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Chronological and Regional Variation in the Late Mesolithic of Eastern Denmark

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As a collaborator to the "Vedbæk Projekt" the author has analysed material variation within the late Mesolithic in eastern Denmark. A result of these studies has been the recognition of five chronological phases within the Kongemose and Ertebølle periods. These phases show a clear resemblance to the development of e.g. projectile points among other Mesolithic groups in Western Europe.

Another important result is the recognition of pronounced regional and local variation within the flake axes of the late Ertebølle culture in eastern Denmark reflecting distinct local groups.

Among sedentary populations, it is anticipated that local patterns of artifact styles, produced and discarded locally, will develop in the same way as dialect groups in language. If so, the existence of local groups of Ertebølle flake axes reflects the presence of territorial and social groups in the Ertebølle resembling the dialectic tribes known from recent hunter-gatherers in Australia and the Kalahari (Birdsell 1968, Wiessner 1983).

THE VEDBÆK RESEARCH AREA

Northeast Denmark has undergone an isostatic uplift since Atlantic time, raising coastal Ertebølle and Kongemose sites above present sea level. Due to the excellent potential for examining changes in Mesolithic coastal cultures in this area of uplift, the "Vedbæk-Project" was initiated in 1974 (1). In 1975 the Mesolithic graveyard at Henriksholm-Bøgebakken was found (Albrethsen and Brinch Petersen 1977), and intensive interdisciplinary investigations have been carried out in the subsequent years. With 35 known sites (fig. 2) documenting a continuous habitation over 300 years the Vedbæk inlet offers an important area for investigation.

The sites

In the 6th millenium bc salt water flooded the Vedbæk valley, creating a shallow inlet with numerous islands and peninsulae inviting habitation. The hunting and fishing population of the Kongemose period (5500 – 4500 bc) occupied the area, which has been populated ever since.

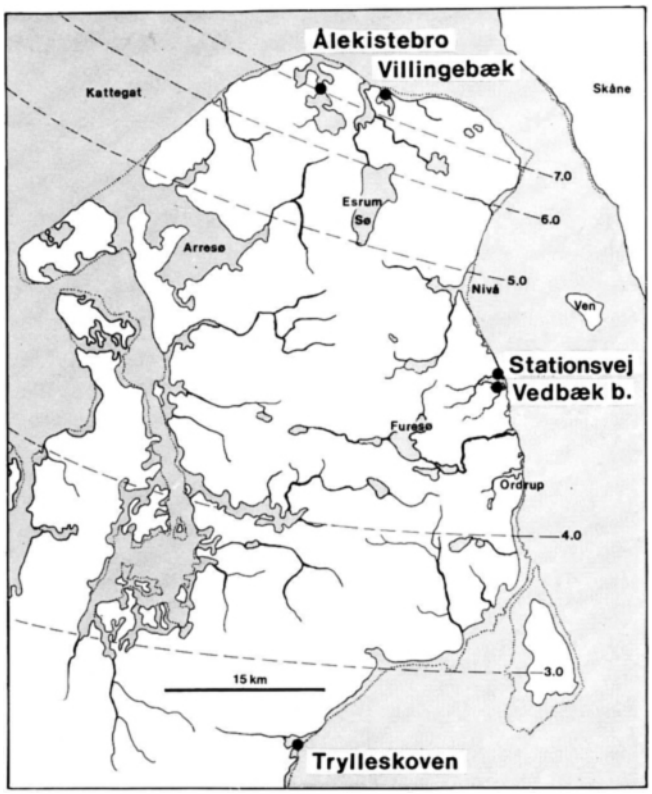

Fig. 1. Northeast Zealand in the Atlantic climatic phase, showing the highest Littorina coast line. The modern coastline is indicated by the fine dotted line. The stippled contour lines indicate the degree of coastal uplift since 3500 B.C. the map also shows the five coastal sites which have given names to the Kongemose and Ertebølle phases in eastern Denmark. Drawn by Svend Åge Knudsen.

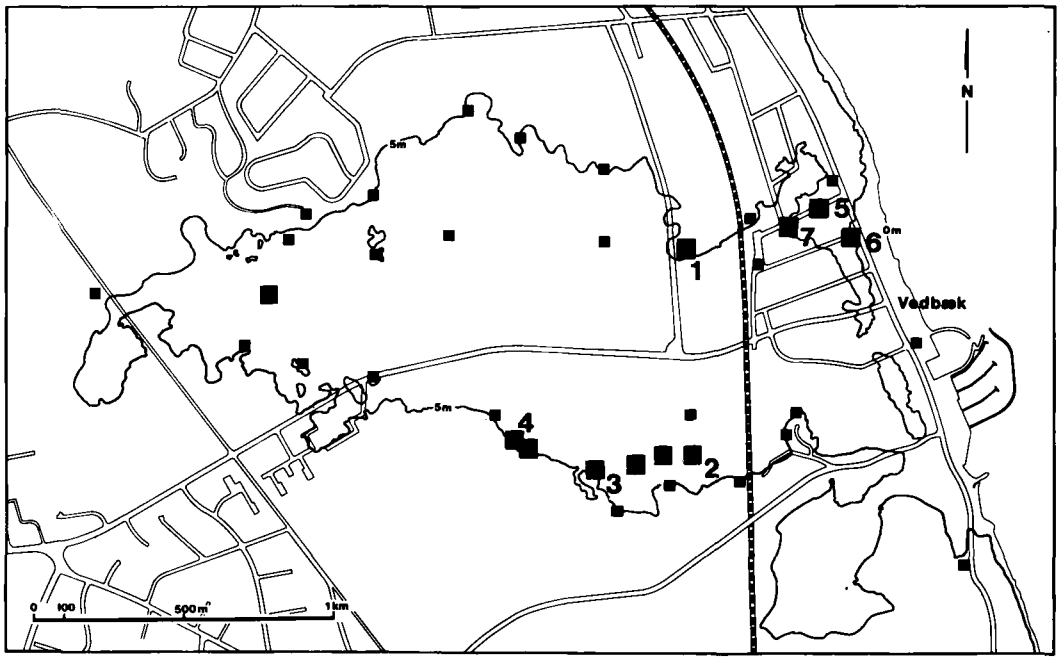

Fig. 2. The "Vedbæk inlet" indicated by the dark 5 meter contour line, and the 35 known Stone Age sites. Mentioned in this article are: 1. Henriksholm-Bøgebakken, 2. Vedbæk boldbaner, 3. Maglemosegårds Vænge, 4. Maglemosegård, 5. Stationsvej 11, 6. Marievej, and 7. Stationsvej 17. Drawn by Svend Åge Knudsen.

