

Daniel Groß · Harald Lübke · John Meadows · Detlef Jantzen (eds.)

Working at the Sharp End: From Bone and Antler to Early Mesolithic Life in Northern Europe



10

Untersuchungen und Materialien
zur Steinzeit in Schleswig-Holstein
und im Ostseeraum

**UNTERSUCHUNGEN UND MATERIALIEN ZUR STEINZEIT
IN SCHLESWIG-HOLSTEIN UND IM OSTSEERAUM**

BAND 10

Untersuchungen und Materialien zur Steinzeit in Schleswig-Holstein und im Ostseeraum
aus dem Museum für Archäologie Schloss Gottorf und dem Zentrum für Baltische und Skandinavische
Archäologie
in der Stiftung Schleswig-Holsteinische Landesmuseen Schloss Gottorf
Band 10

Begründet von
Jürgen Hoika †

Herausgegeben von
Sönke Hartz und Harald Lübke

Working at the Sharp End:
From Bone and Antler to Early Mesolithic
Life in Northern Europe

Daniel Groß, Harald Lübke, John Meadows and Detlef Jantzen (eds.)

Wachholtz



1. Auflage 2019

Redaktion: Gundula Lidke, SSHLM Schloss Gottorf, Schleswig

Satz: Daniel Groß, SSHLM Schloss Gottorf, Schleswig

Einbandgestaltung: Jürgen Schüller, SSHLM Schloss Gottorf, Schleswig; Foto: Markus Wild, SSHLM Schloss Gottorf, Schleswig

Das Werk, einschließlich aller seiner Teile, ist urheberrechtlich geschützt. Jede Verwertung ist ohne Zustimmung des Verlages unzulässig. Das gilt insbesondere für Vervielfältigungen, Übersetzungen, Mikroverfilmungen und die Einspeicherung und Verarbeitung in elektronischen Systemen.

Bibliografische Informationen der Deutschen Nationalbibliothek: Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet unter <http://dnb.n-nb.de> abrufbar.

© Museum für Archäologie Schloss Gottorf und Zentrum für Baltische und Skandinavische Archäologie in der Stiftung Schleswig-Holsteinische Landesmuseen Schloss Gottorf, Schleswig.

ISBN 978-3-529-01861-9

ISSN 2510-313X

Druck und Vertrieb: Wachholtz Verlag, Kiel/Hamburg

Printed in Europe

Besuchen Sie uns im Internet:

www.wachholtz-verlag.de



Laserscan of the wooden sign that was attached to the excavation hut during the Hohen Viecheln excavations ('To the sharp harpoon'; Laserscan: J. Nowotny, ZBSA).

ZBSA

DFG

CONTENTS

Vorwort der Herausgeber	9
Editors' Preface	11
Grußwort des Landesarchäologen von Mecklenburg-Vorpommern	12
Welcome address by the State Archaeologist of Mecklenburg-Western Pomerania.	13
Acknowledgements	14
<i>Daniel Groß, Harald Lübke, John Meadows, Detlef Jantzen and Stefan Dreibrodt</i> Re-evaluation of the site Hohen Viecheln 1	15
<i>John Meadows, Mathieu Boudin, Daniel Groß, Detlef Jantzen, Harald Lübke and Markus Wild</i> Radiocarbon dating bone and antler artefacts from Mesolithic Hohen Viecheln (Mecklenburg-Western Pomerania, Germany)	113
<i>Éva David</i> The osseous technology of Hohen Viecheln: a Maglemosian idiosyncrasy?	127
<i>Markus Wild</i> An evaluation of the antler headdress evidence from Hohen Viecheln	163
<i>Erik Brinch Petersen</i> Nordic visits to Hohen Viecheln, Mecklenburg.	179
<i>Bernhard Gramsch</i> The Mesolithic bone industries of northeast Germany and their geo-archaeological background	193
<i>Sönke Hartz, Harald Lübke and Daniel Groß</i> Early Mesolithic bone points from Schleswig-Holstein	203
<i>Ulrich Schmölcke</i> Early Mesolithic hunting strategies for red deer, roe deer and wild boar at Friesack 4, a three-stage Preboreal and Boreal site in Northern Germany.	239
<i>Lars Larsson, Arne Sjöström and Björn Nilsson</i> Lost at the bottom of the lake. Early and Middle Mesolithic leister points found in the bog Rönneholms Mosse, southern Sweden	255

<i>Sara Gummesson and Fredrik Molin</i>	
Points of bone and antler from the Late Mesolithic settlement in Motala, eastern central Sweden	263
<i>Harry K. Robson and Kenneth Ritchie</i>	
The Early Mesolithic fisheries of Southern Scandinavia	289
<i>Ilga Zagorska</i>	
The Early Mesolithic bone and antler industry in Latvia, Eastern Baltic.	305
<i>Mikhail G. Zhilin</i>	
Early Mesolithic barbed bone points in the Volga-Oka interfluve	319
<i>Olga Lozovskaya and Vladimir Lozovskij†</i>	
Bone and antler projectile points from the Meso-Neolithic site Zamostje 2, Moscow region, Russia	341
<i>Svetlana Savchenko</i>	
Early Mesolithic bone projectile points of the Urals	367
<i>Luc Amkreutz and Merel Spithoven</i>	
Hunting beneath the waves. Bone and antler points from North Sea Doggerland off the Dutch coast	383
<i>Barry Taylor, Nicky Milner and Chantal Conneller</i>	
Excavations at Star Carr: past and present.	405
<i>Ben Elliott, Barry Taylor, Becky Knight, Nicky Milner, Harry K. Robson, Diederik Pomstra, Aimée Little and Chantal Conneller</i>	
Understanding the bone and antler assemblages from Star Carr	419

VORWORT DER HERAUSGEBER

Die Schriftenreihe „Untersuchungen und Materialien zur Steinzeit in Schleswig-Holstein“ wurde von dem ursprünglichen Herausgeber Jürgen Hoika vor mittlerweile 25 Jahren im Jahre 1994 begründet, um am damaligen Archäologischen Landesmuseum Schleswig (ALM) und heutigem Museum für Archäologie Schloss Gottorf (MfA) ein Publikationsorgan für die Veröffentlichung von Forschungsergebnissen zur Steinzeit Schleswig-Holsteins zu schaffen. Dabei sollte es sich zum einen um Sammelwerke mit Beiträgen von vorzugsweise auf Schloss Gottorf veranstalteten Symposien, Workshops und Tagungen mit steinzeitlicher Thematik und zum anderen um zumeist in Dissertationen zusammengestellte ausführliche Materialvorlagen handeln. Entsprechend enthielt der 1994 vorgelegte erste Band der Reihe die Beiträge zum 1. Internationalen Trichterbechersymposium, welches, von Jürgen Hoika gemeinsam mit Jutta Meurers-Balke initiiert, 1984 am Archäologischen Landesmuseum in Schleswig stattgefunden hatte. In der Folge wurden dann aber beginnend mit den Arbeiten der beiden heutigen Herausgeber nunmehr acht überwiegend am Institut für Ur- und Frühgeschichte der Christian-Albrechts-Universität zu Kiel fertiggestellte Dissertationen veröffentlicht, die ganz wesentlich mit der wissenschaftlichen Vorlage und Auswertung von Forschungsgrabungen in Schleswig-Holstein und – seit der Beteiligung des Zentrums für Baltische und Skandinavische Archäologie an der Herausgeberschaft – aus dem gesamten Ostseeraum befasst sind.

Deshalb ist es eine besondere Freude für die Herausgeber, mit dem vorliegenden Band 10 „Working at the Sharp End: From Bone and Antler to Early Mesolithic Life in Northern Europe“ der Schriftenreihe „Untersuchungen und Materialien zur Steinzeit in Schleswig-Holstein und im Ostseeraum“ wiederum einen Sammelband mit den Beiträgen eines Workshops vorlegen zu können, der vom 14. bis 16. März 2016 auf Schloss Gottorf stattgefunden hat. Dabei handelt es sich um den Abschlussworkshop des von der Deutschen Forschungsgemeinschaft geförderten Projektes „Neubewertung von Chronologie und Stratigraphie des frühholozänen Fundplatzes Hohen Viecheln (Mecklenburg-Vorpommern) unter besonderer Berücksichtigung der diagnostischen Knochenartefakte“ (DFG-Projektnummer 271652103) unter Leitung von Daniel Groß, Harald Lübke, John Meadows (alle ZBSA) und Detlef Jantzen (Landesamt für Kultur und Denkmalpflege Mecklenburg-Vorpommern; Landesarchäologie). Entsprechend enthält dieser Band neben dem Abschlussbericht des Forschungsprojektes insgesamt 17 Beiträge der eingeladenen Workshop-Teilnehmer, die entweder ergänzende Studien zum Fundplatz Hohen Viecheln enthalten oder sich grundsätzlich mit verwandten Themen zur Erforschung des frühholozänen Mesolithikums im nördlichen Europa befassen.

