrow stone wristguard from the Myrhøj settlement (Aarup Jensen 1972, fig. 16) can be added as a typical Beaker item: it is a wristguard of Sangmeister's (1974) western form, which is mostly a late type and even occurs in Early Bronze Age burials in central Europe. Other wristguards are known from Denmark, but all of them are single finds. They are not restricted to northern Jutland (Skov 1969/70). They include the predominantly early, broad and curved wristguard of so-called eastern form (cf. Sangmeister 1974), which is a genuine Bell Beaker object.

A few stone so-called arrow-straighteners can be added as Bell Beaker or Beaker affiliated (cf. Glob 1952, no. 539). They are often without informative find contexts. A Beaker affiliation is ascertained in a newly reported find from Petersborg in Østbirk Parish in the municipality of Skanderborg, where an arrow-straightener appeared together with a Beaker sherd and plenty of cereals in a shal-

low pit (AUD 1998, no 443). Singular items of Bell Beaker origin evidently reached Denmark from central and western Europe already during the latest Ground Grave and the Upper Grave Period.

Beaker-affiliated cultural habits

A typical Beaker feature is the custom of burying the dead with arrows and/or a dagger. Pressure-flaked arrowheads occur in Late Neolithic burials throughout Denmark, yet with a concentration in northern Jutland, where several arrowheads per grave is a specific feature rarely found elsewhere in Denmark (fig. 8, 3; Wincentz Rasmussen 1990, 35 ff.; Ebbesen 2004). The combination of arrowheads with type I flint daggers in a funerary context is also a trait mostly seen in northern Jutland, notably the combination of arrowheads with the prestigious parallel-retouched dagger of type IC (e.g. AUD 1997, no. 262; AUD 1998, nos. 271, 486). The latter dagger type is most often found in well-equipped burials of 'Beaker class' in northern Jutland (Wincentz Rasmussen 1990, 34 ff.). Sometimes a compiled position of a series of arrowheads indicates an original deposition in the grave of hafted arrowheads in a quiver made of organic material (e.g. AUD 1998, no. 271).

According to Klaus Ebbesen (2004), individuals buried with various flint weapons are adult males, at least in cases where the biological sex of the deceased can be specified. In Bell Beaker and Beaker settings outside Denmark the dagger and archer's equipment are tightly connected to male burials of a sophisticated kind. It is thus tempting to interpret burials with Beaker-affiliated weaponry in Denmark, especially in northern Jutland, as related to the commemoration of a specific male identity in society. The particular weaponry suggests warfare, and perhaps prestige-hunting[11], to be the kind of social action which this male identity relied on.

In addition, cremations occurred in the early Late Neolithic Period (Brøndsted 1957, 116 ff.; Fabech 1986, 62 ff.; Simonsen 1978), perhaps also most frequently in northern Jutland. My impression is, however, that partly or altogether burnt skeletal material or merely traces of burning are quite common throughout the entire period in the whole region of Late Neolithic Culture (cf. Nordström 1996). Fire rituals even appear in pre-LN I contexts at Kverrestad in southeastern Scania (Larsson 2000) and at Vesterskovgård in western Jutland (AUD 1997, no. 277). Both sites comprise pressure-flaked lanceolate arrowheads, which clearly anticipate a Late Neolithic repertoire. Most recently, cremations have been reported from Solbakkegård in Brøndum Parish in southwestern Jutland (Ribe County), suggesting that this burial custom is known also outside the core area in northern Jutland. One cremation contained late Upper Grave or very early Late Neolithic objects of Bell Beaker or Beaker affiliation: barbed and tanged arrowheads, triangular hollow-based arrowheads, a dagger of the feeding knife type, a strike-a-light, and conical amber buttons (AUD 1999, no. 611). This is almost full Bell Beaker equipment – well outside the classic Beaker region in northern Jutland; only the characteristic pottery is missing. One might well ask whether western Jutland provided a link between the Lower Rhine area and northern Jutland.

Inhumation is nevertheless by far the most common burial custom in LN I. The standardised orientation and crouched position of the dead body so inherent to the Bell Beaker and Beaker concept were not adopted. Contrary to normal Bell Beaker practice (and to

11 Warfare and prestige-hunting are often closely related phenomena in ethnographical and historical sources. A predominantly subsistence-based hunting should in the Late Neolithic be on the decline.

Single Grave Culture practice), the body was placed in extended position on its back. This seems also to have been the case in the Limfjord region. Besides, Jutish Beaker burials are often situated in open grave chambers for kin and community, and most of these show continuity from the Single Grave Period in form as well as in their use (e.g. Ebbesen 1985; Fabech 1986; Hansen 1993/94). Burials in closed one-person graves (uppermost graves) placed in an existent mound of Single Grave Culture origin are also common.

The choice of grave form and the treatment of the dead body in most cases merely emphasise the local foundation of these Beaker burials. It is the Beaker symbolism of the personal equipment and of the accompanying pottery which sets them apart. Whereas the body and dress ornaments and the equipment for war were obviously tied to the specific social personality of the deceased, the Beaker pottery may perhaps be more correctly interpreted as containers for food and drink offered by the relatives, and hence in a broader sense signal the cultural identity of a larger group of people. Such an interpretation accords well with the presence of Beaker pottery in the funerary as well as the domestic domain. It also tallies with the above suggestion that Beaker pottery was fine table ware used for feasting.

Concluding remarks

Locally produced fine-ware Beaker pottery and a series of Beaker-affiliated objects and cultural traits characterise settlements and burials in northern Jutland during the early part of the Late Neolithic (fig. 6–9). New formal concepts were adopted from Beak-

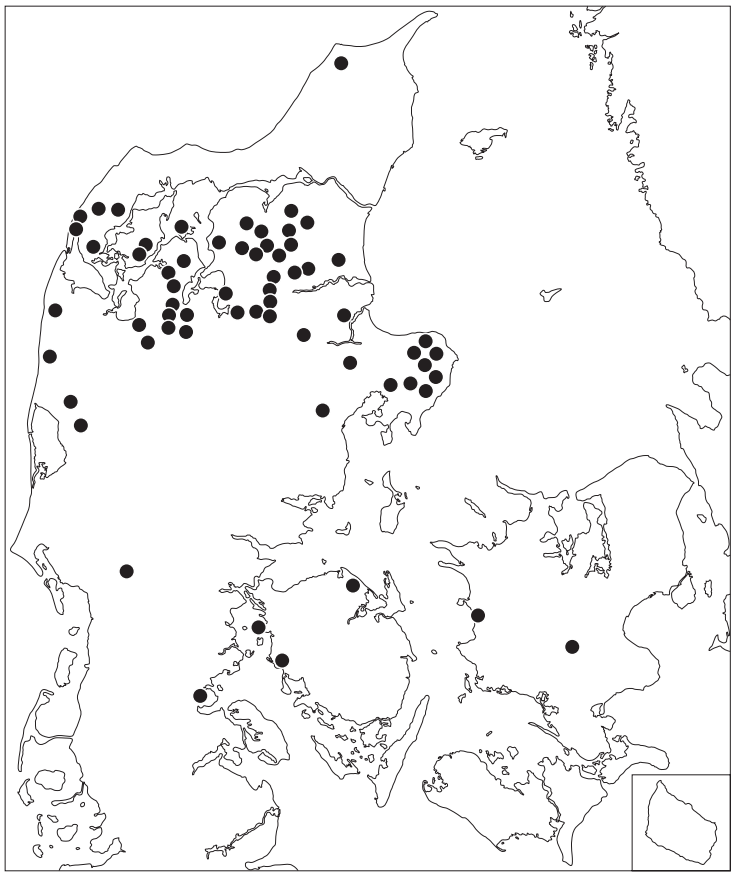


Fig. 9. Geographical distribution of sites with Beaker pottery. Burials and settlements with Beaker pottery are included. Burials with Beaker pottery include those mentioned by Glob 1944, Ebbesen 1977, and Fabech 1986. Settlements with Beaker pottery have been listed in the catalogue, see p. 40 (after Vandkilde 1996 with additions).
Abb. 9. Verbreitung der Fundplätze (einschließlich Gräber und Siedlungen) mit Becherkeramik. Die kartierten Gräber mit Becherkeramik umfassen auch die von Glob 1945, Ebbesen 1977 und Fabech 1986 genannten Bestattungen. Siedlungen mit Becherkeramik sind im Katalog aufgeführt, siehe S. 40 (nach Vandkilde 1996 mit Ergänzungen).

er groups at the lower Rhine around 2350 BC and subsequently translated into a local cultural language. This blend of Beaker Culture and Late Neolithic Culture sets the region apart from the remainder of Denmark, which in the main only adopted the Late Neolithic part whereas the Beaker part was largely rejected as a way of presenting cultural identity.

