



**Universiteit
Leiden**
The Netherlands

Pots, Farmers and Foragers. Pottery traditions and social interaction in the earliest Neolithic of the Lower Rhine Area.

Vanmontfort, B.L.L.; Louwe Kooijmans, L.P.; Amkreutz, L.W.S.W.; Verhart, L.B.M.

Citation

Vanmontfort, B. L. L., Louwe Kooijmans, L. P., Amkreutz, L. W. S. W., & Verhart, L. B. M. (2010). *Pots, Farmers and Foragers. Pottery traditions and social interaction in the earliest Neolithic of the Lower Rhine Area*. Leiden: Leiden University Press. Retrieved from <https://hdl.handle.net/1887/18202>

Version: Not Applicable (or Unknown)

License: [Leiden University Non-exclusive license](#)

Downloaded from: <https://hdl.handle.net/1887/18202>

Note: To cite this publication please use the final published version (if applicable).

Pots,

Farmers and Foragers

Pottery traditions and social interaction
in the earliest Neolithic of the Lower Rhine Area



ASLU 20

Pots, Farmers and Foragers

In *Pots, Farmers and Foragers* the contributing 24 European scholars show with evidence a new synthesis of the complex interaction of the communities of the western part of the North European Plain during early Neolithic.

In the study of the earliest stage of neolithisation pottery plays a key role. The most advanced north-western settlement in the expansion of the central European Linear Pottery culture during the second half of the sixth millennium B.C. is to be found in the Lower Rhine Area. At the same time this is the northernmost extension of the synchronic and enigmatic pottery groups La Hoguette and Limburg. This volume convincingly states that pottery and its associated habits were among the first of the many new societal aspects to be adopted by neighbouring foraging communities.

Edited by Bart Vanmontfort, Leendert Louwe Kooijmans, Luc Amkreutz and Leo Verhart

Bart Vanmontfort is research fellow in prehistory at Leuven University, Belgium

Leendert P. Louwe Kooijmans is emeritus professor in prehistory, Leiden University.

Luc Amkreutz is curator prehistory of the Netherlands National Museum of Antiquities at Leiden.

Leo Verhart is curator archaeology and early history of the *Limburgs Museum* at Venlo.

Archaeological Studies Leiden University (ASLU) is a series of the Faculty of Archaeology, Leiden University since 1998.

The series' aim is to publish Research and PhD theses of Archeology and covers the international research fields of European Prehistory, Classical-, Near Eastern-, Indian American- and Science-based Archeology.



Leiden University Press



Vanmontfort et al. (eds)

Bart Vanmontfort, Leendert Louwe Kooijmans,
Luc Amkreutz, Leo Verhart

ARCHAEOLOGICAL STUDIES LEIDEN UNIVERSITY 20

LEIDEN UNIVERSITY PRESS

Pots, Farmers and Foragers

Pots, Farmers and Foragers

Pottery traditions and social interaction in the earliest Neolithic of the Lower
Rhine Area

Edited by B. Vanmontfort, L. Louwe Kooijmans, L. Amkreutz, L. Verhart

Leiden University Press

Archeological Studies Leiden University is published by Leiden University Press, the Netherlands

Series editors: C.C. Bakels and H. Kamermans

Cover illustration: from left to right, from top to bottom sherds from the sites Ittervoort *Damszand* (La Hoguette), Thines (Limburg pottery), Geleen *Nijssenstraat* (La Hoguette) and Ede *Frankeneng*.

Cover design: Joanne Porck
Lay-out: JAPES, Amsterdam

ISBN 978 90 8728 086 4
e-ISBN 978 94 0060 006 5
NUR 684

© The individual authors and Leiden University Press, 2010

All rights reserved. Without limiting the rights under copyright reserved above, no part of this book may be reproduced, stored in or introduced into a retrieval system, or transmitted, in any form or by any means (electronic, mechanical, photocopying, recording or otherwise) without the written permission of both the copyright owner and the author of the book.

Table of Contents

Early pottery traditions in the Lower Rhine Area: an introduction <i>Bart Vanmontfort</i>	11
Bowls of contention. Mesolithic sites with pottery in the Lower Rhine Area <i>Luc W.S.W. Amkreutz, Bart Vanmontfort, Marc De Bie & Cyriel Verbeek</i>	15
The ceramisation of the Low Countries, seen as the result of gender-specific processes of communication <i>Leendert P. Louwe Kooijmans</i>	27
La Hoguette, Limburg and the Mesolithic: some questions <i>Claude Constantin, Michael Ilett & Laurence Burnez-Lanotte</i>	41
The cannellured version of <i>Begleitkeramik</i>; a survey of finds and sites <i>Fred T.S. Brounen & Anne Hauzeur</i>	49
Limburg sherds at Fexhe-le-Haut-Clocher <i>Podrî l’Cortri</i> (Liège province, Belgium) <i>Dominique Bosquet</i>	65
Non-LBK in Dutch LBK, epi-Limburg ware at Geleen <i>Janskamperveld</i> <i>Pieter van de Velde</i>	69
Non-LBK pottery from Wange and Overhespen <i>Marc Lodewijckx</i>	79
Not just bits of bone and shades of red. Bruchenbrücken (Hesse, Germany) and its La Hoguette pottery <i>Tessa Maletschek</i>	83
La Hoguette north of the Rhine. The Ede <i>Frankeneng</i> site revisited <i>Fred T.S. Brounen, Erik Drenth & Peter Schut</i>	95
Ittervoort <i>Damszand</i>: a find of La Hoguette pottery and <i>Begleitkeramik</i> in the Dutch province of Limburg <i>Fred T.S. Brounen, Erik Drenth & José Schreurs</i>	105
Some technological aspects of LBK and non-LBK pottery in the Rhineland <i>Erich Clafßen</i>	115

La Hoguette in the town centre of Soest (Westphalia)? <i>Benedikt Knoche</i>	125
Fine plant temper and the origin of the Swifterbant culture <i>Claude Constantin</i>	131
The Swifterbant pottery tradition (5000-3400 BC): matters of fact and matters of interest <i>Daan C.M. Raemaekers & J. Paulien de Roever</i>	135
Early Swifterbant pottery from Hoge Vaart-A27 (Almere, the Netherlands) <i>Hans Peeters</i>	151
Swifterbant pottery from the Lower Scheldt Basin (NW Belgium) <i>Philippe Crombé</i>	161
The first pottery in South Scandinavia <i>Søren H. Andersen</i>	167
Technological and typological analysis of Ertebølle and early Funnel Beaker pottery from Neustadt LA 156 and contemporary sites in northern Germany <i>Aikaterini Glykou</i>	177
The earliest pottery in Britain and Ireland and its Continental background <i>Alison Sheridan</i>	189
Early pottery traditions in the Lower Rhine Area. Concluding remarks <i>Leendert P. Louwe Kooijmans & Bart Vanmontfort</i>	209

Appendix

The background data of this publication can be found in the electronic archive for Dutch archaeology (EDNA) under the persistent identifier: urn:nbn:nl:ui:13-tp1-75a as Vanmontfort, B., Louwe Kooijmans, L.P., Amkreutz, L. & Verhart, L.B.M. (eds), 2010, Pots, Farmers and Foragers

Contributors

Luc W.S.W. Amkreutz
Faculty of Archaeology, Leiden University
& National Museum of Antiquities
Papengracht 30
PO-box 11114
2301 EC Leiden
The Netherlands
l.amkreutz@rmo.nl

Søren H. Andersen
Moesgård Museum
8270 Højbjerg
Denmark
farksha@hum.au.dk

Dominique Bosquet
Service public de Wallonie (DG04)
Service de l'Archéologie de la province de Brabant
Avenue Vésale 15
1301 Bierges
Belgium
dominique.bosquet@spw.wallonie.be

Fred T.S. Brounen
Cultural Heritage Agency
PO Box 1600
3800 BP Amersfoort
The Netherlands
f.brounen@cultureelerfgoed.nl

Laurence Burnez-Lanotte
University of Namur
Département d'histoire de l'art et archéologie
61 rue de Bruxelles
5000 Namur
Belgium
laurence.burnez@fundp.ac.be

Erich Claßen
Bayerisches Landesamt für Denkmalpflege
Unterer Graben 37
85049 Ingolstadt
Germany
erich.classen@blfd.bayern.de

Claude Constantin
16 clos de Verrières
91370 Verrières-le-Buisson
France

Philippe Crombé
Ghent University
Department of Archaeology and Ancient History of
Europe
Sint-Pietersnieuwstraat 35 - UFO
9000 Gent
Belgium
philippe.crombe@ugent.be

Marc De Bie
Vlaams Instituut voor het Onroerend Erfgoed
Koning Albert II-laan 19, bus 5
1210 Brussel
Belgium
marc.debie@rwo.vlaanderen.be

Erik Drenth
Torenstraat 4
3811 DJ Amersfoort
The Netherlands
drenth.erik@gmail.com

Tessa Maletschek
Johann Wolfgang Goethe-Universität
Institut für Archäologische Wissenschaften
Abt. Vor- und Frühgeschichte
Grüneburgplatz 1
60323 Frankfurt
Germany
tessa.maletschek@gmx.de

Aikaterini Glykou
Institut für Ur-und Frühgeschichte CAU Kiel
Stiftung Schleswig-Holsteinische Landesmuseen
Schloss Gottorf
24837 Schleswig
Germany
kglykou@yahoo.co.uk

Anne Hauzeur
Scientific collaborator at the National Museum of History and Art
Rue de Luxembourg 241
8077 Bertrange
Luxembourg
ahauzeur@yahoo.fr

Michael Ilett
Université Paris 1/CNRS UMR 7041
Maison de l'Archéologie et de l'Ethnologie
21 allée de l'Université
92023 Nanterre cedex
France
michael.ilet@mae.u-paris10.fr

Benedikt Knoche
Westfälische Wilhelms-Universität
Historisches Seminar
Abteilung für Ur- und Frühgeschichtliche Archäologie
Robert-Koch-Str. 29
48149 Münster/Westf.
Germany
bknoche@uni-muenster.de

Marc Lodewijckx
Leuven University (K.U.Leuven)
Blijde-Inkomststraat 21
3000 Leuven
Belgium
marc.lodewijckx@arts.kuleuven.be

Leendert P. Louwe Kooijmans
Faculty of Archaeology
P.O. Box 9515
2300 RA Leiden
The Netherlands
louwekooijmans@planet.nl

Hans Peeters
Cultural Heritage Agency (RCE)
Presently: University of Groningen
Groningen Institute of Archaeology
Poststraat 6
9712 ER Groningen
The Netherlands
j.h.m.peeters@rug.nl

Daan C.M. Raemaekers
University of Groningen
Groningen Institute of Archaeology
Poststraat 6
9712 ER Groningen
The Netherlands
d.c.m.raemaekers@rug.nl

J. Paulien de Roever
University of Groningen
Groningen Institute of Archaeology
Poststraat 6
9712 ER Groningen
The Netherlands
paulienderoever@hotmail.com

José Schreurs
Cultural Heritage Agency (RCE)
PO Box 1600
3800 BP Amersfoort
The Netherlands
j.schreurs@cultureelerfgoed.nl

Peter Schut
Regio De Vallei
Bergstraat 4
6710 HK Ede
The Netherlands
peter.schut@ede.nl

Alison Sheridan
National Museums Scotland
Chambers Street
Edinburgh EH1 1JF
Scotland
a.sheridan@nms.ac.uk

CONTRIBUTORS

Pieter van de Velde
Faculty of Archaeology
P.O. Box 9515
2300 RA Leiden
The Netherlands
p.van.de.velde@arch.leidenuniv.nl

Cyriel Verbeek
Vond 31
2382 Ravels
Belgium
cyriel.verbeek@pandora.be

Bart Vanmontfort
Faculty of Archaeology, Leiden University
Presently: Prehistoric Archaeology Unit, K.U.Leuven
Celestijnenlaan 200E – pb 2409
3001 Leuven
Belgium
bart.vanmontfort@ees.kuleuven.be

Early pottery traditions in the Lower Rhine Area

An introduction

Bart Vanmontfort

In addition to the use of polished stone, the domestication of plants and animals and sedentarisation, pottery is often regarded as a marker for the Neolithic, commonly defined as the period of Stone Age farmers. There are, however, several examples of ‘pre-pottery Neolithic’ cultures or of the use of pottery by pre-agricultural communities that show that pottery cannot be regarded as a sufficient criterion to identify the Neolithic. Examples in East Asia, Saharan and sub-Saharan Africa have shown that the independent invention of pottery has preceded the invention or introduction of domestic plants and animals, and of food production in general even by several millennia (e.g. Close 1995; Huysecom *et al.* in press; Kuzmin 2006; Yasuda 2002).

The use of pottery vessels can be regarded, on the other hand, as an indication for a changed way of food preparation, and seems fit to conditions of restricted residential mobility. The appearance of pottery seems to be associated first and for all with adaptations to changing environments and the start of a more sedentary way of life at the beginning of the Holocene, as also the early examples from East Asia and West Africa show.

In the Lower Rhine Area, Neolithisation starts around the middle of the 6th millennium and comes to an end during the 4th millennium cal BC. During this time range, all of the above-mentioned elements appear, including pottery as one of the first. The earliest phase of the Swifterbant culture is in fact a ‘ceramic Mesolithic’, not unlike the younger phase of the Ertebølle culture in the western Baltic (Andersen 2008 and this volume). In both cases the beginning of pottery production and use coincides with the first stage of farmer-forager contacts. The appearance of pottery thus seems related to the arrival of Neolithic, agrarian communities and its introduction can be regarded as part of the Neolithisation process.

Since several decades it has been apparent that, besides the pottery of the Linearbandkeramik people, several other pottery traditions were present in the Lower Rhine area during the late 6th and early 5th millennia cal BC. The *Blicquy/Villeneuve-Saint-Germain* (BQY/VSG) pottery is part of a fairly well-known Danubian ‘Neolithic culture’, rather similar to that of the LBK itself. The in every aspect contrasting pottery of the *Swifterbant* culture is also well defined, recovered mainly from wetland contexts in the extensive Holocene area of the Low Countries. This pottery developed in a purely Mesolithic context. For other pottery traditions, however, many questions remain regarding their origins and producers.

La Hoguette and Limburg pottery are frequently found in Linearbandkeramik contexts. Both styles differ fundamentally in all aspects from the LBK standard: technically, morphologically, and in the techniques and schemes of decoration. The occurrence of isolated La Hoguette pottery beyond the LBK activity zone, as at Sweikhuizen and at La Hoguette itself, adds up to its separate identity. La Hoguette and Limburg have some aspects in common (technology), but differ in pot forms and decoration. Although both seem to differ in age – La Hoguette being the earliest – they cannot simply be considered as successors. All this has led to an ongoing debate between two contrasting views: one regarding both La Hoguette and Limburg as part of the LBK phenomenon (e.g. Constantin *et al.* this volume), the other seeing La Hoguette pottery as the product of a ‘ceramic Mesolithic’ or as the product of an early neolithisation of Mediterranean origin (e.g. Pétrequin *et al.* 2009; Gronenborn 2007; Jeunesse 2003; Price *et al.* 2001, 593).

And there is more: several other early pottery assemblages display certain affinities to La Hoguette

and Limburg, but are not quite the same. Some of them are labelled as *céramique d'accompagnement* or *Begleitkeramik* of La Hoguette (following Jeunesse 1994; Jeunesse and Sainty 1991), although the use of this suggestive term is still open to discussion (see Brounen & Hauzeur, this volume). Other ceramic finds in the Lower Rhine Area have not been labelled yet, but their association with Late Mesolithic flint assemblages is suggestive of different trajectories of ceramisation. Again, however, decisive proof is lacking.

A major problem in the evaluation of these early pottery assemblages and traditions is the lack of strict definitions and their general application. It is even not always clear what ranges of variability should be allowed in calling pottery La Hoguette or *Begleitkeramik*. How different, for instance, is the La Hoguette pottery associated with the *Älteste* LBK from that found in a late LBK context? How different is La Hoguette in the middle Meuse basin from that in the Alsace and that found at the eponymous site in Normandy? Surprisingly, even for the better-known BQY/VSG and Swifterbant pottery traditions, similar problems of attribution exist. Swifterbant pottery is moreover characterised by a fairly large variability, which is not surprising in view of its long-living tradition, covering more than a millennium. However, within what ranges can pottery be recognised and identified as Swifterbant pottery if it would be found in, for instance, the middle Belgian loess region? And finally, variable standards in the illustration and publication of the pottery concerned hamper their comparison.

We are convinced that only a direct and real-life comparison of the often very fragmentary material can answer questions of resemblance and technical variability. The workshop on non-LBK, early pottery traditions in the Lower Rhine area, organised by Leiden University in February 2007, should be placed in this context. During two days 30 researchers gathered and assembled early pottery from about as many sites in or near the Lower Rhine Area. The workshop served an ambitious, twofold goal.

First, by gathering most of the early non-LBK pottery from the area, it aimed to arrive at a standardised view on description with the ultimate goal of creating better and strict definitions, evaluating the variability of the pottery and even attributing yet unlabelled assemblages. Ideally, this should be done for a much

larger area – see the question of southern influences in both Hoguette and Limburg pottery traditions – but pragmatically it was limited to Lower Rhine Area.

Secondly, the workshop aimed to provide a view on the current insights with respect to the origins and relations of the pottery traditions and assemblages. Contexts in which the pottery is found, as well as ideas with regard to the technical and morphological variability were discussed. The availability of the pottery itself allowed a direct evaluation and discussion of hypotheses.

Hopefully, this publication of the workshop's results will at least partially have achieved this goal and may be inspiring in the following decade for research on early pottery traditions in and beyond the Lower Rhine Area.

REFERENCES

- Andersen, S.H. 2008. The Mesolithic-Neolithic transition in Western Denmark seen from a kitchen midden perspective. A survey. 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*, Leiden (Analecta Praehistorica Leidensia 40), 67-74.
- Close, A. 1995. Few and far between. Early Ceramics in North Africa. In: W. Barnett & J. Hoopes (eds), *The emergence of pottery*, Washington, 23-25.
- Gronenborn, D. 2007. Beyond the models: 'Neolithisation' in Central Europe. In: A. Whittle & V. Cummings (eds), *Going over: the Mesolithic-Neolithic transition in north-west Europe*, Oxford (Proceedings of the British Academy 144), 73-98.
- Huysecom, E., M. Rasse, L. Lespez, K. Neumann, A. Fahmy, A. Ballouche, S. Ozainne, M. Maggetti & C. Tribolo in press. The emergence of pottery in Africa: new evidence from the Early Holocene at Ounjougou (Mali), *Antiquity*.
- Jeunesse, C. 1994. Le Néolithique du sud de la plaine du Rhin supérieur. Recherches et découvertes récentes, *Praehistorische Zeitschrift* 69, 1-31.
- Jeunesse, C. 2003. Néolithique 'initial', Néolithique ancien et néolithisation dans l'espace centre-européen: une vision rénovée, *Revue d'Alsace* 129, 97-112.
- Jeunesse, C. & J. Sainty 1991. Bischoffsheim 'Le Village' (Bas-Rhin): Un habitat rubané avec Céramique de La Hoguette (avec une annexe de François Lambach),

- Cahiers de l'Association pour la Promotion de la Recherche Archéologique en Alsace* 7, 15-57.
- Kuzmin, Y.V. 2006. Chronology of the earliest pottery in East Asia: progress and pitfalls, *Antiquity* 80, 362-371.
- Pétrequin, P., R. Martineau, P. Nowicki, E. Gauthier & C. Schaal 2009, La poterie Hoguelette de Choisey (Jura), les Champins. Observations techniques et insertion régionale, *Bulletin de la Société Préhistorique Française* 106 (3), 491-515.
- Price, T.D., R.A. Bentley, J. Lüning, D. Gronenborn & J. Wahl 2001. Prehistoric human migration in the Linearbandkeramik of Central Europe, *Antiquity* 75, 593-603.
- Yasuda, Y. 2002. *The origins of pottery and agriculture*, New Delhi.

Bowls of contention

Mesolithic sites with pottery in the Lower Rhine Area

Luc W.S.W. Amkreutz, Bart Vanmontfort, Marc De Bie & Cyriel Verbeek

ABSTRACT

The presence of pottery on sites that are otherwise culturally attributed to the Mesolithic poses a series of problems in relation to the development of the Neolithisation process. These problems relate to the association of the pottery with the Mesolithic lithic industry and to the question whether the indigenous Mesolithic hunter-gatherers might have produced their own pots. This paper presents several Late Mesolithic sites where pottery has been found and seeks to provide an overview of the various possibilities regarding this phenomenon.

KEYWORDS

Mesolithic, Neolithic, pottery, Campine region, association.

1. INTRODUCTION

Ever since the subdivision of the Stone Age into a Palaeolithic and a Neolithic era (Lubbock 1865), various efforts have been made to define a distinguishing criterion. Next to polished stone axes and the importance of food production (Childe 1957), pottery has long remained and sometimes still remains an important indicator of a Neolithic way-of life (Thomas 1999, 89; Yasuda 2002). On the other hand, the relationship between hunter-gatherer societies and ceramic technology also has old roots. Late Palaeolithic hunter-gatherers were already acquainted with shaping and firing clay figurines (e.g. Verpoorte 2001). The first revelation of pottery in a late hunter-gatherer context was made in 19th century Denmark with the discovery of ‘very crude’ pottery in association with the faunal remains of wild animals in various kitchen middens (*køkkenmøddinger*) along the

Danish coast (Steenstrup 2002; Worsaae 2002). These pottery-producing communities came to be known as the Ertebølle culture. Later on similar discoveries were made in the Dutch delta, northern Germany and the Scheldt valley, where the pottery was attributed to the Swifterbant culture, a ceramic Mesolithic which gradually incorporated domesticates and cultigens (Louwe Kooijmans 2007; Raemaekers 1999). In the south, Limburg ware (Modderman 1974), La Hoguette pottery and variants such as *Be-gleitkeramik* of La Hoguette (Brounen 1999; Gronenborn 1999; Jeunesse 1994; Lüning *et al.* 1989) are, although often associated with LBK ware in settlements, also frequently viewed as the product of communities with a largely Mesolithic signature (e.g. Gronenborn 1999 vs. Constantin *et al.*, this volume). Pottery and pottery production thus was not confined to the communities of fully Neolithic farmers that inhabited the southern part of the Lower Rhine Basin from 5300 cal BC onwards.

Apart from the established traditions there are also a number of sites in the upland coversand Campine area which, over the past decades, yielded evidence of a Mesolithic lithic industry associated with pottery (fig. 1). Geographically situated in between the northern Swifterbant-Ertebølle world and the southern Danubian, Limburg and La Hoguette groups, these sites and their pottery could not always be attributed to any of these traditions. As such they may represent new evidence in substitution of Mesolithic potting traditions. On the other hand questions of association and origin loom large.

Below most of these upland sites from the Campine region with evidence for pottery in the Mesolithic are presented. The pottery found at these locations as well as its contextual association with the Late Mesolithic sites is critically analysed and discussed. Following this, some preliminary remarks



Figure 1 Location of sites mentioned in the text. 1. Weelde Paardsdrank, 2. Weelde Voorheide 3, 3. Brecht Thomas Heyveld, 4. Dilsen Dilsrheide, 5. Lommel Molse Nete.

are made concerning the possibilities and impossibilities in the interpretation of these sites.

2. MESOLITHIC SITES WITH POTTERY FROM THE COVERSAND AREA

2.1 Weelde Paardsdrank

Site context

The site of Weelde *Paardsdrank* is situated on a dune that is part of a major Late Glacial dune belt. A fen is situated at the foot of the dune. The site consists of several high-density clusters of lithic artefacts within a less dense scatter of flint that covers the entire dune. In 1976 and 1977 three separate trenches were excavated, focusing on three high-density sectors, labeled 1, 4 and 5, and covering 337 m² (Huyge & Vermeersch 1982). Most finds were recorded three dimensionally and almost all excavated sand was sieved (*ibid.*). The most reliable radiocarbon date for the site was obtained on charred remains of hazelnut

from sector 5 and dates the site between 6200 and 5600 cal BC (95% confidence).¹ Typologically most of the lithic artefacts, of which a considerable number were made of Wommersom quartzite could be attributed to the Late Mesolithic. Nine evolved arrowheads were found *in situ*, within the Late Mesolithic level. Two of these show distinct affinities with LBK points (*ibid.*, 178-181).

In total 131 potsherds were found, one in sector 5 and the rest in sector 4. According to the excavators, the stratigraphy does not demonstrate the association between the pottery and the lithic industry; their co-occurrence within the same level only points to contemporaneity of burial and not necessarily to contemporaneity of discard (Huyge & Vermeersch 1982, 196). Moreover, ploughing and bioturbation have partially destroyed the integrity of the site (*ibid.*, 132, 137). Horizontally, however, the concentrations of potsherds more or less coincide with the concentrations of lithic artefacts (*ibid.*), which is in favour of their association (also see Vermeersch 2006).

Pottery description

The pottery is highly fragmented and mostly intensely weathered, showing distinct surface cracks. All sherds have a similar technological composition. The clay matrix contains approximately 7% of small sub-rounded to rounded quartz particles, possibly a natural component of the clay raw material.² The main temper added to the matrix is quartz. Some fine plant temper and very few grog was also added. Minor differences in the fabric of the sherds suggest that at least two different vessels are represented. Not a single coil fracture was identified. The surface of the sherds was smoothed. Both exterior and interior have a brown-grey colour, while the core is grey. On average the sherds are 5.5 mm thick.

Due to its fragmentation, the reconstruction of a vessel profile was not possible. The only morphological indicators are a single rim and one collar frag-

1. Lv-959, 6990 ±135 BP (Huyge & Vermeersch 1982, 191). All dates mentioned in this article have been calibrated with Oxcal v3.10 (Bronk Ramsey 1995; 2001), using the Intcal04 calibration curve (Reimer *et al.* 2004).

2. The percentages in this paper are visual estimations of volume percentages determined by means of comparison charts provided by Matthew *et al.* 1991.

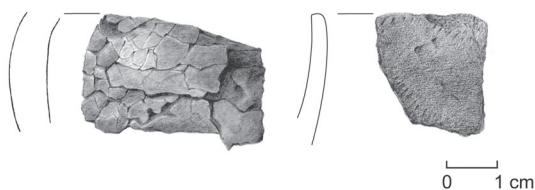


Figure 2 Pottery from Weelde *Paardsdrank*. Scale 2:3. Drawing E. van Driel.

ment (fig. 2). These suggest that one vessel may have been a small thumb-pinched bowl, while the other was a small collared vessel. Decoration is absent.

Interpretation

The pottery was not produced in a technology resembling that of any of the known Early Neolithic pottery traditions, not that of Limburg ware either as was claimed elsewhere (Heinen 2006). This observation originally was interpreted as an extra argument in favour of the association between the pottery and the Mesolithic lithic assemblage (Lauwers & Vermeersch 1982b, 196). The technological characteristics, however, resemble those of the local, late 5th millennium cal BC (Michelsberg culture) pottery tradition, which evidently does not fit the radiocarbon date obtained for the site (see above). It therefore remains unclear how this similarity should be interpreted and whether lithics, pottery and hazelnut shells were actually part of the same occupation phase.

2.2 Weelde Voorheide 3

Site context

Nine spatially separated Mesolithic artefact clusters were excavated at Weelde *Voorheide* in the mid 1990s, when the site was endangered by land development (Verbeek 1996; Verbeek & Vermeersch 1995). The artefact spectra allow for an Early Mesolithic date for most of these clusters; a single concentration, labeled Weelde *Voorheide* 3, yielded a typically Late Mesolithic flint assemblage. Another Late Mesolithic assemblage, collected before the 1940s in this area (Maes 1983), probably also belongs to the same site.

The Weelde *Voorheide* 3 cluster is located on top of a coversand ridge and covers an area of 148 m². Most of the artefacts were recovered from the recent plough layer that affected the upper E and B_{2h} horizons of the podzol soil profile. Below the plough layer, artefacts occurred in the B_{2ir} and B₃ horizons. Apart from 5537 lithic artefacts, 57 potsherds were found. Most of the latter were found in the B_{2ir} and B₃ horizons below the plough layer. Neither vertical nor horizontal stratigraphy allows separating the lithics from the pottery assemblage.

Most of the lithic artefacts were produced on the spot in locally available flint of bad quality. Mainly flakes but also bladelets and blades were produced. Only 5% was produced in Wommersom quartzite. Microburins and fractured, notched bladelets suggest that most microliths were produced with the microburin technique. Trapezes dominate this microlith assemblage and are mainly symmetrical or slightly asymmetrical. Points with unretouched bases are also present.

The assemblage also contains three LBK-like arrowheads (Verbeek & Vermeersch 1995, fig. 6, 18-20). These are similar to points with a straight to slightly convex ventral base retouch, type B in the typology of Huyge and Vermeersch (1982). Two similar points were found in the immediate vicinity, in a postmedieval earthwork and within the cluster of Weelde *Voorheide* 8 (Verbeek 1996, fig. 5, 21).

Pottery description

In total 65 potsherds were recovered during the excavations of the Late Mesolithic site. All sherds are strongly fragmented and have weathered fractures and surfaces. Fifty of these sherds could be attributed to only two fabric groups, and probably belonged to no more than two vessels.

The 13 sherds of the first fabric display voids up to 3 mm covering approximately 10% of the entire matrix and surface. These voids are both rounded and tubular (0.1 mm wide), and probably result from an organic temper. The thickness of the sherds varies between 5.5 and 9 mm. Three sherds display the remains of a decoration (fig. 3.a, d-e): two parallel, 3 mm wide, dragged lines are present on one sherd, while the two others were decorated with a series of 5 to 6 mm long impressions.

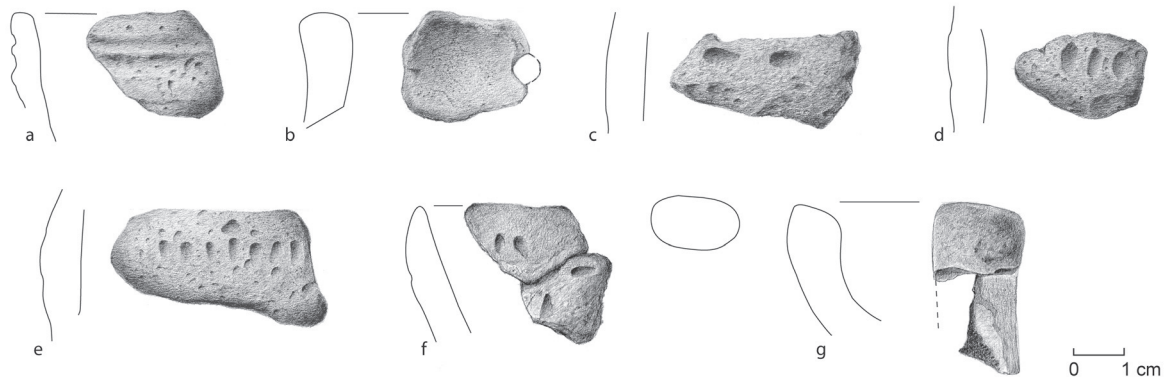


Figure 3 Pottery from Weelde *Voorheide 3*. Scale 2:3. Drawing E. van Driel.

Thirty-seven sherds were attributed to a second fabric type, tempered with approximately 3% of burnt and crushed bone fragments. Small voids suggest that also plant temper was added to the potter's clay. The matrix contains approximately 7% quartz particles that are the remains of sand temper or were naturally part of the clay raw material. Two coil fractures have been identified on sherds of this fabric, suggesting that the pot was made by coiling. The interior and exterior surfaces are brown, while the core is greyish. One rim sherd, possibly belonging to this fabric group, was decorated with two impressions made with a flat tool (fig. 3.c). A single sherd partially preserved the remains of a perforation (fig. 3.b).

The other sherds deviate from the two best-represented fabrics. One sherd was tempered with up to 15% quartz crushed fragments of up to 5 mm large. Its fabric resembles the fabrics commonly encountered in Michelsberg culture context. Two other, 4.5 mm thin sherds were tempered with a fine plant temper, also reminiscent of late 5th/early 4th millennium cal BC (Michelsberg culture) pottery. Only one small sherd was tempered with fragments of grog. Two sherds, finally, are part of a very weathered fragment of a lug or handle (fig. 3.g). Apart from very fine clay pellets (maximally 2 mm large) and 5 to 7% of quartz particles, no temper was added.

Interpretation

The sherds from Weelde *Voorheide 3* cannot be attributed to any of the known (early) Neolithic pottery traditions, thus not to the Limburg ware either as was claimed elsewhere (Heinen 2006). Only a single

sherd resembles the technical characteristics of the local late 5th millennium cal BC Michelsberg culture pottery. The undiagnostic nature of the pottery and the absence of any artefacts that would confirm a later (possibly Iron Age) presence at the site are the arguments in favour of its association with the Mesolithic flint assemblage.

2.3 Brecht Thomas Heyveld

Site context

The site is located in the north-western part of the Antwerp Campine area, c. 400 m north-west of the Late Mesolithic site of Brecht *Moordenaarsven* (Vermeersch *et al.* 1992) and some 2 km south of the Late Mesolithic Brecht *Overbroek* sites (Vermeersch *et al.* 2005). The site is situated near the top of a sandy dune, west of a large depression (Lauwers & Vermeersch 1982a). The 1980 excavations, covering c. 100 m², showed that the entire upper part of the podzol soil had been disturbed by ploughing (*ibid.*). Most lithic artefacts were recovered from this disturbed ploughlayer, while a small part was found below, in the upper part of the podzol's C-horizon. The site consists of two rather distinct concentrations some 15-20 m apart, both including trapezes and Montbani blades and both with flint and Wommersom quartzite (c. 20%) as the most important raw material types. The northern concentration is slightly larger and yielded most artefacts. The C-horizon in this part of the site yielded bone fragments spread over several square metres. In the vicinity of the – smaller – southern concentration several potsherds



Figure 4 Pottery from Brecht *Thomas Heyveld*. Scale 2:3. Drawing E. van Driel.

and charcoal particles were found together, embedded in the – at first sight undisturbed – sand of the C-horizon. No lithics were uncovered in their immediate vicinity (*ibid.*).

Pottery description

In total eight sherds were found, all of which have been refitted to a single rim fragment. Numerous voids up to 7 mm in size and covering approximately 5% of the sherd's surface are presumably the remains of a temper that disappeared due to the original or subsequent firing of the vessel, or due to postdepositional processes. The shape and size of these voids vary significantly. At first sight no grain impressions are included (pers. comm. W. Kuijper, Leiden University, Nov 2007). Whether the voids are the remains of disappeared bone, plant or mineral elements could not be determined. Apart from these voids, the matrix of the sherds is speckled with quartz grains of variable dimensions but generally smaller than 0.1 mm. These cover approximately 15% of the surface of the sherds. This is either a result of the addition of sand temper to the clay paste, or it was part of the raw material from which the clay was extracted.

None of the sherds have obvious coil fractures. The wavy fracture approximately 4 cm below the rim and running along its entire length, however, does suggest that the vessel was constructed by coiling (see Rye 1981, 67-68). The surface of the sherds is of a brown to reddish brown colour, the core is grey to light brown. Although the surface is weathered, it is possible to confirm that both interior and exterior surfaces were smoothed before firing. The sherds are on average 8.5 mm thick. They are part of

the inverted collar of a vessel with a slightly thinned rim. On the exterior, below the rim, a series of superficial, vertical impressions is present (fig. 4). These are 7 to 9 mm by 1.5 mm large and are irregularly spaced between 7 and 10 mm from one another. Due to their superficial nature, the weathering of the sherds and their pitted surface (related to the tempering agent, *cf. supra*), these impressions are only barely visible.

Interpretation

In the original publication of the site, the sherds were described as belonging to the irregular shaped rim of a large egg-shaped vessel that was, tentatively dated to the Iron Age (Lauwers & Vermeersch 1982a, 4).

Two possibilities can explain the presence of artefacts in the apparently undisturbed sands of the C-layers. They either moved down the natural soil horizons through bioturbation (*cf. Vermeersch 2006; Vermeersch & Bubel 1997*), or were deposited in pits or other features that are no longer visible due to post-depositional processes. Since the sherds are *spread on a very limited surface near the southern concentration* (Lauwers & Vermeersch 1982a), the latter is a likely option. The more general distribution of lithics and bone fragments in the same horizon, however, suggest that also the first process played a role in the formation of the site.

Because of the disturbing post-depositional processes and the absence of a direct spatial connection between lithics and pottery, it is simply impossible to prove or disprove the association between the pottery and the fairly homogeneous Late Mesolithic lithic assemblage. The same is true for the sherds them-

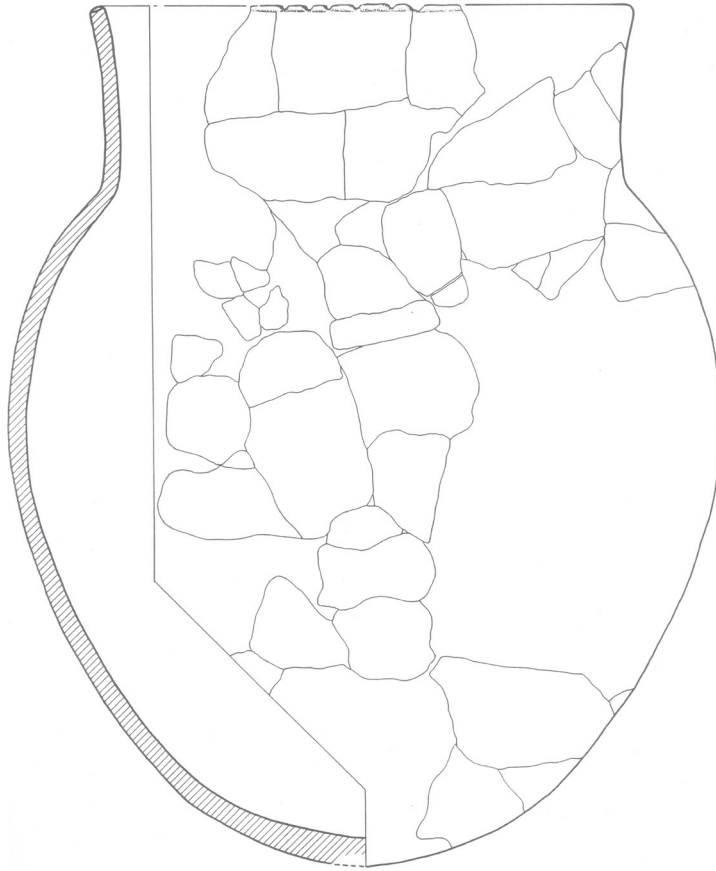


Figure 5 Pottery from Dilsen *Dilserheide*. Scale 1:3. After Luypaert *et al.* 1993, fig. 12.

selves: the pottery was produced in a prehistoric technology but can, unfortunately, not reliably be connected with any known pottery tradition. Moreover, apart from the Late Mesolithic site, no remains of other occupations have been discovered at the site (see Lauwers & Vermeersch 1982a). The possibility of the association between sherds and Late Mesolithic occupation thus remains open to debate.

2.4 Dilsen Dilserheide III

Site context

The site is located on a Late Glacial coversand ridge, on the eastern extent of the Campine plateau. It is situated in an undulating coversand landscape between a local elevation (*Platte Lindenberg*) and a valley with a spring. In 1991, 4 trenches, covering 146 m² and oriented perpendicular to the slope, were

excavated. They revealed a Late Mesolithic artefact cluster of approximately 240 m². More than 60% of the site was disturbed by ploughing; the vertical distribution of the remaining material covers c. 60 cm. Next to 5513 lithic artefacts the site also yielded 206 potsherds, attributed to the Michelsberg culture. Other Neolithic elements found at the site comprise a few tools and flakes made on imported flint, flakes from polished axes and two Late Neolithic points (Luypaert *et al.* 1993).

In both vertical and horizontal stratigraphy, the pottery cannot be distinguished from the lithic assemblage. Nearly 80% of the potsherds were found below the plough horizon. Most pottery is concentrated in a small, roughly ovaloid shaped zone of approximately 2 by 2 m, within the much larger concentration of flint artefacts; all of it apparently belonged to a single vessel.

Pottery description

The pottery was tempered with 1 to 4 mm large, angular quartz fragments, equally sized grog fragments and perhaps some organic material. It was coil-built, although information on the type of joins is not available. Both exterior and interior walls were burnished. The exterior surface is generally light to very light brown, while the interior of the pot is greyish brown to dark grey. The transition in colour between interior and exterior occurs in the middle of the core and is rather abrupt.

All sherds apparently belonged to a single, bottle-shaped vessel with a subvertical collar and round base (fig. 5). It measures 33.3 cm in height and has a maximum diameter of 23 cm. The thickness of the wall of the vessel varies between 7 and 9 mm. The rim is decorated with regular V-shaped incisions (*Randkerbung*).

Both technically and morphologically, this vessel fits with the Michelsberg culture pottery tradition. The excavators attributed it to *Gattung 1, Grundform 4, Type 17* of the Lüning (1967) Michelsberg culture seriation (Luybaert *et al.* 1993, 28), a type occurring in MK phases II to IV. Correctly following Lüning's typology, however, it belongs to the *Vorratsgefäße* (*Gattung 2*) and best fits the *Grundform 5, Type 8* 'bottle-shaped storage vessel', a rare type in Rhineland Michelsberg culture and attributed to MK phase II (Lüning 1967, 35). Such vessels are typical for the contemporaneous pottery of the Spiere group in the Scheldt basin, taking an intermediate position between Rhineland Michelsberg culture and Paris Basin *Chasséen septentrional* during the late 5th and early 4th millennium cal BC (see Vanmontfort 2004; Vanmontfort 2006).

Interpretation

The horizontal and vertical distribution of the sherds suggests that they are in direct association with the Late Mesolithic artefact assemblage. This is confirmed by the presence of only very few Neolithic flint artefacts at the site, none of which are strictly contemporaneous with the Michelsberg culture horizon. The technical and typological dating of the material in the late 5th millennium cal BC, on the other hand, makes such an association remarkable and questionable at the same time. Unfortunately, the

context has not been sealed after the artefact deposition and it cannot be excluded that the observed distribution and mixture resulted from bioturbation processes of at least two not contemporaneous moments of deposition.

2.5 Lommel Molse Nete 1

Site context

The large Mesolithic site-complex along the Molse Nete at Lommel is located in the northern part of the Belgian Campine region, on the edge of the Scheldt river basin. The site occupies the northern bank of the small valley of the Molse Nete, an incipient river draining a nearby brook. Whereas the wet and slightly loamy valley is currently in use as pasture and agricultural land, the northern coversand ridge, partly covered with Holocene dunes, is wooded with mixed pine and oak trees and was never exploited for cultivation. Field survey and systematic coring on this ridge show that the currently known site-complex must contain millions of artefacts – a situation that is not exceptional in the Campine region (De Bie & Van Gils 2009). The flint scatters extend along some 2 km in length, from the earlier excavations at Lommel *Vosvijvers 3* in the west (Geerts 1984), up to the loci of Lommel *Molse Nete 1* in the east. Field research at the latter spot was conducted in 2003 by the Archaeological Heritage Institute (IAP), currently the Flemish Heritage Institute (VIOE), in anticipation of a gas pipeline installation (Van Gils & De Bie 2003). The site was excavated in quarter square metres across an elongated area of some 85 m², recovering one well-defined and rather rich concentration almost completely and two nearby concentrations only partially. All sediment was sieved mechanically (6 mm mesh). Except for some charred bone fragments (still under study), organic material is lacking, and there are no radiocarbon dates available so far. Most of the 4500 lithic artefacts were retrieved from the upper E and B horizons of the podzol soil. A considerable number were made of Wommersom quartzite. The tool assemblage is clearly dominated by trapezes and can be attributed to the Late Mesolithic. Amongst these lithics, two small sherds of Early Neolithic pottery were found, both of similar size and shape (fig. 6). As they must be considered as coming from a surface context, the

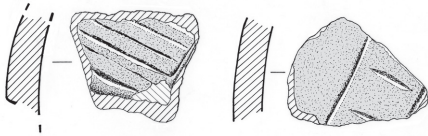


Figure 6 Two sherds from a Late Mesolithic site at Lommel *Molse Nete*. Scale 2:3. Drawing M. Van Meenen.

contemporaneity of discard with the lithics cannot be fully affirmed. In view of the total absence of any other Neolithic material, however, as well as of any Early Neolithic presence in the wider region, the association between the pottery and the lithic assemblage seems quite obvious.

Pottery description

One of the sherds has a dark grey core and dark brown surface. It is 5.6 mm thick and has no observable temper apart from perhaps a 5 mm wide void/imprint on the interior surface. Its exterior surface is smooth and shows a series of incisions. A single, 0.8 mm wide, linear incision crosses the entire sherd and is accompanied by a partly preserved parallel incision at a distance of 14 mm. In between these, two smaller incisions run perpendicular to it with an intermediate distance of 8 mm. All incisions may have been made with the same tool. Based on colour, temper and decoration, this sherd can clearly be interpreted as part of a LBK pottery vessel.

The second sherd has a reddish brown exterior, a dark brown interior and a dark grey core. It is 7 mm thick and also has no clear temper visible. It was decorated with a series of 6 parallel grooves. On the edge of the sherd, the remains of a single groove perpendicular to the other 6 can be observed. This sherd could be interpreted as part of the LBK pottery tradition, but despite the absence of bone temper could also be a Limburg pottery sherd. Apart from colour and decoration, the presence of a weathered coil fracture confirms this possibility.

Interpretation

The presence of only two, small sherds – of which at least one is clearly the product of the LBK pottery tradition – in a Late Mesolithic assemblage, without a trace of other Early Neolithic artefacts and on a

large distance from the nearest LBK site, makes a close association of pottery and lithic artefacts the most likely interpretation. In this scenario, the sherds are in all likelihood the result of direct contact between the Late Mesolithic hunter-gatherer populations of the Campine region and the Early Neolithic LBK populations that colonised the southern loess regions during the second part of the 6th millennium. The second sherd could be part of a Limburg pottery vessel. If this is the case, it illustrates the similar status of LBK and Limburg pottery for the hunter-gatherer occupants of the Lommel site.

3. DISCUSSION

Pottery has been found more than once on a Mesolithic site in the Campine region. Confirming the association of the pottery with the Mesolithic flint assemblage, however, remains problematic due to the specific taphonomic conditions in this region (see also Vermeersch 2006). Although not providing indisputable proof, several arguments are in favour of an association. First among these is the spatial association of the artefacts, both in horizontal and vertical respect. Another is the absence of other elements of material culture at the sites that would point to another, *i.e.* later, occupation. Even in the case where the sherds can be attributed to a known pottery tradition, LBK in Lommel, Michelsberg culture in Dilsen and possibly also in Weelde *Paardsdrank*, no flint or other artefacts have been found that allow identifying a separate, Neolithic occupation phase. In other cases the sherds cannot be attributed to a known (later) pottery tradition which suggests that they should be regarded as separate phenomena.

The association of the incidental pottery finds with the Mesolithic lithic assemblages thus remains a working hypothesis. Within this hypothesis, several hypothetical scenarios can be formulated, none of which are mutually exclusive. Moreover, the differences in fabric and morphology of the pottery presented above indicate that more than a single phenomenon is involved.

3.1 Moving pots

In the case where the technical and morphological characteristics of the pottery fit those of existing Neolithic pottery traditions, there is no reason to as-

sume a local tradition or hybrid form. Rather, the pottery would be imported and suggests contact between ‘Mesolithic’ hunter-gatherer groups and bearers of the Neolithic pottery traditions.

Apart from Lommel *Molse Nete*, with one LBK and one possible Limburg pottery sherd, an LBK vessel has been found near a Late Mesolithic site at Oudenaarde *Donk* (Crombé & Vanmontfort 2007) without any other artefacts confirming the presence of LBK people. Unfortunately there also, the association of pottery and the Late Mesolithic flint industry is uncertain.

It seems highly unlikely that the rather uniform, often thin walled and well-fired LBK pots, let alone their classical decoration canon, would be easily copied or adopted by groups outside of the original cultural context and we therefore assume that these vessels were produced by LBK hands. This culture is known to have settled the fertile loess soils south of the coversand area where most of the above sites are located and is known to have ventured north of the loess at least in a zone of approximately 30 km. Since at least a partial contemporaneity must be assumed, it is likely LBK pottery would have found its way to Late Mesolithic sites through raids or exchange (e.g. Dennell 1985).

A similar reasoning can be applied to the Spiere group/Michelsberg culture pottery from Dilsen and perhaps that from Weelde *Paardsdrank*. Only this time, the chronology of the Neolithic culture makes a direct link between pottery and Late Mesolithic assemblage more questionable.

3.2 Indigenous pottery traditions

Apart from pots, ideas on pottery fabrication or use may have been shared, amongst hunter-gatherers or between these and Neolithic farmers (Louwe Kooijmans, this volume; Raemaekers & De Roever, this volume). The intensity of contact and the limitations of local fabrication will in that case have determined the amount of retained ‘original characteristics’. It may have involved processes of ‘bricolage’ whereby new material culture is developed out of the existing reservoir of available raw material comprising technological, morphological and decoration aspects (e.g. Raemaekers 1999, 22).

It should however be noted that investing in pottery and potting is essentially a technological invest-

ment, which only makes sense if the potential benefits outweigh the costs of investment (Ugan *et al.* 2003). Using pottery involves considerations with respect to availability and transport of vessels, implicating restriction in mobility etc. While these considerations do not preclude the idiosyncratic/singular use of available vessels for functional or other purposes, the suitability of pottery and viability of the investment in the context of the upland coversand landscape should not be taken for granted. There is evidence for pottery production and the intensive use of pottery in wetland locations (e.g. Louwe Kooijmans 2003; Peeters 2007, 186). The production of pottery at these locations may be a corollary of the increased sustainability of these environments (Amkreutz in prep.). Pottery may however not have been of any structural use to highly mobile groups occupying the coversand area.

This kept in mind, the first and most obvious source of inspiration would be the Early Neolithic Linearbandkeramik culture. Whether Limburg and La Hoguette pottery also relate to such phenomena and are the remains of ceramic hunter-gatherer groups (e.g. Gronenborn 1999), is still uncertain due to the often questionable contextual information (see Constantin *et al.*, this volume) and the absence of consistent information on an associated lithic toolkit.

The pottery may also be inspired by later pottery traditions of, for instance, the Middle Neolithic Michelsberg culture. Several sites in the Dutch delta contemporaneous with the Michelsberg culture have yielded evidence for contact in the form of certain adopted ceramic characteristics as well as in the form of exchanged and transported (mined) flint artefacts (Louwe Kooijmans 1976; Raemaekers 1999). From this perspective it would thus not be unlikely to expect pottery on geographically intermediate sites such as the ones mentioned here. However, even though indigenous hunter-gatherer communities will only gradually have adapted themselves to a farming existence, it is highly uncertain whether they were still bearing a Mesolithic signature at the end of the 5th millennium cal BC. The local Michelsberg culture should perhaps even be perceived as an outcome of the process of Neolithisation, rather than being involved in it (Vanmontfort 2007).

Another scenario connects the pottery at Mesolithic sites with that of the Swifterbant culture. The oldest Swifterbant pottery in the region was found at

Hardinxveld-Giessendam *Polderweg* and dates to *c.* 5000 cal BC (Louwe Kooijmans 2003). While the precise origins of Swifterbant pottery remain unclear, it seems likely that the idea of pottery production was inspired by the LBK pottery tradition (Louwe Kooijmans contra Raemaekers & De Roever, this volume). The Swifterbant culture is mainly documented from wetland environments, but scarce finds on the sandy uplands in the northern part of the Netherlands indicate that pottery was not confined to these areas (*e.g.* Hulst 1993; Raemaekers 1999; Schut 1984) and that the culture's activity may very well have extended into the upland environments. The Swifterbant sites nearest to the locations described above are located to the north in the Dutch delta and to the west in the Scheldt floodplain. There are, however, no clear indications for a Swifterbant inspiration of the pottery from Brecht and Weelde *Voorheide 3*.

4. CONCLUSION

At several sites in the Campine region pottery has been found together with Late Mesolithic lithic assemblages. In all cases there is a spatial and stratigraphic association and an absence of indications for subsequent occupation phases. Nevertheless, the specific taphonomic conditions at these sites and in the coversand region in general, do not allow conclusive evidence of the strict association of pottery and lithic assemblage.

Either we are dealing with palimpsests in which the pottery was deposited (well) after any Late Mesolithic occupation, or the pottery and lithics are truly associated. Keeping the latter option as a working hypothesis, two major scenarios arise to explain the presence of pottery at those sites. Some of the pottery, like for instance at Lommel, Dilsen or even Weelde *Paardsdrank*, was most likely produced in Neolithic context and was imported at the site by exchange or other processes related with the interaction between Mesolithic and Neolithic groups. At Brecht and Weelde *Voorheide 3*, on the other hand, the pottery would rather have been locally produced. The inspiration for the latter pottery production can have been provided by the surrounding, contemporaneous, established pottery traditions.

Sites from the southern coversand landscape are unfortunately structurally confronted with taphonomic problems that obstruct conclusive arguments.

Future research should perhaps rather be directed at locations with more favourable taphonomical circumstances where spatial and stratigraphical patterning is preserved and where the contemporaneity of Mesolithic lithics and pottery can be evaluated. Such locations include the wetlands of the Meuse-Rhine delta and the Lower Scheldt valley but perhaps also the valleys of rivers and smaller streams dissecting the Campine and adjacent coversand areas or sites located on the edge of some of the numerous fens in the area. This may eventually also provide some data on the actual end of the Mesolithic in the area. Until we find these sites, however, the sherds presented in this paper will remain bones of contention.

5. REFERENCES

- Amkreutz, L.W.S.W. in prep. *Negotiating Neolithisation. A long-term perspective on communities in the process of Neolithisation in the Lower Rhine Area (6000-2500 cal BC)*, PhD thesis Leiden.
- Bie, M. De & M. Van Gils 2009. Mesolithic settlement and land use in the Campine region (Belgium). In: S.B. McCartan, R. Shulting, G. Warren & P. Woodman (eds), *Mesolithic Horizons: Papers presented at the seventh international conference on the Mesolithic in Europe, Belfast 2005*, Oxford, 282-287.
- Bronk Ramsey, C. 1995. Radiocarbon calibration and analysis of stratigraphy: The OxCal program, *Radiocarbon* 37, 425-430.
- Bronk Ramsey, C. 2001. Development of the radiocarbon calibration program OxCal, *Radiocarbon* 43, 355-363.
- Brounen, F.T.S. 1999. Vroegneolithische Begleitkeramiek uit Limburg en Noord-Brabant, *Archeologie in Limburg* 82, 59-64.
- Childe, V.G. 1957. *The dawn of European civilization*, London.
- Crombé, P. & B. Vanmontfort 2007. The Neolithisation of the Scheldt basin in western Belgium. In: A. Whittle & V. Cummings (eds), *Going over: the Mesolithic-Neolithic transition in north-west Europe*, Oxford (Proceedings of the British Academy 144), 263-285.
- Dennell, R.W. 1985. The hunter-gatherer/agricultural frontier in prehistoric temperate Europe. In: S.W. Green & S.M. Perlman (eds), *The archaeology of frontiers and boundaries*, Orlando, 113-136.
- Geerts, F. 1984. Lommel-Vosvijvers 3, A Late Mesolithic settlement, *Notae Praehistoricae* 4, 61-64.
- Gils, M. Van & M. De Bie 2003. Een uitgestrekt laatmesolithisch site-complex langs de Molse Nete in Lommel, *Notae Praehistoricae* 23, 67-69.