Alle Beiträge wurden nach internationalem Standard von jeweils zwei anonymen Gutachtern in einem Peer-review-Verfahren bewertet und danach den Autoren zur erneuten Überarbeitung übergeben, bevor die abschließende redaktionelle Bearbeitung der Manuskripte erfolgte. Die Textredaktion für alle Beiträge wurde von Gundula Lidke durchgeführt, Jana Elisa Freigang und Jorna Titel leisteten dabei unterstützende Arbeiten. Das Layout übernahm Daniel Groß, Titelbild und Umschlag entwarf Jürgen Schüller. Die meisten Karten und Zeichnungen wurden von den Autoren selbst bereitgestellt. In einzelnen Fällen erfolgte eine Überarbeitung durch Daniel Groß. Allen sei dafür an dieser Stelle herzlich gedankt.

Neu im Rahmen der Schriftenreihe ist, dass die Beiträge unmittelbar nach Fertigstellung und Freigabe der Autoren in einem „online-first“-Verfahren auf der Homepage des Verlages im Open Access zum freien Download bereitgestellt wurden. Für die Umsetzung dieser Forderung der Herausgeber danken wir dem Wachholtz Verlag, insbesondere Herrn Henner Wachholtz, sehr.

Besonderer Dank gilt dem Vorstand des Zentrums für Baltische und Skandinavische Archäologie Schleswig, besonders dem Direktor, Claus von Carnap-Bornheim, und der Forschungsleiterin, Berit Valentin Eriksen, die die Veröffentlichung dieses Bandes durch die Bereitstellung der erforderlichen Mittel für den Druck der Arbeit maßgeblich unterstützten.

Sönke Hartz und Harald Lübke
Schleswig, im Oktober 2019

EDITORS' PREFACE

The series 'Untersuchungen und Materialien zur Steinzeit in Schleswig-Holstein' was founded by its first editor, Jürgen Hoika, in 1994, 25 years ago, in order to establish a possibility to publish Stone Age research results from Schleswig-Holstein at the then Archaeological State Museum (Archäologisches Landesmuseum [ALM]), today's Museum for Archaeology (Museum für Archäologie, Schloss Gottorf [Mfa]). Publications should, on the one hand, reflect proceedings of symposia, conferences and workshops with Stone Age topics primarily held at Gottorf Castle, on the other hand, dissertations presenting comprehensive material. According to that, the first volume, published in 1994, contained the contributions to the 1st International Funnelbeaker Symposium, which, initiated by Jürgen Hoika and Jutta Meurers-Balke, had taken place at the Archaeological State Museum in 1984. Following that, eight dissertations, mainly accomplished at the Institute for Pre- and early History at the Christian-Abrechts-University Kiel, were published, starting with those by today's editors. All these volumes contributed substantially to the scientific presentation and analysis of excavation materials from Schleswig-Holstein and – since 2012, when the Centre for Baltic and Scandinavian Archaeology (ZBSA) also became involved in editing the series – the whole of the Baltic Sea area.

Therefore the editors are especially happy to once more present conference proceedings with volume 10 of the series 'Untersuchungen und Materialien zur Steinzeit in Schleswig-Holstein und im Ostseeraum': 'Working at the Sharp End: From Bone and Antler to Early Mesolithic Life in Northern Europe' collects contributions to a workshop held at Gottorf Castle on 14th–16th March, 2016. This represented the closing workshop of the DFG-funded project 'Neubewertung von Chronologie und Stratigraphie des frühholozänen Fundplatzes Hohen Viecheln (Mecklenburg-Vorpommern) unter besonderer Berücksichtigung der diagnostischen Knochenartefakte' (DFG project no. 271652103), directed by Daniel Groß, Harald Lübke, John Meadows (all ZBSA) und Detlef Jantzen (Landesamt für Kultur und Denkmalpflege Mecklenburg-Vorpommern; Landesarchäologie). In addition to the project's final report the volume contains 17 papers by researchers invited to participate in the workshop, representing either additional studies on material from the site Hohen Viecheln or related topics in research of the early Holocene Mesolithic in northern Europe.

Each paper was, according to international standards, peer-reviewed by two anonymous reviewers and then returned to the author for reworking before final editorial work. Copy-editing was performed by Gundula Lide, supported by Jana Elisa Freigang and Jorna Titel. Daniel Groß realised the layout; cover and cover illustration were designed by Jürgen Schüller. Most maps and figures were provided by the authors themselves, some were reworked by Daniel Groß. We express our sincere thanks to all involved!

It is a novelty for the series to have papers published online first immediately after completion and authors' approval in open access for free download on the website of Wachholtz Publishers. We would like to thank Henner Wachholtz, Wachholtz Publishers, very much for making this possible!

Special thanks are due to the board of the Centre for Baltic and Scandinavian Archaeology (ZBSA) Schleswig, particularly to the director, Claus von Carnap-Bornheim, and the head-of-research, Berit Valentin Eriksen, who substantially supported this publication by providing financial means for its printing.

Sönke Hartz and Harald Lübke
Schleswig, October 2019

GRUSSWORT DES LANDESARCHÄOLOGEN VON MECKLENBURG-VORPOMMERN

Mit seinen großflächigen, oft noch weitgehend unberührten Niederungen und Binnengewässern bietet Mecklenburg-Vorpommern beste Voraussetzungen, um die gewässeraffinen Kulturen des Mesolithikums zu erforschen. Die Überreste ihrer Wohn- und Jagdstationen sind im feuchten Milieu hervorragend erhalten geblieben. Störungen durch Torfabbau, Begradiung von Gewässern oder Meliorationsmaßnahmen blieben im Wesentlichen auf das 19. und 20. Jahrhundert beschränkt. Sie haben zwar einen gewissen Schaden angerichtet, aber, weil sie zumindest im 20. Jahrhundert oft von aufmerksamen ehrenamtlichen Bodendenkmalpflegern beobachtet wurden, überhaupt erst zur Entdeckung vieler Fundstellen geführt.

Welche Fundstellen eingehender erforscht werden und damit das Bild einer Epoche besonders prägen, unterliegt oft dem Zufall. Hohen Viecheln rückte in den Fokus der Forschung, weil die Entdeckung mehrerer Knochenharpunen zu Beginn der 1950er Jahre auf eine günstige Konstellation traf: 1953 war aus der Vorgeschichtlichen Abteilung des Staatlichen Museums das Museum für Ur- und Frühgeschichte Schwerin entstanden, das auch für die Bodendenkmalpflege in den drei Nordbezirken der DDR zuständig war. Der ehrgeizige Direktor des Museums, Ewald Schuldt, hatte sich durch Ausgrabungen auf der Burgwallinsel Teterow einen Namen gemacht und war nun auf der Suche nach einem geeigneten Fundplatz für ein eigenes Forschungsprojekt.

Wegen der sehr guten Erhaltungsbedingungen versprach Hohen Viecheln, zusätzlich zu dem bekannten Spektrum an Steinartefakten auch ein umfangreiches Geräteinventar aus organischen Materialien bergen zu können. Die ebenfalls ausgezeichnet erhaltenen Tierknochen sollten Aufschluss über das Jagdwild geben. Hinzu kam die Aussicht, aus der Stratigraphie neue Erkenntnisse zur Chronologie und zu den Veränderungen der naturräumlichen Verhältnisse zu gewinnen. Diese Erwartungen wurden nicht enttäuscht: Hohen Viecheln entwickelte sich zu einem der bedeutendsten Plätze mesolithischer Forschung, gleichrangig mit Duvensee, und inspirierte weitere Forschungen, u. a. in Friesack und Rothenklempenow.

Hohen Viecheln gehört nach wie vor zu den legendären archäologischen Fundstellen in Mecklenburg-Vorpommern, auch wenn es aus heutiger Sicht nicht mehr so einzigartig dasteht. Dank einer intensiv betriebenen ehrenamtlichen Bodendenkmalpflege ist die Zahl der bekannten mesolithischen Fundplätze im Land deutlich gestiegen, von denen vermutlich mehrere ein ähnliches Potenzial wie Hohen Viecheln aufweisen. Verändert haben sich aber nicht nur die Verbreitungskarten, sondern auch die Möglichkeiten archäologischer Forschung. Es drängte sich deshalb geradezu auf, Hohen Viecheln noch einmal unter die Lupe zu nehmen, bisherige Erkenntnisse kritisch zu prüfen und neue hinzuzufügen. Der DFG und allen Projektpartnern gebührt herzlicher Dank dafür, dass sie das ermöglicht haben.

So wird Hohen Viecheln auch weiterhin als exemplarischer Fundplatz für das Mesolithikum in der norddeutschen Tiefebene stehen – eine hochinteressante Umbruchszeit, in der Klimawandel, Anstieg des Meeresspiegels und andere Veränderungen eine ständige Anpassung der Menschen an ihre Umwelt erzwangen.