Beaker-affiliated Metallurgy in LN I

Opening remarks

The reintroduction and subsequent spread of metallurgy in Denmark is intimately related to the Beaker representation in northern Jutland and is therefore presented here in some detail. The argument is typological, metallurgical and geographical, whilst proper find associations are more or less lacking. Gold sheet ornaments and copper flat axes are the predominant metal objects in LN I, which has a total record of 72 metal objects from 60 localities.

Gold sheet ornaments

The gold sheet ornaments, which are morphologically closely related, consist of three lunulae and ten small and nine large ornaments with oar-shaped ends (fig. 10; Vandkilde 1996, 182 ff.). Lunulae and ornaments with oar-shaped ends are unique types in a Danish context, inasmuch as they have neither antecedents nor successors. They are most frequently singly deposited pieces, or sometimes deposited in pairs, from wet and dry surroundings. Most likely such ornaments formed part of sacrificial activities concluding with the deposition of valuables (gift to the god) – i.e. a ritual context different from burials. One of the ornaments occurred in a bog in immediate proximity to a flint axe of early LN

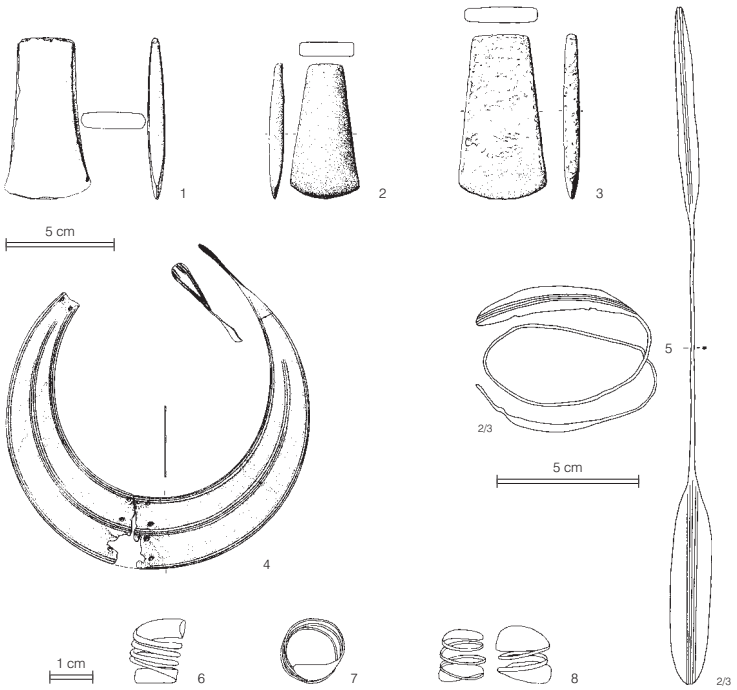


Fig. 10. Selection of LN I goldwork and copperwork. 1–4 Gold lunula and copper flat axes; 5–8 gold sheet ornaments with oar-shaped ends.
Abb. 10. Auswahl von Spätneolithikum I Gold- und Kupferobjekten. 1–4 Goldlunula und Kupferflachbeile; 5–8 Goldblechschmuck mit ruderförmigen Enden.

type, thus confirming the date suggested here for the entire group of gold sheet ornaments.

The form and decoration of the Danish lunulae are dependent on Anglo-Irish lunulae, which can be attributed to the Beaker Culture of western Europe. The ornaments with oar-shaped ends have their most striking parallel in the Bennekom gold ornament, which is accompanied by a Veluwe Beaker of type 2If (Vandkilde 1996, fig. 178). More indirectly they relate to the willow-leaf ornaments of the Nitra and Mierzanowice groups of the earliest central European Bronze Age, and to the various gold and electrum earrings and hair rings of the Bell Beaker and Beaker cultures in central and western Europe. The chemical composition of the gold clearly suggests the use of different sources of gold in central as well as western Europe (cf. ibid. 182 ff. with references).

Copper flat axes

Thirty-two copper flat axes can be attributed to LN I. Their shape is quite variable, with a thin or thick butt and straight or curved sideline (fig. 10). They are thus not always easy to distinguish formally from earlier copper flat axes of the Funnel-necked Beaker Culture, which are predominantly straight-sided trapezoidal axes with a thick or thin butt. Similar to the gold sheet ornaments, copper flat axes are mostly single depositions of sacrificial character. A more precise dating thus depends on typology and metal analysis. Due to their significantly splayed edge corners and considerable size, the trapezoidal thick-butted axes of Bygholm type (Vandkilde 1996, fig. 16) are normally easy to separate from later axes. Copper flat axes can also be dated on purely typological grounds such as the absence/presence of advanced features like thin butt, curved sidelines and low, irregular flanges. Especially when combined in the same axe, these features certainly suggest a date within LN I. The considerable intra-type variation of the LN I copper flat axes is paralleled in other west European Beaker regions (ibid. 177 ff.).

The metal composition of the early and the late axes, however, is entirely different, thus helping to separate the two groups. It may be added that classification made on the basis of typology is supported by metal composition in a general way. The early copper flat axes, dating primarily to the Early Neolithic Period, have a uniform composition of arsenical low-impurity copper without tin (Group 1). By contrast, the LN I copper flat axes divide into two metal groups of middle-high to high impurity, often with tin in small amounts. The first group (Group 2) is a As-Sb-Ni copper, recalling so-called Dutch Bell Beaker copper and the As-Ni copper of Brittany, which also occurs occasionally in British and Irish Beaker contexts. The second group (Group 3) has better compositional parallels in the Early Bronze Age Singen (As-Sb-Ag-Ni) and Ösenring (As-Sb-Ag) coppers. Whereas Singen and Ösenring copper have a central European – probably Alpine – origin, the mining region of Dutch Bell Beaker copper is perhaps Brittany.

A small group of early low-flanged axes presumably also belongs to LN I. These axes correspond to new axe forms being developed at this time in western Europe that anticipate the comprehensive production of low-flanged axes in LN II (Vandkilde 1996, 189 ff. fig. 181).