Settlement was placed as close to the water as possible. The location of sites on small islands and peninsulae demonstrates that the inhabitants wanted to live as close as possible to the main channel of the inlet where the best fishing grounds were to be found.

The Vedbæk inlet has none of the »kitchen middens« with massive layers of oyster shells otherwise so characteristic of Danish coastal sites. There were no oysters in the Øresund or in the Baltic Sea east of Gedser (Spärck 1940:72). Thin layers of sea shells (mussels and periwinkles) may be found on sites along the shore of the Øresund, but coastal sites in eastern Denmark generally do not contain sea shells.

Stratigraphy

In the Vedbæk investigations, an effort has been made to distinguish culture layers of different ages. It is now clear that the larger sites rich in material – which have of course interested the archaeologists – have been inhabited over a long period. The living horizons in these occupation zones contain a mixture of early and later cultural remains. This mixture is a result of bioturbation – human and canine digging, as well as moles and water voles tunnelling through the culture layers, have turned everything upside down.

Conditions are somewhat better in the lagoon sediments adjacent to the site. Here excavations of the water-logged "refuse layers" reveal thick stratigraphic sequences of sand and gyttja layers deposited during the habitation. In this area of rapid sedimentation, early and later objects are kept neatly apart. The artifacts that have been thrown into the water at varying points in time have remained in stratigraphically different layers. *Maglemosegårds Vænge* is the most important of these sites (2). There are several sand and gyttja layers present with cultural remains from three different phases. Abundant wooden artifacts have made it possible to C-14 date the cultural phases as well as the marine transgressions that deposited these layers (Christensen 1982: 176).

In addition sites on beach ridges at the mouth of the Vedbæk inlet have been investigated. The mouth of the inlet was an attractive settlement area. The continuous formation of beach ridges by material eroded from moraine cliffs north of the inlet created new habitation areas and, as new beach ridges were formed next to the

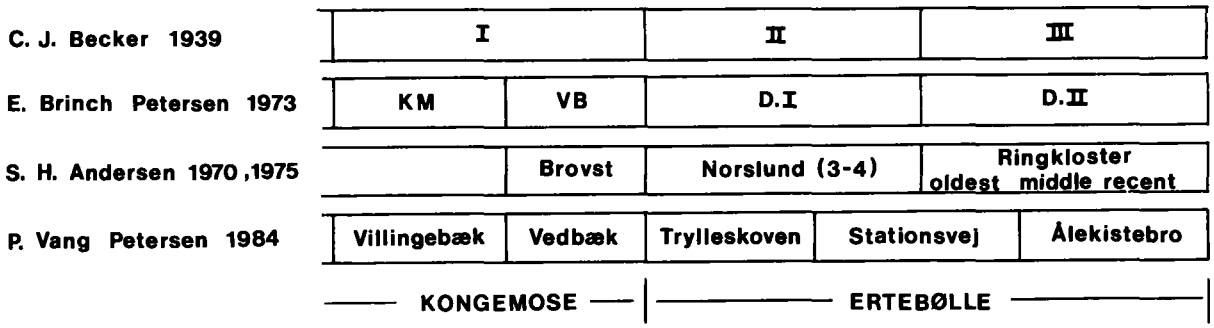

Fig. 3. The development of archaeological chronologies for the Kongemose and Ertebølle periods over the last 45 years in Denmark.

old ones, a horizontal stratigraphy of the occupation of the ridge was created.

The chronological development of material culture in the Kongemose and Ertebølle periods is thus documented by stratigraphical observations, both vertically and horizontally.

The artifacts

Irrespective of the conditions of preservation, the main body of the archaeological assemblage consists of flint artifacts. Consequently, the study of the chronological development of the Vedbæk sites has focused on the lithic materials.

Lithic artifacts from coastal sites consist primarily of waste. Tools are usually broken, and consequently arrowheads are an important group among the flint tools. They appear in large numbers and they have normally kept their original appearance. Due to their small size they were generally not repaired or reworked for other purposes. The arrowheads vary widely in size and shape and analysis has shown that these small flint points provide the best information for dating late Mesolithic sites (fig. 4).

A series of the common flint types – blades, axes and cores – have also been examined and classified according to discrete technological attributes of either/or character, e.g. blades produced by a soft hammer or a hard hammer (fig. 7), handle cores with a negative or a positive platform (fig. 8), axes made from a flake or a core piece, arrowheads having dextral or sinistral orientation, etc. By means of such criteria it has been possible to classify many fragmented pieces that could not have been included if shape or size criteria alone had been used.

CHRONOLOGICAL DEVELOPMENT

Investigations show that five phases of the Kongemose and Ertebølle periods can be established. The development in Vedbæk corresponds to that of the rest of northeast Zealand, and the separate phases are named after the sites (fig. 1) where the inventory characteristic of the individual phases was first recognized or appears in its purest form (Vang Petersen 1979). Each phase is defined by the predominance of various types of arrowheads (fig. 5), but other tool types also contribute to the characterization (fig. 6). This subdivision should be compared to the earlier chronological systems as shown in fig. 3. The coastal sites have previously been inter-

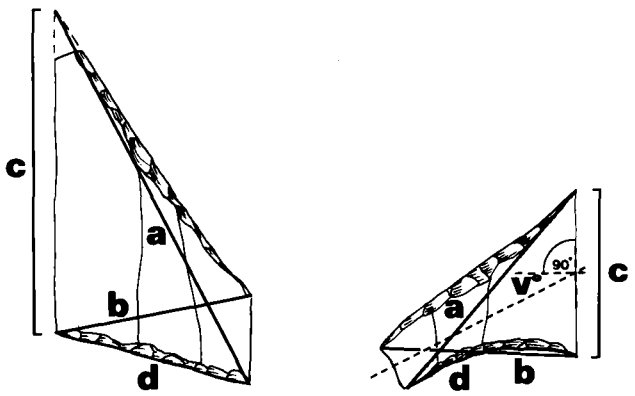

Fig. 4. Measurements and morphological elements used in the typological and chronological analysis of projectile points: a. length of long diagonal, b. length of short diagonal, c. length of leading edge, d. shape of basal transverse retouch, and v° axial angle of leading edge. Above: sinistral, rhomboid arrowhead (a:b ≥ 1,5) with straight basal retouch and broad edge (a:c < 1,75). Below: dextral oblique (v° ≥ 10°) transverse arrowhead (a:b < 1,5) with concave basal retouch and narrow edge (a:c ≥ 1,75).