Detlef Jantzen
Schwerin, im September 2019

WELCOME ADDRESS BY THE STATE ARCHAEOLOGIST OF MECKLENBURG-WESTERN POMERANIA

Mecklenburg-Western Pomerania with its large, often unspoiled lowlands and inland waters offers outstanding possibilities for research into the water-oriented cultural groups of the Mesolithic. Remains of their settlement and hunting sites are often well preserved in wet conditions. Disturbances by peat extraction, straightening of watercourses or melioration measures mainly took place during the 19th and 20th centuries. They did some damage, but – as at least during the 20th century they were often supervised by vigilant amateur archaeologists – many sites were discovered this way in the first place.

But often it is left to chance which sites can be thoroughly investigated to largely characterise the picture of a whole timespan. Hohen Viecheln became the focal point of research interest under favourable circumstances: the discovery of several bone points there at the beginning of the 1950s fell together with the establishment of the Museum of Pre- and Early History in Schwerin (out of the former Department of Prehistory at the State Museum) which was also responsible for the preservation and care of field monuments in the three northern districts of the GDR.

The ambitious museum director, Ewald Schuldt, had already gained reputation through his excavations of the Slavic ring wall island near Teterow, and he was looking for a suitable site for another research project. Due to the very good preservation conditions at the site, Hohen Viecheln promised, in addition to the spectrum of artefacts known from other places, a substantial organic inventory. The well-preserved animal bones were expected to shed light on game species and hunting strategies. Furthermore, important results were expected concerning chronology and environmental changes. These hopes were not disappointed: Hohen Viecheln has become, alongside Duvensee, one of the most important sites for Mesolithic research, and research there has inspired further excavations, e.g. at Friesack or Rothenklempenow.

Hohen Viecheln is still one of the legendary archaeological sites in Mecklenburg-Western Pomerania, even if it no longer stands alone. Thanks to intensive voluntary archaeological surveys the number of Mesolithic sites has increased significantly; and several of these may have a potential similar to that of Hohen Viecheln. But not only distribution maps have changed during the last years, but also the possibilities of archaeological research. Therefore, the idea to have another look at Hohen Viecheln, to challenge old results and add new ones, suggested itself. I want to thank the German Research Foundation (DFG) and all project contributors for having made this possible. In this way, Hohen Viecheln will continue to be an exemplary North German Lowland site of the Mesolithic – a highly interesting time when climate change, sea-level rise and other changes enforced constant human adaptions to the environment.

Detlef Jantzen
Schwerin, September 2019

ACKNOWLEDGEMENTS

This volume of the series ‘Untersuchungen und Materialien zur Steinzeit in Schleswig-Holstein und im Ostseeraum’ represents the proceedings of a workshop held at the Centre for Baltic and Scandinavian Archaeology (ZBSA) in Schleswig in March 2016. It is a part of the editors’ project ‘Neubewertung von Chronologie und Stratigraphie des frühholozänen Fundplatzes Hohen Viecheln (Mecklenburg-Vorpommern) unter besonderer Berücksichtigung der diagnostischen Knochenartefakte’, funded by the German Research Foundation (DFG) under the project number 271652103.

While the project was dealing with the re-evaluation of the site Hohen Viecheln 1 for chronological and stratigraphical aspects, this volume does not only cover its final publication but comprises additional modern studies about the site by different scholars. These are furthermore embedded into the international research landscape by adjacent studies covering an area from modern day Britain in the west to the Urals in the east.

All contributions are representing the authors’ point of view and respective terminologies. Therefore differences in the vocabulary may appear to the careful reader. While a homogenisation of terms and data recording is relevant for comparative studies, it was beyond the scope and means of this project. As a consequence, terminologies may differ between the contributions, as exemplified by the terms ‘uni-serial’ and ‘uni-lateral’ bone points: both are characterised by barbs or notches on one lateral side. At the British site Star Carr those have ever since been named uni-serial, whereas uni-lateral is a more common term in other parts of Europe.

We, as editors, would like to thank all contributors for being part of this volume and their interesting and high-quality articles; also we are grateful for the voluntary support of all anonymous peer-reviewers and their help in improving the articles. Furthermore, we thank the German Research Foundation (DFG) for funding our research and the workshop as well as the Centre for Baltic and Scandinavian Archaeology represented by its director, Claus von Carnap-Bornheim, and the head-of-research, Berit Valentin Eriksen, for support of the project and its presentation in the current form. A tremendous help in the course of making this book was Gundula Lidke who was responsible for text editing, proofreading, and correspondence with the authors and publishers. Thank you very much! Further editorial support was provided by Jana Elisa Freigang, Jorna Titel, Matthias Bolte, Isabel Sonnenschein and Jürgen Schüller. The latter is also responsible for the cover drawing. Much help and support was provided by Peter Teichert-Köster with respect to handling the finds and accessing them in the depot of the Landesamt für Kultur und Denkmalpflege Mecklenburg-Vorpommern; Landesarchäologie in Schwerin. Close collaboration with Mathieu Boudin of the Royal Institute for Cultural Heritage, Brussels, improved our radiocarbon measurements and the analysis of the consolidant.

We thank all people, mentioned and unmentioned here, who were involved in this book and the different research projects, who helped by further pushing the boundaries of our understanding of the cultural remains and chronologies of the past.

Daniel Groß, Harald Lübke, John Meadows, Detlef Jantzen
Schleswig, October 2019

NORDIC VISITS TO HOHEN VIECHELN, MECKLENBURG

Erik Brinch Petersen

Abstract

Two decorated bone tools from the Maglemose site of Hohen Viecheln, Mecklenburg, Germany, are discussed, as their ornamentation finds their closest counterparts in decorated tools from Zealand, Denmark. A personal tool kit, consisting of artefacts with the same decoration, motives, composition, style and fabrication, will be defined here in order to 'follow' this style across the landscape. I will also argue that the two decorated mattock heads found at Hohen Viecheln are indications of human movements from Zealand to Mecklenburg, crossing the supposed 'border' between a Northern and a Southern Maglemose.

1 Maglemose, Duvensee and Komornica

There are, as always, some problems to discuss before the description and discussion can begin. The first question is, whether there is a north-south divide within the Maglemose culture. The next one is, how do we define Maglemose art? How do we deal with decorated objects (which are often stray finds) that are not evenly distributed in space and time? How do we define a subgroup within the art, and, finally, how do we determine a personal tool kit without any gender context?

According to several authors (BOKELMANN 1971; GRAMSCH 1973; KOZŁOWSKI 1989; SCHWABEDISSEN 1944; SCHWANTES 1928) the Duvensee group in Northern Germany and the Komornica group in north-western Poland (BAGNIEWSKI 1997; KABACINSKI 2009; KOZŁOWSKI 1973) are both seen as subgroups different from the south Scandinavian Maglemose. This differentiation is mostly based upon the presence or absence of the Duvensee barbed points (CLARK 1936: type 2; GRAMSCH 1990: Knochenspitzen mit Schrägkerben). However, the same Duvensee type is also one of the dominating types in Denmark during the Preboreal. Following recent data from Friesack 4 (GRAMSCH 1990; 2009/2010) the so-called Pritzerbe type (CLARK 1936: type 9; GRAMSCH 2009/2010: Knochenspitzen mit kleinen Widerhaken) replaces the earlier Duvensee type at the end of the Preboreal, and it is also the favourite type during the remaining part of the Maglemose in Northern Germany. In Denmark, the Mullerup type (SARAUW 1903, figs. 27–28; CLARK 1936: type 7) replaces the Duvensee type around the same time, though this replacement is not as well dated as it is in Germany.

After the Preboreal a cultural divide between north and south is based upon the distribution of different barbed bone points, and this is corroborated by the absence of decorated and undecorated amber pendants in Northern Germany (TOFT/BRINCH PETERSEN 2015), by the absence of slotted bone daggers (Voss 1961), and finally by the absence of the Mullerup art-style (see below). With one exception, also the 'Bohrornament' is absent, despite its common use in Denmark, the exception being the first mattock head from Hohen Viecheln to be dealt with below.

E. CZIESLA (1999; 2001; 2004) even argued that the fishing spear of Pritzerbe type should be present on the island of Zealand, but this is simply not true. There is only a single piece known from the island of Bornholm (BECKER 1951). Actually, Cziesla has merged two different types together, the Pritzerbe and the Mullerup type. The first one's barb has a convex upper side, whereas the latter's has a concave upper side.

Also NEWELL et al. (1990) have constructed some social groupings uniting Northern Germany with Southern Scandinavia, but again without a solid foundation. In short, after the Preboreal some important differences separate the northern from the southern area.

As a contrast, SØRENSEN and CASATI (2011) have argued for a unity between the Danish and the Polish and German groups based upon the lithic industries. DAVID (2003; 2006) also sees the same tradition within the bone technology between Zealand and Northern Germany. Thus, a number of similarities and differences can be listed for southern Scandinavia and Northern Germany, but the problem remains as to how much weight should be assigned to each point of comparison. However, currently the present author tends to see them as an underlining of the existence of various groupings within the Maglemose culture but only after the Preboreal.

2 Maglemose art

As has been demonstrated by GRAMSCH (2000) and by TOFT (2006; 2017), the definition of Maglemose art must, first of all, be based upon the contextual evidence. Unfortunately, quite a number of the decorated tools are stray finds, and a future step therefore should be a series of radiocarbon dates, but at the moment such dates are few, with Hohen Viecheln being among the first exceptions.

