

LOST AT THE BOTTOM OF THE LAKE. EARLY AND MIDDLE MESOLITHIC LEISTER POINTS FOUND IN THE BOG RÖNNEHOLMS MOSSE, SOUTHERN SWEDEN

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Abstract

During the Early and Middle Mesolithic the bog Rönneholms Mosse, situated in central Scania, southernmost Sweden, was part of a large and shallow lake. It filled up with organic material over a long time, lasting until the middle part of the Atlantic period. Due to large-scale peat extraction in the bog, surveys and excavations have been conducted for a number of years. Besides a large number of small campsites, numerous slotted points, harpoon and leister points made of bone have been found in the gyttja layers. During leister fishing the points fell out of the shafts or handles, or their tips simply broke off. The points show a considerable variation in shape and raw material. Through radiocarbon dating it has been possible to establish a chronologically based typology. This sequence, partly different to other find situations in southern Scandinavia, is of major importance for dating sites as well as stray finds.

1 Introduction

During the early Early and Middle Mesolithic the area that today forms the bogs Ageröds Mosse and Rönneholms Mosse constituted the northwestern arm of the basin of Lake Ringsjön in central Scania, southernmost Sweden (Fig. 1). The whole bog complex, with its total area of 12 km², actually constitutes a single bog divided by the river Rönne Å, the present outflow of Lake Ringsjön, into a smaller northern part, Ageröds Mosse, and a larger southern part, Rönneholms Mosse (Fig. 1). It indicates the extent of the ancient lake, within the region of Ringsjön, that later was ultimately becoming transformed into a raised bog.

The former lake was shallow, which resulted in a successive silting up with organic material; a process that started during the Preboreal chronozone and was finished during the Subboreal chronozone (NILSSON 1967). However, due to climatic changes and water level fluctuations, there was considerable variation in the rate and extent of filling. The filling was not restricted to the shallow waters just beyond the former shores. Organic material also accumulated in certain parts of the lake, creating islands of varying sizes, which could be used by the inhabitants of the region. Until the middle of the Atlantic chronozone the lake was very attractive for hunting, fishing, and gathering. Later a raised bog formed, with layers several metres thick. Due to peat cutting and intensive drainage the area has lost its former raised bog character by now.

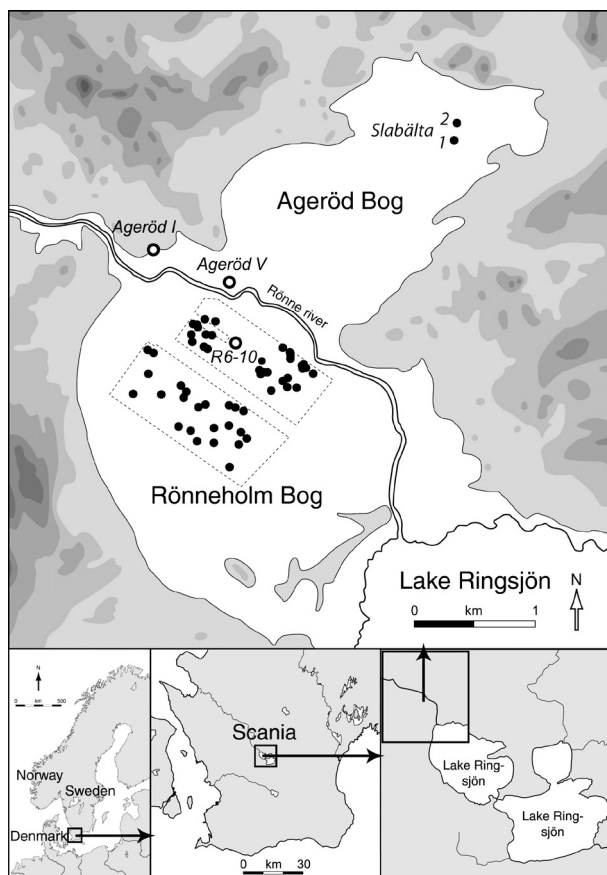


Fig. 1. Map of the bogs Ageröds Mosse and Rönneholms Mosse, with finds of leister points (dots) and selected bog sites (circles). The dashed lines mark the modern peat extraction area in Rönneholms Mosse.