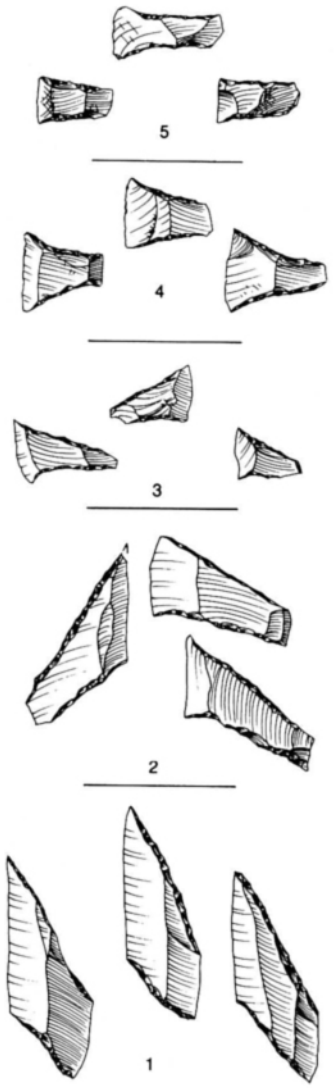

Fig. 5. The succession of projectile point types during the five phases of the late Mesolithic in northeast Denmark: (1). The Villingebæk phase (early Kongemose), (2). The Vedbæk phase (late Kongemose), 3. The Trylleskov phase (early Ertebølle), 4. The Stationsvej phase (middle Ertebølle), and 5. The Aalekistebro phase (late Ertebølle). Drawn by Eva Koch Nielsen. 2:3.

preted as habitations of relative short duration and the characterization of the material aspects of the separate phases has been based on inventories from selected locations. Recent investigations, however, have shown that coastal sites have been inhabited repeatedly for hundreds of years. Even localities that have been used as type sites for phases often cover two or more phases of the cultural development (Vang Petersen 1979: 48–55).

The Villingebæk phase (early Kongemose) 5500 – 5000 bc.

The Villingebæk phase is characterized by large rhomboid arrowheads with a broad edge and a straight basal retouch (fig. 5) (3). The arrowheads are made with the microburin technique and are nearly always sinistral. The blades are long and regular, produced by soft hammer technique with an antler fabricator (Mathiassen 1948: no. 190). Microblades are used as insets in slotted bone points and daggers. The microblades are produced from handle cores, which during this phase generally have negative striking-platforms, i.e., the platform is created by removing a flake from the core (fig. 8). Furthermore this phase contains numerous burins made on blades or flakes. In this phase, named after the site Villingebæk East A (Kapel 1969), flint axes are almost exclusively core tools with a rhomboid cross-section and "normal edge" made by removing flakes parallel to the edge (fig. 10).

The Vedbæk phase (late Kongemose) 5000 – 4500 bc.

The Vedbæk phase is dominated by narrow rhomboid arrowheads and big oblique transverse arrowheads (3). The arrowheads usually exhibit a concave basal retouch, and roughly 33 % are dextral. The microburin technique is discontinued during this phase. Soft hammer blades are still being produced but hard hammer blades become common towards the end of the phase. As the name indicates these blades have been flaked off by means of the hard hammer technique, i.e. by direct percussion with a hammer stone, a technique that results in rather irregular blades (fig. 7). In the Vedbæk phase – named after the site Vedbæk boldbaner (Mathiassen 1946, Vang Petersen 1977) – most handle cores are made on large flakes on which the positive side with the bulb of percussion is used as striking-platform. There are still some burins among the blade tools but, as in the early Kongemose, borers and scrapers are very rare. Flint axes are not distinguishable from those of the Villingebæk phase, nor do the bone and antler materials show any significant changes.

The Trylleskov phase (early Ertebølle) 4500 – 4000 bc.

In the Trylleskov phase a number of characteristic Kongemose types disappear including rhomboid arrow-

