

Mesolithic Art – Abstraction, Decoration, Messages Mesolithische Kunst – Abstraktion, Dekoration, Botschaften

International Conference Halle (Saale), Germany, 19th–21st September 2019

Edited by Judith M. Grünberg, Bernhard Gramsch, Erik Brinch Petersen, Tomasz Płonka and Harald Meller



Tagungen des Landesmuseums für Vorgeschichte Halle Band 26 | 2023

Mesolithic Art – Abstraction, Decoration, Messages

Mesolithische Kunst – Abstraktion, Dekoration, Botschaften

International and interdisciplinary Conference Halle (Saale), Germany, 19<sup>th</sup>–21<sup>st</sup> September 2019

Internationale und interdisziplinäre Konferenz Halle (Saale), Deutschland, 19.–21. September 2019



Edited by Judith M. Grünberg, Bernhard Gramsch, Erik Brinch Petersen, Tomasz Płonka and Harald Meller

Halle (Saale) 2023





Bibliografische Information der Deutschen Nationalbibliothek Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über https://portal.dnb.de abrufbar.

ISSN 1867-4402

ISBN 978-3-948618-64-3

Koordination Judith M. Grünberg • Halle (Saale)

 $Wissenschaftliche \, Redaktion$ Judith M. Grünberg • Halle (Saale); Bernhard Gramsch • Potsdam; Erik Brinch Petersen •

Copenhagen, DK; Ekaterina Kashina • Moscow, RU; Lars Larsson • Lund, SE

 $Englisches\ Lektorat$ Alison Wilson · Cambridge, UK

Deutsche Zusammenfassungen der Beiträge von Nicht-Muttersprachlern

Judith M. Grünberg, Christine Eichhorn-Berndt, Rosel Reichelt • Halle (Saale)

Übersetzung deutscher, französischer

und russischer Texte (2, 16, 26, 27, 30) Alison Wilson, Gerda T. Mamott • beide Cambridge, UK; Ekaterina Kashina • Moscow, RU;

Tomasz Płonka • Wrocław, PL; Judith M. Grünberg • Halle (Saale)

Technische Bearbeitung

Judith M. Grünberg, Brigitte Parsche, Bettina Weber, Christine Eichhorn-Berndt, Alexander

Häusler, Louis D. Nebelsick, Rosel Reichelt • Halle (Saale); Bernhard Gramsch • Potsdam

Brigitte Parsche, Bettina Weber, Mario Wiegmann · Halle (Saale) Satz, Bildbearbeitung

Für den Inhalt der Arbeiten sind die Autoren eigenverantwortlich.

© by Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt – Landesmuseum für Vorgeschichte Halle (Saale). Das Werk einschließlich aller seiner Teile ist urheberrechtlich geschützt. Jede Verwertung außerhalb der engen Grenzen des Urheberrechtsgesetzes ist ohne Zustimmung des Landesamtes für Denkmalpflege und Archäologie Sachsen-Anhalt unzulässig. Dies gilt insbesondere für Vervielfältigungen, Übersetzungen, Mikrover $filmungen \ sowie \ die \ Einspeicherung \ und \ Verarbeitung \ in \ elektronischen \ Systemen.$ 

alterungsbeständig nach DIN/ISO 9706 Papier FF Celeste, News Gothic

GestaltungskonzeptCarolyn Steinbeck · Berlin UmschlagskonzeptKlaus Pockrandt • Halle (Saale)

Umschlaggestaltung Judith M. Grünberg • Halle (Saale); Heribert A. Graetsch • Bochum

Grafisches Centrum Cuno GmbH & Co. KG · Calbe (Saale) Druck und Bindung

Satzschrift

# Inhalt/Contents

#### Band I

#### 9 Preface of the editors

# 11 Erik Brinch Petersen and Judith M. Grünberg

Mesolithic art - Abstraction, Decoration, Messages

#### 15 Gerhard Bosinski

The animal representations of the Azilian Die Tierdarstellungen des Azilien

#### 29 Alain Bénard

The rupestral engravings of the Fontainebleau Massif in France attributed to the Mesolithic Dem Mesolithikum zugeschriebene Felsgravierungen des Fontainebleau-Massivs in Frankreich

# 41 Éva David and Thierry Ducrocq

The biography of decorated antler adzes from Montières (France) suggests a magic function in Mesolithic art

Die Biografie der verzierten Geweihhacken aus Montières (Frankreich) weist auf eine magische Funktion in der mesolithischen Kunst hin

# 55 Luc W. S. W. Amkreutz and Marcel J. L. Th. Niekus

The Dutch masters? Art, decoration and ornaments in the Upper–Late Palaeolithic and Mesolithic of the Netherlands and Doggerland 13 000–5000 BC

Die holländischen Meister? Kunst, Dekoration und Ornamente im Jung- bis Spätpaläolithikum und im Mesolithikum der Niederlande und von Doggerland 13 000–5000 v. Chr.

# 91 Erik Brinch Petersen and Peter Andreas Toft

Working with geometrics – decorated amber pendants from the Danish Maglemosean (9600–6500 cal BC)

Arbeiten mit Geometrie – verzierte Bernsteinanhänger von der dänischen Maglemose-Kultur (9600–6500 v. Chr.)

# 111 Astrid Skou Hansen and Peter Vang Petersen

A new North Sea find of decorated amber Ein neuer Nordseefund eines verzierten Bernsteins

#### 115 Marie Brinch and Erik Brinch Petersen

And a second decorated amber pendant from 2021 Und ein zweiter verzierter Bernsteinanhänger aus dem Jahr 2021

# 119 Søren H. Andersen

Ertebølle Art Ertebølle-Kunst

# 145 Peter Vang Petersen

Mesolithic battle axes? – Decorated antler axes in South Scandinavia Mesolithische Kriegsäxte? – Verzierte Geweihäxte in Südskandinavien

#### 161 Søren A. Sørensen

Mesolithic art in context: examples of Mesolithic objects with »decoration« from Syltholm, Lolland, Denmark

Mesolithische Kunst im Kontext: Beispiele mesolithischer Objekte mit »Dekoration« aus Syltholm, Lolland, Dänemark

# 179 Erik Brinch Petersen

Lots of dots – a Late Mesolithic art style with human figures Viele Punkte – ein spätmesolithischer Kunststil mit menschlichen Figuren

#### 191 Lars Larsson

Spirals, bands and deer. Hafted and richly decorated antler objects from Scania, southern Sweden  $\,$ 

Spiralen, Bänder und Hirsche. Geschäftete und reich verzierte Geweihobjekte aus Schonen, Südschweden

# 205 Lars Larsson and Fredrik Molin

»Island of rich decorations« – the uneven impact of preservation on the interpretation of long-distance connections

»Insel der reichen Verzierungen« – der ungleiche Einfluss der Erhaltung auf die Interpretation von Fernverbindungen

#### 219 Per Karsten

The Tågerup shaft – a masterpiece from the 7<sup>th</sup> millennium BC: thoughts and ideas of a coming exhibition of Mesolithic art and ritual at the Historical Museum at Lund University Der Tågerup-Schaft – ein Meisterwerk aus dem 7. Jahrtausend v. Chr.: Gedanken und Ideen zu einer kommenden Ausstellung über mesolithische Kunst und Rituale im Historischen Museum der Universität Lund

# 229 Trond Klungseth Lødøen

From past hunting to death narratives: towards a better insight into Mesolithic animal ontologies

Von der einstigen Jagd zu Todesnarrativen: hin zu einem besseren Einblick in mesolithische Tier-Ontologien

# 245 Bernhard Gramsch

Mesolithic bone and antler artefacts with intentional incisions and engravings from North-Eastern Germany

Mesolithische Knochen- und Geweihartefakte mit intentionellen Ritzungen und Gravierungen aus Nordostdeutschland

# 275 Sönke Hartz

Decorated objects from Terminal Mesolithic Ertebølle Culture in Schleswig-Holstein Verzierte Objekte von der endmesolithischen Ertebølle-Kultur in Schleswig-Holstein

# 293 Judith M. Grünberg, Heribert A. Graetsch, Michael Buckley, Jennes Hünniger, Benjamin Lentz, Rainer Martin, Marius Markgraf, Antonia Beran, Lothar Mittag, Antje Reichel and Luisa Töpel

Mesolithic portable art from the museums of Saxony-Anhalt

Mesolithische Kleinkunstgegenstände aus den Museen in Sachsen-Anhalt

# 333 Witold Gumiński and Karolina Bugajska

Painted wood, notch on bone – ornamentation or marking? A case of two neighbouring forager sites, Dudka and Szczepanki, Masuria, NE Poland

Bemaltes Holz, Kerbe auf Knochen – Ornament oder Markierung? Ein Fall von zwei benachbarten Wildbeuterplätzen, Dudka und Szczepanki, Masuren, NO Polen

# 361 Tomasz Płonka, Marcin Diakowski, Bernadeta Kufel-Diakowska, Krzysztof Stefaniak and Grzegorz Ziółkowski

New data on Mesolithic art in Poland
Neue Daten zur mesolithischen Kunst in Polen

#### 373 Kristiina Mannermaa and Milton Núñez

Carving and shaping wood, stone and bone – Mesolithic art from the territory of modern Finland

Schnitzen und Gestalten von Holz, Stein und Knochen – Mesolithische Kunst aus dem Gebiet des heutigen Finnland

#### 387 Tõnno Jonuks

Mesolithic art in Estonia: figurative depictions and geometrical ornament Mesolithische Kunst in Estland: figurative Darstellungen und geometrisches Ornament

# 407 Ilga Zagorska

What is it? Unique hunter-gatherer art from the coast of western Latvia Was ist das? Einzigartige Jäger-Sammler-Kunst von der Küste Westlettlands

#### 419 Tomas Rimkus, Marius Iršėnas, Adomas Butrimas and Kristiina Mannermaa

The examples of decorated hunter-gatherer bone and antler implements in Lithuania, c. 10 500–4000 cal BC

Die Beispiele verzierter Knochen- und Geweihgeräte von Jäger-Sammlern in Litauen, ca. 10 500–4000 v. Chr.

#### 435 Maxim Charniaŭski, Aliaksandr Vashanau, Anna Malyutina, Harald Lübke and John Meadows

Ornamented sacral artefacts from Smarhoń quarries (North-Western Belarus) Verzierte sakrale Artefakte aus den Smarhoń-Steinbrüchen (Nordwestbelarus)

# 447 Svetlana V. Oshibkina

Decorated wooden objects from the Mesolithic Veretye Culture settlements Verzierte Holzobjekte aus den Siedlungen der mesolithischen Veretye-Kultur

#### 457 Svetlana V. Oshibkina

The Mesolithic »masks« from the Veretye I settlement, North Russia Die mesolithischen »Masken« aus der Siedlung Veretye I, Nordrussland

# 465 Ekaterina Kashina

Connecting people: ceramic anthropomorphic sculpture of Mid-Holocene hunter-gatherer-fishers of the Circum-Baltic and Russian North-West Menschen verbinden: keramische anthropomorphe Skulpturen der mittelholozänen Jäger-Sammler-Fischer aus dem zirkumbaltischen und russischen Nordwesten

# 477 Olga Lozovskaya

Rhomb motif and net pattern in the Mesolithic-Neolithic mobile art of Zamostje 2, Volga-Oka region

Rautenmotiv und Netzmuster in der mesolithisch-neolithischen Kleinkunst von Zamostje 2, Wolga-Oka-Gebiet

# 491 Svetlana N. Savchenko and Mikhail G. Zhilin

The Big Shigir idol: new data and interpretations

Das große Shigir-Idol: neue Daten und Interpretationen

# 509 Monica Mărgărit, Adina Boroneanț and Clive Bonsall

Mesolithic portable art from the Iron Gates Mesolithische Kleinkunst vom Eisernen Tor

# 529 Margherita Mussi, Flavio Altamura, Luca Di Bianco and Gianpiero Di Maida

Changing patterns of artistic production in late Pleistocene/early Holocene times:

Sich ändernde Muster der Produktion von Kunst im späten Pleistozän/frühen Holozän: der italienische Fall

# 547 Pablo Arias and Esteban Álvarez-Fernández

A new grammar for a changing world: the graphic expression among the Holocene hunter-gatherers of the Iberian Peninsula Eine neue Grammatik für eine Welt im Wandel: Der grafische Ausdruck bei den holozänen Jägern und Sammlern auf der Iberischen Halbinsel

# 561 Esther López-Montalvo, Oreto García-Puchol, Joaquim Juan-Cabanilles, Sarah B. McClure and Josep Lluís Pascual Benito

Mesolithic codes through the lineal engraved plaquettes recovered at Cueva de la Cocina (Dos Aguas, Valencia, Spain)

Mesolithische Kodes anhand der in der Cueva de la Cocina (Dos Aguas, Valencia, Spanien) gefundenen mit gravierten Linien versehenen Steintäfelchen

# 577 Juan F. Ruiz López

Evidence for the Mesolithic origin of Levantine rock art of Mediterranean Iberia Beweise für den mesolithischen Ursprung der levantinischen Felskunst im iberischen Mittelmeerraum

# 599 Judith M. Grünberg and Heribert A. Graetsch

Mesolithic graphic signs, motifs and ornaments Mesolithische grafische Zeichen, Motive und Ornamente

# 625 Ole Grøn and Torunn Klokkernes

The meaning and function of Evenk bead ornaments Die Bedeutung und Funktion des Perlenschmucks der Ewenken

# 637 Corinna Erckenbrecht

Messages on sticks and stones: rock art and message sticks of the Australian Aborigines Botschaften auf Stäben und Stein: Felskunst und Botenstäbe der australischen Aborigines

# 649 Judith M. Grünberg

Characteristic features of Mesolithic art

# Programme of the international and interdisciplinary conference on »Mesolithic Art – Abstraction, Decoration, Messages«, Halle (Saale), Germany, 19<sup>th</sup>–21<sup>st</sup> September 2019

# The Dutch masters? Art, decoration and ornaments in the Upper–Late Palaeolithic and Mesolithic of the Netherlands and Doggerland 13 000–5000 BC

Luc W. S. W. Amkreutz and Marcel J. L. Th. Niekus

# Zusammenfassung

Die holländischen Meister? Kunst, Dekoration und Ornamente im Jung- bis Spätpaläolithikum und im Mesolithikum der Niederlande und von Doggerland 13 000–5000 v. Chr.

Die Belege für Kunst, Dekoration und Ornamente aus dem Jung- und Spätpaläolithikum und dem Mesolithikum in den Niederlanden sind begrenzt. Dies ist zum Teil auf die geringe Erhaltung organischer Überreste zurückzuführen, wobei die bekannte Willemstad-Figur eine der wenigen Ausnahmen darstellt. Dieser Beitrag gibt eine Übersicht über die meisten dokumentierten Objekte, von persönlichem Schmuck und Perlen, über Schwirrgeräte und gravierte Steinartefakte bis hin zu verzierten Knochen-, Holz- und Geweihstücken. Geografisch ist das Verbreitungsgebiet nicht auf die Niederlande beschränkt, sondern umfasst vor allem die versunkenen Landschaften von Doggerland, wo ähnliche Artefakte gefunden wurden. Die erweiterte Datenbasis von diesem ehemaligen europäischen Kernland ist für ein besseres Verständnis der vorhandenen Muster notwendig. Insgesamt zeigen die vielleicht wenig beeindruckenden Beispiele, zumindest aus europäischer Perspektive, die Existenz bestimmter Traditionen und Stile, einschließlich einer Form der Dekoration, die vielleicht informell und persönlich ist. Gleichzeitig ist es offensichtlich, dass bestimmte Stücke breiteren europäischen »Kunststilen« entsprechen. Interessanterweise scheint die Region, einschließlich Doggerland, eine Mischung verschiedener Kunststile zu sein mit Einflüssen des Tardenoisien aus dem Süden und der Maglemose-Kultur aus dem Norden, während gleichzeitig eine Verbindung zu den britischen Inseln aufgezeigt werden kann. Darüber hinaus wird darauf hingewiesen, dass wir, um unser Verständnis dieser Objekte zu erweitern, einen größeren Rahmen als eine kunsthistorische Perspektive einnehmen müssen.

# Summary

The evidence for art, decoration and ornaments dating to the Upper and Late Palaeolithic and Mesolithic in the Netherlands is limited. This is partly due to the scarcity of preservation of organic remains, the well-known Willemstad figurine forming one of the few exceptions. This paper brings together the majority of objects documented, ranging from personal ornaments and beads, over bullroarers and engraved lithics to pieces of decorated bone, wood and antler. Geographically the range is not limited to the Low Countries but specifically includes the submerged landscapes of Doggerland where similar artefacts have been found. The increasing dataset from this European heartland is necessary for a better understanding of existing patterns. Taken together the perhaps unimpressive examples, at least from a European perspective, do demonstrate the existence of certain traditions and styles including a form of decoration that is perhaps informal and personal. At the same time it is evident that certain pieces do conform to wider European »art styles«. Interestingly the region, including Doggerland, appears to sit at the convergence of different art styles with both southern Tardenoisian and northern Maglemosian influences, while at the same time forming a connection to the British Isles. Furthermore, the point is made that to increase our understanding of these objects we need to adopt a wider scope than an art historical perspective.