- Gronenborn, D. 1999. A variation on a basic theme: the transition to farming in southern central Europe, *Journal of World Prehistory* 13, 123-210.
- Heinen, M. 2006. The Rhine-Meuse-Schelde 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*, Stuttgart (Materialhefte zur Archäologie in Baden-Württemberg 78), 75-86.
- Hulst, R.S. 1993. Archeologische kroniek van Gelderland 1992, *Bijdragen en Mededelingen der vereniging Gelre* 84, 206-215.
- Huyge, D. & P.M. Vermeersch 1982. Late Mesolithic settlement at Weelde-Paardsdrank. In: P.M. Vermeersch (ed.), *Contributions to the study of the Mesolithic of the Belgian Lowland*, Tervuren (Studia Praehistorica Belgica 1), 115-209.
- Jeunesse, C. 1994. Le Néolithique du sud de la plaine du Rhin supérieur. Recherches et découvertes récentes, *Praehistorische Zeitschrift* 69, 1-31.
- Lauwers, R. & P.M. Vermeersch 1982a. Late Mesolithic occupation at Brecht-Thomas Heyveld, *Acta Archaeologica Lovaniensa* 21, 1-25.
- Lauwers, R. & P.M. Vermeersch 1982b. Mésolithique ancien à Schulen (avec des contributions de E. Gilot, A.V. Munaut & J. Van Damme). In: P.M. Vermeersch (ed.), *Contributions to the study of the Mesolithic of the Belgian Lowland*, Tervuren (Studia Praehistorica Belgica 1), 55-112.
- Louwe Kooijmans, L.P. 1976. Local developments in a borderland. A survey of the Neolithic at the Lower Rhine, *Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden te Leiden* 57, 227-298.
- Louwe Kooijmans, L.P. 2003. 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*, Oxford, 608-624.
- Louwe Kooijmans, L.P. 2007. The gradual transition to farming in the Lower Rhine Basin. In: A. Whittle & V. Cummings (eds), *Going over: the Mesolithic-Neolithic transition in north-west Europe*, Oxford (Proceedings of the British Academy 144), 287-309.
- Lubbock, J.L.A. 1865. *Prehistoric times, as illustrated by ancient remains, and the manners and customs of modern savages*, London.
- Lüning, J. 1967. Die Michelsberger Kultur. Ihre Funde in zeitlicher und räumlicher Gliederung, *Berichte der Römisch-Germanischen Kommission* 48 (1968), 1-350.
- Lüning, J., U. Kloos & S. Albert 1989. Westliche Nachbarn der bandkeramischen Kultur: die Keramikgruppen La Hoguette und Limburg, *Germania* 67, 355-393.
- Luypaert, I., M. De Bie & P.M. Vermeersch 1993. Dilsen-Dilserheide III (prov. Limburg), midden-neolithisch aardewerk op een laat-mesolithisch site, *Archeologie in Vlaanderen* 3, 7-35.
- Maes, K. 1983. *Bijdrage tot de studie van mesolithische microlieten in de provincie Antwerpen*, unpublished Master's thesis, Katholieke Universiteit Leuven.
- Matthew, A.J., A.J. Woods & C. Olivier 1991. Spots before the eyes: new comparison charts for visual percentage estimation in archaeological material. In: A. Middleton & I. Freestone (eds), *Recent developments in ceramic petrology*, London (British Museum Occasional Paper 81), 211-263.
- Modderman, P.J.R. 1974. Die Limburger Keramik von Kesseleyk, *Archäologisches Korrespondenzblatt* 4, 5-11.
- Peeters, H. 2007. *Hoge Vaart-A27 in context: towards a model of Mesolithic-Neolithic land use dynamics as a framework for archaeological heritage management*, PhD thesis Amsterdam.
- Raemaekers, D.C.M. 1999. *The articulation of a new Neolithic, the meaning of the Swifterbant culture for the process of neolithization in the Dutch-North German Plain; an anthropological perspective*, Leiden (Archaeological Studies Leiden University 3).
- Reimer, P.J., M.G.L. Baillie, E. Bard et al. 2004. IntCal04 terrestrial radiocarbon age calibration, 0-26 cal kyr BP, *Radiocarbon* 46, 1029-1058.
- Rye, O.S. 1981. *Pottery Technology. Principles and reconstruction*, Washington (Manuals on Archaeology 4).
- Schut, P. 1984. Een vroeg-neolithische scherf met graanafdrukken uit Winterswijk (Gld.). *Westerheem* 214-215.
- Steenstrup, J.J.S. 2002. On professor Worsaae's division of the Stone Age. In: A. Fischer & K. Kristiansen (eds), *The Neolithisation of Denmark: 150 years of debate*, Sheffield, 57-68.
- Thomas, J. 1999. *Understanding the Neolithic*, London.
- Ugan, A., J. Bright & A. Rogers 2003. When is technology worth the trouble?, *Journal of Archaeological Science* 30, 1315-1329.
- Vanmontfort, B. 2004. *Converging Worlds, The Neolithisation of the Scheldt basin during the late fifth and early fourth millenium cal BC*, PhD thesis Leuven.
- Vanmontfort, B. 2006. Can we attribute the Middle Neolithic in the Scheldt and Middle Meuse basins to the Michelsberg culture? In: P. Duhamel (ed.), *Impacts interculturels au Néolithique moyen. Du terroir au territoire: sociétés et espaces*, Dijon (Revue Archéologique de l'Est. Supplément 25), 109-116.

- Vanmontfort, B. 2007. Bridging the gap. The Mesolithic-Neolithic transition in a frontier zone, *Documenta Praehistorica* 34, 105-118.
- Verbeek, C. 1996. Relaties tussen vroeg-mesolithische concentraties te Weelde-Voorheide, *Notae Praehistoricae* 16, 91-99.
- Verbeek, C. & P.M. Vermeersch 1995. Vroeg- en laatmesolithicum te Weelde-Voorheide, *Notae Praehistoricae* 15, 61-72.
- Vermeersch, P.M. 2006. Reliability of the stratigraphy and spatial structures of Late Pleistocene and Holocene sites in sandy areas. Mesolithic-Neolithic contacts in Central Benelux? In: C.-J. Kind (ed.), *After the Ice Age: settlements, subsistence and social development in the Mesolithic of Central Europe*, Stuttgart (Materialhefte zur Archäologie in Baden-Württemberg 78), 297-303.
- Vermeersch, P.M. & S. Bubel 1997. Postdepositional artefact scattering in a podzol: processes and consequences for Late Palaeolithic and Mesolithic sites, *Anthropologie (Brno)* 35, 119-130.
- Vermeersch, P.M., R. Lauwers & P. Gendel 1992. The Late Mesolithic sites of Brecht-Moordenaarsven (Belgium), *Helinium* 32, 3-77.
- Vermeersch, P.M., E. Scheltens & R. Foblets 2005. Laatmesolithicum te Brecht-Overbroek. De collectie R. Foblets. In: *Jubileumboek. Honderd jaar Koninklijke Geschied- en Oudheidkundige Kring voor Brecht en Omstreken*, Baarle Nassau, 65-82.
- Verpoorte, A. 2001. *Places of art, traces of fire*, Leiden (Archaeological Studies Leiden University 8).
- Worsaae, J.J.A. 2002. Concerning a new division of the Stone and Bronze Ages. In: A. Fischer & K. Kristiansen (eds), *The Neolithisation of Denmark 150 years of debate*, Sheffield, 45-56.
- Yasuda, Y. 2002. *The origins of pottery and agriculture*, New Delhi.

The ceramisation of the Low Countries, seen as the result of gender-specific processes of communication

Leendert P. Louwe Kooijmans

ABSTRACT

Pottery fabrication was adopted around 5000 cal BC in the Lower Rhine Area, in the first, technological stage of Neolithisation. The distinct native technology and style is explained as resulting from the indirect contacts in the female domain, as opposite to those of the adult male part of society. It was pottery as such, which became known through contacts with various Neolithic groups, not the process of production. The chosen technology was that of native coiled lipwork and matting.

KEYWORDS

Neolithisation, Early Neolithic pottery, gender archaeology.

1. NEOLITHISATION¹

The Neolithisation in the Lower Rhine Area has been the subject of a row of successive publications, describing the process in increasing resolution and coherence on the basis of the growing quantity and quality of basic data, from large-scale excavations to chance discoveries (Louwe Kooijmans 1998; Raemaekers 1999; Verhart 2000; Louwe Kooijmans 2005, 2007; Amkreutz in prep.). It is in its essence

the story of communication across a long lasting static frontier between the early agrarian communities on the loess soils in the south of the region and the indigenous foragers in the wide sandy plain to the north of it. Our knowledge of these northern communities is dominated by the rich evidence of the Rhine delta settlements in the western part of the plain, which together with the archaeological near-invisibility of upland occupation generates a problem of its representativeness in a wider respect. There is, however, no discussion about the basic character of the process. It was no short-lived package deal but a gradual adoption of the Neolithic assets, with the technological innovations first, next those in subsistence and at last those in the social organisation. So the polished axe technology came first with the acquisition of LBK adzes, soon followed around 5000 cal BC by the native production of pottery, then some centuries later (at the last around 4500) by livestock (cattle, pig, sheep and goat all four at a time) and at last the crops (emmer wheat (*Triticum dicoccon*) and naked barley (*Hordeum vulgare* var. *nudum*)) sometime between 4200 and 4000 cal BC (Louwe Kooijmans 2007; Out 2009). Good evidence for the structuration of settlements according to Neolithic principles, *i.e.* creating a domestic space, separated from the 'wild' surroundings, seems to be a rather late stage and is not earlier attested than the fenced-in Schipluiden site, *c.* 3600 cal BC (Louwe Kooijmans & Jongste 2006). The discussion about the time span involved seems not so much to focus on the process or introduction dates, but mainly on the definition of its end (*cf.* Raemaekers 2003 for a 'short chronology'), that is the subjective assessment of the stage when the Neolithisation should be considered as accomplished. If we exclusively use the Zvelebil & Rowley Conwy (1984; Zvelebil 1986) criterion of the role of animal husbandry, then the substitution phase (with domestic animals between 5

1. This is a reworked version of a paper presented at the symposium "Earliest Pottery in the Baltic" in Schleswig, October 20-21, 2007, organised by Friedrich Lütz and Thomas Terberger, to be published in *Berichte der Römisch-Germanischen Kommission* (Louwe Kooijmans in press). The section 'ceramic evidence' of that paper has been skipped in view of the detailed reviews by several authors in this volume; a new section on communication has been added. The final paragraph has hardly been changed. Major difference is the adjusted date and more prominent role attributed to the assemblages related to La Hoguette, north of the loess zone.

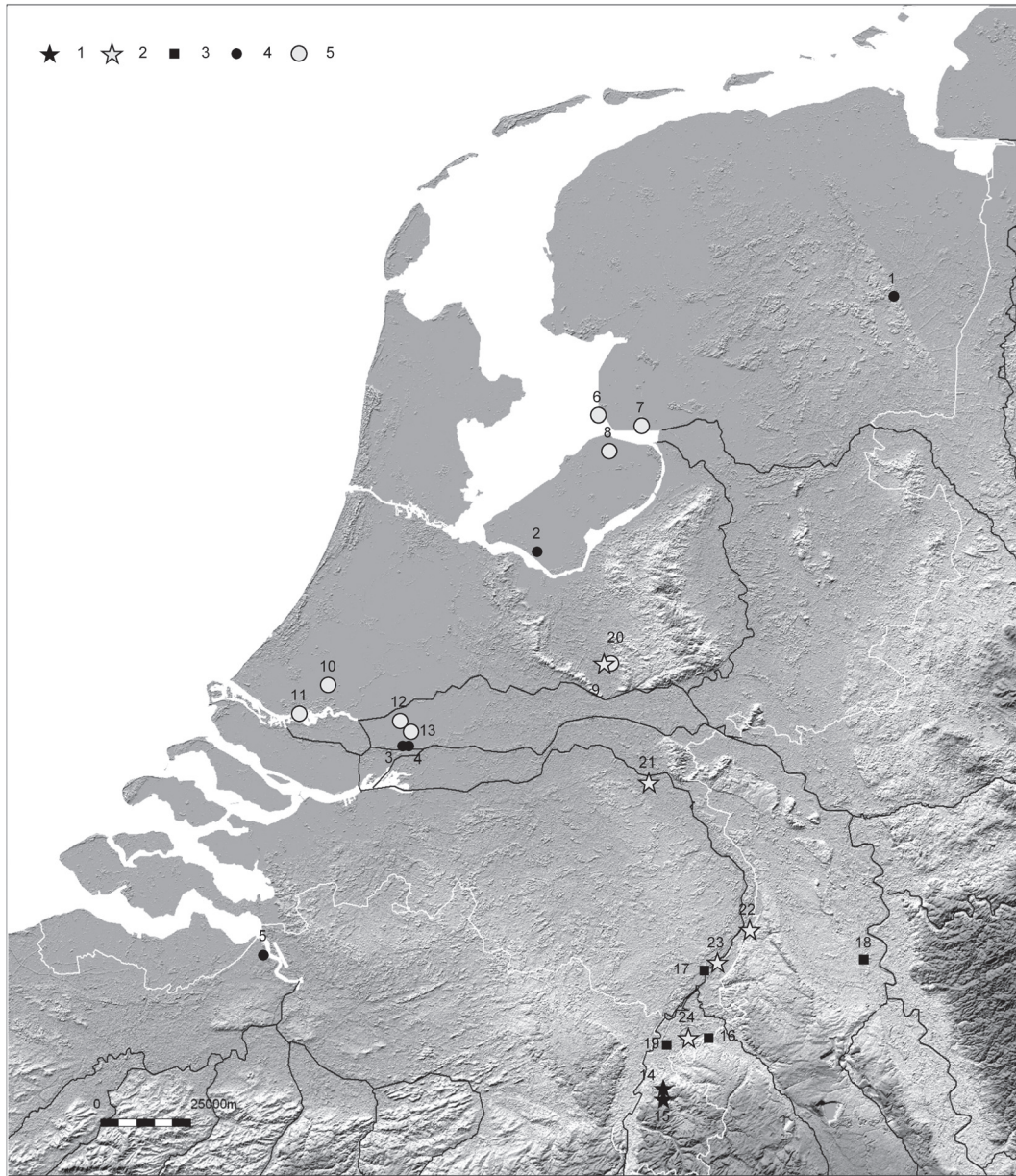


Figure 1 Location map of sites, mentioned in the text.

Symbols: 1. La Hogue, 2 so-called *Begleitkeramik*, 3 LBK and Limburg beyond the loess, 4 Early Swifterbant 5000-4600 cal BC, 5 'classical' Swifterbant c. 4000 cal BC.

Sites:

- | | | | |
|--------------------------------|-----------------------|--------------------------|----------------------------|
| 1 Bronneger | 7 P14 (Schokland) | 13 Hazendonk | 19 Montfort |
| 2 Hoge Vaart | 8 Swifterbant-cluster | 14 Geleen | 20 Ede <i>Frankeneng</i> |
| 3 Hardinxveld <i>De Bruin</i> | 9 Ede <i>Rietkamp</i> | 15 Sweikhuizen | 21 Gassel |
| 4 Hardinxveld <i>Polderweg</i> | 10 Bergschenhoek | 16 Echt <i>Annendaal</i> | 22 Venlo <i>Ossenbergr</i> |
| 5 Doel <i>Deurganckdok</i> | 11 Schiedam | 17 Kesseleik | 23 Kessel |
| 6 Urk | 12 Brandwijk | 18 Veen Kr. Moers | 24 Posterholt |

and 50% of identified bones) would last shorter than 4450-4100 cal BC. The time span would, however, be the full fifth millennium if we would consider the adoption of animal husbandry just as a partial process of the total techno-economical transition. If we would include a considerable social change as well the time lap would be even five centuries more.

2. COMMUNICATION

This all makes one think about the processes involved, about communication and knowledge transfer. This has been done earlier (Louwe Kooijmans 1993; Vanmontfort 2008; Verhart 2009), but we have to confess that we do not know so much about the ways of communication between the southern and northern communities. All that remains is the material reflection of contacts, whereas communication is a matter of interaction between people including specific roles of men and women in both the ‘donor’ and the ‘receiving’ communities, the most probable division of tasks, the native knowledge and technology systems and the mobility of individuals, to better understand the developments in this specific case.

North-south contacts in the preceding Later Mesolithic are documented by the distribution of the well-known, *Grès Quartzitique de Wommersom* (GQW; Gendel 1982). This is a singular fine-grained quartzite, which was very well suited for the production of the so-called Montbani blades, regular blades with parallel ribs and one retouched side, themselves the blanks for the production of all types of trapezes, characteristic for this period. It was distributed from its single primary source near Tienen (Belgium) all over the southern Netherlands. The core distribution up till *c.* 60 km will have mainly resulted from the mobility of the people involved, but the incidental wider distribution, to the north as far as the sites of Hardinxveld and Hoge Vaart, will have been the result of exchange. The major rivers – especially the Meuse – seem to have been a boundary for its distribution, as it was already a boundary between two distinct types of microlith associations in the Boreal period, the ‘Rhine Basin Group’ in the south and the ‘Boreal Group’ in the north.

The material evidence of contacts of the new Bandkeramik settlers of southern Limburg with their neighbours to the north and west is of a modest extent and intensity.

First, there is zone of *c.* 30 km to the north of the loess with relatively frequent finds and rather ephemeral sites, producing basic domestic flint inventories together with fragments of pottery (Louwe Kooijmans 1993, fig. 11; Amkreutz *et al.* 2009). Examples are the Limburg pottery site of Kesseleik at 30 km and the LBK-Rössen sites of Echt-Annendaal and Veen (Kr. Moers) in the German Rhineland at resp. 15 and 25 km (Modderman 1974; Brounen 1985; Hinz 1974).² This 30 km zone is interpreted as a modest expansion of LBK ‘home range’ over the coversand landscape to the north of the loess, especially during the final stages of the LBK, with cattle herding as the major drive, in view of the restricted ecological possibilities within the loess zone (Bakels 1978, 141). This would fit very well with the increased population and the increased need for suitable grazing in that stage on the one hand, and the final LBK dating evidence of these sites on the other hand.

Some tens of typical flint arrowheads have been found all over the Limburg Meuse Valley up to over 100 km distance from the LBK cluster of the Graetheide Plateau. The most plausible explanation is that they reflect hunting activities, but it is impossible to tell whether the hunters were the Bandkeramik people themselves or indigenous groups, who had in some way acquired Bandkeramik hunting equipment. After the inventory was made (1987) a discussion about the possible Late Mesolithic origins of these typical asymmetric points arose, making a scrutiny of the selected arrowheads advisable. The very characteristic LBK arrowhead from Hardinxveld *Polderweg*, made on a Rijckholt type flint blade, with inverse retouch at its base, as it should be and securely dated to 5500-5300 cal BC demonstrates, however, that these far reaching contacts are real and started at an early stage (Van Gijn *et al.* 2001a; De Grooth 2008 for a detailed review of the evidence).

There is at last a thin but wide spread of LBK adzes all over the northern plain (Verhart 2000; in prep.). These adzes are the most intriguing. The idea

2. The composition of the relatively rich find complex of Montfort II (Newell 1970), comprising amongst others four small adzes, should, however, not be considered reliable (pers. comm. L.B.M. Verhart).

that they are male prestigious objects in LBK society is based on their predominant occurrence in adult male graves. It is assumed for good reasons that the adzes were subject to exchange in a social network of those LBK adult males, since they were made from ‘exotic’ – at least non-local – stone, like amphibolite, basalt and (in the later phases) lydite/phtanite and since no production refuse or blanks have been found in the Limburg and Rhineland settlements. It is remarkable that these valued and prestigious implements in some process found their way outside the LBK society itself. One option is that they reflect LBK burials of hunters who perished during a hunting party, or intentional depositions, like these are known from the LBK territory itself (Bakels & Hendriks 1999). The most plausible and generally accepted explanation is, however, that the LBK exchange networks were extended to the north, to include adult males of the ‘other party’, the hunter-gatherers of the northern plain. As such the adzes are the first stage of the much wider and more intensive distribution of the later perforated implements of the Großgartach and Rössen cultures. It is unlikely that these highly valued objects were simply lost or deposited as a burial gift. Burials from this period are very rare in the northern plain and those known lack any grave gifts. The LBK adzes will have been intentionally deposited in the landscape, just like their successors, the Rössen wedges.

An important document is the first phase of the Hardinxveld *Polderweg* site in the river area, 110 km from the loess margin and dated to the period around 5400 cal BC (Louwe Kooijmans 2001a; new calibrations in Mol & Van Zijverden 2007). There are quite a few undeniable southern links in the rich assemblage: a few GQW flakes and blades, the LBK point mentioned above, some small pieces of pyrite and a series of large angular stones, one of which a Rijckholt type flint precore. This site clearly shows us that the Late Mesolithic north-south connections continued into the contact period and covered the South Limburg region and probably included the LBK communities. The rather bulky raw stone material is the main reason to assume expeditions to the south, with water transport along the Limburg Meuse corridor as an interesting option, be it that the canoe evidence so far seems to be suited better to local than to long distance use (Louwe Kooijmans & Verhart 2007).

LBK pottery is as yet not found to the north of the 30 km zone, mentioned above, which implies that domestic activities were restricted to that zone and that the mechanism behind the spread of the arrowheads and adzes indeed should be viewed as reflecting individual mobility. There are, however, several small surface complexes of pottery beyond the 30-km-zone identified as so-called *Begleitkeramik*. They suggest that not only LBK and Limburg played a part in the communication, but a third party as well, especially since finds have been made as far north as the Veluwe district in the central Netherlands (Brounen & Hauzeur this volume). The attribution to La Hoguette does, however, not automatically imply an earlier date (*i.e.* pre-LBK). First, typical La Hoguette pottery was not only found isolated at Sweikhuizen (Modderman 1987) but in later LBK context as well at Geleen *Nijssenstraat*, Liège *Place-Saint-Lambert* and Ittervoort *Damszand* (Brounen & Vromen 1990; Van der Sloot *et al.* 2003; Brounen *et al.* this volume). Second, the decorative motifs – especially the remarkable so-called sun-motif on one of the Ede *Frankeneng* pots (Brounen *et al.* this volume) – have their counterparts in Blicquy-complexes of Hainaut (Constantin & Demarez 1984) and the final LBK-complex of Maastricht *Klinkers* (Theunissen 1990) which altogether give dates around 4900 cal BC. Applying the same argument as for the ceramic LBK sites within the 30-km-zone would imply that these modest pottery scatters far north of the loess would reflect the presence of a community with a distinct ceramic tradition, rooted in La Hoguette. It would have had hardly any contact with the LBK of the loess zone (in contrast to the Limburg tradition) but shows a northward expansion as far as the central Netherlands. It is this ceramic tradition, which most directly may have inspired the indigenous hunter-gatherers, in addition to the hearsay on the LBK pots by hunters returning from southern expeditions. We must, however, realize that this ‘explanation’ would be valid for the Lower Rhine Area only and not hold for the very similar early pottery styles farther to the east of the North European Plain. The most intriguing evidence for direct inspiration are the remains of a few pots with strong Blicquy (bone temper and decoration) and Großgartach (double perforated lugs) affinities in phase 2 of Hardinxveld *De Bruin* (Raemaekers 2001b), now dated to *c.* 5000 cal BC after revision of the calibration (Mol & van Zijverden

2007). How did these vessels travel so far north? Again water transport along the Meuse corridor is an attractive option. It led exactly to a region where both traditions met: Blicquy in the Hesbaye, Großgartach in the Aldenhoverner Platte region.

The material evidence of contact is found exclusively in the northern spheres. There are no archaeological traces of northern contacts documented in LBK settlement context. It has been argued that the presumed Late Mesolithic ‘De Leien-Wartena industry’ has much in common with the LBK flint working tradition, but this has been refuted later with good arguments (Verhart 2000). The similarities are restricted to the less characteristic artefact types and the ‘DLW complexes’ in the Meuse Valley appeared to be Mesolithic-Michelsberg palimpsests. There are no Mesolithic elements in the LBK flint industry (which is the only domain on which we have information about both communities) and there are no microliths in LBK context. So one may wonder what went the other direction. It must have been something equally valuable as the adzes. One suggestion is: admission, *i.e.* permission to enter and make use of the ‘northern territories’. This would fit the model of peaceful contacts across a static frontier. Another option is the supply with perishable woodland products like fur, honey and ‘bush meat’. A third option is women. That would fit to the asymmetrical relation postulated by Zvelebil and his idea of hypergyny, that is the unidirectional marriage of hunter’s women into the farmer’s communities (Zvelebil 1998). That local people merged into the LBK population is documented by strontium analysis of human skeletal material from late LBK cemeteries in the Rhineland, but the process appears not to have been restricted to women (Price *et al.* 2001). Another argument is found in the occurrence of ‘atypically decorated pottery’ other than Limburg ware in some LBK contexts, especially the Geleen *Janskamperveld* site (Van de Velde this volume).

The north-south relations were intensified in post-LBK times, as is reflected by the denser and wider spread of the typical *hohe durchlochte Schuhleistenkeile* and *Breitkeile* of the Großgartach and Rössen cultures (Van der Waals 1972; Sherratt 1990; Verhart 2000; in prep.). The high density can be seen as related to a longer time span involved and optional an intensification of the practice of intentional deposition, but the distribution shows at any rate an in-

creased extent of the supposed exchange network. No such adzes or fragments were found at the Hardinxveld sites, but long flint blades and the presence of non-local pottery related to Blicquy and Großgartach document the continuation of the southern contacts at *De Bruin* phases 2 and 3, between 5000 and 4500 cal BC (Van Gijn *et al.* 2001b; Raemaekers 2001).

The northern communities became acquainted with the polished axe technology by the acquisition of the finished Danubian implements. They merged this knowledge with the existing tradition of pecking stone, as seen in the so-called *Geröllkeule* (‘pebble mace-heads’ with hour glass perforation), generating the *Walzenbeil* axe types and *Spitzhauen* (Verhart 2009; in prep.). The northern hunters may themselves not have observed or experienced the sawing and drilling that were essential techniques in the production of the shaft hole implements, although the rare failed preform for two adzes at Maastricht *Randwijck* shows that at least some of the adzes were made locally in the Dutch loess zone in Rössen times (Louwe Kooijmans 2005, fig. 12.7). Quite similarly, pottery as such was observed and perhaps even taken along, but less likely its production process.

3. CERAMISATION

Around 5000 cal BC various groups in the western part of the North European Plain started to make pottery in a distinct, simple native style, on which basis the ‘Swifterbant culture’ has been defined. The earliest pottery has been dated to a stage around 5000 cal BC at Hardinxveld *Polderweg* phase 2 (Mol & Van Zijverden 2007), and there are several complexes with dates in the early centuries of the fifth millennium: Hoge Vaart, Bronneger, Hardinxveld *De Bruin* and Doel *Deurganckdok* (Peeters this volume; Raemaekers & De Roever this volume; Crombé this volume). A parallel development took place in the western Baltic area. The ceramic phase of Danish Ertebølle pottery is generally dated from 4700 cal BC onward (Andersen 2008; this volume). The start of the Jarbock phase, the first ceramic phase in the Mecklenburg Baltic coastal region, around 4750 cal BC is synchronous with the start of the ceramic phase of Ertebølle. In recent years complexes with earlier dates, have been reported from the German Baltic coastal regions, especially Schlamersdorf (*c.*

sample	material	lab no.	BP date	$\delta^{13}\text{C}$	cal BC
Bronneger					
<i>Kroezenga et al. 1991; Lanting 1992; Raemaekers 1999, 108</i>					
antler 1	antler	OxA-2909	5720 ± 90		4700-4400
pot	charred crust	OxA-2908	5890 ± 90		4900-4600
antler 2	antler	OxA-2910	5970 ± 90		5000-4700
mean			5860 ± 55		4850-4550
Ede-Rietkamp					
<i>Hulst 1993; Raemaekers 1999, 98</i>					
pottery	organic temper		6050 ± 110		5200-4600
Hoge Vaart, selection (3 of 23 dates)					
<i>Peeters & Hogestijn 2002; Peeters 2007, 338</i>					
92-S902, hearth (youngest date)	charcoal	UtC-4621	5710 ± 50	-25,5	4700-4450
49-S3, hearth	charcoal	UtC-4615	5810 ± 50	-23,5	4800-4550
192-S903, hearth (oldest date)	charcoal	UtC-4626	5976 ± 48	-26,3	5000-4700
Doel-Deurganckdok, zone B					
<i>Crombé et al. 2002, 2003; Bats et al. 2003</i>					
pottery	charred crust	KIA-12260	5890 ± 35	-28,03	4950-4750
pottery	charred crust	KIA-14339	5835 ± 35	-27,02	4800-4600
pottery, NW concentration	charred crust	KIA-20232	6015 ± 30	-25,21	5000-4800
hazelnut	charred shell	NZA-12076	5220 ± 55		4250-3950
Doel-Deurganckdok, zone J concentration C1					
<i>Bats et al. 2003</i>					
pottery	charred crust	KIA-20207	5900 ± 45	-26,08	4900-4700
pottery	charred crust	KIA-20233	5915 ± 45	-26,85	4900-4700
Hardinxveld-Polderweg, phase 2					
<i>Louwe Kooijmans & Mol 2001</i>					
3510, oak tree	dendro date	-	-	-	4972 ± 6
18-1-1, t.a.q.	macroremains	GrA-9800	5780 ± 50	-28,14	4800-4500
3026 pottery	charred crust	GrA-11829	6130 ± 50	-29,33	5250-4850
3288 pottery	charred crust	GrA-11841	6140 ± 50	-28,08	5250-4850
24038 human skull	human bone	GrA-11830	6170 ± 60	-24,32	5300-4950
11/783 macro remains	uncharred alder seeds	GrA-9802	6050 ± 50	-27,07	5050-4800
11/818 macro remains, t.p.q.	uncharred Cornus seeds	GrA-9798	6320 ± 50	-25,86	5400-5100
Hardinxveld-De Bruin					
<i>Mol & Louwe Kooijmans 2001</i>					
phase 2 (end)					
20.695 pottery	charred crust	GrA-13315	6070 ± 50	-28,17	5200-4800
20.696 pottery	charred crust	GrA-13313	6090 ± 50	-27,44	5200-4800
DB 3 macro remains	uncharred botanical	GrA-14864	5685 ± 50	-27,51	4700-4400
13.250 macro remains	uncharred botanical	GrA-13278	5730 ± 50	-28,33	4700-4450
phase 2					
20.693 pottery	charred crust	GrA-13318	6100 ± 50	-27,12	5200-4800
DB 4 macro remains	uncharred botanical	GrA-15034	6010 ± 55	-27,37	5000-4750
13.251 macro remains	uncharred botanical	GrA-13296	6050 ± 50	-26,52	5200-4800
DB 5 macro remains	uncharred botanical	GrA-14865	6120 ± 50	-24,23	5200-4900

sample	material	lab no.	BP date	$\delta^{13}\text{C}$	cal BC
phase 2 (start)					
DB 6 macro remains	uncharred botanical	GrA-12304	6170 ± 50	-25,00	5300-4950
Schokland P14 (6 oldest of 19 dates)					
<i>Lanting & Van der Plicht 1999/2000, 55-6; Peeters 2007, 338-9</i>					
pottery	charred crust	UtC-1916	5880 ± 70		4900-4600
pottery	charred crust	UtC-1922	5750 ± 70		4700-4500
pottery	charred crust	UtC-1915	5590 ± 70		4500-4350
pottery	charred crust	UtC-1927	5460 ± 60		4350-4250
pottery	charred crust	UtC-1919	5460 ± 60		4350-4250
pottery	charred crust	UtC-1928	5450 ± 50		4350-4250
Brandwijk L30					
<i>Raemaekers 1999, 201</i>					
Layer 30, dispersed fragments	charcoal	GrN-19073	5670 ± 45		4650-4350

Table 1 Available radiocarbon dates for the Swifterbant culture.

5200 cal BC). These dates are, however, still under discussion since they were measured on samples of charred crusts attached to pottery, which may not be reliable in view of the contribution of fresh water fish and as yet play no role in the periodisation (Hartz & Lübke 2004, esp. 126; Hartz, Lübke & Terberger 2007).

The adoption of pottery production is just one early step of the northern societies on the long road of becoming fully Neolithic. We may call this process the ‘ceramisation’ of the Late Mesolithic society, resulting in both areas in a final, ceramic Mesolithic: the early phase of the Swifterbant culture in the west and the last phase of the Ertebølle culture to the east.

It is considered no coincidence that the period concerned is exactly the phase in which the first agricultural communities spread over the loess zone to the south of the northern plain and developed contacts with their northern neighbours. In the case of a fully autochthonous process, there would be no obvious reason why these peoples would not have started with pottery earlier. The development of pottery and its use is by consequence seen as one aspect of the regional Neolithisation process, the transmission of knowledge and ideas from the farmers in the south to the hunter-gatherer societies in the north. In some way the knowledge of pottery making was introduced relatively early, several centuries before domestic animals and crops would change subsistence and it obviously was not only the technology of pot-

tery making that was transmitted, but, more fundamentally also a new mode of food preparation.

It is striking in this perspective that the early pots of the northern plain seemingly have not much in common with the presumed sources of inspiration, especially not with the ceramics of the *Bandkeramik* and the contemporary Limburg pottery, and only in some aspects (general shape and coiling) with La Hoguette and its *Begleitkeramik*. Detailed accounts on the individual assemblages are published in another context (Louwe Kooijmans in press) and in various contributions to this volume. I restrict myself here to the following concise descriptions.

Bandkeramik (LBK, 5300-4900 cal BC; cf. Modderman 1958-'59, 85, 105; 1988, 111)

LBK pottery is divided in fine and coarse ware. Basic form is the bowl, in the later phases with narrower neck. The fine ware is relatively small, thin-walled, polished and finely decorated. Colours range from dark to light. Temper is invisible. The coarse ware is large(r), thick-walled, with an irregular smooth surface, plain except occasional rows of fingertip impressions. Knob and band lugs are regular features. Colours are in general pale. Temper consists of crushed pottery, with occasional some sand or crushed stone. No coiling is visible, which suggests a construction form a single lump of clay or slabs, possibly in a hammer-and-anvil technique. Only

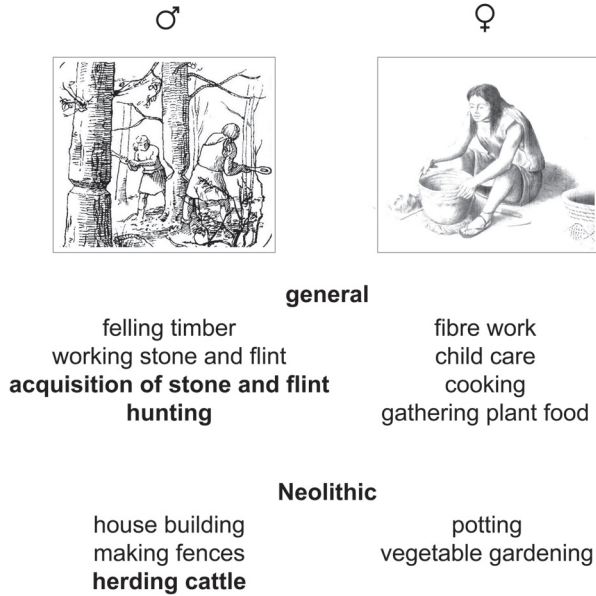


Figure 2 Division of some major tasks between men and women in the Mesolithic and Early Neolithic in the Lower Rhine Area, as suggested in this paper. Activities implying extra-territorial mobility indicated in bold. Vignettes after Nielsen 1981 (left) and Ruoff 1991 (right).

large vessels sometimes show joins between the upper part and the body of the pot.

La Hoguette and Limburg (5500-4900 cal BC; cf. Lüning *et al.* 1989; Modderman 1981)

La Hoguette and Limburg pottery have much in common, but both differ in almost all aspects from that of the LBK. The temper is heterogeneous, with all kinds of admixtures (fibres, chaff, sand, quartz), but most distinct is finely crushed burnt bone, which is, however, not always used. The pots are coil-built, often show 'defective' coils, but this is only occasionally visible at the fractures. The surface colour generally is a distinct and characteristic reddish brown, while the core of the walls are black. The surface is smooth and decorated in techniques and with motives, which are highly distinctive. La Hoguette: a horizontally arranged pattern of low wavy ribs with parallel rows of fine impressions, often with a bidentate instrument (*Doppelstichreihen*). Limburg: a vertically arranged pattern of panels filled with broad groove lines and spatula impressions. While ovoid forms with round to pointed-round bases are most characteristic for La

Hoguette, wide, round-based bowls are typical Limburg. Both often have thick, reinforced rim, made by turning down the lip at the inside, and incidentally knobs or perforated lugs (*Schnurösen*).

Early Swifterbant (5000-5400 cal BC; Raemaekers & De Roever this volume, Peeters this volume)

Early Swifterbant pottery is built of narrow coils, tempered with a variety of materials, like crushed stone or pottery and shortly cut plant fibres, but in some cases temper may be invisible as well. The walls are relatively thick (a mean of 10 mm) and have an uneven surface. Forms are generally S-profiled with rather low flaring rims, or ovoid, and with pointed or round bases. The rims regularly show impressions or incisions (*Randkerbung*). Decoration is scarce and restricted to some rows of impressions and occasional rows of pin pricks.

It is remarkable that the new, native pottery in the north is so different in all aspects from the pottery of the later phases of the *Bandkeramik*. The pots are made in a technique, which is fully different from that of the LBK. They are coil built and tempered with organic material or crushed stone, both alien to the farmer's pots. They differ fundamentally in their style as well, by their pointed bases, flaring rims and the lack of decoration. Was pottery seemingly used in the farmer's world as an important medium to transmit messages on group and personal identity, this does not seem to have been the case in the northern world. It may be that the *Begleitkeramik* played a more distinct role in view of some common characteristics like coiling, the ovoid shape and the pointed bases, but the overall resemblance with that ware are modest.

The original northern pottery style seems to have been deeply rooted in local traditions, since later contacts with the Großgartach, Rössen and especially Blicquy communities did not result in any substantial adoption or change. Alleged Rössen influences on the 'classical' Swifterbant pottery around 4000 cal BC (De Roever 2004) are less likely and problematic from a chronological point of view. A suggestion how to understand these differences will be given in the next paragraph.

4. GENDER ROLES AND THEIR IMPLICATIONS

Neolithisation is not one massive monolithic process, but is the result of interaction between individuals and groups. The process must have been differentiated according to the natural (gender and age) groups distinguished in the societies involved, not only in those of the hunter-gatherers, to be considered as the receiving party, but in the farming society as well. Age groups and gender groups will have been different actors in view of the differences of tasks and the ranges of activities of each, and – consequently – differences in mobility and communication. These premises may help us to better understand the different rates and forms of adoption of ‘domesticates’, here considered to be all material aspects of the Neolithic way of life, technological innovations as well as animals and crops. Central in this approach is the assumed gender-specific division of tasks, with more site-bound activity patterns of women as opposed to the far wider range of the activities of men.

Men’s tasks – in increasing distance from the settlement involved – will have been heavy wood working and construction of houses and fences, clearing land for crop cultivation, cattle herding, hunting and the acquisition of flint and stone for implements and tools and/or the tools themselves. Predominant women’s tasks are amongst others considered to be childcare, food preparation, growing of vegetables, collecting of wild plant food, and working of fibres into utensils and clothing. I suggest that the making of coiled basketry and wickerwork may have been one of the home-bound women’s tasks as well. Most crafts will have been executed in the tribal Mesolithic and Neolithic societies in a domestic production mode for private use, with an option for ad hoc specialization and production for a wider part of the local community for some crafts. Many other jobs are left out of consideration, like working the land, working hides, not because these were not important, but because their attribution is more speculative. That many ‘traditional crafts’ (Seymour 1984) in the West-European society are specialist male jobs is no valid counter argument in view of the different social structure of these societies as compared with the Meso/Neolithic. It must be stressed – in view of the experienced female criticism and even accusation of

sexism – that this division of tasks should not be seen as a kind of ‘natural division’ or ‘fate’ not even as desirable, but just as a generalisation of ethnographically observed general practice, which has enough power to be used as analogy for the prehistoric past. In the past – as in the subrecent present – there will have been exceptions to these ‘rules’, which should, however, not be used to frustrate the application. Wickerwork fish traps for example may have been made and repaired by the users themselves, who more probably will have been male than female (Out 2008 for a review of Dutch fish traps).

Contacts will have predominantly taken place between men of both parties, especially from the hunter’s side, as direct consequence of their general mobility and expeditions. This way they will have obtained direct information, by own observation on aspects as heavy (oak)wood working, house construction and stone technology, have taken this knowledge home and brought it there into practice. This is exactly what is reflected in the archaeological evidence.

The scarce signs for contact discussed above are indeed all related to the male domain of society: the adzes as male symbols of mastering the oak trees used for constructing houses and wells, the arrows as *pars pro toto* for hunting large game and personal defence in what should be considered former native territory. We see a sphere of interaction between males of both ‘parties’ reflected, but mainly one way round, the acquisitions of one (the minor) party in an asymmetrical relationship. This male dominance is continued in the next stages, those of the Großgartach and Rössen cultures up till the final phase of the Neolithisation, as documented at Schipluiden (Louwe Kooijmans & Jongste 2006).

Heavy oak working (wedging) has been attested at Hardinxveld *De Bruin* phases 2 and 3 but not in phase 1 of both Hardinxveld sites (Louwe Kooijmans *et al.* 2001, esp. 447). Knowledge about pottery will have been transmitted indirectly. It is hard to conceive that northern women travelled to LBK villages to be taught the art, and even less that LBK women travelled that far to the north. It is more plausible that they learned the art by hearsay on the La Hoguette and LBK ceramic traditions, and applied their own routine in making containers of fibres or withies to the general principle of making containers of baked clay. It must have been a strong technical

tradition that did not change in spite of the growing contacts and communication over the centuries and that lasted till the end of the Hazendonk group, *c.* 3500 cal BC.

The Swifterbant tradition covers only a modest section of the vast North European Plain, where similar developments from a-ceramic foraging societies to ceramic communities took place in the late 6th and early 5th millennium, as part of an even much wider area, including western Russia and the Ukraine (Timofeev 1998 and contributions to the symposium mentioned in note 1). Pottery of a rather simple morphology was made everywhere, from the Cardial ware and La Hoguette in the west, via the Ertebølle, Narva, Zedmar and Neman cultures south of the Baltic and further east all over Russia down to the Bug-Dnjestr culture. The similarities in overall form – ovoid or with a flaring rim, and with a pointed or a round base – may reflect a parallel need for simple cooking pots and parallel processes in the interaction between the farmers and their neighbours. This is supported by the distinct differences in technology, detailing and decoration. So Swifterbant and La Hoguette have in our study area only the general shape in common, but differ in all other aspects, like temper, firing colour and decoration. There are few or no archaeological indications for wide-ranging connections between these communities.

Coiled basketry or lipwork (German: *Spiralwulstgeflechte*) and wickerwork basketry belong to the widespread ‘traditional crafts’, not only of northern Europe, but worldwide (for instance Seymour 1984, 164-165: Rush and straw work). It is only accidentally preserved, because these products are very perishable. The required long lasting wet conditions are met only in specific regions, which means that their present day archaeological occurrence is in no way representative for their production and use in the past, not in a geographical sense and not in quantitative respect. The most relevant observations are the spectacular impressions of round floor mats in clay at Hoge Vaart phase 2, the same phase as the Early Swifterbant pottery mentioned above (Hamburg *et al.* 2001, 17 & *Afb.* 20; Peeters this volume). No other examples are known from the Low Countries. A millennium and more younger and from evolved Neolithic contexts are the coiled baskets in the Alpine ‘lake dwellings’ like Hornstaad (*c.* 4000 BC) Auvernier *Port* (3800 cal BC) and Arbon *Bleiche*

(dendro dated 3380 BC) and the impressions in clay discs of the Michelsberg culture (Leuzinger 2002; Schlichtherle 1990, 128-130; Lüning 1967, *Tafel* 106).

So, the development of the Swifterbant and Ertebølle styles of pottery may be understood by the development of the need for pots on the basis of a new food preparation mode, the restricted knowledge transfer in the male networks on the technique of potting, the presumed native knowledge system on making fibre mats and containers and the application of this knowledge to clay, in combination with the firing technology. This may after all be conceived as an old idea, like those brought forward by J.H. Holwerda, in line with *e.g.* Carl Schuchardt, as early as 1915 on coiled basketry, Ostrich eggs, gourds etc. as the inspiration of prehistoric pottery in general (Holwerda 1915, 23-33). But basic differences are the archaeological arguments and the specific focus on the earliest northern point-based, coiled pottery. It makes the idea of wide ranging cultural influences, all over the North European Plain, as responsible for the spread of the point-based coil-built pottery style redundant.

5. REFERENCES

- Amkreutz, L.W.S.W. in prep. *Negotiating Neolithisation. A long-term perspective on communities in the process of Neolithisation in the Lower Rhine Area (6000-2500 cal BC)*, PhD thesis Leiden.
- Amkreutz, L.W.S.W., B. Vanmontfort & L.B.M. Verhart 2009. Diverging trajectories? Forager-farmer interaction in two adjacent regions. In: D. Hofmann & P. Bickle (eds), *Creating communities. New advances in Central European Neolithic research*, Oxford, 11-31.
- Andersen, S.H. 2008. The Mesolithic-Neolithic transition in Denmark seen from a kitchen midden perspective: a survey, *Analecta Praehistorica Leidensia* 40, 67-74.
- Bakels, C.C. 1978. *Four Linearbandkeramik settlements and their environment: a paleoecological study of Sittard, Stein, Elsloo and Hienheim*, PhD thesis Leiden (*Analecta Praehistorica Leidensia* 11).
- Bakels, C.C. & W. Hendriks 1999. Bandkeramisches Dechseldepot aus Stein aan de Maas, Niederlande, *Archäologisches Korrespondenzblatt* 29, 317-323.
- Brounen, F.T.S. 1985. HVR 183, vroeg-, midden- en laat-neolithische vondsten te Echt-Annendaal, *Archeologie in Limburg* 24, 66-71.

- Brounen, F.T.S. & H. Vromen 1990. A find of La Hoguette pottery at Geleen (South Limburg, the Netherlands), *Helinium* 30, 36-43.
- Constantin, C. & L. Demarez 1984. Cinq années de fouilles dans le Groupe de Blicquy. In: *Le Néolithique dans le nord de la France et le Bassin parisien. Actes du Colloque interrégional sur le Néolithique tenu à Compiègne (Oise) les 24, 25 et 26 septembre 1982*, (Revue Archéologique de Picardie 1984 1-2), 73-86.
- Gendel, P. 1982. The distribution and utilization of Wommersom-Quartzite during the Mesolithic. In: A. Gob & F. Spier (eds), *Le Mésolithique entre Rhin et Meuse*, Luxembourg, 21-50.
- Gijn, A.L. van, V. Beugnier & Y. Lammers-Keijsers 2001a. Vuursteen. In: Louwe Kooijmans (ed.) 2001a, 119-161
- Gijn, A.L. van, Y. Lammers-Keijsers & R. Houkes 2001b. Vuursteen. In: Louwe Kooijmans (ed.) 2001b, 153-191.
- Grooth, M.E.Th. de 2008. Points of contact. Reflections on Bandkeramik-Mesolithic interactions west of the Rhine, *Analecta Praehistorica Leidensia* 40, 215-234.
- Hamburg, T., C. Kruijshaar, J. Nientker, J.H.M. Peeters & A. Rast-Eischer 2001. Deel 13. Grondsporen: antropogene sporen en structuren. In: J.W.H. Hogestijn & J.H.M. Peeters (eds), *De mesolithische en vroeg-neolithische vindplaats Hoge Vaart-A27 (Flevoland)*, Amersfoort (Rapportage Archeologische Monumentenzorg 79).
- Hartz, S. & H. Lübke 2004. Zur chronostratigraphischen Gliederung der Ertebølle-Kultur und frühesten Trichterbecherkultur in der südlichen Mecklenburger Bucht, *Bodendenkmalpflege in Mecklenburg-Vorpommern* 52, 119-142.
- Hartz, S., H. Lübke & T. Terberger 2007. From fish and seal to sheep and cattle: new research into the process of Neolithisation in northern Germany. In: A. Whittle & V. Cummings (eds), *Going over: the Mesolithic-Neolithic transition in north-west Europe*, London (Proceedings of the British Academy 144), 567-594.
- Hinz, H. 1974. Die Ausgrabungen auf dem Friedhof der vorrömischen Eisenzeit von Veen, Kreis Moers, *Rheinische Ausgrabungen* 15, 243-346.
- Holwerda, J.H. 1915. *Die Niederlande in der Vorgeschichte Europa's, Ausgrabungen und Studien*, (Archives internationales d'ethnographie, Supplement 23).
- Leuzinger, U. 2002. Textilherstellung. In: A. de Capitani, S. Dreschler-Erb, U. Leuzinger, E. Marti-Gradl & J. Schibler (eds), *Die jungsteinzeitliche Seeufersiedlung Arbon Bleiche 3, Funde*, Frauenfeld (Archäologie im Thurnau 11), 115-134.
- Louwe Kooijmans, L.P. 1993. The Mesolithic/Neolithic transformation in the Lower Rhine Basin. In: P. Bogucki (ed.), *Case studies in European prehistory*, Boca Raton, 95-145.
- Louwe Kooijmans, L.P. 1998. Understanding the Mesolithic/Neolithic frontier in the Lower Rhine Basin, 5300-4300 cal BC. In: M. Edmonds & C. Richards (eds), *Understanding the Neolithic of north-western Europe*, Glasgow, 407-427.
- Louwe Kooijmans, L.P. (ed.) 2001a. *Hardinxveld-Polderweg. Een mesolithisch jachtkamp in het rivierengebied (5500-5000 v.Chr.)*, Amersfoort (Rapportage Archeologische Monumentenzorg 83).
- Louwe Kooijmans, L.P. (ed.) 2001b. *Hardinxveld-De Bruin: een kampplaats uit het laat-mesolithicum en het begin van de Swifterbant-cultuur (5500-4450 v. Chr.)*, Amersfoort (Rapportage Archeologische Monumentenzorg 88).
- Louwe Kooijmans, L.P. 2005. Hunters become farmers. Early Neolithic B and Middle Neolithic A. In: L.P. Louwe Kooijmans, P.W. van den Broeke, H. Fokkens & A.L. van Gijn (eds), *The Netherlands in Prehistory*, 249-271.
- Louwe Kooijmans, L.P. 2007. The gradual transition to farming in the Lower Rhine Basin. In: A. Whittle & V. Cummings (eds), *Going over: the Mesolithic-Neolithic transition in north-west Europe*, London (Proceedings of the British Academy 144), 287-309.
- Louwe Kooijmans, L.P. in press. The earliest pottery in the western part of the North German Plain and its inspirations, *Berichte der Römisch-Germanischen Kommission*.
- Louwe Kooijmans, L.P., K. Hänninen & C.E. Vermeeren 2001. Artefacten van hout. In: Louwe Kooijmans (ed.) 2001b, 435-477.
- Louwe Kooijmans, L.P. & P. Jongste (eds), 2006. *Schipluiden-Harnaschpolder, a Middle Neolithic settlement site in the Dutch coastal area, c. 3500 cal BC*, Leiden (Analecta Praehistorica Leidensia 36/37).
- Louwe Kooijmans, L.P. & L.B.M. Verhart 2007. Pebbles and paddles. On Rijckholt flint distribution and water transport in the Mesolithic and Neolithic of the Netherlands. In: B. Hård, K. Jennbert & D. Olausson (eds), *On the Road, studies in honour of Lars Larsson*, Lund, 201-206.
- Lüning, J. 1967. Die Michelsberger Kultur. Ihre Funde in zeitlicher und räumlicher Gliederung, *Berichte der Römisch-Germanischen Kommission* 48, 1-350.
- Lüning, J., U. Kloos & S. Albert 1989. Westliche Nachbarn der bandkeramischen Kultur: die Keramikgruppen La Hoguette und Limburg, *Germania* 67, 355-393.

- Modderman, P.J.R. 1958-'59. Die bandkeramische Siedlung von Sittard, *Palaeohistoria* 6/7, 33-120.
- Modderman, P.J.R. 1974. Die Limburger Keramik von Kesseleyk, *Archäologisches Korrespondenzblatt* 4, 5-11.
- Modderman, P.J.R. 1981. Céramique de Limbourg: Rhénanie-Westfalie, Pays Bas, Hesbaye, *Helinium* 21, 140-160.
- Modderman, P.J.R. 1987. Limburger aardewerk uit Sweikhuizen, gem. Schinnen, prov. Limburg, *Analecta Praehistorica Leidensia* 20, 87-94.
- Modderman, P.J.R. 1988. The Linear Pottery culture: diversity in uniformity, *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* 38, 63-140.
- Mol, J. & W. van Zijverden 2007. Prehistorische woonplaatsen in de dynamische landschappen van de Rijn-Maasdelta. In: R. Jansen & L.P. Louwe Kooijmans (eds), *Van contract tot wetenschap, tien jaar archeologisch onderzoek door Archol BV, 1997-2007*, Leiden. Newell, R.R. 1970. The flint industry of the Dutch Linearbandkeramik. In: P.J.R. Modderman, *Linearbandkeramik aus Elsloo und Stein*, Leiden (Analecta Praehistorica Leidensia 3), 140-183.
- Nielssen, P.-O. 1981. *Stenaldern, Bondestenaldern*, Copenhagen.
- Out, W.A. 2008. Selective use of *Cornus sanguinea* L. (red dogwood) for Neolithic fish traps in the Netherlands, *Environmental Archaeology* 13, 1-10.
- Out, W.A. 2009. *Sowing the seed? Human impact and plant foods in the Dutch wetlands during the Late Mesolithic and Early Neolithic (6000-3500 cal BC)*, PhD thesis Leiden.
- Peeters, J.H.M. 2007. *Hoge Vaart-A27 in context: towards a model of Mesolithic-Neolithic land use dynamics as a framework for archaeological heritage management*, PhD thesis Amsterdam.
- Price, T.D., A. Bentley, J. Lüning, D. Gronenborn & J. Wahl 2001. Prehistoric human migration in the Linearbandkeramik of Central Europe, *Antiquity* 75, 593-603.
- Raemaekers, D.C.M. 1999. *The articulation of a 'New Neolithic'. The meaning of the Swifterbant culture for the process of Neolithisation in the western part of the North European Plain (4900-3400 BC)*, PhD thesis Leiden (Archaeological Studies Leiden University 3).
- Raemaekers, D.C.M. 2001. Aardewerk en verbrande klei. In: Louwe Kooijmans (ed.) 117-152.
- Raemaekers, D.C.M. 2003. Cutting a long story short? The process of Neolithization in the Dutch delta re-examined, *Antiquity* 77, 740-48.
- Roever, J.P. de 2004. *Swifterbant-aardewerk. Een analyse van de neolithische nederzettingen bij Swifterbant, 5^e millennium voor Christus*, PhD thesis Groningen (Groningen Archaeological Studies 2).
- Ruoff, U. 1991. *Leben im Pfahlbau*, Solothurn.
- Schlichtherle, H. 1990. SIEDLUNGSARCHÄOLOGIE IM ALPENVORLAND I. DIE SONDAGEN 1973-1978 IN DEN UFERSIEDLUNGEN HORNSTAAD-HÖRNLE I, BEFUNDE UND FUNDE ZUM FRÜHEN JUNGNEOLITHIKUM AM WESTLICHEN BODENSEE, Stuttgart (Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg 36).
- Seymour, J. 1984. *The forgotten arts, a practical guide to traditional skills*, London.
- Sherratt, A. 1990. The genesis of megaliths: monumentality, ethnicity and social complexity in Neolithic north-west Europe, *World Archaeology* 22, 147-167.
- Sloot, P. van der, F. Damblon, N. Debenham et al. 2003. Le Mésolithique et le Néolithique du site Saint-Lambert à Liège dans leur contexte chronologique, géologique et environnemental. Synthèse des données et acquis récents, *Notae Praehistoricae* 23, 97-104.
- Theunissen, L. 1990. Maastricht-Klinkers, een opgraving op de Caberg, *Archeologie in Limburg* 46, 325-328.
- Timofeev, V.I. 1998. The beginning of the Neolithic in the Eastern Baltic. In: M. Zvelebil, R. Dennell & L. Domańska (eds), *Harvesting the sea, farming the forest*, Sheffield (Sheffield Archaeological Monographs 10), 225-236.
- Vanmontfort, B. 2008. A southern view on north-south interaction during the Mesolithic-Neolithic transition in the Lower Rhine Area, *Analecta Praehistorica Leidensia* 40, 85-97.
- Verhart, L.B.M. 2000. *Times fade away. The neolithization of the southern Netherlands in an anthropological perspective*, PhD thesis Leiden (Archaeological Studies Leiden University 6).
- Verhart, L.B.M. 2009. Interaction, exchange and imitation. Some short and preliminary notes on the distribution of Breitkeile in Belgium and the Netherlands and its implications for the transition from Mesolithic to Neolithic. In: S.B. McCartan, R. Schulting, G. Warren & P. Woodman (eds), *Mesolithic horizons. Papers presented at the seventh International Conference on the Mesolithic in Europe, Belfast 2005*, Oxford, 570-575.
- Verhart, L.B.M. in prep. Adzes, axes and picks: the transition from Mesolithic to Neolithic in the Lower Rhine Basin.
- Verlinde, A.D. & R.R. Newell 2006. A multi-component complex of Mesolithic settlements with Late Mesolithic grave pits at Marienberg in Overijssel. In: B.J. Groenewoudt, R.M. van Heeringen & G.H. Scheepstra (eds), *Het Zandeilandenrijk van Overijssel*,

- Amersfoort (Nederlandse Archeologische rapporten 22), 83-270.
- Waals, J.D. van der 1972. Die durchlochten Rössener Keile und das frühe Neolithikum in Belgien und den Niederlanden. In: J. Lüning (ed.), *Die Anfänge des Neolithikums vom Orient bis Nordeuropa, Teil 5a: westliches Mitteleuropa*, Köln (Fundamenta Reihe A, Band 3), 3-27.
- Zvelebil, M. 1986, Mesolithic prelude and Neolithic revolution. In: M. Zvelebil (ed.), *Hunters in transition: Mesolithic societies of temperate Europe and their transition to farming*, Cambridge, 5-15.
- Zvelebil, M. 1998. Agricultural frontiers, Neolithic origins, and the transition to farming in the Baltic Basin. In: M. Zvelebil, R. Dennell & L. Domańska (eds), *Harvesting the sea, farming the forest*, Sheffield (Sheffield Archaeological Monographs 10), 9-27.
- Zvelebil, M. & P. Rowley-Conwy 1984. Transition to farming in northern Europe: a hunter-gatherer perspective, *Norwegian Archaeological Review* 17, 104-128.