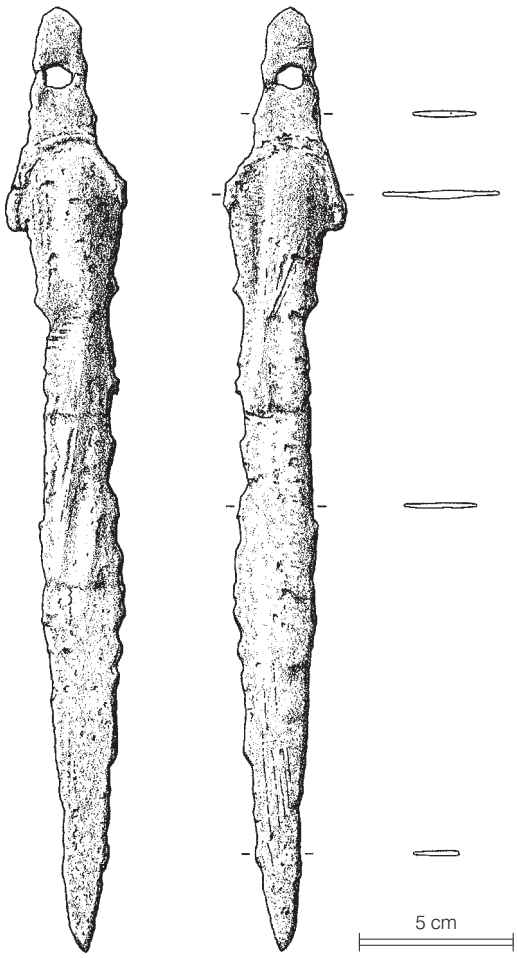


Fig. 11. Tanged flat dagger of 'Dutch Bell Beaker copper' found below a stone close to a mound in Kongens Thisted, Aalborg County (Vandkilde 1996, cat.-no. 8). J. Kirkeby del.
Abb. 11. Flachdolch mit Griffzunge aus „niederländischem Glockenbecherkupfer" gefunden unter einem Stein nahe einem Hügel in Kongens Thisted, Aalborg sn. (nach Vandkilde 1996, Kat.-Nr. 8). Zeichnung J. Kirkeby.

Tanged copper dagger

The remaining metal objects are singular objects, among these notably a tanged copper flat dagger (fig. 11). It was found below a stone near a burial mound at Kongens Thisted in the municipality of Aalborg close to the Limfjord and the Late Neolithic flint mines. The find circumstances may be interpreted as a dryland sacrificial offering in proximity to a burial mound – quite a typical ritual situation in LN I (Vandkilde 1996, 39 ff.). Due to its shape with a perforation through the tanged hilt, and its considerable size, the copper dagger must be classified as an import from the western European Beaker region, presumably Brittany. This is further supported by its metal composition. It is As-Sb-Ni copper with a trace of tin, hence corresponding closely to copper of so-called Dutch Bell Beaker type.

The tanged dagger from Kongens Thisted is the only certain imported metal object dating to LN I, and it is hardly a coincidence that the only tanged copper dagger found in Denmark was located in the heart of the flint dagger-producing Beaker region. Such singular copper daggers must have inspired to the production of lanceolate flint daggers of type I. It is indeed interesting to note that type I flint daggers often have a considerable length, sometimes exceeding 30 cm, hence in this respect matching the copper dagger from Kongens Thisted (Vandkilde 1996, 180 ff. with references).

Context

The early metal finds of Beaker affinity derive mostly from sacrificial single depositions, thus highlighting the rarity of metal objects in funerary rituals. It may also be significant that metal objects are not yet included in multiple offerings in wetlands; this does not happen until the LN II Period. Deposition in pairs is probably slightly underrepresented, since some single gold ornaments may originally have been hoarded as pairs. Gold sheet ornaments and copper flat axes are more often than later metalwork deposited on dry land. Hoarding on or close to a burial mound/megalithic tomb makes up these dryland depositions, which may then have had a quality and meaning different from rituals performed in open water.

A local production

Due to their formal peculiarity and deviation from known parallels, including details in their manufacturing technique, all three types of gold sheet ornaments are likely to have been manufactured locally. Besides, there is absolutely no correspondence between formal types and gold composition, and this certainly lends support to the view that they were manufactured in Denmark of gold from various western and central European sources. Since gold can be shaped without annealing, no extensive knowledge of metallurgy was required.

Whether or not the flat axes are local products is a fairly open question, but it is not unlikely that they represent initial local metalworking. The marked intra-type variation present among the flat axes is a trait typical of an incipient production, which will always contain elements of experimentation and a search for norms. Coherence in axe style does not in fact emerge until later (Vandkilde 2000, 16 ff.). The utilisation of two copper types of different origin may also support this notion of an indigenous manufacture of copper flat axes since there is no correlation between the internal typology of axe heads in the late group and their metal composition.

Concluding characterisation

These Beaker-affiliated metal objects are few in number, hence their social and economic significance is probably correspondingly limited. Essentially, they indicate an initial local metallurgy. Their almost total exclusion from burials, and their close affiliation with a sacrificial domain, emphasise their rarity and status as inalienable objects probably more attached to a group of kin than to individual agents. The increased rivalry among individuals, which is otherwise indicated by the use of Beaker symbols, was hardly based on metals. Rather it built on indigenous materials, primarily flint objects.

The LN I metalwork is distributed throughout most of Denmark, but there are particularly many finds in the Limfjord region and on Djursland (fig. 12). This concentration of early metalwork coincides with the centre of gravity for Beaker representation in Denmark (see fig. 9), hence suggesting a connection between Beakers and the introduction of metallurgy. The introduction of metallur-

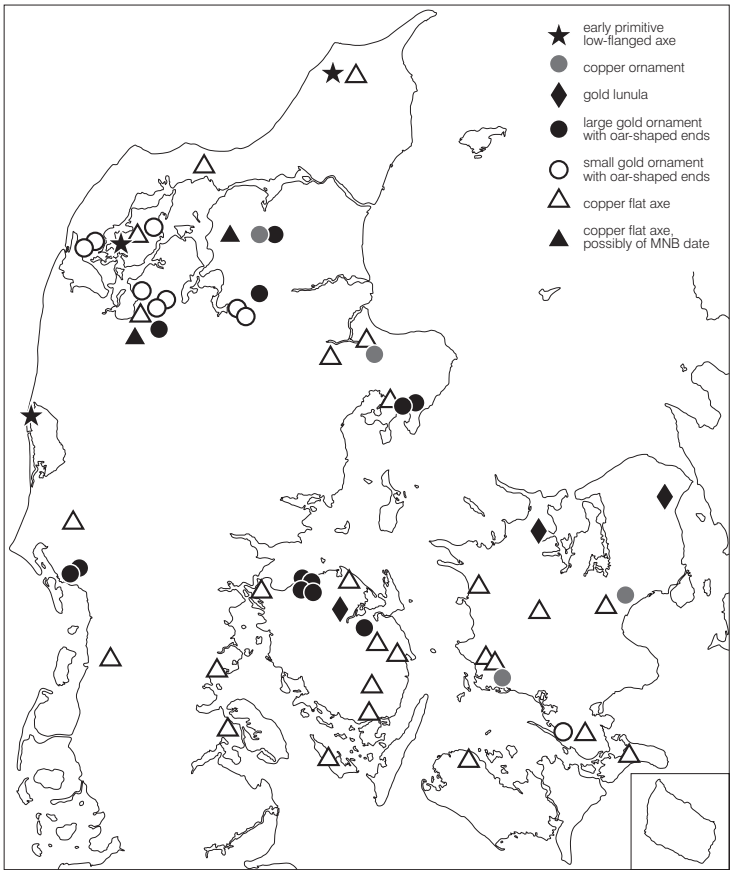


Fig. 12. Geographical distribution of LN I metalwork (after Vandkilde 1996).
Abb. 12. Verbreitung von Spätneolithikum I Metallobjekten (nach Vandkilde 1996).

gy in Denmark was, arguably, connected to the institution of the Beaker group around the Limfjord and on the Djursland peninsula, and more broadly to networks of exchange and alliance with other Beaker groups towards the southwest in Europe. The argument is twofold:

Firstly, most LN I metal objects are distinctly influenced by the western European Beaker metal industry: the flat axes, the early primitive low-flanged axes, the tanged flat dagger, and the three types of gold sheet ornaments. Secondly, such objects of copper and gold tend to be particularly frequent in the Beaker region of northern Jutland, where the local fine-ware pottery of Beaker derivation shows links with the Veluwe group at the Lower Rhine. There are in the Danish material no signs of large-scale migration, merely intensive interaction between distant regions, probably in the form of regular trade. Only the concurrent introduction of metallurgy shows that some people must have crossed cultural boundaries. Foreign people with metallurgical knowledge may well to some limited extent have been involved in the project. Alternatively, agents from northern Jutland may have travelled to foreign lands, learned the craft of metalworking there and returned to Jutland as persons of knowledge and influence.