2 Previous research

Since the 1930s prehistoric settlements have been discovered on the northwestern periphery of the bog Ageröds Mosse and on a moraine ridge near the former outlet of the river Rönne Å. In the late 1940s and early 1970s, fieldwork was primarily concentrated on a settlement area with several settlements, named Ageröd I, dated to the late Maglemose Culture (ALTHIN 1954a; b; LARSSON 1978). Sites were also located in the northwestern part of Ageröds Mosse (Ageröd III–VII), and in the western part of Rönneholms Mosse (Rönneholm I–III). These sites date from the Maglemose Culture to the early Ertebølle Culture (ALTHIN 1954a; DENDARSKY 2002; LARSSON 1978; 1979/1980). The refuse from a site in the central part of the bog, Ageröd V, was in an excellent state of preservation, and not only bone and antler, but also wooden artefacts were preserved there (LARSSON 1983). Ageröd V is dated to the transition phase from the Kongemose Culture to the Ertebølle Culture.

3 Peat cutting in the bog Rönneholms Mosse

Peat cutting in Ageröds Mosse stopped in the early 1960s. In Rönneholms Mosse, peat cutting has continued since the late 1800s, originally by cutting pieces of peat by spade or machine. However, in the 1990s, a new type of peat extraction, the ‘Peco’ method (see below) was introduced. In 1993 the first finds were discovered in the peat production field in Rönneholms Mosse. Today the peat extraction has more or less reached the bottom layers in all parts of the bog. The exploited area of the bog is today about 1.4 km². It is divided into sections about 20 m wide and several hundred metres long.

The method generally used for cutting peat in the bog now is the so-called ‘Peco’ method, where a thin layer of 10–15 mm of bog surface is milled each time, about ten times every season depending on the weather. In some areas all the peat and most of the gyttja have been removed, while in other areas some layers still remain, which means that while surveying the bog by walking in straight lines with a distance of about five metres one moves across different time horizons.

Since 1993 the bog has been surveyed annually, and hundreds of stray finds and small sites have been found and excavated. The small sites cover just a few square metres and seem to be the remains of very short stays. Somewhat larger sites, similar to the well-known bog sites, have also been found along old shorelines on former peat islands in the central part of the bog (LARSSON/SJÖSTRÖM 2011; 2013; see Fig. 1). The sites are dated by typochronology, combined with radiometric analysis, to the period from the late Maglemose Culture to the late Kongemose Culture.

4 Leister points in Rönneholms Mosse

A total of 52 single finds of bone leister points stem from Rönneholms Mosse, consisting of 7 more or less intact examples, 35 tip fragments and 10 base fragments. They have all been found during the last 15 years in the central part of the bog, where commercial peat extraction is still ongoing (Fig. 1). In the northeastern part of Ageröds Mosse, called Slabälta meadows, one leister point has been found at a small bog site dated to the late Maglemose Culture (Slabälta 1; SjöSTRÖM 2013); there is also a single find of a leister point (Slabälta 2).

The fragmentary and complete leister points, with preserved barbs, show diversity in shapes, and some appear only as single specimens. The variation could be interpreted as typo-chronological, functional, or as a matter of preferences or craftsmanship. When leister points were broken off, the base fragments could have been recycled and reshaped for re-use with a smaller number of new barbs. All leister points have been found as single finds without any hafting. There are no indications of whether they were used as single fish spears or multiple leisters.