La Hoguette, Limburg and the Mesolithic

Some questions

Claude Constantin, Michael Ilett & Laurence Burnez-Lanotte

ABSTRACT

This article is a contribution to the debate on the significance of the so-called La Hoguette and Limburg pottery traditions, which emerge on the western boundaries of the Linearbandkeramik culture in the 6th millennium cal BC. The authors challenge the hypothesis that these pottery traditions were the product of Mesolithic populations. While there are large numbers of finds of La Hoguette and Limburg pottery from Linearbandkeramik settlements, there are still no firm associations with Mesolithic sites or material. Current evidence therefore suggests that the two pottery traditions are closely connected to the Linearbandkeramik.

KEYWORDS

Mesolithic, Neolithic, pottery, La Hoguette, Limburg, Linearbandkeramik.

1. INTRODUCTION

In our view there is some cause for concern about the way in which quite speculative hypotheses generated by the whole issue of La Hoguette and Limburg pottery are increasingly presented as established facts. One is surprised to read, for example, statements such as the following:

Today, it is widely accepted that La Hoguette pottery is a ceramic tradition which emerged among late hunter/gatherer societies in Western Europe and western Central Europe... (Gronenborn 1999, 138).

Other studies have revealed the presence of forager-herder/horticulturists in Central and

Western Europe prior to the appearance of the LBK... (Price et al. 2001, 593).

No doubt the organisers of the Leiden Workshop had assertions such as these in mind when stating in their introduction that *La Hoguette pottery is now widely accepted as the product of a 'ceramic Mesolithic' or of pastoralists (Vanmontfort et al. 2007, 3)*. Yet, thankfully in our opinion, the organisers immediately go on to say, that *the archaeological data remain very contentious*. It is precisely this contentious aspect that we wish to underline in this short contribution, by recalling what has or has not been reliably established so far, by stressing the Linearbandkeramik (LBK) context of the large majority of finds and by raising some general questions about the nature and origin of La Hoguette and Limburg pottery.

2. THE LA HOGUETTE-LIMBURG POTTERY TRADITION, THE MESOLITHIC AND THE LINEARBANDKERAMIK POTTERY TRADITION

2.1 La Hoguette and Limburg: a long-lasting and widely distributed pottery tradition

Creator of the 'Limburg pottery' concept, Modderman (1970) noted that this pottery, covering a wide area and lasting for a long time, maintains its originality through time and space. Ultimately he employed the term 'pottery tradition' to describe the phenomenon (Modderman 1974; 1982). It is this term that we will use again here, both for Limburg and La Hoguette pottery, and we will begin by underlining the strength and internal coherence of this tradition, traits which might appear surprising if one was to envisage manufacture by a Mesolithic population, even if this was a particularly evolved one. The

tradition can be discussed in terms of technology, vessel shape and decoration.

To deal first with technology, three points must be mentioned. First, bone is used as temper in all this pottery, from the time of the earliest right through to the later LBK, a duration of at least three centuries. Bone temper occurs from Bruchenbrücken (Wetterau, Germany, Lüning *et al.* 1989) to the eponymous site of La Hoguette at Fontenay-le-Marmion (Calvados, France, Jeunesse 1986), a distance of 600 km, and from Rosmeer (Hesbaye, Belgium, Jansens 1974) to Bavans (Doubs, France, Jeunesse 1986), a distance of 350 km. Second, plant temper is also used, from the earliest LBK, in La Hoguette pottery (Lüning *et al.* 1989), to the late LBK of Belgium, in Limburg pottery (Jansens 1974), as well as in the *Begleitkeramik* from areas of the Netherlands outside the loess (information from F. Brounen; Constantin & Kuijper 2002), a distance of over 200 km. Third, throughout the distribution area and for the whole duration mentioned above, La Hoguette and Limburg pottery frequently underwent oxidised firing, implying specific conditions or procedures.

La Hoguette and Limburg pottery show long-lasting and widespread morphological unity. Although there are some variants, such as the height/width relationship and the rounded or slightly pointed bases, the vessels are always bowl-shaped with a slightly inturned upper part.

La Hoguette and Limburg pottery both display specific decoration systems, which are again found over vast areas and for long periods of time:

- The decoration on vessels from Bruchenbrücken and Fontenay-le-Marmion is evidently very similar.
- The two decoration patterns of La Hoguette pottery from Bruchenbrücken (Lüning *et al.* 1989, fig. 4, no. 1 and 2) both occur identically at Bischoffsheim (Bas-Rhin, France, Jeunesse 1987).
- Throughout its distribution area, Limburg pottery is characterised by a single decoration system.

At the same time, a development from La Hoguette to Limburg can be envisaged. Without going into details here – and this could very usefully be the object of further study – there does seem to be a chronological trend in decoration, as is the case with most ce-

ramic traditions. Rosmeer provides key evidence in this respect:

- On this site the Limburg pottery decoration, consisting of parallel grooves (or stab-and-drag lines) bordered by impressions, can be considered as a development from La Hoguette decoration motifs (Modderman 1981, fig. 9 no. 10, fig. 10 no. 1).
- One could even see much of the *Begleitkeramik*, with its slight cordons edged by impressions or short grooved lines, as another development from La Hoguette patterns (Brounen & de Jong 1988). This type of *Begleitkeramik* is also present at Rosmeer (Modderman 1981, fig. 9 no. 8; van Berg 1990, fig. 9 no. 2 and 3).
- The same type of *Begleitkeramik* is associated both with La Hoguette pottery, for example at Niedernai (Bas-Rhin, France, Jeunesse 1987, fig. 6 no.3 and 6), and with Limburg pottery, as at Aysur-Moselle (Moselle, France; information from V. Blouet), thus providing an additional link between the two traditions.

The above remarks can be summarised as follows. La Hoguette and Limburg pottery correspond to a homogeneous and well-established ceramic tradition in terms of technology, decoration and shape. One can identify a coherent development in the decoration system, as might be expected for such a long lasting phenomenon. The distribution area involved covers hundreds of kilometres and the time-depth is several centuries.

2.2 A pottery tradition compatible with Mesolithic society?

Our doubts about the Mesolithic character of this pottery tradition can be expressed through two questions. First, is it likely that pottery produced by Mesolithic groups would be so uniform and stable in character over such considerable distances and for such a long period of time? This seems incompatible with the view shared by specialists of the Mesolithic that lithic cultural traditions did not extend over such vast areas, with in fact quite distinct typological provinces appearing in both the Late and Final Mesolithic (see for example Thévenin 1996 or Marchand 1999).

Second, if one supposes nonetheless that these pottery vessels are manufactured by a Mesolithic population, then it is difficult to understand why a society capable of expressing itself so firmly in terms of material culture would have left no other material traces of its presence. The remains that one would expect to be associated with La Hoguette and Limburg pottery or located in close proximity have yet to be found.

For these reasons we consider that the currently available evidence renders the Mesolithic nature of this tradition doubtful.

2.3 A technological tradition related to the LBK

The question of temper is a culturally significant aspect that needs to be examined further. La Hoguette and Limburg pottery includes two tempering materials : bone – present in La Hoguette pottery then in Limburg vessels – and a plant matter, which occurs in La Hoguette pottery and in some of the *Begleitkeramik*. Both kinds of temper belong to the LBK technological sphere. It is well known that plant temper is quite massively used in the earliest LBK. Bone temper has been identified so far in LBK pottery in a number of places, including the following:

- in Poland on several LBK sites at Brzezic and Targowisko (Rauba-Bukowska 2006),
- in Germany at Bruchenbrücken, in some of the undecorated pottery which is curiously attributed by the excavators – despite the absence of decoration – to La Hoguette (Lüning *et al.* 1989, note 61 and figs. 8-9),
- in Belgium on two sites in Hainaut, in undecorated vessels which can unquestionably be attributed to the LBK, on the basis of shape and handle arrangement: this involves 12% of undecorated vessels at Aubechies *Coron Maton* (Constantin 1985, 109) and 19% at Blicquy-Ormeignies *La Petite Rosière* (unpublished). The same phenomenon has been observed on sites in Hesbaye.

Thus La Hoguette, Limburg and LBK pottery belong, partially at least, to the same technological universe. Supposing that these vessels were made by two different populations (*i.e.* Mesolithic and Neolithic), the shared ways of making use of temper would have required definite contact between these

populations, without which imitation would have been impossible. But there is another logical solution to the problem: the vessels could have been made by a single (*i.e.* Neolithic) population.

3. WHICH POPULATION HANDLED LA HOGUETTE AND LIMBURG POTTERY ?

The situation of La Hoguette and Limburg pottery on the LBK sites where they are present leaves us in no doubt that these vessels were handled and used by the people living in these settlements. Some examples are described below.

3.1 Bruchenbrücken

According to the latest information, which includes the newly excavated areas, La Hoguette pottery is present in 26 pits (Maletschek, this volume). In the original publication of the La Hoguette pottery from the site, based on the earlier excavations, La Hoguette pottery is reported from 17 pits (Lüning *et al.* 1989, 264 and *Beilage* 1). Using the additional information provided in the site monograph (Lüning 1997), one observes that the distribution of La Hoguette sherds generally coincides with the LBK pits showing the highest densities of all categories of finds (Stäubli 1997, fig. 58). Most of these features are lateral construction pits (*Längsgruben*), on one or both sides of 4 of the 7 buildings identified on this part of the site.

3.2 Aubechies-Coron Maton

Limburg pottery is present in 35 out of a total number of 81 LBK pits (Constantin 1985 and unpublished data). These 35 features contain 63 Limburg vessels and 150 decorated LBK vessels. Roughly a quarter of the Limburg vessels are represented by large fragments rather than by single sherds. A small number of situations can be observed in which large fragments of undecorated LBK vessels and Limburg vessels lie closely packed together (fig. 1).

3.3 Cuiry-lès-Chaudardes

This is the most extensively excavated LBK site in the Paris Basin, with a large assemblage of Limburg pottery comprising 119 identifiable vessels. As well

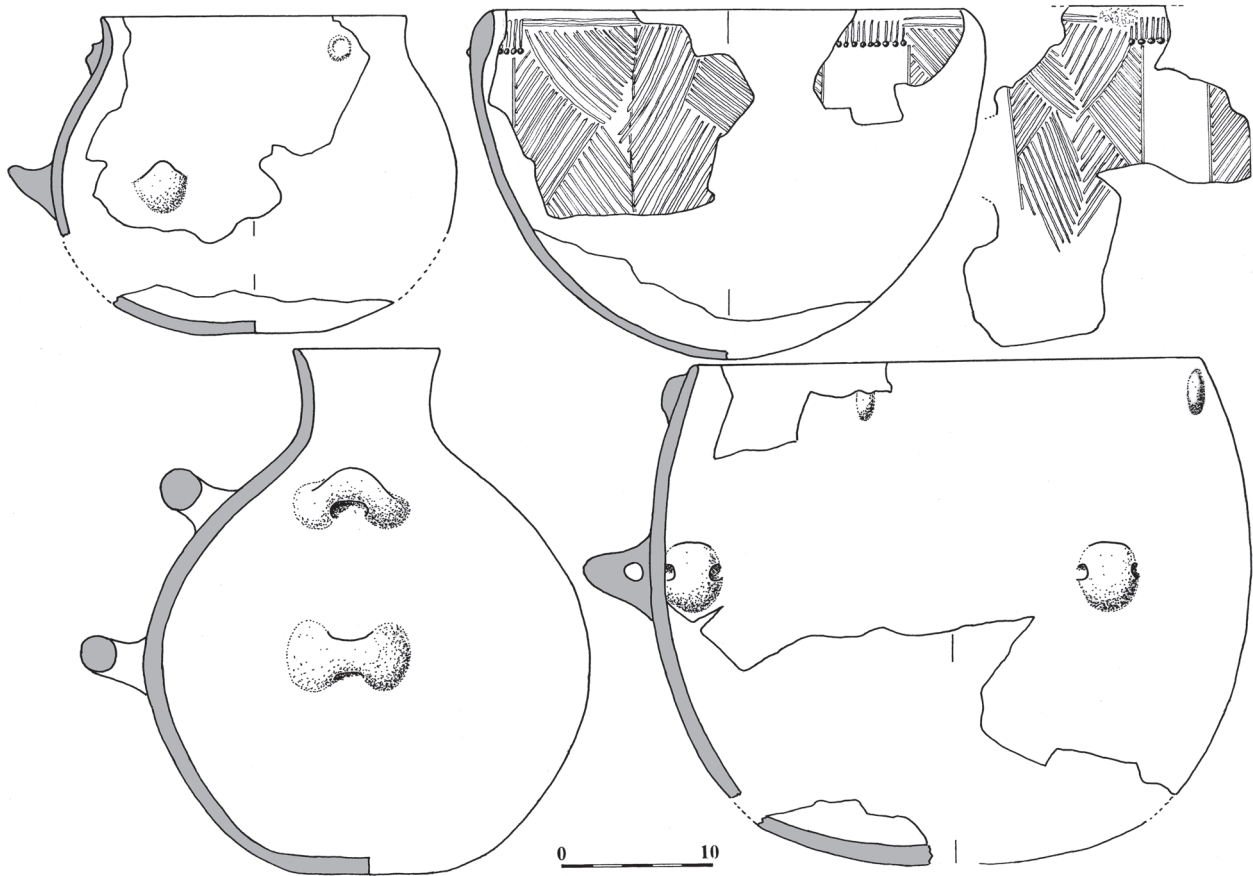


Figure 1 Aubechies (Belgique): Limburg and *Linearbandkeramik* vessels found closely packed together in pit 150. Scale 1:5.

as the numerous LBK features, the site contains over 140 pits dating to the Michelsberg and about 50 Iron Age pits. Except for one small sherd from a Michelsberg pit, all Limburg pottery comes from LBK features. The LBK settlement includes 31 houses with well-preserved lateral pits containing ceramics. Limburg pottery occurs in the pits of 25 of these houses. It also occurs in 12 of the 22 LBK pits on the site that cannot be associated with houseplans. The distribution of the Limburg sherds in lateral pits often coincides with the zones containing the highest densities of other categories of finds. All this contextual evidence demonstrates very clearly that the Limburg pottery was handled and discarded by the inhabitants of the LBK settlement. The Limburg pottery represents a little under 6% of the total number of vessels from LBK features (N=2091). In terms of weight, Limburg sherds account for just under 3% of all pottery from LBK features.

All the above examples show that La Hoguette and Limburg vessels were used and discarded by the occupants of the LBK settlements. If we were to suppose that these occupants included both LBK people and apparently regular Mesolithic visitors, the same question arises: why are there no other artefactual remains of these visits, apart from the quite large numbers of pots?

4. ON LA HOGUETTE POTTERY IN MESOLITHIC CONTEXTS AND ON MESOLITHIC AGRICULTURE

Finds of La Hoguette and Limburg pottery on LBK sites have continuously increased and the number of sites involved stands today at over one hundred. Yet there are still no observed associations between the pottery and Mesolithic artefacts on these sites. Now the supporters of the idea of a Mesolithic origin for

this pottery would clearly like to be able to report its discovery in Mesolithic contexts. They would also be keen to find traces of cereal agriculture in these contexts, because in their view this would make the presence of pottery more acceptable. What is the current state of research?

4.1 La Hoguette pottery in Mesolithic contexts?

We will limit our remarks here to the data available from two sites often mentioned as providing evidence for the La Hoguette-Mesolithic connection.

The first is Stuttgart *Bad-Cannstatt* (Württemberg, Germany; Schütz *et al.* 1991). This site, the excavated surface area of which is only 4 m², has been discussed quite recently by Perrin (2002), as part of a broader analysis of ten possible Mesolithic sites with La Hoguette pottery. As far as Bad-Cannstatt is concerned, he concludes that *...the objective attribution of this assemblage to the Mesolithic depends solely on the presence of fragments of antler harpoons*. For the other sites examined, his conclusion is that *...the association of decorated pottery in La Hoguette style and lithic industry of Mesolithic tradition can on no account be objectively demonstrated in a direct manner, no more so it seems than for Limburg pottery*.

The second site is the Abri de Bavans (Doubs, France, Aimé & Jeunesse 1986; Aimé 1991). Here the claimed association La Hoguette-Mesolithic is based on the study of level 5, a deposit 27 to 40 cm thick with no observed stratigraphic subdivisions. In fact it is the spatial distribution of finds in this level that is used to suggest that the decorated LBK pottery is separate from the La Hoguette sherds. Our first remark is that the description of this distribution by the excavator is far from clear (Aimé 1991): decorated and undecorated LBK pottery are *mainly in the upper part*, while the La Hoguette pottery is *dominant in the lower part* (our accentuation). Furthermore, we would like to quote in detail the analysis of level 5 published by Cupillard *et al.* (1991):

- This level 5 is affected by pollution, and by particular disturbances...the large elongated triangular arrowheads are unquestionably middle Neolithic I and show the downward movement of later material.

- Likewise, Montbani type debitage was found as far as layers later than the early Neolithic, and is found again in contact with Bell Beaker sherds.
- It must be noted, in this respect, that the series from Bavans 5 were first purified by making the middle Neolithic arrowheads disappear (Aimé & Jeunesse 1986), then a second time by opposing a lower assemblage (with La Hoguette sherds and without small arrowheads) and an upper assemblage (with late LBK sherds and with small arrowheads) (Aimé 1987). Elementary prudence prompts us not to accept this kind of procedure, which moreover is explicated neither in the 1986 article, nor in that of 1987.

A final reference can be made at this point to a recent overview of the La Hoguette and Limburg issue, one of the main conclusions of which is that

...unfortunately it is still not possible to link in direct and unambiguous manner La Hoguette pottery and late/final Mesolithic populations (Manen & Mazurié de Keroualin 2003, 120).

Thus there is no firm evidence for the association of La Hoguette pottery and Mesolithic lithic industries. Yet La Hoguette pottery is still occasionally described as having been made by Mesolithic populations:

...this region (the Rhine basin) is in fact occupied by native populations rooted in the Mesolithic tradition of north-west Europe, but distinguishable from contemporary groups through their mastery of the technique of pottery... (Jeunesse 1999).

4.2 Mesolithic agriculture

As far as France is concerned, the first serious claims for very early cultivation of cereals were put forward by Richard (1994), making reference to the anthropogenic indicators in pollen as defined by Behre (1981). Following work on a number of sites in the Jura, Richard then went on to propose the existence here of a precocious Neolithisation phase, dating to 5500 cal BC (Richard 1997). Over the next few years similar discoveries were announced by various researchers in quite a wide range of regions, including

Brittany, the Paris Basin, central France and the Mediterranean littoral (Richard 2004). At the same time, comparable finds were announced in other parts of Europe.

Now Behre himself has recently reacted in a highly critical manner to all these studies, expressing severe doubts about 'Mesolithic agriculture' (Behre 2007). He generally makes a plea for prudence, and the main points of criticism can be summarised as follows:

- The distinction between cereal pollen and wild grass pollen is practically impossible.
- The studies accept the presence of *Cerealia*-type pollen in the part of the pollen diagrams that corresponds to the Late Mesolithic, but curiously ignore this pollen type when it occurs at even earlier periods such as the Boreal or Late Glacial.
- The studies lend too much importance to ruderals as anthropogenic indicators, since they occur naturally in some small open biotopes.
- There have been no finds of actual cereal grains on Mesolithic sites in these regions.

The overall conclusion is that *there is no evidence of Mesolithic agriculture in the area in question*, that is to say central, western and northern Europe (Behre 2007, 215).

As regards the sites studied by Richard, we would like to add a further comment about dating. In a recent publication the chronological position of the Chalain (508 m altitude) pollen diagram is apparently well supported by two radiocarbon dates (Richard & Ruffaldi 2004, fig. 5). This is not the case however with a number of previously published analyses, for which some diagrams have no dates at all, or dates that are incoherent or rejected (Chalain 490 m altitude, Mouthe II 960 m altitude; Richard 1997, fig. 3). In this situation the diagram is positioned in time by means of established chronozone markers such as the highest values for yew. The same technique is used with the Méjean diagram, for which the radiocarbon dates were rejected because they were *either incoherent, or did not match the vegetation known regionally for the chronozone* (Puertas & Richard 2003, 86). We could venture to suggest that the anomalous radiocarbon dates simply reflect disturbed parts of the cores, which would of course have implications for the overall reliability of the diagrams.

5. CONCLUSION

In the current state of research there is thus very little evidence indeed to support the 'widely accepted' idea that La Hoguette pottery was the product of a 'ceramic Mesolithic', however attractive this idea might appear. We have tried here to draw attention to a number of outstanding problems. The main questions raised and the points made can be summarised as follows:

- Is the long-lasting, widespread and coherent La Hoguette pottery tradition really compatible with Mesolithic groups?
- What are the technological links between this pottery tradition and the LBK pottery tradition?
- The La Hoguette and Limburg pottery was clearly used and discarded by the occupants of LBK settlements.
- Associations between La Hoguette or Limburg pottery and Mesolithic lithic material are still to be discovered.

Ultimately, we feel it would be a mistake to rule out the possibility that the La Hoguette and Limburg pottery traditions may actually be components of the Linearbandkeramik itself.

6. REFERENCES

- Aimé, G. 1987. Les abris sous roche de Bavans (Doubs), couches 4 et 5, *Revue Archéologique de l'Est* 38, 397-403.
- Aimé, G. 1991. Les niveaux mésolithiques de Bavans dans le contexte jurassien. In: *Mésolithique et néolithisation en France et dans les régions limitrophes, Actes du 113^e congrès national des sociétés savantes, Strasbourg 1988*, Paris (Comité des Travaux Historiques et Scientifiques), 323-345.
- Aimé, G. & C. Jeunesse 1986. Le niveau 5 des abris sous roches de Bavans (Doubs) et la transition Mésolithique récent/Néolithique dans la moyenne vallée du Doubs. In: A. Chancerel *et al.* (eds), *Actes du 10^e colloque interrégional sur le Néolithique, Caen 1983*, Rennes (Revue archéologique de l'Ouest, supplément n° 1), 31-40.
- Behre, K.-E. 1981. The interpretation of anthropogenic indicators in pollen diagrams, *Pollen and Spores* 23, 225-245.

- Behre, K.-E. 2007. Evidence for Mesolithic agriculture in and around central Europe? *Vegetation History and Archaeobotany* 16, 203-219.
- Berg, P.-L. van 1990. Céramique du Limbourg et néolithisation en Europe du Nord-Ouest. In: D. Cahen & M. Otte (eds), *Rubané et Cardial, Actes du colloque de Liège 1988*, Liège (Études et Recherches Archéologiques de l'Université de Liège 39), 161-208.
- Brounen, F.T.S. & J.P.M. de Jong 1988. Opmerkelijke vroeoneolithische vondsten bij Gassel, gem. Beers, *Westerheem* 37, 183-192.
- Constantin, C. 1985. *Fin du Rubané, céramique du Limbourg et Post-rubané, le Néolithique le plus ancien en bassin Parisien et en Hainaut*, Oxford (BAR International Series 273).
- Constantin, C. & W.J. Kuijper 2002. Utilisation de mousse comme dégraissant dans des céramiques néolithiques de France et de Belgique, *Bulletin de la Société Préhistorique Française* 99, 775-783.
- Cupillard, C., P. Pétrequin, J.-F. Piningre & H. Richard 1991. La néolithisation du Jura. In: *Mésolithique et néolithisation en France et dans les régions limitrophes, Actes du 113^e congrès national des sociétés savantes, Strasbourg 1988*, Paris (Comité des Travaux Historiques et Scientifiques), 347-387.
- Gronenborn, D. 1999. A variation on a basic theme: the transition to farming in southern central Europe, *Journal of World Prehistory* 23, 123-209.
- Jansens, D.M. 1974. *Het vroeeg-neolithisch vaatwerk van de Staberg te Rosmeer (B. Li.)*, unpublished Master's thesis, Ghent University.
- Jeunesse, C. 1986. Rapports avec le Néolithique ancien d'Alsace de la céramique 'danubienne' de La Hoguette (à Fontenay-le-Marmion, Calvados). In: A. Chancelerel et al. (eds), *Actes du 10^e colloque interrégional sur le Néolithique, Caen 1983*, Rennes (Revue archéologique de l'Ouest, supplément n° 1), 41-50.
- Jeunesse, C. 1987. La céramique de La Hoguette, un nouvel 'élément non rubané' du Néolithique ancien de l'Europe du Nord-Ouest, *Cahiers Alsaciens d'Archéologie, d'Art et d'Histoire* 30, 5-33.
- Jeunesse, C. 1999. Le néolithique ancien danubien. In: J. Evin, C. Oberlin, J.-P. Daugas & J.-F. Salles (eds), *3^e Congrès International ¹⁴C et Archéologie Lyon 1998*, Paris (Mémoire de la Société Préhistorique Française 26), 459-461.
- Lüning, J., U. Kloos, & S. Albert 1989. Westliche Nachbarn der bandkeramischen Kultur: La Hoguette und Limbourg, *Germania* 67, 355-393.
- Lüning J. (ed.) 1997. *Ein Siedlungsplatz der Ältesten Bandkeramik in Bruchenbrücken, Stadt Friedberg/Hessen*, Bonn (Universitätsforschungen zur Prähistorischen Archäologie 39).
- Marchand, G. 1999. *La néolithisation de l'Ouest de la France, caractérisation des industries lithiques*, Oxford (BAR International Series 748).
- Manen, C. & K. Mazurié de Keroualin 2003. Les concepts 'La Hoguette' et 'Limbourg': un bilan des données. In: M. Besse, L.-I. Stahl Gretsche & P. Curdy (eds) *ConstellaSion, Hommage à Alain Gally*, Lausanne (Cahiers d'Archéologie Romande 95), 115-145.
- Modderman, P.J.R. 1970. *Linearbandkeramik aus Elsloo und Stein*, Leiden (Analecta Praehistorica Leidensia 3).
- Modderman, P.J.R. 1974. Die Limburger Keramik von Kesseleyk, *Archäologisches Korrespondenzblatt* 4, 5-11.
- Modderman, P.J.R. 1981. Céramique du Limbourg: Rhénanie-Westphalie, Pays-Bas, Hesbaye, *Helinium* 21, 140-160.
- Modderman, P.J.R. 1982. Éléments non-rubanés du Néolithique ancien entre les vallées du Rhin inférieur et de la Seine, VII conclusion générale, *Helinium* 22, 272-273.
- Perrin, T. 2002. La fin du Mésolithique dans l'arc jurassien: approche statistique des industries lithiques taillées, *Bulletin de la Société Préhistorique Française* 99, 487-499.
- Puertas, O. & H. Richard 2003. Impact de l'homme sur le couvert végétal entre environ 6300 et 3400 cal. BC d'après l'analyse pollinique des sédiments lagunaires de l'étang de Méjean (Hérault, France). In: B. Vandermeersch (ed.), *Echanges et diffusion dans la préhistoire méditerranéenne*, Paris (Éditions du Comité des travaux historiques et scientifiques), 83-89.
- Price, T.D., A. Bentley, J. Lüning, D. Gronenborn & J. Wahl 2001. Prehistoric human migration in the *Linearbandkeramik* of Central Europe, *Antiquity* 75, 593-603.
- Rauba-Bukowska, A. 2006. *Mineralogical examination of Neolithic pottery (Linear Band Pottery Culture) from Southern Poland*. Poster: European Association of Archaeologists, 12th annual meeting, Krakow, Poland.
- Richard, H. 1994. Indices polliniques d'une néolithisation précoce sur le premier plateau du Jura (France), *Comptes Rendus de l'Académie des Sciences* 398, 993-999.
- Richard, H. 1997. Indices polliniques de néolithisation du massif jurassien aux VI^e et Ve millénaires, *Quaternaire* 8, 55-62.
- Richard, H. (ed.) 2004. *Néolithisation précoce. Premières traces d'anthropisation du couvert végétal à partir des données polliniques*, Besançon (Annales Litté-

- raires de l'Université de Franche-Comté 777, série Environnement, Sociétés et Archéologie 7).
- Richard, H. & P. Ruffaldi 2004. Premières traces polliniques d'influence de l'homme sur le couvert végétal de l'Est de la France. In: H. Richard (ed.), 117-125.
- Schütz, C., H.-C. Strien, W. Taute & A. Tillmann 1991. Ausgrabungen in der Wilhelma von Stuttgart-Bad Cannstadt: die erste Siedlung der altneolithischen La-Hoguette-Kultur. In: *Archäologische Ausgrabungen in Baden-Württemberg 1991*, Stuttgart, 45-49.
- Stäuble, H. 1997. Häuser, Gruben und Fundverteilung. In: J. Lüning (ed.), *Ein Siedlungsplatz der Ältesten Bandkeramik in Bruchenbrücken, Stadt Friedberg/Hessen*, Bonn (Universitätsforschungen zur Prähistorischen Archäologie 39), 17-150.
- Thévenin, A. 1996. Mésolithique récent et Mésolithique final entre Bassin Parisien et Alpes et perspectives sur les processus de néolithisation. In: P. Duhamel (ed.), *La Bourgogne entre les bassins rhénan, rhodanien et parisien: carrefour ou frontière?*, Dijon (Actes du 23^e colloque interrégional sur le Néolithique, Revue Archéologique de l'Est, supplément 14), 9-27.
- Vanmontfort B., L. Amkreutz, L.P. Louwe Kooijmans & L.B.M. Verhart (eds), *Early Pottery Traditions in the Lower Rhine Area* (Workshop Leiden University, 16th and 17th of February 2007).

The cannellured version of *Begleitkeramik*

A survey of finds and sites

Fred T.S. Brounen & Anne Hauzeur

ABSTRACT

A relatively small, but regarding their properties rather consistent number of Early Neolithic sherds, representing about 25 geographically scattered sites, is isolated from the larger non-Bandkeramik corpus and described. Their geographical distribution largely matches the Rhine-Meuse style group of Limburg pottery, as for the greater part do the contexts in which the finds were made. Yet, a few sites produced plausible evidence for a close relationship to La Hoguette. Others provide a glance on the accompanying flint industry.

KEYWORDS

Begleitkeramik, La Hoguette, cannellure decoration.

1. INTRODUCTION

Shortly after the introduction of the La Hoguette concept, Christian Jeunesse (1986, 1987) signalled the presence of potsherds in Early Neolithic assemblages from eastern France (fig. 1), differing noticeably from the classic La Hoguette pottery decorated with a multi-dented spatula. True enough, a similar ornamentation existed in the corpus of Limburg pottery (Schmidgen-Hager 1993a, 1993b), which typologically might have grown a bit motley and capacious at the time.¹ For those finds the question could be raised whether they should be regarded as La Hoguette too, or as representatives of a third non-Bandkeramik group (Jeunesse 1987). Numerically – con-

sidering both sherds and sites – still modest, the ambiguous pottery group provisionally was named *Begleitkeramik* (*c eramique d’accompagnement*; Jeunesse & Sainty 1991; Jeunesse 1994). This specific term till then had predominantly been used in reference to the much younger Bell Beaker culture, *c.q.* Bell Beaker Complex (BBC; Besse & Strahm 2001), designating the undecorated component in pottery assemblages from settlements and later on graves (common ware; domestic ware; utilitarian ware). Along the same lines Jeunesse and Sainty (1991) suggested that it might concern the simple, everyday ceramic, should a La Hoguette ‘culture’ exist (Jeunesse 1994). In contrast to the BBC, however, the Early Neolithic *Begleitkeramik* was decorated and may thus be considered a ‘cultural marker’.

The identification of a *Begleitkeramik* sherd was the outcome of a process of elimination: (a part of) the associated finds dated from the Early Neolithic and the presence of at least one La Hoguette sherd was required, but the fragment in question could itself not unequivocally be attributed to the Bandkeramik, Limburg or La Hoguette. It more or less was a remainder, different but without an ‘identity’ of its own.

Jeunesse came across four types of decoration that could be lumped together as *Begleitkeramik*. In the review in hand we will confine ourselves to one of these types, consisting of a series of adjacent shallow, wide cannellures, adorned with rows of simple elongated stabs (see below). It occurs comparatively often, has distinguishing features and geographically has a wide area of distribution. Moreover, a few examples were found at sites where they gave meaning to the concept of *Begleitkeramik* in the real sense of the word. In an unpublished paper by Belland *et al.* (1995; Fritsch 2000c) such sherds were referred to as

1. Though increasingly the quasi abbreviated term Limburg pottery is used, it should be noted that P.J.R. Modderman (1968, 67; 1970) named it Limburger pottery, *i.e.* with the suffix ‘er’.

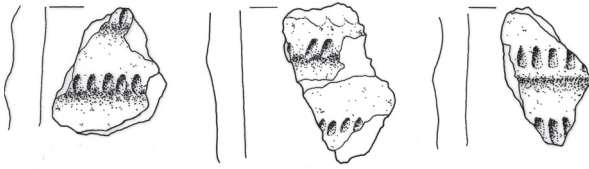


Figure 1 Bischoffsheim *le Village*. Selected non-Bandkeramik elements. Scale 2:3. Drawing R. Timmermans (after Jeunesse & Sainty 1991).

‘cannelured ware’, a term we gladly adopt to designate this particular type of *Begleitkeramik*.

In the last two decades the number of sites and the distribution area of cannelured ware have increased (fig. 2) and like others the authors now and again have come across yet unknown finds in the course of surveys and studies (Brounen 1999; Hauzeur 2006). The workshop on Early Pottery in the Lower Rhine Area (Leiden, February 2007) was the occasion to combine data and present a preliminary picture.

2. A BRIEF HISTORY

Fragments of cannelured ware probably for the first time were described and depicted by Gudrun Loewe (1971), reporting on the site of Brügggen-Bracht 8/*west*. In those days the ‘non-Bandkeramik’, apart from Buttler’s *Importgruppen I and IV* (Buttler & Haberey 1936) that had only just been renamed by Modderman (1968; 1970), was a phenomenon scarcely known.² The sherds under consideration (fig. 3) were not linked to the Mesolithic flint artefacts they had been found amidst; they were identified as originating from a ‘*Becher*’ (Loewe 1971). Presumably the author was referring to Late Neolithic Beaker pottery, since the pieces seem too small for a morphologically induced designation.³

In terms of discovery, the oldest finds (fig. 4) were made in 1937 at Venlo *Ossenberg*. Lacking an adequate frame of reference, a describer tentatively dated them in the Late Neolithic too.⁴ Even before 1971,

2. For example: the same sherds (Helden-Kessel = Kesseleik) Modderman in 1968 named Limburg pottery, a few years earlier (Modderman 1965) were compared to Buttler & Haberey’s *Importgruppe 1*.

3. Loewe certainly was acquainted with Late Neolithic pottery, as she wrote a thesis on *Schnurkeramik* (1943).

during the 1952-1966 excavations at Rosmeer *Staberg* (Roossens 1962), similar potsherds (fig. 5) were found in an evidently Early Neolithic context, but somehow failed to draw wider attention. In the eighties of the 20th century the greater part of the fragments unearthed in previous decades was published (Modderman 1981, fig. 9 and 10), while ongoing excavations yielded new ones (Rousselle 1981; 1984; Boelicke *et al.* 1988; Schmidgen-Hager 1993a; 1993b). Sporadically sherds were discovered beyond Bandkeramik settlements (Löhr & Ewers-Bartimes 1985; Brounen & De Jong 1988).

The whole, stray-finds and sherds found in association alike, was regarded as an exponent of the Limburg pottery group, typologically influenced at best by La Hoguette (Lüning *et al.* 1989, 389). Jeunesse (1987) tended towards the idea of a La Hoguette connection, but except for a Bandkeramik origin left the door open to other possibilities. More distinct was van Berg’s proposal (1990) to rename sherds with this type of decoration and lump them together with La Hoguette, a suggestion reportedly disputed by Jeunesse (Le Brun-Ricalens & Grisse 1992). His view finally was articulated in the neutral term *Begleitkeramik* (Jeunesse & Sainty 1991), that in later publications was adopted by others (*e.g.* Le Brun-Ricalens 1994, 106; Brounen 1999; Hauzeur & Jost 2003). Fritsch (2000c, 228, following Belland *et al.* 1995) returns to the earlier view and regards ‘*kannelierte Ware*’ as a regional group within the larger Rhine-Meuse style group of Limburg pottery. According to Manen and Mazurié de Keroualin (2003, 136) the notion of *Begleitkeramik* has been abandoned. If this is so, it would mean an interesting parallel to the fall of its Late Neolithic counterpart (*cf.* Besse & Strahm 2001).

3. CHARACTERISTICS

Like other non-Bandkeramik pottery groups, cannelured ware is tempered with organic and/or inorganic material. The mineral component comprises sand (sporadically fine gravel) and/or quartz as well as grog. Small white particles that after macroscopic assessment are considered to be bits of burnt bone oc-

4. An inscription on the old carton they were kept in at the National Museum of Antiquities (Leiden) is saying ‘Bell Beaker?’.

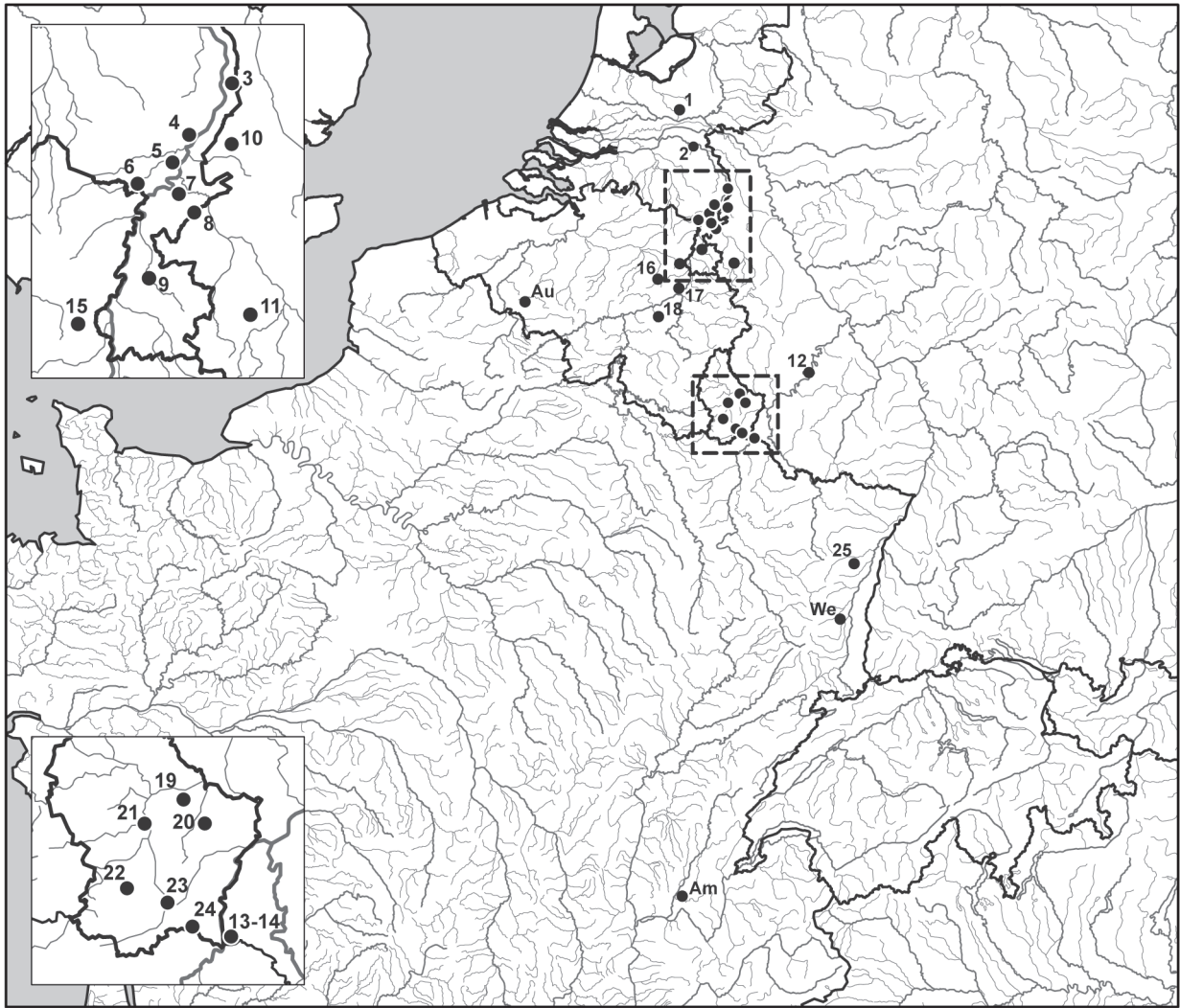


Figure 2 Geographical location of sites yielding cannellured ware. Drawing M. Haars. A description of these sites and finds can be found in the appendix of this publication.

- | | | | |
|--------------------------------------|---------------------------------------|-------------------------------------|---|
| 1 Ede <i>Frankeneng</i> | 9 Sweikhuizen <i>De Hei</i> | 15 Rosmeer <i>Staberg</i> | 23 Alzingen <i>Grossfeld</i> |
| 2 Gassel <i>Over de Voort</i> | 10 Brünnen-Bracht <i>8/west</i> | 16 Oleye <i>al Zèpe</i> | 24 Altwies <i>Op dem Boesch</i> |
| 3 Venlo <i>Ossenberg</i> | 11 Langweiler <i>8</i> | 17 Liège <i>Place Saint Lambert</i> | 25 Bischoffsheim <i>Le Village</i> |
| 4 Kessel <i>Sjoppenaas</i> | 12 Maring-Noviant <i>Siebenborn</i> | 18 Modave <i>Trou Al'Wesse</i> | Au Aubechies <i>Coron Maton</i> |
| 5 Haelen <i>Broekweg</i> | 13 Sehndorf <i>Vor dem Büsch</i> | 19 Medernach <i>Baachbiert</i> | We Wettolsheim <i>Ricoh</i> |
| 6 Ittervoort <i>Damszand</i> | 14 Sehndorf <i>Hinter 'm Dellchen</i> | 20 Hersberg <i>Auf der Leien</i> | Am Amberieux-en-Bugey <i>Grotte du Gardon</i> |
| 7 Sint Odiliënberg <i>Mortelshof</i> | | 21 Mersch <i>Haard</i> | |
| 8 Posterholt <i>Voorsterveld</i> | | 22 Mamer <i>Juckelsboesch</i> | |

cur scarcely. By contrast a fine vegetable additive is present in sherds of several vessels. Surfaces and fractures in those cases show mostly angular, flat cavities, which in section and in the plane do not match the narrow tubiform imprints of moss, discern-

ible in a La Hoguette pot from Ittervoort (Brounen *et al.*, this volume). The amount of organic temper varies: most often it was used with restraint and only occasionally as abundant as in the average Limburg pot. In comparison with Limburg pottery coil frac-

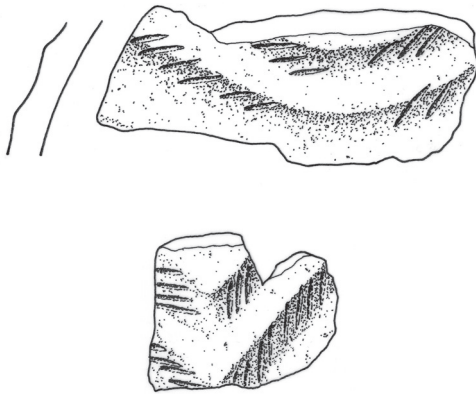


Figure 3 Selected cannellured sherds excavated at Brüggem-Bracht. Scale 2:3. Drawing R. Timmermans (after Loewe 1971).

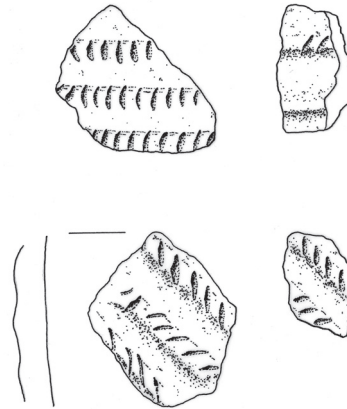


Figure 5 Rosmeer *Staberg*. Cannelured ware from a LBK settlement. Scale 2:3. Drawing R. Timmermans (after Modderman 1981; Van Berg 1990).

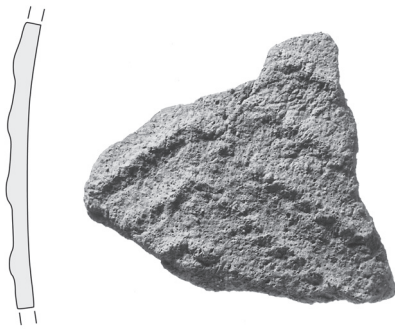


Figure 4 Weathered fragment from Venlo *Ossenberg*. Scale 2:3. Photograph J. Pauptit.

tures occur far less. The thickness of the wall is limited, surely in relation to the presumed dimension of the pots; some sherds display but little curvature. Both surfaces as a rule were well finished, *i.e.* smoothed or polished, but time can have taken its toll, causing bits of the compact(ed) upper layer to chip off. Interesting in this context is the identification of engobe on sherds from Sehndorf (Fritsch & Rauber 2000, 298). The firing process of most pots was finished with an oxidising phase. In consequence, the core of a sherd usually is black/dark grey and the exterior reddish- to beige-brown, less frequently bright red or grey to black. To a certain extent the inner surfaces display an oxidative colour as well, but tones of grey are no exception.

The overall impression is that of a sound production process resulting in pottery which is more solid, less porous and not as brittle as Limburg pottery. As for the quality, most sherds can bear comparison with La Hoguette pottery or Bandkeramik fine ware.

In contrast to La Hoguette and Limburg pottery only a few fragments of cannellured ware offer information on morphological aspects of the pots; body sherds make up the majority of finds. The rim of the Posterholt specimen (fig. 6) shows the thickening and inward flexing that also characterises vessels of the other non-Bandkeramik groups. The same goes for two fragments from Maring-Noviant (fig. 7), assuming that they belonged to a cannellured vessel (see below). At Ede *Frankeneng* the rim has not been thickened. Bottom fragments are rare: only the slender oviform Ede *Frankeneng* pot has a rounded off point base (Schut 1988; Brounen *et al.*, this volume).⁵ As for its shape an affinity to La Hoguette pottery exists, be it that with the latter the maximum width occurs higher up the profile. Alternatively, it is not unlike some of the Swifterbant pots either (*e.g.* Raemaekers 1999, 102; 2001, 135, 137). The Ede *Frankeneng* vessel also has got the sole example of a

5. A culturally hard to assign pot from Rosheim-Sainte-Odile (Jeunesse & Lefranc 1999, 45) has a pointed bottom. The rarity of base fragments may be an indication that bottoms were round and can easily be mistaken for plain body sherds. Due to their lack of decoration they may not be recognised as dating from the Early Neolithic at all.

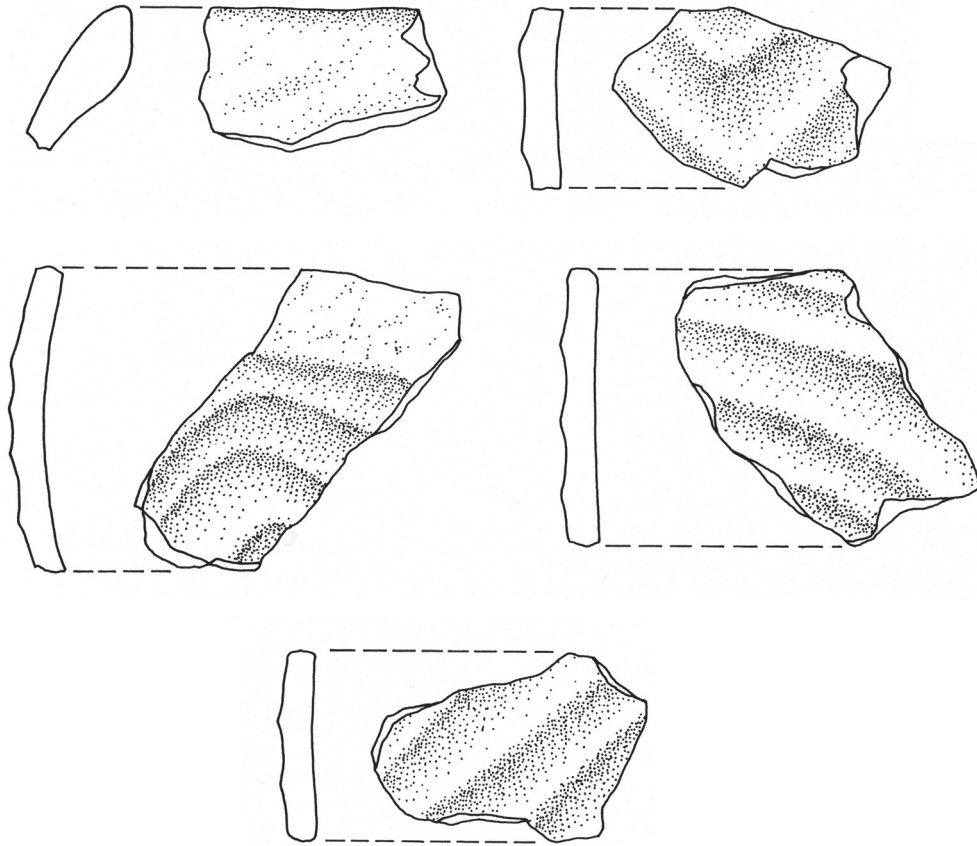


Figure 6 Posterholt Voorsterveld. Sherds decorated with only cannelures. Scale 2:3 (after Verhart 2000).

tongue-knob (*grifflappenartige Knubbe*; cf. Lüning *et al.* 1989, 378), that like many of the La Hoguette appendages is part of a cordon.

As hardly any large pieces of pottery have been preserved, no complete ornamental schemes and only fragments of motifs are available. Diagnostic for the type under consideration is the presence of a primary decorative element: slightly raised cordons that apparently were produced in different ways. The Ede *Frankeneng* pot was decorated with a number of applied, parallel and evenly spaced cordons, more or less diagonal to the outer wall. With most of the other pots another technique (fig. 8) seems to have been used, resulting in a series of slight elevations mimicking cordons. The ornamentation consists of shallow wide cannelures, mostly oriented diagonally to the rim, though sporadically horizontal examples may occur (*e.g.* Fritsch 2000c, 228). As a result of their adjacency, between the cannelures ridges are formed, about a finger's breadth apart. At regular in-

tervals series of cannelures alternate direction, thus creating a motif of chevron- to festoon-shaped meanders. With the exception perhaps of Ede *Frankeneng* no fragments are known of cannelures (cordons) that display an interruption at the high or low angles, such as a vertical groove or an empty zone. The lower part of the pots probably was left undecorated (Schut 1988; Loewe 1971, *Taf.* 4.49,50), while at the top the plastic element of the decoration may reach the rim and fade (fig. 6).⁶ Hypothetically filling in the missing pieces, a continuous *Winkelband* appears, in an interrupted configuration especially known from Rössen pottery (Stroh 1938; Jürgens 1979) and in a more 'uncoupled' way from a number of La Hoguette vessels (*e.g.* Dautenheim; Lüning *et*

6. This may be the case with the Maring-Noviant rim sherds too: the ridges fade, while the rows of stabs continue up to the edge.

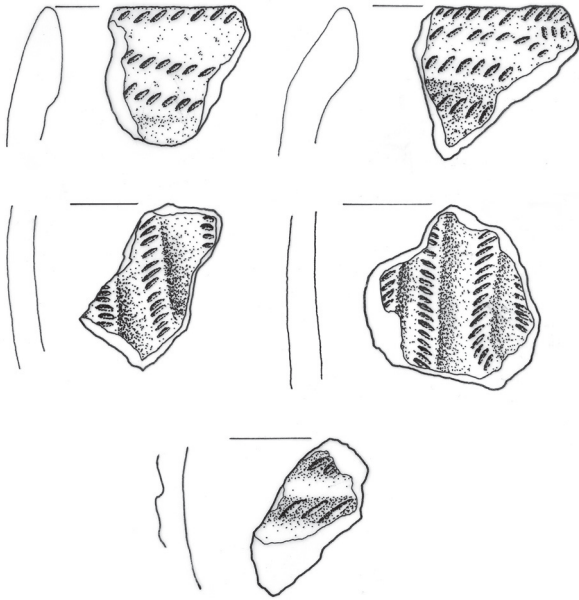


Figure 7 Maring-Noviant *Siebenborn*. Selected non-Bandkeramik pottery. Scale 2:3. Drawing R. Timmermans (after Schmidgen-Hager 1993a).

al. 1989, *Abb.* 26.3, 28.2).⁷ There are no indications that the roughly triangular areas under and above the band (*Zwickel*) were adorned.

Secondary, recurring decorative elements are rows of simple stabs, flanking one side of the elevations (fig. 8). Mostly these are rather narrow and placed oblique to the crests, changing directions at the points of inflection. As a rule, the rows are aligned alike, but sometimes a potter chose to vary direction (e.g. Ittervoort, Haelen, Gassel; see appendix); now and again the stabs on a (segment of a) cannelure's flank seem to have been missed. Two vessels (Ede and Posterholt) lack the secondary embellishment altogether, although one of the Posterholt sherds seems to show a few faint stabs, as if they were erased on second thought. A row of stabs close to the rim is only known from Maring-Noviant, which is an observation of limited importance since the identification is uncertain and the number of rims found up till now is rather small. At Maastricht *Caberg* a Limburg sherd with a cordon and accompanying rows of stabs below, though parallel to the rim has been found

7. Perhaps the decoration on some of the pots would better be called a *Wellenband*.

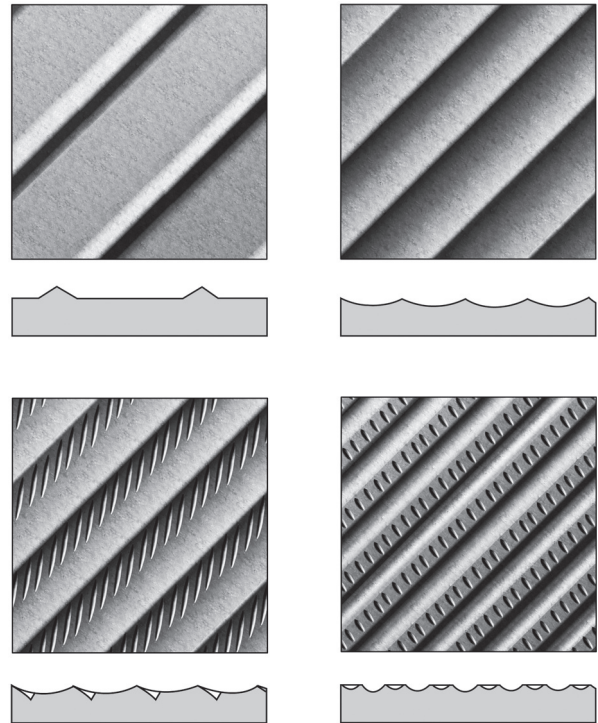


Figure 8 Variety of decorative elements occurring on body sherds of cannelured ware. Drawing M. Kriek.