Single Grave Jutland and Bell Beaker Europe

A proper Bell Beaker stratum is absent in Denmark, in marked contrast to central, western and southern Europe. This is confirmed by radiocarbon dates. The first appearance of Bell Beakers in Europe dates to c. 2600–2500 BC, which is 200–300 years prior to the emergence of Beakers in northern Jutland. Vessels in AOO/AOC, and particularly Maritime, style are known, but from a fairly late context with lanceolate flint daggers (fig. 7). It might well be a sort of Epi-maritime style, equivalent to the situation in northern Holland, where Maritime ornamentation continues after it has ceased in the central region of Veluwe (cf. Lanting/van der Waals 1976 a).

The reason for this absence of regular Bell Beakers is unknown[12], but should be looked for in the Upper Grave phase of the Single Grave Culture as well as in the European context of emerging Bell Beakers and declining Corded Ware. On a general European scale there are, moreover, structural differences between Bell Beakers proper (2600/2500–2300 BC) and local Beaker derivations (2300–2000/1800 BC), which deserve a thorough investigation. These differences may be relevant to the reading of the Danish material.

A comparison of radiocarbon dates suggests the Upper Grave Period and perhaps also the latest part of the Ground Grave Period to be contemporaneous with the Bell Beaker Culture in central Europe (BB phases 1–2; cf. Müller 1997, 118 ff.), and in western Europe with the Maritime Bell Beakers (2Ia). Their appearance can as mentioned be dated to 2600–2500 BC (cf. Lanting et al. 1973; Lanting/van der Waals 1976 a, 1976 b; Vandkilde et al. 1996).

In Denmark there seem to be faint traces of Bell Beaker influence in the local pottery of late Ground Grave and Upper Grave date, such as occasional use of AOO-like or zoned decoration, and frequent use of ornamentation in dentated spatula technique (Simonsen 1986). Accompanying objects of the Bell Beaker type occasionally found their way into the northern territories of the Corded Ware Culture, such as, notably, broad curved wristguards (cf. Skov 1969/70), small copper trinkets (Janzon 1986), and perhaps stone arrow-straighteners.

Denmark and Europe at the end of the third millennium BC

With the onset of the Late Neolithic Period in Denmark, around 2350 BC, the European context has changed. In western Europe Beaker cultures persist, consolidate and expand, whilst in central Europe various Early Bronze Age cultures emerge: a whole range of Únetician and Danubian-Carpathian groups. The initial EBA phase in central Europe may, generally speaking, be interpreted as the slow transformation of a BB cultural identity to an EBA identity, and in some places the temporary co-existence of two quite disparate cultural identities (cf. Zich 1996; Vandkilde 1999 c).

On the northern frontier the chronological implications are as follows. A few imports from central Europe indicate contemporaneity between LN I and the early Frühbronzezeit (Vandkilde 1996, 139 ff.; 177 ff.). Danish Beakers are then contemporary with the earliest EBA (early Br.A1) in central Europe and with the floruit of Beaker cultures in western Europe. The latter comprise Veluwe and

12 The vessel from a megalithic tomb in Kirke-Helsinge near Holbæk on Zealand may be classified as a 'Maritime' Bell Beaker, but with central European rather than western European parallels (see Glob 1952, no. 484).

Epi-Maritime in Continental northwestern Europe and the Middle Style Beakers (Style 2) in insular western Europe (see fig. 1; cf. Lanting/van der Waals 1976 a; Case 1977; 1993; Needham 1996). This is strongly implied by a comparison of radiocarbon dates and material culture in general (Vandkilde et al. 1996). A temporal overlap is, however, possible between the earliest Danish Beakers and the latest central European Bell Beakers (BB phase 3, Br.A0: proto-Únetice, Safferstetten, Oggau-Ragelsdorf, Golnsdorf, Vesele) and developed Maritime styles in western Europe (Maritime 2IB, Early Style Beakers).

The important question of chronological versus social variation in the central European Bell Beaker province, and its relationship to the Early Bronze Age cannot yet be considered as wholly solved (Müller 1997). A larger number of radiocarbon dates is indeed needed to distinguish diachronic changes in material style from synchronic material variations correlating with differences in age, gender and social rank. Likewise, the exact temporal relationship between Bell Beakers in the central European and the western European provinces needs to be reconsidered, incorporating the evidence of radiocarbon dates.

Beaker 'islands' in Europe

It is thus only with the emergence of a particular group in northern Jutland c. 2350 BC that one may speak of a Beaker Culture in Denmark. Above, the peculiarity of this group in a European perspective has been emphasised. On the other hand, the Beaker group in Jutland does exhibit clear material links to other Beaker groups in Western Europe. In the constitution of the Beaker group in northern Jutland, and most likely also in other cases of Beaker representation, local agents and external agents of distant origin interact. Importantly, the material tie between northern Jutland and the Veluwe group in the Netherlands is as distinct as the link between northern Jutland and the rest of Denmark. The interaction between the Beaker groups on the Veluwe Plain and in Jutland must therefore, at least initially, have been quite intensive.

The Beaker group in northern Jutland thus forms an integrated part of the western European Beaker Culture, which comprises a number of local derivations of Bell Beakers. Integration into various social activities of domestic and ritual character is a trait common to these Beaker representations in western and northern Europe. A similar picture of cultural integration is finally appearing among Bell Beakers in central Europe (see Pesca/Turek and Kalicz-Schreiber/Kalicz in Nicolis 2001), thus challenging previous theories of Bell Beakers as an elitist or purely super-structural phenomenon (cf. Shennan 1976; 1977; Harrison 1980; cf. also Thorpe/Richards 1984; Lohof 1994; Strahm 1998).

The Beaker group in Jutland exhibits a closer material relationship with the Dutch Veluwe Beaker group than, for instance, with the developed Beakers in Britain and Ireland. Lanceolate flint daggers of type I reached Holland quite frequently, where they occur in burials related to the Veluwe series of Beakers (Bloemers 1968; Lanting 1973; Lanting/van der Waals 1976 a; 1976 b). As mentioned previously, the decoration and shapes of some of the Danish Beakers resemble pottery of the Veluwe class. Moreover, there is a fine agreement in absolute dating: developed local Beakers of the Veluwe and Epi-Maritime style succeed the Maritime Bell Beak-

ers in Holland c. 2300 BC, and this coincides roughly with the initial dates for Beakers in northern Jutland (Vandkilde et al. 1996).

From a bird's eye perspective, a comparatively uniform material culture emerges across northern Europe in the Late Neolithic Period. Beaker pottery and accompanying Beaker items were only rarely included in the materials that circulated. Interestingly, here and there in northern Europe, in close analogy with northern Jutland, there are clusters of Beaker presence. Such pockets or 'islands' of Beaker Culture occur within a Late Neolithic setting in parts of Mecklenburg, Schleswig-Holstein, and in southern Norway (Struve 1955, pl. 22; Kühn 1979, pl. 11; 18; Myhre 1978/79; Jacobs 1991; Prescott/Walderhaug 1995). In northern central Poland Beaker-like representations even occur in an EBA setting contemporary with the early Late Neolithic in northern Europe (Czebreszuk 1996; Czebreszuk in Nicolis 2001). Something similar may possibly have existed in central Germany in the early Únetice phase (cf. Zich 1996; Vandkilde 1999 c).