Of the 39 leister points that show similar formal attributes, a rough division into five different main types has been made. Based on radiocarbon dates from 19 selected leisters, an attempt has been made to place them in a chronological order regarding the main types (Figs. 2–4). One of the leister points (Fig. 3,2) has been radiometrically measured twice, and the results indicate that the radiometric age measurements of one object can vary by several hundred years, an important aspect when regarding the chronology of a special type. The short time range, and the standard deviation of the radiometric measurements (Fig. 4), make it difficult to construct a more detailed typological chronology, or discuss the contemporaneity further. However, it is possible to outline a typo-chronological development valid for central Scania.



Fig. 2. A find of a leister point, type 1, in the bog Rönneholms Mosse (photo Arne Sjöström).

4.1 Type 1

Type 1 consists of relatively long and finely barbed leister points (Fig. 3,1–3). They are made of long bones, with shallow notches distally sawn on the edges. The notches are placed at varying distances from each other, and the three specimens observed have long and rounded tips. The cross-section is triangular and quadratic. They are among the oldest finds from the bog and date to the Preboreal (Fig. 4). Just one settlement on dry land from the shore area, Henninge Boställe, might belong to that period (ALTHIN 1954b).

Between types 1 and 2 there is a chronological hiatus, which might indicate a lesser degree of leister fishing in the central part of the ancient lake during the period 8000–7500 cal. BC due to changes of the environment.

4.2 Type 2

Type 2 includes nine wide leister points made of long bones. In contrast to those of type 1 these leisters are well worked, and the pointy and denticulated parts have smooth and even surfaces. The barbs are widely spaced and shaped through deep cuts, and hence some have a characteristic ‘shark-fin’ shape

(Fig. 3,5), or even straight edges between the cuts (Fig. 3,6). The wide distal barb is placed at the tip of the point. Four of the five type 2 leister points are radiometrically dated to c. 7200 cal. BC (Fig. 3,4–7). During this time there are neither smaller campsites nor any larger settlements documented in the bog. A similar leister point, although somewhat more narrow, is dated to c. 6800 cal. BC (Fig. 3,12).

4.3 Type 3

Type 3 consists of five leister points; three of these have been dated. They are finely manufactured, thin and distinctly denticulated. The barbs' ends are pointed, and their angles are inclined towards the base. The distal barb is placed at the tip of the point, and some items even show a hint of a protruding tip close to the actual tip of the leister point (Fig. 3,9). The oldest type 3 leister point is dated to 7200 cal. BC, it has type 2-like widely spaced barbs (Fig. 3,8). A slightly younger type 3 leister point – dated to 7150 cal. BC – has somewhat more densely spaced barbs (Fig. 3,9). Leister point no. 18, a very late type 3-point, dates to 6575 cal. BC (Fig. 3,18). It differs from the others in its closely spaced teeth, the interior angles of which are almost longitudinally perpendicular.

4.4 Type 4

Type 4 is represented by seven long bone leister points; three of which have been dated. They have relatively closely spaced barbs. Differently from type 3, the barbs' ends are not pointed; instead each barb has retained a small part of the sharp lateral edge of the blank. Most type 4 leister points are thicker and wider than type 3 items, and not all are that well-articulated or crafted. Some are partly spongy and show concave grooves from the inner part of the long bone, often stretching far out towards the tip of the point. Significant for this type is a long and sharp tip. The interior angles are slightly blunter than those of types 2 and 3. The oldest type 4 leister point is dated to c. 7000 cal. BC (Fig. 3,10). Another type 4 leister point is distally incomplete and dated to c. 6850 cal. BC (Fig. 3,11). At about the same time, increased activity around the ancient lake is recorded through a large number of small scattered campsites and single finds. The youngest type 4 leister point dates to about 6650 cal. BC (Fig. 3,15).