(Modderman 1981, fig. 7.7). The cordon and stabs of the Maring-Noviant fragments, however, seem to diagonally run off.

The characteristic decoration might instigate the definite renaming and/or secession of this type of *Begleitkeramik*, but this seems premature. It would mask the essential aspect of 'accompaniment', however that may be interpreted. In addition, more surveys and pottery are needed to improve the characterisation. And there is the problem of definition. To catch two decorative techniques, cordons and cannelures, in a single term is one, presumably arguable thing, but what about grooves: how wide or shallow should a groove be to be called a cannelure?⁸ Cordons and cannelures (shadow grooves) are intended to enhance the plasticity of an object, plain grooves are not; their effect is rather two-dimensional. At Wettolsheim *Ricoh*, near the southern fringe of the distribution area, potsherds (fig. 9) have been found

8. For example Constantin 1985, 100: "13 - *larges sillons (cannelures) horizontaux*".

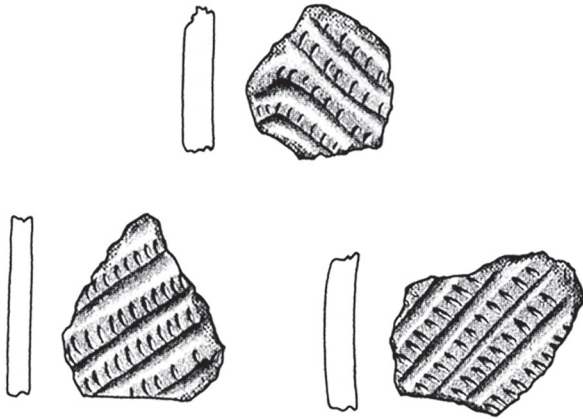


Figure 9 Selected non-Bandkeramik elements from Wettolsheim *Ricoh*. Scale 2:3 (after Jeunesse *et al.* 1991).

with a decoration that at a cursory glance seems to have points in common with the fragments described above. They therefore are regarded as *Begleitkeramik* in the wider sense (Jeunesse 1994). About 300 km farther south, at Ambérieu-en-Bugey similarly decorated sherds, regarded as representatives of the *Néolithique Ancien Rhodanien*, were excavated in a cave (Jeunesse *et al.* 1991; *cf.* Manen 1997, 143). At both sites the primary decoration consists of a series of grooves rather than wide cannelures. Moreover, instead of the slope of the depressions themselves, the narrow flat remainder of the wall in between (*méplat*) has been ornamented with stabs. Farther north the latter is a rare variation or inaccuracy known from *e.g.* Alzingen *Grossfeld* (fig. 10) and some of the Gassel sherds (fig. 11). Jeunesse *et al.* (1991, 64) point out the close relationship to the Rhine-Meuse group of Limburg pottery, among other things because of the assumed subdivision of the motif in vertical sections (*ibid.*), which is considered an essential characteristic of the Limburg pottery syntax (Modderman 1981; van Berg 1983; Constantin 1985; Lünig *et al.* 1989). In the same line Voruz (1989-1990 in Manen 1997, 224) suggests vertical sectioning and a type of pot well-known from Limburg pottery with regard to the vessel from Ambérieu-en-Bugey. In contrast to Limburg pottery, however, where run around motifs consisting of grooves do not flowingly continue at the highest and lowest points, in Wettolsheim and Ambérieu-en-Bugey they do (*cf.* Manen 1997, 143); the pieces are part of a *Winkelband* mo-

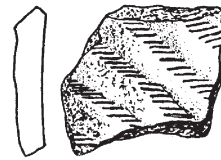


Figure 10 Alzingen *Grossfeld*. Body sherd showing a hatching of flat ledges. Scale 2:3.



Figure 11 Gassel *Over de voort*. Fragment with stabs on top of the (flat) crests. Scale 2:3. Drawing J. Nederlof.

tif. The decorative pattern would then roughly match *e.g.* Gassel, though the technique used is not as elaborate and the plasticity remains ‘flat’. Instead of enlarging the distribution area of Limburg pottery in a southern direction (Jeunesse *et al.* 1991, 65), the expansion might thus apply to *Begleitkeramik*, thereby more or less fitting the La Hoguette distribution there. It is a possibility worth investigating when more sites are discovered in the far south. Interesting in this respect are La Hoguette sherds found in an Earliest/Early Linearbandkeramik settlement at Gächlingen (Switzerland), at the southern fringe of the LBK (Altorfer & Höneisen 2007). Their decoration differs from classic La Hoguette and is thought to perhaps represent a local or supra-regional variant (*ibid.*, 9). The primary motif consists of stacked chevrons of shallow grooves, with partly added double stabs. A partial likeness to *e.g.* Wettolsheim is apparent.

4. SITES AND REPRESENTATIVENESS

With regard to the type of sites where it is found, cannelured ware is no different from La Hoguette and Limburg pottery: it appears in the features of Bandkeramik settlements as well as at a close or greater distance from them. The latter occurrence may concern stray-finds or those that seem to be associated with contemporary pottery or lithic artefacts

(see below). The number of vessels or even sherds per site is very limited.

Another distinction to be made is that between ploughed up stray-finds and pottery from a shelter, an artefact-trap or pedological circumstances providing a similar protective context. Obviously ploughed up, isolated finds may also derive from a natural or archaeological feature. Modderman (1981, 159) has rightly pointed out that the producers of Limburg pottery may have had a way of existence that did not require the digging of pits; consequently, as one of the aspects complicating research, the known/knowledgeable distribution pattern must be biased. Jeunesse (1987, 13-15) and Lüning *et al.* (1989, 384-387) have made a similar claim with respect to La Hoguette pottery. Not surprisingly the same holds true for cannellured ware: part of the fragments found have only been preserved because they got trapped in a depression and/or were covered by a natural or an anthropogenic layer. Add to that the presence of a proficient discoverer in the right place at the right time, it seems nothing short of a miracle that the handful of fragments at our disposition has been found at all. The number of sherds – and thus identifiable sites – that did not survive a range of post-depositional processes must have been far greater, within the loess zone and beyond. In fact, comparatively fragile pottery at present is the only true marker of non-Bandkeramik sites, as we are only just beginning to gain a perception of what a related, ‘clean’ flint assemblage looks like (*e.g.* Gehlen 2006).

The distance of sites where cannellured ware was found to LBK settlements can differ considerably, ranging from 1 to 110 km. Some of them are located within sight of a Bandkeramik village, *i.e.* within the site territory (Bakels 1978, 141 ff), the other part lies within the home range (*ibid.*) or far beyond (Brounen *et al.*, this volume). Finds have been made in different types of landscape. Besides typical LBK settlement locations (moderately elevated, not too ‘cut up’ or undulating loess-covered middle terraces), it concerns coversand plains and ridges, lower terraces and rises in river valleys, sandy (patches on) middle and upper terraces, sandstone plateaus, caves and probably rockshelters. Except for the middle and to a lesser extent lower terraces with a loess or loam substrate, these locations seem to fit in badly with Early Neolithic farming, *i.e.* with its sedentary aspects and cereal cultivation. That they in part are situated well

within the home range of LBK communities, is clearly illustrated by the fair number of Bandkeramik artefacts collected at the Sint Odiliënberg *Mortelshof* site. This may be a regional representative of a special activity site constituting the incorporation of peripheral zones into the LBK subsistence system (Bakels 1982; Brounen 1985; Kalis & Zimmermann 1988) as well as a focal point in a contact zone (Jeunesse 1990). Apart from its remarkable richness in finds, which could partly be a reflection of the site’s size and the decades of attention it was given by surveying amateur archaeologists, it is an example of the limitations Neolithic archaeology in the coversand area is subject to. Contrary to the loess zone sites are not affected by erosion and finds and features have not been washed down-hill. Soil formation processes have, however, obliterated most features – except those that were protected by a thick *Plaggen* soil – and as a rule sites become visible rather suddenly at the moment of their (imminent) destruction, *i.e.* after deep ploughing or in the course of construction works.

5. GEOGRAPHICAL DISTRIBUTION

The numerical increase in sites and the expansion of the distribution area did not take place in a still frame. For one thing the number of Bandkeramik settlements discovered in the last decades has increased far more than sites with cannellured ware. Also an intensification of archaeological excavations did not result in a uniform distribution pattern; large areas remain void of cannellured sherds. A preliminary outline of its spatial distribution is taking shape. In a northern direction the pottery has turned up in regions a long way from Early Neolithic population centres, *i.e.* Bandkeramik *Siedlungskammern* (fig. 2). Its absence in Dutch LBK settlements is remarkable and in contrast with Limburg pottery. From the quasi-neighbouring German *Aldenhovener Platte* area we only know a few sherds (Langweiler 8) despite the fact that it was well populated in Bandkeramik times and in recent decades elaborately surveyed and excavated. Outside the loess zone fragments occur in natural environments assumed to pre-eminently have provided a subsistence basis for hunter/gatherer societies or nomadic people. By Bandkeramik societies they supposedly were used only extensively, *e.g.* for the herding of cattle. A ‘dispersal’ across the Rhine

to the east, into the area of *älteste / ältere Bandkeramik* and early La Hoguette, seems to be non-existent and determined by factors in the systemic context; the situation is identical to that of Limburg pottery, with the exception of Bochum *Hiltrop* (Brandt 1967; Modderman 1981). Judging by the number of sites known at present, cannellured ware has neither convincingly pushed out into the far west, to Hainaut and the Paris Basin. Such in striking contrast with the Seine-Scheldt group of Limburg pottery (van Berg 1990), that could have evolved on the 'move' westward or may have been present in the area all along. In this context an unpublished sherd from Aubechies *Coron Maton* (taken to the Leiden workshop by C. Constantin) resembling fragments from Wettolsheim and Ambérieu-en-Bugey is remarkable; the west might yet have something up its sleeve preventing a simplification of matters. In the south the distribution extends to Alsace (Bischoffsheim) or, if the pottery of Wettolsheim and Ambérieu-en-Bugey is included, perhaps even to the southern Jura.

The picture emerging (fig. 2) is that of a comparatively narrow zone of occurrence along a predominantly north-south axis, excluding the 'old' LBK settlement areas in the east and presumably the late ones in the west. An overlap with the Rhine-Meuse group of Limburg pottery is unequivocal, as is the overlap with late La Hoguette sites.

6. ASSOCIATIONS AND RELATIVE DATING

Sherds of cannellured ware as afore-mentioned have been found as stray-finds, or with Bandkeramik pottery, La Hoguette pottery, Limburg pottery and/or Late/Final Mesolithic flint artefacts. The extent to which they were associated may vary; there is a continuum from closed to open contexts.

Putting aside Bandkeramik settlements for the moment (see below), evidently relevant in view of an interpretation are clean sites that have not been disturbed or become mixed with the residue of later occupation or use. These are in short supply. Potential candidates, some of which admittedly may be liable to interpretative limitations, seem to foremost occur in the northern part of the distribution area. At Ittervoort a handful of cannellured sherds were exclusively associated with La Hoguette pottery fragments (Brounen *et al.*, this volume). Sweikhuizen also yielded two finds that have been picked from the sur-

face within and in the immediate vicinity of a La Hoguette pottery concentration (*ibid.*). With regard to Sweikhuizen the presence of an LBK settlement located at 1200 m distance is often mentioned (Modderman 1987), but the sandy part of the upper terrace itself is well-known for its Mesolithic finds collected from a site a few hectares large (*e.g.* Willems 1971; Van Geel 1980). The number of Bandkeramik artefacts from the wider Sweikhuizen plateau to our knowledge is limited to a single adze (coll. H. Vromen; Geleen). At Ede *Frankeneng* (Schut 1988; Brounen *et al.*, this volume) fragments of a probable La Hoguette vessel and dozens of sherds belonging to a (version of a) cannellured ware pot were preserved in a natural depression. Two other northern sites are characterised by a close association of the pottery type with mostly flint artefacts. Excavations at Brügggen-Bracht, located in the coversand area of North Rhine-Westphalia, revealed a flint concentration with a large number of artefacts (Loewe 1971), several fragments of a cannellured ware vessel (fig. 1) and sherds of other pots. The date of the fragments last mentioned, or their cultural attribution is unknown.⁹ Judging from the drawings, the flint assemblage amongst other things comprises regular mediolithic (*i.e.* medium-sized) blades with a reduced platform, two matching blade cores, a small bifacially (partly) retouched leaf-shaped point, an asymmetric trapezoid and two asymmetric triangular projectile points, one of them slightly concave-based. Except for the lack (or failing mention?) of ventral retouch at the base of the points, there is a notable resemblance to Haelen *Broekweg*, a site also located on the coversands, 17 km to the west. There excavations revealed an Early Mesolithic scatter, on the southern fringe of which an anomalous small lithic assemblage from the Late Mesolithic (fig. 12) was found that coincided with a large number of cannellured sherds (fig. 13; Bats *et al.* 2002). It included eight mediolithic blade fragments with a narrow,

9. The amateur-archaeologist who discovered Bracht 8/west 'excavated' the site, but not fully. Regarding the context of his finds Loewe (1971, 135) writes: "Verstreut zwischen den Feuersteinen ... Wandungsscherben von verschiedenen derben Gefäßen und mehrere Wandungsscherben eines Bechers [= cannellured ware]". It should be noted that a subsequent final excavation performed by Loewe again yielded flints and sherds of the 'Becher' but no fragments of 'derben Gefäßen'.

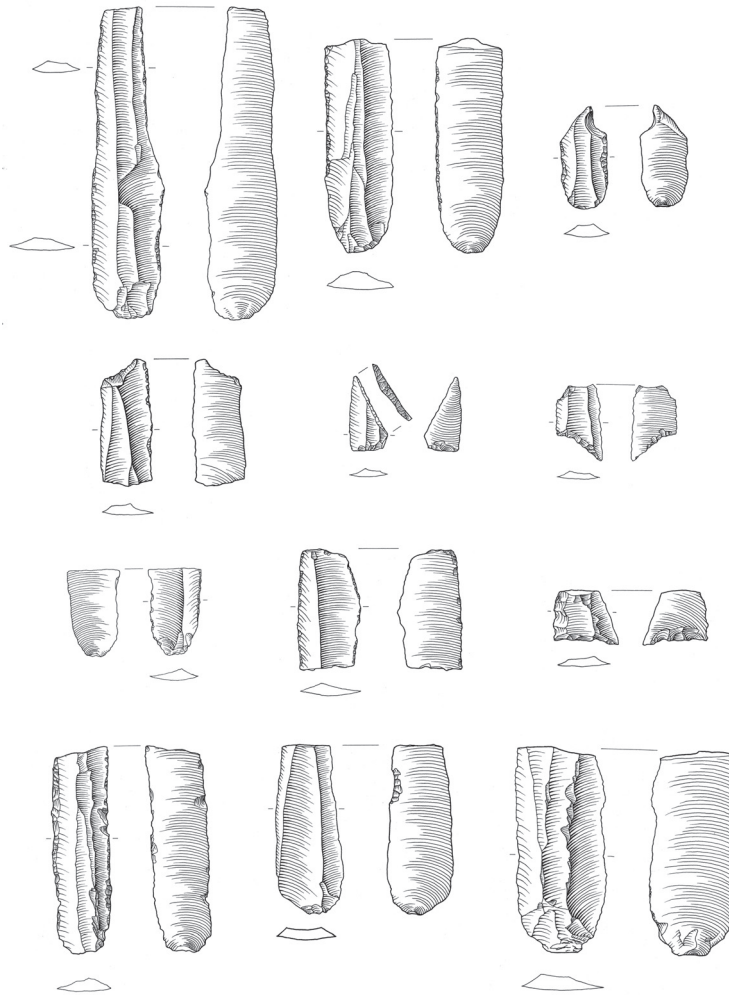


Figure 12 Haelen *Broekweg*. Late Mesolithic artefacts. Scale 1:2. Drawing R. Timmermans.

neatly reduced platform, a ‘micro-burin’, two ventrally retouched (*retouche inverse plate*) asymmetric trapezoid projectile points and a larger, at the base ventrally retouched, asymmetric triangular point, to the excavators reminiscent of the LBK (*ibid.*). The butts of these punched Montbani blades on the whole can be typified as plain; occasional facets are due to a correction of the platform angle (core maintenance). One or two butts have been retouched after the detachment of the blade. Though particularly characteristic arrowheads are absent, the regular blades and the points present could very well fit in with a La Hoguette flint assemblage (Gehlen 2006).

Cannelured ware has also been found at sites that yielded Limburg pottery; on several occasions the non-Bandkeramik spectrum was even completed by

one or more La Hoguette sherds. A problem with most of these sites is a lack of plausible or demonstrable association. At Gassel *Over de Voort* (Brounen & de Jong 1988), for instance, the haphazard way in which the finds had to be ‘salvaged’ makes it impossible to reconstruct at what locations within a large area explored the various pottery fragments, flint artefacts and an adze were discovered. At Langweiler 8 (Boelicke *et al.* 1988) and Sint Odiliënberg *Mortelshof* it is clear that the finds come from different parts and/or phases of the site. At Liège *Place Saint Lambert* Limburg pottery and cannelured ware were found in the same pit (no. 9), but how they got there remains unknown. Another part of the area excavated also yielded La Hoguette sherds from a single pot, that were uncovered in the top of a layer pre-

dating the Early Neolithic (Van der Sloot *et al.* 2003; Hauzeur & Vanmontfort, forthcoming). If indisputable associations should occur, cannellured ware cannot automatically be considered a component of the Rhine-Meuse group of Limburg pottery. It alternatively might indicate the existence of an intricate exchange network.

The associations with Bandkeramik fine ware foremost matter with regard to the relative dating of cannellured ware. As stated above, fragments have not turned up in *älteste* Bandkeramik complexes. In fact, the type makes a rather late entrance. In contrast to an early part of Limburg pottery (from Modderman's phase Ib onward) and much in accordance with La Hoguette finds west of the Rhine, the sherds known were mostly found in features containing pottery from the younger period of the LBK (Modderman's phases IIa-IIId).¹⁰ This indirectly dates the finds from Ede, Sweikhuizen and Ittervoort, three of the four La Hoguette sites known in the Netherlands. It becomes unlikely that they pre-date the LBK occupation. Rather they seem to fit in with the group of young La Hoguette sites west of the Rhine.

7. DISCUSSION

Archaeologists pursuing the non-Bandkeramik are not the only researchers playing with the idea of *Begleitkeramik*; colleagues engaged in the study of the Late Neolithic have done so for decades. Besse and Strahm (2001) have made it clear that the term is more concealing than clarifying with regard to the problem of rather heterogeneous, fragmented, undecorated pottery sometimes accompanying Bell Beakers and often occurring without them. For these and other reasons they propose to reject the designation and replace it with two terms: "... 'Bell Beaker common ware' for undecorated pottery present only in a Bell Beaker context (Category II) and 'pottery of the regional tradition' for pottery types which are also present in the regional substratum (Category III) ..." (*ibid.*, 108). Since Early Neolithic *Begleitkeramik* is

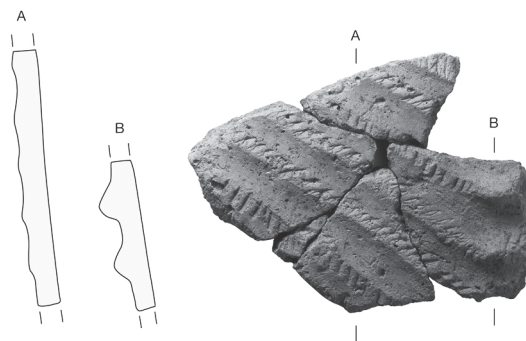


Figure 13 Haelen *Broekweg*. Selected sherd from the excavation. Scale 2:3. Photograph T. Penders, drawing M. Kriek.

decorated, it would rather belong to another subgroup of Besse and Strahm's Category II, *i.e.* 'ornamented pottery of the regional style'. To qualify as such it would have to be found exclusively with La Hoguette or only in connection with one another, which it does not. At the moment the number of well-documented sites is far too small to even consider an analysis comparable to Besse and Strahm. It could well be that the sherds from Gassel and Wetolsheim represent two regional variants, but there is simply no substantial corpus to compare them to. Therefore abandoning the concept of *Begleitkeramik* at this point seems fairly impractical for the lack of a meaningful alternative.

Raemaekers (1999, 138) roughed out a scenario in which west of the Rhine Limburg pottery was "possibly created as a result of the interplay of LBK and La Hoguette people", at the expense of La Hoguette pottery, that from then on vanishes from the archaeological record. This presupposes the non-existence of Limburg pottery prior to Modderman's (1970) phase Ib. La Hoguette, however, does not seem to have fully disappeared. Moreover, if it is accepted that to the east of the Rhine communities producing La Hoguette pottery may have been present before the arrival of the Bandkeramik way of life, there is no compelling reason to exclude the possibility of Limburg pottery being fabricated to the west of the river during or before LBK phase Ia. After all, based on the stray-finds outside LBK territories, 'pure' Limburg sites may exist and none of these has yet been dated. The people that supplied *älteste* Bandkeramik settlements located at 200 km from the raw material source with Rijckholt type flint (Gronen-

10. With the exception of Rosmeer. According to Modderman (1981, 152, fig. 9-8,9; *cf.* van Berg 1990, fig. 9-2,3) two sherds date from phase Ib. It is unclear if similar finds (Modderman 1981, fig. 10.2; Van Berg 1990, fig. 9.2) also derive from Early LBK assemblages at the site.

born 1990, 178, 180), may thus have had a Limburg identity.

If so, why didn't their pottery cross the cultural 'boundary' as well and got entrapped in *älteste* Bandkeramik features, like La Hoguette sherds did? From here matters become increasingly speculative and we are entering a realm of mere possibilities, some of which may be worth exploring in the future and others dismissed as the oversimplifying, anachronistic projection of 21st century consumers, tentatively taking pots for people.

One of the possible scenario's goes as follows. Representatives of the larger La Hoguette community occupying the (at the time) westernmost part of the territory (*ibid.*) may have had an intermediate position, passing on flint to the east and as an uninteresting commodity filtering out Limburg pottery. When the *ältere* (Ib) Bandkeramik expanded to the west, it gained a more direct access to the raw material and the La Hoguette exchange network largely collapsed or was assimilated. From then LBK communities themselves took care of raw material distribution into the homeland. As a spin-off of the geographical expansion, Limburg pottery became archaeologically 'visible'. The producers of it got to be the new trading partners and maintained that position to the very end, though (the contents of) their vessels still were not desired in the area east of the Rhine. The La Hoguette counterpart was marginalised, but survived somewhat altered in the west, taking part in exchange with LBK communities to a lesser extent or merely indirect. As a result of the crash the relation between La Hoguette and Limburg presumably changed: cannellured ware came into being in response to these new conditions, that admittedly can have emerged in a less roundabout way, simply as a result of La Hoguette penetrating the area west of the Rhine. The new ceramic (sub)style did hardly, if at all, take part in the final expansive LBK phase into Hainaut and the Paris Basin, which is another indication that it was inextricably bound up with (the producers of) La Hoguette.

Obviously this is but a tentative exploration of possibilities, starting from a scanty and incomplete database. New discoveries, such as a Villeneuve-Saint-Germain settlement at Sours (Eure-et-Loir) in the western part of the Paris Basin that yielded an important set of 'Limburg' pottery (Dupont *et al.* 2007), will undoubtedly keep stirring the field of

non-Bandkeramik studies and necessitate the adjustment of shared ideas.

As with Limburg pottery, significant progress in explaining different aspects of the La Hoguette and *Begleitkeramik* phenomenon is unlikely to come from yet another fortuitous find in a Bandkeramik settlement, important as the occasion may be with regard to clarifying chronological and geographical problems. It seems to be the other, smaller but 'pure' sites, which almost by accident are discovered, that have the potential to make a difference. A focal shift to areas that were marginal to LBK communities is needed, as has been done with respect to mountainous regions in the periphery of settled areas in central Europe. In the flat Northwest-European plain natural 'vaults' such as rock shelters are lacking and the discovery of relevant, but comparatively small sites is much more determined by chance. In order to get a grasp on this aspect of fortuity, people should be alerted to the problem. Colleagues engaged in the large-scale excavation of series of house plans dating from later periods, for example, who may implicitly regard flint artefacts and odd sherds as 'by-catch'. And, of course, amateur archaeologists should be made aware of the contribution they can make to unravel a riddle that has tempted archaeology for some decades now. They provided many of the cannellured ware sherds and perhaps more are hidden in private collections.

8. ACKNOWLEDGEMENTS

For the realisation of this paper colleagues and amateur archaeologists generously trusted us with – partly not even published – finds and documentation or shared their knowledge. In alphabetic order: Ph. Crombé (Ghent University), T. Dziurawski, E. van Geel, W. Hupperetz (Limburgs Museum), I. Jadin (Royal Belgian Institute of Natural Sciences), J. de Jong, F. Le Brun-Ricalens (Musée National d'Histoire et d'Art Luxembourg), R. Miller and M. Otte (University of Liège), H. Schmitz, K. Schmitz-Winthagen (province of Limburg), L. Verhart (Limburgs Museum).

Photographs and drawings for the paper and corresponding parts of the appendix were proficiently made by respectively F. Gijbels, J. Pauptit, T. Penders and M. Haars, M. Kriek, J. Nederlof, R. Timmermans, next to of course their colleagues who cre-

ated the figures we derived from literature. To all we are greatly indebted. Special thanks are owed to Marjolein, Mikko, Raf and Ton, for their patience and helpfulness.

9. REFERENCES

- Altorfer, K. & M. Höneisen 2007. Neues zur frühen bäuerlichen Besiedlung am Hochrhein, *Helvetica Archaeologica* 149-150, 2-12.
- Bakels, C.C. 1978. *Four Linearbandkeramik settlements and their environment: a paleoecological study of Sittard, Stein, Elsloo and Hienheim*, Leiden (Analecta Praehistorica Leidensia 11).
- Bakels, C.C. 1982. Zum wirtschaftlichen Nutzungsraum einer bandkeramischen Siedlung. In: Archeologický Ústav, Slovenskej Akadémie Vied (ed.), *Siedlungen der Kultur mit Linearkeramik in Europa. Internationales Kolloquium Nové Vozokany 17.- 20. Nov. 1981*, Nitra, 9-16.
- Bats, M., P. Crombé, I. DeVriendt, R. Langohr, J. Mikkelsen, C. Ryssaert, J. Schreurs, A. van de Water & M. van Strydonck 2002. Onderzoek langs de omleiding N273 te Haelen (Prov. Limburg, Nederland): vroeg-mesolithicum en vroeg-neolithicum, *Notae Praehistoricae* 22, 87-102.
- Belland, G., V. Blouet, C. Bouvret, L. Thomashausen, H. Richard & P. Ruffaldi 1995. Rubané, Limbourg, Hoguette à l'épreuve de la palynologie. In: *XXIII Colloque Interrégional sur le Néolithique, Strasbourg 27-29 octobre 1995. Résumés des communications*.
- Berg, P.-L. van 1983. Une nouvelle approche du décor céramique au Néolithique ancien et son application à la Céramique du Limbourg. In: S.J. de Laet (ed.), *Progrès récents dans l'Etude du Néolithique ancien*, Brugge (Dissertationes Archaeologicae Gandenses 21), 103-112.
- Berg, P.-L. van 1990. Céramique du Limbourg et Néolithisation en Europe du Nord-Quest. In: D. Cahen & M. Otte (eds), *Rubané et Cardial – Néolithique ancien en Europe moyenne. Actes du Colloque de Liège, novembre 1988*, Liège (Études et Recherches Archéologiques de l'Université de Liège 39), 161-208.
- Besse, M. & C. Strahm 2001. The components of the Bell Beaker Complex. In: F. Nicolis (ed.), *Bell Beakers today. Pottery, people, culture, symbols in prehistoric Europe*, Riva del Garda, 103-110.
- Boelicke, U., D. Brandt, J. Lünning, P. Stehli & A. Zimmermann 1988. *Der bandkeramische Siedlungsplatz Langweiler 8, Gemeinde Aldenhoven, Kreis Düren*, Cologne (Rheinische Ausgrabungen 28).
- Brandt, K. 1967. *Neolithische Siedlungsplätze im Stadsgebiet von Bochum*, Bonn.
- Brounen, F.T.S. 1985. HVR 183; vroeg-, midden- en laat-neolithische vondsten te Echt-Annendaal, *Archeologie in Limburg* 24, 66-71.
- Brounen, F.T.S. 1999. Vroeg-neolithische Begleitkeramiek uit Limburg en Noord-Brabant, *Archeologie in Limburg* 82, 59-64.
- Brounen, F.T.S. & J.P.M. de Jong 1988. Opmerkelijke vroeg-neolithische vondsten bij Gassel, gem. Beers, *Westerheem* 37, 183-192.
- Brounen, F.T.S. & H. Vromen 1990. A find of La Hoguette pottery at Geleen (South-Limburg, the Netherlands), *Helinium* 30, 36-43.
- Buttler, W. & W. Haberey 1936. *Die bandkeramische Ansiedlung bei Köln-Lindenthal*, Leipzig (Römisch-Germanische Forschungen 2).
- Constantin, C. 1985. *Fin du Rubané, céramique du Limbourg et post-Rubané. Le néolithique le plus ancien en Bassin Parisien et en Hainaut*, Oxford (BAR International Series 273).
- Dupont, F., J. Liagre & R. Irribarria 2007. Sours (28), un site particulier du Villeneuve-Saint-Germain en région Centre. In: *Quoi de neuf à l'ouest? Culture, réseaux et échanges des premières sociétés néolithiques à leur expansion. 29ème colloque Internéo. Résumé des communications*, Le Havre.
- Fritsch, T. 1998. *Studien zur vorurnenfelderzeitlichen Besiedlung des Saar-Mosel-Raumes*, Bonn (Saarbrücker Beiträge zur Altertumskunde 67).
- Fritsch, T. 2000a. Verlauf und Ergebnisse der Prospektion 1994/1995 auf der Trasse der Bundesautobahn A 8 (2. Teilstrecke: Perl / Borg-Landesgrenze). In: A. Miron (ed.), 183-204.
- Fritsch T. 2000b. Keramik der Gruppe La Hoguette von Sehndorf. In: A. Miron (ed.), 219-225.
- Fritsch, T. 2000c. Limburger Keramik von Sehndorf. In: A. Miron (ed.), 227-234.
- Fritsch, T. 2000d. Siedlung der Rössener Kultur von Sehndorf. In: A. Miron (ed.), 235-260.
- Fritsch, T. & J. Rauber 2000. Untersuchungen zur neolithischen, kupfer- und bronzezeitlichen Keramik in Sehndorf. In: A. Miron (ed.), 291-318.
- Geel, E.A. van 1980. Sweikhuizen, *Archeologie in Limburg* 9, 14.
- Gehlen, B. 2006. Late Mesolithic – Proto-Neolithic – Initial Neolithic? Cultural and Economic Complexity in Southwestern Central Europe between 7000 and 5300 calBC. 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 of 9th to 12th of September*

- Rottenburg/Neckar, Baden-Württemberg, Germany, Stuttgart*, 41-57.
- Gob, A. 1984. L'industrie lithique mésolithique. In: M. Otte (ed.), *Les fouilles de la Place Saint-Lambert à Liège 1*, Liège (Études et Recherches Archéologiques de l'Université de Liège 18), 147-152.
- Gob, A. 1990. Du Mésolithique au Néolithique en Europe nord-occidentale: un point de vue de mésolithicien. In: D. Cahen & M. Otte (eds), *Rubané et Cardial – Néolithique ancien en Europe moyenne. Actes du Colloque de Liège, novembre 1988*, Liège (Études et Recherches Archéologiques de l'Université de Liège 39), 155-159.
- Gronenborn, D. 1990. Mesolithic-Neolithic interactions – The lithic industry of the earliest Bandkeramik culture at Friedberg-Bruchenbrücken, Wetteraukreis (West Germany). In: P.M. Vermeersch & P. van Peer (eds), *Contributions to the Mesolithic in Europe*, 173-182.
- Hauzeur, A. 2006. *Le Rubané au Luxembourg. Contribution à l'étude du Rubané du Nord-Ouest européen*, Marché-aux-Poissons/Liège (Dossiers d'Archéologie du Musée National d'Histoire et d'Art 10 / Études et Recherches Archéologiques de l'Université de Liège 114).
- Hauzeur, A. & C. Jost 2003. Une occupation rubanée particulière à Altwies-‘Op dem Boesch’ (Grand-Duché de Luxembourg), *Bulletin de la Société Préhistorique Luxembourgeoise* 23-24, 209-240.
- Hauzeur, A. & B. Vanmontfort forthcoming. Étude du matériel céramique. In: J.-M. Léotard, A. Warnotte & P. van der Sloot (eds), *Liège Saint-Lambert 1990-1995. 2. Préhistoire*. Études et Documents Archéologie.
- Jeunesse, C. 1986. Rapports avec le Néolithique ancien d'Alsace de la céramique ‘danubienne’ de La Hoguette (à Fontenaye-le-Marmion, Calvados). In: A. Chanceler, B. Jehanne & G. Verron (eds), *Actes du X^e Colloque interrégional sur le Néolithique, Caen 30 septembre-2 octobre 1983*, (Revue Archéologique de l'Ouest, Supplément 1), 41-50.
- Jeunesse, C. 1987. La céramique de la Hoguette. Un nouvel «élément non-rubané» du Néolithique ancien de l'Europe du Nord-Ouest, *Cahiers Alsaciens d'Archéologie d'Art et d'Histoire* 30, 5-33.
- Jeunesse, C. 1990. Habitats rubanés en grottes et abris-sous-roches. Contribution à l'étude des systèmes de subsistance de la culture à Céramique Linéaire. In: D. Cahen & M. Otte (eds), *Rubané et Cardial – Néolithique ancien en Europe moyenne. Actes du Colloque de Liège, novembre 1988*, Liège (Études et Recherches Archéologiques de l'Université de Liège 39), 231-237.
- Jeunesse, C. 1994. Le Néolithique du sud de la plaine du Rhin supérieur. Recherches et découvertes récentes, *Praehistorische Zeitschrift* 69, 1-31.
- Jeunesse, C. & J. Sainty 1991. Bischoffsheim ‘Le Village’ (Bas-Rhin). Un habitat rubané avec Céramique de La Hoguette, *Cahiers de l'Association pour la Promotion de la Recherche Archéologique en Alsace* 7, 15-57.
- Jeunesse, C., P.-Y. Nicod, P.-L. van Berg & J.-L. Voruz 1991. Nouveaux témoins d'âge néolithique ancien entre Rhône et Rhin, *Jahrbuch der Schweizerischen Gesellschaft für Ur- und Frühgeschichte* 74, 43-78.
- Jeunesse, C. & P. Lefranc 1999. Rosheim ‘Sainte-Odile’ (Bas-Rhin), un habitat rubané avec fossé d'enceinte, *Cahiers de l'Association pour la Promotion de la Recherche Archéologique en Alsace* 15, 1-111.
- Jürgens A. 1979. Die Rössener Siedlung von Aldenhoven, Kreis Düren. In: H.-E. Joachim (ed.), *Beiträge zur Urgeschichte des Rheinlandes 3*, Cologne (Rheinische Ausgrabungen 19), 385-505.
- Kalis, A.J. & A. Zimmermann 1988. An integrative model for the use of different landscapes in Linearbandkeramik times. In: J.L. Bintliff, D.A. Davidson & E.G. Grant (eds), *Conceptual Issues in Environmental Archaeology*, Edinburgh, 145-152.
- Le Brun-Ricalens, F. 1994. Le Néolithique du Luxembourg, *Bulletin de la Société Préhistorique Luxembourgeoise* 16, 99-124.
- Le Brun-Ricalens, F. & A. Grisse 1992. Contribution à l'étude du néolithique ancien non rubané du territoire Luxembourgeoise: un tesson de céramique de ‘type Hoguette’ découvert à Weiler-la-Tour-‘Mêchel’, *Bulletin de la Société Préhistorique Luxembourgeoise* 14, 107-115.
- Loewe, G. 1943. *Die Kultur der Schnurkeramik im Lande Thüringen*.
- Loewe, G. 1971. [Gemeinde Bracht] 8/West. Kreis Kempen-Krefeld, (Archäologische Funde und Denkmäler des Rheinlandes 3), 134-135.
- Löhr, H. & M. Ewers-Bartimes 1985. Deux nouveaux témoins du Néolithique ancien au Luxembourg: herminette de Reisdorf et poterie du Limbourg de Medernach-Savelborn, *Bulletin de la Société Préhistorique Luxembourgeoise* 7, 103-108.
- Lüning, J., U. Kloos & S. Albert 1989. Westliche Nachbarn der bandkeramischen Kultur: Die Keramikgruppen La Hoguette und Limburg, *Germania* 67, 355-420.
- Manen, C. 1997. *L'axe rhodano-jurassien dans le problème des relations sud-nord au Néolithique ancien*, Oxford (BAR International Series 665).
- Manen, C. & K. Mazurié de Keroualin 2003. Les concepts ‘La Hoguette’ et ‘Limbourg’: un bilan des données. In: M. Besse, L.-I. Stahl Gretsch & P. Curdy (eds),

- Constellations. Hommage à Alain Gally*, Lausanne (Cahiers d'Archéologie Romande 95), 115-145.
- Miron, A. (ed.) 2000. *Archäologische Untersuchungen im Trassenverlauf der Bundesautobahn A 8 im Landkreis Merzig-Wadern*, Saarbrücken (Bericht der Staatlichen Denkmalpflege im Saarland. Abteilung Bodendenkmalpflege, Beiheft 4).
- Modderman, P.J.R. 1965. Helden-Kessel, *Bulletin van de Koninklijke Nederlandse Oudheidkundige Bond* 64, Archeologisch Nieuws, *56.
- Modderman, P.J.R. 1968. Helden/Kessel, *Bulletin van de Koninklijke Nederlandse Oudheidkundige Bond* 67, Archeologisch Nieuws, *67.
- Modderman, P.J.R. 1970. *Linearbandkeramik aus Elsloo und Stein*, Leiden (Analecta Praehistorica Leidensia 3).
- Modderman, P.J.R. 1981. I – Céramique du Limbourg: Rhénanie-Westphalie, Pays-Bas, Hesbaye, *Helinium* 21, 140-160.
- Modderman, P.J.R. 1987. Limburger aardewerk uit Sweikhuizen Gem. Schinnen Prov. Limburg, *Analecta Praehistorica Leidensia* 20, 87-93.
- Otte, M. 1984. Interprétation générale. In: M. Otte (ed.), *Les fouilles de la Place Saint-Lambert à Liège 1*, Liège (Études et Recherches Archéologiques de l'Université de Liège 18), 247-250.
- Raemaekers, D.C.M. 1999. *The articulation of a 'New Neolithic'. The meaning of the Swifterbant culture for the process of neolithisation in the western part of the North European Plain (4900-3400 BC)*, Leiden (Archaeological Studies Leiden University 3).
- Raemaekers, D.C.M. 2001. Aardewerk en verbrande klei. In: L.P. Louwe Kooijmans (ed.), *Hardinxveld-Giesendam De Bruin. Een kampplaats uit het laat-mesolithicum en het begin van de Swifterbant-cultuur (5500-4450 v. Chr.)*, Amersfoort (Rapportage Archeologische Monumentenzorg 88), 117-152.
- Roossens, H. 1962. Gebouwen van een bandkeramische nederzetting op de Staberg te Rosmeer. In: Miscellanea Archaeologica in honorem J. Breuer, (*Archaeologica Belgica* 61), 121-144.
- Rousselle, R. 1981. Tessons non-rubanés dans le matériel Omalien de la Place Saint-Lambert à Liège, *Helinium* 21, 248-250.
- Rousselle, R. 1984. La céramique danubienne. In: M. Otte (ed.), *Les fouilles de la Place Saint-Lambert à Liège 1*, Liège (Études et Recherches Archéologiques de l'Université de Liège 18), 153-170.
- Schmidgen-Hager, E. 1993a. *Bandkeramik im Moseltal*, (Universitätsforschungen zur prähistorischen Archäologie 18).
- Schmidgen-Hager, E. 1993b. Neue Forschungen zur Bandkeramik an der mittleren Mosel. In: *Le Néolithique du nord-est de la France et des régions limitrophes. Actes du XIII^e Colloque Interrégional sur le Néolithique (Metz, 10, 11 et 12 octobre 1986)*, Paris (Documents d'Archéologie Française 41), 60-63.
- Schut, P. 1988. Poteries du Néolithique ancien à Ede (prov. de Gueldre), *Helinium* XXVIII, 223-231.
- Sloot, P. van der, F. Damblon, N. Debenham, K. Fechner, A. Gob, P. Haesaerts, A. Hauzeur, I. Jadin, J.-M. Léotard, M. Remacle & B. Vanmontfort 2003. Le Mésolithique et le Néolithique du site Saint-Lambert à Liège dans leur contexte chronologique, géologique et environnemental. Synthèse des données et acquis récents, *Notae Praehistoricae* 23, 79-104.
- Stehli, P. 1994. Chronologie der Bandkeramik im Merzbachtal. In: U. Boelicke, C. Frirdich, J. Gaffrey, J. Lüning, P. Stehli, P. Vaughan & A. Zimmermann, *Die Bandkeramik im Merzbachtal auf der Aldenhovener Platte*, Cologne (Rheinische Ausgrabungen 36), 79-193.
- Stroh, A. 1938. *Die Rössener Kultur in Südwestdeutschland*, (Bericht der Römisch-Germanischen Kommission 28).
- Thiele, W.R. 2000. Naturwissenschaftliche Untersuchungsverfahren und Auswertung von Keramikproben aus der Grabung Sehndorf. In: A. Miron (ed.), 345-380.
- Verhart, L.B.M. 2000. *Times fade away. The neolithization of the southern Netherlands in an anthropological and geographical perspective*, PhD thesis Leiden (Archaeological Studies Leiden University 6).
- Willems, J.H. 1971. Opmerkingen over de herkomst van het lithische materiaal van de prehistorische vindplaats te Sweikhuizen (Gemeente Schinnen, L.). In: F. H.G. Engelen et al. (eds), *First International Symposium on flint, Maastricht 26-29 April 1969*, (Grondboor en Hamer 3), 120-130.

Limburg sherds at Fexhe-le-Haut-Clocher *Podrî l’Cortri* (Liège province, Belgium)

Dominique Bosquet

ABSTRACT

On the site of Fexhe-le-Haut-Clocher (near Liège, Belgium) sherds from two Limburg pots and one unknown type of vessel were found in an isolated house corresponding to the pioneer phase of the LBK occupation of Hesbaye. This house is the only one to deliver such vessels, suggesting that its inhabitants or the house itself had a special social status.

KEYWORDS

LBK, Hesbaye, pioneer phase, Limburg and odd vessels, social status.

1. INTRODUCTION

During the excavations of the LBK site at Fexhe-le-Haut-Clocher *Podrî l’Cortri* (Liège, Belgium; Bosquet *et al.* 1998; 2004; 2008), four non-LBK sherds were found in one of the LBK pits (no. 89). Pit 89 lies along the east wall of a well-preserved house (House I), which was the first to be constructed at the site and corresponds to the ‘pioneer phase’ of the LBK colonisation of Hesbaye.

There are three other pioneer houses known from this region, on the sites of Remicourt *En Bia Flo II*, Waremme *Longchamps* and Darion *Colia*. These share a number of characteristics confirming their early attribution and setting them apart from the younger villages: forested charcoal spectra indicating forested surroundings (*Quercus*, *Fraxinus* and *Corylus* representing 90 to 95% in every four cases), a typochronological date, which is older than the rest of the village and the use of different lithic (flint and in one case sandstone) and clay resources. In two cases an additional confirmation of the special position of the houses are some ‘cultural’ elements that are absent in the villages. Apart from the four sherds

found near the house at Fexhe presented here, the pioneer house at Waremme *Longchamps* provided two blades in bartonian flint, a type of raw material which is totally absent in the other features of the village and typical of Groupe de Blicquy assemblages. In all four cases, the houses were left outside the villages when the colony grew and when the villages and enclosures were built.

Two of the sherds from Fexhe can be attributed to Limburg pottery. The style of the other two, belonging to a single vessel, remains unknown to all the consulted specialists.

2. POTTERY TECHNOLOGY

Limburg sherd 1 is bone-tempered and probably coil-built, although this is difficult to confirm due to the small size of the sherd. The thickness of the sherd varies between 5 and 8 mm. It is a belly sherd, with a brown-red colour on both exterior faces, and with a dark core.

Limburg sherd 2 is bone and grog-tempered. Again, due to the small size of the sherd it is difficult to confirm whether it is coil-built. The thickness varies between 6 mm at the belly and 8 mm at the externally thickened rim. Both faces are red and the core is dark.

The sherds of unknown style are grog, quartz and charcoal tempered. One fracture suggests that they were coil-built, but the small size of the sherd makes it difficult to confirm. The rim and belly sherd is 6 mm thick and has a black colour throughout.

3. POTTERY MORPHOLOGY AND DECORATION

Limburg sherd 1 (fig. 1a) is too small to allow statements on vessel shape. Decorations consist of 3 mm wide, superficial (less than 1 mm deep) impressions.

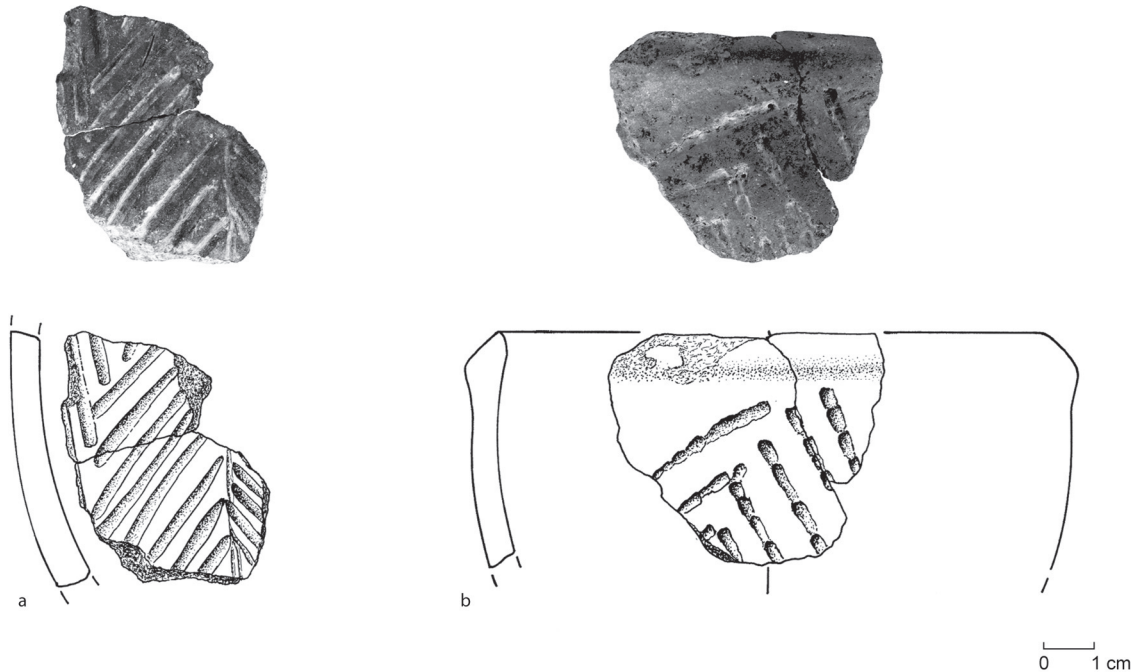


Figure 1 Fexhe-le-Haut-Clocher *Podrî l'Cortri*. Limburg sherds 1 and 2. Scale 2:3.

These impressions are organised in a typical 'fish-bone' motif covering the entire fragment.

Limburg sherd 2 (fig. 1b) is part of a bowl-like vessel with thickened rim, typical for Limburg style pottery. It is decorated, however, with a LBK angle motif in stab-and-drag technique. This sherd thus presents a mixture of two styles.

The sherds of unknown style (fig. 2) belong to a small bowl with a lip curved outward. The decoration starts just below the rim and covers the shoulder and at least a part of the belly (the rest is absent). The motif consists of vertical grooves (*c.* 4 mm wide and 2 mm deep) made with a round-pointed tool. The secondary motif consists of small panels reproducing these vertical grooves on a smaller scale. None of these characteristics can be linked with a known Early Neolithic pottery style.

4. DISCUSSION

All sherds presented were found in the same dump layer of pit 89, at a depth between 90 and 100 cm from the present day surface. The pit also contains flint implements, charcoal and charred seeds, burnt clay and vessel fragments that can be attributed to

the Modderman (1970) phases Id to IId. While the complete seriation still has to be done, this 'chronological mix' in one single pit poses serious questions about the filling processes of LBK waste pits, the LBK waste treatment and, more generally, the life span documented for LBK pits. In order to formulate an answer to these questions, the results of anthracology, potsherd refitting and ceramic typology were confronted with one another (Salavert *et al.* in press). In summary, the preliminary conclusion is that the content of LBK pits as preserved archaeologically corresponds to a short or relatively short life span of the house/site, probably less than 10 years. So, how can we explain the chronological mix pointed in the pit 89 from Fexhe? In this scenario, three probably interacting factors can explain the chronological mix in pit 89 from Fexhe:

1. A long to very long use life of a small part of the vessels (between 50 and 100 years following ethnographic data: Mayor 1994; Shott 2004),
2. the fact that the older Modderman's phases succeed probably more quickly than the younger ones and, finally,
3. the duration of LBK presence in Hesbaye which may be less than 200 years, bearing in mind that

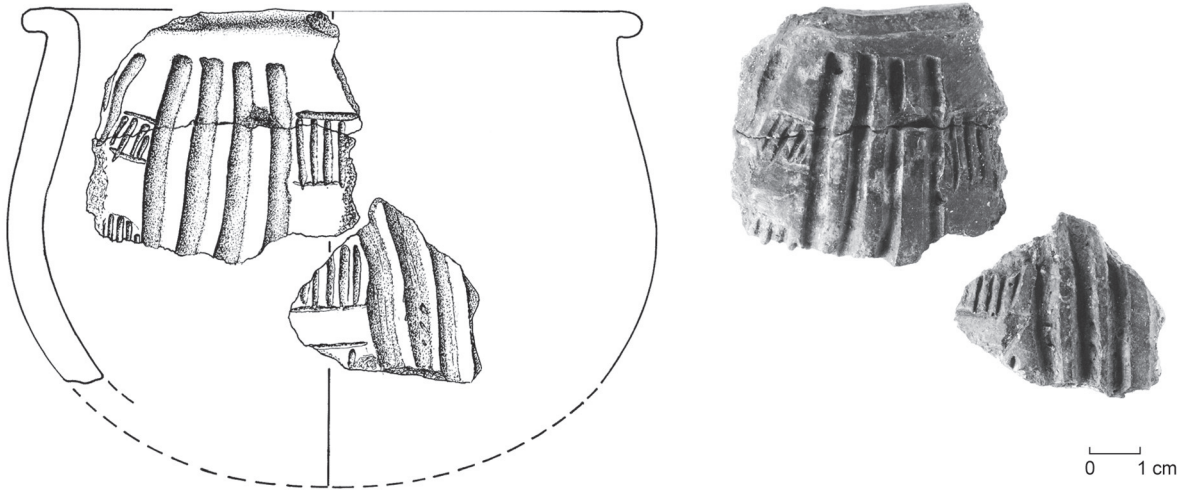


Figure 2 Fexhe-le-Haut-Clocher *Podrî l'Cortri*. The odd one: pot sherds of unknown style. Scale 2:3.

the ^{14}C dates, as good as they are, remain imprecise as they are affected by the plateau effect (Jadin 2003).

It is thus highly probable that the pottery assemblage we analyse today corresponds to the vessels still in use at the moment of the dumping, which seems to represent a relatively short life span of the house, but does not provide the duration of the entire occupation. If this is true, the non-LBK sherds presented in this article were dumped at the same time as the LBK ones. This implies that these vessels were manufactured and used either by LBK people or by non-LBK people living constantly or occasionally with LBK people, travellers for example. The fact that only isolated houses provide such non LBK material (pottery at Fexhe, lithics at Waremmé) let us to propose that, this presence may be linked to a particular 'social' status of the occupants of the isolated houses, perhaps due to the fact that they were the first ones to arrive at the site. This special status can also have been attached to the house itself as it was the first building of the community. In such a case, one can imagine that, after the construction of the village, the isolated building becomes a kind of 'guest house' similar to the ones existing in many communities today, also in an isolated position, to welcome strangers. Then, is it unreasonable to propose that, maybe, these travellers brought some Limburg vessels with

them? The LA-ICP-MS chemical analysis of the Limburg pottery sherds of Fexhe by Mark Golitko in any case shows that neither of both Limburg pots has been locally produced (Golitko *et al.* 2009). They were produced elsewhere, possibly in the same place, as they are chemically very similar (Dutch Limburg, Rhine valley, Paris basin...?) and imported into Hesbaye.

5. REFERENCES

- Bosquet, D., H. Fock, C. Goffioul & D. Preud'homme 1998. Le site rubané de Fexhe-le-Haut-Clocher-Podrî l'Cortri: résultats des fouilles, *Notae Praehistoricae* 18, 131-140.
- Bosquet, D., H. Fock, C. Goffioul, D. Preud'homme & J.-P. Marchal 2004. La néolithisation en Hesbaye (Belgique): apport des fouilles récentes (1996-1999) sur le tracé du TGV oriental et le domaine militaire d'Alleur. In: *Section 9: Le Néolithique au Proche Orient et en Europe. Section 10: L'âge du cuivre au Proche Orient et en Europe. Actes du 14^{ème} Congrès UISPP, Liège, 2-8 septembre 2001*, Oxford (BAR International Series 1303), 81-94.
- Bosquet, D., M. Golitko & A. Salavert 2008. Une phase pionnière à l'origine du peuplement rubané de la Hesbaye liégeoise (Belgique). In: L. Burnez-Lanotte, M. Ilett & P. Allard (eds), *Fin des traditions danubiennes dans le Néolithique du Bassin parisien*

- et de la Belgique (5100-4700 BC)*, Paris (Mémoires de la Société Préhistorique Française 44), 301-315.
- Golitko M., D. Bosquet, L.H. Keeley, I. Jadin & E. Goemaere 2009. *Chemical analysis of Linienbandkeramik ceramics and clay samples from the Hesbaye region of Belgium by LA-ICP-MS*, Poster presented at the 74th annual meeting of the Society for American Archeology, April 22-26, Atlanta, Georgia.
- Jadin, I. 2003. TROIS PETITS TOURS ET PUIS S'EN VONT... LA FIN DE LA PRÉSENCE DANUBIENNE EN MOYENNE BELGIQUE, Liège (Études et Recherches Archéologiques de l'Université de Liège 109).
- Mayor, A. 1994. Durée de vie des céramiques africaines: facteurs responsables et implications archéologiques. In: F. Audouze & D. Binder (eds), *Terre cuite et société, document technique, économique, culturel*, Juan-les-Pins. (Actes des 14^{èmes} Rencontres Internationales d'Archéologie et d'Histoire, Antibes, 21-23 oct. 1993), 179-98.
- Modderman, P.J.R. 1970. *Linearbandkeramik aus Elsloo und Stein*, Leiden (Analecta Praehistorica Leidensia 3).
- Salavert, A., D. Bosquet & M. Golitko in press. Temps d'ouverture et rythmicité des rejets. La complémentarité des analyses anthracologiques et céramiques pour appréhender la taphonomie des fosses néolithiques, *Proceedings of the Workshop 'Taphonomy of organic burned residues and combustion structures in archaeological context'*, May 27-29 2008, Valbonne, France.
- Shott, M.J. & P. Sillitoe 2004. Modeling use-life distributions in archaeology using New Guinea Wola ethnographic data, *American Antiquity* 69 (2), 339-355.