# 1 Introduction

The Upper–Late Palaeolithic and Mesolithic occupation of the Netherlands is mainly known through numerous surface sites characterised by lithics. The absence of caves and rock formations has prevented the development (or delivery) of any significant Palaeolithic art tradition in these parts. Also, the geographical and soil conditions often have not been favourable to the preservation of organic remains. Evidence of Upper–Late Palaeolithic and Mesolithic art in the Netherlands is therefore rather limited, but it is not absent

altogether. In this contribution we will present an overview of the existing corpus of several dozen decorated objects and ornaments from the time period between roughly 13 000 and 5000 BC (Fig. 1; Tab. 1). The finds can be attributed to the Hamburgian, the *Federmessergruppen*, the Ahrensburgian and the Mesolithic. Since the finds from the Upper–Late Palaeolithic have been discussed in detail elsewhere (Niekus/Amkreutz 2021), we will emphasise the Mesolithic finds in the context of this volume. We will discuss aspects of technology, style and cultural affiliation with the aim of discovering whether there is evidence for continued traditions

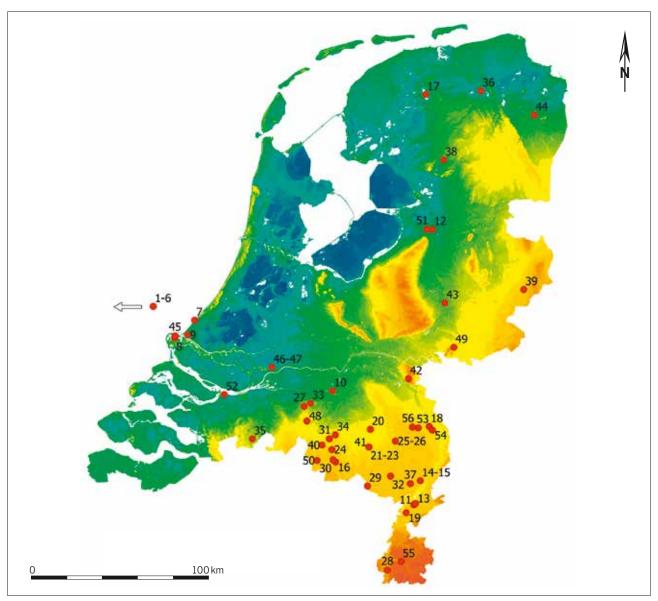


Fig. 1 Digital elevation map of the Netherlands with the (approximate) location of the sites discussed in this paper. The Upper and Late Palaeolithic sites in Niekus/Amkreutz (2021) have also been plotted. For site names, information on the finds and references the reader is referred to Table 1 and the text.

and/or new developments. We will also highlight some of the controversies surrounding elements of the corpus. An important focus lies with the North Sea and the potential offered by artefacts from the Dutch part of »Doggerland« (Peeters/Amkreutz 2020) including those from the replenished beaches Maasvlakte 1 and 2, the Zandmotor [»Sand Engine« and Hoek van Holland. Before presenting the Mesolithic decorated objects and art we will briefly summarise the evidence available for the previous period, the Upper and Late Palaeolithic1.

# 2 Upper and Late Palaeolithic art: a brief summary

The evidence for Upper and Late Palaeolithic art in the Netherlands is limited (Tab. 1). A recent overview is presented in Niekus and Amkreutz (2021). The title of this paper is »Facts, fakes and fantasy«, which refers to the fact that many of the objects registered as »art« in one or multiple ways are connected to the late A.M. Wouters (1917-2001), a well-known amateur-archaeologist associated with forgeries and manipulations of find spots which unfortunately make any claims related to his activities doubtful. If we take this into account then a number of characteristics may be sketched for the periods in question. The undisputed finds can be attributed to the Hamburgian, the Federmessergruppen and the Ahrensburgian and these include decorated objects of stone, bone and antler, personal ornaments and other perforated objects. To date no unambiguous engravings or ornaments are known from the Late Magdalenian or the Creswellian. For the decorated pieces of bone and antler the most convincing piece is a bovid [probably aurochs]

<sup>1</sup> A small number of <sup>14</sup>C-dates was calibrated with OxCal v4.4.2 (Bronk Ramsey 2009) using IntCal2o (Reimer et al. 2020).

| No. | Location/site name                             | Province      | Α | В | С | D | E | Cultural a/o chrono-<br>logical attribution          | Primary and most relevant references   |
|-----|--|---------------|---|---|---|---|---|--|--|
| 1   | North Sea, SW of Brown<br>Bank                 | -             | 1 | _ | _ | _ | _ | Federmesser  | Amkreutz et al. 2018   |
| 2   | North Sea, SW of Brown<br>Bank                 | -             | 1 | _ | _ | _ | _ | Mesolithic?  | unpublished  |
| 3   | North Sea, Southern Bight                      | _             | 1 | _ | _ | - | _ | Late Palaeolithic<br>(Federmesser?) or<br>Mesolithic | unpublished  |
| 4   | North Sea, undisclosed *                       | -             | 2 | _ | _ | _ | _ | Ahrensburgian  | Niekus/Amkreutz 2021 (1)   |
| 5   | North Sea, »Bolkgeul«                          | -             | 1 | _ | _ | _ | _ | Early-Middle<br>Mesolithic                           | Van Noort 2018   |
| 6   | North Sea, »De Stekels«                        | _             | _ | _ | _ | 2 | _ | Mesolithic   | unpublished  |
| 7   | North Sea, Zandmotor                           | -             | 1 | _ | _ | 2 | 2 | Mesolithic and later?                                | unpublished  |
| 8   | North Sea, Maasvlakte 1/2                      | _             | 1 | _ | _ | 5 | _ | Mesolithic and later?                                | Maasvlakte 1: Verhart 1988;<br>Maasvlakte 2: unpublished                       |
| 9   | North Sea, Hoek van<br>Holland                 | -             | _ | _ | _ | 1 | _ | Mesolithic   | unpublished  |
| 10  | Den Bosch-Maaspoort                            | Noord-Brabant | 5 | _ | - | _ | _ | Ahrensburgian (?) &<br>Late Mesolithic               | Arts 1987; Verhagen 1991;<br>Verhart/Wansleeben 1991;<br>Niekus/Amkreutz 2021  |
| 11  | Linne/Montfort *                               | Limburg       | 2 | _ | - | _ | - | Ahrensburgian  | Niekus/Amkreutz 2021 (1)   |
| 12  | Zwolle *?                                      | Overijssel    | 1 | - | _ | _ | - | Ahrensburgian  | Niekus/Amkreutz 2021 (1)   |
| 13  | Linne  | Limburg       | _ | 1 | - | _ | - | Federmesser  | Niekus/Amkreutz 2021 (1)   |
| 14  | Neer II/II-A (Boshei) *                        | Limburg       | _ | 3 | _ | _ | - | Federmesser  | Niekus/Amkreutz 2021 (1)   |
| 15  | Neer II-B *                                    | Limburg       | _ | 1 | _ | _ | - | Federmesser?   | Niekus/Amkreutz 2021 (1)   |
| 16  | Eersel-Panberg *?                              | Noord-Brabant | _ | 1 | _ | _ | - | Federmesser  | Niekus/Amkreutz 2021 (1)   |
| 17  | Kjellingen (O 3)                               | Friesland     | _ | 1 | _ | _ | _ | Federmesser  | Niekus/Amkreutz 2021 (1)   |
| 18  | Wanssum  | Limburg       | _ | 1 | _ | _ | _ | Mesolithic?  | Verhart/Wansleeben 1990;<br>Verhart/d'Errico 2012;<br>Niekus/Amkreutz 2021 (1) |
| 19  | Echt-Montfort 1 *                              | Limburg       | _ | 1 | _ | _ | _ | Ahrensburgian  | Niekus/Amkreutz 2021 (1)   |
| 20  | Lieshout-Mariahout                             | Noord-Brabant | - | 1 | _ | _ | - | Federmesser?   | Niekus/Amkreutz 2021 (1)   |
| 21  | Geldrop 3-1/3-2                                | Noord-Brabant | _ | 1 | _ | _ | _ | Ahrensburgian or<br>Early Mesolithic                 | Niekus/Amkreutz 2021 (1)   |
| 22  | Geldrop-Aalsterhut                             | Noord-Brabant | - | 1 | _ | _ | - | Early Ahrensburgian                                  | Niekus/Amkreutz 2021 (1)   |
| 23  | Geldrop III (= 3-1) *                          | Noord-Brabant | _ | 2 | _ | 4 | _ | Early-Late Ahrens-<br>burgian                        | Niekus/Amkreutz 2021 (1)   |
| 24  | Vessem-Rouwven *                               | Noord-Brabant | _ | 1 | _ | 2 | _ | Early Ahrensburgian                                  | Niekus/Amkreutz 2021 (1)   |
| 25  | Deurne/Deurnese Peel<br>(Leegveld-Stortplaats) | Noord-Brabant | _ | 1 | _ | _ | _ | Federmesser  | Niekus/Amkreutz 2021 (1)   |
| 26  | Deurne/Deurnese Peel<br>(Eikenlaan III)        | Noord-Brabant | _ | 2 | 1 | _ | _ | Federmesser  | Niekus/Amkreutz 2021 (1)   |
| 27  | Loon op Zand-Plakkeven III                     | Noord-Brabant | _ | 1 | 1 | _ | - | Federmesser  | Niekus/Amkreutz 2021 (1)   |
| 28  | Maastricht-De Heeg                             | Limburg       | _ | 1 | 1 | _ | - | Late Magdalenian or<br>Federmesser                   | Niekus/Amkreutz 2021 (1)   |
| 29  | Budel II (Dorplein) *                          | Noord-Brabant | _ | 1 | 5 |   | - | Federmesser  | Niekus/Amkreutz 2021 (1)   |
| 30  | Duizel *?                                      | Noord-Brabant | _ | _ | 1 | _ | _ | Middle Palaeolithic ('Mousterian')                   | Niekus/Amkreutz 2021 (1)   |

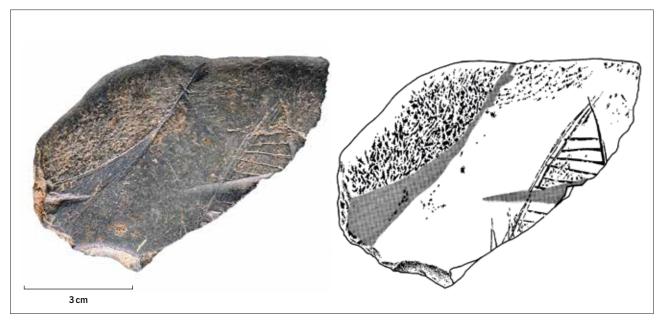
| No. | Location/site name              | Province      | Α | В | С | D | E | Cultural a/o chrono-<br>logical attribution | Primary and most relevant references                                  |
|-----|---------------------------------|---------------|---|---|---|---|---|---|---|
| 31  | Oostelbeers-De Aardborst        | Noord-Brabant | _ | _ | 1 | _ | _ | Federmesser                                 | Niekus/Amkreutz 2021 (1)  |
| 32  | Nederweert-De Banen *?          | Limburg       | _ | _ | 3 | _ | _ | Federmesser                                 | Niekus/Amkreutz 2021 (1)  |
| 33  | Drunense Duinen/Drunen<br>4 A   | Noord-Brabant | _ | _ | 1 | _ | _ | Federmesser                                 | Niekus/Amkreutz 2021 (1)  |
| 34  | Oirschot 5 or 7                 | Noord-Brabant | _ | - | 1 | - | - | Federmesser                                 | Niekus/Amkreutz 2021 (1)  |
| 35  | Zundert-De Matjes               | Noord-Brabant | _ | - | 1 | - | - | Federmesser                                 | Niekus/Amkreutz 2021 (1)  |
| 36  | Peizermaden                     | Drenthe       | _ | _ | 1 | _ | - | Federmesser?                                | Van Doesburg et al. 2010  |
| 37  | Heythuysen-<br>De Fransman I *  | Limburg       | _ | _ | 3 | 1 | _ | Federmesser                                 | Niekus/Amkreutz 2021 (1)  |
| 38  | Vledder                         | Drenthe       | _ | _ | _ | 1 | _ | Hamburgian,<br>Havelte-phase                | Niekus/Amkreutz 2021 (1)  |
| 39  | Usselo                          | Overijssel    | _ | _ | _ | 1 | _ | Federmesser?                                | Niekus/Amkreutz 2021 (1)  |
| 40  | Westelbeers                     | Noord-Brabant | _ | _ | - | 1 | - | Federmesser                                 | Niekus/Amkreutz 2021 (1)  |
| 41  | Geldrop 1 *                     | Noord-Brabant | _ | - | - | 2 | - | Early Ahrensburgian                         | Niekus/Amkreutz 2021 (1)  |
| 42  | Mook-Mookerheide *              | Limburg       | - | _ | _ | 1 | - | Ahrensburgian                               | Niekus/Amkreutz 2021 (1)  |
| 43  | Zuthpen-Ooijerhoek              | Gelderland    | - | - | - | 1 | - | Early Mesolithic                            | Verneau 1999  |
| 44  | Nieuwe Pekela 3                 | Groningen     | _ | _ | _ | 1 | _ | Early-Middle<br>Mesolithic                  | unpublished   |
| 45  | Rotterdam-Yangtzeharbour        | Zuid-Holland  | _ | _ | _ | 1 | _ | Early-Late<br>Mesolithic                    | Zeiler/Brinkhuizen 2015   |
| 46  | Hardinxveld-De Bruin            | Zuid-Holland  | 1 | _ | _ | 2 | _ | Late Mesolithic and ceramic Swifterbant     | Louwe Kooijmans et al. 2001   |
| 47  | Hardinxveld-Polderweg           | Zuid-Holland  | 6 | _ | _ | _ | _ | Late Mesolithic                             | Louwe Kooijmans et al.<br>2001a, b                                    |
| 48  | Tilburg-Kraaiven                | Noord-Brabant | _ | _ | _ | _ | 1 | Late (?) Mesolithic                         | Arts 1987   |
| 49  | Braamt                          | Gelderland    | _ | _ | _ | _ | 1 | Mesolithic or<br>Iron Age                   | unpublished, pers. comm.<br>M. van den Berg (Transect,<br>Nieuwegein) |
| 50  | Reusel-De Moeren                | Noord-Brabant | _ | _ | _ | _ | 1 | Middle Mesolithic                           | Roymans 1980  |
| 51  | Zwolle-Spoolde                  | Overijssel    | 1 | _ | _ | _ | 1 | Late Mesolithic or ceramic Swifterbant      | Clason 1983; Peeters 1990   |
| 52  | Willemstad                      | Noord-Brabant | 1 | - | - | - | - | Late Mesolithic?                            | Van Es/Casparie 1968  |
| 53  | Venray-Vlakwater                | Limburg       | _ | 1 | - | - | - | Stone Age?                                  | Verhart/Wansleeben 1991   |
| 54  | Meerlo-Wanssum<br>»De Campagne« | Limburg       | _ | 1 | _ | - | - | Early (?) Mesolithic                        | Verhart/Wansleeben 1991   |
| 55  | Valkenburg-Straatbeek           | Limburg       | _ | 1 | - | - | - | Stone Age?                                  | Verhart 2015  |
| 56  | Merselo                         | Limburg       | _ | - | 1 | - | _ | Late Mesolithic                             | Verhart/Wansleeben 1991   |

(1) with further references

Tab. 1 Catalogue of Dutch sites with the number of engravings, perforated objects and personal ornaments (see Fig. 1 for the location of the sites). A Decorated and/or engraved bone, antler and wood; B engraved pebbles and stones; C cortex engravings; D personal ornaments and beads; E other perforated objects (\*bullroarers\* and miscellaneous). Sites with an asterisk (\*) indicate direct or indirect involvement by A. M. Wouters. An added question mark indicates that involvement or the extent of the involvement is not certain. Please note that the numbering of the sites differs from Niekus/ Amkreutz (2021, Tab. 1).



Fig. 2 The Late Glacial decorated bovine metatarsus from the North Sea. Note the smooth strips that were made on all sides which served as panels for the flint incised decoration. The decoration continues and will have run around and further on the broken and split metatarsus.



 $\textbf{Fig. 3} \ \ \textbf{The "Linne triangle"}, found during the excavation in 1997 of a small \textit{Federmesser} site.$ 

metatarsus dredged from the North Sea with chevron decoration (Fig. 2). A  $^{14}$ C-date places it around 13 000 cal BP in the Allerød. Parallels are to be found in Wales, France, Denmark and Poland. Another decorated North Sea find is from an aurochs and is still being studied. Other decorated antler

and bone finds originate from the Maaspoort site, which is also discussed here. It is questionable though to what extent these undated finds may be attributed to the Late Palaeolithic as the identification of reindeer antler is dubious and the pointillé decoration better fits the Late Mesolithic. There are

quite a number of engraved pebbles or stones which can be attributed to the *Federmessergruppen* or the Ahrensburgian. Best known is an excavated lydite retoucher from the site of Linne dating to the former period (Fig. 3). Other finds include sandstone objects and the designs most regularly present include parallel lines or ladder-like motifs, typical for this period. Of particular importance is a lydite retoucher with an engraved female figure on it, the so-called »Dancer from Geldrop«, or »Venus of Mierlo«, found at Geldrop. It is usually attributed to the Ahrensburgian or the Early Mesolithic. A comparable piece is the dancer of Wanssum, which may also be Mesolithic in date. Regarding both pieces there is controversy as to whether or not they are genuine (see Niekus/Amkreutz 2021 for an in depth discussion of both pieces). Apart from the engravings on stone there are c. 18 engravings in the cortex of flint, almost all of which date to

the Federmessergruppen (Fig. 4). Again motifs are mostly parallel lines, cross-hatchings and ladder-like motifs. Other "art" objects are personal objects, rondelles and other perforated pieces. The oldest ornament is an ochre pendant form Vledder dating to the Hamburgian. A small number of pendants, rondelles and perforated pieces of ochre, lydite and quartzite can be attributed to the Federmessergruppen and the Ahrensburgian.