Today, more than 400 decorated pieces are known from the entire Maglemose culture. The decorative elements are variations of geometric elements like fringe, barbed line, chevron, triangle and zigzag lines, arranged vertically or horizontally. It is characteristic that a single motif is kept apart and not intertwined with other motifs to form complicate patterns as with later Mesolithic art styles. The patterning is made by repeating the same motif and by observing a symmetrical layout. Various techniques can be used to engrave the motif, from coarse cutting with a flint burin via fine incisions with a flint blade to the so-called *pointillé* technique, i.e. impressions with a flint blade, but also with the use of a flint borer to make a line of cup marks. However, some of the more complex patterns look as if they have not been fully completed (GRAMSCH 1979). In all cases the decoration is enhanced by black tar (MALMER/MAGNUSSON 1955).

There even appears to be a 'standard list' of objects to be decorated, and it comprises the following artefact types: 1) baton, red deer antler; 2) antler tine, red deer; 3) mattock head of aurochs or elk radius; 4) slotted bone dagger, often made of an elk bone; 5) plain bone dagger; 6) bone hammer from an aurochs bone; 7) tubular bone adze, also from an aurochs; 8) small bone axe; 9) small tubular bone from a boar; 10) amber pendant; and 11) amber figurine. All these artefacts of bone, antler and amber also appear as undecorated pieces.

Mullerup, being the first excavated site with Maglemose art (SARAUW 1903), is also the foundation for the next question, the one asking for a Mullerup subgroup within Maglemose art. Apart from two objects, five of the other decorated tools from Mullerup presented by Sarauw show the same fine decoration with incision, a chevron or a double zigzag line, organized symmetrically on the artefact, a mattock head, a slotted bone dagger, a plain bone dagger, a bone hammer and a bone fragment. This 'Mullerup style' with fine ornaments has been found all over Zealand as well as in Scania, and now also in Blekinge, Sweden (KJÄLLQUIST et al. 2016), but it is absent, as already indicated, from Northern Germany and Poland.

2.1 Personal tool kits and personal amber pendants

Observing the unit of time and place, and again based upon the evidence from Sarauw's Mullerup, a decorated personal tool kit is hereby presented. This includes the five pieces just mentioned, decorated in the same technique, with the same motives, same patterns and in the same style: the mattock head (SARAUW 1903, fig. 45; though better depicted in PŁONKA 2003, fig. 40.2), the slotted bone dagger (Sarauw 1903, fig. 31; PŁONKA 2003, fig. 45), the bone hammer (PŁONKA 2003, fig. 69.1), a plain bone dagger (SARAUW 1903, fig. 20; PŁONKA 2003, fig. 56.2), and finally a bone fragment, perhaps an *ebauche*. Apart from the Tis-lehus mattock, a replica of the first one from Mullerup (MÜLLER 1918, fig. 1), the decorated amber pendant from Lundby II (TOFT/BRINCH PETERSEN 2015, fig. 2) as well as the amber figurine of an elk from Egemarke, Zealand (MATHIASSEN 1953; BRINCH PETERSEN 1990; PE-

TERSEN 2015, fig. 4) could both be included in this group, too. This, the best example of a personal tool kit, is described here in order to make parts of the following examples understandable (Fig. 1). Admittedly, an assemblage like the Mullerup one is rather unique, but there are indications of similar tool kit combinations elsewhere, e.g. at Sværdborg and at Øgaard (TOFT 2009), or at Verchen, Mecklenburg-Western Pomerania (TERBERGER 2000).

2.2 Decorated mattock heads from aurochs or elk radii

- 1) HoVi 609: mattock head made of an aurochs radius, decorated on both sides (SCHULD 1961). The upper, domed side shows seven vertical barbed lines with the barbs pointing in- and downwards (Fig. 2). The lines are organised three by four and mirrored. The flat backside is decorated with four double lines of drilled holes – cup marks – running across and evenly spaced. The opposition of a vertical front with a horizontal backside is not unknown in other objects, but the combination of incised and bored decoration is extremely rare, as the only other two pieces with such a combination are an unpublished slotted bone dagger from Mullerup itself and an amber pendant from Holme, Djursland, in Jutland

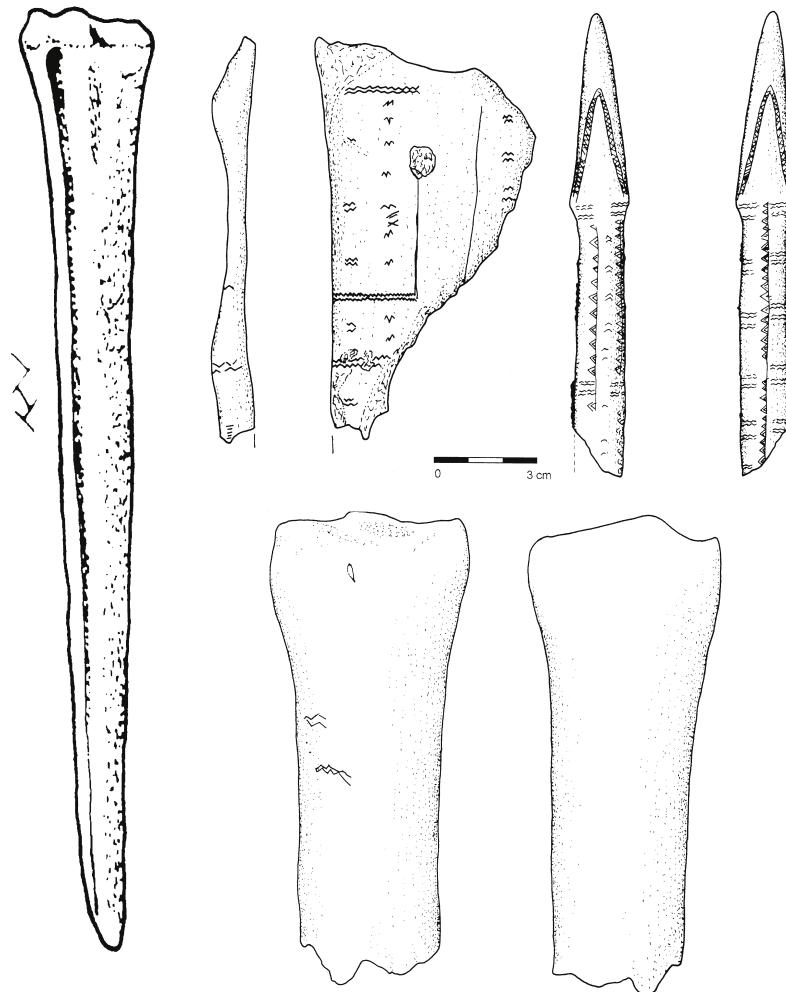


Fig. 1. The Mullerup personal toolkit (J. Titel, ZBSA).

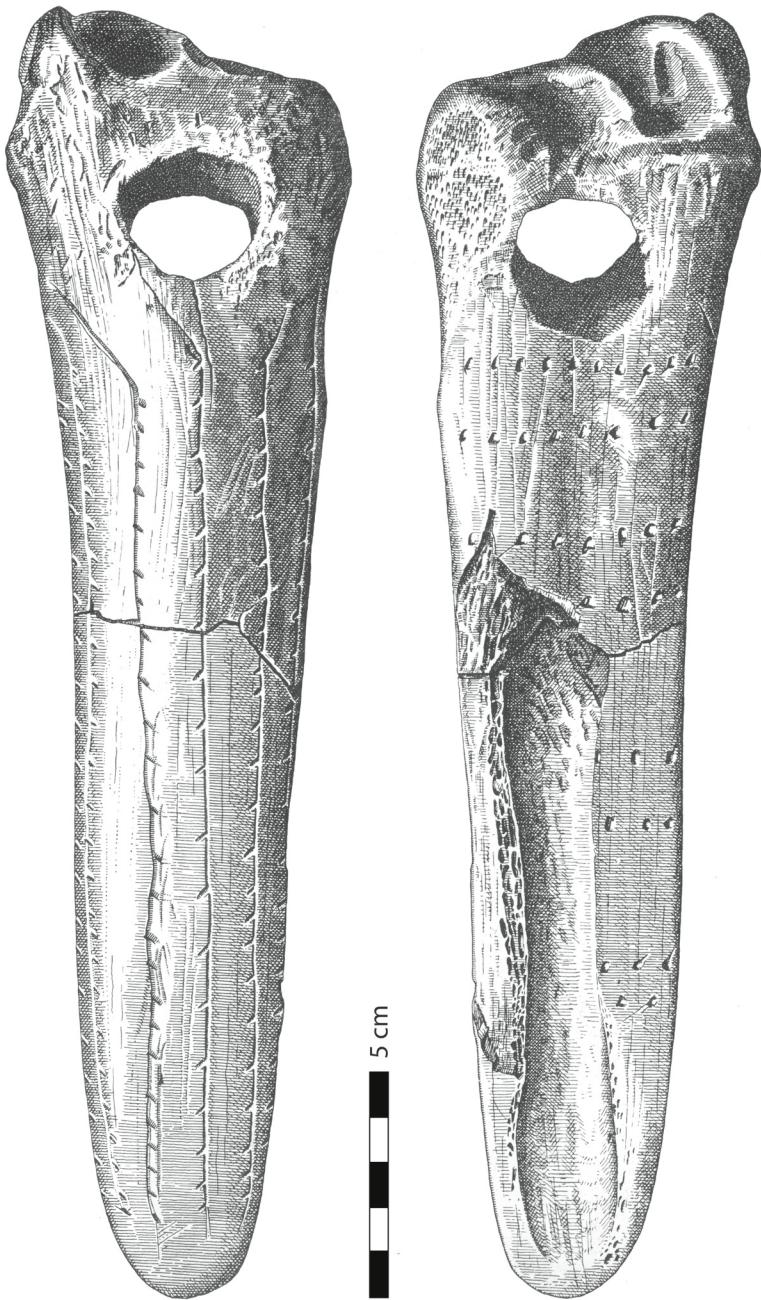


Fig. 2. Decorated mattock head from Hohen Viecheln (after SCHULD 1961, Taf. 51).