Non-LBK in Dutch LBK

Epi-Limburg ware at Geleen *Janskamperveld*

Pieter van de Velde

ABSTRACT

In an analysis of the pottery from the Geleen Janskamperveld LBK-Ib / Flomborn period settlement in the southern Netherlands (almost 4000 pots; over 12,000 sherds) a little less than two hundred sherds emerged which in one way or another violated the definitions of the local LBK. Some of the sherds could be attributed to the Limburg group, the majority not so, nor to any other known Early Neolithic peripheral group. It is hypothesised that they have been produced by acculturating, in-married non-local women. It is argued that independently of this hypothesis, these ‘non-LBK’ ceramics should not be put into a generalised and ill-defined LBK bag, but considered explicitly a class on its own.

KEYWORDS

LBK, Limburg pottery, acculturation.

1. INTRODUCTION: THE EXCAVATIONS AT GELEEN JANSKAMPERVELD (JKV)

In the mid-February 2007 workshop on early (‘Para-Neolithic’) pottery in the Lower Rhine Region I discussed non-LBK pottery and presented some sherds in this category from the excavation at Geleen *Janskamperveld*. Excavated in 1990 and 1991 by L.P. Louwe Kooijmans and H. Kamermans (Louwe Kooijmans 1991; Louwe Kooijmans *et al.* 2003), my contribution to that project is the analysis of the finds, mainly the ceramics and the houses; other specialists are occupied with other sub-projects from that excavation, which was recently published (Van de Velde 2009).

The JKV-settlement is in between two other early LBK foundations on the eastern edge of the Graet-

heide, a sub-region of the loess covered middle Meuse terrace in the Dutch province of Limburg. Some five hundred metres to the east of the site, and ten to fifteen metres lower, the Geleenbeek is flowing, providing fresh water in all seasons. Sittard to the north has been inhabited from the first LBK colonization right to the end of that culture in this region; to the south Geleen-De Kluis was abandoned somewhere in phase 1c of the LBK, possibly simultaneously with JKV.

Over 60% (3.1 ha) of that LBK settlement has been uncovered. The large majority of the finds and the features can be assigned to a first habitation phase, coincident with the House Generations I to IV on the *Aldenhovener Platte*; *i.e.*, in general terms, Flomborn period or Meier-Arendt II in the German system, and Early Neolithic A / LBK-1b/c in the Dutch chronology. Undecorated rims on the decorated pottery, Y-configured central post settings in the houses, and ¹⁴C measurements on grain pellets all support the early foundation, somewhere in the second half of the 53rd century cal BC. The houses and their associated finds from this first occupation of the site have been assigned to four phases on the basis of the decorated pottery; a later inhabitation with perhaps 10% of finds and features has been designated Period II, to be dated to LBK-2c.

The reason for my participation in the workshop was that apart from a few ‘classical’ Limburg sherds (fig. 1), remains of several vessels have turned up which in one way or another neither fit in with the local Bandkeramik pottery canon nor with that of Limburg ware – hence ‘non-LBK’ in the title (table 1 gives the chronological distribution). I have been looking at this pottery from a LBK position, trying to ascertain what it has to say about the *Bandkeramian* way of doing things.



Figure 1 The 'classical' Limburg sherds from the JKV settlement (nos 26090, 19087). Scale 2:3.

On terminology: in the analyses similar sherds have been grouped to vessels, even if there was no fit; in this settlement on average only 2.4 sherds remained per decorated vessel, 5.0 per undecorated pot. Finds were grouped per feature, thus obtaining the same find number.

phase	I-1	I-2	I-3	I-4	II
no. of finds	3 / 11	2 / -	4 / 3	6 / -	1 / 11

Table 1 The number of features with 'non-LBK' ware per settlement phase (reliably dated features / other features with non-LBK ware possibly in this phase).

2. GENERAL PRESENTATION OF NON-LBK SHERDS AT GELEEN JANSKAMPERVELD

Figures 2 to 7 present a selection of decorated sherds among the unorthodox ware announced in the previous section. Clearly these sherds cannot reasonably be attributed to a single tradition. To me the most bizarre in this collection are the sherds (no. 19078) that constitute the pot partially reconstructed in fig. 2. On the one hand the organization of the decoration is contrastive with regular Bandkeramik practice and on the other several details fit within the canon. On the pot wave-like motifs occur in the zone above the thick applied strip around its neck, whereas normally they are exclusively restricted to the belly zone. Yet

the vertical incisions below the strip are hardly ever seen on this culture's fine ware (coarse ware, though, occasionally shows vertical incisions). Thus, the unique, anomalous decoration may qualify this vessel as non-LBK, while the technique with which it has been executed seems to allude to early Flomborn practice. Yet the colour of the surface is dark grey, internally and externally; on fractures a lighter yellowish grey is shown; temper is not perceptible in line with regular LBK fine ware. Unfortunately the lower part of this vessel is entirely missing so nothing can be said of the bottom; the silhouette, though, suggests a steep-walled beaker, which by its rim diameter of 25 cm is among the largest known (J. Lünig, pers. comm.). The context in which this pot was found is an all-out Bandkeramik pit, datable to first period, phase 2 of the settlement.

Applied clay strips are comparatively rare in north-western Bandkeramik inventories, but not entirely unknown, especially on coarse ware; even in the present settlement excavation some more have turned up on fine and coarse ware alike. From the Graetheide I know of one other example, excavated by Modderman in Sittard and dated to phase LBK-1d/2a of the Dutch chronology (Modderman 1959, *Abb.* 69). That beaker, too, has deviant decoration. Ironically, this latter pot has a missing *upper* part, while the Janskamperveld specimen lacks a *lower* part.



Figure 2 'Non-LBK' beaker (reconstruction) from JKV (no. 19078). Scale 1:2. Drawing E. van Driel.

Fig. 3 shows a number of sherds decorated with an incised fishbone motif, which on this score pertains to the Limburg repertoire, as also indicated by their dark interior. However, their fabric sets them off from that tradition in that it has not appreciably been tempered, or with fine-grained sand and silt only. Similar decoration is illustrated from the southern German Neckar area, although this similarity poses chronological problems since at JKV the sherds are associated with finds from the first period (latest phase, still Flomborn period), whereas in the south a much later date is indicated (Spatz 1996(I), 132).

The sherds in fig. 4 have been decorated in a similar way as the previous set, although the hatches are



Figure 3 'Non-LBK' sherds with fishbone decoration from JKV (nos 31075). Scale 2:3.

larger (not wider). But also decoration with an oblique 'ladder' seems related to the herringbone (*Tannenbaum*) decoration known from the Limburg ware. The pot from Kesseleyk that gave this ware its name (Modderman 1974) comes to mind, although admittedly the hatchings of the latter are much less widely spaced. There is some more likeness to the



Figure 4 'Non-LBK' sherds from JKV with ladders and hatched decoration (nos 44028; 31075). Scale 2:3.



Figure 5 'Non-LBK' sherds with lines & fringe, or with stab-and-drag decoration from JKV (nos 91002, 57020). Scale 2:3.

decorated pot from the Haute-Alsace youngest LBK illustrated by Jeunesse (1994, fig. 12). The tempers of the JKV sherds are different from one another, from organic to crushed pottery and fine sand or silt.

In fig. 5 fully drawn lines with fringes offer yet another non-LBK decoration, as do the sherds with stab-and-drag (*Furchenstiche*) impressions. The finest among the latter (no. 57020) are reminiscent of East German *Stichbandkeramik* (also Stroke Ware), but the problem is that this tradition originated very late in the LBK sequence, whereas the sherd is accompanied by (sherds of) another 12 decorated LBK pots which point to the *first* habitation, fourth phase; *i.e.* middle Flomborn.

The most awkward sherds are shown in fig. 6: their fabrics are really old-time LBK; their decoration, though, does not fit in with the other LBK sherds from the early settlement.

Finally, in fig. 7 a number of decorated sherds is shown, deriving from the two periods of habitation at JKV, and different again from the local LBK; therefore they have been labelled non-LBK. However, their triangles with pointlets ('dragon's teeth') are quite common in more southerly late LBK societies, especially in the Upper Rhine and Alsace (*e.g.* Spatz 1996 (I), 175-181). The fabric of the later sherds (no. 32144, and possibly 54029, too, although to the latter there are no chronologically valuable accompanying LBK sherds) is similar to that of most late LBK fine ware. So it stands to reason that when still pots, they have been brought from that region and/or made by people well versed in the southerly tradition. Those sherds that derive from the Flomborn period in this settlement (nos 54020, 92001) have fabrics that are alike the other fine ware of that period and as such they compare better with the triangle decorated sherds in fig. 6.



Figure 6 'Non-LBK' sherds with triangles decoration from JKV (nos 31075, 91124). Scale 2:3.

3. DISCUSSION, PART ONE

The sherds in this paper have been negatively defined; they are simply non-LBK. Perhaps better phrased they are non-local LBK as they emerged as different in an analysis of the full set of pottery from the JKV village. The JKV LBK pottery consists of two major classes, the thin-walled, decorated pots, and the thick-walled undecorated pots. There are also a few thin-walled undecorated, and thick-walled decorated vessels, but their number is small, about the same number as that of the 'non-LBK' pots. The coarse ware (average thickness 8.3 mm) has been tempered mainly with clay pellets (64% of the primary component of the temper of the pots), rarely with grog (not even 1%), organic materials (1%), chalk (1%), or sand (4%); the rest did have fine sand from the loess matrix or no temper at all. Thick-walled pots have generally been fired to spotted grey or greyish brown looks, often slightly darker on fracture; the outer and inner skins generally well-smoothed. The fine ware (average thickness of the sherds 5.6 mm) has mostly been fired in a reducing atmosphere, with quite even greyish or blackish results; its tempering is the silt or fine sand naturally present in the local loess. The strip decoration has been incised with a single-dented spatula (with a few multi-dented decorations in the second habitation period of the settlement); the motifs of the decoration can only very rarely be ascertained due to the fragmented nature of the sherds. It can be observed, though, that within the first period there is a rapid growth of the number of pots with rim decoration (from 9% to 45%), and an increase of the filling of the strips of the belly decoration (from 30% to 60%),

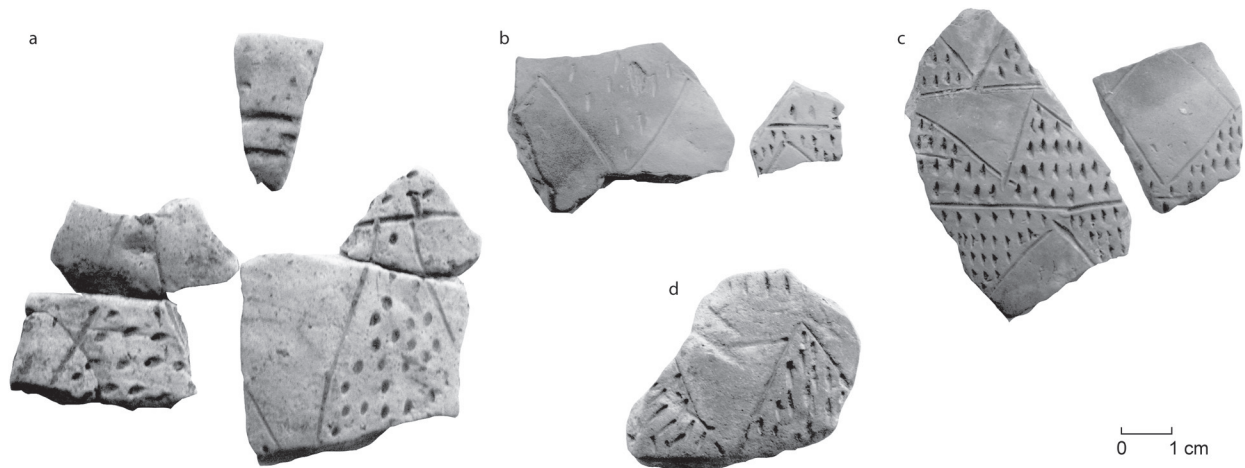


Figure 7 'Non-LBK' sherds with dragon teeth decoration from JKV (nos 32144, 54028, 92001). Scale 2:3.

generally with small pointlets (and some hatching in the second period as well). All so-called non-LBK sherds deviate from this description in one or more ways.

Except those depicted in fig. 1, the non-LBK sherds can only hesitatingly be ascribed to alternatives, remote in space or time as above, or nearer by to Limburg ware, especially from Belgian LBK sites like Rosmeer (*cf.* table 3). Yet, from among the generally acknowledged (Cahen *et al.* 1981; Lüning *et al.* 1989) albeit non-exclusive characteristics of Limburg ware – thickened rims, and ridges; grog or clay pellet tempers with or without burnt bone and/or sand; brown to red-brown surfaces with black bodies; triangle, fishbone or ladder decoration in vertical panels – these all occur singly or in different combinations on the sherds under discussion. As quite explicitly stated in the literature (Lüning *et al.* 1989; van Berg 1990), technical aspects like firing, clay composition and tempering are common to Limburg and La Hoguette; the other aspects are common to LBK as well. Definitions of the various groups should accordingly be based on the decoration of their pots as only this can bring out subtle differences between their respective potting traditions (van Berg 1990); and between them and the LBK, I would add. However, the definitions are apparently not that sharp, as van Berg (1990) has four pages filled with *réattributions à Blicquy-VSG* and *à La Hoguette*, and several of the sherds illustrated there would nicely fit the JKV collection. Not surprisingly therefore that as recently as this workshop I have heard the Sweikhui-

zen sherds (Modderman 1987) on display being variously assigned to the La Hoguette or Limburg traditions by different experts. Some time before the workshop I showed these sherds to colleagues, and to my astonishment they changed my 'non-LBK'-label for 'LBK' (again, with the exception of the sherds in fig. 1). When questioned they said it was because the sherds examined could not decently be grouped with Limburg or La Hoguette. Of course, the specialists I consulted in the workshop by and large agreed on the principle that if something does not fit a definition, it does not belong to the class so defined.¹ When arguing from a 'Limburg', resp. 'La Hoguette' standpoint a 'LBK' assignment for these sherds may be an adequate label, but a very generalizing one at that. For, if the so-called Limburg pottery is sub-divided in a western or Seine-Scheldt Group and an eastern or Rhine-Meuse Group (van Berg 1990), and the latter group is again sub-divided into six 'series', then a lumping of all LBK into one category seems a bit over-done. One needs only to compare the quantities of pottery involved in the two operations, as even from a single short-lived site as JKV there are many more LBK vessels than all Limburg ones put together. I would rather suggest that at least the LBK *Siedlungskammern* be differentiated

1. *Cf.* Constantin 1985, 108: *We have deliberately grouped these vessels with the Bandkeramik pottery because of their shapes. This is, à propos, undecorated ware tempered with calcinated bone.*

(still an over-simplification), hence my insistence on the *local* referents of the analysis. However that may be, *those* non-Limburg sherds and non-La Hoguette ones, which do *not* fit in the canon of the local LBK or even the LBK at large, are *not* to be attributed to those categories, at least not all of them. Neat definitions are certainly helpful in describing complex realities, but hardly ever do they exhaust that reality. While some of the ‘non-LBK’ sherds of JKV should perhaps be given Middle or Upper Rhine Region LBK antecedents, for most of these an ‘in-between class’ should be created to accommodate this non-Limburg, non-La Hoguette, non-(local) LBK pottery, with a definition which comprises characteristics from the three canons and allowing that way gradations between them: some pots will be more Limburg or La Hoguette than LBK, other pots less so without having to be forcefully assigned to either of the established traditions.

Table 2 summarises the description of the non-LBK sherds from JKV as set off against the definitions of Limburg and local LBK ware. None of them is fully local LBK (that is why they have entered the table), and also their participation in the Limburg schemes is very variable, to say the least. A very similar picture may be assembled in relation to the La Hoguette canon (not shown here).

	Limburg	indistinct	LBK
shape	1 rims	10 thin rims	1 band
	3 ridges		32 regular
paste	9 chalk or bone	6 grog	21 regular
		12 sand	
		9 pellets	
firing	21 decorated	-	15 regular
	21 undecorated		
decoration	28	8	21

Table 2 36 decorated and 21 undecorated ‘non-LBK’ vessels, classified according to Limburg- and to local-LBK-definitions.

4. DISCUSSION, PART TWO

In observation series as well as in any production a small but quite stable number of errors is made: mis-readings and off-targets. No doubt this has also been the case with LBK potting. It has been suggested that the sherds going here with the label ‘non-LBK’ are

precisely such misfires. Thus, a small percentage of the pots in an excavation belong to such a category if they have not been smashed and crushed to be re-used as grog temper in early days, and their quantity should be an approximately constant proportion of the sherds they are associated with, given household production. However, in the JKV excavation that proportion is very variable: the correlation between the sherd counts of both categories is $r = 0.21$, which is very low, therefore the counts of the supposed ‘misfires’ and of the ‘non-failures’ have almost no relation one with another; in fact, only 4% (equals r^2) of the variability can be attributed to that cause. Additionally, as I have argued elsewhere (Van de Velde 2009) in the JKV material qualitative differences between find units should be taken seriously, quantitative differences being caused by post-depositional factors only. That is, my ‘non-LBK’ sherds do indeed pose a problem; they cannot be reasoned away through hypotheses of failure.

Another early hypothesis on non-LBK pottery was that it represents a functional variation within the LBK repertoire. At the background is the observation that very few (if any) accompanying finds of a definite non-LBK character have been located (Constantin 1985; Verhart 2000, 229). The discussion seems another instance of the pots-and-people problem: do anomalous pots really represent weird people, or not? However, the non-LBK pottery as it is understood by most of us, including that in this paper, is so widely divergent from the LBK canon (technologically, and perhaps even more so from the decorative schemes current in that society) that even mentally disordered Bandkeramians would not be able to conceive of it. In other words, there were differently habituated people behind it.

Because of these considerable differences other students support the idea that Limburg ware is made by a (hypothetical) group of herders or hunters in the area to the west of the north-western Bandkeramik territory (Modderman in Cahen *et al.* 1981, 140; Constantin 1985; Lüning in Lüning *et al.* 1989, 357; van Berg 1990, 163; Jeunesse 2001), and therefore an occasional exchange of meat or grain would be the mechanism of acquisition. While this may be an option, there will have been more to it than food exchange alone. In my opinion at least two issues have not been addressed: the substantial variability of ‘Limburg’ decoration, and the occurrence of ‘Lim-

NON-LBK IN DUTCH LBK

no.	temper	shape	firing	decoration	house	phase	fig. no.	parallels
19078	5	3	3	curvilinear incision	59	I-2	-	F Abb. 69
19087	1	1	4	stab-and-drag, fringe	57		1	A fig.7-3, B fig. 7-10, E Abb. 9-7
19087	5	x	5	ladder	57		1	A fig.10-2
19087	5	x	5	oblique hatches	57		-	A fig. 15-1; D
19087	5	x	1	curvilinear incision	57		-	
22019	4	x	4	fishbone	37	I-1	-	A fig. 12-10
26090	1	1	4	stab-and-drag, fringe	57	I-3	-	A fig. 5-3, B fig. 7-10
26090	3	1	5	stab-and-drag, fringe	57		-	A fig. 5-3, B fig. 7-2
26090	0	x	2	triangle, pointlets	57		-	A fig. 17-1(?)
31075	4	x	4	double ladder; incrustrated	13		4	?
31075	5	x	4	stab-and-drag, fringe	13		-	A fig. 5-3, B fig. 7-10
31075	0	1	4	fishbone	13	I-4	3	A fig. 12-1, B fig. 7-5
31075	0	4	4	triangles, pointlets	13		6	A fig. 15-4, 5
32100	5	2	4	2 deep incisions parallel to ridge	35?	I-4/II	-	
32144	3	1	1	triangle, pointlets	-	II	7	A fig. 17-1
33000	3	x	4	triangle, pointlets	-	II?	-	A fig. 15-4, 5
33025	4	1	4	curvilinear wave	-	I-1?	-	
44012	5	1	2	triangle, fringe; pointlets parallel to rim	14		-	
44012	4	x	6	triangles; oblique hatched strip	14	I-4	-	
44012	5	2	6	none	14		-	
44028	x	x	4	oblique hatched strip (2-t. spatula?)	-	I-1?	4	A fig.10-2
46004	5	4	1	oblique ladder; row pointlets	-	I-1?	-	
49015	5	x	1	small triangles	22	I-4	-	
49015	5	4	1	triangle, pointlets	22		-	A fig. 17-1
49016	1	x	1	parallel incisions	23	I-3?	-	
49050	5	2	4	curved fishbone	24?	I-1?	-	A fig. 14-3
49080	5	x	2	triangle, pointlets	-	I-3?	-	A fig. 17-1
49104	4	x	5	fishbone-like	24?	I-1?	-	A fig. 12-10, 13-1
49105	1	x	4	parallel lines?	-	I-1?	-	
54028	5	x	1	dragon's teeth	19	I-3	7	
54028	5	x	1	dragon's teeth	19		7	
54029	5	x	1	dragon's teeth	19	I-1?	-	
57020	0	1	4	stab-and-drag, fringe	41	I-4	5	A fig. 5-3, B fig. 7-10
91002	0	x	5	cross-hatched strip, fringe	2	I-3	5	A fig. 8-1
91124	2	x	6	pseudo-fishbone	3	I-1	-	
91124	2	x	6	fishbone	3		-	B fig. 7-5
91124	0	4	1	double triangles	3		6	A fig. 15-4, 5
92001	4	4	1	triangle, pointlets	4	I-3	7	A fig. 17-1, C t. 33-101
93050	0	x	6	parallel lines, fringe	5	I-1?	-	B fig. 6-4, 10-1
94052	3	1	6	2 rows pointlets	-	I-2	-	

Table 3 Description of the Limburg and 'non-LBK' pottery at *Janskamperveld*.

Find no: find number in excavation

temper: 0: none apparent; 1: organic; 2: bone fragments; 3: clay pellets; 4: crushed pottery; 5: sand/silt; x: not determined

shape: shape of pot – 1: thickened rims; 2: ridge; 3: applied band; 4: straight rims; x: not visible

firing: sherd fracture – 1: light heart; 2: id. & fair skins; 3: id. & grey surfaces; 4: dark heart; 5: id. & fair skin; 6: id. & dark surfaces; x: indeterminate

phase: settlement phase – I-1 to I-4, first habitation; II, second habitation period

parallels: A: van Berg 1990; B: Cahen *et al.* 1981; C: Constantin 1985; D: Jeunesse 1994; E: Lüning *et al.* 1989; F: Modderman 1959.



Figure 8 Excavation plan, with frequencies of 'non-LBK' pots.

burg'/'non-LBK' decoration on 'Bandkeramik' pots. The first problem may be solved by the introduction of yet other hypothetical herders' or hunters' groups, similarly of the 'not-digging' variety (Modderman in Cahen *et al.* 1981, 159; Modderman 1985, 118), which is, given the mosaic of Late Mesolithic and

Early Neolithic cultures of those days, not really a daring proposal (*cf.* Jeunesse 1994; Brounen 1999). The second problem of Limburg-like characteristics on otherwise Bandkeramik pots and *vice versa* is neither addressed nor explained in the literature but probably tacitly included under the label 'LBK' (*cf.*

note 1), sometimes justified through the invocation of a *'polythetic distribution of characteristics'* (Clarke 1968, 37-38). It should be admitted that a choice between shape, temper, and firing as *the ultimate razor* cannot reasonably be made, only decoration if any defines LBK pottery. Therefore, a grey zone where one student will say 'LBK' and another 'Limburg' (or 'Blicquy', or 'La Hoguette', or '*Begleitkeramik*' or ... as the case may be), both with justifiable confidence, will necessarily continue to exist. On the assumption that these non-LBK pots have been built by people not versed in the LBK canon (above), this extracanonial ware can be most simply explained as a product of acculturation. Acculturation that is, or socialization of non-Bandkeramian immigrants in the Bandkeramik milieu: occasionally a female from beyond the Frontier will have entered the Bandkeramik world, as marriage partner an element of the symbiotic relationships across that border (Brounen 1999; Verhart 2000, 18, 40). First she will have continued to use her brought foreign pot(s), only to replace them after breakage with decreasingly non-conformist ware, gradually losing her native, extra-territorial 'practical knowledge' (Giddens 1984, 49-50), first on the score of clay preparation and firing, second in the area of pottery decoration. Probably, the making and firing of the paste is the first thing to join in with the Joneses, since finding, mining, selecting and preparing the clay will have been done jointly with the neighbours, resulting in a Bandkeramik-like ware, or fabric of the pots. Decorating, though probably done in company as well, has more of an individual pursuit, regulated rather by private and innate custom or habitus than by conscious persuasion, to be lost only with the passing of the years, but until then resulting in Bandkeramik ware pots with some lingering non-LBK characteristics. It should be borne in mind that the other members of the potters' circle also understood pottery decoration as part of their own family identity. And certainly, where several of these non-LBK pots occur together near a house, different stages of 'bandkeramization' are represented.

Some confirmation of this mechanism can be found in the diminutive proportion of such non-LBK ware in the archaeological record of the *Janskamperveld* settlement: 99 sherds deriving from 36 pots in a total of over 1600 LBK-decorated vessels; or 175 sherds for 57 pots among more than 3600 pots,

when the undecorated ware is also incorporated. This is not even two percent of the total, testimony of something special, in the order of only a few allochthonous utterances in a full hundred years. Even when considered per house, this type of ware is not very common: fifteen houses (among a total of 69 houses excavated) can be associated with altogether 45 non-LBK vessels, eight houses being accompanied by only one single pot (fig. 8).

5. CONCLUDING REMARKS

It is highly remarkable that the decoration on the LBK pots at JKV is not affected at all by these allochthonous utterances in any archaeologically perceptible way: LBK decoration stays LBK decoration, entirely within its long standing canon; for these NW-Group Flomborn period people decoration was a non-negotiable cultural item, to extend Ulrike Sommer's ideas (Sommer 2001) to this domain.

Apart from that, according to the analysis in this paper *Non-Limburg sherds in an LBK context can no longer be automatically grouped with LBK*, to paraphrase van Berg (1990, 163). Extending that conclusion to other domains of culture, whenever a canon can be identified (in potting, or in flint smithing, or house building, or whatever cultural domain) the margins with their exceptions, their in-betweens should be taken seriously and not be dumped on the table of the geographical neighbours.

Finally, if the acculturation idea has any merit, La Hoguette and Limburg pottery may also show 'in-between-these-two' characteristics without LBK adoptions, at least in theory; and here, some of van Berg's 'series' may be brought into memory. Also, one would expect LBK/Pre-Cattle-and-Cereal-Neolithic gradations outside the LBK by people who left the latter society.

6. REFERENCES

- Berg, P.-L. van 1990. Céramique du Limbourg et néolithisation en Europe du Nord-Ouest. In: D. Cahen & M. Otte (eds), *Rubané et Cardial*, Liège (Études et Recherches Archéologiques de l'Université de Liège 39), 161-208.
- Brounen, F.T.S. 1999. Vroegneolithische Begleitkeramik uit Limburg en Noord-Brabant, *Archeologie in Limburg* 82, 59-64.

- Cahen, D., C. Constantin, P.J.R. Modderman & P.-L. van Berg (eds) 1981. Eléments non-Rubané du néolithique ancien entre les vallées du Rhin inférieur et de la Seine, *Helinium* 21, 136-159.
- Clarke, D.L. 1968. *Analytical Archaeology*, London.
- Constantin, C. 1985. *Fin du Rubané, céramique du Limbourg et post-Rubané, le néolithique le plus ancien en Bassin Parisien et en Hainaut*, Oxford (BAR International Series 273).
- Giddens, A. 1984. *The constitution of society, outline of the theory of structuration*, Cambridge.
- Jeunesse, C. 1994. Le néolithique du sud de la plaine du Rhin supérieur, *Prähistorische Zeitschrift* 69, 1-31.
- Jeunesse, C., 2001. Armatures asymétriques, régionalisation, acculturation. Contribution à l'étude des relations entre le Rubané et la composante autochtone dans l'Ouest de la sphère danubienne. In: M.Otte & J.K. Kozłowski (eds), *Préhistoire de la grande plaine du Nord de l'Europe, Actes du Colloque Chaire Franconi interuniversitaire au titre étranger* (Université de Liège, 26 juin 2001). Liège (Études et Recherches Archéologiques de l'Université de Liège 99), 147-165.
- Louwe Kooijmans, L.P. 1991. An Early Bandkeramic settlement and a Roman cremation cemetery at Geleen-Janskamperveld (Netherlands), *Notae Praehistoricae* 11, 63-65.
- Louwe Kooijmans, L.P., P. van de Velde & H. Kamermans 2002. The early Bandkeramic settlement of Geleen-Janskamperveld, its intrasite structure and dynamics. In: J. Eckert, U. Eisenhauer & A. Zimmermann (eds), *Archäologische Perspektiven, Analysen und Interpretationen im Wandel* (Festschrift Lüning), Rahden, 373-397.
- Lüning, J., U. Kloos & S. Albert 1989. Westliche Nachbarn der bandkeramische Kultur: La Hoguette und Limburg, *Germania* 67, 355-393.
- Modderman, P.J.R. 1959. Die bandkeramische Siedlung von Sittard, *Palaeohistoria* 6-7, 33-120.
- Modderman, P.J.R. 1974. Die Limburger Keramik von Kesseleyk, *Archäologisches Korrespondenzblatt* 4, 5-11.
- Modderman, P.J.R., 1985. Die Bandkeramik im Graetheidegebiet, Niederländisch Limburg, *Bericht der Römisch-Germanischen Kommission* 66, 26-121.
- Modderman, P.J.R. 1987. Limburger aardewerk uit Sweikhuizen, gem. Schinnen, prov. Limburg, *Analecta Praehistorica Leidensia* 20, 87-94.
- Sommer, U. 2001. Hear the instruction of thy father, and forsake not the law of thy mother, Change and persistence in the European early Neolithic, *Journal of Social Archaeology* 1, 244-270.
- Spatz, H. 1996. *Beiträge zum Kulturenkomplex Hinkelstein-Großgartach-Rössen, der keramische Fundstoff des Mittelneolithikums aus dem mittleren Neckarland und seine zeitliche Gliederung*, Stuttgart (Materialhefte zur Archäologie in Baden-Württemberg 37).
- Velde, P. van de (ed.) 2009. *Excavations at Geleen-Janskamperveld*, Leiden (Analecta Praehistorica Leidensia 39).
- Verhart, L.B.M. 2000. *Times fade away, the Neolithization of the southern Netherlands in an anthropological and geographical perspective*, PhD thesis Leiden (Archaeological Studies Leiden University 6).

Non-LBK pottery from Wange and Overhespen

Marc Lodewijckx

ABSTRACT

Research on the Linearbandkeramik (LBK) culture is making rapid and significant progress. The relationship between LBK settlers and indigenous groups in particular is a hot topic. The discovery of a cluster of sites outside the traditional LBK distribution area in central Belgium has introduced new elements in this debate. In this article, I will discuss the characteristics of these sites. The study reveals that the sites played a part in large-scale cultural developments of which the impact is not completely clear as of yet.

KEYWORDS

Wange, Overhespen, LBK, Limburg pottery, Hesbaye, Belgium.

1. THREE LBK SITES IN THE KLEINE GETE REGION

A detailed survey in the northern part of the Hesbaye loess region from the late 1970s onwards led to the discovery of three sites of the Linearbandkeramik (LBK) culture along the river the Kleine Gete (fig. 1.1-3; Lodewijckx 1990; Lodewijckx & Bakels 2000). These three, partially excavated settlements are rather small (c. 1.5 ha). All three are located on a low hill, flanked by natural gullies, very close to the edge of the alluvial plain. The sites seem to have formed a regional cluster. Because of their small size and the damage inflicted by erosion, no other sites could be located but we assume some must have existed. The nearest settlement of the southern Hesbaye group is Waremmes in the valley of the Geer, about 17 km to the south-east of Wange.

A few kilometres to the north, there is an abrupt transition between the Hesbaye loess zone and the Hageland area to the north. The Hageland has a varied relief with areas of sandy loam, clay and sand.

The Steenberg at Wommersom (fig. 1.4) is a long protrusion in this transitional area between the Hesbaye and the Hageland. It forms the only known outcrop of Wommersom quartzite, a source of stone that was very popular amongst Mesolithic hunter-gatherer groups.

The settlements seem to have been conceived as a whole from the beginning. No overlap of structures or pits could be detected during the excavations. The observation that the rubbish in several pits was restricted to the bottom leads to the assumption that the settlements were deserted after a rather short period of time. ¹⁴C analyses on charcoal allowed dating the sites in the last centuries of the 6th millennium cal BC.

The data recovered from the three LBK settlements fit the traditional image of the LBK but also differ from it for a number of characteristics (Lodewijckx & Bakels 2000). Typical for the LBK are the clustered settlements in an undulating loess landscape, large dwelling structures with rubbish pits in the vicinity, pear-shaped vessels with the typical LBK decoration, traditional tools on flint blades including sickle blades, polished adzes and querns, the cultivation of emmer, einkorn and pea, and the keeping of cattle, sheep, goats and pigs. Also the occurrence of Limburg pottery is not unique, even if its origin is not all that obvious. Differences with the traditional LBK image are the small number of settlements belonging to this cluster, the slightly trapezoidal house plans, the clusters of pits of a type apparently unknown elsewhere, the proximity to the outcrop of Wommersom quartzite that was processed locally, workshops where lydite adzes were made, the presence of small axes, and the occurrence of barley. Apart from a few pits with few finds, artefacts in Wommersom quartzite (fig. 2, 1-5) are present in every pit in a proportion from a few percentages up to more than 50%, with an average of 10% on all three sites. Most artefacts in Wommersom quartzite

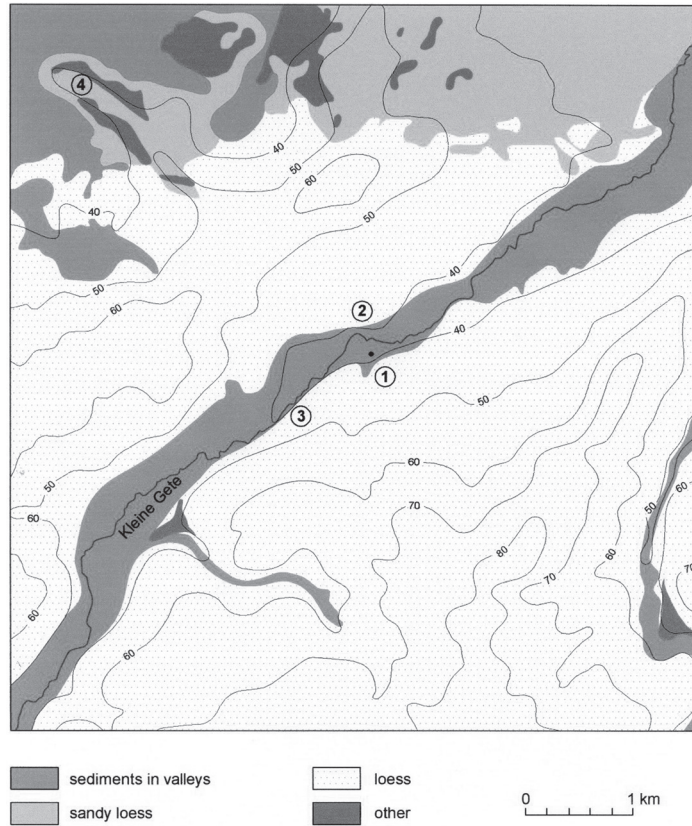


Figure 1 Map of the *Kleine Gete* area with the sites of Wange *Neerhespenveld* (1), *Overhespen Sint-Annaveld* (2), Wange *Damekot* (3) and the outcrop of *Wommersom quartzite* (4).

are to be described as atypical tools, although several show a great resemblance with the highly standardised LKB tools. The presence of artefacts in lydite (fig. 2, 6) is more at random but in some pits they form the majority of lithic artefacts, although in that case they mainly consist of flakes and chips and give evidence for the manufacturing of adzes on that spot.

These non-typical elements are regarded as influence from non-LBK societies (Lodewijckx & Bakels 2000). With respect to the barley, the chronological relation with other barley cultivating sites in the Early Neolithic is not completely clear. However, the sites along de *Kleine Gete* seem to have fulfilled a pioneering function. The exploitation, processing and distribution of *Wommersom quartzite* and lydite are most frequently associated with indigenous groups. Their appearance within the LBK settlements indicates that the inhabitants either adopted this exploitation, or that they had good contacts with indigenous groups. The fact that the stoneworkers at Wange and Overhespen did not make typical LBK

tools creates room for the assumption that at least some of them were not from LBK-origin. Adzes and arrowheads of LBK type were also discovered in the more northern area of the *Hageland*, a region where LBK settlements have not been documented. The iron-sandstone that was used to polish the adzes appears to come from this *Hageland* region as well. Hence, it is possible that part of the inhabitants of the LBK-settlements at Wange and Overhespen were not LBK in origin.

2. NON-LBK POTTERY FROM THE KLEINE GETE SITES

Most pottery of the sites at Wange and Overhespen perfectly fits the characteristics of the typical LBK pottery. They are tempered with grog, sand and to a limited degree also with organic temper. Most common are small, pear-shaped and decorated vessels. Coarse ware includes pear-shaped and barrel-shaped pots, but also open, semi-spherical and more closed

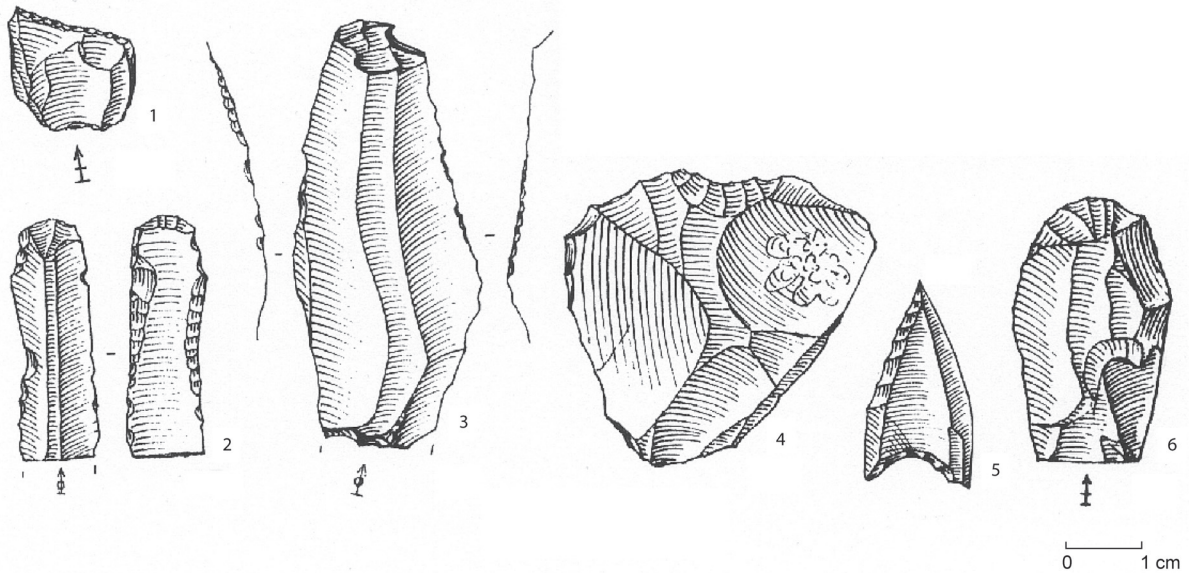


Figure 2 Wommersom quartzite (1-5) and lydite (6) tools from the LBK-pits. Scale 1:1.

bowls. The decoration consists of incised lines, pin-pricks or fingernail impressions. It generally consists of a simple configuration, where the principal decoration zigzags angular or undulating across the surface. Predominantly, bands of two parallel lines were applied which were filled in either with lines or dots (Modderman 1970, 122, Types AIII, DII and DIII). A dented spatula (*ibid.*, 122, Types AIV and FII) was used in only one third of all cases. This implies a date in the two final phases (period IIc-d) of Modderman's chronological scheme (*ibid.*, 199).

A few sherds are totally different in tempering material, shape and decoration techniques (fig. 3). These pots are usually semi-spherical and are tempered with small fragments of bone. One base fragment (fig. 3.4) belongs to a cylindrical beaker. Based on these characteristics these sherds can be attributed to Limburg pottery, which may be accredited to another population group (Modderman 1981; van Berg 1990). These sherds came to light in the LBK rubbish pits with the most abundant number of artefacts, situated in the centre of the villages, and therefore can be considered as contemporaneous and well incorporated in the LBK dwelling structure. Some of the most characteristic Limburg sherds were found in the rubbish pits of the LBK settlement at Overhespen. They have very thin walls and are made of a hard but very brittle fabric with a fine temper com-

posed of grog and organic material with a small admixture of small bone fragments. The surface has been smoothed in all cases, but usually exhibits an abundance of small round voids from the organic temper. The fractured surfaces are sometimes remarkably oblique. The colour varies from beige to almost black, although most of the decorated sherds are red-brown. The decoration, which consists of lines, has been applied very superficially. The dots have been stabbed a little deeper but, because of their small dimensions, they are hard to distinguish from the little holes left by the organic temper. A characteristic feature is the sharp angle at which the decoration was applied.

Other sherds exhibit only some of these technological features – in particular, the fine organic temper, the thin walls and the carefully smoothed surface – and can also be distinguished from traditional LBK pottery. They have an intermediate position between typical LBK pottery and Limburg pottery. Unfortunately, this pottery is in most cases very fragmented. The question arises whether the Limburg pottery and LBK pottery are always that distinct, and whether both groups – even if they had different origins and pottery traditions – may not have met, resulting in a mutual exchange of know-how.

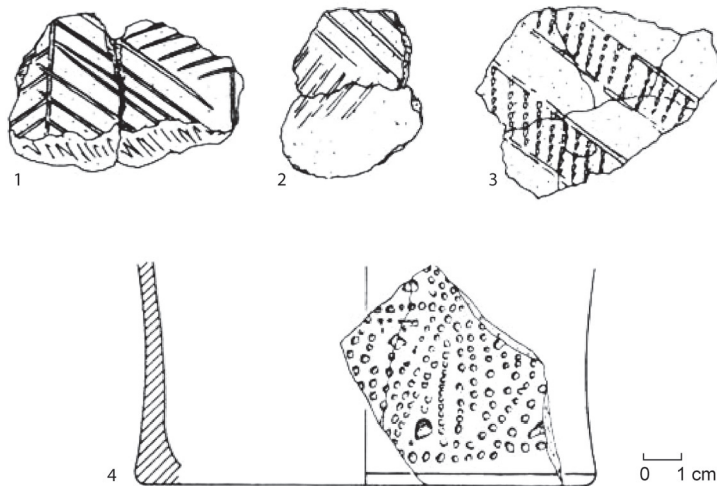


Figure 3 Non-LBK pottery from Overhespen *Sint-Annaveeld* (1-3) and Wange *Damekot* (4). Scale 1:2.

3. DISCUSSION

The inhabitants of the sites at Wange and Overhespen most probably had their roots in the LBK. The tradition of oblong house constructions, the economy based on agriculture and cattle breeding, the typical tools and pottery in these settlements clearly belong to the characteristic western LBK as found especially in the southern Hesbaye region, the Netherlands and the Rhineland. Several characteristics, such as the Limburg pottery, however, suggest the presence of non-LBK population – which may or may not have been temporary. Limburg pottery differs too much from the LBK-pottery to be considered a variant (van Berg 1990, 171). The chance that this pottery was preserved outside the protective environment of a LBK rubbish pit is very low, but not impossible (Modderman 1981). Limburg pottery appears nevertheless to be widespread. It is still unclear who the producers of the Limburg pottery were. It is not clear whether these groups were of local origin or were rooted elsewhere. Whether the barley at Wange and Overhespen was imported via the same population group as the Limburg pottery and the lydite manufacturers is not clear yet. They nevertheless appear to constitute a significant component in the global context of the Early Neolithic populations. The lack of distinct traces and archaeological material makes them, however, archaeologically almost invisible, and renders it difficult to specify their influence and position in the Neolithisation process in Middle Belgium.

4. REFERENCES

- Berg, P.-L. van 1990. Céramique du Limbourg et néolithisation en Europe du Nord-Ouest. In: D. Cahen & M. Otte (eds), 161-208.
- Cahen, D., H. Keeley, I. Jadin & P.-L. van Berg 1990. Trois villages fortifiés du Rubané récent en Hesbaye liégeoise. In: D. Cahen & M. Otte (eds), 125-146.
- Cahen, D. & M. Otte (eds) 1990. *Rubané et Cardial. Actes du Colloque international de Liège, novembre 1988*, Liège (Études et Recherches Archéologiques de l'Université de Liège 39).
- Jadin, I. 1990. Économie de production dans le Rubané récent de Belgique. Approche comparative des industries lithiques de trois villages. In: D. Cahen & M. Otte (eds), 147-153.
- Lodewijckx, M. 1990. Les deux sites rubanés de Wange et d'Overhespen (Belgique, prov. Brabant). In: D. Cahen & M. Otte (eds), 105-116.
- Lodewijckx, M. & C. Bakels 2000. The interaction between early farmers (Linearbandkeramik) and indigenous people in central Belgium. In: J.C. Henderson (ed.), *The prehistory and early history of Atlantic Europe*, Oxford (BAR International Series 86), 33-46.
- Modderman, P.J.R. 1970. *Linearbandkeramik aus Elsloo und Stein*, The Hague (Nederlandse Oudheden 3).
- Modderman, P.J.R. 1981. Céramique du Limbourg: Rhénanie-Westphalie, Pays-Bas, Hesbaye. *Helinium* 21, 140-175.

Not just bits of bone and shades of red

Bruchenbrücken (Hesse, Germany) and its La Hoguette pottery

Tessa Maletschek

ABSTRACT

In Friedberg-Bruchenbrücken, 25 km north of Frankfurt am Main, Germany, a LBK settlement was excavated in 1984-'85 and 2003. This settlement includes 17 house remains, and pottery as well as other finds from the Earliest LBK and later phases. In total 55 La Hoguette vessel units were discovered in the LBK pits. Since the site is completely excavated it is possible to study the distribution of the La Hoguette pottery within the settlement. Three different La Hoguette wares could be distinguished, on the basis of their temper and its abundance. Only 42% of the discovered vessel units were tempered with the 'typical' bone temper, while 58% were tempered with organic material, sand and/or grog, giving the vessels a more Bandkeramik appearance. X-Ray Fluorescence Analysis indicated that the La Hoguette pots in Bruchenbrücken were made of the same local clay of which the LBK pottery was made. The earliest radiocarbon dates of Bruchenbrücken place the beginning of the settlement in the 54th century cal BC, so the first inhabitants of this hamlet probably still felt connected to the character of the Earliest LBK but at the same time stood at the advent of the following Flomborn phase. Perhaps they were, with their established relationships to the west (La Hoguette pottery and western flint e.g. from Rijckholt), the pioneers for the upcoming LBK diffusion across the Rhine.

KEYWORDS

Neolithic, Linearbandkeramik, La Hoguette, Rhine-Main area, settlement site.

1. PREVIOUS RESEARCH

The first scattered finds in Friedberg-Bruchenbrücken, Hesse, Germany were discovered in 1945. During construction works in the following years and decades, pits with pottery dating to the middle and later phases of the Linearbandkeramik (LBK) were unearthed.

In 1984-'85 an excavation of this site in the Wetterau took place in the context of the project *Ausgrabungen zum Beginn des Neolithikums in Europa* under the direction of Prof. J. Lüning (Lüning 1997). An area of 2775 m² could be examined and traces of eight houses were found. Six of these can be dated to the Earliest LBK (*Älteste LBK*) because of their typical layout and orientation.

The pottery in the 'long-pits' (*Längsgruben*) along the houses confirms this date. Altogether 257 pits and postholes were discovered (Stäuble 1997) as well as 1246 vessel units dating to the Earliest LBK and 1535 vessel units belonging to the later LBK periods (Flomborn to latest LBK). One house (house 1) belongs to the later LBK period (Flomborn phase), and one house (house 7) was only partially investigated, because it was situated outside the excavation area. It is difficult to establish an intra-settlement chronology, although correspondence analysis of the flint raw material and technological differences of pottery (temper material changes) indicate a sequence in which houses 8 and 2 are earlier, while houses 3 and 6 are later (Kloos 1997, 217).

A total of 15 radiocarbon samples was dated, but surprisingly the earliest group of dates lies between 5344 and 5254 cal BC. A second group of dates covers the time between 5250 and 5072 cal BC. The last group is set further apart from the other dates (5031-4788 cal BC; Stäuble 2005, 241). Thus, the typologically Earliest LBK settlement belongs, with regard to

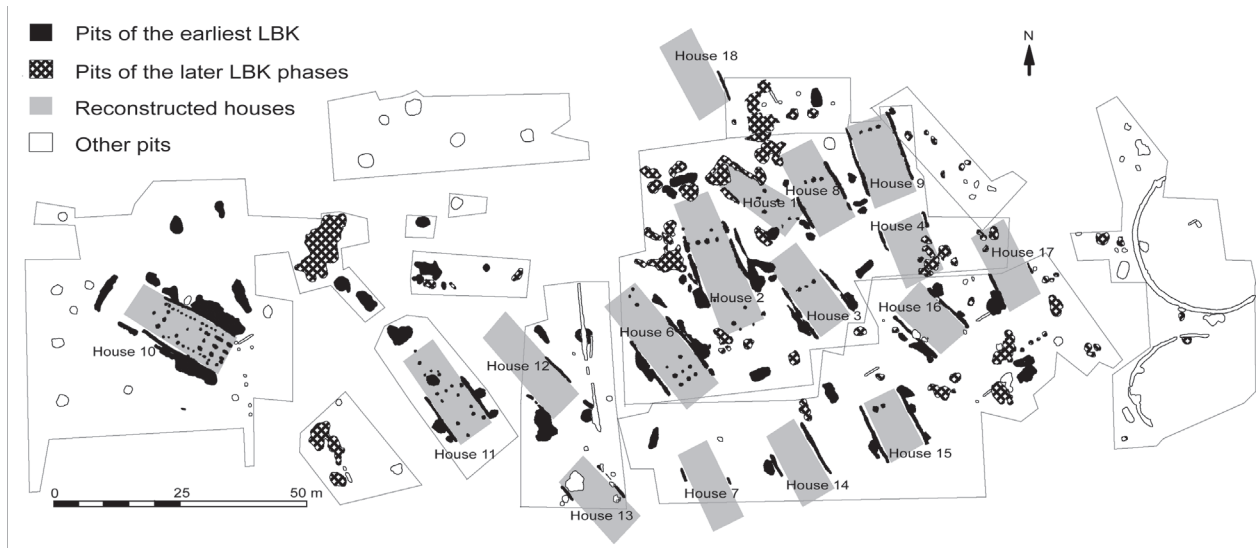


Figure 1 Excavation plan of Friedberg-Bruchenbrücken, Germany (after Kegler-Graiewski *et al.* 2003, fig. 28).

the radiocarbon dates, to the very end of the Earliest LBK or to the following Flomborn phase. This ‘overlapping’ of the different LBK phases is, for example, also established at Goddelau (30 km south of Frankfurt), a settlement site where (typologically) only the Earliest LBK phase was discovered, but where four samples provided ^{14}C dates of the 53rd century cal BC. This confirms the assumption that the Earliest LBK at least in some regions continued till 5200 cal BC (Stäuble 2005, 223, 241).

2. THE 2003 EXCAVATIONS

Planned construction works on the site of the LBK settlement brought the archaeologists back to Bruchenbrücken in 2003, nearly 20 years after the first excavation campaign. Beforehand a geophysical examination showed that more house structures were to be found in the area surrounding the 1980s excavations. Nine more house remains and several pits were discovered in an area of 24,300 m² (fig. 1). Altogether 228 pits and postholes were documented, 131 of which definitely belong to the Earliest LBK. Most of the pottery can be dated to the first phase of the LBK, but also sherds corresponding to later LBK periods were found. The LBK ceramic material comprises 207.865 kg, but the number of vessel units still has to be evaluated (doctoral thesis of the author).

Two new radiocarbon dates were commissioned in 2007.¹ They originate from the long-pit 104 of house

10. One sample dates to the later phases of the LBK: UtC-15029, 6180 ± 50 BP (5213-5059 cal BC) and the second sample is even younger, thus dating to the very end of the LBK: UtC-15061, 5990 ± 90 BP (5000-4777 cal BC). The dates were taken from two different charred seeds, which were found about 40 cm apart in the topmost stratum of the southern edge of the pit. The possibility of later intrusions in an earlier context can almost never be ruled out, especially at a site with later settlement activity. While working with radiocarbon dates one has to remind that the dated objects only show a punctual event within a continuous relation (Stäuble 2005, 240).

3. FOREIGN ELEMENTS

In the course of the analysis of the finds of both excavations some ‘foreign’ elements were found. Flint material from the west, *e.g.* Rijckholt (The Netherlands) or Vetschau (near Aachen, Germany) was the preferred raw material in Bruchenbrücken (53%). These flint sources are at a distance of over 200 km from the site. The inhabitants of other nearby Earliest LBK settlements (*e.g.* Frankfurt-Niedereschbach and Goddelau) rarely used western flint (7.9% and 1.8%).

1. All dates have been calibrated with Oxcal v4.0 (Bronk Ramsey 1995; 2001), using the Intcal04 calibration curve (Reimer *et al.* 2004).

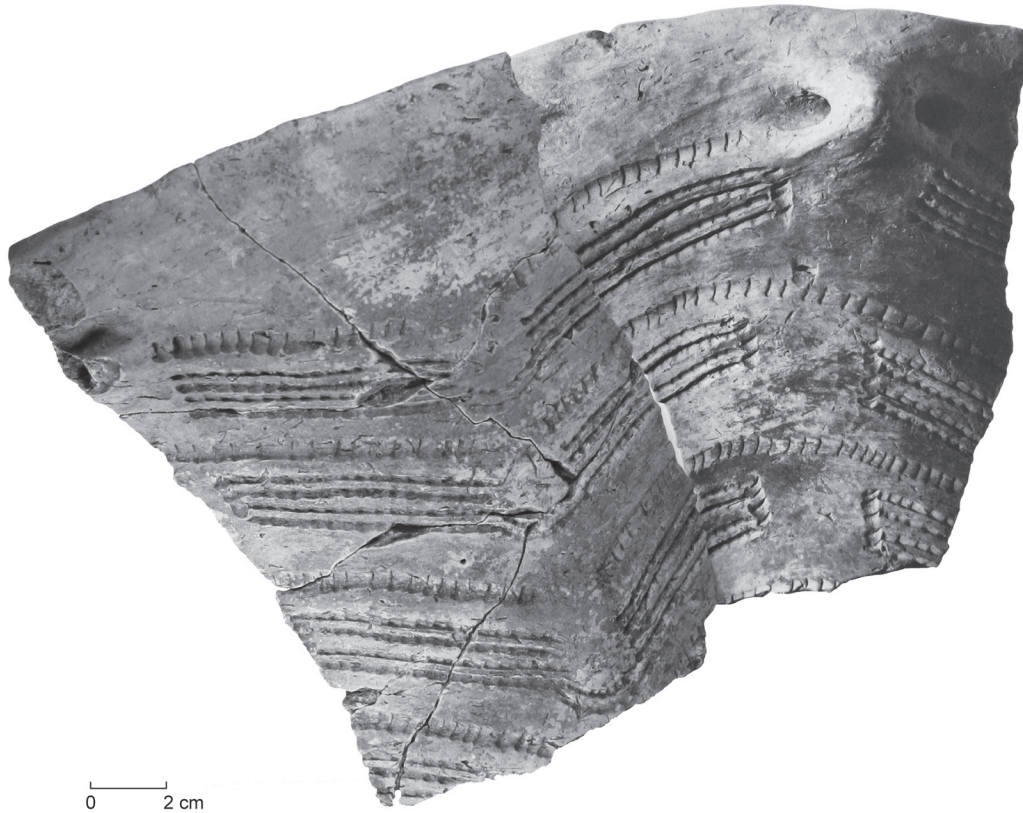


Figure 2 Two matching parts of vessel unit 1574 – one discovered during the excavation in the 1980s and the other in 2003. The distance between both find spots is 20 m. Scale 1:2.