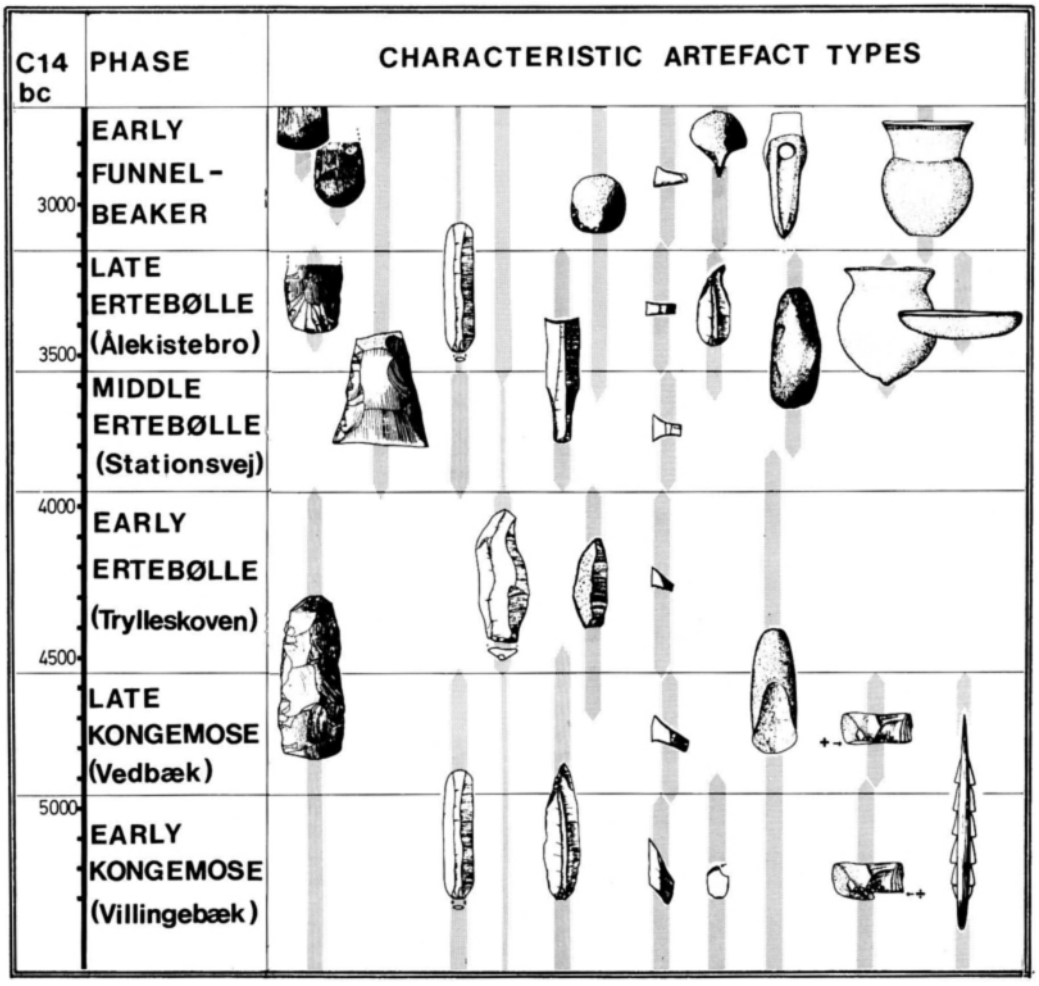

Fig. 6. The appearence of characteristic artifact types in the coastal Mesolithic and Neolithic culture in east Denmark.

heads, microburins, soft hammer blades, handle cores, fabricators, and slotted bone points. The arrowhead category is now completely dominated by small oblique points. Soft hammer blades have been completely replaced by hard hammer blades, often with a dorsal retouch. Burins are made on flakes or hard hammer blades, borers are rare, and scrapers are completely absent. The absence of scrapers is particularly noteworthy in view of their otherwise broad distribution, temporally as well as geographically. Axes are still represented only by core tools. The early Ertebølle has few characteristic flint types. For this reason it was not recognized as a distinct phase until the excavation of the type-site Trylleskoven on the Køge Bugt (fig. 1.) in 1976 (Vang Petersen 1978). This reduced inventory has since then been found at several localities along the Vedbæk inlet.

The Stationsvej phase (middle Ertebølle) 4000 – 3500 bc.

In the Stationsvej phase (4) arrowheads are symmetrical, transverse forms with a broad leading edge and concave sides. The points are made on regular soft hammer blades which have reappeared and once again dominate the blade industry after 500 years of absence. Antler fabricators have also returned, but they are now significantly shorter than they were during the Kongemose. A new and characteristic type is the tanged blade with a concave end-retouch, a type that is also found in the next phase. Burins are common but borers and scrapers are still missing, at least during the first part of the phase. Most important is the emergence of the flake axe, which in this phase completely replaces the core axe. In the Stationsvej phase, the symmetrical flat-trimmed type dominates. In the second half of the

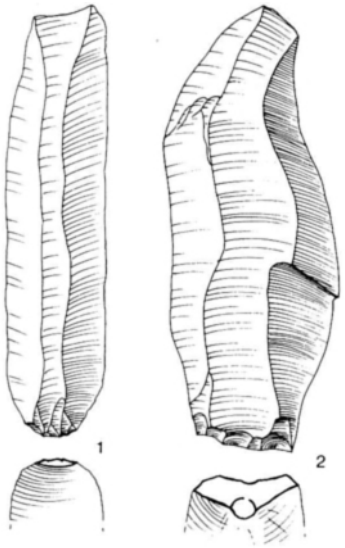

Fig. 7. The difference between: 1, a soft hammer blade, and 2, a hard hammer blade, is seen clearly at the bulbar end of the blade. Drawn by Eva Koch Nielsen. 2:3.

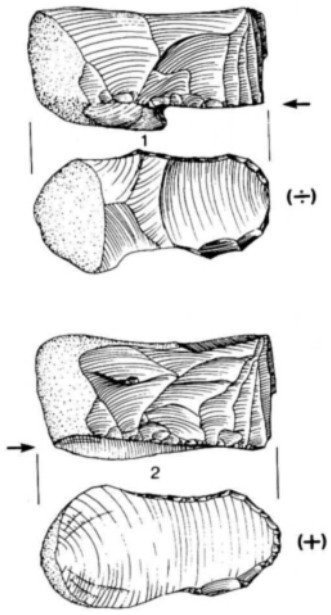

Fig. 8. Handle cores are abundant in the Kongemose culture in eastern Denmark. 1. Handle cores with "negative" striking-platforms, – the negative scar of a flake taken from the core becomes the platform – are prevalent in the early Kongemose while handle cores with "positive" platforms – made on large flakes where the positive side with the bulb of percussion is used as striking-platform – dominates in the late Kongemose. Drawn by Eva Koch Nielsen. 2:3.

phase, pottery makes its appearance in the form of thick-walled, pointed-based vessels. The phase was recognised for the first time at the excavation of the site Maglemosegaard in the Vedbæk area (5), but later a less mixed site from this phase was found on the beach ridge in the mouth of the Vedbæk inlet at Stationsvej 11 (6) (fig. 2).

The Aalekistebro phase (late Ertebølle) 3500 – 3000 bc.

In the latest part of the Ertebølle period, transverse arrowheads are narrow with straight or slightly concave retouched sides. In thise phase named after the site of Aalekistebro (6), soft hammer blades are once again less common, especially towards the end of the phase. Burins are poorly represented, but borers and especially scrapers have become extremely common. There are still the three major types of flake axes, but the symmetrical side-trimmed and the asymmetrical flake axes prevail in northeast Zealand. Core axes are revived, but with a symmetrical, convex cross-section and a "special" working edge, shaped by parallel blade-like removals from the edge (fig. 10). In addition to the pointed-based vessels, flat oval blubber lamps appear and Funnel-Beaker pottery is apparently in use during the last part of the Aalekistebro phase, which probably ends around 3000 bc in Zealand.