le one from England: 8) Hammersmith, London, on the River Thames (SMITH 1934, fig. 1) (Plate 3.2). This is the third directly dated mattock head (OXA-17128: 8505±45 BP or 7596-7508 cal. BC [MILNER et al. 2016]).

The remaining nine examples are all from Denmark: 9) Dageløkke (PŁONKA 2003, fig. 34,3) (Plate 3.1); 10) Højby Mose (CHRISTENSEN 1997; SØRENSEN 1979, fig. 1); 11) Ringsted Å (Tislehus) (MÜLLER 1918, fig. 1) (Plate 1.1); 12) Øgaarde (MATHIASSEN 1943, fig. 35,2) (Plate 4.2); 13) Mullerup (SARAUW 1903, fig. 45); 14) Mullerup (SARAUW 1903, fig. 44) (Plate 1.2); 15) Lundby II (HENRIKSEN 1980, fig. 58) (Plate 2.2), an originally finely decorated piece, unfortunately cut up into leisters; 16) Illebølle (MÜLLER 1918, fig. 19) (Plate 2.1); and, finally, 17) Ryom Å, Djursland, Jutland (BRØNDSTED 1934,

(TOFT/BRINCH PETERSEN 2015). HoVi 609 has been dated to around 8,000 cal. BC (RICH-22644: 8741±43 bp).

2) HoVi 4760, 5229, 476: The second decorated mattock head from Hohen Viecheln (Fig. 3) is also made of a radius, but whether aurochs or elk has not been determined due to its fragmentary state (SCHULD 1961). Only the upper domed side is decorated with fourteen horizontal bands made of 'free floating' vertical fringes, evenly spaced (Fig. 3).

Four more decorated mattock heads are known from Northern Germany: 3) Verchen (TERBERGER 2000, fig. 3) also with a direct ¹⁴C date (UtC-9739: 8820±60 bp), 4) Mellensee (HOHMANN 1955, fig. 10), 5) Golchen (HEIDELKSCHACHT 1983, fig. 3a). Another mattock head from northern Germany comes 6) from Bothkamper See (K.S. 3752-16). This latter piece has not yet been published, but will be described by HARTZ et al. (in prep.). This fragment is decorated only on the lower side with cross-hatching, a very simple ornament.

Poland has one piece: 7) Trudna (DOMAŃSKA 1976, fig. 1), and there is also a sing-

fig. 2; BRINCH PETERSEN 1990, fig. 162) (Plate 4.1). These seventeen objects are all generously decorated, with the exceptions of Mellensee, Golchen and Bothkamper See, and none of the German-Polish ones resembles the two mattock heads from Hohen Viecheln. Taking the dates from Sarauw's Mullerup together with the quoted three ^{14}C dates, five of these mattock heads must be placed between 8,000 and 7,000 cal. BC.

3 From southern Scandinavia to Mecklenburg

In the following I shall try to relate the decorations on the two mattock heads from Hohen Viecheln with two different tool kits on Zealand (Fig. 4). The first mattock head from Hohen Viecheln (Fig. 2) is very interesting with its different motives, patterns and layouts, as already indicated. The barbed line is very popular in Maglemose art, also at Mullerup itself (SARAUW 1903, fig. 44), and appears on many different artefacts in the north as well as in the south (GRAMSCH 2000; TERBERGER 2006), but the mirror ordering of the barbed lines seen here is unique. The domed side of the first mattock head from Mullerup is decorated with five barbed lines, three of which have the barbs turned upwards and two downwards. In contrast to Hohen Viecheln, a single zigzag line has here been added as a lower horizontal framing below the vertical barbed lines. The well-preserved mattock head from Højby Mose, Zealand, is also decorated on the domed side with seven vertical barbed lines with the barbs turned downwards. The open block of barbed lines is again framed by a single lower horizontal zigzag line, while the upper end of the open block is framed by a double horizontal zigzag line. The reworked mattock head from Lundby II was apparently decorated with four vertical barbed lines, with barbs turned upwards. Finally, there is the middle fragment of a stray find from Illebølle, Langeland, with two blocks of vertical barbed lines, with the barbs turned upwards, but where a single line has the barbs replaced by chevrons. The two open blocks are separated by an undecorated band. These four pieces constitute – together with the object from Hohen Viecheln – a group of clearly related mattock heads.

The stray find from Farum (PŁONKA 2003, fig. 44) is the only slotted bone dagger with vertical barbed lines on both sides, and might therefore be a 'member' of the tool kit including the first mattock head from Hohen Viecheln. The same might be true for the bone dagger from Söllerön, Dalarna (Montelius 1917). This particular piece, however, was found far away from the normal Maglemose distribution, but has many vertical barbed lines on the front side. However, both objects have an upper horizontal frame, a zigzag line, alien to the piece from Hohen Viecheln, but alike the mattock heads from Højby Mose and also from Mullerup.

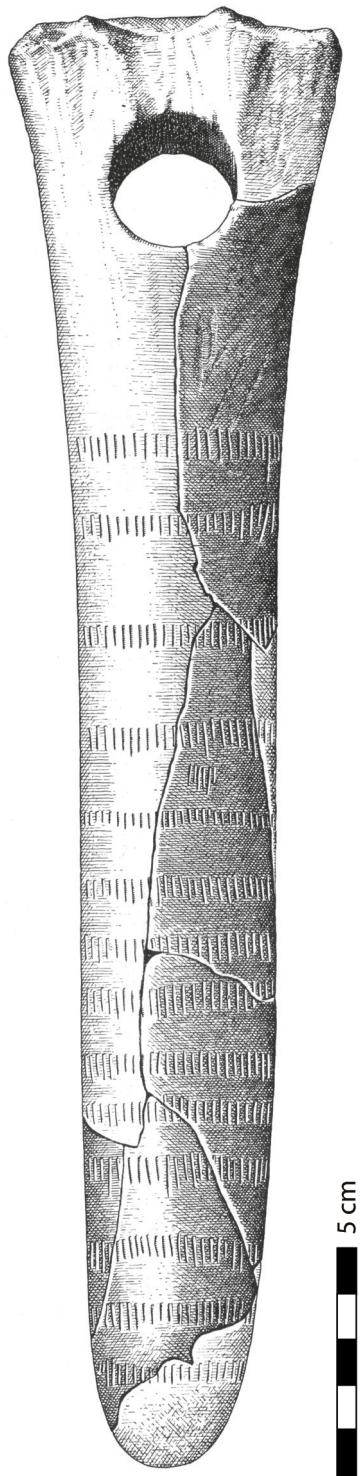


Fig. 3. Decorated mattock from Hohen Viecheln (after SCHULDT 1961, Taf. 52)



Fig. 4. Northern connections to Hohen Viecheln (map: epha.zbsa.eu; timeslice: Late Boreal).

The other mattock head from Hohen Viecheln (Fig. 3) with its horizontally placed band of free floating vertical fringes has a perfect match in a slotted bone dagger from Sværdborg I: 1943A, where both sides are decorated with the same vertical fringes in the same horizontal order (HENRIKSEN 1976, fig. 35,3). Also a small tubular bone from Øgaard is decorated with the same fringes, but here they are running lengthwise and not across (PŁONKA 2003, fig. 64:3). Even at Hohen Viecheln there is a bone dagger decorated in the same manner (SCHULDT 1961, Tab. 43c). Although many amber pendants are decorated with the fringe motive, hanging or standing, the free floating motive as described here is known in one other case only. This is a fragmented, but still heavy amber pendant with horizontally organised free floating fringes. This particular pendant was found as far away as Hinge Å near Silkeborg, Jutland. The second mattock head from Hohen Viecheln relates again to Sværdborg I. The particular bog sites Sværdborg I and Lundby II are also the ones situated at the shortest distance to Hohen Viecheln (Fig. 4).