In Niedereschbach the so-called Baltic flint (71.1%) was common, and in Goddelau Jurassic chert (68.8%) from the Swabian Alb, 150 km to the south, was used (Fischer 2005, 22, 35). Bruchenbrücken and Steinfurth, another early LBK settlement situated in the Wetterau region, 12 km to the north of Bruchenbrücken, are the only hamlets where western flint was frequently discovered (Steinfurth: 65.9%); obviously the inhabitants had access to a completely different flint distribution system. Flint from Rijckholt becomes one of the most important raw materials during the later LBK phases and was traded over large distances (Fischer 2005, 19).

Special types of arrowheads also mirror the intensive contacts to the west. An asymmetrical trapezoidal right-winged arrowhead found in 2003 shows the typical form of the Late Mesolithic in western Europe. Such a piece has never been discovered before at sites of the Earliest LBK. Together with a triangular arrowhead found in 1984-'85 it shows the

connection of the inhabitants of Bruchenbrücken with people living in the west, presumably the 'La Hoguette people'. It is probably no coincidence that this arrowhead was discovered in long-pit 18 of house 2, the house with most La Hoguette vessels.

4. LA HOGUETTE POTTERY

In total 39 La Hoguette vessel units were already discovered in the excavation of 1984-'85, which unearthed the remains of the central part of the hamlet. In 2003 the periphery of the settlement was brought to light and with it 16 more La Hoguette vessel units.

The phenomenon of La Hoguette pottery found within LBK settlement pits is not new and has been observed in several excavations in Hesse, *e.g.* Goddelau, near Groß-Gerau and Steinfurth (Lüning *et al.* 1989). But even though the quantity of 55 vessel units seems low for a whole settlement, it is quite high in comparison to other sites. The relation of



Figure 3 Profile of the vessel unit 460 (excavation 2003) showing the typical construction technique of La Hoguette pots in Bruchenbrücken ('N-technique'). Natural size.

LBK vessel units to La Hoguette vessel units in Bruchenbrücken is 98.6% to 1.4%.

In Steinfurth, 47 La Hoguette sherds belonging to one vessel unit (shape 1; Lüning *et al.* 1989, 377, fig. 4) were found in a pit together with pottery of the Earliest LBK (Langenbrink & Kneipp 1990, 155, fig. 6). The ovoid La Hoguette pot is 21.5 to 22 cm high and has a rim diameter of 19 cm. It is tempered with sand and grog and decorated with applied moulding, horizontal stab-and-drag (*Furchenstich*) rows, and rectangular indentations. Through this find the connection of the site to the La Hoguette group is demonstrated, but beyond that nothing more can be said about this relationship.

In Bruchenbrücken the 55 La Hoguette vessel units consist of 151 single sherds, *i.e.* on average 2.7 sherds per vessel unit. The fragmentation is therefore comparable with the pottery fragmentation of the Earliest LBK in Bruchenbrücken (2.5 sherds per unit). The average weight per La Hoguette vessel unit is 51.1 gm the heaviest unit being 628 gm, the lightest being 4 gm. In 2003, the archaeologists were

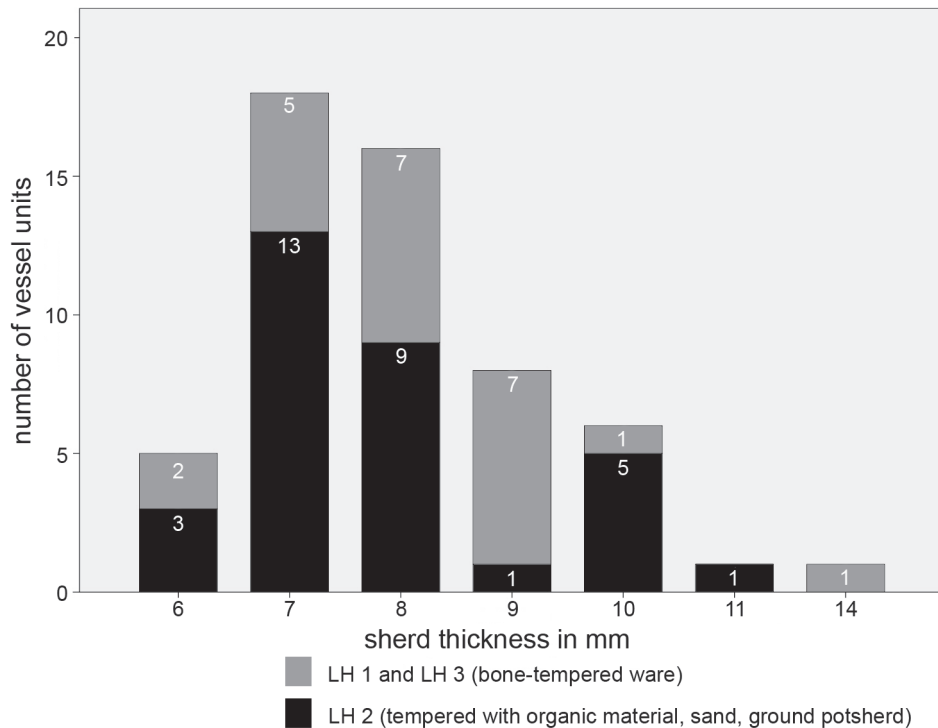


Figure 4 Thickness of La Hoguette sherds, grouped in bone tempered ware and sherds tempered with organic material and sand/grog.

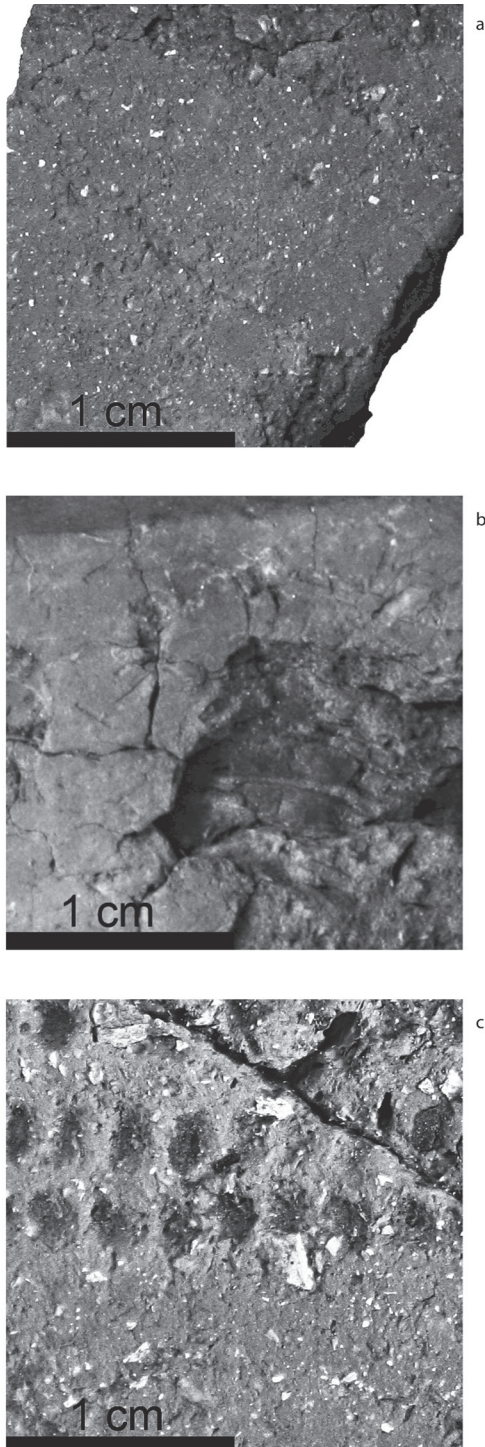


Figure 5 Examples of the three La Hogue wares from Bruchenbrücken: LH 1, LH 2 and LH 3 (a, b, c). 3x natural size.

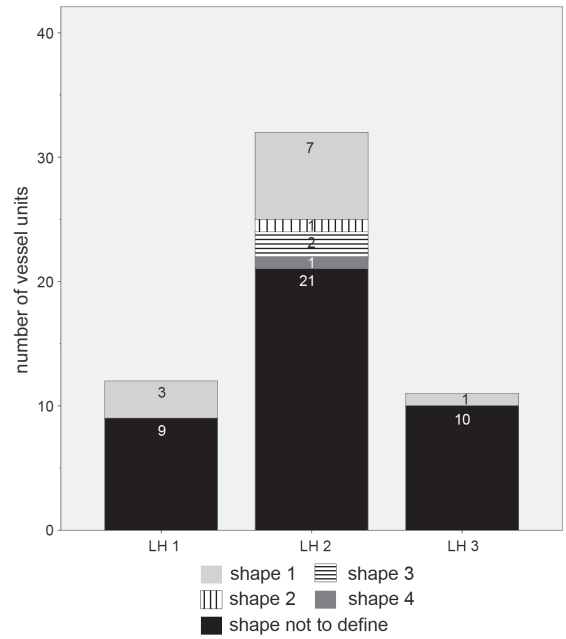


Figure 6 La Hogue wares LH 1-3 (Bruchenbrücken) and the division into vessel shapes (after Lüning *et al.* 1989).

lucky to find the matching sherds of one of the vessel units already discovered in the 1980s (vessel unit 1574; fig. 2).

4.1 Pottery technology

The La Hogue pottery in Bruchenbrücken was mainly coil built; distinct overlapping of coils – the ‘N-technique’ – can be seen in figure 3.

The thickness of the sherds ranges from 6 to 14 mm, the average being 8 mm. This average does not change at all when only the bone-tempered wares (LH 1 and LH 3, see below) are included in the calculation (fig. 4). The decorated vessel units generally have a thinner wall, on average 7.35 mm.

Contrary to what is typical for La Hogue pottery, in Bruchenbrücken sand and organic material (*e.g.* glumes) outnumbers bone as temper. In a few cases hematite could be distinguished, but since these minerals are very small (<1 mm) and infrequent it seems likely that they were not intentionally mixed with the clay but instead originated from the clay source.

Three different La Hogue fabric groups (wares) could be defined at Bruchenbrücken. Differences be-

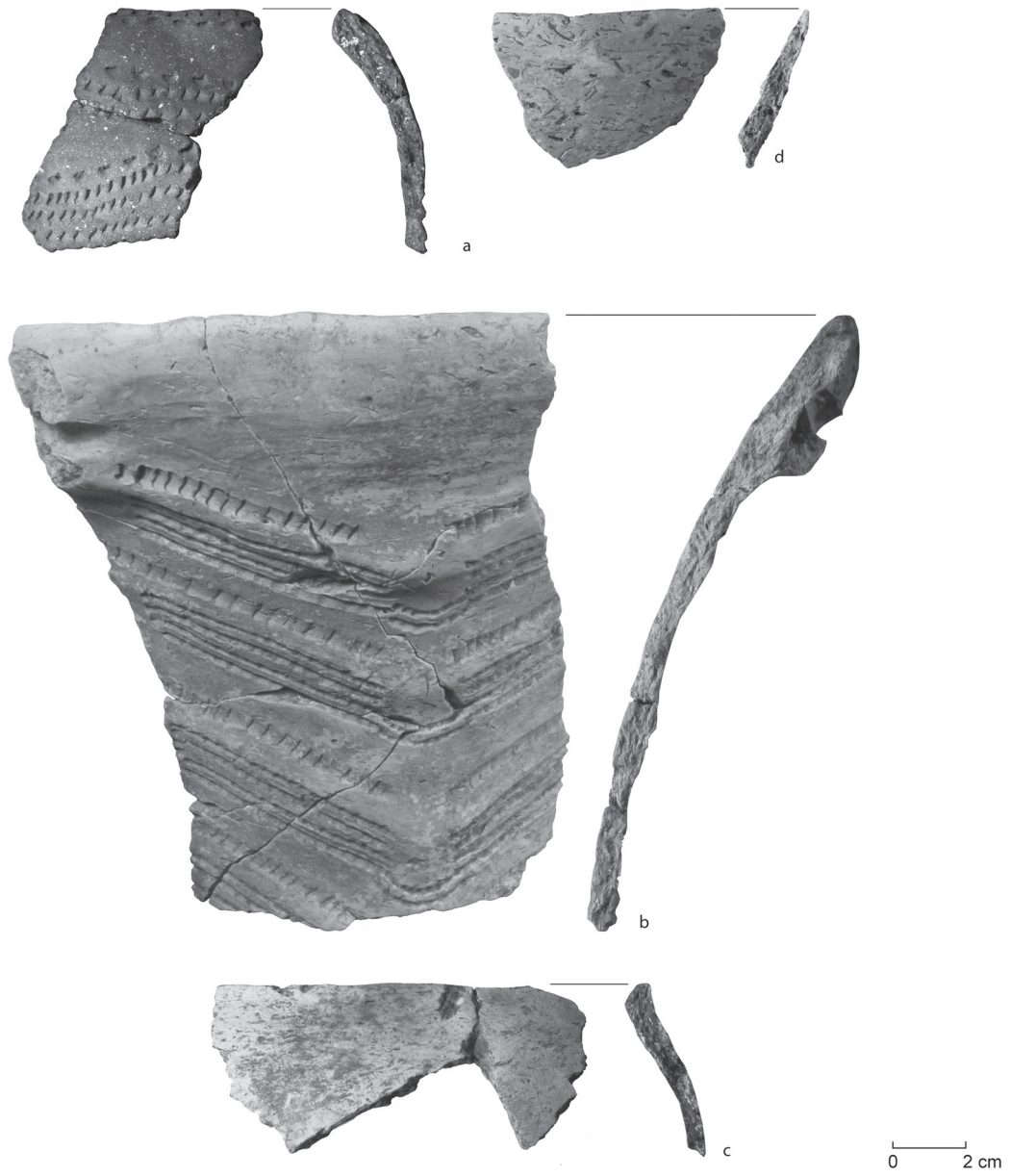


Figure 7 The four La Hoguette vessel shapes. Scale 1:2.

a shape 1. Rim diameter of this example is 15 cm.

b shape 2. Special form only known from one vessel in Bruchenbrücken. Rim diameter of this example is 23 cm.

c shape 3. Rim diameter of this example is 25 cm.

d shape 4. Rim diameter of this example is 24 cm.

tween them are mainly the type of temper and its abundance (fig. 5).² The La Hoguette wares from Bruchenbrücken are:

- LH 1: 3-5% bone, 3-5% organic material, 3-5% grog and/or sand (0.2-2.0 mm).
- LH 2: 3-10% organic material, 3-5% grog and/or sand (0.2-2.0 mm).
- LH 3: 3-5% bone, 3% grog and/or sand (0.2-2.0 mm).

A total of 23 vessels or 42% of all La Hoguette vessels at Bruchenbrücken are bone tempered (LH 1 and 3; fig. 6). All of them are also tempered with sand and/or grog; half of them are additionally tempered with organic material.

On 21 vessels small parts of the outer and inner surface are still preserved, which enables specifying the surface treatment. In total 18 pots are polished on the exterior, 13 also on the interior; three vessel walls are carefully smoothed but not polished. The exterior and interior walls of the remaining 34 vessels were at least smoothed, but cannot be examined because the surface is missing.

The exterior of all the La Hoguette vessels in Bruchenbrücken are predominantly reddish in colour, ranging from light orange to dark red (47 vessels) and light brown to grey (seven vessels). The interior of the pots often display hushed reddish tones (16 vessels) but are mainly dark brown to dark grey (30 vessels). Only one bone-tempered pot is black on both sides.

Most vessels supposedly stood upside down on their rims while the fire was in process: the draft on the outside caused the oxidation (reddish shades) on the exterior of the vessels, while inside the pots a reduced atmosphere prevailed, being responsible for the darker greyish to black shades. Eight vessels have a very light orange colour on the interior and exterior – they probably lay or stood upright in the open fire.

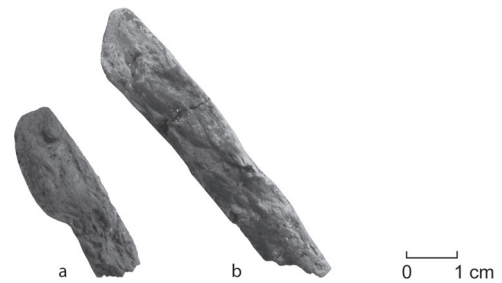


Figure 8 Most rims of La Hoguette vessels are thickened (a), but they can also be flattened obliquely at the inner side (b). Scale 2:3.

4.2 Pottery morphology and decoration

Both closed and open shapes of pots are common in the La Hoguette ceramic spectrum. U. Kloos defined four different vessel shapes (Lüning *et al.* 1989: 375):

- Shape 1: closed, ovoid form, with the rim following the general outline of the vessel side (fig. 7a).
- Shape 2: special form – open on the upper part and on the middle and lower part shaped more like a cylindrical form (fig. 7b).
- Shape 3: closed shape with a slightly everted rim (fig. 7c).
- Shape 4: open bowl with a rounded or straight outline (fig. 7d).

Parts of the rim of some 24 vessel units are preserved, but only on 16 of them the rim diameter can be measured. The average diameter is 20 cm, ranging from 10 to 30 cm. Most rims are characteristically thickened (13 vessels or 54%), but sometimes the lip is flattened obliquely on the inner side of the vessel (seven vessels or 29%), or it is simply rounded (four vessels or 17%) (figs 7d & 8). The bases of only two vessel units were preserved; both are flat. Appendages are either knobs (on six vessel units; fig. 9) or perforated lugs (on one vessel unit; fig. 2; 7b). The knobs are round or oval, and sometimes have a modified end.

Indented decoration occurs on 14 vessel units, while two vessels have applied moulding, one horizontally, one vertically. On four vessel units both decoration techniques are mixed. Drag-and-stab dec-

2. The abundance of the temper was determined with the help of visual estimation charts (clay-matrix and temper = 100%; Matthew *et al.* 1991).

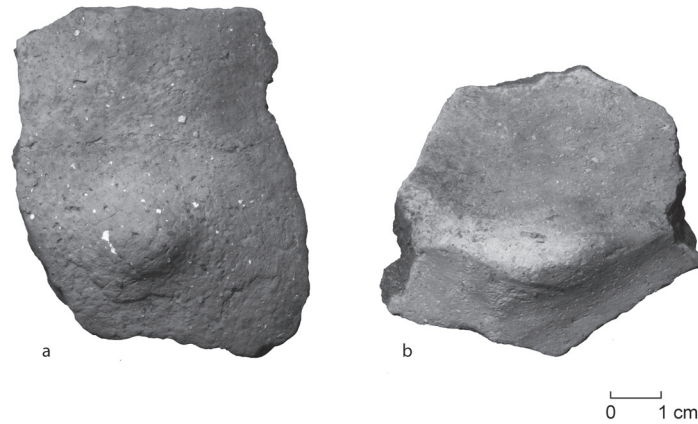


Figure 9 Knob handles: round (a) and oval (b). Scale 2:3.

oration is also common on some La Hoguette vessels (fig. 7b).

The indented decoration mostly consists of round impressions, made with a bidented spatula and arranged in bands – often two parallel double-rows, which sometimes can be wavy (fig. 10). Elongated/rectangular and crescent-shaped indentations also appear. In four cases, the decoration is located on the rim, otherwise the body of the vessel is the ornamented zone. One vessel from Bruchenbrücken has quite a complex ornamentation, with different decoration techniques and designs combined together (fig. 2; 7b).

4.3 Spatial distribution

The distribution of La Hoguette sherds within the settlement of Bruchenbrücken can be studied, because the site is one of the few completely excavated settlements of the Earliest LBK period (fig. 1).

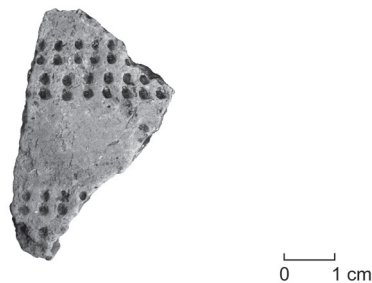


Figure 10 Round, dot-like indented decoration of a La Hoguette vessel. Scale 2:3.

House 10

In the westernmost part of the site no La Hoguette pottery was found. There, house 10, the best-preserved house of the whole settlement, was discovered with its pits and postholes. It is, in some aspects, strikingly different from the other dwellings. First of all it is situated about 60 m away from the other houses, which are closer to each other (distances of 5-15 m are common). The orientation (30° relative to the west) differs plainly from those of the other houses (50°-70°). Interestingly it has nearly the same orientation as the later LBK house 1.

In general the north to north-west orientation (50°-90°) is associated to houses of the Earliest LBK, while a west-north-west to north-west orientation (roughly 20°-60°) is attributed to houses of later dates (Flomborn and later; Stäuble 2005, 208). Apart from its orientation, House 10 typologically fits with the Earliest LBK dwelling structures. At the bottom of long-pit 122, along this house, a male burial was discovered (Engelbrecht & Jacobi 2007) (fig. 12).

The flint material also varies from that of the other houses. Associated with house 10 mainly Baltic flint was used (47.9%). Similar high quantities of Baltic flint were found in other sites of the Earliest LBK, such as Schwanfeld, Franken (30.9%) and Frankfurt-Niederreschbach (71.1%; Fischer 2005:20). The pottery in the pits typologically belongs to the Earliest LBK, but the new dates from long-pit 104 point surprisingly to a later phase of the LBK.

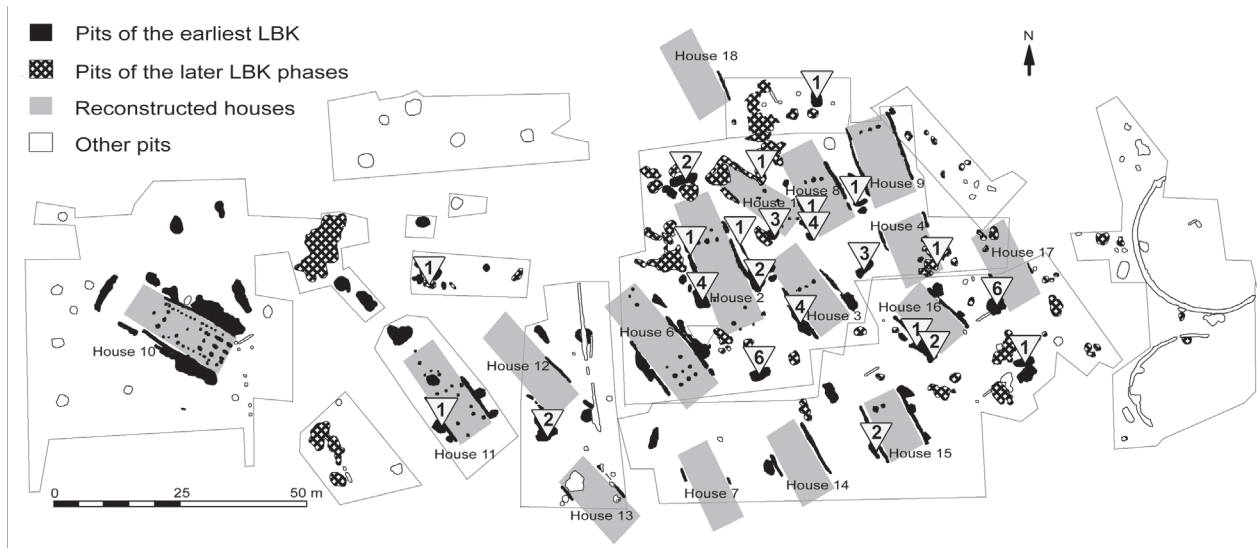


Figure 11 Distribution of La Hoguette sherds within the LBK settlement of Bruchenbrücken. Triangles show numbers of sherds.

Other houses

House 11 had one bone tempered La Hoguette vessel unit in its western long-pit. Two vessel units were discovered at the southern edge of the huge pit 219 (together with roughly 530 LBK vessel units). The western long-pit of house 12 and the northern pit of house 13 overlap each other probably there. In the central and eastern part of the settlement in the long-pits of the houses 2, 3, 6, 8, 15, 16 and 17 La Hoguette pottery (33 vessel units) was discovered. The northern pits of the houses 2, 3, 14, 16 contained altogether 14 La Hoguette vessel units. In the western pit of house 8 one piece of La Hoguette pottery was located. Four vessel units could not be assigned to a house, since they were found in four different pits.

Intra-site patterning

Looking at the quantity of La Hoguette vessel units per house, house 2 holds the highest count with ten units (six times bone tempered ware, four times sherds tempered with organic material). Assigned to house 3 and house 8 are seven vessel units each, the houses 14, 16, and house 17 follow with six pieces of La Hoguette pottery each. The other houses have a lower quantity of this special pottery (four vessel units or less). It remains unanswered whether this distribution is caused by chronological succession, by



Figure 12 The skeleton of a 20-25 years old male person, buried at the bottom of the western long-pit 122 alongside house 10.

certain preferences or by personal contacts of the inhabitants of the houses to La Hoguette people, at least until an intra-site chronology has been established.

A divergent spatial distribution of the bone tempered ware LH 1 and LH 3 and the sherds tempered with organic material, sand and/or ground potsherd (LH 2; see above) cannot be determined. Three pits contained all three wares, and in eight pits two different wares were present.

The distribution of sherds from one vessel unit in different pits is a phenomenon already known from many LBK settlements. In Bruchenbrücken vessels of the Earliest LBK for example were found spread in the central part of the settlement over the pits of houses 2, 3 and 6 (Stäuble 1997, 85). Four La Hoguette vessel units follow this trend (fig. 16); obviously they did not attract special attention from their former owners and were disposed like the ordinary LBK pots. It cannot be proven whether these pits were open at the same time. Later intrusions in earlier structures are a well-known and problematic obstacle while establishing a chronology in densely occupied settlements. Also secondary refilling or the intentional filling of pits are possible actions within a settlement area (Gronenborn 1999, 152). In some pits that were filled mainly with material of the Earliest LBK, intrusions of later LBK phases as well as La Hoguette pottery were found, so in these cases the La Hoguette pottery could have been disposed of later into the pit.

La Hoguette sherds were discovered in the topmost stratum (the topmost 20 cm) in nine pits, but in eight pits the pieces of pottery were found below the first stratum. Interestingly the house with most La Hoguette vessels (house 2) only owned two decorated pots, while for example house 17 on the eastern periphery of the settlement contained four ornamented vessels.

One has to bear in mind, that what the archaeologists find today at a site after more than seven thousand years is only a small fraction of what was there in Neolithic times. Especially the low quantity of La Hoguette pottery cannot be evaluated statistically without difficulty. Although the stratigraphic position and distribution of the different wares and of the decorated vessel units are presented here, it is still only the investigators 'filtered' view of the past.

The settlement site of Bruchenbrücken shows that a phenomenon such as the La Hoguette pottery is ob-

viously something that does not necessarily affect the whole hamlet, perhaps as result of chronological differentiation or otherwise for 'personal' reasons. House 10, for example, though it is the best-preserved house of the settlement, provided no La Hoguette sherds.

4.4 Imported or locally made?

Another question is: were the La Hoguette pots imported, perhaps together with the western flint, or were they instead made in Bruchenbrücken by people of the La Hoguette group? To answer this question the results of the project *Produktions- und Symbolwissen, soziale Identität und gesellschaftlicher Wandel: Zur gesellschaftlichen Bedeutung keramischer Stile im Frühen und Mittleren Neolithikum* (University of Frankfurt am Main) can be used (Eisenhauer 2002). Ceramic samples from Bruchenbrücken (from 30 sherds) and other Neolithic settlements were analysed with X-Ray Fluorescence Analysis. It could be shown that the six analysed La Hoguette samples from Bruchenbrücken had the same chemical 'fingerprint' as the samples from the Earliest LBK pottery; three pots had higher counts for calcium oxide (CaO) and phosphorus pentoxide (P₂O₅) because they were tempered with bone.

The La Hoguette ceramic was produced from local clay in Bruchenbrücken, but the 'foreign' La Hoguette people decorated the pots with their traditional motifs, and sometimes tempered them with the typical bone temper. The manufacturers of those pots were probably La Hoguette women who were 'married' by LBK farmers or otherwise whole families may have attached themselves to the LBK settlement (Eisenhauer 2003, 327; also Van de Velde, this volume). It is also possible that LBK people were married into a Mesolithic group, and that these exchanges of marriage partners became a symbolic expression of solidarity (Frirdich 2005, 103). On this basis it seems natural that not only personal relationships with the La Hoguette people were established (as seen on the La Hoguette pottery made in Bruchenbrücken) but also trading contacts (as seen in the western flint material).

The inhabitants of Bruchenbrücken, and probably also of the nearby settlement of Steinfurth, were the first during the Earliest LBK to establish a 'flint-trade' with the non-LBK groups living in the West

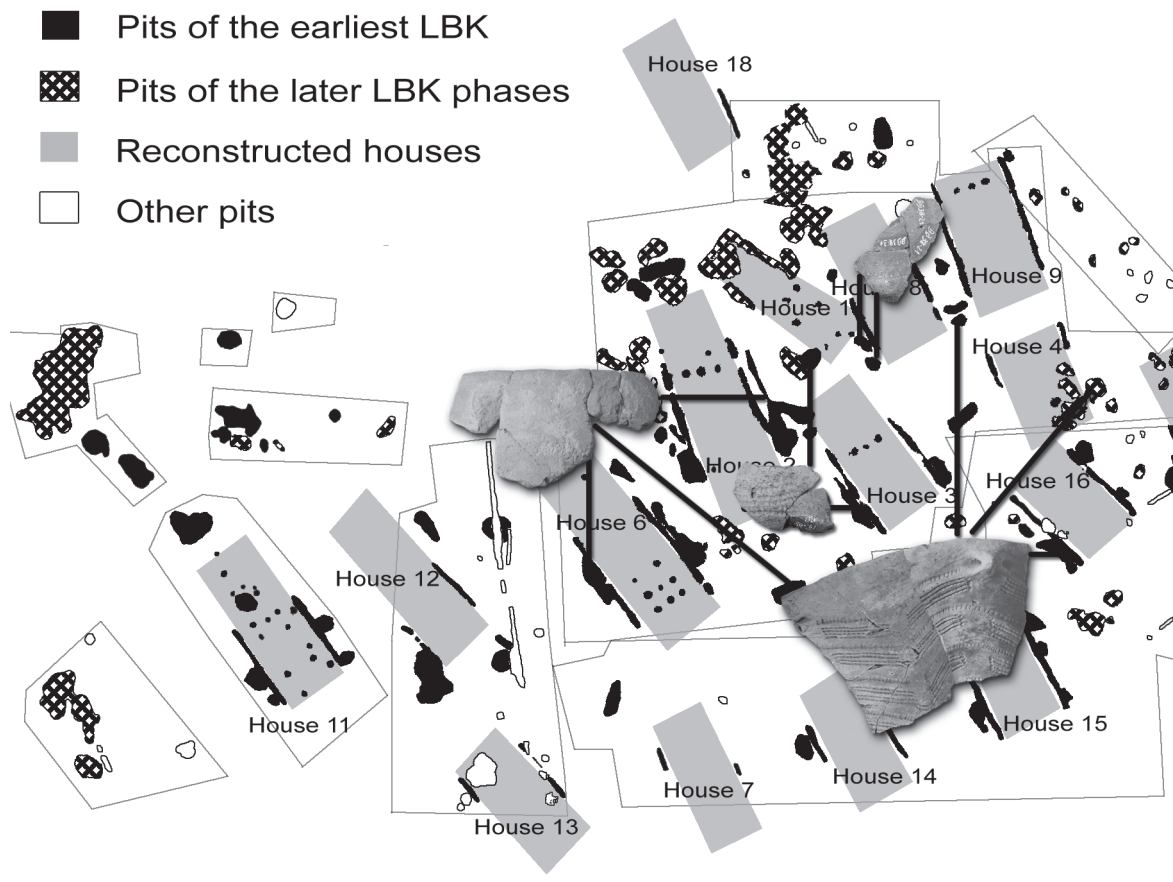


Figure 13 Sherds of four vessel units distributed over different pits of the houses 2, 3, 8 and 16.

(Gronenborn 1999). An alternative explanation of how the western flint came to the settlers of Bruchenbrücken could be, that they received it from the inhabitants of the western Flomborn settlements (e.g. in the Merzbach valley, district of Düren), which were founded around 5300 cal BC (Lüning 2005, 70). They were situated close to the rich flint region of Vetschau, Lousberg (Aachen, Germany) and Rijckholt, and were established perhaps one or two generations after Bruchenbrücken. But, given that the people of Bruchenbrücken received the important western flint from their ‘own’ LBK people living in the Merzbachtal, why should they then foster close personal relationships to the western La Hoguette people (women coming into the settlement through marriage)? This model also implies that there was no contact from the Wetterau to the west before the LBK settlements on the left side of the Rhine were established – but would LBK people

risk the step over the Rhine into a mostly unknown region (Friedrich 2005, 105) with ‘foreign’ people?

It seems far more likely, that the settlers from Bruchenbrücken had close contacts with the La Hoguette people for one or two generations (in the 54th century cal BC). During this time they received the necessary information about the region farther to the west (natural resources e.g. flint deposits, microclimate, fauna, flora etc., Friedrich 2005, 102). They also developed a trading relationship (what did the LBK-people give in exchange?) for the acquisition of western flint, and La Hoguette women married into the settlement of Bruchenbrücken and made their traditional pottery there, but perhaps only in the first few months or years, before they adapted to the LBK lifestyle. The congruent onsite distribution of western flint and the La Hoguette pottery support this assumption.

The knowledge of these settlers about the western people and landscape was subsequently used by other LBK people around 5300 cal BC and helped them to settle to the west of the Rhine, especially near the important flint areas.

For the moment it can only be guessed, whether the La Hoguette people at the western side of the Rhine also adapted themselves to the Neolithic life-style – for better or for worse.

5. REFERENCES

- Bronk Ramsey, C. 1995. Radiocarbon calibration and analysis of stratigraphy: The OxCal program, *Radiocarbon* 37 (2), 425-430.
- Bronk Ramsey, C. 2001. Development of the radiocarbon calibration program OxCal, *Radiocarbon* 43 (2A), 355-363.
- Eisenhauer, U. 2002. *Abschlussbericht des SFB 435: Teilprojekt C1: „Produktions- und Symbolwissen, soziale Identität und gesellschaftlicher Wandel: Zur gesellschaftlichen Bedeutung keramischer Stile im Frühen und Mittleren Neolithikum“*, Frankfurt, unpublished report.
- Eisenhauer, U. 2003. Matrilokalität in der Bandkeramik? Ein ethnologisches Modell und seine Implikationen, *Archäologische Informationen* 26, 321-331.
- Engelbrecht, T. & F. Jacobi 2007. Eine ältestbandkeramische Siedlungsbestattung aus Friedberg-Bruchenbrücken – anthropologische Untersuchung, *Hessen-Archäologie* 2006, 19-22.
- Fischer, A.-L. 2005. *Die Silexartefakte der bandkeramischen Siedlung Bruchenbrücken, Stadt Friedberg/Hessen*, Cologne, unpublished Master's thesis.
- Friedrich, Chr. 2005. Struktur und Dynamik der bandkeramischen Landnahme. In: Lüning *et al.*, 81-109.
- Gronenborn, D. 1999. A variation on a basic theme: the transition to farming in southern central Europe, *Journal of World Prehistory* 13, 123-210.
- Kegler-Graiewski, N., A.-L. Fischer & L. Petit 2003. Bruchenbrücken vor 7000 Jahren, *Hessen-Archäologie* 2003, 30-32.
- Kloos, U. 1997. Die Tonware. In: Lüning (ed.), 151-255.
- Langenbrink, B. & J. Kneipp 1990. Keramik vom Typ La Hoguette aus einer ältestbandkeramischen Siedlung bei Steinfurth im Wetteraukreis, *Archäologisches Korrespondenzblatt* 20, 149-160.
- Lüning, J. (ed.) 1997. *Ein Siedlungsplatz der Ältesten Bandkeramik in Bruchenbrücken, Stadt Friedberg/Hessen*, Bonn (Universitätsforschungen zur Prähistorischen Archäologie 39).
- Lüning, J. 2005. Bandkeramische Hofplätze und die absolute Chronologie der Bandkeramik. In: Lüning *et al.*, 49-74.
- Lüning, J., Chr. Friedrich & A. Zimmermann (eds) 2005, *Die Bandkeramik im 21. Jahrhundert. Symposium in der Abtei Brauweiler bei Köln 16.09.–19.09.2002*, Rahden/Westfalen.
- Lüning, J., U. Kloos & S. Albert 1989. Westliche Nachbarn der bandkeramischen Kultur: La Hoguette und Limburg, *Germania* 67, 355-393.
- Matthew, A. J., A. J. Woods & C. Oliver 1991. Spots before the eyes: New comparison charts for visual percentage estimation in archaeological material. In: A. Middleton & I. Freestone (eds), *Recent Developments in Ceramic Petrology*, London (British Museum Occasional Paper 81), 211-264.
- Reimer, P.J., M.G.L. Baillie, E. Bard, *et al.* 2004. IntCal04 terrestrial radiocarbon age calibration, 0-26 cal kyr BP, *Radiocarbon* 46 (3), 1029-1058.
- Stäuble, H. 1997. Häuser, Gruben und Fundverteilung. In: J. Lüning (ed.), 17-150.
- Stäuble, H. 2005. *Häuser und absolute Datierung der Ältesten Bandkeramik*, Bonn (Universitätsforschungen zur Prähistorischen Archäologie 117).

La Hoguette north of the Rhine

The Ede *Frankeneng* site revisited

Fred T.S. Brounen, Erik Drenth & Peter A.C. Schut

ABSTRACT

The remains of two Early Neolithic pots described almost two decades ago are presented anew, against the background of and in addition to some forgotten finds, rediscovered in a private collection. It turns out that the Ede Frankeneng site has just that little more to offer in the field of La Hoguette than expected.

KEYWORDS

Gelderse vallei, La Hoguette, pottery, flint, import.



Figure 1 Location of the Dutch La Hoguette sites. 1: Sweikhuizen *De Hei*. 2: Geleen *Nijssenstraat*. 3: Ittervoort *Damszand*. 4: Ede *Frankeneng*. The loess zone is shaded. Drawing M. Haars.

1. INTRODUCTION

In 1967 the construction of an industrial zone called *Frankeneng*, on the south-western outskirts of Ede (province of Gelderland, the Netherlands; fig. 1), led to the discovery of prehistoric artefacts by E. Zuurdeeg, a local amateur-archaeologist. From that moment on every lot prepared by levelling was searched in the ongoing development. By 1974 an area of about 425 x 100 m had been explored, revealing two concentrations of archaeological remains some 400 m apart. Only the western scatter (named ‘concentration’ below) is relevant with regard to the topic of this publication. It roughly measured 50 x 30 m and yielded a number of Early Neolithic pottery fragments (Schut 1988).

When the second author studied the archaeological collection of E. Zuurdeeg in the winter of 2007, it appeared that a box containing Iron Age pottery from the concentration also held a few much older fragments. It is these sherds that may put a different complexion on the matter of cultural attribution suggested for the finds in 1988.

2. SITE LOCATION

Ede is located on the east side of a wide, formerly marshy basin called the *Gelderse Vallei*, which separates the ice-pushed ridges of the Utrechtse Heuvelrug from those of the Veluwe.¹ Topographically it is

1. Before the Saalien glaciation the rivers Meuse and Rhine deposited their sand and gravels in the region of the present Gelderse Vallei. During the Saale glacial an ice tongue pushed up these sediments, creating ridges. The basin left after melting of the glacier gradually was filled with sediments (including coversands) and peat.

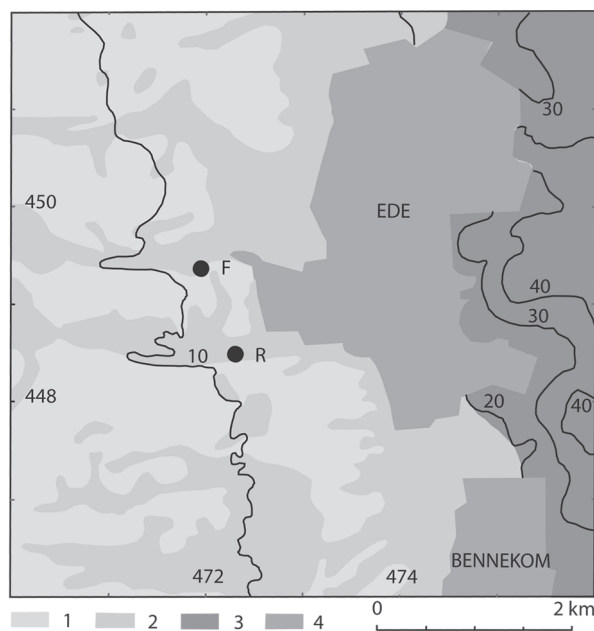


Figure 2 Geomorphological map predating the construction of the industrial zone *Frankeneng*, with the position of Ede *Frankeneng* (F) and *Rietkampen* (R). 1: moraine deposits, 2: coversand ridges, 3: washed coversands, 4: residential-industrial area. Drawing P. Schut.

considered a district of the western Veluwe. The region in which the town developed, forms part of a comparatively high zone of Late Pleistocene drift sands, deposited along the foot of the glacial ridges (fig. 2). The town extension of *Frankeneng* was constructed on one of the east-west oriented coversand ridges typical for the area. The archaeological finds have been collected at the top of the elevation, at about 12.25 m above Dutch Ordnance Datum (N.A.P.).

3. CONTEXT OF DISCOVERY

The preparation of a new lot around 1972 involved the removal of soil, enabling Zuurdeeg not only to collect finds, but also make some general stratigraphical observations. It appeared that a 0.5 to 1 m thick layer of topsoil was man-made. This so-called *Plaggen* soil had come into being as a result of the gradual accumulation of sods (Dutch: *plaggen*) enriched with manure over the centuries.² It had buried, partly absorbed, the underlying coversand deposit and archaeological remains in or on top of it, thus

acting as a protective ‘blanket’ preventing disturbances, that is, until the levelling. Stripping the upper stratum to the pure sand revealed a pit or filled-up depression, about 3 m across and 0.5 to 1 m deep, the fill of which contained the Early Neolithic potsherds mentioned above. The complex of finds from this feature also comprised a few pottery fragments dating from a later period (Schut 1988). Alas the stratigraphical position of individual finds collected at the time is not known. It is assumed, however, that these temporal anomalies derive from the upper part of the depression, probably as part of the wider, multi-period scatter that came to rest in an artefact trap. The same goes for a group of flakes (see below).

Much less a problem from a chronological point of view pose three pottery fragments and two flint artefacts, that were filtered from the extensive collection in January 2007. As indicated, they were not stored with the finds from the pit or depression, but nonetheless gathered within the boundaries of the concentration, meaning that they were collected or dug up at a distance of 50 m at the most – presumably far less – from the feature concerned.³

4. EARLY NEOLITHIC FINDS

4.1 Pottery

From the feature

The excavation of the fill yielded 75 to 80 sherds, with different degrees of preservation. Remains of the smaller vessel were left unaffected by time, but the bigger pot has suffered. Particularly its inner surface in places is pockmarked with the negatives of small parts that have chipped off. The potsherds were interpreted as belonging to Early Neolithic pots, although hard to assign to a specific culture (Schut 1988). Twenty years later they, to some ex-

2. The suffix ‘eng’ in the toponym *Frankeneng* refers to the presence of an ‘open field’ with a man-made raised sandy soil (Dutch: *es*, German: *Eschflur*).

3. The combination RJA8 (R=*Frankeneng*, J=Iron Age) written on the sherds is a bit confusing, as expectedly ‘A’ would mean that they were found in the eastern concentration (see below). Zuurdeeg however pointed out that the fragments were collected in the western scatter, ‘A’ in this case referring to the first Iron Age site at *Frankeneng*.

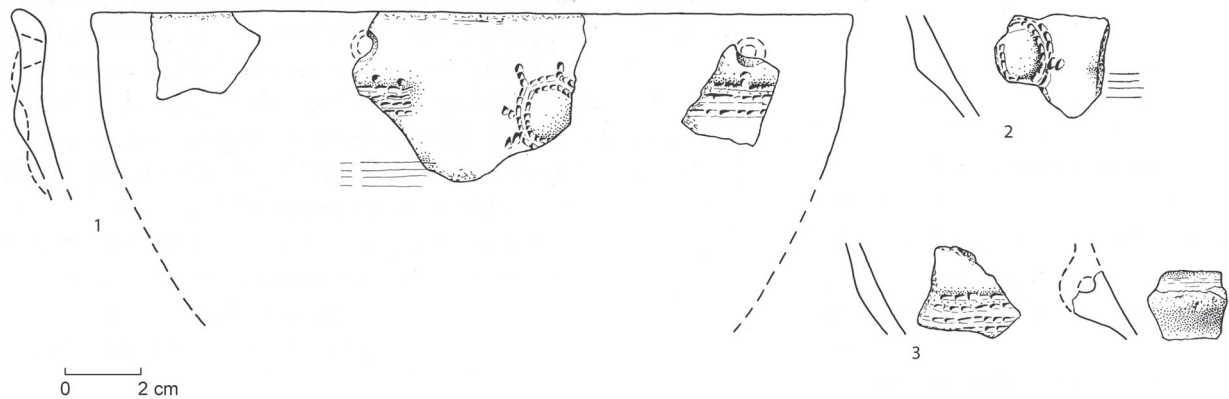


Figure 3 Fragments of an open vessel, excavated from the depression (after Schut 1988). Scale 1:2.

tent, still resist a clear identification, due to the presence of characteristics unknown to the repertoire searched (*i.e.* the La Hoguette group) and the lack of aspects regarded as ‘classic’.

The wide, open shape of one of the pots (fig. 3), probably a bowl, is an exception to the La Hoguette morphological spectrum and can perhaps only be matched by a specimen from Ammerbuch *Reusten* (Lüning *et al.* 1989, 375, *Abb.* 17.1). The same holds for the slightly receding, somewhat thickened rim. Apart from *Bruchenbrücken*, where it is thought to be an imitation of Bandkeramik examples (*ibid.*, 377), it is only found at Bavans (Jeunesse 1987) and Hiddenhausen *Bermbeck* (Günther 1991). There, however, it strictly occurs on more closed recipients. These sites also share the absence of rim decoration. Only one of the rim sherds of the *Frankeneng* bowl shows a shallow groove, which might be caused by a grain of sand being dragged along the surface in the production process (appendix, fig. 3b). Conical repair holes have been drilled under the rim.⁴ Part of the body decoration, both motif and combined techniques, perfectly fits the La Hoguette repertoire. This concerns the superimposed horizontal bands of unknown length, that as a rule were applied to the upper part of vessels (Lüning *et al.* 1989, 381, *Abb.* 28.2). They consist of a slightly raised cordon of

only a few millimetres thick, flanked by widely spaced stabs on one side and four rows of smaller stabs made with a bidentated spatula on the other. The former, seemingly ‘simple’ imprints were created using the same bidentated spatula. This was done with the instrument in a more upright position and in a way that the lower tooth more or less coincided with the uppermost of the four (paired) rows that form the main part of the band (*cf.* Lüning *et al.* 1989, *Abb.* 28.1). For this reason most of the ‘simple’ imprints are placed on top of the cordon instead of above it. Pairs of bands alternate with a solar motif, placed halfway between two bands, consisting of two concentric circles, adhering short rays and a protuberance in the centre. The elements of the sun were stabbed with the same bidentated spatula used for the rest of the decoration.⁵ In some instances the rays were slightly extended by an additional, third, overlapping imprint. Unlike the knobs forming their centre, the solar symbol is a perfect stranger to the La Hoguette decorative corpus known thus far, but certainly not to the wider Early Neolithic repertoire (Schut 1988; Jeunesse & Van Willigen 2006). Perforated knobs (fig. 3) occur, but are rare (Lüning *et al.* 1989, 378). To conclude, the largely adopted (Schut 1988), partly adjusted description should be supplied with some technical aspects. Pottery-grit and sand

4. Just a thought: drilled repair holes foremost seem to occur at sites beyond Bandkeramik settlements. This might be a reflection of a mobile, pottery endangering way of life or activity, in which broken vessels are not simply discarded but repaired.

5. Contrary to the supposition made earlier, that a flexible multi-dented spatula was used (Schut 1988). Neither were the horizontal bands created with an instrument having ‘at least 7 teeth’ (Schut 1988).

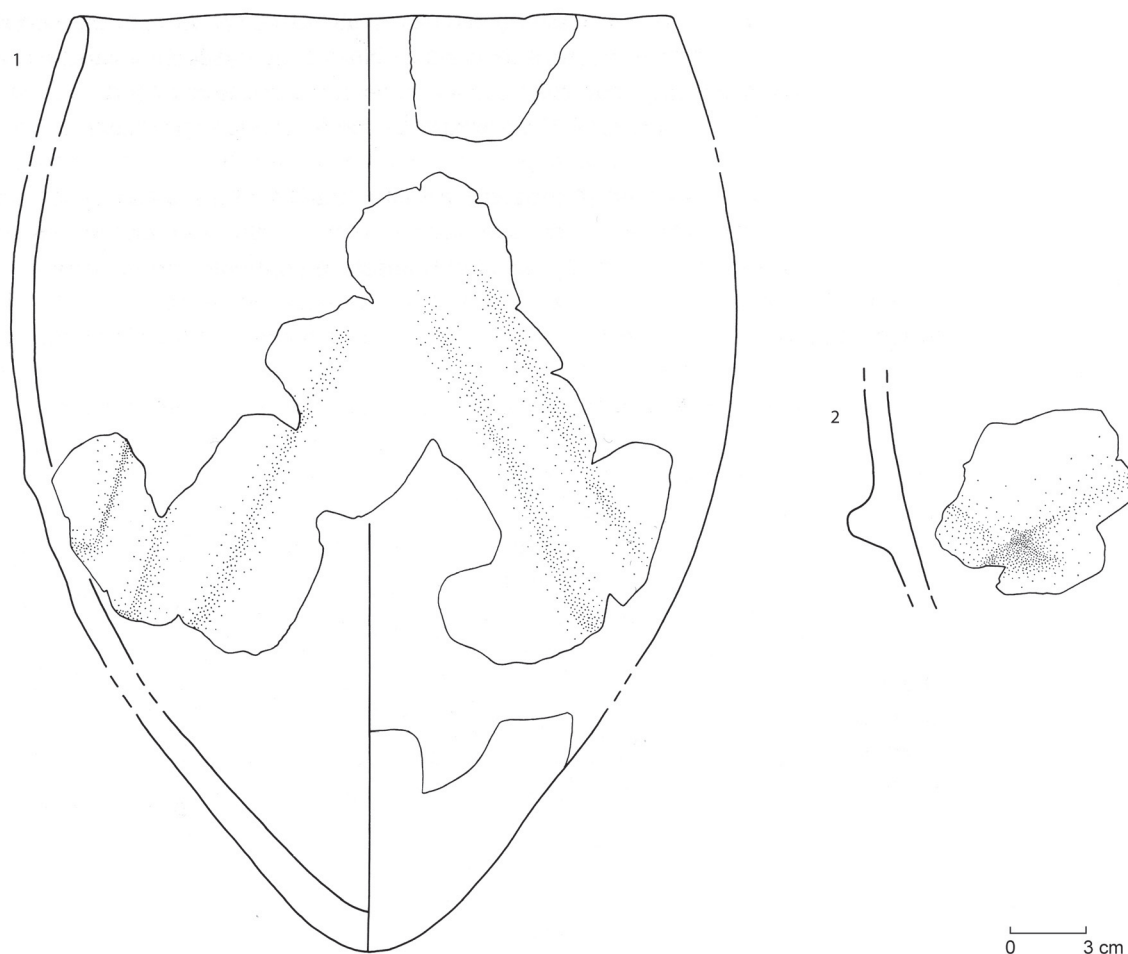


Figure 4 Fragments of an oviform pot, excavated from the depression (after Schut 1988). Scale 1:3.

were abundantly used as tempering agents. The pot has been built with overlapping, well joined coils (N type); only a few defective joints are present. Its wall is 4-6 mm thick and the surface was finished by smoothing. Firing resulted in a greyish to very dark brown exterior surface and a predominantly black interior; the core is black as well.

Most potsherds belong to a large pot, tempered with coarse sand (2-3 mm) and occasional pieces of fine gravel (up to 5 mm). This vessel was also built with overlapping, well joined coils; coil fractures are rare. The bright brown inner and outer surfaces of its solid, 7-8 mm thick wall have been polished; the core is grey to black. A notable morphological characteristic of the pot is the rather thick rounded-off pointed base. Together with the incurved rounded rim it lends

the vessel a slender oviform appearance (fig. 4). Its simple plastic decoration consists of three parallel slight cordons, which were applied obliquely to the body, 3 cm apart and in an alternating direction. The resulting stacked V's fade out at the top, only hinting at a possible connection.⁶ Included in one of the V's preserved is a somewhat angular knob. Unlike most *Begleitkeramik*, which we think it is (Brounen & Hauzeur, this volume), the cordons were not embellished by stabs. Given the fact that the potsherds

6. While renewing the partial restoration of the largest fragment in 2007, it appeared that a presumed fit of two sherds was doubtful. For that reason it is missing from the photograph (appendix, fig. 4b)

were dug up from the same feature, the interpretation of the larger pot as (a particular type of) *Begleitkeramik* indirectly sustains the idea that the other one should be regarded as La Hoguette or a ceramic tradition very close to it.⁷ After all: snapping off its unusual solar symbol would leave us with almost ‘classic’ La Hoguette sherds.

From the concentration

Three more fragments (fig. 5) were rescued from oblivion in January 2007 (see above). It is assumed that they were once part of a single pot. Not all constituents of the motif are present on each sherd, but the shared element (stabs) seems to have been created with one and the same tool. The most complete version of the design is a curvilinear band composed of an applied, slightly raised cordon, 2 mm thick, and two rows of paired stabs below, in fact partly covering it. The decoration was created with a bidentated spatula with distinctly separated teeth. The opposite side of the elevation lacks impressions. Other potsherds show two – on one of the fragments diverging – rows of similar stabs, but no cordons. Only one of the sherds holds some morphological information; it shows a point of vertical tangency, *i.e.* a smooth junction of lower body and shoulder.

The clay was tempered with sand and a vegetable material, which left cavities up to 2 mm in diameter; it was not added to the extent that it made the wall very porous. Judging from the oblique pattern discernable at the fracture the pot was built with coils, but hardly a defective joint can be seen. The wall was well smoothed. In the (very) last phase of firing oxygen was admitted, resulting in a ‘thin’, pale reddish-brown to beige-brown colour on both surfaces, in which shades of grey are present; the inner surface of one of the sherds is predominantly grey.

These fragments fit the polythetic definition of La Hoguette, without necessarily qualifying as ‘classic’. It unfortunately is unknown at precisely what dis-

7. Here of course lures the risk of a circular argument, neither of the two pots complying fully with the standard. On the other hand: our knowledge on the matter of especially ‘western’ La Hoguette pottery and earthenware – let alone lithic – ‘companions’ has only just outgrown the embryonic state and a lot of research still needs to be done.