Taken together, the evidence for Upper and Late Palaeolithic art is limited. The most spectacular pieces, the engraved stones with figurines, remain contested. The other pieces appear to fit the wider existing cultural characteristics and networks. Apart from the Vledder pendant (late Hamburgian, Havelte-phase), no convincing art objects are known for the Hamburgian or Late Magdalenian from the Netherlands, despite their presence in neighbouring countries. This may

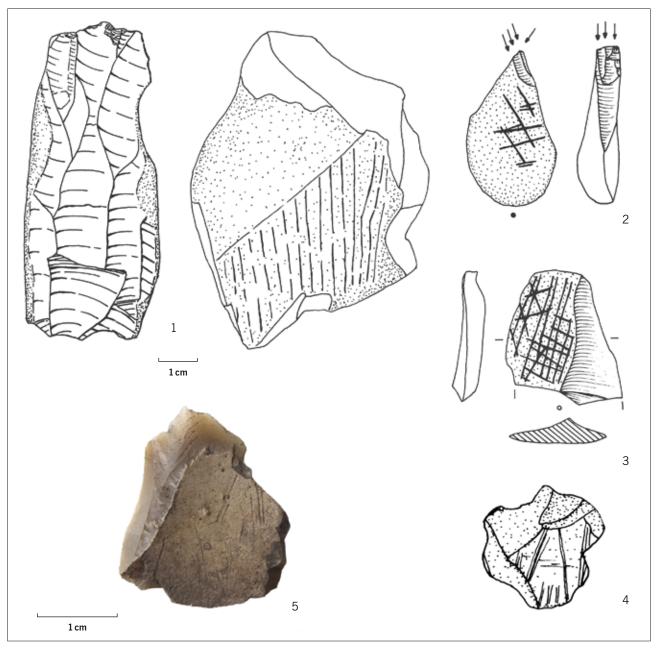


Fig. 4 Upper and Late Palaeolithic flint artefacts with cortex engravings, predominantly cross-hatchings (see Niekus/Amkreutz 2021 with further references). 1 Core from Maastricht-De Heeg, 2 dihedral burin from Oostelbeers-De Aardborst, 3 flake from Nederweert-De Banen, 4 flake from Zundert-De Matjes, 5 flake from Peizermaden; 1 Late Magdalenian or Federmessergruppen, 2–5 Federmessergruppen.

be due to the lack of good source material such as schist plates for engravings but also to the rather ephemeral Late Magdalenian occupation along the northern fringe of the loess belt. For the Federmessergruppen the number of cortex engravings is limited, and with one exception (van Doesburg et al. 2010), examples are only known from the southern part of the Netherlands. The linear and cross-hatching engravings are typical for this period, as is the chevron design on the decorated aurochs metatarsus from the North Sea. This to some extent confirms the existence of a more stylised geometric art that seems to be continued in the Mesolithic. It is just a suggestion, but one could guess that these geometric styles may relate to the warming of the climate and the return of forests in both the Allerød and early Holocene.

More figurative styles may then perhaps relate to colder stages, although for the Netherlands the »Dancer from Geldrop« remains contested. For the Federmessergruppen and the later Mesolithic one could in any case argue that the Netherlands fit the broader European pattern of abstract and repetitive motifs such as lines, hatchings and zigzags. These are often placed on functional items such as retouchers or in the cortex of flint artefacts. The motifs at work seem to be a transcultural element (d'Errico 1994) and the change to abstract designs has been linked to changes in mobility and social organisation at the transition to the Final Palaeolithic (Naudinot et al. 2018). This should receive further attention, especially regarding the extent to which this new style may be rooted in the previous Magdalenian, or is perhaps really a new art tradition. As argued by Niekus and Amkreutz (2021) these types of studies should not solely focus on the designs themselves but also incorporate the mediums on which the decorations were made and their archaeological context. Decoration, object and performance should be studied together. Apart from the engraved objects there also appears to be continuity in the use of ochre and the fabrication of perforated objects in both the Upper-Late Palaeolithic and Mesolithic, but this is perhaps less surprising.

# 3 The Mesolithic in the Low Countries

In the Low Countries, and the Netherlands in particular, the Mesolithic is dated between c. 9000 and 5300/4400 cal BC. The development of increasingly temperate conditions and a wooded environment, led to changes in hunting strategies and mobility patterns, including distinct developments in material culture of which microlithic tools and hunting implements are the most well-known (Deeben/Arts 2005, 145). The Mesolithic is rooted in the Late Palaeolithic of which the final Ahrensburgian (»Epi-«or Late Ahrensburgian) phase already witnessed a microlithisation of its tool set (Verhart 2008, 163). The initial Mesolithic must be dated to the Preboreal (Lanting/Van der Plicht 2000) but is not well known (Niekus 2019). Its end is related to the presence of the Neolithic *Linearbandkeramik* (LBK) on the loess soils in the south or is associated with the development of the Swifterbant Culture and pottery production and the process of Neolithisation in the millennium following that. Whereas in the Netherlands the Neolithic may also start with pottery producing Swifterbant communities, these are interpreted as Final Mesolithic in Belgium (Crombé/Vanmontfort 2007).

Due to problems with absolute dating (Crombé et al. 1999; 2013) as a result of contamination of samples and generally poor association between samples and the phenomena intended to be dated (i. e. flint scatters) only a coarse grained internal subdivision of this period is currently possible. Generally the Mesolithic is therefore subdivided in three phases (Lanting/Van der Plicht 2000; Peeters/Niekus 2005; Verhart/Arts 2005; Verhart/Groenendijk 2005): an early [c. 9000-7700 cal BC], middle [c. 7700-6500 cal BC] and late [6500-5300/4400 cal BC] phase. These phases are based primarily on the occurrence of certain artefact types, mostly different types of microlithic points, and raw material varieties (Crombé 1998; 1999).

#### 3.1 North and South

Apart from changes over time, the Mesolithic in the Netherlands is also characterised by geographical differences in material culture. For the Early Mesolithic the southern part of the Low Countries appears to be, at least for some time, oriented more towards Southern and Central European traditions (Verhart 2008, 163; Crombé 2019) while in the northern part assemblages show more affinities with northern traditions. This dualism continues in the Middle Mesolithic where a Northwest-group, north of the Rhine, appears to be associated with a Northern European [Maglemosian/Duvensian| tradition while the south is part of the Rhine basin group also known as the Rhine-Meuse-Scheldt complex, which in itself forms an extension of the Western European [Sauveterrian/Tardenosian] tradition (Verhart/Groenendijk 2005, 164-165; Heinen 2006; Verhart 2008, 171). The use of surface retouched implements such as feuilles de gui, narrow backed bladelets and Wommersom quartzite characterises the Middle Mesolithic in the southern and central part of the Netherlands, while triangles dominate assemblages further to the north. The Late Mesolithic is mainly identified by the widespread use of trapeze-shaped points (Verhart 2008, 163-172). This subdivision is also largely applicable to the Rhineland and Belgian Mesolithic (Arora 1976; Verhart/ Groenendijk 2005; Vanmontfort 2008). The difference between the north and the south should probably not be overemphasised as they are variations on the same theme. However, it is worth stressing that despite the many things in common they do represent different accents that may have been more than merely stylistic. For instance, point types are not merely functional or the result of tradition, but may also express aspects of identity and territory (Wiessner 1983; Perdaen et al. 2008). Furthermore other aspects such as differences in raw material composition may point to actual differences in site use, economic exploitation of the landscape and diverging raw material and mobility networks.

# 3.2 Dry and wet

Most Mesolithic sites are known from the higher Pleistocene soils in the southern, eastern and northern part of the coun-

try and consist of flint scatters, sometimes with evidence of surface hearths in the form of charcoal and burnt hazelnut shells (Sergant et al. 2006) or pit hearth features (Groenendijk 1987; Peeters/Niekus 2017). The latter are more typical for the northern part of the study area. Sites are mostly situated on cover sand dunes and ridges in the vicinity of small streams, lakes or peat fens. The presence of open water, biodiversity, exposure to sunlight and raw material were probably distinct pull-factors in this (Van Gils et al. 2009; Amkreutz 2013, 142). As such they are discovered relatively easily, but at the same time often represent palimpsests of repeated visits to the same place, probably within a fixed seasonal mobility cycle (Binford 1982). This is different for sites that are discovered further west in the Rhine-Meuse delta, or the margins of the current Noordoostpolder and Swifterbant area. Due to the relatively quick cover by clay or peat, spatio-temporal patterning is

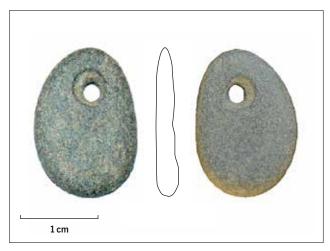


Fig. 5 The Early Mesolithic pendant from Zutphen-Ooijerhoek.

preserved there as are organic artefacts and information on environment and diet. Over the past years a number of these sites have been excavated such as the site Hardinxveld-Polderweg (Louwe Kooijmans 2003) and Hoge Vaart-A27 (Peeters 2007). In particular the Hardinxveld sites have provided an enormous addition to our knowledge of the (Late) Mesolithic as much information has become available on food consumption, use of natural resources, technology, seasonality etc. (Louwe Kooijmans 2003). On the one hand it can be argued that this is a taphonomical difference and that the sites in the western part of the Netherlands form templates for the meagre evidence provided by the flint scatters (Louwe Kooijmans 1997). On the other hand we should be aware that during the Mesolithic the transgression of the sea influenced the landscape in the Holocene Rhine-Meuse delta as well. Many of the sites, especially from the Late Mesolithic, were situated in a distinct wetland environment (De Mulder et al. 2003; Vos/Kiden 2005). It has been attested that differences in toolkit composition, site structure and investment also point to differences in site and landscape use and may well indicate a particular wetland Mesolithic, part of, or independent from Mesolithic communities on the Pleistocene soils (Amkreutz 2009; 2013; Crombé et al. 2011; Brouwer-Burg 2012).

# 4 An overview of Mesolithic art, decorated objects and personal ornaments

In this section we present the corpus of Dutch Mesolithic objects of art, decorated pieces and personal ornaments. Due to difficulties in dating and attribution, especially regarding surface sites which are often palimpsests, we have restricted ourselves to those objects that are unequivocally Mesolithic or have indicated this otherwise. This applies also to finds from beach nourishments such as the Zandmotor and Hoek van Holland, as well as infrastructural works like Maasvlakte 1 and 2, extensions of the Port of Rotterdam. These replenishments are rich sources of palaeontological and archaeological finds. The sediments used for these projects are dredged from permit areas located c. 10-15 km offshore. These sands contain numerous Palaeolithic and Mesolithic flint artefacts, but also Mesolithic bone and antler points, antler axes and other worked bones. Some of the objects from these artificial beaches described in this section have not yet been studied in detail and hence the Mesolithic age of the objects in question is not beyond doubt in all cases.

#### 4.1 Personal ornaments: pendants and beads

# Zutphen-Ooijerhoek

In 1998 a small Mesolithic site was discovered, and subsequently excavated near Zutphen (Verneau 1999). During the excavation 371 artefacts >5 mm were recovered; only a few retouched tools are present, including a scalene triangle and an obliquely truncated point ("b-point"). Amidst the artefact scatter a small flat pebble with a round, biconical perforation [diameter 2 mm] was found (Fig. 5). The pebble measures 19 mm in length, is 13 mm wide and has a maximum thickness of 3 mm. It weighs 1.1 g. The rock type was not specified, but described as layered with a greenish hue. Groove marks resulting from the perforation with a flint tool were observed on both sides. A sample of charred hazelnut shells from a fireplace was dated to the Boreal (GrA-13662: 8840 ± 40 BP, 10154-9711 cal BP), placing the occupation and the ornament in the Early Mesolithic. This pendant is one of very few examples that can be attributed to the Mesolithic based on secure contextual information.

#### Nieuwe Pekela 3

A fragment of an as yet unpublished elongated amber bead was found in 1993 on the surface near a ditch close to the Mesolithic site-complex NP-3 in the Veenkoloniën (»Peat Colonies«) in the Province of Groningen. The bead (not shown) is perforated in a longitudinal direction and measures 20 mm in length and is 10 mm thick at one end. The site NP-3 is well-known for the occurrence of hundreds of pithearth features. The 23 available radiocarbon dates point to extensive occupation during the Boreal and Early Atlantic, roughly between 8500 and 7800 BP, i.e. the Middle Mesolithic and possible the beginning of the Late Mesolithic. Based on the typology of points it is likely that occupation of the sand ridge started already during the Early Mesolithic

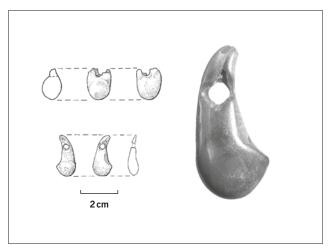


Fig. 6 Perforated red deer tooth pendants [Late Mesolithic and Swifterbant Culture] from Hardinxveld-De Bruin (find nos. 2621 and 9462). The photograph of the complete specimen is on the scale 2:1.



Fig. 7 The possible bird bone bead (find no. 362), dating to the Middle/ Late Mesolithic from Rotterdam-Yangtzeharbour.

(Groenendijk 2004). Although the bead was initially dated to a more recent past (Anonymous n. d.), it is assumed to date to the Mesolithic, but it cannot be dated more accurately than Early to Middle Mesolithic based on the available dates.

#### Hardinxveld-De Bruin

At Hardinxveld-De Bruin two perforated pendants were excavated (Fig. 6). The larger and more complete of these [find no. 9462] dates to the Mesolithic phase 1 (between 5500 and 5100 cal BC), the smaller [find no. 9462] to the later phase 3 (4700–4450 cal BC) and therefore to the Swifterbant occupation phase. Both were made from red deer teeth (Louwe Kooijmans et al. 2001, 359–360). They were probably used as pendants in a necklace or sewn onto clothing or other objects. The fact that they are similar in execution, style and species may be indicative of the fact that there is an important degree of continuity between the Late Mesolithic occupation and the later Swifterbant Culture, which may also have been the case at other sites.

#### Rotterdam-Yangtzeharbour

During targeted grab-bag sampling in 2011 of a sand dune with late Pleistocene and early Holocene sediments at the Yangtzeharbour in the port of Rotterdam, flint and stone artefacts, animal bones and botanical remains were brought to the surface. Among the finds from »trench 2« is a calcined fragment [diameter 6.7 mm] from the middle section of a bird bone (Fig. 7). The fragment, weighing only 0.4 g, is hollow and shaped like a bead. The break on one end occurred after heating; the other side displays some trace of wear consistent with the interpretation as a bead (Zeiler/ Brinkhuizen 2015). Three of the five radiocarbon dates from this trench (between 9215 BP and 8920 BP) point to occupation during the latter part of the Early Mesolithic and the earlier part of the Middle Mesolithic [Late Preboreal-Early Boreal| while two other dates (7750 BP and 7685 BP) are significantly later [Early Atlantic] and testify to the later Middle Mesolithic or even the beginning of the Late Mesolithic. It is of interest to note that traces of jet and shell working



Fig. 8 Two presumably Mesolithic amber pendants from »De Stekels« in the Post collection. Note the difference in size of the perforation and patination.

were found on flint artefacts from the Yangtzeharbour, but ornaments of these materials have not been recovered (Niekus et al. 2015).

# The North Sea

# · »De Stekels«

The North Sea has only yielded a sparse number of pendants and beads so far due to the fact these small ornaments slip from the nets. In the collection of J. Glimmerveen there are two amber beads fished from the North Sea. They have been polished and have a straight perforation. It is likely that these date to the later prehistory or even the medieval period. Two other beads, more coarsely shaped, have been fished from the area of »De Stekels«, south of the Brown Bank, at the end of the 20th century and are in the Post collection (Fig. 8). They are irregularly shaped. The left more reddish pendant measures 67 mm x 56 mm x 23 mm and weighs 34g, the larger yellow piece measures 61 mm x 60 mm x 44 mm and weighs 78 g. The perforations, respectively 15 mm and 6 mm in diameter, appear irregular and somewhat hour-glass shaped and were probably made with

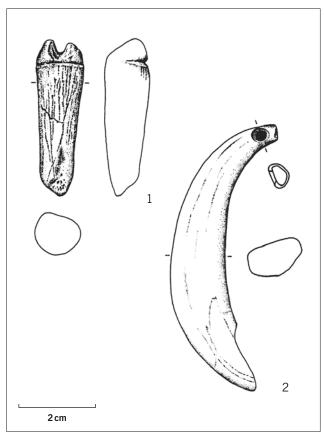


Fig. 9 1 Perforated piece of antler; 2 perforated wild boar incisor from Maasvlakte 1.

a flint tool. The number of human bones from this site points to a potential [Mesolithic] cemetery (Peeters/ Amkreutz 2020). These beads would most likely fit a Mesolithic context. Similar ones have been documented after the submergence of Doggerland in a Swifterbant context (Devriendt 2014; 2016).

#### • Maasvlakte 1 and 2

From Maasvlakte 1 Verhart (1988) reports a perforated piece of antler [c.  $4 \, \text{cm} \times 1 \, \text{cm}$ ] from the Hombroek collection (HO 30). This was possibly a pendant due to the remainder of a broken perforation. Right below the perforation there was a groove running horizontally across one side of the pendant (Fig. 9,1). Furthermore a perforated tooth [KFA] (Fig. 9,2) was found fabricated from a wild boar's incisor [7 cm x 1.5 cm] from the Kerkhoff collection. A small conical perforation was made in the root which did not run through.

Three beads (not shown) were reported from Maasvlakte 2, two during an artefact identification day 2017 in the Natural History Museum, Rotterdam. These, possibly of chalcedony and a phyllite stone with rather straight perforations, were discovered in August 2016 in the Hoekse Slag area. The third, found by W. Schulte in March 2023, is a rounded rectangular amber bead (2.8 cm x 1.7 cm x 2.5 cm) with an hourglass perforation (o.6-o.4 cm). H. van der Made recorded a ferrous, rectangular (maybe sandstone) pebble with an hourglass-shaped perforation from Maasvlakte 2.

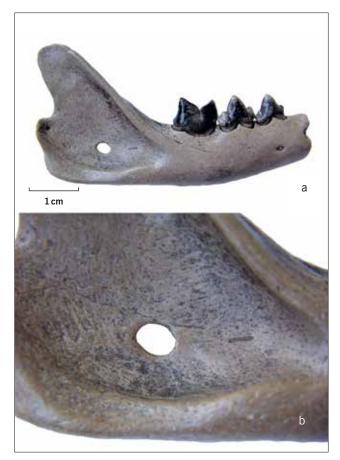


Fig. 10 a Perforated feline jaw from Maasvlakte 2; b detail of the

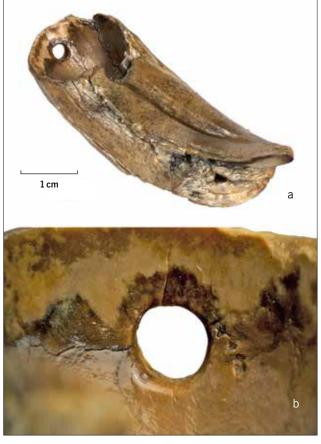
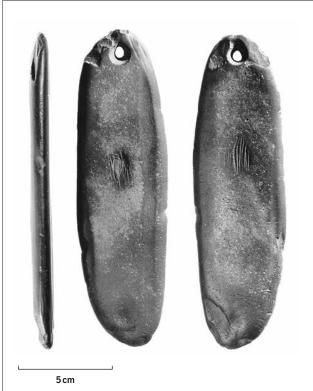


Fig. 11 a Perforated wild boar tusk from Hoek van Holland; b detail of the



Fig. 12 A small perforated (Mesolithic?) amber bead from the Zandmotor.