The causes of chronological changes

Throughout these phases of the Atlantic Mesolithic culture there are only small changes in the appearance of the most important functional types. Arrowheads, flint axes, blades, and burins are in use throughout the period. However, there are significant changes in shape (for arrowheads) and manufacturing techniques (for axes, blades, handle cores, etc.). Such changes are apparently more common and have happened more quickly than previously presumed. The most likely explanation for most of these shifts in material culture during the Kongemose and Ertebølle periods seems to be changes in taste or fashion.

All over Europe hunters were manufacturing flint tools and new ideas may have arisen anywhere. The parallel development in microlithic artifacts in west and central Europe during the Boreal climatic period

(Clark 1958, Jacobi 1976) indicates that ideas spread rapidly over very long distances during the early Mesolithic.

In the rest of Europe there are few excavated sites from Atlantic time that can be compared to the sites in southern Scandinavia. At the present the best basis for a comparison seems to be La Baume de Montclus in Languedoc (Escalon De Fonton 1976: 1382–89). At this site in southern France, 1500 km from Vedbæk, the stratigraphic sequence shows a development in arrowhead morphology that is strikingly similar to the Danish material and roughly contemporary according to C-14 datings. Narrow scalene triangles and broad trapezes are replaced by rhomboid arrowheads which are later replaced by oblique transverse forms.

Around 4000 bc, these are superceded by symmetrical transverse arrowheads with a broad cutting edge. Various sites with rhomboid or oblique transverse points in the area between southern France and Denmark (Rozoy 1978: 525–34, 489–509) argue that this parallel development is no coincidence. Such examples of similar material development among widely separated groups demonstrate that new types and techniques spread rapidly over Western Europe in the late Mesolithic.

REGIONAL DIFFERENCES WITHIN THE ERTEBØLLE CULTURE

The chronological development of the material culture recorded at Vedbæk is roughly the same among all the Atlantic Mesolithic groups in southern Scandinavia. As already noted, parallels can be found among other European hunters but of course there are also many differences. Culture varies, new ideas are not welcomed with the same degree of enthusiasm everywhere, taste and needs change, and raw materials and food resources are not evenly distributed. Even in a small region like Denmark, pronounced differences between local areas can be observed.

In the early phases of the Atlantic Mesolithic, regional studies are unfortunately complicated by the loca-

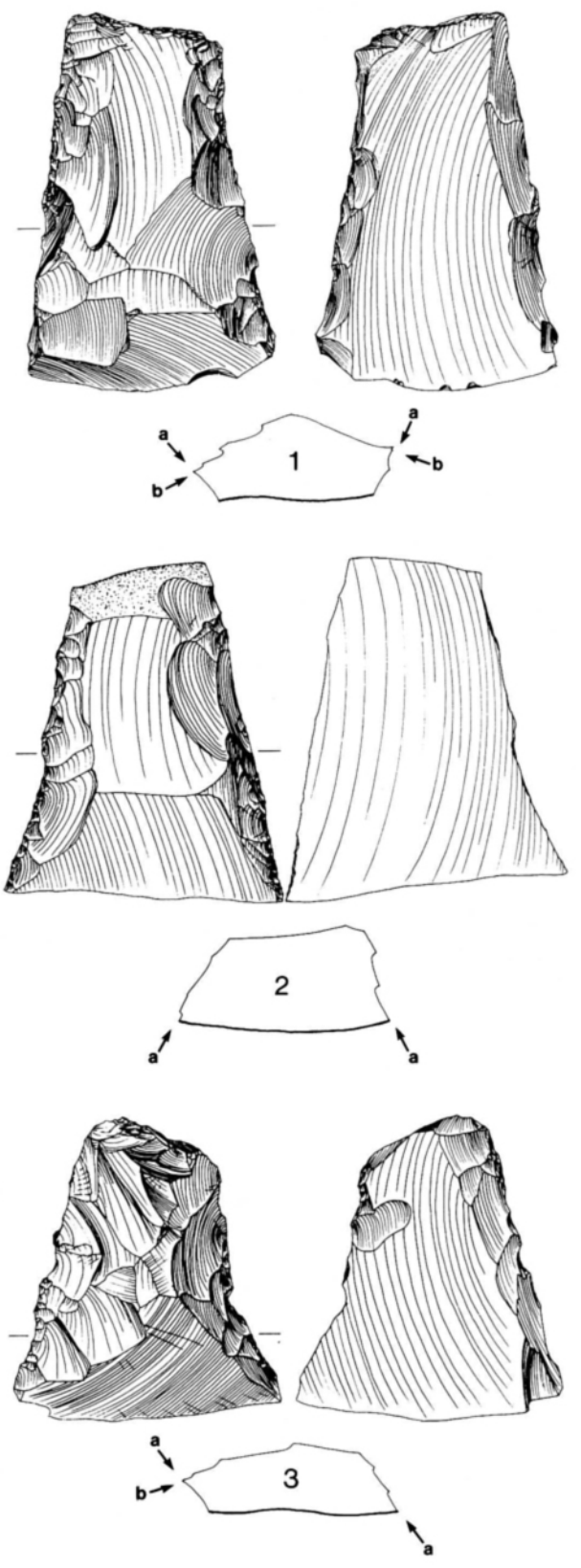

Fig. 9. The flake axes of the Ertebølle culture can be separated into three types: 1. symmetrical flat trimmed, 2. symmetrical side trimmed, and 3. asymmetrically trimmed axes. Drawn by Eva Koch Nielsen. 2:3.

Fig. 10. The core axes of the Kongemose and early Ertebølle phases have a "normal" cutting edge, created by flakes taken off parallel to the edge (1) whereas the core axes of the late Ertebølle generally show a "special" cutting edge with blade-like removals from the entire face of the edge (2). Drawn by Eva Koch Nielsen. 2:3.

tions of the sites. Due to the uneven land uplift Kongemose sites in eastern Denmark have been found only in the northeastern part of Zealand. In Jutland there is only one properly excavated site, Brovst (Andersen 1970), from the late Kongemose. This site lacks handle cores which, along with the relative absence of slotted bone points in Jutland (Andersen and Malmros 1966: 105), is indicative of regional differences between west Danish and east Danish Mesolithic already during the Kongemose period.