4 For or against

More cases might be demonstrated, but this essay has to be limited to the two mattock heads from Hohen Viecheln. However, by mapping the distribution of the barbed-line motif, TERBERGER (2003) has shown that this is a common motif across Southern Scandinavia, Northern Germany and Western Poland. Therefore, he sees this uniformity as evidence for a regional group with its own social network.

The backside of the first mattock head from Hohen Viecheln, with its double lines of drilled holes (cup marks), running horizontally, finds its best parallel with the re-sharpened baton from Sværdborg I (FRIIS JOHANSEN 1919, fig. 35). From Sværdborg I there is also a small tubular bone decorated with drilled holes (FRIIS JOHANSEN 1919, fig. 61). Three different amber pendants show the same horizontal composition with double lines of drilled holes. Of these, two are from Jutland (TOFT/BRINCH PETERSEN 2015), but the nearest one is from the site of Ulkestrup Lyng II, Zealand (ANDERSEN et al. 1982). So, Hohen Viecheln could be related to the tool kit consisting of the baton and the tubular bone together with the amber pendant and distributed among the two classic Maglemose sites on Zealand, Sværdborg I and Ulkestrup Lyng II.

Moreover, he has also pointed to a special and unique motif, where a block of barbed lines is directly framed by a zigzag line, an unusual trait within Maglemose art. The three batons from Friesack, Trave and Holmegård IV all have a blank area between the two closed blocks. With two from Germany and only one from Zealand, this might be indicative of an individual movement in the opposite direction.

That there is a difference between north and south after the initial Preboreal must be accepted due to the different types of the most common artefact, the fishing spear, in the two areas, of the types Maglemose versus Pritzerbe. However, many other bone tools are common to the two areas, and so are the bone technology and some of the decorations, not to forget the lithic industries. Therefore the question is, how much does the described difference mean.

The various distribution maps of Maglemose art linking Southern Scandinavia with Northern Germany as presented by TERBERGER (2003) and by TOFT (2006; 2017) might be serious arguments against the idea mentioned above by showing several north-south connections. On one side, the diverse types of the barbed bone points split the two areas, while some of the geometrical motives lump them together. But it is not the distribution of the single motives and patterns that matters, but the composition and style that are decisive for our argumentation.

Looking at the distribution of the two different tool kits constructed for Hohen Viecheln (Fig. 4), one might also speculate on their validation for the opening question. Perhaps it should rather be argued that the random distribution of perishable bone and antler tools over no less than 3,000 years, and over an area from London to Warsaw and from Berlin to Scania, make comparisons somewhat futile at the present.

5 Finally – a conclusion

The concept of people moving across the landscape negotiating and maintaining the common way of doing things the Maglemose way, and promoting the introduction of new ideas and new types of arrowheads, is of course a banal conclusion. Nevertheless, what is proposed here is a way to directly map such movements across the Maglemose landscape. This is done by comparing the decorated artefacts for the same motif, composition, style and fabrications. To this must be added the concept of a decorated tool kit, for only then can the entire geographical distribution of its elements be followed. As it takes an individual, perhaps an itinerant artist, to move around with a decorated tool kit, the two alien mattock heads from Hohen Viecheln might then be understood as the material evidence of foreign visits.

REFERENCES

- ANDERSEN et al. 1982: K. ANDERSEN/S. JØRGENSEN/J. RICHTER/H. J. JENSEN, Maglemose hytterne ved Ulkestrup Lyng. Nordiske Fortidsminder Serie B quarto 7 (København 1982).
- BAGNIEWSKI 1997: Z. BAGNIEWSKI, Contacts between the Populations of Mesolithic Pomerania and the Maglemosian Traditions. In: D. KROLL (ed.), The Built Environment of Coast Areas during the Stone Age (Gdansk 1997) 34–49.
- BECKER 1951: C. J. BECKER, Maglemosekultur på Bornholm. Aarbøger for Nordisk Oldkyndighed og Historie 1951, 96–177.

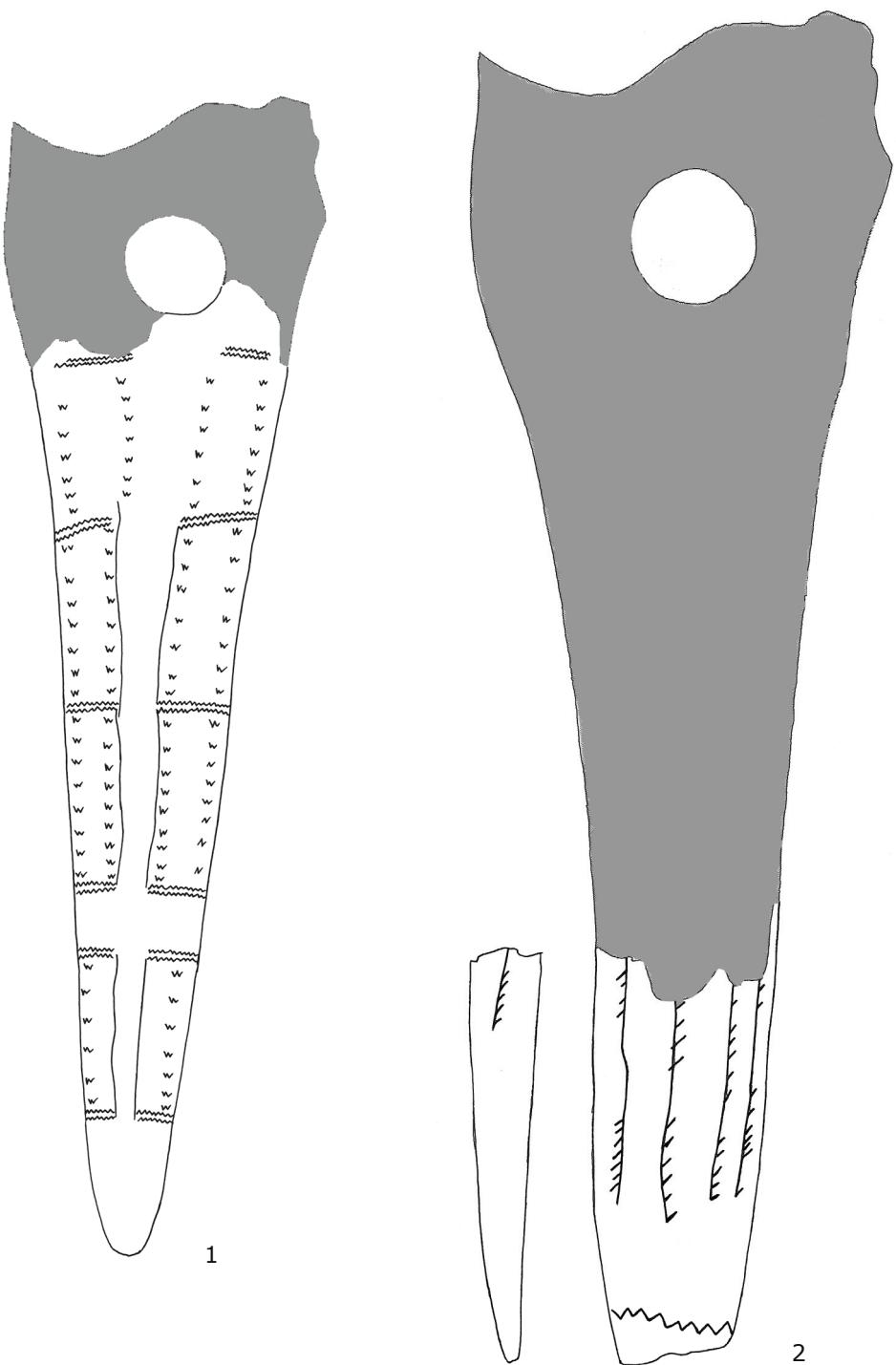
- BOKELMANN 1971: K. BOKELMANN, Duvensee, ein Wohnplatz des Mesolithikums in Schleswig-Holstein, und die Duvensee-gruppe. *Offa* 28, 1971, 5–26.
- BRINCH PETERSEN 1990: E. BRINCH PETERSEN, L'Art et les Sepultures Mésolithique en Scandinavie meridionale. In: 5 Millions d'Annees, l'Aventure Humaine (Bruxelles 1990) 118–128.
- BRØNDSTED 1934: J. BRØNDSTED, Inedita aus dem dänischen Nationalmuseum. *Acta Archaeologica* 5, 1934, 145–183.
- CHRISTENSEN 1997: T. CHRISTENSEN, The aurochs in the bog. F. BIRKEBÆK (ed.), *The Ages Collected from Roskilde Museum* (Roskilde 1997) 24–25.
- CLARK 1936: J. G. D. CLARK, The Mesolithic Settlement of Northern Europe. A Study of the Food-Gathering Peoples of Northern Europe during the Early Post-Glacial Period (Cambridge 1936).
- CZIESLA 1999: E. CZIESLA, Zur Territorialität mesolithischer Gruppen in Nordostdeutschland. *Ethnographisch-Archäologische Zeitschrift* 40, 1999, 485–512.
- CZIESLA 2001: E. CZIESLA, Weitere Bemerkungen zu organischen Geschosspitzen aus Brandenburg. *Die Kunde N. F.* 52, 2001, 133–144.
- CZIESLA 2004: E. CZIESLA, Late Upper Palaeolithic and Mesolithic cultural continuity – or bone and antler objects from the Havelland. In: T. TERBERGER/B. V. ERIKSEN (eds.), Hunters in a changing world. Environment and Archaeology of the Pleistocene-Holocene Transition (ca. 11000–9000 B.C.) in Northern Central Europe. Workshop of the U.I.S.P.P. Commission XXXII at Greifswald in September 2002 (Rahden/Westfalen 2004) 165–182.
- DAVID 2003: E. DAVID, The Contribution of the 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* (Oxford 2003) 649–657.
- DAVID 2006: E. DAVID, Redskaber af ben og tak i tidlig Maglemosekultur et teknologisk studie. In: B. V. ERIKSEN (eds.), Stenalderstudier. Tidlig mesolitiske jægere og samlere i Sydkandinavien. *Jutland Archaeological Society Publications* 55 (Højbjerg 2006) 77–100.
- DOMAŃSKA 1976: L. DOMAŃSKA, Knochenhacke der Maglemose-Kultur aus Trudna, Kr. Złotow, Polen. *Bonner Hefte zur Vorgeschichte* 11, 1976, 55–59.
- FRIIS JOHANSEN 1919: K. FRIIS JOHANSEN, En Boplads fra den ældste Stenalder i Svaerdborg Mose. *Aarbøger for Nordisk Oldkyndighed og Historie* 1919, 106–235.
- GRAMSCH 1973: B. GRAMSCH, Das Mesolithikum in Mecklenburg und Brandenburg – zeitliche Gliederung und Formengruppen. In: S. K. KOZLOWSKI (eds.), *The Mesolithic in Europe* (Warsaw 1973) 209–235.
- GRAMSCH 1979: B. GRAMSCH, Zwei neue mesolithische Hirschgeweih-Lochstäbe mit Verzierung aus dem Bezirk Potsdam. *Veröffentlichungen zur brandenburgischen Landesarchäologie* 12, 1979, 39–50.
- GRAMSCH 1990: B. GRAMSCH, Die frühmesolithischen Knochenspitzen von Friesack, Kr. Nauen. *Veröffentlichungen des Museums für Ur- und Frühgeschichte Potsdam* 24, 1990, 7–26.
- GRAMSCH 2000: B. GRAMSCH, Friesack: Letzte Jäger und Sammler in Brandenburg. *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz* 47(1), 2000 (2002), 51–96.
- GRAMSCH 2009/2010: B. GRAMSCH, Die mesolithischen Knochenspitzen von Friesack, Fundplatz 4, Lkr. Havelland. Teil 2: Die Knochenspitzen des späten Prä-, des Früh- und Spätboreals sowie des älteren Atlantikums. *Veröffentlichungen zur brandenburgischen Landesarchäologie* 43/44, 2009/2010 (2011), 7–84.
- HARTZ et al. in prep.: S. HARTZ/H. LÜBKE/D. GROSS, Mesolithic decorated bone and antler tools in Schleswig-Holstein. In: Tagungen des Landesmuseums für Vorgeschichte Halle/Congresses of the State Museum for Prehistory Halle.
- HENRIKSEN 1976: B. B. HENRIKSEN, Sverdborg I. Excavations 1943–44. A Settlement of the Maglemose Culture. *Arkæologiske Studier* 3 (København 1976).
- HENRIKSEN 1980: B. B. HENRIKSEN, Lundby-holmen. Pladser af Maglemose-type i Sydsjælland. *Nordiske Fortidsminder* B 6 (København 1980).
- HOHMANN 1955: K. HOHMANN, Querhauen und andere urtümliche Geräte aus der Mittelmark. Ein Beitrag zur märkischen Steinzeitforschung. *Berliner Blätter für Vor- und Frühgeschichte* 4, 1955, 7–64.
- HEIDELK-SCHACHT 1983: S. HEIDELK-SCHACHT, Knochen- und Geweihgeräte des Spätpaläolithikums und Mesolithikums aus Mecklenburg. *Bodendenkmalpflege in Mecklenburg*, Jahrbuch 31, 1983, 7–82.