 $\label{eq:Fig.13} \textbf{ The Late Mesolithic *bullroarer* from Tilburg-Kraaiven}.$ 

Lastly we mention a large fragment of the perforated lower jaw of a wild cat [Felis silvestris], found in 2014 by H. Houtgraaf at the Hoekse Slag area of Maasvlakte 2. The jaw fragment measures 55 mm in length, and is 6 mm wide and 30 mm high (Fig. 10). Some wear [»polishing«] is visible, an indication that the piece was suspended (Zeiler 2021).

#### · Hoek van Holland

Almost certainly Mesolithic is the perforated upper tusk (Fig. 11) of a wild boar [pers. comm. J. T. Zeiler], found several years ago on the replenished beach of Hoek van Holland by D. Chrispijn.

# Zandmotor

Finds from the Zandmotor beach replenishment include a small perforated amber bead found in 2017 by W.van Wingerden (Fig. 12). It has an elongated oval shape. Some measurements are: length 17 mm, width 8 mm and maximum thickness 6 mm. The bead weighs 0.39 g. In cross-section the bead is asymmetric, more or less rounded triangular. The diameter of the cylindrical perforation is 2 mm and it is 3 mm deep. The surface of the bead seems polished. The bead might be Mesolithic but could be younger as the perforation is rather straight and the bead rather shaped. Furthermore R. Nederpelt found a perforated incisor of a red deer in 2020. The tooth measures c. 3 cm including the root and the small (c. 2 mm) perforation is situated in the top part of the root.

#### 4.2 Bullroarers

Two perforated objects described as »bullroarers« deserve special attention here.

# Tilburg-Kraaiven

The first and best known example is the object from the site Tilburg-Kraaiven. It is a thin elongated object of lydite with a length of 155 mm (Fig. 13). On one end a biconical perforation was applied. Traces of wear above the perforation indicate the piece was suspended for a prolonged period of time. On both flat sides a series of »scratches« is present (Arts 1987). Tilburg-Kraaiven is an extensive site, if not the largest, in the southern part of the Netherlands, with significant Late Mesolithic remains.

#### Braamt

Part of possibly a second »bullroarer« (not shown) was found during an excavation in 2019 near Braamt, a small town in the municipality of Montferland, province of Gelderland. The fragment with the biconical perforation preserved measures slightly less than 55 mm in length, and was found in a posthole associated with hand formed pottery dating to the Iron Age or younger. It is presently unclear whether it is indeed a Mesolithic bullroarer which ended up in a later prehistoric feature or something else and younger.

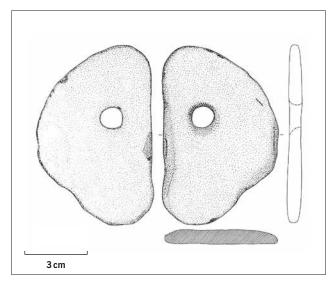


Fig. 14 The perforated slate object from Reusel-De Moeren, probably belonging to the Middle Mesolithic Rhine-Meuse-Scheldt Culture.

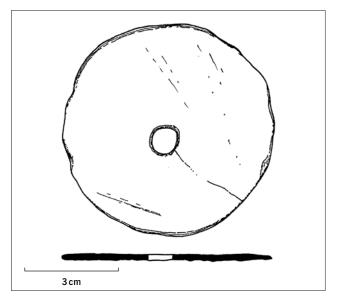


Fig. 15 The Late Mesolithic or Early Swifterbant perforated bone disc from Zwolle-Spoolde.



Fig. 16 A »netting needle« from the Zandmotor, probably dating to the Late Mesolithic.

# 4.3 Miscellaneous perforated objects

# Reusel-De Moeren

A perforated slate object, possibly a retoucher, was found during the early 1960s at a site called »De Moeren« in the municipality of Reusel, province of Noord-Brabant (Fig. 14). Hundreds of flint artefacts were found on the site. Several artefacts are made of Wommersom quartzite (Roymans 1980). Based on the presence of a surface retouched point or feuille de gui the site can be ascribed to the Rhine-Meuse-Scheldt Middle Mesolithic.

# Zwolle-Spoolde

In 1961 a new canal with a lock was constructed on the banks of the Zwarte Water, a small waterway situated on the floodplains of the river IJssel. During construction more than 300 objects of antler and bone were dredged from depths between c. 4 and 6 m. Among the finds, which were described in detail by Clason (1983) there are approximately 75 tools including base axes, T-shaped antler axes and beam axes. Most tools are made of red deer [Cervus elaphus] antlers but roe deer [Capreolus capreolus], elk [Alces alces] and a fragment of reindeer [Rangifer tarandus] antler were also identified testifying to the debris of several occupations over a longer period of time. The site is located at the foot of a series of coversand elevations with occupations dating from the Middle Neolithic to the Late Iron Age and it is very likely that earlier Neolithic and Mesolithic habitation was also present. This is attested by several 14C-dates, one of red deer antler with cut marks [GrN-7988: 8125 ± 70 BP, 9395-8776 cal BP], and a T-shaped antler axe [GrN-8800: 6050±30 BP, 6985-6795 cal BP (Lanting/Van der Plicht 2000). Two objects are of interest here, namely a perforated bone disc (Fig. 15) and a decorated base axe; the latter is presented in

section 4.6 (Fig. 33). The following descriptions are based primarily on Clason (1983). The bone disc (find no. ZR 1962/ III156) with a diameter of 66 mm was made from the lateral side of the vertical ramus of a left mandibula of a domestic cow or aurochs. The perforation was made from both sides (ibid., 86 Fig. 13). In view of the <sup>14</sup>C-dates mentioned above it is very likely that the perforated bone disc and the decorated axe (see section 4.6) date to the Late Mesolithic or the Early Swifterbant Culture.

# North Sea: Zandmotor

Two perforated bones were found on the replenished Zandmotor beach. Both were made from the long bone, possibly the metapodial, of a large mammal. It seems the natural foramen was artificially enlarged but detailed research is necessary to validate this (pers. comm. J. T. Zeiler). Neither of these objects - due to their resemblance to modern fishery tools we refer to them as »netting needles«- has been dated (Fig. 16). In view of numerous small core axes and several trapezes from the Zandmotor it is likely they are Late Mesolithic in age.

# 4.4 Engraved pebbles and stones

#### Venray-Vlakwater

Several engraved stone objects came to light during a survey of Stone Age artefacts from the collections of amateur archaeologists and museums in the wider region of Venray in the province of Limburg (Verhart/Wansleeben 1990). All objects are surface finds, none were found during systematic excavations. The first is a retoucher of a finegrained quartzite pebble with engraved lines on both flat sides (not shown). The pebble was found at a site known as »Vlakwater« but the exact find spot is unknown. Both weathered and more or less sharp engraved lines occur; the latter are probably intentional according to the authors but a clear pattern could not be discerned. The lack of associated artefacts prevents a cultural attribution.

#### Meerlo-Wanssum »De Campagne«

The second is an elongated retoucher of a lydite (?) or similar stone with marks of use on both ends from a site called »De Campagne« to the northwest of Maashees/Geijsteren, in the municipality of Meerlo-Wanssum. Both flat sides display a jumble of fine lines and several stages of engraving were identified (Fig. 17). Some engraved lines are superimposed on the percussion marks, so these were applied after use as a retoucher. Other finds from the site include a point with retouched base (»c-point« or »Tardenoisian point«), burins and blade cores. The absence of Wommersom quartzite led the authors to conclude that an Early Mesolithic date is the most likely.

# Valkenburg-Straatbeek

In 2010 a small and flat pebble with engraving was found in the bed of the Straatbeek, a small rivulet near Valkenburg in the province of Limburg (Verhart 2015). The pebble is reddish-brown in colour and probably a quartzite (Fig. 18). It measures 37 mm in length, 26 mm in width and is 4 mm thick. The surface of the pebble is smooth. Engraved lines are present on both sides. On one side a fish is depicted with the presence of scales suggested by cross-hatchings. To the left of the fish a small triangle is depicted filled with several horizontal and oblique lines; the triangle is lacking a base. On the reverse side a large number of parallel lines with cross-hatchings are present. Except for a few recent lines made by the finder with a metal needle to enhance the image

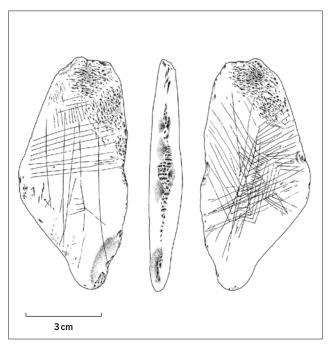


Fig. 17 The Early (?) Mesolithic engraved retoucher from Meerlo-Wanssum »De Campagne«.

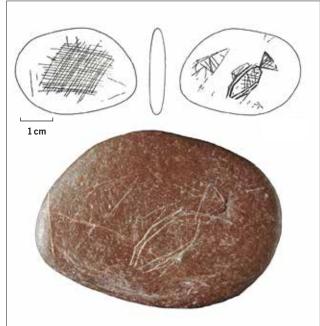


Fig. 18 The engraved pebble from Valkenburg-Straatbeek.

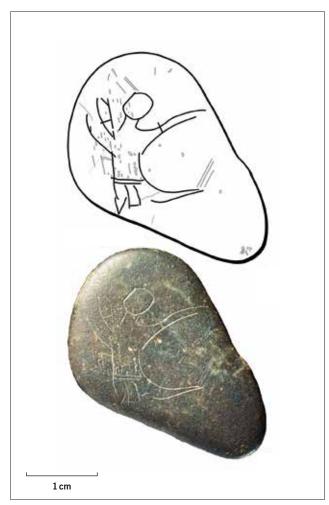


Fig. 19 The »dancer of Wanssum«.

of the fish all engraved lines are weathered. The geometric decoration is well-known from Federmessergruppen contexts (see Niekus/Amkreutz 2021 for examples from the Netherlands and Amkreutz et al. 2018 for a wider scope) and the triangle reminds us of the engraving of a retoucher from Linne (Verhart 2015a). But there are no clear parallels for the depiction of the fish; examples from abroad are usually more detailed in their execution and recognisable as to species (see Verhart 2015 for a brief discussion of fish engravings). The engraved pebble probably dates to the Stone Age but this is not beyond doubt.

# »Dancer of Wanssum«

Since this object was described in detail in Niekus and Amkreutz (2021) some general remarks will suffice. It concerns a small (max. length 38 mm) more or less oval pebble (Verhart/Wansleeben 1990; Verhart/d'Errico 2012; Verhart 2015) with the engraving of a right-handed human in a throwing motion. A belt of some sort and a loin-cloth are present (Fig. 19). The pebble was found in the 1960s or 1970s but the engraving was not recognised until the late 1980s during reassessment of old amateur collections in the course of the Meuse Valley Project. Other finds from the wider area around the site have been collected, dating from the Early Mesolithic to the Early Middle Ages (Verhart/Wansleeben 1990) so the

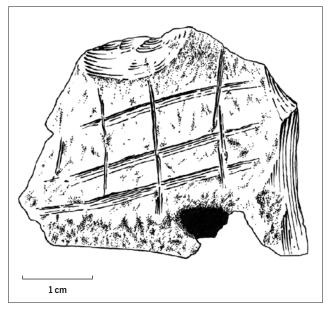


Fig. 20 The Late Mesolithic engraved cortical flake from Merselo.

pebble cannot be dated based on association with culturally distinct artefact types, although the image is reminiscent of a hunter-gatherer »in action«. If it is indeed a genuine prehistoric engraving, it could very well date to the Mesolithic (but see the discussion in Niekus/Amkreutz 2021).

# 4.5 Cortex engravings

# Merselo

A very convincing piece is a flint flake with an engraved cortex which was found in an agricultural field to the northwest of Merselo in the municipality of Venray. The engraving consists of three horizontal and four vertical lines forming a fishnet pattern (Fig. 20). Other finds from the field such as trapezes and artefacts made from Wommersom quartzite suggest a Late Mesolithic age.

# 4.6 Decorated bone, antler and wood

# Hardinxveld-Polderweg and De Bruin

By far the largest group of decorated objects on bone and antler comes from the well-known Late Mesolithic site of Hardinxveld (Louwe Kooijmans 2003). This site actually consists of two locations, Polderweg and De Bruin that are both situated on adjacent Pleistocene river dunes or »donken« that at the time were situated in an extensive freshwater wetland with peat marsh and waterways. The sites were inhabited between c. 5500 and 4500 cal BC, with Polderweg covering the Late Mesolithic period between 5500 to 5000 cal BC. The main occupation of the site yielded seasonal information pointing to an occupation in winter and early spring. The site also yielded the oldest inhumation in the Netherlands and a dog burial. Occupation ends around

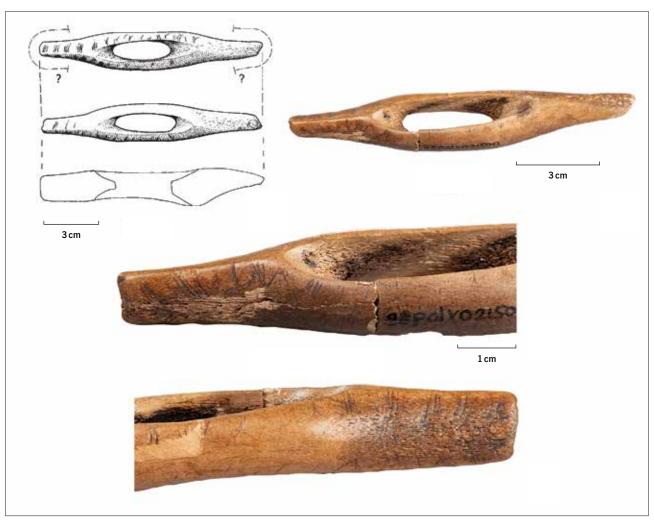


Fig. 21 The decorated grip (find no. 21.509) from Hardinxveld-Polderweg.

the time of the first pottery production and the start of the Swifterbant Culture. The adjacent De Bruin site documents the later occupation and also witnessed the introduction of the first domesticated animals in the Netherlands between 4700 and 4400 cal BC (Raemaekers 2019). Apart from this, occupation seems to have been comparable to the Mesolithic. Due to the excellent waterlogged conditions, preservation at both sites was ideal, yielding evidence of food remains and many organic artefacts and waste products. A number of the bone and antler tools and one wooden object were decorated (Louwe Kooijmans et al. 2001; 2001a; 2001b). They will be described here.

#### · Grip and awls

An enigmatic object found at Hardinxveld-Polderweg is formed by a small artefact with an oval perforation (Fig. 21) [find no. 21.509] and two flattened ends (Louwe Kooijmans et al. 2001a). It measures (11.8 cm x 2 cm) and was manufactured on a red deer tine. The perforation measures 10 mm x 30 mm on the inside and was probably used for an insert of flint, bone or antler. The object as such would have functioned as a grip, possibly for scraping or cutting. Some black material, possibly tar, was observed on the inside and use wear points to a transverse motion of use, as with a scraper.

No evident Mesolithic parallels are known although the object is reminiscent of certain Neolithic wooden handles for flint tools from the Alpine lacustrian settlements. The object is decorated on both sides and from top to bottom with 15–20 small bundles or sets of incised lines. These have been partly eroded by use and on the sides may have formed a zigzag pattern. Also at least two almost identical bone awls [find nos. 12.761 and 21.452] at Hardinxveld-Polderweg have yielded groupings of incised lines (Fig. 22).