4.5 Type 5

Type 5 is represented by 15 leister points made of thin ribs; five of these items are dated. They are all well-crafted, and their thickness varies between 2.7 and 3.9 mm (average 3.3 mm). Two of the retrieved type 5 leister points are almost intact and as long as 23 cm (SJÖSTRÖM 2011, fig 9:9; 2014, fig 6:1). The two earliest dated type 5 leisters have a special shape. Their tips are sharp, and they have several small and closely spaced barbs. They have been dated to c. 6800 cal. BC and c. 6700 cal. BC, respectively (Fig. 3,13–14). The close spacing of the barbs and the sharp points may be a type 4 continuation, but with a difference in the design of the barbs and a change of bone material. The other eleven leister points made of ribs have widely spaced small barbs, in contrast to the older two. Six of these are narrow, and five wider. The narrow ones have slightly smaller and sharper barbs than the wide ones. One narrow point has been dated to c. 6650 cal. BC (Fig. 3,16), and two of the wider ones to c. 6550 cal. BC (Fig. 3,17,19). These are the latest dated leister points from the area. Most likely this is not a matter of find circumstances, but rather a matter of a change to wood as raw material for leister points, a change also indicated by finds from Ageröd V (LARSSON 1983). Concerning the manufacture of the documented leister points, both the 'F' method, i.e. the splitting of metapodials of big ungulates as well as the 'D' method, i.e. the splitting of ribs from the same kind of animals (type 5; for methods see DAVID 2003), were used.