Future research therefore confronts the following question: What exactly ties these 'islands' of Beaker representation together? Do they have a similar relationship to a more indigenous Late Neolithic or EBA zone surrounding them? The Beaker regions still remain to be investigated in more detail, and a comparative contextual analysis will obviously be of great value to a better understanding of the social mechanisms involved.

The chronological synchronism between Denmark and Europe as outlined above may conclude in the following correlation. The division between a Beaker region and a Beaker-free Late Neolithic zone in Denmark can in a general sense be understood as a remote reflection of two major cultural units in Europe in the late third millennium BC: Beaker cultures in the west and Early Bronze Age cultures in the east. An outline of an interpretation of the Danish Beaker Culture is presented below.

The Social Construction of Identities in Northern Jutland

Rehearsing geography

The geographical distribution of sites with Beaker pottery is remarkably constrained, inasmuch as the vast majority of Beaker sites is situated in the Limfjord region and on the Djursland peninsula (see fig. 9). Although more Beaker sites are likely to appear in the remainder of Denmark, especially in southern, western and central Jutland, this picture of a Beaker 'island' surrounded by a partly differing material culture is presumably representative for the prehistoric conditions. Specific burials of the Beaker class combining several arrowheads and flint daggers of type I, and occasionally a Beaker, have been found in northern Jutland in particular, as has Beaker pottery from settlements. The same geography, but much less constrained, characterises type I flint daggers (fig. 13; Wincentz Rasmussen 1990, fig. 2), flint arrowheads with a concave basis (ibid. 35 ff.; Ebbesen 2004), conical amber beads with perforation (Wincentz Rasmussen 1990, 35 ff.), and not least metal objects of Beaker affinity (fig. 12).

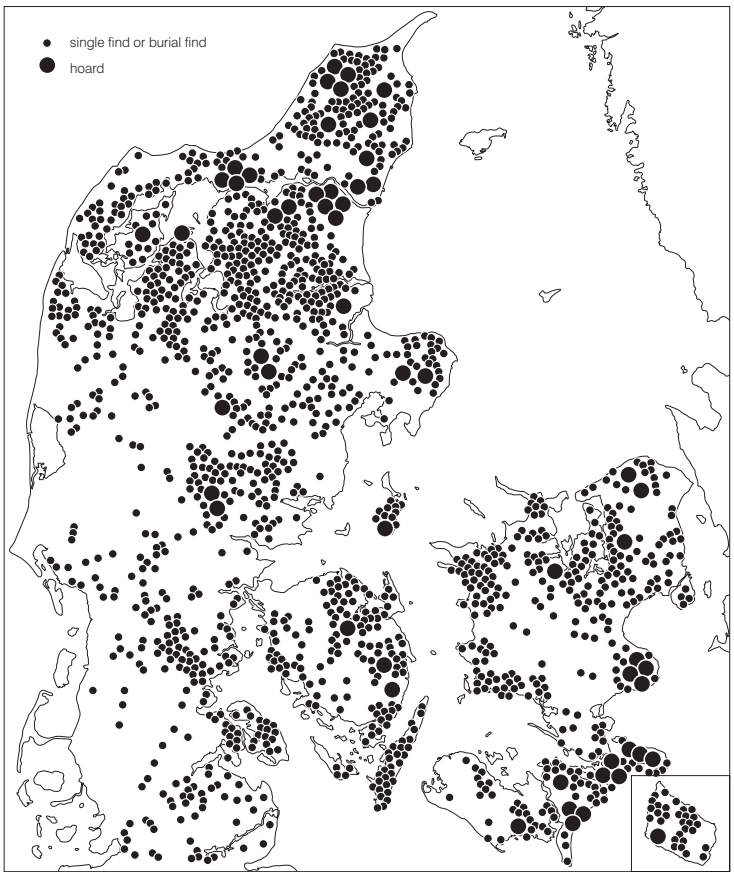


Fig. 13. Geographical distribution of LN I flint daggers (after Vandkilde 1996).
Abb. 13. Verbreitung von Spätneolithikum I Flintdolchen (nach Vandkilde 1996).

Social identification

One key question presents itself. Why are Beaker pottery and accompanying Beaker objects – including the first flint daggers – principally found in northern Jutland, and not to any noteworthy degree the remainder of Denmark?

Several interacting factors may be mentioned. Firstly, northern Jutland has abundant sources of high quality flint, which had previously attracted industrious mining, large-scale production, and the comprehensive exchange of flint objects: notably axes and chisels. Lanceolate pressure-flaked flint daggers of type I were in LN I manufactured in large numbers. From this region of production they were distributed to a wider region of consumption in northwestern Europe. Another key is the geographical location towards the west, considering the predominantly western location of developed Beaker cultures in Europe. In addition, the Limfjord can be perceived as a major channel of communication rather than separation. A fourth, socially constituted, factor may well have been the most important.

As pointed out in an earlier work, the principal reason for the Beaker representation may well have been a social one (Vandkilde 1996, 279 ff.; 295 f.; 2001). Already in the late Single Grave Period northern Jutland stands out as an extraordinarily complex region. In LN I this situation accelerates considerably. Well-equipped graves are more frequent here than elsewhere in the Late Neolithic region, which does not generally adopt a habit of depositing valuables in burials (see above). An unusually large number of different grave types are, moreover, encountered within the Beak-

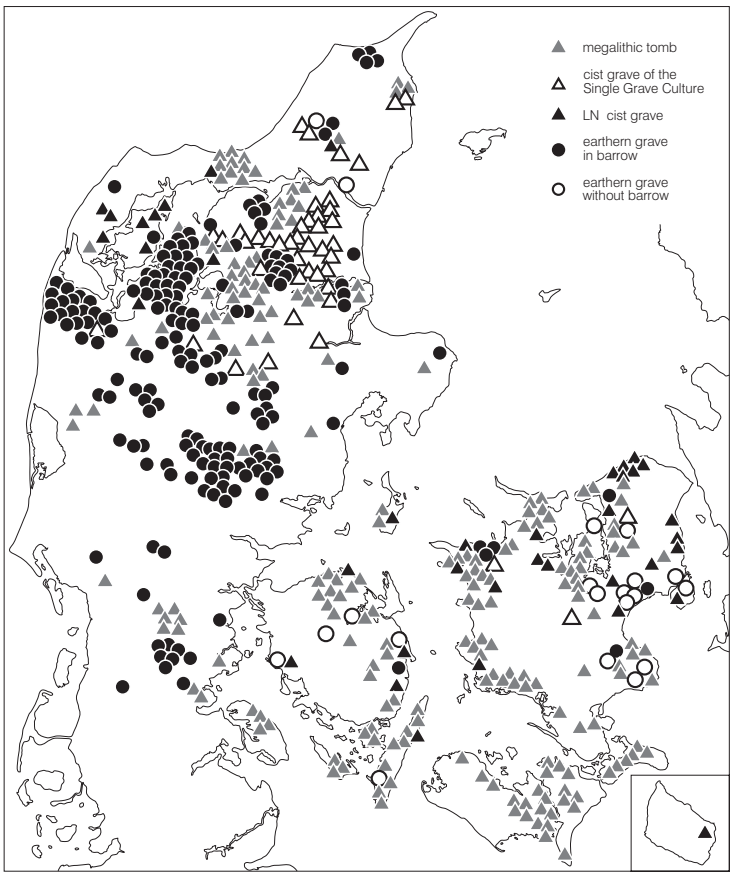


Fig. 14. Geographical distribution of LN I graves with flint daggers (after Vandkilde 1996).
Abb. 14. Verbreitung von Spätneolithikum I Gräbern mit Flintdolchen (nach Vandkilde 1996).

er region of northern Jutland (fig. 14), possibly representing geographically separated social groupings since they tend to be complementary to one another in geographic space.