#### · Antler axe sleeves

Apart from many antler axes of different shapes, there are also three Y-shaped perforated antler axe sleeves (Louwe Kooijmans et al. 2001a) found at Hardinxveld-Polderweg. Two of these stand out because of their size, perforation, surface finishing and decoration and were probably valued tools that may also have had a symbolic meaning. The smaller one measures 22 cm and is intensively decorated (Fig. 23); the slightly larger one measures 24 cm in length and is decorated less abundantly (Fig. 24). They are fabricated on the upper part of the tine, just above the burr. Two tines were cut off from the upper part (creating the Y-shape), while the lower part was separated by a cut above the brow tine. What is remarkable is the small diameter of the perfo-



Fig. 22 One of two bone awls with incised lines (find no. 12.7610) from Hardinxveld-Polderweg

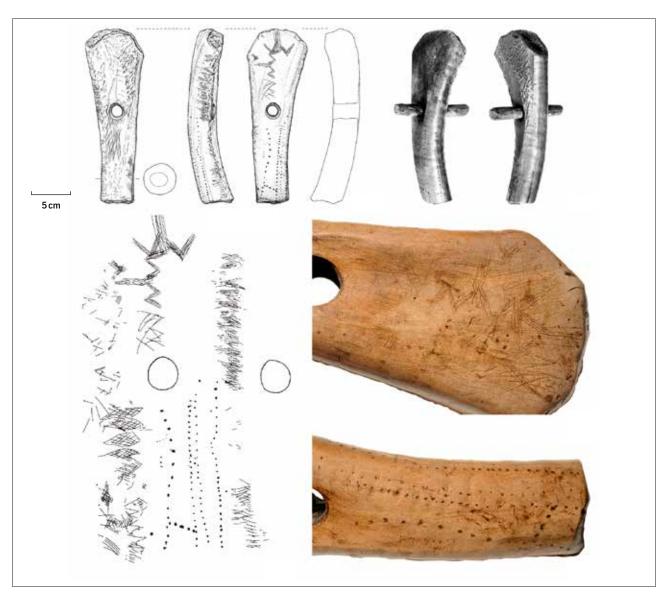
rations (14-16 mm x 20 mm). The heaviest most decorated sleeve also yielded a fragment of an ash handle of c. 20 mm. The cylindrical hole on both sleeves was irregularly cut, yet the surface of the antler was distinctly scraped and smoothed near the perforation. The opening for the insert measures 14-18 mm and probably contained an adze made of the tusk of a wild boar as was also documented at Maaspoort (Verhagen 1991). According to Louwe Kooijmans et al. (2001a, 305), the decoration on the sleeves is technically comparable to the grip described above and the bow described below. The more slender and longer sleeve (find no. 24.300) is decorated on the upper side with four sets of about 4 cm long with incised lines. The upper set furthest from the working end actually consists of two groupings of lines just above each other. The lowermost one of these mainly consists of straight lines; all the other sets are irregular cross-hatchings. The other shorter but larger sleeve (find no. 24.296) is more impressively decorated. On the inward curving lower side we see a set of coarse lines below the perforation. These may have been part of the smoothing of the area. The upper part is decorated with different designs. Above the perforations there are some coarse crosshatchings, but right above that, towards the Y-shape, there are three combinations of straight lines, two of which appear to form a man or bird-like figure at perpendicular angles. The third and fourth ones, more to the side, appear incomplete. On the left side this decoration is mirrored by isolated short lines and towards the working end lozenge-shaped groups of crosshatches that are reminiscent of Scandinavian examples (Andersen 1997). The other side is characterised by two zones of cross-hatching, the upper one forming triangular groupings of hatches. Remarkably this decoration is combined with a punctured décor pointillé below the perforation, consisting of four parallel lines on top and extending over the sides of the object, and one horizontally, connecting two lines. Louwe Kooijmans et al. (2001a, 305) argue that the groupings of zigzag lines, the lozenge-shaped motif and even the dotted lines have parallels in the Late Mesolithic and Ertebølle Culture, but rarely appear together on one object. Alternatively, the dotted lines are also typically a southern element as there are distinct parallels in the Somme valley in France (Blanchet/ Lambot 1977; Fagnart 1991), however, geometrical motifs are present there as well (Louwe Kooijmans 2001, 463). Closer to home the site Maaspoort yielded a distinct parallel (Verhagen 1991; Louwe Kooijmans et al. 2001). Louwe Kooijmans et al. (2001a, 357) argue that the sleeve from Polderweg as an artefact type has more links to Northern France than Southern Scandinavia, but the incised design would link up with the Ertebølle style. This also goes for the less decorated sleeve. The pointillé designs are, however, more typical for the south. In general it may be assumed that there is less of a regional tradition separating incised and geometrical motifs from décor pointillé, however it may also be argued that our sites are situated on the convergence of both spheres.

#### • A bow fragment with lines

Another object from Hardinxveld-Polderweg that is decorated in a similar vein to most of the antler and bone objects is half of a bow made of elm (Fig. 25) that broke on the grip [find no. 6051]. The remaining fragment is 76 cm long and the original bow may have been 160 cm long with a maximal width of 5 cm and a maximal thickness of 2.9 cm on the grip. What also remains is the extension to which the bow string was attached. On one side of the grip a remaining piece of about 11 cm exhibited 17 bundles of sharply incised lines, perpendicular to the longitudinal axis of the bow (Louwe Kooijmans et al. 2001b). It is unlikely that this decoration could be a technological improvement of the (balance of the) bow. Rather, it appears to be a form of decoration similar to that on the bone and antler objects, or perhaps a way of scoring the number of kills on the hunt?

# · A gouge-like awl

Although from the slightly later site of Hardinxveld-De Bruin, we also include here a gouge-like awl made of the ulna of a mute swan (Fig. 26). It dates to phase 2 at De Bruin



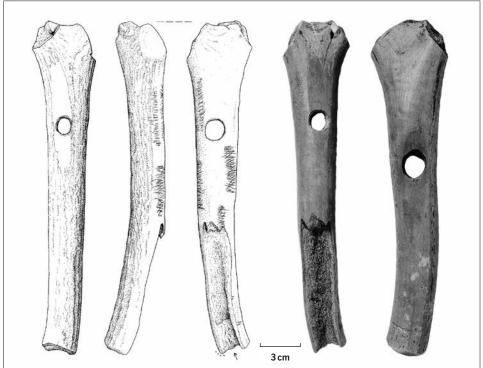
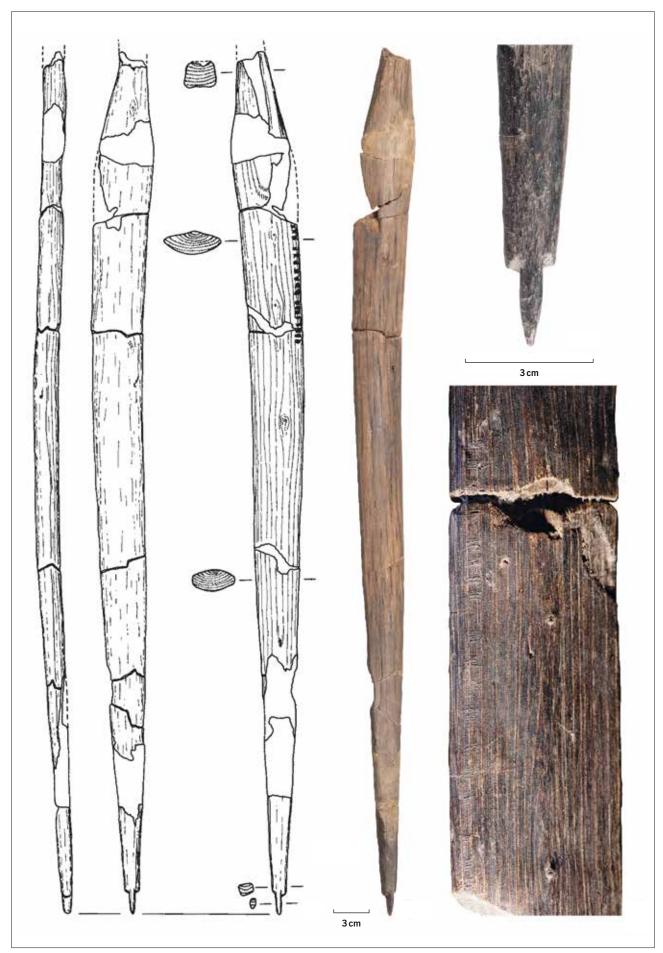


Fig. 23 Decorated Y-shape adze sleeve from Hardinxveld-Polderweg (find no. 24.296).

Fig. 24 Decorated Y-shape adze sleeve from Hardinxveld-Polderweg (find no. 24.300).



 $Fig.\ 25\ \ \text{Decorated fragment of a bow (find no.\ 6051) from\ Hardinxveld-Polderweg.}$ 

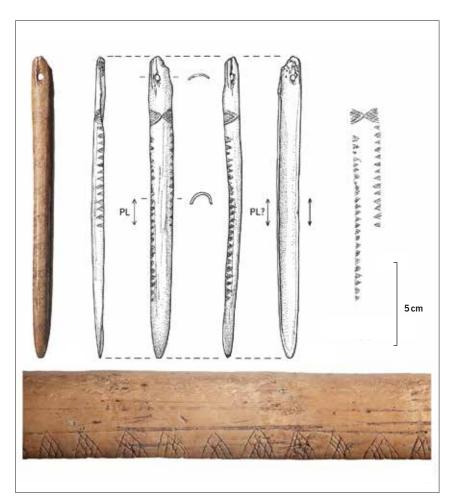


Fig. 26 Decorated gouge-like awl (find no. 6990) made from the ulna of a mute swan decorated with triangles filled with hatching from Hardinxveld-De Bruin.



 $Fig.\ 27\ \ \ Selection\ of\ bone\ and\ antler\ artefacts\ from\ Den\ Bosch-Maaspoort.$ 

between 5100 and 4800 cal BC, which would characterise it as the ceramic Swifterbant Culture, although several centuries before the introduction of the first domesticates. It therefore very much belongs in the Mesolithic sphere of occupation, the start of which was documented at Hardinxveld-Polderweg. The awl is 18 cm long and has a width of 13 mm. The working end is round-pointed and the other end is perforated. Both sides are decorated over 6 and 10 cm with respectively 14 and 24 small triangles, rather coarsely filled with hatching. Both series end in larger triangles, the points of which touch each other on the axis of the awl (Louwe Kooijmans et al. 2001). Apart from the decorated pieces awls were also made from the bones of goose and white-tailed eagle. The not very sturdy bird bone tools must have been used on softer materials. According to Louwe Kooijmans et al. (2001, 357) the triangular decoration on the broad bone awl is rather singular. Unlike the pointillé design or the larger hatchings, this type of decoration and the bundles or groupings of lines such as discussed for the bow and the antler grip appear to be more typical for the Hardinxveld region, although other artefacts are more typical of the links with Northern France and the Scandinavian world, the Ertebølle Culture in particular.

#### Den Bosch-Maaspoort

A further site with good organic preservation is 's-Hertogen-bosch-Maaspoort. Here a number of decorated and undecorated Mesolithic bone and antler artefacts were recovered in primary and secondary position during the creation of an artificial lake, the Noorderplas (Arts 1987a; Van Wijngaarden-Bakker 1991; Verhagen 1991; Verhart/Wansleeben

1991; Verhagen/Wouters 1994). Subsequent archaeological research indicated Mesolithic and Neolithic occupation including charcoal, lithics, domestic and wild faunal remains, human remains and hearths on a Pleistocene river dune bordered by a gully in a wetland environment. Unfortunately none of the decorated artefacts were found in situ during the excavation as the Mesolithic occupation layer was only covered later during the Neolithic. There was, however, secondary evidence for Late Mesolithic occupation, as well as use of this site in other periods (Verhart/Wansleeben 1991, 110). There are a number of decorated artefacts that were found previous to the excavation. A first is a pointillé decorated antler shaft of red deer, although earlier publications (Verhagen 1991) interpret this as reindeer (Niekus/Amkreutz 2021, § 3.2). On the broken and cut piece (length 15.5 cm) three rows of points can be determined close together. On the opposite side there is a crack in the beam, which seems to have been stopped or mended by two incisions cross-cutting it, suggesting this was a [highly] curated piece (Fig. 27,4; 28). The other tool with *pointillé* decoration is a perforated antler adze sleeve with a length of 21.5 cm (Fig. 27,1; 29). The decoration consists of three lines of points that stop short of the perforation on the upper side. The lines are bordered and connected near the perforation by points. The perforation itself is deepened by scraping. The sides are also characterised on either side by two sets of triple pointillé lines that stop short at the height of the perforation on the upper side and again are closed off by interconnecting points between the lines. Separating these converging lines is a short double row of vertical pointillé lines on either side. On the upper side and towards the tip, three sets of three points, so-called »rosettes«, flank the pointillé lines on the inside. On the



Fig. 28 A pointillé decorated antler shaft of red deer from Den Bosch-Maaspoort.



 $\textbf{Fig. 29} \ \ \textbf{A perforated antler adze sleeve with } \textit{pointill\'e } \textit{decoration from Den Bosch-Maaspoort}.$ 

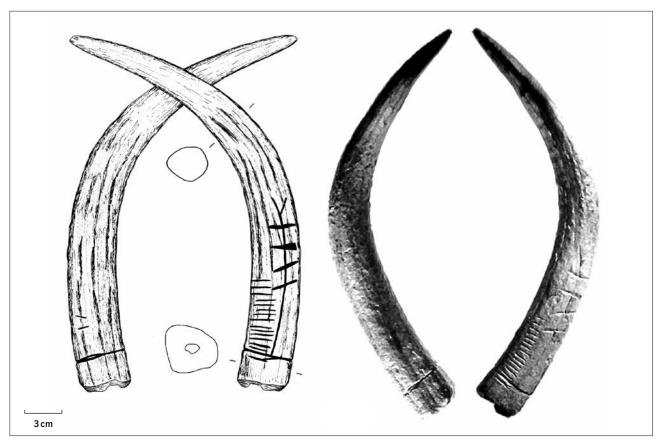
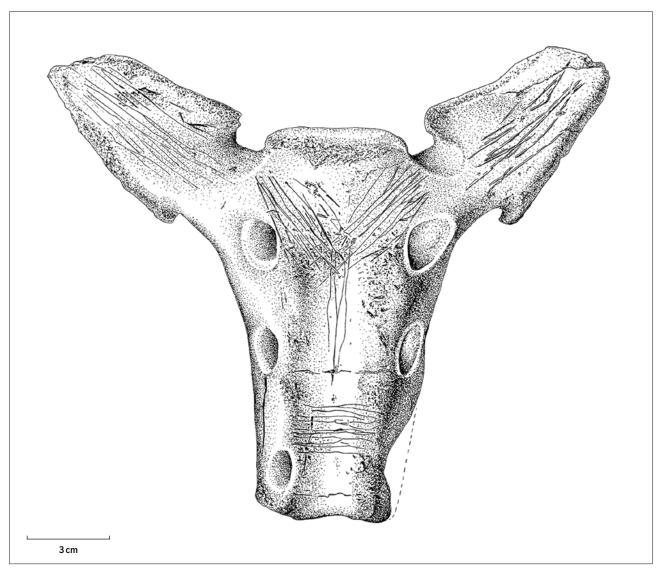


Fig. 30 A cut antler tine with stacked incisions and a line ending in a V-shape cross-cut by horizontal or slightly oblique lines from Den Bosch-Maaspoort.



 $Fig.\ 31\ \ The\ horse\ sacrum\ with\ incised\ lines\ from\ Den\ Bosch-Maaspoort.$ 

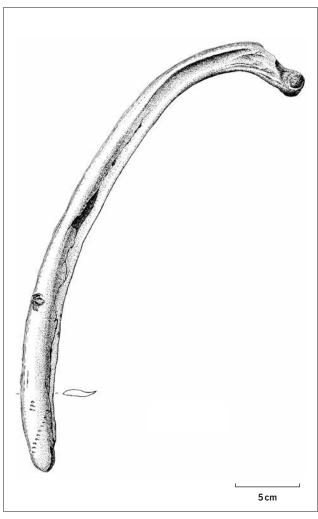
other side of the perforation only two sets on either side are observed. Both artefacts date to the Late Mesolithic based on stylistic aspects. The perforated sleeve forms a close counterpart to the one from Hardinxveld found further west. Both artefacts are part of a wider group of tools that also include undecorated examples such as an adze of aurochs bone (Fig. 27,3) and a perforated tine with an insert of the tusk of a wild boar (Fig. 27,2). Both decorated artefacts have become part of the collection of the National Museum of Antiquities (RMO). A number of decorated artefacts remain in private hands. One is a large antler tine piece that has been cut (Fig. 30). Above the cut there is a second incision that spans the circumference of the tine and that might have been an earlier or later discontinued location to cut the tine. Directly above this line is a series of 14, c. 1 cm large stacked horizontal cuts with two less regularly placed cuts on the back. Next to the stacked lines and emanating from the second circumferential cut is a vertical line that ends in a V-shape and is cross-cut by four horizontal or slightly oblique lines. Another object is the sacrum bone of a horse [length 16 cm] decorated with series of oblique and straight thinly incised lines (Fig. 31), giving it a decorated »skull-like« appearance. Both

finds originate from c. 100 m from the actual Maaspoort site (Verhagen 1991). A final decorated piece from Maaspoort is a 26 cm long rib of red deer with 14 parallel markings in two rows at its distal end [op. cit.] (Fig. 32).

It is regrettable that the site was never extensively researched and excavated. Both artefacts with pointillé decoration fit well into the pattern complemented by finds from Hardinxveld. They are indicative of a date in the Late Mesolithic and of relations to both the Scandinavian Ertebølle and comparable pieces in Northern France. The other finds are perhaps less convincingly dateable. The flint artefacts at Maaspoort also point to an Early Mesolithic occupation as well (Lanting/Van der Plicht 2000, 146-147). As other periods are also represented at the site, they may also pre- or postdate Mesolithic occupation. None of the finds has been dated directly.

# Zwolle-Spoolde

The base axe (Fig. 33; find no. ZR 1962/II61) is described as the left [shed] antler of a red deer (Clason 1983, 101 Fig. 82). The base was used as a hammer and rounded. The shaft-



 $Fig.\ 32\ \ \text{Red deer rib with parallel markings from Den Bosch-Maaspoort}.$ 

hole is at the base of the bez tine. In his study on the function of antler axes Peeters (1990) noted the presence of a decoration on this axe that was apparently overlooked by Clason. The decoration consists of four sets of fine engraved lines. Each set is triangular shaped and is made up of a dozen or so lines. The orientation of the sets is perpendicular to the longitudinal axis of the axe (Peeters 1990, Fig. 7). The decorated axe probably dates to the Late Mesolithic or the Early Swifterbant Culture (see discussion in section 4.3).

#### North Sea

#### · »Bolkgeul«

In 2005 a decorated piece of antler [Cervus elaphus] was fished from the North Sea by trawler TX2 on the eastern side of the so-called »Bolkgeul«, approximately 30 km to the northwest of the Brown Bank (Fig. 34). This is a site on the northern side of the Southern Bight of the North Sea. The find, described by Van Noort (2018), is the brow tine [length c. 38 cm] of a shed antler with engravings over the full length of the beam, starting from the pedicle. In total 13 sets consisting of two parallel rows of engravings are present. The more or less oval engravings measure approximately  $5\,\mathrm{mm}$  in length and are  $2\,\mathrm{mm}$  wide. The depth of the ovals is approximately 2 mm. The object was given by the finder, Mr. Vonk, to Van Noort and it presently resides in his collection. Unfortunately Van Noort was not willing to lend us the object for study or to put the photographs and drawings at our disposal. A sample of the antler was submitted to the former Utrecht AMS-facility and the following date was obtained: 8610 ± 50 BP [UtC-14653] or 9693-9490 cal BP (op.