- KABACINSKI 2009: J. KABACINSKI, Quarrying the antler adzes – a new Mesolithic site of the Boreal at Krzyz Wielkopolski, western Poland. *Quartär* 56, 2009, 119–130.
- KJÄLLQUIST et al. 2016: M. KJÄLLQUIST/A. EMILSSON/A. BOETHIUS, Norje Sunnansund. Boplatslämningar från Tidigmesolitikum och Järnalter. Blekinge Museum Rapport 10/2014 (Blekinge 2016).
- KOZŁOWSKI 1973: S. K. KOZŁOWSKI, Introduction to the History of Europe in Early Holocene. In: S. K. KOZŁOWSKI (ed.), *The Mesolithic in Europe* (Warzaw 1973) 331–366.
- KOZŁOWSKI 1989: S. K. KOZŁOWSKI, Mesolithic in Poland. A New Approach (Warzaw 1989).
- MALMER/MAGNUSSON 1955: M. MALMER/E. MAGNUSSON, Mesolithische Harzornamentik. Ein Fund aus dem Lyby-Moor, Schonen. *Meddelanden från Lunds Universitets Historiska Museum* 81, 1955, 104.
- MATHIASSEN 1943: Th. MATHIASSEN, Stenalderboplader i Aamosen. *Nordiske Fortidsminder* III 3 (København 1943).
- MATHIASSEN 1953: Th. MATHIASSEN, An amber elk head from Zealand. *Acta Archaeologica* 23, 1952, 167–169.
- MILNER et al. 2016: N. MILNER/M. BAMFORTH/G. BEALE/J.C. CARTY/K. CHATZIPANAGIS/S. CROFT/C. CONNELLER/B. ELLIOTT/L.C. FITTON/B. KNIGHT/R. KRÖGER/A. LITTLE/A. NEEDHAM/H. K. ROBSON/C. C. A. ROWLEY/B. TAYLOR, A unique engraved shale pendant from the site of Star Carr: the oldest Mesolithic art in Britain. *Internet Archaeology* 40, 2016: dx.doi.org/10.11141/ia.40.8.
- MONTELius 1917: O. MONTELius, Minnen från vår Forntid I: Stenåldern och Bronsåldern (Stockholm 1917).
- MÜLLER 1918: S. MÜLLER, Stenalderens Kunst i Danmark. *Oldtidens Kunst i Danmark* I (København 1918).
- NEWELL et al. 1990: R. R. NEWELL/D. KIELMAN/T. S. CONSTANDSE-WESTERMANN/W. A. B. VAN DER SANDEN/A. VAN GIJN, An Inquiry into the Ethnic Resolution of Mesolithic Regional Groups. The Study of their Decorative Ornaments in Time and Space (Leiden 1990).
- PETERSEN 2015: P. V. PETERSEN, Amber pendants, bears and elks. *Die Kunde N.F.* 65, 2015, 219–238.
- PŁONKA 2003: T. PŁONKA, The Portable Art of Mesolithic Europe. *Acta Universitatis Wratislaviensis* 2527 (Wroclaw 2003).
- SARAUW 1903: G. F. L. SARAUW, En Stenalders Boplads i Maglemose ved Mullerup, sammenholdt med beslægtede Fund. *Aarbøger for Nordisk Oldkyndighed og Historie* 1903, 148–315.
- SCHULDT 1961: E. SCHULDT, Hohen Viecheln: Ein mittelsteinzeitlicher Wohnplatz in Mecklenburg. *Schriften der Sektion für Vor- und Frühgeschichte* 10 (Berlin 1961).
- SCHWABEDISSEN 1944: H. SCHWABEDISSEN, Die mittlere Steinzeit im westlichen Norddeutschland. *Offa-Bücher* 7 (Neumünster 1944).
- SCHWANTES 1928: G. SCHWANTES, Nordisches Paläolithikum und Mesolithikum. *Mitteilungen aus dem Museum für Völkerkunde Hamburg* 13, 1928, 159–252.
- SMITH 1934: R. SMITH, Examples of Mesolithic art. *The British Museum Quarterly* 8(4), 1934, 144–45: <http://dx.doi.org/10.2307/4421635>.
- SØRENSEN 1979: S. A. SØRENSEN, En ornamenteret benøkse fra Højby ved Lejre. In: F. A. BIRKEBAEK (ed.) 13 bidrag til Roskilde by og egn's historie. Udgivet i anledning Roskilde Museum's 50 års jubilæum (Roskilde 1979) 56–61.
- SØRENSEN/CASATI 2011: L. SØRENSEN/C. CASATI, Maglemosekulturens østlige udbredelse – et opgør med de mesolitiske kulturer i det polske lavland. *Speciale i forhistorisk Arkæologi*. Københavns Universitet (København 2011) 21–44.
- TERBERGER 2000: T. TERBERGER, Drei verzierte mesolithische Funde aus der Peene bei Verchen, Kr. Demmin. *Boden Denkmalpflege in Mecklenburg-Vorpommern*, Jahrbuch 48, 2000, 7–30.
- TERBERGER 2003: T. TERBERGER, Decorated objects of the older Mesolithic from the northern Lowlands. In: L. LARSSON/H. KINDGREN/K. KNUTSSON/D. LOEFFLER/A. ÅKERLUND (eds.), *Mesolithic on the Move* (Oxford 2003) 547–557.
- TERBERGER 2006: T. TERBERGER, Mesolithic Group Territories of the Northern Lowlands in Discussion. In: C.-J. KIND (ed.), *After The Ice Age. Settlements, subsistence and social development in the Mesolithic of Central Europe*. Materialhefte zur Archäologie in Baden-Württemberg 78, 2006, 221–236.
- TOFT 2006: P. A. TOFT, Hvor går grænsen? Et stadium af sociale territorier og ornamentik i Maglemosekulturen. In: B. V. ERIKSEN (ed.), *Stenalderstudier. Tidlig mesolitiske jægere og samlere i Sydskandinavien*. Jutland Archaeological Society Publications 55 (Højbjerg 2006) 101–118.
- TOFT 2009: P. A. TOFT, What goes where? Intrasite studies of depositions of Maglemosian art and flint picks of the Maglemose and Kongemose cultures. In: S. MACCARTAN/R. SCHULTING/G. WAREN/P. WOODMAN (eds.), *Mesolithic Horizons Volume II*. Papers presented at the Seventh International Conference on the Mesolithic in Europe, Belfast 2005 (Oxford 2009) 614–621.