In other words, a large number of social groups seems to be present within a comparatively small region. This entangled picture in the Limfjord region may suggest activities related to social rivalry between individuals and between groups. This could well be a social situation particularly sensitive to alternative ways of acquiring social identity and enhancing prestige, such as offered by the Beaker phenomenon. The gradual decline of Beaker materiality in northern Jutland seems to indicate that the reason for its emergence gradually disappeared.

The argument can be carried further into a discussion about the presentation of cultural and social identity through material means. Firstly, the boundary between ordinary Late Neolithic Culture and Beaker-enriched Late Neolithic Culture in Jutland coincides roughly with an older cultural boundary between Single Grave Culture and Funnel-necked Beaker Culture (Glob 1944, fig. 113) in addition to a similar boundary centuries later, c. 1600 BC, between the Valsømagle and the Sögel-Wohlde metalwork styles (Vandkilde 1996, fig. 273, B; 1999 b). All three cases relate to contexts of general social change. Secondly, it is especially the frequent occurrence of Beaker pottery in settlements that makes the early Late Neolithic boundary distinct (see fig. 9). This tallies with an interpretation of Beaker pottery as first and foremost signalling a large-scaled form of social identity, which we may call cultural identity, or perhaps ethnic identity.

In the recurrence of the same boundary over time there may be a hint of cultural identities which appear and disappear at intervals, apparently depending on transformations in political and social systems. It is in this respect noteworthy that the boundary is maintained on a regional level, especially through the use of Beaker pottery, which as mentioned above may well have carried connotations of a specific cultural identity. On the local level, inside the Beaker region, deviations in burial customs are actively used to mark other kinds of group identities. On a more individualised level, various weapons are utilised to denote identities of gender (maleness; possibly adult maleness) and presumably identities of rank (high social rank). It is especially the latter kind of gendered and rank-based identity – and its principal material discourse of lanceolate flint daggers – that tends to disrupt the cultural boundary between Beakers and non-Beakers in Jutland.

The entanglement of overlapping identities and the recurring boundaries – the Beaker boundary and its Single Grave predecessor and earliest Bronze Age successor – are consistent with the ideas about social identity advanced by Fredrik Barth (1969) and Richard Jenkins (1996). It is noticeable how the boundary is disrupted and maintained depending on the specific kind of material culture and social identity involved. Social identity is often processual rather than static. It is socially constructed within and across boundaries, and it is – at least potentially – flexible, situational and negotiable. Notably, the three cases of cultural revival occurred during times of change and under circumstances of intense cross-cultural interaction. Intensified cultural contact with outsiders indeed tends to increase the need to mark cultural identity (Barth 1969, passim). Besides, different kinds of material culture are typically selected to mark different kinds of identities (ibid.), as illustrated strikingly by the active uses of Beaker and Late Neolithic symbols in different as well as overlapping social arenas.

Cultural maintenance and transformation of meaning

A related question can now be posed based on the fact that the Beaker Culture in northern Jutland relates to a cultural concept of foreign origin. How closely were the general Beaker conceptions and qualities followed, and how deeply did they penetrate into ideology and social practice in northern Jutland?

Alterations in material culture and funerary activities around 2350 BC suggest some degree of social change. Most especially this is valid in northern Jutland, but society does not seem either radically or suddenly altered. The Beaker idea and its materialisation are far more prominent, or more complete, in northern Jutland than elsewhere in Denmark. Not even in northern Jutland, however, was the Beaker concept adopted slavishly: older funerary and sacrificial traditions were largely maintained or underwent small-scale change through motivated activities.

The Beaker objects themselves often deviate from their foreign prototypes. This is not necessarily that important since they may theoretically have contained the exact same symbolism. More importantly, their associations and contexts are arguably similar, but not identical, to the situation in the preceding Bell Beaker Culture and in contemporary Beaker provinces. Deviations in the contexts of funerary and sacrificial rituals and in settlements are crucial to the argument that the attachments of functions and meanings

were partly transformed when objects were transferred from one region into another. Late Neolithic Culture and the archaeology of Beakers in Denmark seem to suggest that the ideas attached to material objects, both imports and locally made obejcts reproducing a foreign form, were transformed to adapt to local culture.

An fitting example of this is the type I flint dagger, which only retained part of its original functions and meanings even if it was clearly modelled on the tanged Bell Beaker copper dagger. Flint daggers of type I are much more numerous than the tanged copper dagger ever was in any region. Quite a large group of (male) actors seems to have carried a flint dagger, in life and in death. The specific context and associations of these flint daggers in burials also differ in detail from the Beaker ideal: the wristguard does not seem to be part of the personal equipment of the warrior, and the characteristically decorated drinking cup is more often missing than not. The grave form and the orientation and position of the dead body also deviate considerably. Likewise, flint daggers occur commonly in the domestic sphere and in sacrificial rituals, whereas tanged copper daggers in their original setting are mostly buried with the dead as a key token of high-ranking maleness.

Judging from context and associations, the specific IC subtype of flint dagger (see fig. 2, 2) is the only flint dagger type which more consistently maintained a symbolic meaning fairly similar to the original model in copper. Type II flint daggers of the southeastern flint region can probably tell a similar story of changed symbolism, or deviation from an ideal, practised in the core region of northern Jutland. It is, moreover, conceivable that the meaning and value of flint daggers changed as they became more numerous.

Concluding characteristics

The concentration of different artefact types of Beaker affiliation in northern Jutland can hardly be a coincidence. They suggest, on the one hand, the existence of a Beaker Culture in a restricted region; the Beaker representation, on the other hand, cannot be separated from Late Neolithic Culture in the same region. In northern Jutland a dual, and thus inseparable, relationship exists between Beakers and Late Neolithic material expressions: Beaker Culture is thoroughly integrated in Late Neolithic Culture, and the opposite formulation would be equally true. Above, this has been interpreted in terms of social construction of identities in the domain of culture difference, competing local groupings, in addition to gender and presumably rank. The background was probably one of moderate social change and intensified cross-cultural contacts. The European Beaker concept as a strong coalition between material culture, technology, social practice and ideology was interpreted quite liberally and adjusted to local practices and taste. It did not permeate into deeper levels of ideology and social practice in northern Jutland: material categories of Beaker origin, and their inherent ideas, were translated into a definite local language.

The Beaker group in northern Jutland is a late and northerly application of a European-wide phenomenon which was selectively adopted. The incorporation of Beaker traits in this particular region may be explained mainly with reference to a complex social situation of increased rivalry, which thrived on the rich sources of high quality flint. The adoption of metallurgy was part of the Beaker-derived idea, and as a prestige technology it suited the gen-

eral atmosphere of social rivalry present in the region. Although the Beaker idea was interpreted liberally it nevertheless did contribute to, or even provoked, cultural and social changes. On a general Neolithic and Bronze Age background the change may still be described as fairly moderate. The changes occurred first and most distinctly in northern Jutland. Emanating from this central region a general cultural change was instituted in the remainder of southern Scandinavia, which in the process became Late Neolithic with the extensive use of pressure-flaked flint items. The hallmark of the north Jutish Beaker group was precisely its material and social distinctiveness as an 'island' surrounded by a more indigenous Late Neolithic Culture.