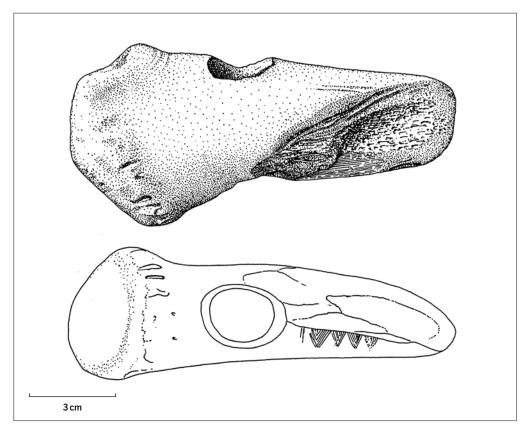


Fig. 33 The decorated base axe from Zwolle-Spoolde.

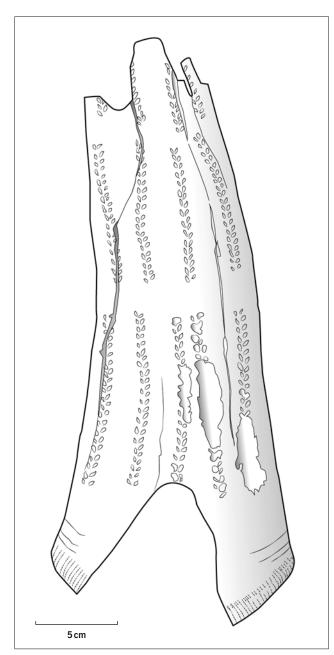


Fig. 34 The decorated antler from the »Bolkgeul«, North Sea.

cit.). It dates to the Early Mesolithic or the earlier part of the Middle Mesolithic.

# · Southern Bight

More than 30 years ago a decorated bovine bone was found during fishing by trawler GO-23 in the southern part of the North Sea. Since 1978 the bone resides in the collection of K. Tanis. It is a complete left metatarsus (length 30.18 mm) of an adult male aurochs [Bos primigenius] engraved with zigzag lines in addition to oblique marks, marked in red and green respectively in Figure 35. Several cut marks, probably the result of butchering and/or skinning of the aurochs, have also been observed (pers. comm. J. T. Zeiler). The find is currently being studied.

#### · Southwest Brown Bank

In 2005 a fragment of an axe made from an aurochs (?) metapodial was found on the southwestern part of the Brown Bank (Fig. 36). It currently resides in the collection of J. Glimmerveen. The fragment measures: length 13.5 cm, maximum width 5.1cm and thickness 3.4cm. The break is old and it seems the axe was originally not much longer. One of the sides (Fig. 36b) shows a series of oblique, more or less parallel scratches or incisions, most of which are 1-2 cm long. The incisions are arranged in several groups, but a clear pattern cannot be discerned. It is not clear whether the lines represent intentional/deliberate engravings or should be interpreted as cut marks. The axe most probably dates to the Mesolithic but it is not dated yet.

#### • Maasvlakte 1

A rather singular piece was recorded by Verhart (1988) in the collection of Meuldijk [MS6]. It is an oblong piece of decorated bone [5 cm x 1.2 cm] cut from a larger bone (Fig. 37). Some of the cutting traces are still visible. Across one side there is a vertical line intersected by horizontal or oblique lines running perpendicular to it, creating something reminiscent of a herring-bone motif. It is unclear whether the piece is an ornament, art object or perhaps part of a tool. The decoration is intentional. Similar decorations are known from the Mesolithic, for example from a sandstone pebble excavated at the Late Mesolithic site of Remouchamps Station Leduc in the Ardennes (Gob/Jacques 1985, Fig. 13-14).

#### • Zandmotor

In 2016 N.de Blok found a lamella of a molar with dozens of horizontal engraved [?] lines at the Zandmotor replenished beach (Fig. 38). The lamella is from a bovine (pers. comm. J. T. Zeiler) and measures 7 cm in length and is 1.5 cm wide. It weighs 6 g. This piece has not yet been studied in detail since it only became known to us recently. It most probably dates to the Mesolithic.

# 4.7 An enigmatic object: The Willemstad figurine

One of the most enigmatic »art« objects of the Low Countries – leaving aside the »Geldrop Venus« (Niekus/Amkreutz 2021) – must be the Late Mesolithic Willemstad figurine (Fig. 39). This wooden statuette was found in April 1966 by two workers during the construction of a dock for the Volkerak sluices near Willemstad which are part of the coastal defence system the »Delta Works« (Van Es/Casparie 1968). The object was sent for research a day later to the Rijksdienst voor het Oudheidkundig Bodemonderzoek (currently the Cultural Heritage Agency), where it was investigated and sampled for a 14C-date. The agency also investigated the site shortly afterwards. Unfortunately the exact find location had meanwhile been prepared for construction. Nevertheless pollen samples were taken and a geological section was documented. These indicated that the object was found on a Pleistocene sand ridge 50 m wide with steep

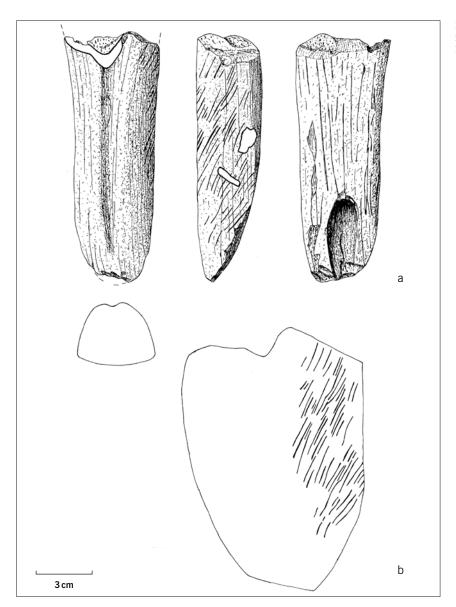


Fig. 35 Aurochs bone with zigzag-decoration from the Southern Bight, North Sea.

slopes and that the site was located in a freshwater tidal environment, outside of marine influence but at a time of peat growth. According to the workers the wooden figurine was situated between the roots or stub of an oak tree and the dating of the peat matched the radiocarbon date of the statuette at 7484-7158 cal BP (6400  $\pm$  85 BP, GrN-4922). The workers also remarked that they had found another large piece of worked wood, possibly from a canoe, but this was thrown away. At the time of the investigation no further artefacts

were found, but the remains of an oak tree stump extending into the sand was observed (op. cit.).

The statuette was made of oak wood measuring 12.5 cm, with a width varying from 3 to  $3.5\,\mathrm{cm}$  and a maximum thickness at the base of 2.4 cm (all measurements after preservation). It is clear to see that the statuette consists of a head with almond-shaped eyes, a long, flat nose, pronounced cheek bones, protruding ears and a distinct smile (perhaps the oldest smile in the world?). A sharp V-shaped cut sepa-



 $\begin{tabular}{ll} Fig. 36 & Bone axe with oblique scratches or incisions from the southwestern part of the \end{tabular}$ Brown Bank, North Sea.

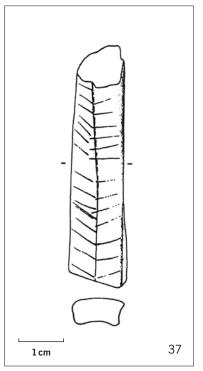
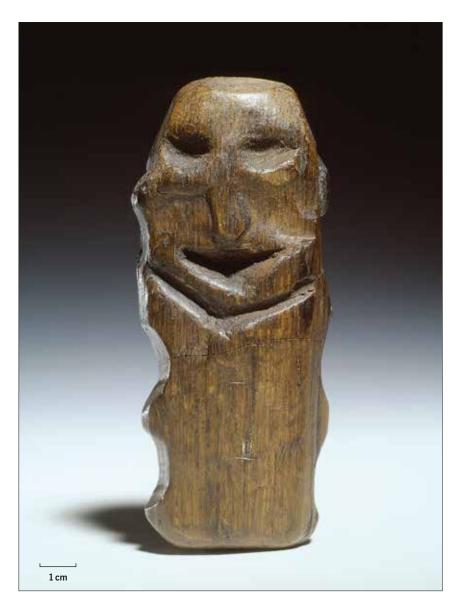




Fig. 37 The decorated piece of bone from Maasvlakte 1.

 $\label{eq:Fig.38} \begin{tabular}{ll} Fig. 38 & The engraved (?) fragment of a bovine molar from the Zandmotor. \end{tabular}$ 

Fig. 39 The Willemstad figurine.



rates the head from a short body, the sides of which are shaped by indentations that in fact quite nicely function as a grip (Van Es/Casparie 1968). It is therefore thought that this object may have been hand-held (Fig. 40). The figurine was carved from a small oak plank with the tree rings parallel to the front and back (op. cit.). Due to the necessarily quick conservation in Zürich at the time, the current surface is difficult to read. Experimental research on newly made figurines undertaken with colleagues in 2019 (Fig. 41) did not yet yield conclusive evidence of the type of tool with which the figurine had been made, but it appears there is evidence for scraping, there are clear facets observable in the wood (ibid., 113) and there are no indications for the use of metal tools so far.

While the discovery of this find has always been treated as somewhat suspect, there are no indications (more than 50 years later) that this was a hoax. At the time the stories of the workmen were checked and these people were interviewed. The first author also re-checked the story with the finder in February 2022. The execution and style of the objects and the fact that very hardened oak wood was used with a correct <sup>14</sup>C-date all argue in favour of it being a genuine Late Mesolithic object. What is problematic is that up to now no decent parallels have been found. The 11600-year-old and

5 m long Shigir idol from Russia (Zhilin et al. 2018) seems to belong to a different, less portable category. A more convincing parallel maybe the figures of bone, antler and other material that are found in Northeastern Europe, such as the figurines from Olenii Ostrov on the Russian Lake Onega and two stray finds from the river Pärnu in Estonia (Jonuks 2021). While these pieces originate from graves (something that cannot be confirmed for the Willemstad figurine), they do demonstrate parallels in execution and design. The rather abstract features of face and body, the crude execution and the size and shape, in some case suggesting the function of a handheld object, are striking. Also these northern examples also relate to a wet environment such as rivers or lakes, which may be somewhat comparable to the Willemstad setting.

# 5 Later developments: ornaments and decoration in the **Neolithic**

While the emphasis of this volume lies with Mesolithic art and decoration, the situation in the Low Countries is such that a somewhat wider scope may be useful. From the start



 $Fig.\ 4o\ \ \text{The Willemstad figurine. Note the}$ indentations that might have served as a grip.

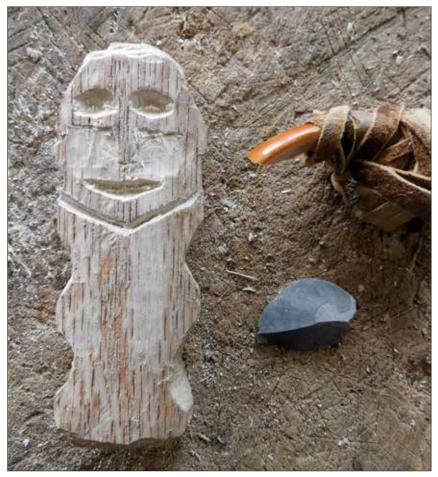


Fig. 41 Experimentally produced reproduction of the Willemstad figurine.

of 5<sup>th</sup> millennium, the Mesolithic communities in the wetlands of the central riverine and coastal areas of the Netherlands are involved in a very gradual process of Neolithisation (Amkreutz 2013). This involves the local production of pottery from c. 5000 cal BC, small-scale animal husbandry from c. 4500 cal BC and small-scale crop cultivation from c. 4000 cal BC. From c. 3700 cal BC there is evidence for

permanent settlements. At the same time these communities to an important extent remain rooted in the Mesolithic. Hunting, gathering and fishing remain important subsistence activities that are more or less combined with crop farming and animal husbandry. Domestic mobility as well remains of importance until well into the 3<sup>rd</sup> millennium. Although some social and ritual aspects such as

Fig. 42 The man from Swifterbant S2 with a string of five amber beads around his forehead. a During the excavation.



b Detail of the skull with the beads.



a crouched burial position relate to new Neolithic traditions, one may assume that others to an important extent have a Mesolithic signature.

In the Swifterbant Culture and the Hazendonk group for instance amber beads are of importance. These were worn as pendants or beads, sometimes individually, or in combination with stone pebbles or animal teeth (Devriendt 2008, 137-138; 2016; Louwe Kooijmans 2009). A well-known example is the grave of a man at the Swifterbant site S2. He wore a string of five amber beads around his forehead (Fig. 42a-b) with a sandstone pendant near his ear and a perforated fragment of a boar's tusk on his chest. The amber beads in the Swifterbant Culture appear unmodified; they are in fact often perforated natural lumps (op. cit.). It is noteworthy that these Swifterbant burials are still in a stretched »Mesolithic« fashion. Some perforated pendants of jet were also found at Swifterbant (Devriendt 2016) and two small 0.5 cm ones and a very large one (6.2 cm x 5.8 cm) recently at Nieuwegein (Molthof/Baetsen in prep.) [Fig. 43]. It appears that the jet and amber beads were imported as finished products. The beads and pendants of stone and animal bone and teeth

appear locally made. At the later site of Schipluiden in the coastal area, attributed to the Hazendonk group and dating to c. 3700 cal BC, there were a number of amber and jet beads (Fig. 44) and manufacturing tools such as flint drills. Here too a stone ornament with a perforation was found as well as two tubular bone beads made on bird bone and a perforated bone bead made of an animal ear bone (van Gijn 2006, 196-205). At the nearby site of Ypenburg one child's grave in the cemetery yielded a bone ring (Koot 2005, 275).

The use of animal bone for beads and pendants may importantly relate to the animal used and the powers attributed to it. This is more difficult to understand in abstract objects like the above-mentioned tubular beads, but the Mesolithic and later wetland sites do yield convincing evidence that certain animals were targeted. Beads made of teeth at Swifterbant apparently were made of such diverse animals as cattle, horse, wild boar and dog (Devriendt 2016). Also for the Late Neolithic Vlaardingen Culture there is convincing evidence that bears may have played an important socio-symbolic role. At Hekelingen III part of a defleshed bear skull was found and at numerous Vlaardingen sites per-

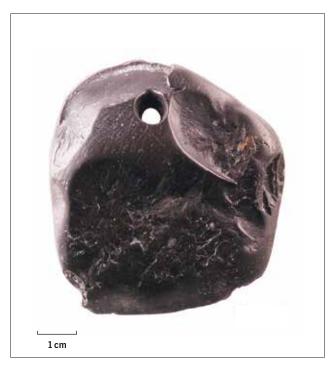


Fig. 43 Large perforated jet pendant (Swifterbant Culture) from

forated bear teeth were discovered as well as indications from the bone spectra that bear hides were used where claws and head were still attached. It appears that although bear meat may have been eaten, the teeth, claws and hide of this animal would have been of particular importance to these communities (Zeiler 2010). Something similar may have been going on with the white-tailed eagle. This species of predatory bird is the second most commonly occurring species of bird in the presence/absence counts of aviary fauna at Mesolithic and Neolithic sites in the wetlands of the Lower Rhine Area. It appears to have mainly been hunted for its feathers and claws rather than for meat, although one of course does not exclude the other (Amkreutz/Corbey 2008).

Fig. 44 Beads of amber, jet, stone and bone from the Hazendonk group site of Schipluiden. Summarising, it may be stated that for the indigenous communities involved in a process of Neolithisation in the wetlands of the Lower Rhine Area, there are many aspects that indicate continuity. Although the occurrence of jet pendants or beads has not yet been attested at the few Mesolithic sites where organic preservation would have been sufficient and amber beads are rare, their occurrence from the Swifterbant Culture onwards and the already existing use of animal teeth and bones and natural stone point to the fact that the decorative aspects and ornaments of these communities should ideally not be treated as something separate.

# 6 Synthesis and concluding remarks

The foregoing has shown that the evidence for »art«, including decorated objects for the Dutch Mesolithic is limited. As with the preceding Late Palaeolithic period aspects of taphonomy and in particular the absence of caves and easily accessible waterlogged sites is the main cause of this. In some way these conditions make for a seemingly empty Mesolithic »canvas« between the magnificent parietal art of the countries bordering the Netherlands and the exuberantly decorated pottery of the Early Neolithic LBK. Our conclusions therefore also remain brief.

The group of perforated pendants and beads is limited and seems uninformative. At the same time it is clear that a variety of naturally occurring materials was used. Various stones were perforated and there are indications that occasionally the colour or shape may have been of importance. This of course also goes for more »exotic« materials such as amber which must have been collected in a coastal environment. The bird bone bead at the Yangtze harbour has not been identified at species level, but together with the perforated red deer pendants at Hardinxveld demonstrates the use of animal bone and teeth. Taken together the assemblage demonstrates the use of everyday objects such as stones, bones and teeth and sometimes more rare resources in a very mundane way. The fact that both more round beads



and perforated pendants are known, as well as a bone disc, leaves open the possibility for use in necklaces or otherwise as appliqués on garments, bags etc. None of the objects seem intensively shaped, worked or decorated. In essence this appears to be a continuation from the Late Palaeolithic (Niekus/Amkreutz 2021). Apparently these aspects of personal adornment were rather naturalistic and less performative in the sense that much time and effort would have gone into their fabrication, decoration, or in aspects of quantity. The fact that two perforated objects are identified as potential bullroarers, the one from Tilburg-Kraaiven with some decorative scratches, forms something of a nuance as these objects are known within ethnographic contexts to have particular ritual significance. The absence of large sizes, decoration, or elaborate working therefore is not informative about the importance of these small finds. This can only be derived from contextual evidence, which is unfortunately often lacking.

More imaginative is the evidence for decorated objects. A number of these such as retoucher, a pebble and a piece of flint with cortex are unobtrusively decorated with lines or hatching, but twice there is evidence of figurative examples. The Wanssum dancer (Verhart/d'Errico 2012; Niekus/ Amkreutz 2021) is enigmatic as it represents a male or female figure in motion. As indicated, the attribution and history of the pebble remain questionable. This is perhaps less so for the »fish-with-hatchings« found at Valkenburg, but the absence of a convincing context limits giving it a Mesolithic date. If we would take both objects at face value, then there appears to be a tradition of small-scale figurative design at least in stone. Although there is no strong argument for this, it seems to be more in line with an individual setting, as intimate decorations of personal objects, rather than as a large-scale widespread tradition. If anything it evokes the idea of customisation, of appropriating objects by adding something that makes them uniquely yours. In that sense it differs from, for instance, the decoration on the schist plaques of the Magdalenian hunters at Gönnersdorf and Andernach which appear to be more performative and ritual and distinctly linked to their parietal counterparts.