From the early Ertebølle period there are only a few investigated sites. In Jutland, as well as in Zealand, the layers from this phase are often heavily mixed with later material. During recent years it has been possible to isolate and excavate unmixed layers from the early Ertebølle, but the amount of material is as yet not sufficient to permit further statements regarding regional differences.

It is not until the middle and late phases of the Ertebølle culture that properly excavated sites are distributed all over Denmark and allow comparative regional studies. Bone and antler tools have been examined in detail. T-shaped red deer antler axes appear in large numbers in Jutland and on Funen (fig. 11) but they are very rare east of the Great Belt (8). Bird bone points (Mathiassen 1948: no. 152 and 156) and aurochs and wild boar scapulae with holes from the manufacture of bone discs and rings (Mathiassen 1948: no. 203) have a similar westerly distribution (fig. 12, 13). These scapulae, which are actually waste material, are rather numerous in west Denmark, but they have never been found on eastern Danish Ertebølle sites. The finished bone rings are rarely found and it is noteworthy that one specimen was recovered on the Karlsgab site in southwest Zealand (Johansson 1964: 305). This specimen was likely imported into Zealand from the west.

Bone combs (Mathiassen 1948: no. 199–201) are also known solely from sites in Jutland (Andersen 1970: 36). The total number is rather small (fig. 12) and superior conditions for bone preservation at the Jutland "kitchen middens" may contribute to the uneven distribution of these items.

Among the artifact types with an easternly distribution can be mentioned Limhamn axes, which are only found on Zealand and Bornholm on Danish soil (fig. 11) (Becker 1939: 235, Jennbert 1984: 104). Curved antler harpoons of type B (Andersen 1971) have a similar distribution (fig. 14). They appear in eastern Denmark, Scania (Larson 1981: fig. 40), and on the island of Rügen (Klinghardt 1924: 19). Type B harpoons are not found at all in Jutland, but straight antler harpoons of type A are numerous.

The distribution of these bone, antler and stone types indicates a distinct regional border between the eastern and western Danish Ertebølle cultures in the 4th millennium bc. This border through the Kattegat and the Great Belt may also have functioned as a cultural barrier during the early Ertebølle (Andersen 1978, 1980) and Kongemose, but that cannot yet be demonstrated.

The causes of the regional variation

Regional differences in the bone inventories of eastern and western Danish Ertebølle sites are partly to be attributed to the uneven distribution of resources. The depauperation of the fauna of the Zealand forests during Atlantic time is of decisive importance (Aaris-Sørensen 1980). A number of mammals, including aurochs, elk, and brown bear, disappeared from Zealand after the Boreal period and certain raw materials (e.g. aurochs

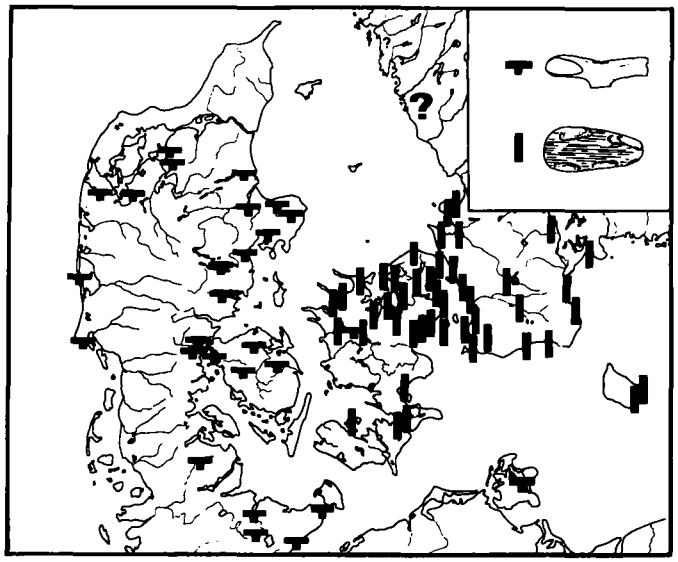

Fig. 11. Distribution of T-shaped red deer antler axes and Limhamn greenstone axes in southern Scandinavia (based partly on Becker 1939 and Jennbert 1984).

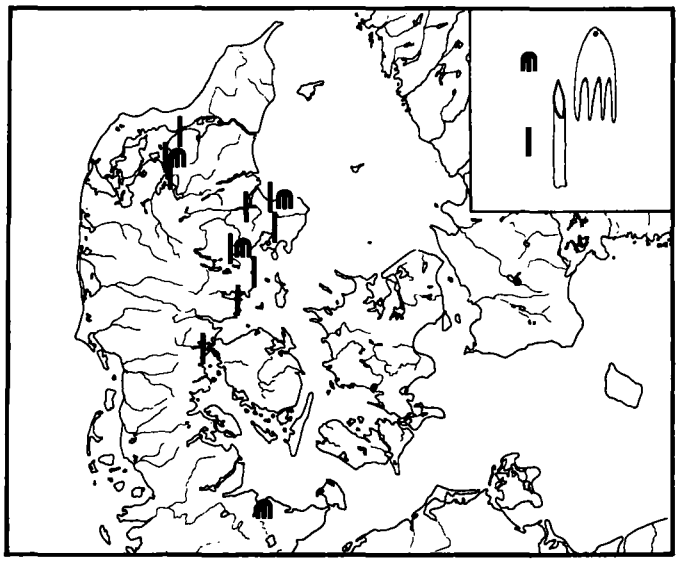

Fig. 12. Distribution of bone combs and bird-bone points dated to the Ertebølle culture in southern Scandinavia.