- TOFT 2017: P. A. TOFT, Regionalism and Mobility in Early Mesolithic art? In: M. SØRENSEN/K. BUCK PETERSEN (eds.), Problems in Palaeolithic and Mesolithic Archaeology (Copenhagen 2017) 259–274.
- TOFT/BRINCH PETERSEN 2015: P. A. TOFT/E. BRINCH PETERSEN, Five Thousand Years of Decorated Amber Pendants from the Danish Mesolithic. *Die Kunde N. F.* 65, 2015, 197–218.
- Voss 1961: O. Voss, Danske Flintæggdolke. *Aarbøger for Nordisk Oldkyndighed og Historie* 1960, 153–167.

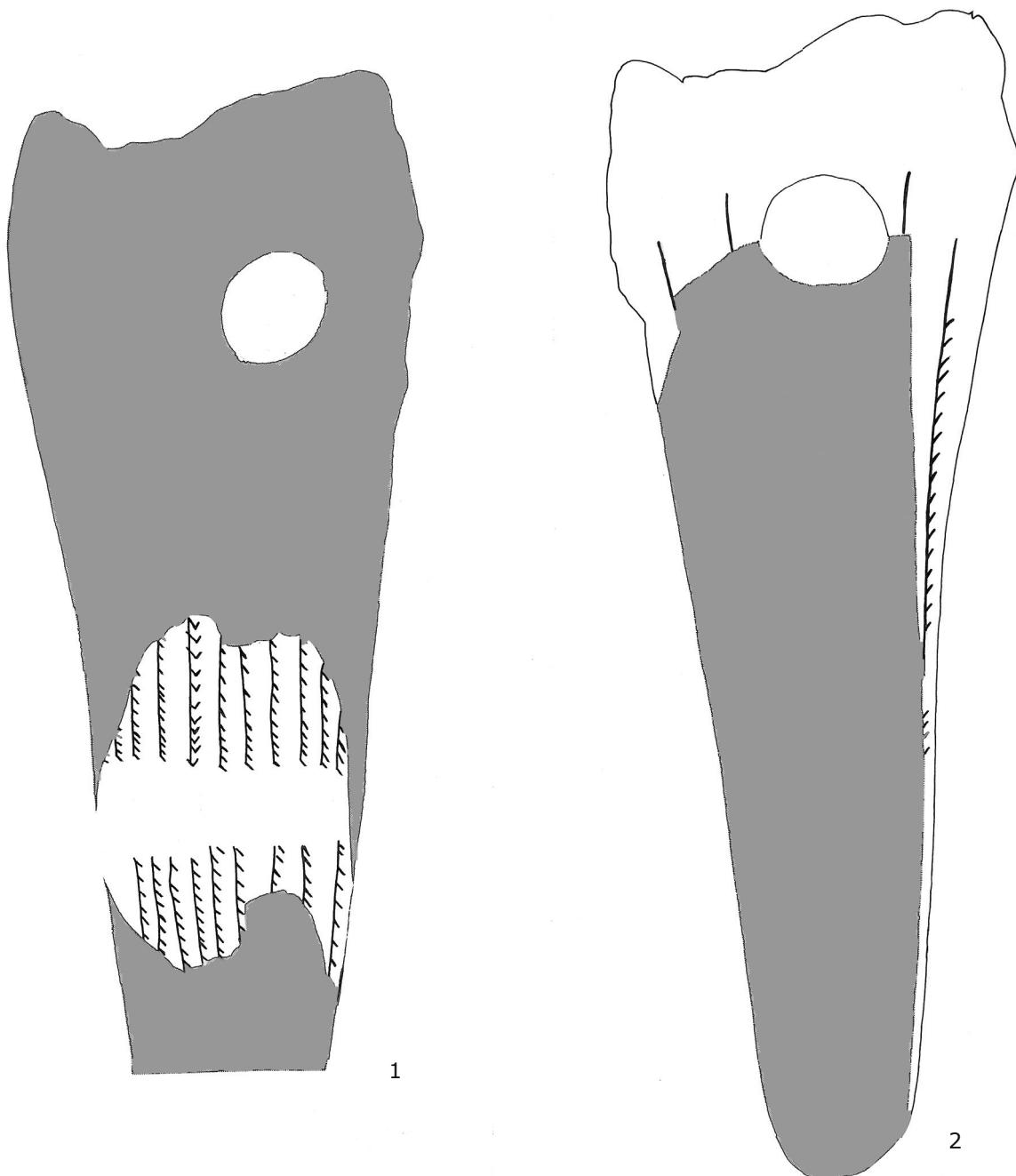
Erik Brinch Petersen
Saxo Institute
Faculty of Humanities
Karens Blixens Plads 8
2300 København S
Denmark
ebp@hum.ku.dk

Plate 1



1: Ringsted Å (Tislehus), 2: Mullerup.

 5 cm



1: Illebølle, 2: Lundby II.

5 cm



1



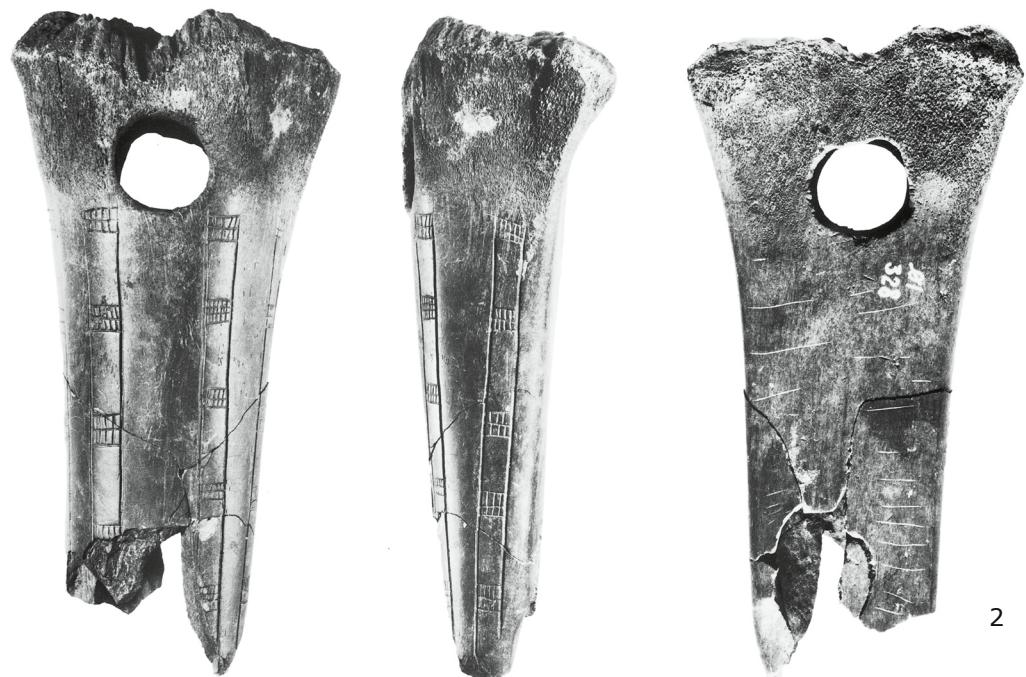
2

1: Dageløkke, 2: Hammersmith.

5 cm



1



2

1: Ryom Å, 2: Øgårde.

5 cm