It also differs from evidence of a more widespread tradition as demonstrated by the decoration on objects of bone, antler and wood documented at the Late Mesolithic and Early Swifterbant sites of Hardinxveld-Polderweg and De Bruin and the Late Mesolithic site of Maaspoort. Here there is evidence for a repertoire that is clearly embedded in a larger cultural sphere. The *pointillé* design and the geometrical motifs have parallels both in the more northern Ertebølle world as well as in the Somme valley Mesolithic. To what extent these sites in the Netherlands appear to be associated more with one or the other, or rather sit at the convergence of two stylistic traditions, remains to be seen and requires a quantitatively more elaborate dataset. Of importance at least is the fact that this indicates these were not isolated, or merely regional communities, but huntergatherers embedded in supra-regional contact networks. At the same time it is worth mentioning that some elements such as the triangle-decorations on the swan awl at De Bruin, or the bird or man-like figure on the Polderweg Y-axe are

distinctly regional, local or even idiosyncratic in design. The Hardinxveld objects therefore point out that it is important to seek out the exciting interplay between tradition and variation and between style, repertoire and individual expression.

For some objects that is more difficult to do as they lack any convincing parallels. In our region this is the case with the wooden Willemstad figurine. Firmly dated to c. 5400 cal BC and found in a typical wetland setting on a riverdune, the absence of an archaeological excavation and the lack of visually convincing parallels hamper interpretation. On the other hand both ethnographically and archaeologically there is evidence for the existence of small, rather crudely executed figurines that may also have been handheld (Jonuks 2021). The Willemstad figurine therefore deserves the benefit of the doubt as it seems to fit the bill but for now stands alone.

The aforementioned aspects of natural resources and lack of elaborate shaping or decoration also strongly resonates with later »Neolithic« communities as documented for the wetland area and attributed to the Swifterbant Culture, the Hazendonk group and the Vlaardingen Culture. While on the one hand clearly adopting farming elements such as husbandry and crop cultivation and increasingly embracing sedentism, there are clear aspects in society and tradition that point to their Mesolithic origins. Apart from ongoing hunting and gathering, persistent mobility and earlier on distinctly Mesolithic burial traditions, this is also mirrored in the evidence for ornaments and decoration. In line with the earlier Mesolithic, beads, pendants and rings are made from natural resources such as stone, animal bone and teeth, amber and jet, and are mostly crudely sculpted and undecorated. They mirror the evidence from the Mesolithic and testify to the existence of longstanding traditions with little change. In any case the prolonged contact and interaction through exchange of knowledge, objects and people with fully Neolithic communities in the cover sand area and further south does not seem to have affected these aspects of indigenous society. One may argue that these persistent traditions (Amkreutz 2013) of which personal adornment may have been one, indicate the importance of being rooted in the Mesolithic and in a hunter-gatherer existence and worldview or mentalité.

In conclusion the evidence for objects of art, decoration and ornaments is limited, perhaps even more so for the Mesolithic than the Late Palaeolithic. Rather than the »Dutch Masters« we are dealing with »folk art« or ancient »primitivism«, however, we should accept that we only see a small part of the richness there must have been in art and decoration due to unbalanced site preservation and taphonomical processes. The majority of expressions with and on organic materials will have been lost. In particular the increasing evidence from the North Sea and »Doggerland« may prove to provide a welcome perspective on this. We should also stress that the objects we do find and the clues we have should not only be interpreted from the end product, but also include aspects of procurement, technology and performance in order to be understood. As such, these traditions as documented in our research area appear to have stayed very close to their natural origins (Descola 1992;

1994), which to some extent may reflect the values of the communities fabricating, wearing and using them.

# 7 Acknowledgements

The authors gratefully acknowledge the following people (in alphabetical order) for their help in preparing this paper, either with additional information on finds, figures or otherwise: Nico Arts, Marjan van den Berg (Transect, Nieuwegein), Niels de Blok, Jaap Bongers (De Steekproef, Zuidhorn), Davado van Dommelen (Hunebedcentrum Borger), J. Glimmerveen, Michel Groothedde (archaeological team, Municipality of Zutphen), Tom Hamburg, Christian Heydenrijk,

Sophie van Heymbeeck, Henk Houtgraaf, Harry Huisman (Hunebedcentrum Borger), Lykke Johansen (Archaeological Drawings and Analyses, Haren), Raoul Limpens (Raoul Limpens Photography, Valkenburg aan de Geul), Helle Molthof (RAAP Foundation, Leiden), Hans Peeters (Groningen Institute of Archaeology), Kirsten van der Ploeg (Groningen Institute of Archaeology), Klaas Post (North Sea Fossils, Urk), Eelco Rensink (Cultural Heritage Agency of the Netherlands), Maaike Sier (Archeologie Rotterdam), Kommer Tanis, Martin Valkhoff (Archeologie Rotterdam), Leo Verhart, Sophie Verneau (Lithos AAB, Zutphen), Frans de Vries (ToonBeeld, Oosterwolde), Harrie Wolters (Hunebedcentrum Borger) and Jørn Zeiler (Archaeobone, Haren).

# Bibliography

#### Amkreutz 2009

L. Amkreutz, Time to move on? The Late Mesolithic in the Lower Rhine Area as a diverse substrate for the process of Neolithisation. In: P. Crombé/M. Van Strydonck/ I. Sergant/M. Boudin/M. Bats (eds.), Chronology and evolution within the Mesolithic of North-West Europe. Proceedings of an international meeting, Brussels, May 30th-June 1st 2007 (Newcastle upon Tyne 2009) 653-670.

#### Amkreutz 2013

L. W. S. W. Amkreutz, Persistent traditions. A long-term perspective on communities in the process of Neolithisation in the Lower Rhine Area [5500–2500 cal BC] (Leiden 2013).

#### Amkreutz/Corbey 2008

L. Amkreutz/R. Corbey, An eagle-eyed perspective. Haliaeetus albicilla in the Mesolithic and Neolithic of the Lower Rhine Area. In: H. Fokkens/B. J. Coles/A. L. van Gijn/ J. P. Kleijne/H. H. Ponjee/C. G. Slappendel (eds.), Between foraging and farming. An extended broad spectrum of papers presented to Leendert Louwe Kooijmans. Analecta Praehistorica Leidensia 40 (Leiden 2008) 167-180.

#### Amkreutz et al. 2018

L. Amkreutz/A. Verpoorte/ A. Waters-Rist/ M. Niekus/V. van Heekeren/A. van der Merwe/ H. van der Plicht/J. Glimmerveen/D. Stapert/ L. Johansen, What lies beneath ... Late Glacial human occupation of the submerged North Sea landscape. Antiquity 92,361, 2018, 22-37.

#### Andersen 1997

S. H. Andersen, Ertebølle-harpuner og spækhuggertænder. Aspekter af marin fangst i Ertebølletid. Kuml 1995-96 (1997), 45-99.

#### Anonymous n.d.

Anonymous, Notes of the Prehistory Working Group of the Veenkoloniaal Museum Veendam. G149.

#### Arora 1976

S. K. Arora, Die Mittelsteinzeit im westlichen Deutschland und in den Nachbargebieten. In: H.-E. Joachim/M. Ludwig (red.), Beiträge zur Urgeschichte des Rheinlandes II. Rheinische Ausgrabungen 17 (Köln 1976) 1-65.

#### Arts 1987

N. Arts, Mesolithische jagers, vissers en voedselverzamelaars in noordoost België en zuidoost Nederland. Het Oudste Land van Loon 42, 1987, 27-85.

#### Arts 1987a

N. Arts, Vroegmesolithische nederzettingssporen en twee versierde hertshoornen artefakten uit het Maaskantgebied bij 's-Hertogenbosch. Brabants Heem 39, 1987, 2-22.

#### Binford 1982

L. R. Binford, The archaeology of place. Journal of Anthropological Archaeology 1, 1982, 5-31.

#### Blanchet/Lambot 1977

J.-C. Blanchet/B. Lambot, Les dragages de l'Oise de 1973 à 1976 (première partie). Cahiers archéologiques de Picardie 4, 1977,

# Bronk Ramsey 2009

C. Bronk Ramsey, Bayesian analysis of radiocarbon dates. Radiocarbon 51,1, 2009, 337-

# Brouwer-Burg 2012

M. Brouwer-Burg, Hunter-gatherers in dynamic landscapes: modelling land use strategies in the central river valley of the Netherlands. In: W. Bebermeier/R. Hebenstreit/E. Kaiser/J. Krause (eds.), Landscape archaeology. Proceedings of the international conference, Berlin, 6<sup>th</sup>–8<sup>th</sup> June 2012. eTopoi. Journal for Ancient Studies, special vol. 3, 2012, 25-29, <a href="https://edition-topoi.org/">https://edition-topoi.org/</a> articles/details/647>.

### Clason 1983

A. T. Clason, Spoolde. Worked and unworked antlers and bone tools from Spoolde, De Gaste, the IJsselmeerpolders and adjacent areas. Palaeohistoria 25, 1983, 77-130.

#### Crombé 1998

P. Crombé, The Mesolithic in northwestern Belgium. Recent excavations and surveys. BAR International Series 716 (Oxford 1998).

#### Crombé 1999

P. Crombé, Vers une nouvelle chronologie absolue pour le Mésolithique en Belgique. In: A. Thévenin/P. Bintz (eds.), L' Europe des derniers chasseurs. L' Épipaléolithique et Méso lithique: peuplement et paléoenvironment de l'Épipaléolithique et du Mésolithique, Actes du 5e colloque international UISPP, commission XII, Grenoble, 18-23 septembre 1995 (Paris 1999) 189-199.

# Crombé 2019

P. Crombé, Mesolithic projectile variability along the southern North Sea basin (NW Europe): hunter-gatherer responses to repeated climate change at the beginning of the Holocene. PLoS ONE 14,7, 2019:e0219094, <a href="https://doi.org/10.1371/journal.pone">https://doi.org/10.1371/journal.pone</a>. 0219094>.

#### Crombé/Vanmontfort 2007

P. Crombé/B. Vanmontfort, The neolithisation of the Scheldt basin in western Belgium, In: A. Whittle/V. Cummings (eds.), Going over: the Mesolithic-Neolithic transition in northwest Europe. Proceedings of the British Academy 144 (Oxford 2007) 263-285.

#### Crombé et al. 1999

P. Crombé/H. Groenendijk/M. van Strydonck, Dating the Mesolithic of the Low Countries: some practical considerations. In: J. Evin/ C. Oberlin/J.-P. Daugas/J.-F. Salles (eds.), 14C et archéologie. Actes du 3ème congrès international, Lyon, 6-10 avril 1998. Mémoires de la Société Préhistorique Française 26. Supplément 1999 de la Revue d'Archéometrie (Paris 1999) 57-63.

#### Crombé et al. 2011

P. Crombé/J. Sergant/E. Robinson/J. De Reu, Hunter-gatherer responses to environmental change during the Pleistocene-Holocene transition in the southern North Sea basin: Final Palaeolithic-Final Mesolithic land use in northwest Belgium. Journal of Anthropological Archaeology 30,3, 2011, 454–471.

# Crombé et al. 2013

P. Crombé/E. Robinson/M. Van Strydonck/ M. Boudin, Radiocarbon dating of Mesolithic open-air sites in the coversand area of the North-West European Plain: problems and prospects. Archaeometry 55,3, 2013, 545-562.

#### Deeben/Arts 2005

J. Deeben/N. Arts, Van jagen op de toendra naar jagen in het bos: Laat-paleolithicum en vroeg-mesolithicum. In: L.P. Louwe Kooijmans/P.W. van den Broeke/H. Fokkens/ A. Van Gijn (eds.), Nederland in de prehistorie (Amsterdam 2005) 139-156.

# De Mulder et al. 2003

E. F. J. de Mulder/M. C. Geluk/I. L. Ritsema/ W. E. Westerhoff/T. E. Wong, De ondergrond van Nederland. Geologie van Nederland 7 (Groningen 2003).

#### d'Errico 1994

F. d'Errico, L'art gravé azilien. De la technique à la signification. XXXIe supplément à Gallia Préhistoire (Paris 1994).

#### Descola 1992

P. Descola, Societies of nature and the nature of society. In: A. Kuper (ed.), Conceptualizing

society. Papers from the first conference of the European Association of Social Anthropologists, Coimbra, Portugal, 1990 (London 1002) 107-126.

#### Descola 1994

P. Descola, In the society of nature: a native ecology in Amazonia. Cambridge Studies in Social and Cultural Anthropology 93 (Cambridge 1994).

#### Devriendt 2008

I. Devriendt, Becoming Neolithic. The Mesolithic-Neolithic transition and its impact on the flint and stone industry at Swifterbant (the Netherlands). Documenta Praehistorica 35, 2008, 131-141.

#### Devriendt 2014

I. Devriendt, Swifterbant Stones. The Neolithic stone and flint industry at Swifterbant (the Netherlands): from stone typology and flint technology to site function. Groningen Archaeological Studies 25 (Groningen 2014).

#### Devriendt 2016

I. Devriendt, Het gouduit de zee. Barnstenen kralen en natuurstenen hangers. In: W. Prummel/J. P. de Roever/A. F. L. van Holk (eds.), Swifterbant. Pionieren in Flevoland 6500 jaar geleden (Eelde 2016) 107-115.

# Fagnart 1991

J.-P. Fagnart, La fin du Mésolithique dans le Nord de la France. In: A. Thévenin (ed.), Mésolithique et Néolithisation en France et dans les régions limitrophes. Actes du 113<sup>e</sup> congrès national des Sociétés savantes, Strasbourg, 1988 (Paris 1991) 437-452.

#### Gob/Jacques 1985

A. Gob/M.-C. Jacques, A Late Mesolithic dwelling structure at Remouchamps, Belgium. Journal of Field Archaeology 12,2, 1985, 163-175

#### Groenendijk 1987

H. A. Groenendijk, Mesolithic hearth-pits in the Veenkoloniën (prov. Groningen, the Netherlands), defining a specific use of fire in the Mesolithic. Palaeohistoria 29, 1987, 85-102.

#### Groenendiik 2004

H. A. Groenendijk, Middle Mesolithic occupation of the extensive site NP3 in the peat reclamation district of Groningen, the Netherlands. In: P. Crombé/P. Vermeersch, Acts of the XIV<sup>th</sup> UISPP congress, University of Liège, Belgium, 2-8 September 2001. Section 7: The Mesolithic. BAR International Series 1302 (Oxford 2004) 19-26.

# Heinen 2006

M. Heinen, The Rhine-Meuse-Scheldt Culture in Western Europe. Distribution, chronology and development. In: C.-J. Kind (ed.), After the Ice Age. Settlements, subsistence and social development in the Mesolithic of Central Europe. Proceedings of the international conference, Rottenburg/Neckar, Baden-Württemberg, 9<sup>th</sup>–12<sup>th</sup> September 2003. Materialhefte zur Archäologie in Baden-Württemberg 78 (Stuttgart 2006) 75-86.

# Jonuks 2021

T. Jonuks, Mesolithic anthropomorphic sculpures from the Northern Europe, Quaternary International 573, 2021, 104-112, <a href="https://doi.org/10.1016/j.quaint.2019.09.027">https://doi.org/10.1016/j.quaint.2019.09.027</a>>.

# Koot 2005

H. Koot, Steentijdboeren aan de Noordzee. Het grafveld Rijswijk-Ypenburg. In: L. P. Louwe Kooijmans/P. W. van den Broeke/ H. Fokkens/A. L. van Gijn (eds.), Nederland in de Prehistorie (Amsterdam 2005) 273–276.

# Lanting/Van der Plicht 2000

J. N. Lanting/J. van der Plicht, De <sup>14</sup>C-chronologie van de Nederlandse pre- en protohistorie, II: Mesolithicum. Palaeohistoria 39/40, 1997/1998 (2000), 99-162.

# Louwe Kooijmans 1997

L. P. Louwe Kooijmans, Denkend aan Holland ... Enige overwegingen met betrekking tot de prehistorische beweoning in de Nederlandse delta, aangeboden aan Francois van Regteren Altena. In: D. P. Hallewas/G. H. Scheepstra/ P. J. Woltering (eds.), Dynamisch landschap. Archeologie en geologie van het Nederlandse kustgebied (Assen 1997) 9-25.

#### Louwe Kooijmans 2001

L. P. Louwe Kooijmans, Synthese. In: L. P. Louwe Kooijmans (ed.), Archeologie in de Betuweroute. Hardinxveld-Giessendam Polderweg: een mesolithisch jachtkamp in het rivierengebied (5500-5000 v. Chr.). Rapportage Archeologische Monumentenzorg 83 (Amersfoort 2001) 441-469.

#### Louwe Kooijmans 2003

L. P. Louwe Kooijmans, The Hardinxveld sites in the Rhine/Meuse Delta, the Netherlands, 5500-4500 cal BC. 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 2000 (Oxford 2003) 608-624.

#### Louwe Kooiimans 2009

L. P. Louwe Kooijmans, Multiple choices -Mortuary practices in the Low Countries during the Mesolithic and Neolithic, 9000-3000 cal BC. In: L. Larsson/F. Lüth/T. Terberger (eds.), Innovation and continuity - Non-Megalithic mortuary practices in the Baltic. New methods and research into the development of stone age society. International workshop, Schwerin, 24–26 March 2006. Berichte der Römisch Germanischen Kommission 88, 2007 (2009) 551-580.