Further Interpretative Perspectives

Agency, structure and materiality

Above, the ideas of Barth and Jenkins have been used to venture into Beaker and Late Neolithic material culture in northern Jutland as expressions of highly processual and flexible forms of social identity. This highlights activities taking place locally and across regions. Seen on the background of their local, regional and European representations, however, Bell Beakers and Beakers constitute a cultural phenomenon of a very multi-faceted nature. To comprehend this complexity, future archaeology requires an elaborate theoretical toolkit which can enter into dialogue with archaeological data. Theoretical developments in anthropology and sociology no doubt hold a vast potential to gain further insight into archaeological remains. Recent theories rooted in Marxism and Structuralism, in particular, contribute to a complex and highly interactive view of culture and society even if the same theories tend to ignore the material world or underestimate its significance.

A fundamental trait in these theories is that social structure cannot exist independently of human action and interaction. Agents and structure are not autonomous phenomena opposing each other as a dualism, says Anthony Giddens. Rather they exist as a duality in which structure is always both constraining and enabling human action (Giddens 1984, 25). This interactive entity should, in my opinion, include material culture. Similarly, Pierre Bourdieu has in his generative structuralism and theory of practice incorporated the three central themes of habitus (habitually structured action), strategy (planned action, which may have unforeseen consequences) and social fields (interaction networks). He has also introduced a useful separation between different forms of capital that can be invested in various power strategies (notably economic, cultural, symbolic capital; Bourdieu 1977; 1984[13]). It might well prove worthwhile to approach Beakers and Late Neolithic Culture from such perspectives, although their weaknesses must also be considered[14].

From an archaeological point of view, I will maintain firstly that archaeological remains are fragments of social action in the past, secondly that human action is always informed by social structure, and thirdly that material culture is included in social action as a silent discourse and as a material setting, which enables as well as constrains action. In my view, then, agents, structure and materiality are highly interactive in reproducing and transforming culture and society.

13 See also Høiris (1993) for a useful summary of Bourdieu's theory of practice.

14 Perhaps not unsurprisingly, these two action-structure theories also have their weaknesses. Both may be criticised of not really considering sudden and fundamental social transformation. Society thus easily becomes a mainly reproductive, slowly transforming organism. Then we are in a situation not unlike the longue durée mode of the Braudelian universe, which also chose to emphasise the constant and unchangeable elements of history. What is needed, from an archaeological point of view, seems to involve a closer theoretical inspection of the generative potential of interaction between people within and across cultural boundaries, and between people and their material settings, from the very near and biographical to the remote and general (see Gosden 1999, 123 ff.). Arjun Appadurai, Fredrik Barth, Catherine Bell, Pierre Bourdieu, Michael Mann, and Marilyn Strathern are among the authors, who have approached relational theory.

As repeatedly argued above, the appearance of Beakers in the Danish region around 2350 BC represents a fairly marked material distinction. The emerged dissimilarities must surely be rooted in social interactions on the societal as well as the intersocietal level – i.e. ranging from the local to the more distant. It is conceivable that the Danish Beakers should be understood as a specific material discourse adhering to the strategic actions of individual agents and larger collectives within and across cultural boundaries. In short, I have suggested above that we are dealing with the creation (and recreation) of new social identities in the centuries prior to the turn from the third to the second millennium BC. It is likely that material culture, human actors and social structure were the three entangled components in making these identities. It is likewise plausible that Beakers in their Jutish context are traces of action and interaction rooted in political and ideologically influenced thinking. Beakers are thus evidence of a break with the social routine, at least during their earlier phase. When contextualised the Beaker material does suggest some degree of social change inasmuch as it deviates from preceding, more traditional or habitual patterns of materiality and social action.

Giddens (1984, 143) rightly pays attention to the fact that 'all contacts between members of different communities or societies, no matter how far-flung, involve contexts of co-presence'. When different social systems inside society, as well as between societies, become integrated this is rooted in interaction in contexts of co-presence (ibid. 142)[15]. The explicit and relatively durative link to external forms of culture in northern Jutland strongly suggests that formalised encounters, and more loosely organised gatherings, took place between foreigners and local people. It is likely that some people undertook long journeys into foreign lands and returned with exoteric knowledge that could be used in strategic actions in the home region of Northern Jutland. Foreigners most likely also visited our region, especially since copper metallurgy cannot be practiced without pre-knowledge; typically a period of apprenticeship.

In the cosmos of current practice theory there is room for explaining social change only through empirical studies of agency, of processes of institutional emulation, of unintended consequences of human action, and of structural contradiction (Giddens 1984). It is likely that all four domains were influential in the emergence of a Beaker way of life in parts of northern Europe, and in northwestern Denmark in particular. Agency and institutional emulation may well have been the most significant of the four factors, and should thus receive specific attention in future analyses of the archaeological sources. It seems clear that some groups of people in northern Jutland found room for new forms of social activities within existent structural frames, which then very gradually became transformed. It seems equally clear that these new forms of social actions and identities emulated similar institutions towards the southwest in Europe. Indeed, some people must have travelled to distant lands and must have returned with new ideas and knowledge of the 'other' . What was eventually created was the network of cross-cultural relations across Europe that present-day archaeologists recognise as the Bell Beaker and Beaker cultures.

15 Giddens has borrowed the term co-presence from the American sociologist Erving Goffman. Co-presence is anchored in the perceptual and communicative qualities of the human body. Conditions of co-presence mostly demand physical presence on a locality, but not necessarily direct communication between all agents. Some agents may interact directly whereas others may only perceive the ongoing interaction and themselves be perceived in whatever they are doing in a social space (Giddens 1984, 67 ff.).

Into the Future

Research into the Late Neolithic Period has traditionally been effectively outdistanced on the one hand by studies in the preceding Neolithic periods – especially the Funnel-beaker Culture – and on the other hand by studies in the mature Bronze Age that followed it. For some reason the Late Neolithic as an intermediate period has lacked appeal. This was noted early on by Becker (1964), who therefore attempted to promote the Late Neolithic Period as an important object of study in its own right and as a significant prelude to the much celebrated Nordic Bronze Age. Becker's appeal did inspire new studies and new results; hence new problems and questions emerged. Some of these have been summarised, assessed and addressed above.

The present-day impression is nevertheless that the Late Neolithic Period is still a neglected period in which comparatively little effort has been invested[16]. Late Neolithic find categories such as burials, sacrificial depositions, pottery, pressure-flaked flint items other than daggers still lack comprehensive study, not to mention studies seeking to integrate these into syntheses of local, regional and super-regional relevance. Many aspects of Late Neolithic Culture in the Danish region remain unstudied, unpublished, or insufficiently published. A vast research potential is, however, implied by the quantities of Late Neolithic materials stored in museum collections and by the continued flow of excavation reports. One such potential is to explore identities of age, gender, rank, profession, ethnicity and so forth. New insight can surely be achieved by drawing on published evidence, but this should not conceal that what is really needed is primary recording and analysis of the archaeological sources. This is, in fact, not only of relevance to Beakers, but to Late Neolithic Culture in general.

This article and preceding studies hardly exhaust the subject of Beakers in Denmark. On the contrary, they most likely only mark a beginning, since Beaker material culture is continuously and increasingly being excavated. Quantities of new material have notably emerged quite recently from the excavation of early Late Neolithic settlements at Bejsebakken close to the flint mines (Sarauw in press). This must remind us of a constantly changing data situation. These quantities of new material emphasise more than anything else the urgent need for a detailed analytical treatment of Beaker material culture to be carried out in its Late Neolithic setting using primarily recorded data. One such analysis is fortunately in progress (PhD project: Torben Sarauw). Besides, a detailed material and contextual comparison with the preceding Single Grave assemblages is obviously required inside as well as outside the Beaker region in northern Jutland. It is just as important not to ignore our current obligation to present, revise and review interpretations. Future developments in social theory will no doubt improve our understanding of this particular kind of material culture.