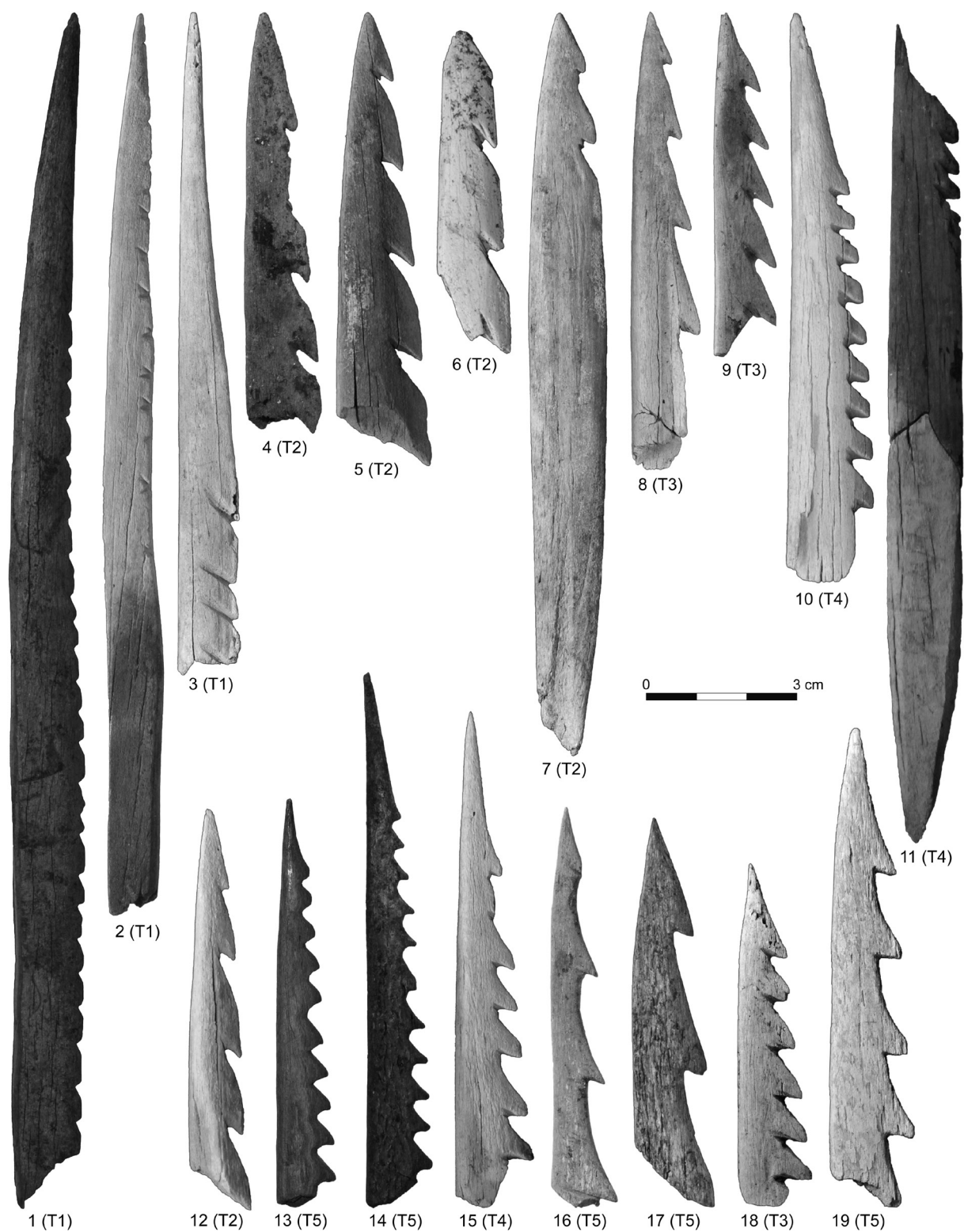


Fig. 3. Leister points from the bogs Ageröds Mosse and Rönneholms Mosse. They are placed according to their radiocarbon age. Numbers 6 and 11 have broken tips. Numbers 2, 7, and 11 have intact bases. Numbers 13, 14, 16, 17, and 19 are made of thin ribs. T = type. Scale: 90 % of natural size (photo Arne Sjöström).