#### Louwe Kooijmans et al. 2001

L. P. Louwe Kooijmans/A. van Gijn/ J. F. S. Oversteegen/M. Bruineberg, Artefacten van been, gewei en tand. In: L. P. Louwe Kooijmans (ed.), Archeologie in de Betuweroute. Hardinxveld-Giessendam De Bruin: een kampplaats uit het Laat-Mesolithicum en het begin van de Swifterban-cultuur (5500-4450 v. Chr.). Rapportage Archeologische Monumentenzorg 88 (Amersfoort 2001) 327-367.

#### Louwe Kooijmans et al. 2001a

L. P. Louwe Kooijmans/J. F. S. Oversteegen/ A. L. van Gijn, Artefacten van been, gewei en tand. In: L. P. Louwe Kooijmans (ed.), Archeologie in de Betuweroute. Hardinxveld-Giessendam Polderweg: een mesolithisch jachtkamp in het rivierengebied (5500-5000 v. Chr.), Rapportage Archeologische Monumentenzorg 83 (Amersfoort 2001) 285-324.

# Louwe Kooijmans et al. 2001b

L. P. Louwe Kooijmans/C. E. Vermeeren/ A. M. I. van Waveren, Artefacten van hout en vezels, In: L. P. Louwe Kooiimans (ed.), Archeologie in de Betuweroute, Hardinxveld-Giessendam Polderweg: een mesolithisch jachtkamp in het rivierengebied (5500–5000 v. Chr.). Rapportage Archeologische Monumentenzorg 83 (Amersfoort 2001) 379-414.

# Molthof/Baetsen in prep.

H. M. Molthof/S. Baetsen, Two new Swifterbant settlements at Nieuwegein - Het Klooster, the Netherlands: preliminary site interpretation and overview of human remains

#### Naudinot et al. 2018

N. Naudinot/C. Bourdier/M. Laforge/ C. Paris/L. Bellot-Gurlet/S. Beyries/ I. Thery-Parisot/M. LeGoffic, Correction: Divergence in the evolution of Paleolithic symbolic and technological systems: the shining bull and engraved tablets of Rocher de l'Impératrice. PLoS ONE 13(9), 2018:

e0204464, <a href="https://doi.org/10.1371/journal.">https://doi.org/10.1371/journal.</a> pone.o204464>.

#### Niekus 2019

M. J. L. T. Niekus, The »Dark Ages«: a brief survey of the Late Preboreal and earlier Boreal occupation in the Netherlands. In: C. Montoya/J.-P. Fagnart/J.-L. Locht (eds.), Préhistoire de l'Europe du Nord-Ouest: mobilité, climats et identités culturelles, 2: Paléolithique supérieur ancien, Paléolithique final-Mésolithique. Proceedings of the 28th Congrès préhistorique de France, Amiens, 30 mai-4 juin 2016 (Paris 2019) 417-432.

#### Niekus/Amkreutz 2021

M. J. L. T. Niekus/L. W. S. W. Amkreutz, Facts, fakes and fantasy: a critical review of upper and late Palaeolithic engravings, perforated objects and personal ornaments from the Netherlands. Quaternary International 573, 2021, 75-91, <a href="https://doi.org/10.1016/j">https://doi.org/10.1016/j</a>. quaint.2019.09.017>.

#### Niekus et al. 2015

M. J. L. T. Niekus/A. Verbaas/H. de Kruyk/ J. J. Boon, Flint and other stone. In: J. M. Moree/M. M. Sier (eds.), Twenty metres deep! The Mesolithic period at the Yangtze Harbour site - Rotterdam Maasvlakte, the Netherlands: early Holocene landscape development and habitation. Interdisciplinary Archaeological Research Programme Maasvlakte 2, Rotterdam, Part 1. BOOR rapporten 566 (Rotterdam 2015) 147–200.

#### Peeters 1990

H. Peeters, Over de functie van geweibijlen. Proeve van een onderzoeksmethode en voorlopige resultaten van een onderzoek naar sporen op geweibijlen van Spoolde (Overijssel). Archeologie 2, 1990, 81-109.

#### Peeters 2007

J. H. M. Peeters, Hoge Vaart-A27 in context: towards a model of mesolithic-neolithic land use dynamics as a framework for archaeological heritage management [PhD dissertation, University of Amsterdam 2007: Rijksdienst voor Archeologie, Cultuurlandschap en Monumenten, Amersfoort], <a href="https://hdl">https://hdl</a>. handle.net/11245/1.262008>.

#### Peeters/Amkreutz 2020

H. Peeters/L. Amkreutz, The Netherlands: Probing into the submerged prehistoric archaeology, landscapes and palaeontology of the Dutch continental shelf. In: G. Bailey/ N. Galanidou/H. Peeters/H. Jöns/M. Mennenga (eds.), The archaeology of Europe's drowned landscapes. Coastal Research Library 35 (Cham 2020) 157-174.

# Peeters/Niekus 2005

H. Peeters/M. J. L. T. Niekus, Het Mesolithicum in Noord-Nederland. In: J. Deeben/E. Drenth/ M.-F. van Oorsouw/L. Verhart, De steentijd van Nederland. Archeologie 11-12 (Zutphen 2005) 201–234.

#### Peeters/Niekus 2017

H. Peeters/M. J. L. T. Niekus, Mesolithic pit hearths in the northern Netherlands: function, time-depth and behavioural context. In: N. Achard-Corompt/E. Ghesquière/V. Riquier (eds.), Creuser au Mésolithique/Digging in the Mesolithic. Actes de la séance de la Société préhistorique française, Châlons-en-Champagne, 29-30 mars 2016. Séances de la Société préhistorique française 12 (Paris 2017) 225-239.

#### Perdaen et al. 2008

Y. Perdaen/P. Crombé/J. Sergant, Lithic technology and the cultural identity of Early Mesolithic groups. Current Anthropology 49,2, 2008, 317-327.

#### Raemaekers 2019

D. Raemaekers, Taboo? The process of Neo-

lithisation in the Dutch wetlands re-examined (5000-3400 cal BC). In: R. Gleser/D. Hofmann (eds.), Contacts, boundaries and innovation in the fifth millennium: exploring developed Neolithic societies in central Europe and beyond. Proceedings of the eponymus international conference, Münster/Westf.,  $29^{th}$ – $30^{th}$  September 2015 (Leiden 2019) 01-102.

#### Reimer et al. 2020

P. J. Reimer/W. E. N. Austin/E. Bard/A. Bayliss/ P. G. Blackwell/C. Bronk Ramsey/M. Butzin/ H. Cheng/R. L. Edwards/M. Friedrich/ P. M. Grootes/T. P. Guilderson/I. Hajdas/ T. J. Heaton/A. G. Hogg/K. A. Hughen/ B. Kromer/S. W. Manning/R. Muscheler/ J. G. Palmer/C. Pearson/J. van der Plicht/ R. W. Reimer/D. A. Richards/E. M. Scott/ J. R. Southon/C. S. M. Turney/L. Wacker/ F. Adolphi/U. Büntgen/M. Capano/ S. M. Fahrni/A. Fogtmann-Schulz/ R. Friedrich/P. Köhler/S. Kudsk/F. Miyake/ J. Olsen/F. Reinig/M. Sakamoto/A. Sookdeo/ S. Talamo, The IntCal20 Northern Hemisphere radiocarbon age calibration curve (o-55 cal kBP). Radiocarbon 62,4, 2020, 725-757, <doi:10.1017/RDC.2020.41>.

# Roymans 1980

N. Roymans, Archeologisch overzicht van de gemeente Reusel. Brabants Heem 32,1, 1980,

#### Sergant et al. 2006

J. Sergant/P. Crombé/Y. Perdaen, The »invisible« hearths: a contribution to the discernment of Mesolithic non-structured surface hearths. Journal of Archaeological Science 33,7, 2006, 999-1007.

# Van Doesburg et al. 2010

J. van Doesburg/A. Müller/J. Schreurs, Land van melk en honing? Waardestellend archeologisch onderzoek (februari-juli 2006) naar middeleeuwse veenterpen in de Peizer- en Eeldermaden (gem. Noordenveld) in het kader van inrichting en beheer van het archeologi sche monument Peizermaden. Rapportage Archeologische Monumentenzorg 178 (Amersfoort 2010).

#### Van Es/Casparie 1968

W. A. van Es/W. A. Casparie, Mesolithic wooden statuette from the Volkerak, near Willemstad, North Brabant. Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek 18, 1968, 111-116.

# Van Gijn 2006

A. van Gijn, Ornaments of jet, amber and bone, In: L. P. Louwe Kooiimans/P. F. B. Jongste (eds.), Schipluiden. A Neolithic settlement on the Dutch North Sea coast c. 3500 cal BC. Analecta Praehistorica Leidensia 37/38 (Leiden 2006) 195-205.

# Van Gils et al. 2009

M. van Gils/B. Vanmontfort/M. de Bie, A history of Mesolithic occupation in the Belgian Campine region. In: P. Crombé/M. Van Strydonck/J. Sergant/M. Boudin/M. Bats (eds.), Chronology and evolution within the Mesolithic of North-West Europe. Proceed-

ings of an international meeting, Brussels, May 30<sup>th</sup>-June 1<sup>st</sup> 2007 (Newcastle upon Tyne 2009) 261-276.

#### Vanmontfort 2008

B. Vanmontfort, Forager-farmer connections in an 'unoccupied' land: first contact on the western edge of LBK territory. Journal of Anthropological Archaeology 27,2, 2008, 149-160.

#### Van Noort 2018

G. van Noort, Een mesolithische slachtplaats van de Maglemose-cultuur gedurende het Boreaal (9000-8000 B.P.) in het dorp De Waal op Texel. APAN/Extern 17 (Groningen 2018).

#### Van Wijngaarden-Bakker 1991

L. H. van Wijngaarden-Bakker, Faunaresten uit het Maaskantgebied bij 's-Hertogenbosch. Archeologie 3, 1991, 130–132.

#### Verhagen 1991

A. J. C. E. Verhagen, »De Hoogaard«, eenkultusplaats in Maaspoort, Den Bosch. Archeologie 3, 1991, 99-129.

# Verhagen/Wouters 1994

A. J. C. E. Verhagen/A. M. Wouters, Midden-Neolithische vondsten uit Rosmalen (Noord-Brabant). APAN/Extern 4, 1994, 8-10.

#### Verhart 1988

L. B. M. Verhart, Mesolithic barbed points and other implements from Europoort, the Netherlands. Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden 68, 1988,

#### 145-194. Verhart 2008

L. B. M. Verhart, New developments in the study of the Mesolithic of the Low Countries. In: G. Bailey/P. Spikins (eds.), Mesolithic Europe (Cambridge 2008) 158-181.

#### Verhart 2015

L. Verhart, Vondsten, vindplaatsen en verhalen: een vis uit het water. De Maasgouw 134, 2015, 12-15.

# Verhart 2015a

L. Verhart, Palaeolithic and Mesolithic engravings from the Netherlands: some highlights. Die Kunde N.F. 66, 2015, 89-95.

# Verhart/Arts 2005

L. Verhart/N. Arts. Het Mesolithicum in Zuid-Nederland. In: J. Deeben/E. Drenth/ M.-F. van Oorsouw/L. Verhart (eds.), De steentijd van Nederland. Archeologie 11/12 (Zutphen 2005) 235-260.

#### Verhart/d'Errico 2012

L. Verhart/F. d'Errico, Dance and suspense -Reassessing Dutch Mesolithic anthropomorphic engravings. In: M. J. L. T. Niekus/ R. N. E. Barton/M. Street/T. Terberger (eds.), A mind set on flint, Studies in honour of Dick Stapert. Groningen Archaeological Studies 16 (Groningen 2012) 355-367.

# Verhart/Groenendijk 2005

L.B.M. Verhart/H. Groenendijk, Leven in overvloed Midden- en laat-mesolithicum In: L. P. Louwe Kooijmans/P. W. van den Broeke/H. Fokkens/A. van Gijn (eds.), Nederland in de Prehistorie (Amsterdam 2005) 161-178.

#### Verhart/Wansleeben 1990

L.B.M. Verhart/M. Wansleeben, Tussen America en Siberië: enkele aspecten van het Maasdalproject. In: A. T. L. Niklewicz-Hokse/ C. A. G. Lagerwerf (eds.), Bundel van de Steentijddag 1 april 1989 (Groningen 1990) 45-54

# Verhart/Wansleeben 1991

L. B. M. Verhart/M. Wansleeben, 's-Hertogenbosch-Maaspoort. In: W. J. H. Verwers (ed.), Archeologische Kroniek van Noord-Brabant 1990. Brabants Heem 43, 1991, 108-110.

#### Verneau 1999

S. M. J. P. Verneau, Een Mesolithische jachtkamp te Zutphen, 8000 jaar voor Christus: jagers-verzamelaars in de Ooyerhoek, Zutphen. Lithos rapport 1 (Deventer 1999).

#### Vos/Kiden 2005

P. C. Vos/P. Kiden, De landschapsvorming tijdens de steentijd. In: J. Deeben/E. Drenth/ M.-F. van Oorsouw/L. Verhart (eds.), De steentiid van Nederland, Archeologie 11/12 (Zutphen 2005) 7-38.

#### Wiessner 1983

P. Wiessner, Style and social information in Kalahari San projectile points. American Antiquity 48,2, 1983, 253-276.

#### Zeiler 2010

J. T. Zeiler, Sometimes you eat the bear... Bruine beren en mensen in het Neolithicum. In: T. de Ridder/L. Verhart/J. Coenraadts/ G. Groeneweg/M. Lockefeer/L. Kruyf (eds.), Vlaardingen-Cultuur. Westerheem-Special 2, 2010, 52-56.

#### Zeiler 2021

J. T. Zeiler, Aangespoeld en opgeraapt. Archeozoölogisch onderzoek van bewerkt bot en gewei van Maasvlakte 1 en 2 en Hoek van Holland: een eerste inventarisatie. In: A. Carmiggelt/D. E. A. Schiltmans (eds.), Doggerland en Rotterdam. Een inventarisatie van opgespoten paleolithische en mesolithische artefacten van (vuur)steen, bot en gewei van Maasvlakte 1 en 2) en Hoek van Holland (gemeente Rotterdam): een aanzet voor vervolgonderzoek. BOORnotitie 41 (Rotterdam 2021) 125-149.

# Zeiler/Brinkhuizen 2015

J. T. Zeiler/D. C. Brinkhuizen (in collaboration with D. L. Bekker/A. Verbaas), Fauna. In: J. M. Moree/M. M. Sier (eds.), Twenty metres deep! The Mesolithic period at the Yangtze Harbour site - Rotterdam Maasvlakte, the Netherlands: early Holocene landscape development and habitation. Interdisciplinary Archaeological Research Programme Maasvlakte 2, Rotterdam, Part 1. BOOR rapporten 566 (Rotterdam 2015) 201–221.

## Zhilin et al. 2018

M. Zhilin/S. Savchenko/S. Hansen/ K.-U. Heussner/T. Terberger, Early art in the Urals: new research on the wooden sculpture from Shigir. Antiquity 92,362, 2018, 334-350.

# Source of figures

- J. Bongers, De Steekproef, Zuidhorn
- National Museum of Antiquities, Leiden
- drawing L. Verhart; photograph Faculty of Archaeology, Leiden
- University
- (1) E. Rensink; (2-3) N. Arts; (4) S. van Heymbeeck; (5) after VanDoesburg et al. 2010
- Municipality of Zutphen, team archeologie (right) and
- S. Verneau/J. H. M. Peeters (left)
- 6 from Louwe Kooijmans et al. 2001
- Archeologie Rotterdam
- 8 K. Post
- from Verhart 1988 9
- 10 H. Houtgraaf

- 11–12 F. de Vries, ToonBeeld/ Oosterwolde
  - N. Arts 13
  - from Roymans 1980, courtesy 14 N. Arts
  - from Clason 1983 15
  - F. de Vries, ToonBeeld/ 16 Oosterwolde
  - from Verhart/Wansleeben 1990, 17 courtesy L. Verhart
  - drawings from Verhart 2015, courtesy L. Verhart; photograph National Museum of Antiquities, Leiden
  - drawing after Verhart/Wansleeben 1990, courtesy L. Verhart; photograph National Museum of Antiquities, Leiden
  - after Verhart/Wansleeben 1990, courtesy L. Verhart
  - drawings from Louwe Kooijmans et al. 2001a; photographs National Museum of Antiquities, Leiden

- from Louwe Kooijmans et al. 2001a
- from Louwe Kooijmans et al. 23 2001a; colour photographs National Museum of Antiquities, Leiden
- from Louwe Kooijmans et al. 2001a
- drawings from Louwe Kooijmans et al. 2001b; photographs National Museum of Antiquities, Leiden
- drawings from Louwe Kooijmans et al. 2001; photographs National Museum of Antiquities, Leiden
- National Museum of Antiquities, Leiden
- drawings and photographs courtesy N. Arts
- drawings from Verhagen 1991; photographs National Museum of Antiquities, Leiden
- drawings and photographs courtesy N. Arts

- 31-32 from Verhagen 1991
  - from Peeters 1990 33
  - drawing C. Heydenrijk; after 34 Van Noort 2018
  - F. de Vries, ToonBeeld/Oosterwolde, edited by C. Heydenrijk
  - L. Johansen, Archaeological Drawings and Analyses, Haren
  - from Verhart 1988
  - 38 N. de Blok and H. Houtgraaf
- National Museum of Antiquities, 39-41 Leiden
  - (a) University of Groningen, Gro-42 ningen Institute of Archaeology; (b) National Museum of Antiquities, Leiden
  - 43 photograph RAAP/BAAC
  - Archol; from Van Gijn 2006 44

# Addresses

Luc W. S. W. Amkreutz National Museum of Antiquities Leiden P.O. Box 11114 NL-2301 EC Leiden The Netherlands l.amkreutz@rmo.nl

> Faculty of Archaeology Leiden University Einsteinweg 2 NL-2333 CC Leiden The Netherlands

Marcel J. L. Th. Niekus Stichting STONE/Foundation for Stone Age Research in the Netherlands Acacialaan 51 NL-9741 KW Groningen The Netherlands marcelniekus@gmail.com voorzitter@steentijdonderzoek.nl

> Human Origins Group Faculty of Archaeology Leiden University Einsteinweg 2 NL-2333 CC Leiden The Netherlands