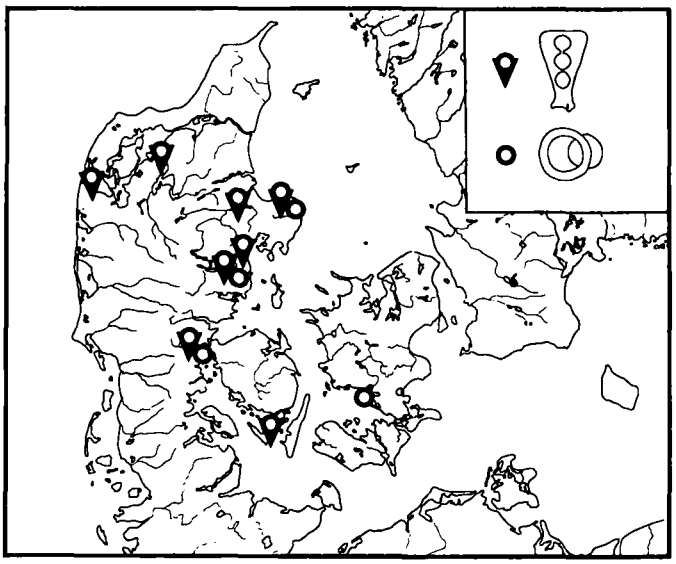

Fig. 13. Distribution of scapulae with circular cuts and bone rings or discs made from scapulae.

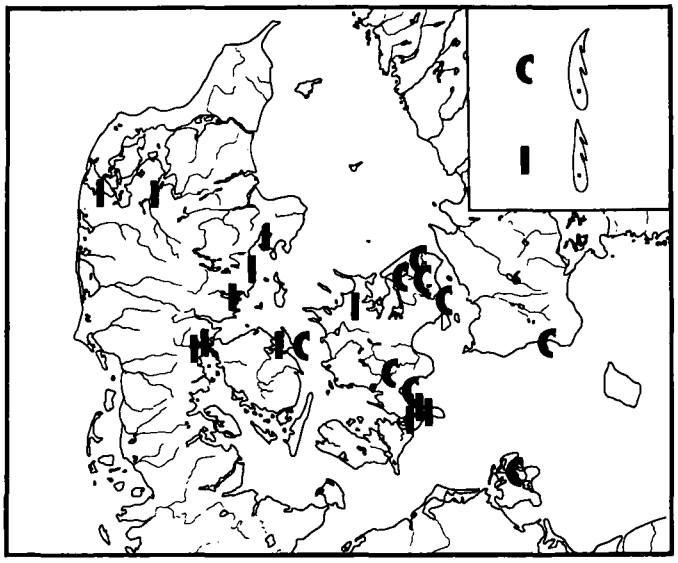

Fig. 14. Distribution of straight (type A) and curved (type B) antler harpoons in southern Scandinavia (based partly on Andersen 1971 and 1975).

scapulae for bone rings) are thus lacking in this area. The manufacture of bone rings from wild boar scapulae (Skaarup 1980) was apparently not a satisfactory solution in the Zealand Ertebølle.

Unlike aurochs and elk, red deer managed rather well in Zealand during Atlantic time and became the primary game animal. There was no scarcity of red deer antler. However, during Atlantic time antler of the Zealand red deer are reduced in size and most of them were simply unsuitable for the manufacture of antler axes. This is probably the reason why antler axes are rarely found on Zealand Ertebølle sites.

The western Danish Ertebølle culture is clearly influenced by continental groups (Andersen 1970: 36),

whereas the eastern Danish area exhibits a close resemblance in material culture to the hunting populations of the Scandinavian peninsula. The most obvious similarity is the presence of Limhamn axes on Zealand and Bornholm – a type which is found in great numbers along the Baltic coasts of Sweden (fig. 11). These lightly polished, coarse stone axes have never been found west of the Great Belt.

The regional differences between the eastern and western Danish Ertebølle can be explained partly as a result of the uneven distribution of natural resources (e.g. the absence of elk and aurochs on Zealand) and partly as the result of the presence of a major geographical barrier to communication (the Great Belt), which must have inhibited the exchange of the influences between the European continent (T-shaped antler axes) and the Scandinavian peninsula (Limhamn axes). The emergence of regional differences and the function of the Great Belt as a cultural barrier reflects the Ertebølle people's limited range and limited technology based on the local resources. Apparently the Great Belt was only rarely crossed and the exchange of ideas and exotic artifacts like the bone ring from Karlsgab, was not intensive enough to disrupt differences.

Local groups in eastern Denmark

Regional variation among organic remains is unsuitable for the more detailed study of local difference in material culture, partly because each type is known only in limited numbers and partly because many sites with unfavourable conditions of preservation lack the bone types entirely. Once again we must turn to the flint tools that always appear in large quantity and provide a good medium for the evaluation of technical and stylistic differences between sites.

The flake axes are particularly suitable as they appear in large numbers on all sites and were normally discarded without much resharpening or reworking. The flake axes have thus maintained their original shape, size and some indications of the manufacturing technique.

Comparison of flake axes from eastern Zealand sites dating to the late Ertebølle shows the existence of three local groups of these artifacts (fig. 15):

I. The northeast Zealand group including sites along the Roskilde inlet and the west coast of the Øresund. Here symmetrical side-trimmed and asymmetrical flake axes prevail.
II. The Køge Bugt group including sites on the island of Amager and along Køge Bugt where symmetrical flat-trimmed flake axes make up the majority of the type.
III. The southeastern Zealand and Møn group including sites along the Præstø inlet and on the island of Møn, where symmetrical flat-trimmed axes also prevail, but where they have a very broad cutting edge. The flake axes on the island of Møn have particularly concave curves and broad edges.

Comparable investigations on flake axes and other artifact types would presumably establish the existence of 3–4 similar local Ertebølle groups in the remainder of eastern Denmark. A group on Bornholm is markedly different due to the use of the poor local pebble flint, which precludes the manufacture of regular blades, flake axes and other larger flint types.

The causes of the local differences

The existence of local differences in eastern Denmark shows that the Ertebølle groups not only had a limited range, but also that they were closely attached to specific areas within the region. The hunters of the primeval forest were probably as limited in mobility as the "standwild" game animals they pursued and may very well have defended their territory with equal ardour. In this connection it is tempting to interpretet the recorded instances of manslaughter or murder (Albrethsen and Brinch Petersen 1977: 14), scalped children, and cannibalism (Degerbøl 1942) as results of territorial strife.

In terms of the number, size and richness of finds, the Atlantic coastal sites surpass contemporaneous inland sites on lakes and water courses. Current information indicates that the coastal sites were year-round occupations. The Vedbæk inlet with its surrounding forests could likely have sustained a permanent sedentary population of up to 60 individuals (Vang Petersen 1976; 86). Only highly sedentary populations can explain the emergence of the distinct local groups of artifacts within the Ertebølle culture.