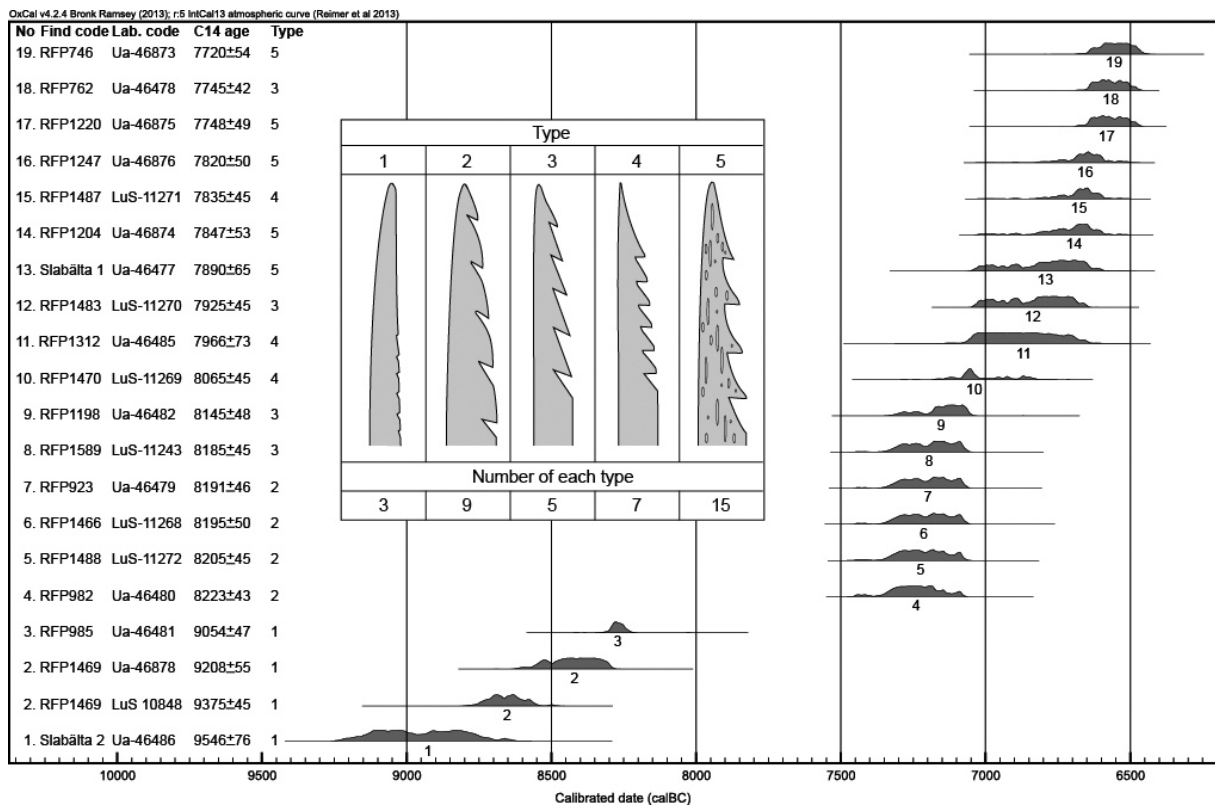


Fig. 4. Schematic types of leister points from the bogs Ageröds Mosse and Rönneholms Mosse, and radiocarbon dates of selected points. ID numbers are the same as in Fig. 3.

4.6 Distribution of leister points

The leisters in the bog Rönneholms Mosse were found evenly distributed over the peat extraction area, and no clear concentrations indicating certain areas in the ancient lake favoured for leister fishing can be recognised (Fig. 1), nor can any differences be seen concerning the spatial distribution of the different types of leisters. Most of them were found in a relatively thin layer of algae gyttja. There are no stratigraphical differences in terms of different leister types, except that one of type 1 (Fig. 3,2) was found deep down in a layer of chalk gyttja, and one of type 5 high up in a layer of detritus gyttja.

5 Regional finds of leister points

An important aspect to take into account is how this typology and its chronological setting can be compared to finds from settlements in the smaller or wider region. Concerning leister points in the neighbourhood of the Rönneholm-Ageröd bog system, there are a few finds. In Ageröd I:HC two examples of the finely-toothed type have been found. One was discovered during trench stripping (ALTHIN 1954b, pl. 50:6) and one in the lower peat layer (LP; LARSSON 1977/1978, fig. 15). The latter object has a length of 21 cm, which indicates that it was made of an elk metatarsal. The three dates from this layer span an interval between 7515–7048 cal. BC. These are much later dates than those for the stray finds in the bog complex.

Two other leister points are so heavily weathered (ALTHIN 1954b, pl. 49:2; 50:7) that they cannot be arranged in the present typology. A find from an upper peat cultural layer (ALTHIN 1954b, pl. 52:3)

as well as a stray find (LARSSON 1977/1978, fig. 16) can be classified as type 3 points, while another example belongs to type 4 (ALTHIN 1954b, pl. 52:2). The layer is dated between 7024–6470 cal. BP and 6471–6207 cal. BC. These dates can be well related to the dates of leister points of the same types in Rönneholms Mosse.

The youngest settlement site with leister points is Ageröd I:D. A find of a leister point with heavily marked barbs belongs to type 3 (LARSSON 1978, fig 82:7). This site is dated to the latest phase of the Maglemose Culture, c. 7055–6401 cal. BC, in accordance with dates of finds from Rönneholm.

Yet another site with tools made of bone and antler is Sjöholmen at the easternmost border of the bogs. This site was settled during the Mesolithic and the Neolithic; finds stem from layers with mixed material. However, three fragments of finely-barbed leister points might indicate an early use of the settlement area (LARSSON 1977/1978, fig. 33b–c).

Of the leister points found in Rönneholms Mosse 28 % are made of ribs (type 5). However, just a single example – from the site Slabälta 1 in the bog Ageröds Mosse – of this dominant type comes from a settlement of about the same age. This might appear somewhat strange, but we have to be aware that a number of sites related to the former lake belonging to the Maglemose Culture and early Kongemose Culture have not yielded finds of organic material.

At the Ageröd V site, which dates to the transition from the Kongemose Culture to the Ertebølle Culture, there are wooden leister points representing a type best known at a number of sites from the Ertebølle Culture (KLOOSS 2015; LARSSON 1983).