The ultimate reasons for Beaker activities should be looked for in the social and material contexts specific to northern Jutland and other 'islands' of Beaker Culture in Europe. In the local communities mere copying of foreign material culture and social institutions very rarely happened, and many societies evidently succeeded in resisting, thus maintaining themselves in a recursive manner. The remarkable thing is the variation encountered across Europe among Beaker-enriched communities and among non-Beaker

16 The relative popularity of Late Neolithic settlement studies can be connected to increased excavation activities, but also to a celebration of settlements as an optimal unit of study. Settlements are often thought to bring more genuine and uncomplicated information about prehistoric society than other kinds of past material culture.

communities. It is a special task for future research to study how local traditions interacted with foreign ideas and patterns of action.

Zusammenfassung

In einer Darstellung der Forschungsgeschichte von Spätneolithikum und Glockenbecher-Einflüssen in Südskandinavien werden sowohl chronologische Modelle, siedlungsarchäologische Fortschritte und soziale Interpretation vorgelegt als auch offene Probleme geschildert. Eine Interpretation ist nur mit Hilfe einerseits einer detaillierten Analyse der archäologischen Daten, andererseits einer intensiveren Beschäftigung mit sozialer Theorie möglich.

Es gelingt beim derzeitigen Stand der Forschung, die signifikante Rolle sowohl der spätneolithischen Verhältnisse als auch der Glockenbecher-Einflüsse darzustellen. Offenbar handelt es sich ab ca. 2350 v. Chr. bei Nordjütland um eine Region, die aufgrund der geographischen Vorteile bei Interaktionen und der bedeutenden Flintvorkommen zu einer Kernregion sozialer Entwicklung wird. So lässt sich u. a. zeigen, dass von hier und später von Seeland Silexdolche bis nach Nordmitteleuropa und Mittelskandinavien ausgetauscht werden. Im Rahmen verstärkter innergesellschaftlicher Rivalität beginnt die Limfjord-Region, Glockenbecherelemente als alternative Darstellungsformen sozialer Verhältnisse in die eigene Gesellschaft zu integrieren und diese als Ausdruck kultureller Identitäten zu benutzen. Die Becherideologie, die offensichtlich aufgrund von Interaktionen mit der niederländischen Veluwe-Region zugänglich ist, wird zu einer eigenen kulturellen Sprache.

Sammenfatning

Dette studie fokuserer på den tidlige del af den senneolitiske periode med vægt på indflydelsen fra den europæiske klokkebægerkultur i slutningen af det 3. årtusinde f. Kr. Forskningshistorien bedømmes ganske kort, og publicerede kilder til hverdagslivet, rituel praksis og materielle udtryk diskuteres detaljeret. Det sker bl.a. med det formål at nå frem til en foreløbig konklusion, som en beskrivelse af fremtidens forskningsspørgsmål kan tage afsæt i.

Flintdolke og andre ting og materialer beriget med symbolske betydninger, kultur og viden blev udvekslet over det nordlige central Europa og Sydskandinavien, men blev forskelligt modtaget på lokalt niveau. Den specielle kulturelle og sociale situation i Nordjylland – forbundet med en markant koncentration af Beaker elementer – kan bedst forstås som værende afhængig af en serie interne forhold som for eksempel rige flint ressourcer samt interaktion med et større senneolitisk kulturrum i Sydskandinavien og med sene klokkebægergrupper i Vesteuropa.

Et scenario præsenteres bestående af rivaliserende sociale identiteter, hvis strategier var tæt koblet til tilegnelsen af ny materiel kultur og i mindre omfang også nye kulturelle og sociale praksisser. Eksterne impulser blev hele tiden oversat til et lokalt kulturelt sprog. Fremtidens forskning i Beakers vurderes til at kunne få den største succes gennem en fortolkende tilgang, der kombinerer analyser af arkæologiske data med sociale teorier om materiel kulturs rolle i social praksis, identifikationsstrategier og tværkulturel forbundenhed.

Catalogue of settlement sites with Beaker pottery

Most sites have been published (beginning of 2002), but a few sites have kindly been reported to me by the excavators. The sites often have two-ailed houses with sunken floor at one end. The list is not necessarily complete since the presence of Beaker pottery is not always specifically mentioned in AUD. For burials with Beaker pottery see Glob (1944), Ebbesen (1977), and Fabech (1986).

AUD is an abbreviation for the annual publication of 'Arkæologiske Udgravninger i Danmark' (with English versions), Det Arkæologiske Nævn, København.

1. Hemmed Plantage, Hemmed Parish. 14.01.10 (Boas 1986; 1991).
2. Svapkæret, Rimsø Parish. 14.01.14 (Boas 1986).
3. Glæsborg Lyng, Glæsborg Parish. 14.01.07 (Boas 1986).
4. Pismølle, Lyngby Parish. 14.02.09 (Boas 1986).
5. Diverhøj, Homå Parish. 14.02.06 (Asingh 1987).
6. Solbjerg III, Solbjerg Parish. 12.03.11 (Johansen 1986).
7. Fur. 13.02.02 (Aarup Jensen 1972,109).
8. Myrhøj, Strandby Parish. 12.02.12 (Aarup Jensen 1972).
9. Stendis, Ryde Parish. 18.02.06 (Skov 1982).
10. Tastum, Kobberup Parish. 13.01.07 (Simonsen 1983).
11. Husby, Husby Parish. 18.08.01 (Aarup Jensen 1972, 109 f.).
12. Hovergårde, Hover Parish (Aarup Jensen 1984).
13. Lodbjerg Klit, Mortens Sande. 11.01.08 (Liversage 1989).
14. Nørre Holmegård ved Ringkøbing (Aarup Jensen pers. comm.).
15. Lindum, Selde Parish. 13.11.07 (Ebbesen 1977).
16. Lodbjerg Klit, Gjævhul Bakke. 11.01.08 (Ebbesen 1977).
17. Kildevang, Harring Parish. 11.01.03 (Ebbesen 1977).
18. Store Arden, Store Arden Parish. 12.04.10 (Ebbesen 1977).
19. Sødal Skov, Rødding Parish. 13.08.12 (Ebbesen 1977).
20. Geding, Fårup Parish. 15.05.02 (AUD 1991, no. 286; Jens Jeppesen pers. comm.).
21. Ove Sø, Sønderhå Parish. 11.01.12 (Bech 1993; Earle et al. 1998).
22. Ballegård, Skarresø Parish. 14.11.07 (AUD 1993, 176).
23. Nørre Holsted III, Holsted Parish. 19.03.04 (AUD 1993, 196).
24. Vandborg, Borgbjerg Parish. 18.05.02 (AUD 1993, 189).
25. Kongsager, Hørning Parish. 14.10.06 (AUD 1996, no. 305).
26. Mosegård, Grundfør Parish. 15.06.03 (AUD 1997, no. 331).
27. Bejsebakken. Hasseris Parish. 12.05.06 (AUD 1998, no. 282; 1999, no. 339).
28. Brændekilde. 08.04.03 (AUD 1998, no. 190).
29. Petersborg. Østbirk Parish. 16.05.15 (AUD 1998, no. 443).
30. Søndergård. Vrejlev Parish. 10.01.16 (AUD 1999, no. 284).
31. Glatrup IV. Dommerby Parish. 13.01.02 (AUD 1999, no. 359).
32. Rønbjerg Strandvolde. 12.07.10 (Skousen 1997/98, fig. 8).
33. Alken Enge, Dover Parish (AUD 1995, no. 344).

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17 For references to early metalworking see Vandkilde (1996).

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