A homogeneous distribution of food resources in the Atlantic coastal environment was of course a pre-condition for the sedentism of the Ertebølle people. This

sedentary way of life also made possible intensive fishing, which seems to have fulfilled the major portion of caloric needs, according to carbon isotope analyses of human bones from Vedbæk and other Ertebølle sites (Tauber 1981). Fishing was done to a large extent with traps and nets and yielded the best result when the fishing population was permanently settled close to the fishing grounds.

Like the regional patterning, local differences in material culture may reflect the uneven distribution of resources. The Bornholm group, for example, is distinquished by the poor flint of this island. Furthermore, the manufacture of side-trimmed axes does not require the same high quality flint as the manufacture of flat-trimmed flake axes. This may to some extent explain the popularity of the side-trimmed flake axes in northeast Zealand, where the flint seems to be of lesser quality than in the rest of the island. However, the most important differences within eastern Zealand seem to be of a stylistic nature.

Stylistic groups of flake axes, or other low status objects which are manufactured by everyone and deposited locally, probably develop the same way as dialect groups develop in language – as a result of the social organisation of the population. Territorial hunters cultivate necessary social intercourse, such as marriage contracts with their closest neighbours. Investigations among the Aborigines of Australia and in Africa show that most social interaction takes place within groups of people speaking the same dialect. Within the dialectic group or tribe, which usually includes around 500 members (Birdsell 1968: 232), the communication is intense; there is much less communication with members of other dialect tribes. The linquistic differences between the dialectic tribes seem to be the direct result of the territorial division of the population into socially self-sufficient groups.

Recent ethnoarchaeological investigations among the Bushmen of the Kalahari Desert confirm that the division of social groups not only entails a difference in dialect, but also in material culture (Wiessner 1983; 267). Thus, the size and shape of the projectile points among the San Bushmen indicate membership in a dialect group. Stylistic differences among the Ertebølle flake axes likely reflect a similar social and territorial division in the late Mesolithic.

Further studies of local style zones of Mesolithic material culture will undoubtedly create a firmer archaeological basis for the recognition of territorial and social structures in the Atlantic Mesolithic cultures.

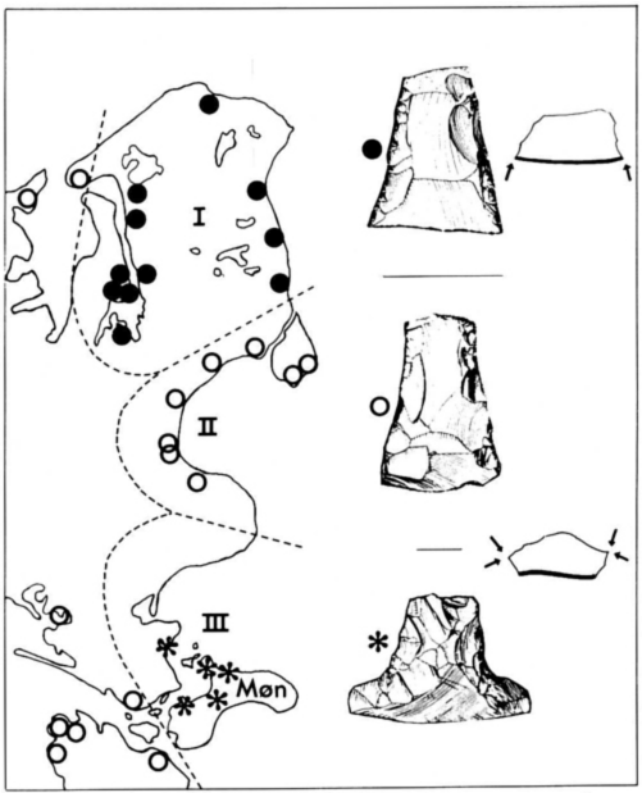

Fig. 15. Local groups of flake axes in the late Ertebølle culture in eastern Zealand: I. the sites in the northeast Zealand group are dominated by symmetrical side trimmed and asymmetrical flake axes. II. symmetrical flat trimmed flake axes prevail in the Køge Bugt group and in III. the southeast Zealand group, that has flake axes with a very broad edge – especially the flake axes from the island of Møn.

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NOTES

1. The Vedbæk Project is an interdisciplinary research program with contributors from The Institute of Prehistoric Archaeology in Copenhagen, the Danish National Museum, The Zoological Museum, and the Department of Anthropology, both of the University of Copenhagen, the University of Wisconsin, a.o. The purpose of the project is to reveal, describe, and explain the life of the hunting and fishing population of the Vedbæk inlet between c. 5500–3000 bc (Brinch Petersen 1975).

The author wishes to thank all members of the Vedbæk excavations, especially the leader of the Vedbæk-Project, Erik Brinch Petersen, who has offered much support and inspiration as a teacher at the Institute of Prehistoric Archaeology.

2. Maglemosegårds Vænge, excavated by the Vedbæk Project 1976–79, National Museum, 1st Department, file no. 1553/76. The site was inhabited during the Vedbæk, Trylleskov, and Stationsvej phases.
3. A distinction between rhomboid and oblique transverse arrowheads is made using the ratio between long and short diagonal (fig. 4). Rhomboid arrowheads are defined as ($a:b \geq 1.5$), Obligue transverse arrowheads as ($a:b < 1.5$, and $v° \geq 10°$) whereas symmetrical transverse arrowheads has ($v° < 10°$). Broad edge is defined as ($a:c \leq 1.75$) and narrow edge as ($a:c > 1.75$).
4. This phase was originally named after the Maglemosegård site (Vang Petersen 1979) but the risk of confusing this name with the Maglemose culture and the excavation of a less contaminated site at Stationsvej 11 in Vedbæk made a renaming necessary.
5. Maglemosegård was excavated by the Vedbæk Project 1975–1983. NM I, file no. 1035/75.
6. Stationsvej 11 was excavated by the Vedbæk Project 1982 – 1984, NM I, file no. 3727/82.
7. Aalekistebro was excavated by E. Freundt for the Nationalmuseum in 1946. NM I, file no. 751/46.
8. Only one T-shaped red deer antler axe from Zealand is known to the author. This axe was found in the Aamose in western Zealand NM I, file no. 5549/84, private collection.

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