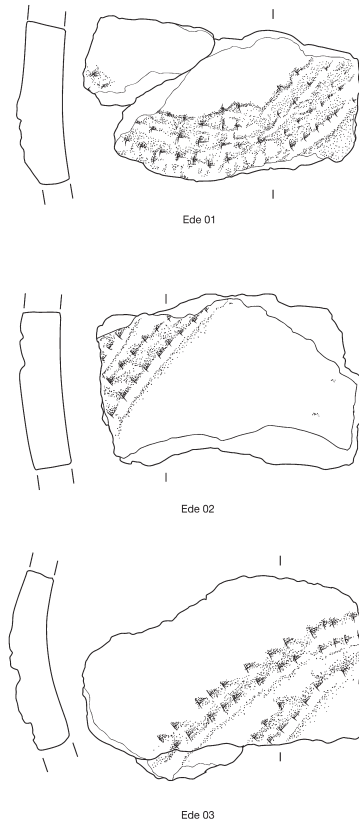


Figure 5 La Hoguette sherds from the western concentration. Drawing M. Kriek. Scale 2:3.

tance they were found from the pottery described twenty years ago, but their presence substantiates a La Hoguette attribution of a part of the 1988 sherds. They also encouraged a closer examination of the lithic finds from the western concentration.

4.2 Flint

From the feature

Among the finds from the depression presented in 1988 was a lopsided flint blade (fig. 6) with a flat butt. It probably ‘deformed’ because of a preceding, hinged bladelet that failed to detach along the line of an existing crest. A remnant of cortex is rough, indicating an origin directly from a limestone or – more likely – an eluvial deposit. In this case one should look in a southern direction, since the raw material is Rijckholt type flint (see below). Both lateral sides of

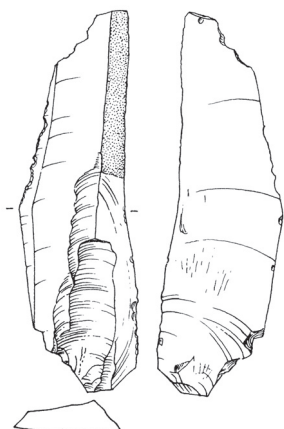


Figure 6 Flint blade excavated from the depression (after Schut 1988). Scale 1:2.

the blade show a fine retouch, caused by using the artefact. It may very well date to the Early Neolithic.

*From the concentration*⁸

One of the artefacts that struck the eye, is a short end-scrapers (fig. 7), made of flint from the Lanaye Member of the Gulpen Formation, better known to archaeologists as Rijckholt type flint (De Grooth 1998; Felder 1998; Felder *et al.* 1998). It was predominantly extracted from a primary and a secondary geological context in the south-west of Limburg, but does also occur in tertiary position, *i.e.* transported and redeposited by the river Meuse (Löhr 1975; Schreurs 1992, 132-133; Weiner 1997). In that way this raw material also ended up in ice-pushed river deposits in the centre of the Netherlands (references in Niekus & Stapert 2005), likely to have partly been damaged by mechanical forces. By the Neolithic, infiltration of iron oxides presumably would have coloured it to some extent. It is unclear whether the sources that we in recent decades have come to know thanks to Middle Palaeolithic oriented research

8. Like the additional La Hoguette sherds, the two flints were selected by one of us (ED) from the assemblage of the western concentration. Both artefacts are labelled RGB (R=Frankeneng, G=Neolithic, B=western concentration), a code that also is written on the blade and the potsherds excavated from the feature (Schut 1988). According to Zuurdeeg, the scaper and the medial blade fragment may have been found in close vicinity to the depression, but not in the fill.

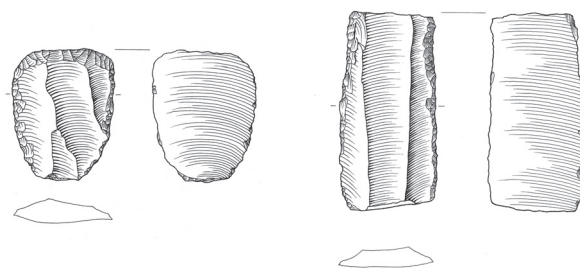


Figure 7 Scraper and blade fragment from the western concentration. Drawing R. Timmermans. Scale 1:2.

in gravel pits in the area (*ibid.*), were accessible in the Neolithic. The *Frankeneng* finds show no signs of natural transport and frost (hidden cracks) or colouration. For those, as well as for metrical and morphological reasons, we consider the scraper to be 'imported' from the southernmost part of the Netherlands. The artefact was produced on a short, wide blade with clear dorsal negatives of previously detached blades; the platform is missing. The scraper end originally was slightly rounded but became more rectilinear when resharpenering resulted in a steeper, secondary retouch. One of the angles (*i.e.* the cap touching sides) is rather acute and both lateral sides are retouched, aspects not unknown from Bandkeramik scrapers (Bohmers & Bruijn 1958-'59, 195). The surface has a natural luster, presumably caused by the sandy matrix it was buried in. Typologically the artefact has numerous counterparts in flint assemblages from Linearbandkeramik settlements on the loess (*e.g.* Bohmers & Bruijn 1958-'59; Newell 1970; Van Gijn 1990), where eluvial Rijckholt type flint was a popular raw material for tool production (De Grooth 1987; Zimmermann 1995).

The concentration comprised a second artefact made of Rijckholt type flint, *viz.* a medial blade fragment with retouched lateral sides (fig. 7). In view of the flint type used, we suspect this find to be an 'import' of Bandkeramik origin too. Its maximum width of 27 mm surpasses the Bandkeramik average, but falls within the known range (*e.g.* Bohmers & Bruijn 1958-'59, *Tafel* XXIII; Langenbrink 1992). Moreover, a retouched slight curve at one end of the fragment might be the remnant of a broken off scraper end; such tools are often wider than simple blades. As for its maximum thickness (nearly 6 mm) it easily

joins in with the dimensions of other lithic finds from the Early Neolithic.

Among the finds there is also an unretouched flake (appendix, fig. 7b) possibly made of Rullen type flint (De Warrimont & Groenendijk 1993; Gayck 2000, 208-221). This artefact may also have been brought in from the LBK settlement area in the south (e.g. Brounen & Vromen 2005, with further references).

5. FINDS FROM OTHER PERIODS

The western scatter has produced numerous flint artefacts that can be attributed to the Mesolithic. Worthy of mention are two A-points, a narrow trapeze, a surface retouched isosceles triangle, a lancet point, one or two triangular backed blades, and a leaf-shaped point with fully retouched dorsal face and a ventral side that was only retouched in order to remove the percussion bulb (typology after Newell & Vroomans 1972, 20-35).⁹ These artefacts may be contemporary and as a group hint at a date around the transition from Middle to Late Mesolithic (M.J.L.Th. Niekus, pers. comm.), i.e. about the first half of the 7th millennium cal BC (Niekus 2005-'06, fig. 3; Verhart & Arts 2005, 237). Individually, some of the flints may be younger, but as an assemblage they predate the Early Neolithic finds.

Eight flakes and a splintered piece, all made of Simpelveld flint (Franzen 1986; Arora & Franzen 1987; Gayck 2000, 223-226), were found in or above the depression that contained the pottery fragments published by Schut (appendix, fig. 7c). Being unaware of their existence at the time, the flakes were left unmentioned in 1988. Their relative stratigraphical position is obscure, but from a lithotechnological perspective it is highly questionable that we are dealing with an associated complex. In other words, these flints do not seem to date from the Early Neolithic.¹⁰ Judging from their dimensions (up to 50 x 82 x 14 mm), the pattern of dorsal negatives and the striking platforms, they may represent debris origi-

nating from (an early stage in) the manufacture of a bifacial tool or a pre-core. As for the raw material, the first option is consistent with the overall picture that in the area where Simpelveld flint was extracted during the Middle and Late Neolithic (Southeast-Limburg), it was preferably used for the fabrication of axes (Franzen 1986; Arora & Franzen 1987). Some of the flakes, however, display parts of a shining natural surface, presumably indicative of alluvial transport. So at the Frankeneng site a small axe or a core was made from a nodule collected from (probably ice-pushed) river deposits? It just might.

Within the concentration a flake of a polished axe was collected that might also be identified as Simpelveld flint, be it that it has only a slightly laminated appearance and therefore reservations are in order. Potsherds or lithic artefacts of clearly Middle Neolithic age are missing at *Frankeneng*. The Simpelveld pieces may date to the Late Neolithic though. Noteworthy in this context is a fragment of an Early Bronze Age vessel and a Late Neolithic or Early Bronze Age sherd, both from the depression (Schut 1988). The surrounding scatter has yielded several sherds and flints – in particular arrowheads – of the Single Grave culture (briefly discussed by Drenth *et al.* 2008, 172) and the Bell Beaker culture. Finally, a number of potsherds from the Iron Age have been collected at the site.

6. A WIDER GEOGRAPHICAL PERSPECTIVE

Finds of Bandkeramik origin such as adzes, concave-based asymmetric projectile points, occasional pottery fragments (Brounen 1985) – there is even an intact pot from the mid-Limburg Meuse valley (Luys 1990) – are no rare thing in the coversand area bordering the loess region of southern Limburg, i.e. within 30-35 km from the loess boundary (e.g. Louwe Kooijmans 1993, 127; Verhart 2000). Examples can be picked from almost every larger private or museum collection. Simple Early Neolithic blades and blade tools are likely to occur far more north of the loess than the archaeological record shows at the moment, but may not be recognized by the average observer unfamiliar with their specific morphological aspects and raw material type. In all, the finds probably represent the archaeological 'residu' of Bandkeramik expeditions into the area and in part perhaps

9. A-point: unilateral fully steep retouched. *Pointe à retouche unilatérale; pointe à dos abattu total.*

10. Simpelveld flint is known from German Bandkeramik settlements, at some of which 'a great number of artefacts' may be present (Arora & Franzen 1987, 27). At others the raw material seems to have been of minor importance (Zimmermann 1995, 44).

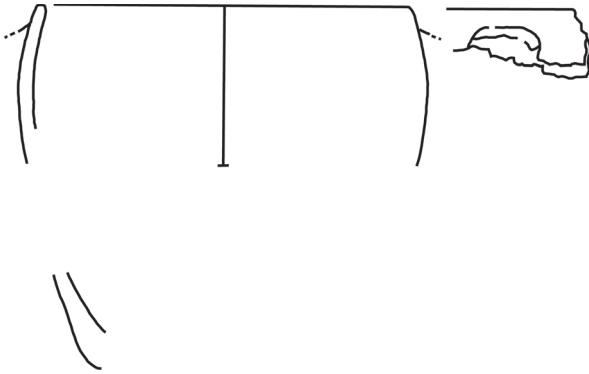


Figure 8 Fragments of a pot discovered at Ede Rietkampen (after Schut 1993). Scale 1:4.

of exchange with hunter-gatherers or people whose existence is founded on a different economic basis.

Advancing to the north, the density of dots on the map decreases rapidly. It is to be expected that the systemic context in which artefacts entered a region gradually changed along the south-north axis. In the province of Gelderland the number of presumably Bandkeramik finds is very limited, especially when the raw material used for the production of adzes is taken into consideration (Schut 1981; 1991, 59-61; 2000-'01). Whether the deviant specimens are 'copies' executed in locally available erratic stone and/or post-date the earliest Neolithic is a matter open to discussion. The presence of Rijckholt type flint at the *Frankeneng* site surely is suggestive of a 'southern', even of a Bandkeramik connection. The direction and the cultural origin may be right, but it is hard to tell whether each partner along the line of exchange had a Bandkeramik identity or how he provided for the necessities of life.

Ede *Frankeneng* is one of the northernmost La Hoguette sites known, outrivaled only by Hiddenhausen *Bermbeck* (Günther 1991). From the Graetheide *Siedlungskammer* in the Dutch province of Limburg the loess boundary in a somewhat patchy way takes a northeastward direction, bearing off to the east around Osnabrück and continuing in the direction of Hannover.¹¹ The same holds for a series of Bandkeramik settlements, an observation not implying that they on every given pedological occasion

11. Aalten (Schut 1981), for example, is significantly closer to the German loess zone in the east than to southern Limburg.

quasi 'pulled up' to the very frontier; their dispersal is as patchy as the substratum, with far larger blanks. Hiddenhausen is situated on a loess soil, in a region where at least one (early) Linearbandkeramik site was discovered (Günther 1988). This also goes for a somewhat less northern outlier, named Anröchte (Lüning *et al.* 1989, 363). To reach a loess area starting from *Frankeneng*, one would, however, have to travel several days on foot in a southern or eastern direction. The site is located no less than 110 km north of the Limburg loess boundary and 9 km north of the Rhine.

On the sandy deposits of the *Gelderse Vallei* many more prehistoric sites were discovered. Interestingly the next sand ridge, about one kilometre to the south-east of *Frankeneng*, called Ede Rietkampen (fig. 2), also produced pottery from the Early or perhaps the first part of the Middle Neolithic (fig. 8). Radiocarbon dating of organic remains used as a tempering agent resulted in 6050 ± 110 BP (UtC-2728).¹² Calibration (using two σ) gave two possible dates: 5287-5269 or 5222-4708 BC (Schut 1993).¹³ Since the pottery cannot unambiguously be attributed to cultures or pottery groups contemporaneous with the LBK, an Early Swifterbant attribution is an alternative.¹⁴

7. FINAL REMARKS

Be it Swifterbant or non-Bandkeramik, the *Gelderse Vallei* with its distinctive coversand ridges overlooking a predominantly moist environment, may more than occasionally have attracted members of early pottery producing communities. So, when in the area a ridge's soil is disturbed, there is a fair chance of hitting such a site and it may even turn out to be

12. All radiocarbon date calibrations were performed using WinCal 25.

13. One should be aware of a possible deviation in case of dating organic temper (Lanting & Van der Plicht 1993-'94, 4-5; 1999-2000, 19; Schut 1993).

14. Up to now the Ede Rietkampen pottery typologically is an isolated find from the sandy soils of the Veluwe. If it was to be attributed to the Swifterbant Culture, also adzes, perforated adzes and wedges – tools that show a thin but clear distribution pattern in the northern Netherlands and adjacent Germany (Van der Waals 1972; Raemaekers 1999, 102-106; Verhart 2000, 39; Merkel 1999) – should probably be looked at as indications for Early Neolithic habitation on the western Veluwe.

rather well preserved under a *Plaggen* layer. In the last decades it has been the efforts of amateur archaeologists that revealed their presence. Since it is now becoming increasingly clear that scattered pieces of a multidimensional La Hoguette puzzle are to be found (far) north of the loess zone, they should be looked for by professional colleagues too, in a structured manner. It are not only the sites from the 'loessic Old World' that may add to the solution.

8. ACKNOWLEDGEMENTS

First of all, we wish to thank E. Zuurdeeg (Ede) for salvaging the finds, sharing information on the site and giving his valued objects on loan for the purpose of study and documentation. Also the hospitality of him and his wife must be mentioned. Joop Hulst (†) introduced two of us to the Zuurdeeg family. Sadly he passed away June 2007; Joop is gratefully remembered for his helpfulness. We have greatly benefited from the photographic skills of T. Penders (Cultural Heritage Agency) and the drawing expertise of M. Kriek and R. Timmermans. The same goes for M. Haars, who provided us with one of the figures. Restorative mishaps were neatly cured by E. Kieft (Cultural Heritage Agency). We furthermore are indebted to M. Niekus (Groningen Institute of Archaeology) for his comment on the Mesolithic finds from Ede *Frankeneng*. To all we owe our gratitude.

9. REFERENCES

- Arora, S.K. & J.H.G. Franzen 1987. Simpelveld vuursteen: een nieuw type vuursteen, *Archeologie in Limburg* 32, 23-27.
- Bohmers, A. & A. Bruijn 1958-'59. Statistische und graphische Methoden zur Untersuchung von Flintkomplexen. IV. Das lithische Material aus den bandkeramischen Siedlungen in den Niederlanden, *Palaeohistoria* 6-7, 183-211.
- Brounen, F.T.S. 1985. HVR 183; vroeg-, midden- en laatneolithische vondsten te Echt-Annendaal, *Archeologie in Limburg* 24, 66-71.
- Brounen, F.T.S. & H. Vromen 2005. Een bandkeramische vindplaats bij Spaubeek, *Archeologie in Limburg* 99, 16-23.
- Drenth, E., O. Brinkkemper & R.C.G.M. Lauwerier 2008. Single Grave culture settlements in the Netherlands: the state of affairs anno 2006. In: W. Dörfler & J. Müller (eds), *Umwelt – Wirtschaft – Siedlungen im dritten vorchristlichen Jahrtausend Mitteleuropas und Südkandinaviens*, Neumünster (Offa-Bücher 84), 149-181.
- Felder, P.J. 1998. Onderzoek van vuursteen in de Limburgse regio. In: P.C.M. Rademakers (ed.), *De prehistorische vuursteenmijnen van Ryckholt-St. Geertruid*, Maastricht, 157-159.
- Felder, P.J., P.C.M. Rademakers & M.E.Th. de Grooth (eds) 1998. *Excavations of prehistoric flint mines at Rijckholt-St. Geertruid (Limburg, the Netherlands) by the 'Prehistoric Flint Mines Working Group' of the Dutch Geological Society, Limburg Section*, Bonn (Archäologische Berichte 12).
- Franzen, J.H.G. 1986. Simpelveld-Feuerstein: ein neuer Feuersteintyp zur Beilherstellung, *Archäologische Informationen* 9, 61-67.
- Gayck, S. 2000. *Urgeschichtlicher Silexbergbau in Europa. Eine kritische Analyse zum gegenwärtigen Forschungsstand*, Weissbach (Beiträge zur Ur- und Frühgeschichte Mitteleuropas 15).
- Gijn, A.L. van 1990. *The wear and tear of flint. Principles of functional analysis applied to Dutch Neolithic assemblages*, PhD thesis Leiden (Analecta Praehistorica Leidensia 22).
- Grooth, M.E.Th. de 1987. The organisation of flint tool manufacture in the Dutch Bandkeramik, *Analecta Praehistorica Leidensia* 20, 27-51.
- Grooth, M.E.Th. de 1998. Archeologische beschrijvingen van Ryckholt-vuursteen. In: P.C.M. Rademakers (ed.), *De prehistorische vuursteenmijnen van Ryckholt-St. Geertruid*, Maastricht, 160-161.
- Günther, K. 1988. Eine Linienbandkeramik-Siedlung im Wesertal bei Minden, *Archäologisches Korrespondenzblatt* 18, 237-241.
- Günther, K. 1991. Ein Gefäßrest der Gruppe La Hoguette aus dem Unterem Weserbergland, *Germania* 69, 153-154.
- Jeunesse, C. 1987. La céramique de la Hoguette. Un nouvel 'élément non-rubané' du Néolithique ancien de l'Europe du Nord-Ouest, *Cahiers Alsaciens d'Archéologie d'Art et d'Histoire* 30, 5-33.
- Jeunesse, C. & S. van Willigen 2006. Le vase à décor rubané de la Grande Grotte à Cheval-Blanc (Vaucluse) – un objet danubien dans le Néolithique ancien du Midi de la France?, *Bulletin de la Société Préhistorique Française* 103, 603-608.
- Langenbrink, B. 1992. Rohmaterial und Grundformen des Steinmaterials. In: J. Lüning & P. Stehli (eds), *Der bandkeramische Siedlungsplatz Lamersdorf 2, Gemeinde Inden, Kreis Düren*, Bonn (Rheinische Ausgrabungen 37), 134-174.
- Lanting, J.N. & J. van der Plicht 1993-'94. ¹⁴C-AMS: Pros and cons for archaeology, *Palaeohistoria* 35-36, 1-12.

- Lanting, J.N. & J. van der Plicht 1999-2000. De ¹⁴C-chronologie van de Nederlandse pre- en protohistorie. III: neolithicum, *Palaeohistoria* 41-42, 1-110.
- Löhr, H. 1975. Zur Verbreitung von Feuerstein aus den Bergwerken in der Umgebung von Maastricht in Deutschland. In: F.H.G. Engelen *et al.* (eds), *Second International Symposium on Flint, 8-11 Mei 1975 – Maastricht* (Staringia 3), 95-97.
- Louwe Kooijmans, L.P. 1993. The Mesolithic/Neolithic transformation in the Lower Rhine Basin. In: P. Bogucki (ed.), *Case Studies in European Prehistory*, Boca Raton, 95-145.
- Lüning, J., U. Kloos & S. Albert 1989. Westliche Nachbarn der bandkeramischen Kultur: Die Keramikgruppen La Hoguette und Limburg, *Germania* 67, 355-420.
- Luys, W. 1990. Een bandkeramisch potje uit Asselt opgebag-gerd, *Archeologie in Limburg* 44, 298-299.
- Merkel, M. 1999. Überlegungen zur Typologie frühneolithischer Felsgesteingeräte. Ein Beitrag zur Neolithisierung Norddeutschlands und Südskadnaviens, *Offa* 56, 223-238.
- Newell, R.R. 1970. The flint industry of the Dutch Linearbandkeramik. In: P.J.R. Modderman (ed.), *Linearbandkeramik aus Elsloo und Stein*, Leiden (Analecta Praehistorica Leidensia 3 / Nederlandse Oudheden 3), 144-183.
- Newell, R.R. & A. Vroomans 1972. *Automatic artifact registration and systems for archaeological analysis with the Philips P1100 computer: a Mesolithic test-case*, Oosterhout.
- Niekus, M.J.L.Th. 2005-'06. A geographically referenced ¹⁴C database for the Mesolithic and the early phase of the Swifterbant culture in the northern Netherlands, *Palaeohistoria* 47-48, 41-99.
- Niekus, M.J.L.Th. & D. Stapert 2005. Het Midden-Paleolithicum in Noord-Nederland. In: J. Deeben, E. Drenth, M.-F. van Oorsouw & L. Verhart (eds), *De Steentijd van Nederland* (Archeologie 11-12), 91-118.
- Raemaekers, D.C.M. 1999. *The Articulation of a 'New Neolithic'. The meaning of the Swifterbant culture for the process of Neolithisation in the western part of the North European Plain (4900-3400 BC)*, PhD thesis Leiden (Archaeological Studies Leiden University 3).
- Schreurs, J. 1992. The Michelsberg site Maastricht-Klinkers: a functional interpretation, *Analecta Praehistorica Leidensia* 25, 129-171.
- Schut, P. 1981. Een 'durchlochte Breitkeil' uit Zellhem en een overzicht van vroeg-neolithische vondsten uit de Achterhoek, *Westerheem* 30, 105-111.
- Schut, P. 1988. Poteries du Néolithique ancien à Ede (prov. de Gueldre), *Helinium* 28, 223-231.
- Schut, P. 1991. *Een inventarisatie van neolithische bijlen uit Gelderland, ten noorden van de Rijn*, Amersfoort (Nederlandse Archeologische Rapporten 11).
- Schut, P. 1993. Ede. In: R.S. Hulst, *Archeologische kroniek van Gelderland 1992, Bijdragen en Mededelingen Vereniging Gelre* 84, 206-207.
- Schut, P. 2000-'01. Een halffabrikaat van een Emmenhamer uit Rhenen (U.) en een vroeg-neolithische dissel uit Aalten (Gld.), *Archeologie* 10, 157-160.
- Verhart, L.B.M. 2000. *Times fade away. The neolithization of the southern Netherlands in an anthropological and geographical perspective*, PhD thesis Leiden (Archaeological Studies Leiden University 6).
- Verhart, L. & N. Arts 2005. Het mesolithicum in Zuid-Nederland. In: J. Deeben, E. Drenth, M.-F. van Oorsouw & L. Verhart (eds), *De Steentijd van Nederland*, Meppel (Archeologie 11-12), 235-260.
- Waals, J.D. van der 1972. Die durchlochten Rössener Keile und das frühe Neolithikum in Belgien und in den Niederlanden. In: H. Schwabedissen (ed.) *Die Anfänge des Neolithikums vom Orient bis Nordeuropa. Teil Va. Westliches Mitteleuropa*, Köln (Fundamenta A, Band 3), 153-184.
- Warrimont, J.P. de & A.J. Groenendijk 1993. 100 jaar Rullenvuursteen: een kleurrijke vuursteensoort nader bekeken, *Archeologie in Limburg* 57, 37-46.
- Weiner, J. 1997. Die Maasschotter der Niederrheinischen Bucht als Feuersteinlieferant für die bandkeramischen Siedlungsplätze Langweiler 8 und Langweiler 9. In: J. Lüning (ed.), *Studien zur neolithischen Besiedlung der Aldenhovener Platte und ihrer Umgebung*, Bonn (Rheinische Ausgrabungen 43), 599-646.
- Zimmermann, A. 1995. *Austauschsysteme von Silixartefakten in der Bandkeramik Mitteleuropas*, Bonn (Universitätsforschungen zur prähistorischen Archäologie 26).

Ittervoort *Damszand*

A find of La Hoguette pottery and *Begleitkeramik* in the Dutch province of Limburg

Fred T.S. Brounen, Erik Drenth & José Schreurs

ABSTRACT

A small pottery assemblage from Ittervoort Damszand raises the number of La Hoguette sites in the Netherlands to four, all but one located beyond the perimeter of Bandkeramik settlements. Though welcomed, the contribution of the new finds to the La Hoguette debate is restricted and mainly concerns their close association with sherds of a Begleitkeramik pot.

KEYWORDS

La Hoguette, Begleitkeramik, cannellured ware.

1. INTRODUCTION

In June 2000 T. Bosmans (Hunsel) discovered a number of pottery fragments while inspecting a newly excavated strip of a shallow sandpit at *Damszand*, near Ittervoort, with a metal detector.¹ The uncovered plane revealed a single prehistoric feature measuring about 100 cm across and no more than 20 to 30 cm in depth (pers. comm. T. Bosmans). Its fill contained sherds of two Early Neolithic pots and some charcoal.² The finds were given to H. Heijmans (Ittervoort), who – aware of their possible importance – brought them to the attention of professional archaeologists. In spite of a subsequent excavation in August

2000 by the State Service for Archaeological Investigations in the Netherlands (ROB)³ no further unequivocal Early Neolithic remains were found. The short field campaign did, however, provide the data necessary to place the site in a landscape perspective.



Figure 1 Location of the Dutch La Hoguette sites. 1: Sweikhuizen *De Hei*. 2: Geleen *Nijssenstraat*. 3: Ittervoort *Damszand*. 4: Ede *Frankeneng*. The loess zone is shaded. Drawing M. Haars.

1. In literature (Schreurs 2005) the site has also been referred to as Hunsel *Damszand*, Hunsel being the municipality at the time.

2. In other words, categories occurring in the 'typical' Early Neolithic refuse-pit, such as bits of burnt bone and loam, flint artefacts, heat-fractured stones and a larger amount of charcoal, are missing.

3. Since the merging of the ROB with the Netherlands Department for Conservation (RDMZ) in 2006, the joint department was known as the National Service for Archaeology, Cultural Landscape and Built Heritage (RACM). In 2009 it was renamed Cultural Heritage Agency.

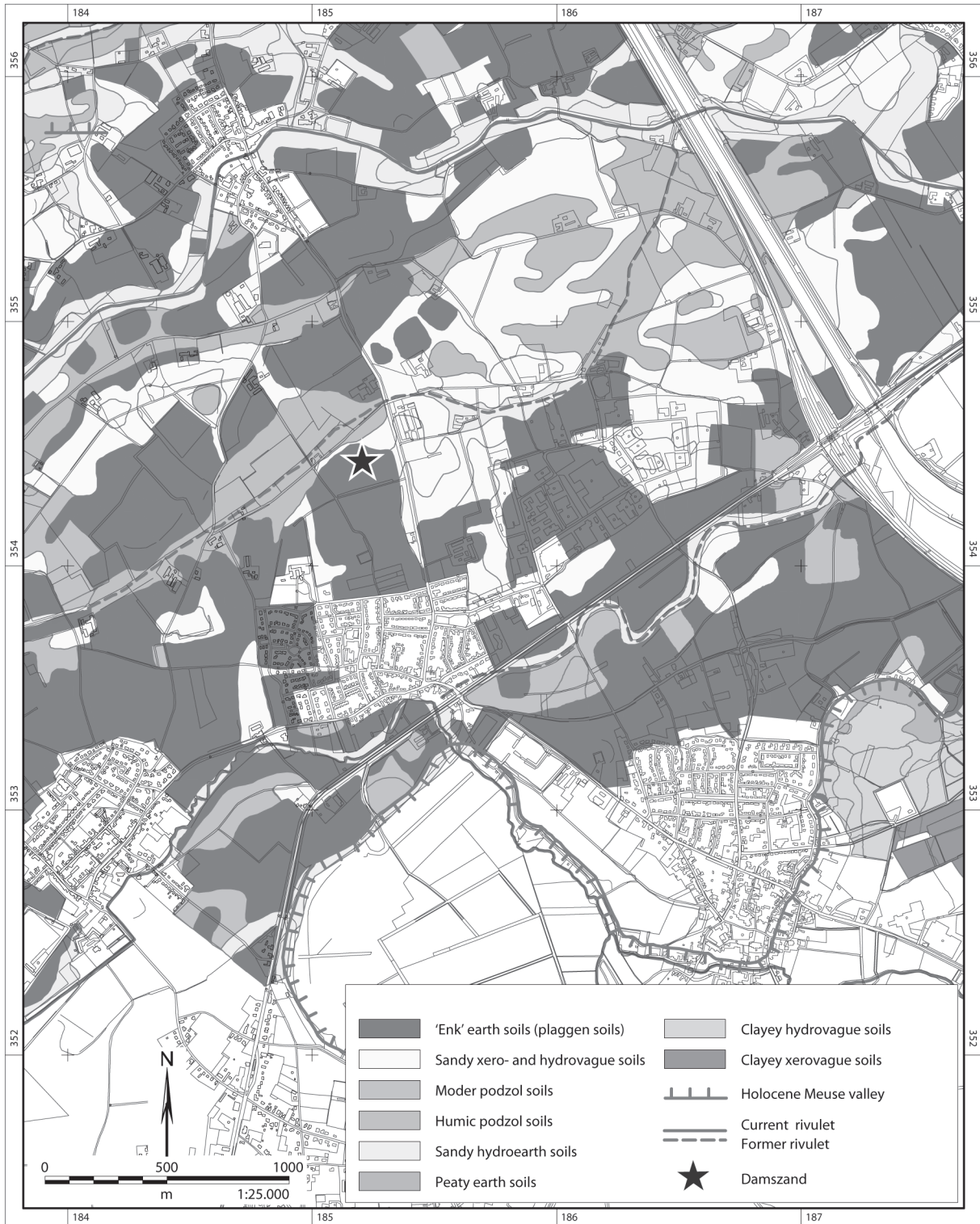


Figure 2 Soil map showing (partly disappeared or reduced) brooklets and the border of the Holocene Meuse valley. Location of the site: ★. Drawing D. Keijers / M. Haars (after Keijers 2007).

2. NATURAL ENVIRONMENT AND HUMAN IMPACT

Ittervoort is located in the coversand area of mid-Limburg, about 17 km north of the loess zone (fig. 1), which in the Early Neolithic was scattered with dozens of Bandkeramik settlements forming part of the Graetheide *Siedlungskammer*. Though nowadays the river Meuse is confined to a narrow bed 5 km to the east of Ittervoort, the edge of its Holocene valley almost borders on the south side of the village (Keijers 2007; fig. 2). No doubt in the Meso- and Neolithic it was rich in resources.

The wider surroundings of the *Damszand* site are characterised by parallel low ridges of fine, loamy coversands, deposited in the Late Pleistocene.⁴ Interjacent depressions held rivulets (fig. 2), some of which have (almost) disappeared in the last centuries or decades as a result of damming and a dropped groundwater table (*ibid.*). Consequently, the availability of surface water and the number of moist locations must have diminished. Other natural aspects of the area have changed since prehistoric times as well. Agricultural practices starting in the Late Middle Ages led to the formation of *Plaggen* soils, while the more recent extraction of sand involved the levelling of elevations. Both processes erased the smaller morphological components from an undulating landscape and somewhat smoothed it. The overall picture nonetheless seems to have been preserved in a map displaying groundwater table classes (fig. 3).

The Early Neolithic feature was discovered on terrain shelving to the northwest, in the direction of a reduced brooklet, which runs along the present *Mezenstraat* at about 150 m distance. A vertical section, perpendicular to the contour lines and for the greater coinciding with the northwest-southeast oriented face of the sandpit, revealed that it was situated on the gentle slope of a shallow depression approximately 50 m wide, in which a podzol soil had formed.⁵ The ploughed bed has thickened over the

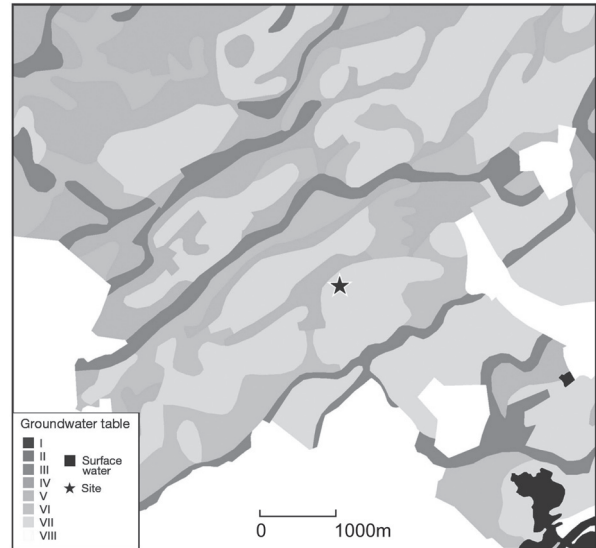


Figure 3 Map showing groundwater table classes. I: wet – VIII: dry. Location of the site: ★. Drawing M. Haars.

centuries by the gradual accumulation of sods resulting in a *Plaggen* soil, which filled and covered the depression. The vertical section showed a phase of initial cultivation by spading prior to the filling, which may have affected the upper part of the feature, but the following accumulation of sods kept it from modern, more drastic disturbances, until the digger started trenching. To expose the feature 75 cm of topsoil had to be excavated, leaving 70 cm of pure sand to be won.

3. FINDS

The majority of finds from the archaeological excavation formed part of a concentration of potsherds from the Middle and Late Neolithic Stein group (Louwe Kooijmans 1983), uncovered at about 60 m from the small, isolated assemblage to be discussed below.⁶ Among the pieces H. Heijmans collected during earlier stages of sand extraction are fragments

4. In the *Damszand* sandpit coversands were extracted.

5. By the time the ROB excavation started, the strip of sand holding the feature had been completely removed, creating a vertical section 8 m further. Because of the gradual decline, the southern limit of the depression was difficult to assess. The boundary decided on coincides with the stratigraphically oldest phase of the *Plaggen* soil; the younger layer on top extends over

dozens of metres more. Differences in height are moderate: from the location of the feature – 18 m from the centre – the depression gains but another 20 to 25 cm in depth.

6. In August 2000 the ROB excavated about 1200 m². Over the years T. Bosmans and H. Heijmans inspected about 6 ha of the ever expanding sandpit. Parts of the area were excavated with the help of local amateur archaeologists and volunteers (members of *Stichting Streekarcheologie Peel Maas en Kempen*

of Michelsberg culture pottery. The total of Michelsberg and Stein group finds will be dealt with elsewhere (Brounen *et al.* in prep.). For now, we confine ourselves to the older earthenware.

3.1 Early Neolithic pottery

La Hoguette

The greater part of the sherds belongs to the undecorated lower half of a La Hoguette pot (fig. 4).⁷ A surprising technological aspect is the fact that it is tempered with a species of moss (*Neckera crispa*) (fig. 5). At the time of the identification (September 2000) by W.J. Kuijper (Faculty of Archaeology, Leiden University) the Ittervoort pot in this respect was a chronological and geographical outlier, since the use of moss in pottery was only known from the temporal horizons of epi-Rössen and the Michelsberg culture in northern France and Belgium (Constantin & Kuijper 2002). A stroke of good luck was Tessa Maletschek (*Institut für Archäologische Wissenschaften, Johann Wolfgang Goethe Universität, Frankfurt*) taking a fragment of a morphologically divergent La Hoguette pot from Bruchenbrücken (Lüning *et al.* 1989, 377, *Abb.* 10.4) to the Leiden workshop, for the fabrication of which moss seems to have been used as well. A renewed study of La Hoguette vessels may reveal more examples, thus dating the practice back to almost the very beginning of pottery production in central and western Europe. *Neckera crispa* is the only temper used in the Ittervoort specimen, except perhaps for an occasional grain of sand. Particles of burnt and crushed bone are completely lacking.

The vessel was built from coils, overlapping and well joined (N type); coil fractures are almost absent. On some of the sherds traces of scraping are preserved as evidence of finishing off and thinning the wall; and uniformly thin (5–6 mm) it is, especially in view of the size of the vessel. Both surfaces are very

well smoothed, the higher parts having acquired a slight lustre. The process of firing created a rather solid product with a reddish brown inner and outer surface and a grey core.⁸

Only one small, pointed rim fragment was passed down through the ages. Its dimensions are insufficient to assess the position or a diameter. A series of mostly plain sherds could be fitted together, thus forming the lower part of a pot that morphologically may not have appealed to the average La Hoguette person. Instead of the usual pointed bottom the vessel's base seems to be rather rounded, as if the 'egg' was put wrong side up.⁹

As for the decoration, most of the aspects (scheme, motif, and techniques) comply with the wider standard. The lower part, which for reasons of stability presumably was dug in, was left plain. The decoration of the body consists of a curvilinear pattern of bands. It is plausible, but somewhat hard to prove, that the process of embellishment started with appliques, *i.e.* cordons, because the subsequent stabbing was done very close to these slight elevations. A simple spatula was used to create a single row of stabs above the cordon and (as closely spaced) a double one underneath.¹⁰

Close to the edge of the rim we find a horizontal row of stabs. On top of the lip small notches were made. One of the sherds shows a conical repair hole. As a whole the pot does not fully meet the 'classic' La Hoguette style, but it falls well within the limits of what might be a younger western facies. In this respect a last unusual fragment of the vessel should be mentioned, *i.e.* a piece of a morphological element, decorated with rows of stabs, which seems to be a broken-off appendage (fig. 4).

and *Heemkunde Vereniging Hunsel*). No additional Early Neolithic finds were made.

7. No doubt pottery fragments were lost in the action of stripping the topsoil. After refitting, a total of 16 sherds remained. Six of them showed decoration, ten (including some large split pieces) did not.

8. The presence of reddish iron oxides in the soil may post-depositionally have added to the colouration. Especially *Begleitkeramik* sherds were covered by a tough crust of sand and oxides. With the La Hoguette fragments oxides that invaded the sherds in some places led to a peeling off of the surface.

9. The exact position of the lower part is difficult to assess, but the rounded shape of the base is certain.

10. The stabbing was done in a rather sloppy way, with not the neatest of instruments, making it hard to determine if a single or a multi-dented spatula was used.

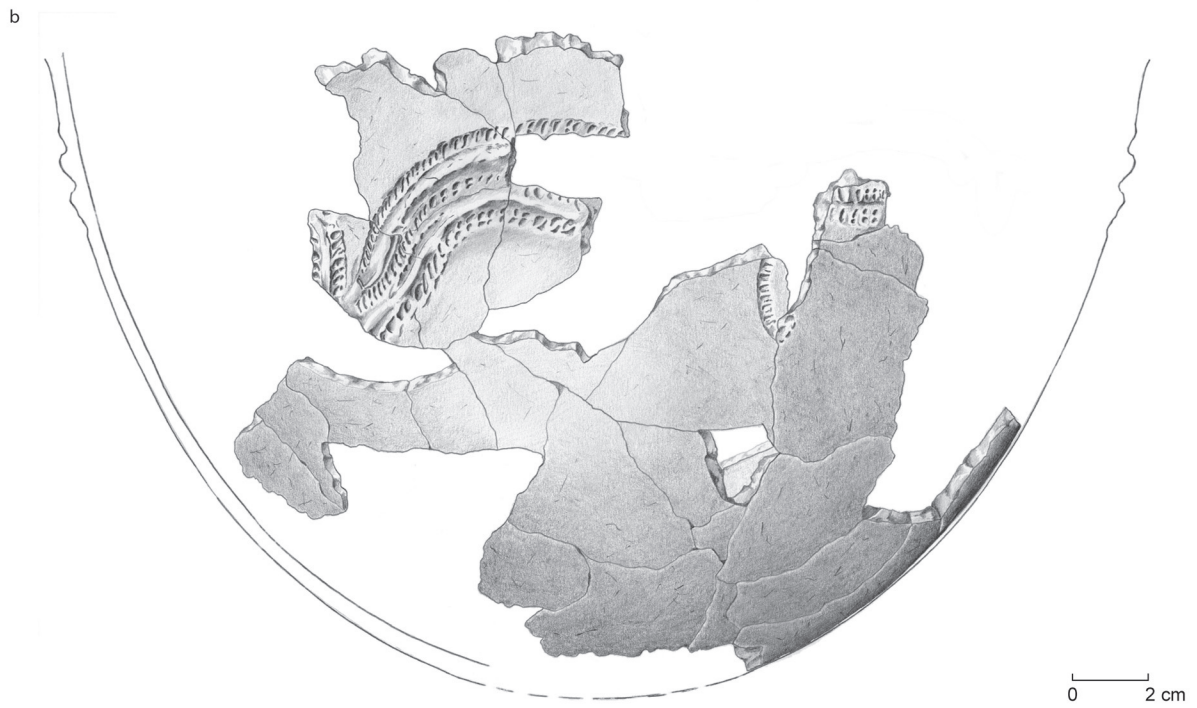
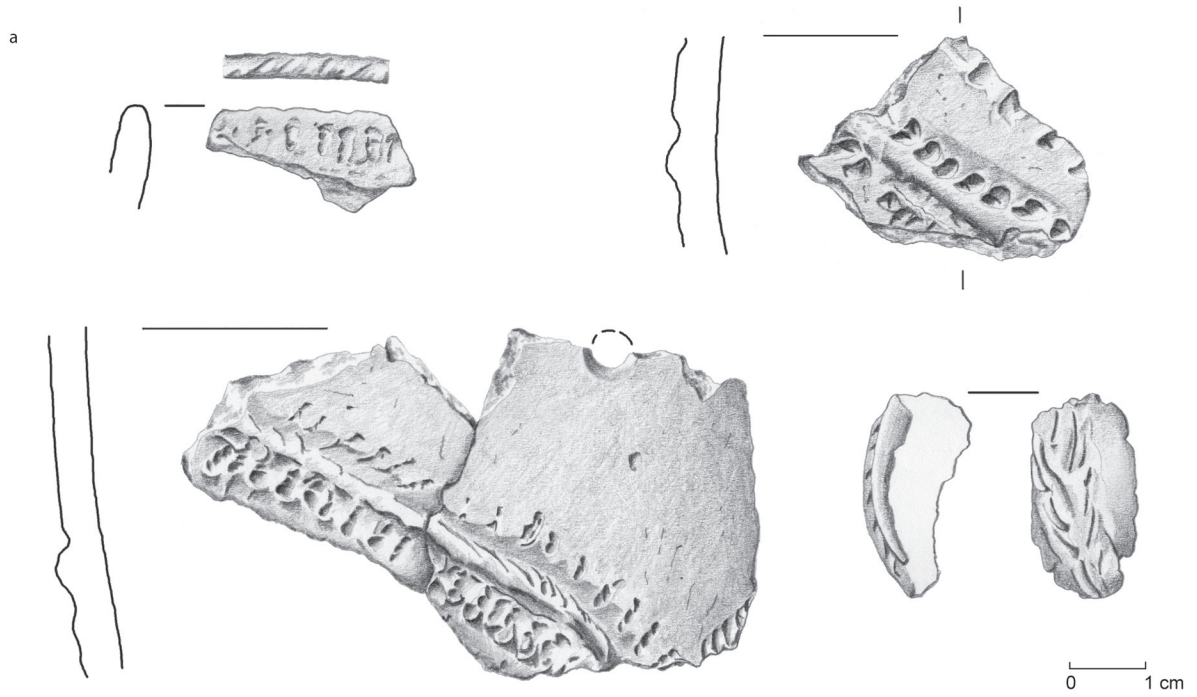


Figure 4 Fragments of a La Hoguette pot. Drawing R. Timmermans. a: scale 1:1; b: scale 1:2.



Figure 5 Surface of a La Hoguette sherd showing imprints of moss. Photograph T. Penders. 2x natural size.

Begleitkeramik

A second, smaller group of potsherds (fig. 6) represents a particular type of *Begleitkeramik*, i.e. cannelured ware (Brounen & Hauzeur, this volume). Only six 5-7 mm thick fragments of the body were preserved; rim sherds alas are lacking. Their temper consists of pottery-grit. Both surfaces were very well smoothed or polished and had acquired a pale brown colour at the end of the firing; the core is grey.¹¹ As with most *Begleitkeramik* sherds, the wall is rather solid (e.g. Jeunesse & Sainty 1991; Brounen 1999). They are decorated with shallow wide cannelures, oriented obliquely to the once present rim and ac-

companied by rows of oblique, narrow, simple stabs on one side of the crests. These rows alternate directions, as presumably do the series of cannelures, thus creating a *Winkelband*.

3.2 Flint

Neither T. Bosmans nor the ROB found flint artefacts that could be connected with the La Hoguette 'sojourn' at the site. The only lithic find from the northern part of the excavation which may be of the same age, was a flint blade (75 x 20 x 7 mm), discovered at a distance of more than 40 m from the La Hoguette sherds.

11. The original colour cannot fully be established, as a result of soil formation processes.

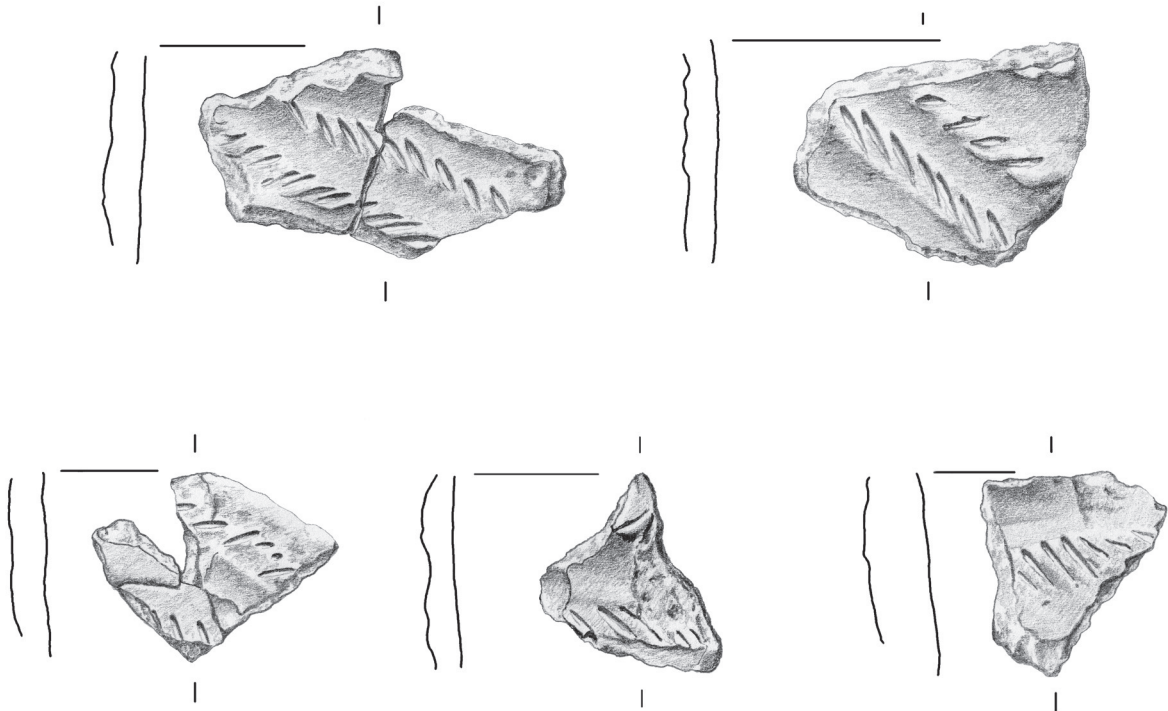


Figure 6 Fragments of a cannelured *Begleitkeramik* pot. Drawing R. Timmermans. Scale 2:3.

4. IMPLICATIONS

Several aspects of the *Damszand* site fit a pattern emerging to the west and north of the Rhine, already touched upon by others: an absolute minimum of vessels, typologically somewhat deviating from the 'classic' norm, found in an environment not or scarcely frequented by the Bandkeramik people, only survived thanks to exceptional circumstances of preservation.¹² Frankly, the site adds little to a solution of the La Hoguette riddle. On closer inspection its contribution is mainly statistical: another dot on a map confirming that something is annoyingly escaping our interpretative efforts.

The most striking and fortunate aspect of the Ittervoort assemblage is the close and 'pure' association of a La Hoguette pot with a cannelured *Begleitkeramik*

mik counterpart, finds that moreover were uncovered at a comforting distance from any Bandkeramik *Siedlungskammer*.¹³ It is one of the few clear-cut cases providing evidence that the two styles are intimately connected, thus making the latter a true 'companion' in the sense suggested by Jeunesse (e.g. Jeunesse & Sainty 1991).

Ittervoort *Damszand* also provides the imaginary glue necessary to join together the La Hoguette and *Begleitkeramik* fragments of Sweikhuizen *De Hei*, collected in a more open association. In March 1980 E.A. van Geel (Geleen) discovered the first identified La Hoguette site in the Netherlands, situated on a high (Upper Terrace) patch of sandy soil enclosed in the loess zone near Sweikhuizen (Van Geel 1980). The La Hoguette pottery from the subsequent excavation was published by Modderman (1987) and van Berg (1987). Van Geel, however, had also found 2 sherds of cannelured *Begleitkeramik*, which for reas-

12. Of the Dutch La Hoguette finds, the fragments from Geleen *Nijssenstraat* (Brounen & Vromen 1990) can be regarded as 'classic'. The pot is the only Dutch La Hoguette specimen found in a Bandkeramik settlement.

13. 'Pure' in the sense that the pottery is not associated with Bandkeramik finds.

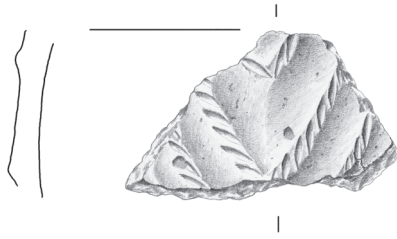


Figure 7 Sweikhuizen, fragment of a cannelured *Begleitkeramik* pot. Drawing R. Timmermans. Scale 2:3.

ons unknown were ignored by both authors. Only a few years later the fragments were depicted by van Berg (1990, 1994), who suggested they should be added to the La Hoguette corpus. The smaller of the two finds was collected at the spot where the excavation later that year uncovered a scatter of La Hoguette sherds. The other (fig. 7) – presumably transported as a result of ploughing, harrowing or sheet erosion – was picked from the surface slightly downhill, at a distance of about 13.5 m from the La Hoguette concentration (E.A. van Geel, pers. comm. and documentation).

The afore-mentioned associations seem to contradict (Brounen & Hauzeur, this volume) the assumption that ‘pure’ La Hoguette sites like Sweikhuizen may be indicative of a pre-Bandkeramik presence of La Hoguette in the Lower Rhine Basin (Louwe Kooijmans 1993, 125; Raemaekers 1999, 136-138).¹⁴ They also indirectly provide an argument against scepticism regarding the comparatively young dates of La Hoguette finds west of the Rhine (e.g. Lüning *et al.* 1989, 382-385).

Ittervoort is a welcome stepping-stone in relation to a rather similar but far off site as Ede *Frankeneng* (Schut 1988; Brounen *et al.*, this volume), filling up the wide gap with e.g. Sweikhuizen. With the given possibility to add dots of cannelured ware finds to the distribution map, the density of sites representing a La Hoguette ‘presence’ in the wider region indirectly increases.

14. Or the assumption of a post-Bandkeramik date of the finds (Modderman 1983; 1987).

5. ACKNOWLEDGEMENTS

Most of all, we are indebted to T. Bosmans for recovering the finds and to H. Heijmans for bringing the sherds to our attention and giving them on loan. The owner of the plot G. Nijskens kindly gave permission for an archaeological excavation, which was mechanically facilitated by Kessels B.V. (Ospel), the firm extracting sand. The excavation was humanly powered by a team that (apart from the authors) included J. Deeben (Cultural Heritage Agency), H. and M. Heijmans and R. Paulussen. E.A. van Geel trusted us with the extensive documentation of the Sweikhuizen site and an important piece of pottery. W.J. Kuijper identified the remarkable vegetable temper. D. Keijers (RAAP) provided the figure of the soil map and gave permission to reproduce it. And last, but certainly not least: R. Timmermans made the drawings, M. Haars the maps and T. Penders (Cultural Heritage Agency) the photographs. To all we owe much gratitude for their help.

6. REFERENCES

- Berg, P.-L. van 1987. Céramique de la Hoguette à Sweikhuizen (Limbourg néerlandais), *Helinium* 27, 259-269.
- Berg, P.-L. van 1990. Céramique du Limbourg et néolithisation en Europe du Nord-Ouest. In: D. Cahen & M. Otte (eds), *Rubané et Cardial. Actes du Colloque de Liège, novembre 1988*, Liège (Études et Recherches Archéologiques de l’Université de Liège 39), 161-208.
- Brounen, F.T.S. 1999. Vroegneolithische Begleitkeramiek uit Limburg en Noord-Brabant, *Archeologie in Limburg* 82, 59-64.
- Brounen, F.T.S. & H. Vromen 1990. A find of La Hoguette pottery at Geleen (South-Limburg, the Netherlands), *Helinium* 30, 36-43.
- Brounen, F.T.S., E. Drenth, H. Heijmans & J. Schreurs in prep. *Resten van de groepen La Hoguette en Stein te Ittervoort-Damszand* (provisional title).
- Constantin, C. & W.J. Kuijper 2002. Utilisation de mousse comme dégraissant dans des céramiques néolithiques de France et de Belgique, *Bulletin de la Société Préhistorique Française* 99, 775-783.
- Geel, E.A. van 1980. Sweikhuizen, *Archeologie in Limburg* 9, 14.
- Jeunesse, C. & J. Sainty 1991. Bisschoffsheim ‘Le Village’ (Bas-Rhin). Un habitat rubané avec Cérami-

- que de la Hoguette, *Cahiers pour la Promotion de la Recherche Archéologique en Alsace* 7, 15-57.
- Keijers, D. 2007. Landschappelijke karakteristieken van het onderzoeksgebied. In: H. Heijmans, E. Drenth, D. Keijers & J. Schreurs (eds), *Archeologisch onderzoek Ittervoort. Oude bedrijvigheid op het industrieterrein Santfort ontsloten*, Ittervoort, 15-37.
- Louwe Kooijmans, L.P. 1983. Tussen SOM en TRB, enige gedachten over het laat-neolithicum in Nederland en België, *Bulletin van de Koninklijke Musea voor Kunst en Geschiedenis* 54, 55-67.
- Louwe Kooijmans, L.P. 1993. The Mesolithic/Neolithic transformation in the Lower Rhine Basin. In: P. Bogucki (ed.), *Case Studies in European Prehistory*, Boca Raton, 95-145.
- Lüning, J., U. Kloos & S. Albert 1989. Westliche Nachbarn der bandkeramischen Kultur: Die Keramikgruppen La Hoguette und Limburg, *Germania* 67, 355-420.
- Modderman, P.J.R. 1983. Sweikhuizen. In: W.J.H. Willems (ed.), *Archeologische kroniek van Limburg over de jaren 1980-1982*, (*Publications de la Société Historique et Archéologique dans le Limbourg* 119), 204-205.
- Modderman, P.J.R. 1987. Limburger aardewerk uit Sweikhuizen, gem. Schinnen, prov. Limburg, *Analecta Praehistorica Leidensia* 20, 87-93.
- Raemaekers, D.C.M. 1999. *The articulation of a 'New Neolithic'. The meaning of the Swifterbant culture for the process of neolithisation in the western part of the North European Plain (4900-3400 BC)*, PhD Thesis Leiden (Archaeological Studies Leiden University 3).
- Schreurs, J. 2005. Het midden-neolithicum in Zuid-Nederland. In: J. Deeben, E. Drenth, M.-F. van Oorsouw & L. Verhart (eds), *De Steentijd van Nederland*, (*Archeologie* 11-12), 301-332.
- Schut, P. 1988. Poteries du Néolithique ancien à Ede (prov. de Gueldre), *Helinium* 28, 223-231.