REFERENCES

- ALTHIN 1954a: C.-A. ALTHIN, Man and Environment. A View of the Mesolithic Material in Southern Scandinavia. Meddelanden från Lunds universitets historiska museum 1954, 269–293.
- ALTHIN 1954b: C.-A. ALTHIN, The Chronology of the Stone Age settlement of Scania, Sweden. 1: The Mesolithic settlement. Acta Archaeologica Lundensia, Series in 4°, No. 1 (Lund 1954).
- DAVID 2003: É. DAVID, The contribution of a technological study of bone and antler industry for the definition of the Early Maglemose Culture. In: L. LARSSON/H. KINDGREN/K. KNUTSSON/D. LOEFFLER/A. ÅKERLUND (eds.), Mesolithic on the Move: Papers presented at the sixth international conference on the Mesolithic in Europe, Stockholm (Oxford 2000) 649–657.
- DENDARSKY 2002: M. DENDARSKY, Ageröd III. Eine mesolithische Siedlung in Schonen. Offa 57, 2000, 7–100.
- KLOOSS 2015: S. KLOOSS, Mit Einbaum und Paddel zum Fischfang. Holzartefakte von endmesolithischen und frühneolithischen Küstensiedlungen an der südwestlichen Ostseeküste. Untersuchungen und Materialien zur Steinzeit in Schleswig-Holstein und im Ostseeraum 6 (Kiel, Hamburg 2015).
- LARSSON 1977/1978: L. LARSSON, Mesolithic Antler and Bone Artefacts from Central Scania. Papers of the Archaeological Institute, University of Lund, 1977/1978, 28–67.
- LARSSON 1978: L. LARSSON, Ageröd I:B–I:D. A Study of Early Atlantic Settlement in Scania. Acta Archaeologica Lundensia, Series in 4°, No. 12 (Lund 1978).
- LARSSON 1979/1980: L. LARSSON, Some aspects of the Kongemose Culture of Southern Sweden. Papers of the Archaeological Institute, University of Lund, 1979/1980, 5–22.

- LARSSON 1983: L. LARSSON, Ageröd V. An Atlantic Bog Site in Central Scania. *Acta Archaeologica Lundensia*, Series in 8°, No. 12 (Lund 1983).
- LARSSON/SJÖSTRÖM 2011: L. LARSSON/A. SJÖSTRÖM, Bog sites and wetland settlement during the Mesolithic: Research from a bog in central Scania, Southern Sweden. *Archäologisches Korrespondenzblatt* 4, 2011, 457–472.
- LARSSON/SJÖSTRÖM 2013: L. LARSSON/A. SJÖSTRÖM: Mesolithic research in the central part of Scania, southern Sweden. In: K. JOHANSON/M. TÖRV (eds.), *Man, his Time, Artefacts, and Places*. Collection of articles dedicated to Richard Indreko. *Mui-nasaja Teadus* 19 (Tartu 2013) 487–513.
- NILSSON 1967: T. NILSSON, Pollenanalytische Datierung mesolithischer Siedlungen im Randgebiet des Ageröds Mosse im mittleren Schonen. *Acta Universitatis Lundensis Sectio II*, 16 (Lund 1967).
- SJÖSTRÖM 2011: A. SJÖSTRÖM, Mesolitiska lämningar i Rönneholms mosse. *Arkeologisk förundersökning* 2010. Hassle 32:18, Stehag socken, Eslövs kommun, Skåne. *Rapporter från institutionen för arkeologi och antikens historia* 4 (Lund 2011).
- SJÖSTRÖM 2013: A. SJÖSTRÖM, Slabälta 1 – en boplatz från sen maglemosetid vid Ageröds mosse. *Arkeologisk undersökning* 2012. Munkarp 2:3, Munkarp socken, Höörs kommun, Skåne. *Rapporter från Institutionen för arkeologi och antikens historia* 6 (Lund 2013).

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