Some technological aspects of LBK and non-LBK pottery in the Rhineland

Erich Cläßen

ABSTRACT

In the course of a PhD thesis at the University of Cologne a total of 15 Early Neolithic (LBK) settlements in the vicinity of Königshoven (Rhineland) were studied (Cläßen 2006a). The examination of the preserved features and finds permitted the reconstruction of the settlement history and structure of the sites, as well as the social networks existing between the Early Neolithic settlers. One offshoot of this research was a rather detailed treatment of the technological aspects of the pottery, an otherwise neglected aspect of LBK pottery research in the Rhineland. In addition to the well known coding system for decorations (cf. Stehli 1973) the temper of the vessels and the size of its particles were recorded.

An analysis of the temper showed that chronological differences exist between assemblages of the older, middle and later phases of the LBK in the Lower Rhine Basin. In fact, in some cases this approach enables the dating of LBK assemblages comprising solely undecorated vessels.

Furthermore, one non-LBK vessel (Limburg pottery) from one of the sites near Königshoven is described here, although it does not deliver a basis for statistically significant comparisons.

KEYWORDS

Rhineland, LBK, technology, Limburg pottery.

1. FRAMEWORK

The Bandkeramik (LBK) is the material culture associated with the first Neolithic settlers in Central Europe. Settlements of this period are found in an area between the Carpathian Mountains in the east and the Paris Basin in the west. From the earliest phase, between 5600 and 5300 cal BC, LBK sites

are only known from areas east of the river Rhine. After 5300 cal BC the LBK occupation of the Rhineland begins.¹

In this region the focus of research lies in the lignite exploitation area to the west of Cologne where about 100 Early Neolithic settlements have been located to date. Especially the Bandkeramik settlements on the Aldenhovener Platte – a fertile loess area bordered by the foot of the Eifel mountain range in the south, the rivers Ruhr and Inde in the east, and the river Wurm in the north-west – have been a major concern of research in the last four decades (Farrugia *et al.* 1973; Kuper *et al.* 1977; Boelicke *et al.* 1988; Lüning & Stehli 1992; 1994; Langenbrink 1996; Lüning 1997; Kolhoff 1999; Münch 1999; Bollig 2000; Frank *et al.* 2000; Clare 2004; Heller 2004; Krahn 2006; Rück 2006; Mischka in prep.). The project Settlement Archaeology of the Aldenhovener Platte (SAP) conducted between 1971 and 1981 involved large-scale excavations in the Merzbach valley and provided an essential contribution to our knowledge of Early Neolithic settlement history in this part of western Germany.

Another part of the Rhineland to have fallen victim to opencast mining is the area near Königshoven. On this loess plateau, known as the *Titzer Platte*, a total of 15 LBK settlements were discovered in the course of survey work, some of which were subject

1. Here 'Rhineland' is understood as the southernmost part of the Lower Rhine Area. This region, which in geographical terms is termed the Cologne Basin (*Kölner Bucht* or *Niederrheinische Bucht*), is bordered by the low mountain ranges of the *Hohes Venn* (*Les Hautes Fagnes*) and the Eifel in the west, and the *Bergisches Land* in the east. In contrast to the lowlands to the north, this region, between the cities of Bonn, Aachen and Düsseldorf, is, characterised mainly by fertile loess soils that provided ideal conditions for the first farmers.

to subsequent small-scale excavations (Claßen 2006a).

For the *Aldenhovener Platte* a detailed settlement history has been established comprising 14 settlement phases (*i.e.* house generations; Stehli 1989; 1994; Münch 1999); this is a sequence which is also valid for the sites near Königshoven (Claßen 2006a).

The examination of the sites near Königshoven has concentrated not only on settlement history and structure but also on land use models and on the reconstruction of the Early Neolithic social networks in the Rhineland (Claßen 2004; 2005; 2006a; 2006b; 2007; 2009).

The focus of this paper solely lies on some of the technological aspects of the LBK pottery assemblages.

2. DOCUMENTATION SYSTEM

The primary concern of the 'classical' documentation system of Rhenish LBK pottery has always been the decoration. Further elements to be considered include the vessel form, and, as a single technical element, wall thickness (Stehli 1973; 1977; 1988; Stehli & Strien 1987; Cladders 1997). This system has also been used to describe the material from the settlements near Königshoven. However, in this case, additional technical aspects, principally temper type and grain size, proved so important in distinguishing different vessel units as to merit additional coding. No observations were made concerning the building technique of the vessels (narrow coiling or slabs).

The temper was determined using a magnifier (10-times magnification). The particles were not counted (*e.g.* by cm²; Kloos 1997, 186), but instead the grain size of the temper particles visible in the fractures was determined. In an earlier study the author also documented the colour of the sherds (Claßen 1998, 41-42). Since analyses of these aspects are rare the results will be summarised here.

A further difference to the 'classical' documentation system was that vessel units comprising only undecorated sherds, *i.e.* without rim preservation or knobs, were also examined. These sherds are normally referred to as the 'sorting rest' of a given assemblage and usually play only a minor role in LBK pottery studies. However, in the case of my analysis this material was taken into account owing to its importance for reconstructing household inventories.

All sherds larger than 2 cm in length were considered in the vessel unit identification process.

3. DATA AND ANALYSES

The analysis is based on 3644 vessel units of which 1102 are decorated (30.2%), 1051 are undecorated and display rim preservation, knobs or lugs (28.8%), and 1491 comprise only undecorated sherds without rim preservation, knobs or lugs (41%). The ratio of decorated to undecorated vessels is 1 to 2.3.² In the following I refer to the 'total' inventory of LBK pottery in the settlements near Königshoven, *i.e.* to the 1102 decorated and 2542 undecorated vessel units; for this reason the percentages presented in this paper are not comparable to published material in which undecorated vessels without rim preservation, knobs and lugs are disregarded (*e.g.* Stehli 1973; 1977; 1988; Schimmelschulze 1992; Cladders 1997; Schmidt 1997; Krahn 2006; Lehmann 2004).³

In the 15 settlements near Königshoven the percentage of decorated vessels ranges from 12.7% to 44.4%. For the whole settlement group this means that decoration was applied to 30.2% of all vessels. Taking into account the weight instead of the number of vessel units, decorated pottery makes up between 8.5% and 55.2% of the assemblage, with an average of 20.2%.

Important for the analysis to be discussed in the ongoing text is the chronological variation in the inventories. In discerning both settlement and stylistic phases of the LBK it has been shown that seriation or correspondence analyses of the main decoration motifs yield the best results (*e.g.* Stehli 1994). Here no methodological or chronological details will be discussed, but it should be noted that the chronological frame used here is based on a correspondence analysis of 10,052 vessels recovered from 1677 pits at 34 LBK settlements in the Rhineland. For the technological analysis of the pottery the very fine chronology, with its 14 house generations, was simplified and

2. Excluding the 41% of vessels normally seen as 'sorting rest' the ratio would be 1:0.95.

3. The detailed numbers and percentages for decorated pottery and undecorated pottery as in the 'classical' documentation system and for the undecorated vessel units from body sherds have of course been differentiated (Claßen 2006a) and the publication of all data is in preparation.

combined into three distinct phases: older, middle and late LBK. These phases comprise three to seven house generations, which cover periods lasting approximately 175 (older LBK), 75 (middle LBK) and 100 years (late LBK).

3.1 Colour

Munsell Color Charts (Geological Society of America 1991) were used to describe the colours of vessel surfaces and cores of LBK pottery from Königshoven 4 (Claßen 1998). For reasons of simplicity the determined Munsell values are summarised in eight groups (Cg1-8):

Cg1: grey to black = N1-N5; 5Y 2/1 – 5Y 8/1; 5B 3/1; 5YR 5/1 – 5YR 6/1; 10YR 6/2

Cg2: drab to brown = N3, N5; 5Y 4/1 – 5Y 5/1; 5YR 5/1, 5YR 6/4, 5YR 5/5; 10YR 4/2 – 10YR 8/2, 10YR 7/4- 10YR 8/4

Cg3: ochre to yellow = N4; 5Y 3/1; 5YR 4/4; 10YR 4/2, 10YR 6/4, 10YR 6/5, 10YR 5/6 – 10YR 6/6, 10YR 5/8

Cg4: auburn to brown = 5Y 2/1, 5Y 5/1 – 5Y 6/1; 5YR 3/1, 5YR 5/3, 5YR 5/4, 5YR 5/6; 10YR 3/2 – 10YR 5/2, 10YR 5/4, 10YR 6/5, 10YR 7/8; 10R 4/6

Cg5: brown to black = N2 – N3; 5Y 2/1 5Y 3/1; 10YR 3/2 – 10YR6/2, 10YR 5/3 – 10YR 7/3, 10YR 6/4

Cg6: blotchy grey to black = N3 – N5; 5Y 2/1 – 5Y 5/1, 5Y 5/2 – 5Y 6/2, 5Y 7/5; 5YR 5/6; 10YR 5/2 – 10YR 8/2, 10YR 6/4 – 10YR 7/4

Cg7: blotchy auburn to black = N1 – N3; 5Y 2/1; 5YR 4/1, 5YR 3/4 – 5YR 6/4, 5YR 5/6; 10YR 3/2 – 10YR 6/2, 10YR 5/4 – 10YR 6/4

Cg8: blotchy brownish-black to auburn = 5YR 2/1 – 5YR 4/1, 5YR 5/6

The first five groups comprise vessels with a uniform colour, whilst in groups 6 to 8 different colours occur on one vessel.

Generally speaking, LBK potters preferred dark colours (fig. 1). Only 4.9% of the vessels show lighter colours, such as ochre or yellow. Just two vessels in colour group 1 are of a lighter colour grey. Those vessels with an auburn colouring (groups 4 and 7) may have been subjected to a secondary firing, although this colour may also have resulted from firing in an oxidising environment. The mentioned pre-

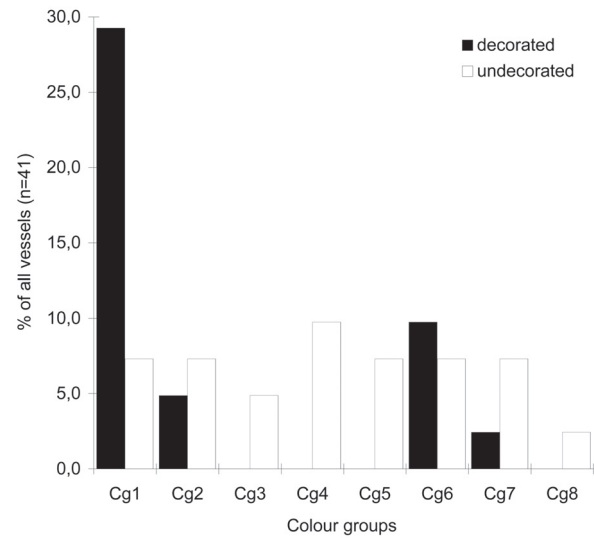


Figure 1 Königshoven 4. Percentages of vessel colour groups for decorated and undecorated pottery.

ference for dark colours is especially evident in decorated vessels of which nearly two thirds (63.2%) are assigned to colour group 1. Therefore, in all likelihood the firing of these vessels was controlled; a particularly convincing hypothesis considering that these pots are occasionally preserved with light coloured incrustations within the incised lines. In contrast, undecorated vessels are of unspecific colouring, with vessels of this type occurring in each colour group.

Due to the rather limited significance of these results, the very time consuming process of determining vessel colour was discontinued for the more extensive study of all LBK settlements near Königshoven (Claßen 2006a). Nevertheless, vessel colours were still an indispensable aid in the identification of vessel units.

3.2 Temper

The analysis of the temper is based on the principal division of three kinds of temper: mineral, organic and grog particles. A more detailed distinction, especially regarding the mineral components, can only be reached using thin sections and more advanced methods of analysis. Additionally, components may be mixed within one vessel. Thus, a total of eight different types of temper (Tt1-8) were defined:

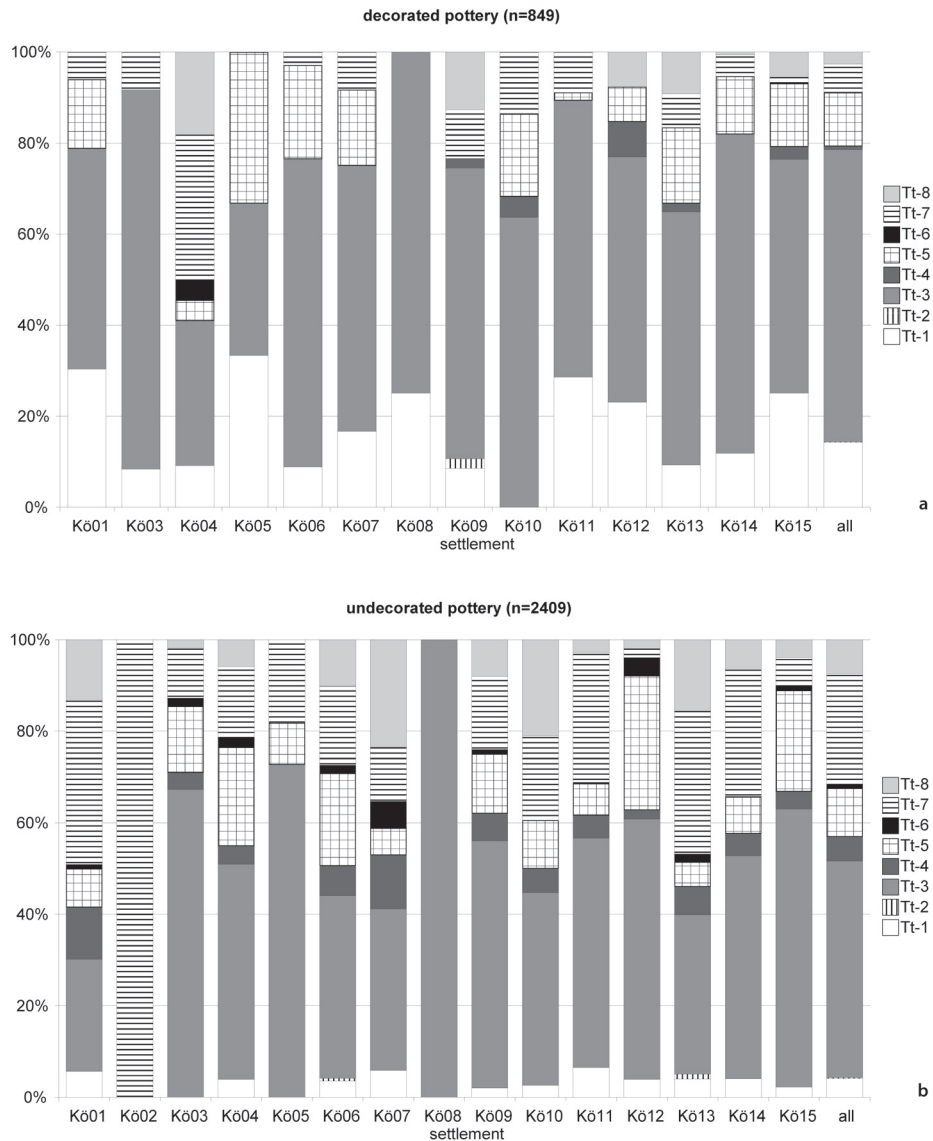


Figure 2 Percentages of different temper types (Tt1-8) observed in vessels from the 15 settlements near Königshoven (Kö01-Kö15) and for the entire settlement group (all).

- Tt1: no temper observable
- Tt2: organic temper
- Tt3: mineral temper
- Tt4: grog
- Tt5: combination of organic and mineral temper
- Tt6: combination of organic temper and grog
- Tt7: combination of mineral temper and grog
- Tt8: combination of all three kinds of temper

Besides the kind of temper also the size of the temper particles was measured; six classes were distinguished (Ts1-6):

- Ts1: no temper observable
- Ts2: particles <1 mm
- Ts3: particles between 1 and 3 mm
- Ts4: particles between 3 and 6 mm
- Ts5: particles between 6 and 10 mm
- Ts6: particles >10 mm

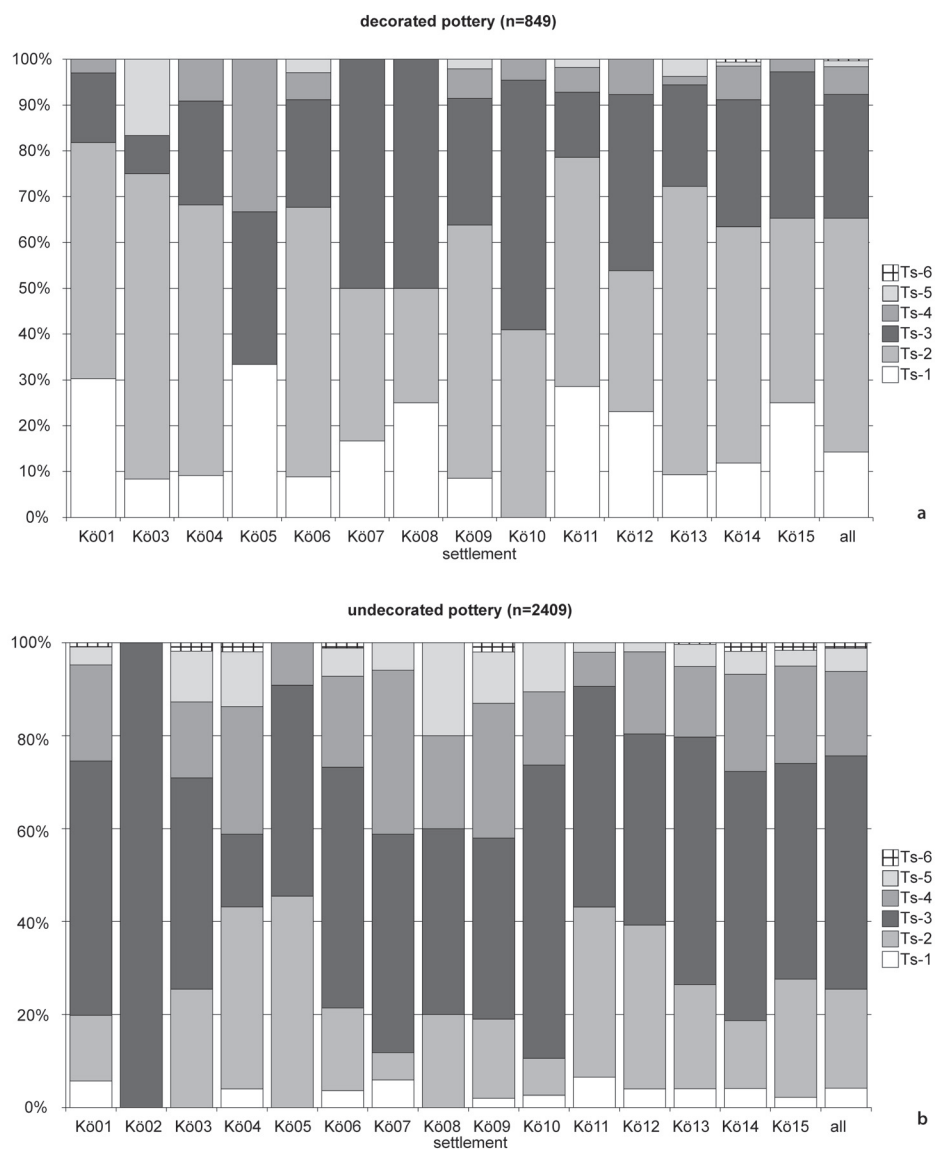


Figure 3 Percentages for the size of temper particles (Ts1-8) observed in vessels from the 15 settlements near Königshoven (Kö01-Kö15) and for the entire settlement group (all).

The percentages for the individual settlements presented in figures 2 and 3 will not be discussed here, as this would require a more detailed description of the settlements themselves. Generally speaking, for the whole settlement group the addition of mineral components was favoured (fig. 2, Tt3, Tt5, Tt7 and Tt8). Organic material (fig. 2, Tt2) is extremely rare, and also grog (fig. 2, Tt4) was seldom used as the only temper; only in combination with other mineral components do these additives show a certain fre-

quency (fig. 2, Tt5-8). A difference between decorated and undecorated vessels can be observed in connection with the rather infrequent temper type grog, it being clearly more frequent within undecorated pottery (fig. 2, Tt4, Tt6, Tt7, Tt8). Concerning organic temper there is no visible difference between decorated and undecorated vessels.

Turning now to the grain size of temper particles (fig. 3); in 65% of the decorated vessel units no temper or only particles smaller than 1 mm were ob-

served, whilst in 75% of the undecorated vessels particles are larger than 1 mm. Thus, the usual distinction between fine ware and coarse ware is confirmed by the grain size of temper particles. It should be noted that the very small mineral inclusions in the decorated vessels may not actually be an intentional admixture. In fact, these may represent natural components of the clay. This being the case, a rather high amount (55%) of the decorated pottery would be void of any form of temper whatsoever.

It is known since the work of Quitta (1960) that organic temper is typical for the oldest LBK (so far unknown in the Rhineland) and a lower proportion of chaff or other organic material is common for vessels of the older LBK (*i.e.* Flomborn). For the settlement of Bruchenbrücken Kloos (1997, 236-237) has described a continuous decrease of organic temper from the oldest (phase I) to the older and middle LBK (phases II-III according to Meier-Arendt 1966). This example, however, just serves as justification that chronological analyses of temper composition are worthwhile, since temper is not an ideal feature for consideration in supraregional studies (*cf.* Cladders 2001, 78-79; Hillemeier 2003, 56). I will, therefore, in the following focus on the chronological developments within the temper types of the LBK sites near Königshoven. Regrettably, there is no possibility for a regional comparison with the datasets from Langweiler 2, as these data are not published in detail (*cf.* Stehli 1973, 58, Abb. 32). Consequently, the following interpretations are only valid for the settlement group near Königshoven. I would, however, expect similar results for other settlements if the features discussed here were to have been documented.

For the chronological analysis I again simplified the defined temper types into the following groups:

- Ttg1: no temper (= Tt1)
- Ttg2: mineral components (= Tt3)
- Ttg3: contains organic components (= Tt2, Tt5)
- Ttg4: contains grog components (= Tt4, Tt7)
- Ttg5: combination of organic temper and grog (= Tt6)
- Ttg6: combination of all three kinds of temper (= Tt8)

Figure 4 shows that the temper with mineral components is dominant during the entire duration of the LBK. From the older to the middle LBK a remark-

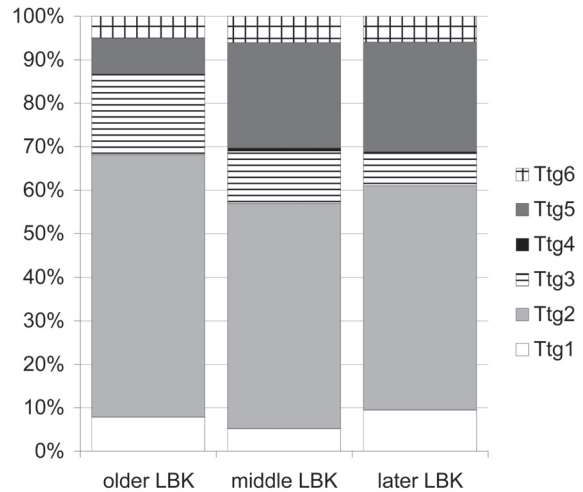


Figure 4 Percentages for the different temper type groups (Ttg1-6) observed in all vessels from dated pits documented in the settlement group near Königshoven.

able decrease of organic temper in favour of grog temper can be noted. The following illustration (fig. 5) with the distinction of decorated and undecorated pottery shows this tendency again more clearly. The proportion of grog in the temper spectrum of the undecorated vessels increases from the older to the middle LBK by more than a factor three. The transition from the middle to the late LBK is marked by a further increase of about 7% in the inclusion of grog in undecorated vessels. Parallel to this, there is a clear decrease in both mineral and organic components. In particular the organic temper – ascertainable in more than one fifth of the undecorated vessel units of the older LBK – is clearly more rarely used in the later LBK, and makes up just 6% of the total. These differences in temper composition between older and middle, respectively later LBK inventories, are so significant that pits from which only undecorated vessels are excavated can be dated to one of the three phases on the basis of temper analysis. The only requirement is that the feature contains a statistically significant number of undecorated vessels to ensure reliable calculations.

Figure 5 shows that a pit can be dated to the middle or later LBK when the percentage of vessels with grog temper is high (about 30%), and that of vessels with organic temper is low (about 10%). On the other hand, if the percentage of vessels with an organic temper within one pit is in excess of 20%, and the

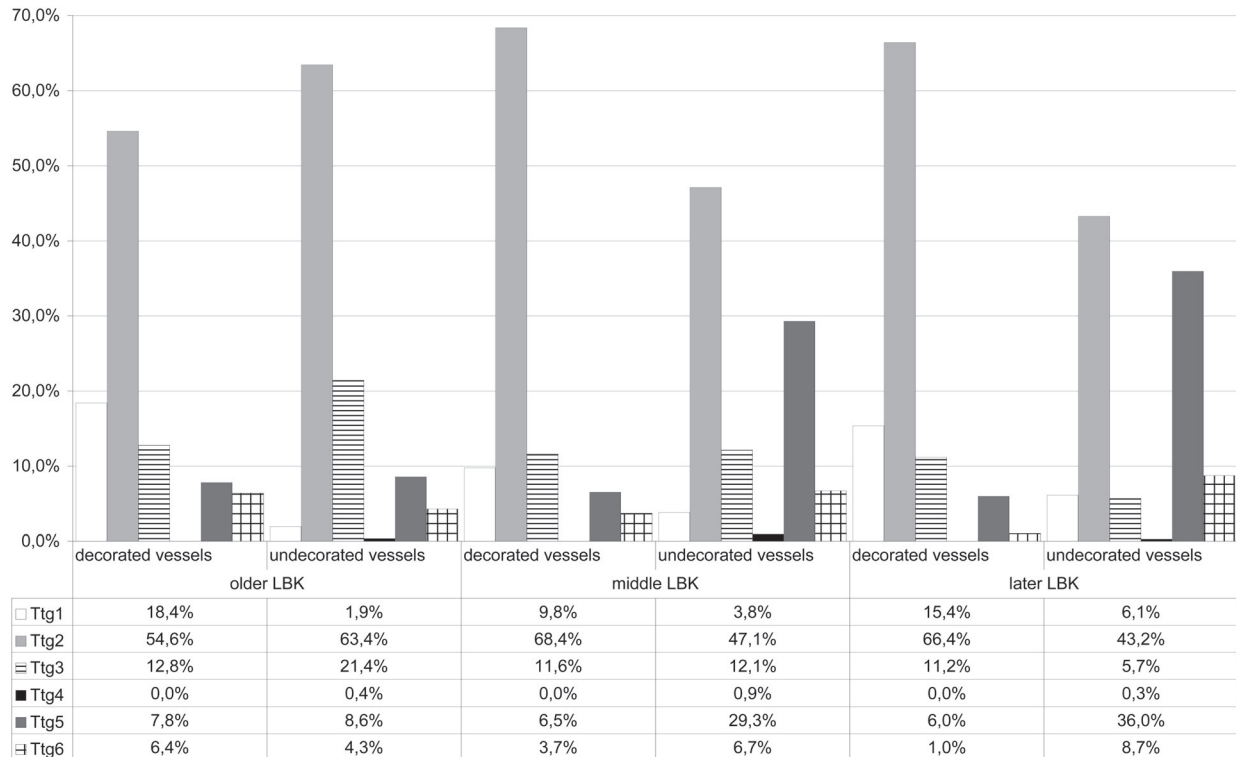


Figure 5 Percentages for the different temper type groups (Ttg1-6) observed in decorated and undecorated vessels from dated pits documented in the settlement group near Königshoven.

percentage of vessels with grog inclusions lies below 20%, it may be assumed that the inventory dates to the older LBK. For the inventories of the research area near Königshoven this connection was checked by means of a χ^2 -test and has proved to be statistically significant.

Unfortunately, it is more difficult to differentiate between the temper spectrum of the middle and later LBK phases. This said, one may assign inventories in which vessels with mineral and grog temper appear in approximately the same ratios (between 35% and 45%) to the middle phase.

The hypotheses formulated above, were verified in an attempt to assign pits containing solely undecorated pottery to one of the afore-mentioned phases. A total of 12 pits from five settlements, containing more than six undecorated vessels, were available for analysis. In just two cases the pit could not be assigned to one of the three phases; for all other pits the temper spectrum provided a clear indication to which of the phases the inventory should be dated. Furthermore, at those sites at which occupation had previously been dated to one of the three phases only

using the aforementioned correspondence analysis, a distinct correlation was given between it and the temper spectrum.

Summarising, whereas later LBK inventories are characterised by assemblages comprising about 30% of vessels with a grog temper and less than 10% of vessels with organic components, older LBK assemblages comprise more than 20% of vessels with an organic temper and less than 20% with grog inclusions. Additionally, but with slight uncertainty, inventories in which between 35% and 45% of vessels have a mineral or a grog temper can be assigned to the middle phase of the LBK.

4. A LIMBURG VESSEL FROM KÖNIGSHOVEN 1

At the settlement Königshoven 1 (Claßen 2006a, 25-27) a total of 19 pits were discovered though no detailed ground plan was drawn due to the circumstances of the rescue excavation. From five pits LBK pottery was recovered dating to the middle and later LBK in the Rhineland (Claßen 2006a, 155-156). In

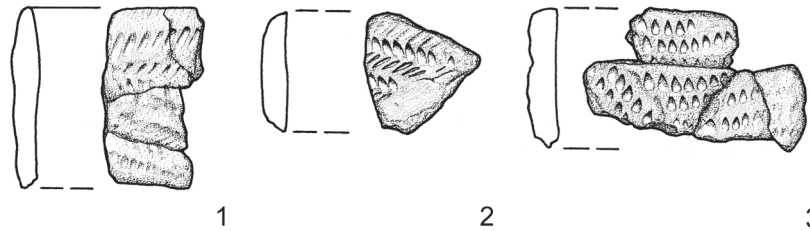


Figure 6 Some decorated sherds of a vessel assigned to the Limburg pottery group from Königshoven 1 (pit no. 5). Scale 1:2.

one pit (no. 5) with a very late LBK inventory (house generation XIV; cf. Stehli 1994, Claßen 2006a, 155) a total of 23 vessel units was documented. One of these has technological as well as decorative features that distinguish it from the typical LBK pottery as described above. The presence of bone temper (in combination with mineral and other organic components) is considered decisive in assigning this vessel to the Limburg pottery as described by Constantin (1985). Furthermore, the decorative elements, as well as the auburn surface colour, must be considered as ‘foreign’ elements within this LBK inventory.

The sherds are very badly preserved and refits could not be made, but the similar fabric of the sherds indicates that all belong to one vessel. The shape of the vessel cannot be reconstructed, nor can the form of the rim be determined with any certainty, although it does resemble rims with external rounded form (e.g. Farrugia *et al.* 1973, *Taf.* 11, 4-5). The sherds show different decorations at the rim and on the body of the vessel, a feature encountered on other Limburg vessels (e.g. Constantin 1985, pl. 97).

The decorative element at the rim, a row of slightly oblique oriented indentations, is best described as type 21 according to Constantin (1985, 99 & tab. 34). Comparable pieces are also known for example from Langweiler 2 (Farrugia *et al.* 1973, *Taf.* 11, 4-5), Rosmeer and Beek (Constantin 1985, pl. 91). Beneath this decoration a herringbone pattern without a central line is visible (fig. 6, 1; Constantin 1985, 98, tab. 33, type 81). The same motif is found on other wall sherds in a better state of preservation (fig. 6, 2). According to the documentation system for the main motifs of LBK pottery in the Rhineland this decoration corresponds to type 41, which was defined on the basis of an incomplete vessel from Langweiler 8 (Stehli 1988, 441, *Taf.* 12, 6). Similar pieces are

known for example from Rosmeer and Stein (Constantin 1985, pl. 91, 6 & pl. 97).

Other sherds are decorated with horizontal and diagonal rows of larger impressions (fig. 6, 3). Such decorative elements are found within other Limburg inventories filling triangles limited by lines, although such triangles have also been described without accompanying lines (e.g. Rosmeer or Kesseleyk; Constantin 1985, pl. 89, 2 & pl. 100, 10-11). In the LBK documentation system such a decoration corresponds best with main motif type 20.

Although just one Limburg vessel was preserved in the 15 settlements near Königshoven, an interesting point with regard to the chronological position of Limburg pottery in the Rhineland can be made: The vessel from Königshoven 1, with its attribution to house generation XIV, is one of the latest testimonies of Limburg pottery within the Rhenish LBK. The most recent well-dated pit with a Limburg vessel on the *Aldenhovener Platte* belongs to house generation XII (Langweiler 2, pit no. 395). The vessels from Köln-Lindenthal (Bernhardt 1986, 52) are slightly older; these are assigned to phase IIb after Dohrn-Ihmig (1974), which can be correlated with house generation X-XI on the *Aldenhovener Platte* (Stehli 1994, 135, Abb. 36). A comparable late date has only been given for a Limburg vessel recovered from ditch G6 at the settlement of Kückhoven (Lehmann 2004, 61, *Beilage* 6 and 7).

This may imply that in the northern Rhineland (*Titzer Platte*) Limburg pottery was produced or used about 50 years longer than in the south-western part of this region (*Aldenhovener Platte*). Due to the fact that we still know very little about the economic and social relations between LBK and non-LBK groups in the Rhineland, this chronological variation between two major LBK settlement areas may some day be of interest.

5. ACKNOWLEDGMENTS

I would like to thank the organising committee for both their invitation to the workshop, which provided me with the unique chance to view all the fantastic material together under one roof, and the opportunity to contribute to these proceedings. In addition I am grateful to Lee Clare (Cologne) for the proof reading of this text.

6. REFERENCES

- Bernhardt, G. 1986. Die linearbandkeramische Siedlung von Köln-Lindenthal. Eine Neubearbeitung, *Kölner Jahrbuch für Vor- und Frühgeschichte* 18-19, 7-165.
- Boelicke, U., D. von Brandt, J. Lüning, P. Stehli & A. Zimmermann 1988. *Der bandkeramische Siedlungsplatz Langweiler 8, Gemeinde Aldenhoven, Kreis Düren*, Bonn (Rheinische Ausgrabungen 28).
- Bollig, L. 2000. *Die Gesteinsartefakte des bandkeramischen Fundplatzes Weisweiler 110*, unpublished Master's thesis, Cologne.
- Cladders, M. 1997. Befunde und Keramik des bandkeramischen Siedlungsplatzes Hambach 21, Gem. Jülich, Kr. Düren. In: J. Lüning (ed.), 131-228.
- Cladders, M. 2001. *Die Tonware der ältesten Bandkeramik. Untersuchungen zur zeitlichen und räumlichen Gliederung*, Bonn (Universitätsforschungen zur Prähistorischen Archäologie 72).
- Clare, L. 2004. *Keramik und Befunde des bandkeramischen Siedlungsplatzes Inden-Altendorf B und aus dem Außenbereich C*, unpublished Master's thesis, Cologne.
- Claßen, E. 1998. *Der linearbandkeramische Siedlungsplatz Frimmersdorf 122, Erftkreis*, unpublished Master's thesis, Cologne.
- Claßen, E. 2004. Verfahren der 'Sozialen Netzwerkanalyse' und ihre Anwendung in der Archäologie, *Archäologische Informationen* 27 (2), 219-226.
- Claßen, E. 2005. Siedlungsstrukturen der Bandkeramik im Rheinland. In: J. Lüning, Chr. Frirdich, & A. Zimmermann (eds), *Die Bandkeramik im 21. Jahrhundert, Symposium in der Abtei Brauweiler bei Köln vom 16.9.-19.9.2002*, Rhaden/Westfalen (Internationale Archäologie: Arbeitsgemeinschaft, Symposium, Tagung, Kongress 7), 113-124.
- Claßen, E. 2006a. *Die bandkeramische Siedlungsgruppe bei Königshoven*, PhD thesis Cologne.
- Claßen, E. 2006b. Landnutzungsmodelle und Netzwerkanalysen zur Bandkeramik des Rheinlandes. In: H.-J. Beier (ed.), *Varia neolithica* 4, Langenweißbach (Beiträge zur Ur- und Frühgeschichte Mitteleuropas 43), 153-174.
- Claßen, E. 2007. Siedlungs-, Wirtschafts- und Sozialgeschichte der frühesten Ackerbauern im Rheinland, *Archäologie im Rheinland* 2006 (2007), 55-58.
- Claßen, E. 2009. Settlement history, land use and social networks of early Neolithic communities in western Germany. In: P. Bickle & D. Hofmann (eds), *Creating communities. New advances in Central European Neolithic research*, Oxford, 95-110.
- Constantin, C. 1985. *Fin du Rubané, céramique du Limbourg et Post-Rubané. Le Néolithique le plus ancien en Bassin parisien et en Hainaut*, Oxford (BAR International Series 273).
- Dohrn-Ihmig, M. 1974. *Untersuchungen zur Bandkeramik im Rheinland*, Cologne/Bonn (Rheinische Ausgrabungen 15), 51-142.
- Farrugia, J.-P., R. Kuper, J. Lüning & P. Stehli 1973. *Der bandkeramische Siedlungsplatz Langweiler 2, Gemeinde Aldenhoven, Kreis Düren*, Bonn (Rheinische Ausgrabungen 13).
- Frank, T., B. Paffgen & A. Zimmermann 2000. Zur Landschaftsarchäologie der Bandkeramik auf der östlichen Aldenhovener Platte, *Archäologie im Rheinland* 1999, 45-47.
- Geological Society of America (ed.) 1991. *Rock color chart*, Boulder (Colorado).
- Heller, K. 2004. *Das bandkeramische Gräberfeld von Altdorf (Inden, Kr. Düren)*, unpublished Master's thesis, Cologne.
- Hillemeyer, E.-M. 2003. Die Tonware der ältesten Bandkeramik in Wang, Landkreis Freising. In: E.-M. Hillemeyer & B. Ramminger (eds), *Studien zur Siedlungsarchäologie* 3, Bonn (Universitätsforschungen zur Prähistorischen Archäologie 94).
- Kloos, U. 1997. Die Tonware. In: J. Lüning (ed.), *Ein Siedlungsplatz der ältesten Bandkeramik in Bruchengraben, Stadt Friedberg/Hessen*, Bonn (Universitätsforschungen zur Prähistorischen Archäologie 39), 151-256.
- Kolhoff, C. 1999. *Die Keramik des bandkeramischen Fundplatzes Weisweiler 110*, unpublished Master's thesis, Cologne.
- Krahn, Chr. 2006. *Die bandkeramischen Siedlungen im oberen Schlangengraben*, Mainz (Rheinische Ausgrabungen 57).
- Kuper, R., H. Lühr, J. Lüning, P. Stehli & A. Zimmermann 1977. *Der bandkeramische Siedlungsplatz Langweiler 9, Gemeinde Aldenhoven, Kreis Düren*, Bonn (Rheinische Ausgrabungen 18).
- Langenbrink, B. 1996. Zu den Steinen der bandkeramischen Siedlungen Langweiler 2 und Langweiler 9, *Bonner Jahrbuch* 196, 397-420.

- Lehmann, J. 2004. Die Keramik und Befunde des bandkeramischen Siedlungsplatzes Erkelenz-Kückhoven, Kreis Heinsberg (Grabungskampagnen 1989-1994). In: H. Koschik (ed.), *Der bandkeramische Siedlungsplatz von Erkelenz-Kückhoven. – I Archäologie*, Mainz (Rheinische Ausgrabungen 54), 1-364.
- Lüning, J. (ed.) 1997. *Studien zur neolithischen Besiedlung der Aldenhovener Platte und ihrer Umgebung*, Bonn (Rheinische Ausgrabungen 43).
- Lüning, J. & P. Stehli (eds) 1992. *Der bandkeramische Siedlungsplatz Lamersdorf 2, Gemeinde Inden, Kreis Düren*, Bonn (Rheinische Ausgrabungen 37).
- Lüning, J. & P. Stehli (eds) 1994. *Die Bandkeramik im Merzbachtal auf der Aldenhovener Platte*, Bonn (Rheinische Ausgrabungen 36).
- Meier-Arendt, W. 1966. *Die bandkeramische Kultur im Untermaingebiet*, Bonn.
- Mischka, C. in prep. *Die bandkeramische Großsiedlung Altdorf D*, PhD thesis Cologne.
- Münch, U. 1999. *Zur Siedlungsstruktur der Flombornzeit auf der Aldenhovener Platte*, unpublished Master's thesis Cologne.
- Quitta, H. 1960. Zur Frage der ältesten Bandkeramik in Mitteleuropa, *Prähistorische Zeitschrift* 38, 1-38 & 153-188.
- Rück, O. 2006. *Die bandkeramische Siedlung Weisweiler 111*, PhD thesis, Halle (Saale).
- Schimmelschulze, B. 1992. Verzierte Tonware. In: Lüning & Stehli (eds), 71-133.
- Schmidt, F.W.V. 1997. Verzierte Keramik. In: U. Boelicke, K.-H. Deutmann, J. Lüning, F.W.V. Schmidt & P. Stehli, *Der bandkeramische Siedlungsplatz Aldenhoven 3, Kr. Düren*. In: Lüning (ed.), 20-82.
- Stehli, P. 1973. Keramik. In: Farrugia *et al.* 1973, 57-100.
- Stehli, P. 1977. Keramik. In: Kuper *et al.* 1977, 107-130.
- Stehli, P. 1988. Zeitliche Gliederung der verzierten Keramik. In: Boelicke *et al.* 1988, 441-482.
- Stehli, P. 1989. Merzbachtal – Umwelt und Geschichte einer bandkeramischen Siedlungskammer, *Germania* 67 (1), 51-76.
- Stehli, P. 1994. Chronologie der Bandkeramik im Merzbachtal. In: Lüning & Stehli (eds), 79-191.
- Stehli, P. & H.-Chr. Strien 1987. *Katalog bandkeramischer Ornamente*, unpublished manuscript.

La Hoguette in the town centre of Soest (Westphalia)?

Benedikt Knoche

ABSTRACT

Excavations of a younger Neolithic earthwork (caused by a camp) between the Höggenstraße and the Rosentraße (Burgtheaterparkplatz/Rosenstraße 1) in Soest (Westphalia) led to the discovery of a pit with probably La Hoguette pottery. This paper presents these finds in their regional context.

KEYWORDS

La Hoguette, Soest, Westphalia, Neolithisation.

1. LA HOGUETTE POTTERY FROM SOEST

The area surrounding the town of Soest (Kr. Soest) is one of the most important Neolithic research areas in Westphalia (Knoche 2001). Due to its fertile loess soils, infrastructural and hydrological advantages it was intensely settled since the Early Neolithic period, around the middle of the 6th millennium cal BC. Excavations conducted in the 1990s between the Höggenstraße and the Rosentraße (Burgtheaterparkplatz/Rosenstraße 1) in the town centre of Soest led to the discovery of a younger Neolithic earthwork. It dates to the Michelsberg phase MK IIIb, i.e. the 39th century cal BC. The entire ditch system was built on a ridge between two brooks (Knoche 1998; 2008). Apart from the younger Neolithic remains there was only one pit (feature F 264) dating to an older Neolithic occupation of the ridge. It will be subject of the following brief discussion.

Partly destroyed by the construction of a theatre building, the pit was situated on the southern edge of the excavation area. It was covered by a 40-50 cm thick debris layer (fig. 1). As it was partially destroyed, the pit's original size and shape are unknown (available length 1.0 m, width 2.1 m, depth 0.54 m). The filling consisted of dark brown to black compressed soil with inclusions of bright loess-loam

in the lower part (fig. 2). A thin charcoal layer crossed this filling approximately 10-20 cm under the upper edge of the pit. Some inclusions of charcoal particles and burned loam were found in the pit fill.

Pit F 264 produced only very few artefacts. They comprise 22 sherds representing up to ten vessels (fig. 3). Most of their surfaces are eroded. On account of the strong fragmentation, a conclusive statement on the original vessel form cannot be made. The sherds are tempered with sand and organic material and are 4 to 8 mm thick. The colour spectrum varies from brown to light brown and red-brown. Some of the vessels display stitch or stroke ornaments. To this group belong several sherds with closely set single pricks and double prick rows, most likely made with a bidentated tool. Decoration on another sherd consists of a zone of oblique single pricks, bordered by a row of pinpricks. The pit also contained two blades of Baltic flint. One is unilaterally retouched (length 57 mm; width 13 mm; thickness 3 mm; weight 5 g), the other is slightly longer (length 66 mm; width 15 mm; thickness 5 mm; weight 6 g) and unretouched.

The sherds are not of Michelsberg origin like the rests of the earthwork with its partly large amount of ceramics. There is a probability that the sherds are representing Rössen pottery, but colour and decoration differ from specimen from Nottuln and Deiringen/Ruploh. In fact the sherds are strongly eroded, so the decoration is in parts indeed hardly recognisable. On the larger sherd there are rests of a decoration consisting of 'bows' or 'ribbons' with no parallels in Rössen or Linearbandkeramik. Decoration makes an identification as La Hoguette most probable (e.g. Lünig, Kloos & Albert 1989, *Abb.* 8,2; 17,7; 26,3; also friendly examination of the decorated Soest sherds by Chr. Jeunesse, Strassbourg). Barbed wire decorated La Hoguette-pottery from Anröchte (Kr. Soest) also as many other La Hoguette sherds lack

Soest - „Burgtheaterparkplatz/Rosenstraße 1“

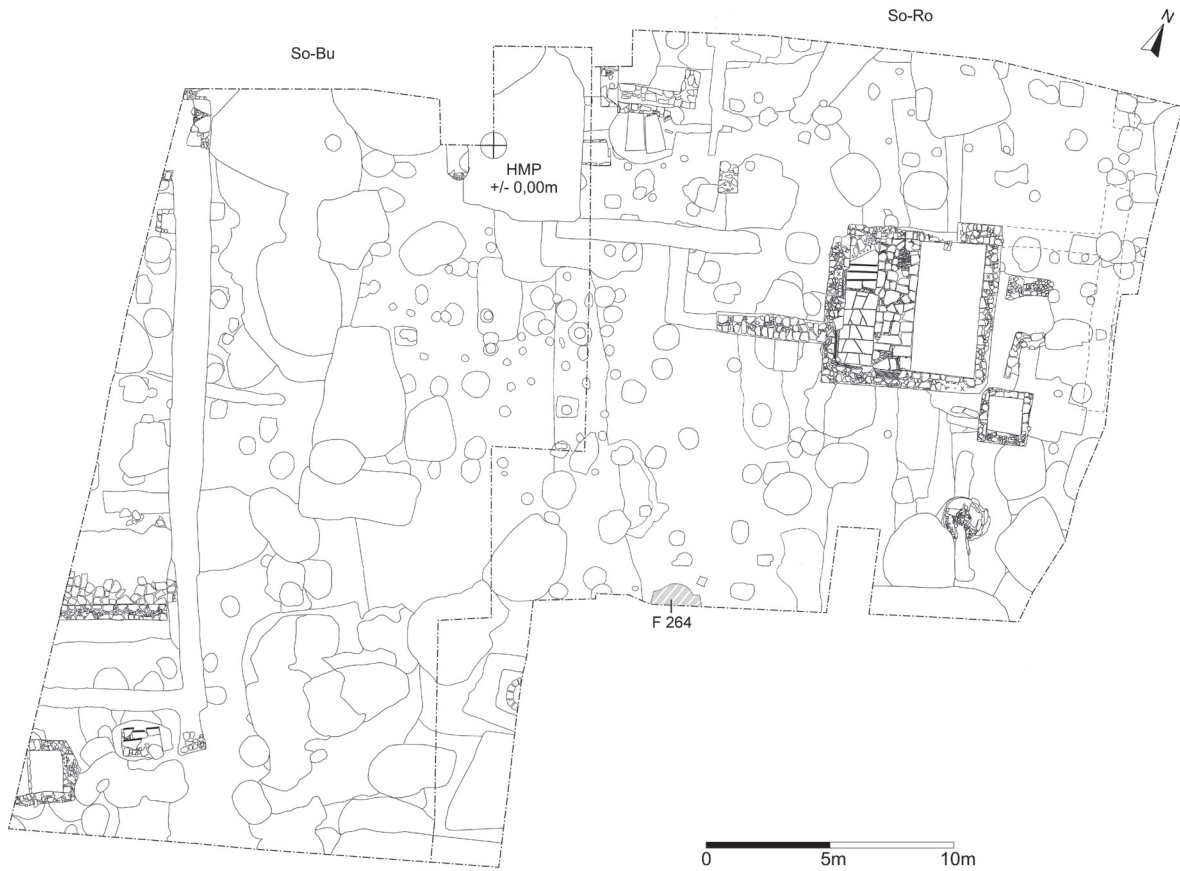


Figure 1 Soest *Burgtheaterparkplatz/Rosenstraße 1*, Excavation plan with the position of pit F 264.

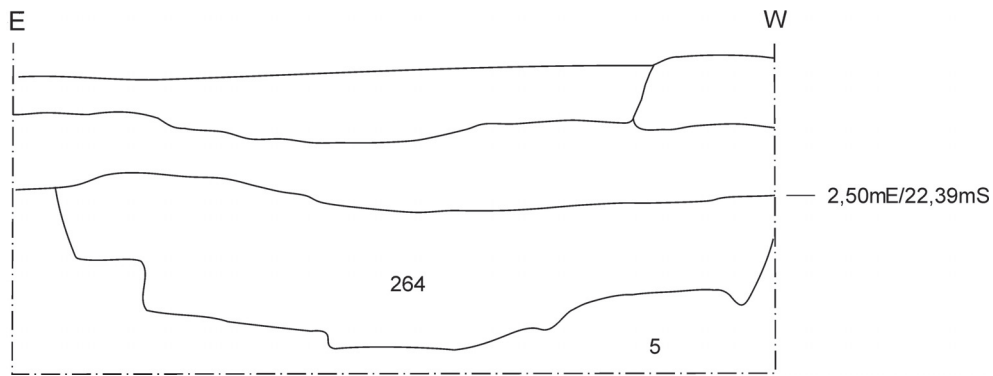


Figure 2 Soest *Burgtheaterparkplatz/Rosenstraße 1*, pit F 264, section.

bone temper like the Soest specimen (Lüning, Kloos & Albert 1989, 363; 374 Abb. 28,1). Maybe there is a regional differentiation in tempering and in parts of decoration. The undecorated pieces have only a gen-

eral Neolithic appearance. Diagnostic elements of other Neolithic groups are not present. On this basis pit F 264 has been dated to the Early Neolithic and is therefore substantially older than the Neolithic earth-

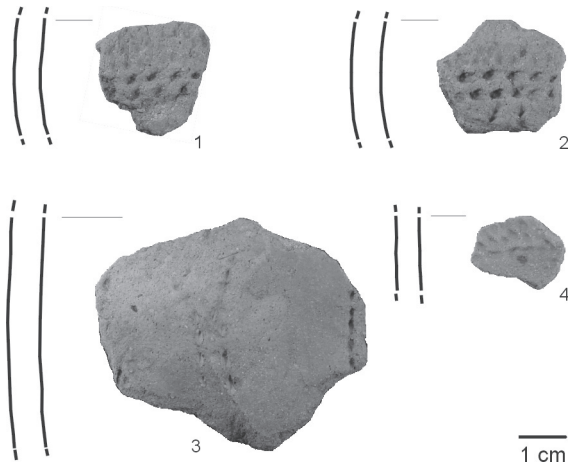


Figure 3 Soest *Burgtheaterparkplatz/Rosenstraße 1*, pit F 264. La Hoguette sherds. Scale 2:3.

work. A direct connection between both structures does not exist.

2. IMPLICATIONS FOR THE POSITION OF LA HOGUETTE IN WESTPHALIA

The material from pit F 264 of Soest is probably the fourth reported identification of La Hoguette pottery from Westphalia, three of which concentrate in the vicinity of Soest, the so-called *Soester Börde* (fig. 4).

An egg-shaped vessel with horizontal rows of a barbed wire-like prick decoration is known from *Stelle 7* at Anröchte (Kr. Soest), a small concentration of finds, representing the last traces of a pit fill, which was fully removed by slope erosion. Linearbandkeramik pottery was not found (Lüning *et al.* 1989, 363 *Abb.* 28,1; 33,2). Other La Hoguette sherds near Soest come from a pit (*Fläche 2, Grube 46*) of the Linearbandkeramik settlement of Bad Sassendorf (Kr. Soest). They were found in association with material of the middle phase of the Linearbandkeramik (Kneipp 1998, 274). La Hoguette pottery and so-called *Begleitkeramik* were found almost exclusively in settlement pits of the Linearbandkeramik; La Hoguette sherds found independently are an extremely rare feature. With probably Soest and Anröchte two such complexes exist, however, in the *Soester Börde* region. The remaining Westphalian evidence of La Hoguette is an isolated find from Hiddenhausen *Bernbeck* (Kr. Herford; Günther 1991), representing the northernmost find spot of La Hoguette. The northern border of the Westphalian hills

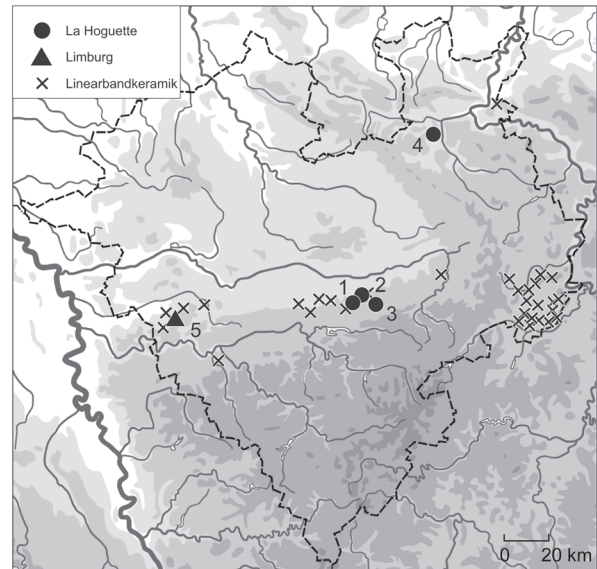


Figure 4 Distribution of older Neolithic pottery groups in Westphalia. 1 Soest; 2 Bad Sassendorf; 3 Anröchte; 4 Hiddenhausen *Bernbeck*; 5 Bochum (after Lüning *et al.* 1989; Günther 1995; Kneipp 1998; Knoche 2003).

and their foreland therefore mark the northern periphery of the extent of La Hoguette. To the west of these finds one meets the easternmost site of the Limburg pottery, a single sherd in *Grube 48* of the Linearbandkeramik settlement of Bochum *Hiltrop*, in the western Hellweg zone (Lüning *et al.* 1989, *Abb.* 2; Brandt 1967, *Taf.* 29.4). There might be still unknown La Hoguette pottery in the north German lowlands outside the loess-belt but at least the Westphalian evidence fits in with the Central European La Hoguette. Even the so far isolated barbed wire decoration of the Anröchter La Hoguette pot has a counterpart in La Hoguette pottery of the Saarland (Sehndorf *Vor dem Büsch*, Ldkr. Merzig-Wadern; Fritsch 2000, *Abb.* 2).

The Westphalian La Hoguette and Limburg pottery has to be seen in the context of the intense settlement activity of the Linearbandkeramik along the corridor-like loess substrates of the Hellweg region between the Sauerland in the south and the river Lippe in the north (fig. 4). This is especially the case in the *Soester Börde*, while farther to the east, in the *Warburger Börde*, no La Hoguette pottery is known, despite a dense Linearbandkeramik settlement. In the area of Soest there is a series of Linearbandkeramik settlements from the Flomborn phase onwards (Soest

Plettenberg, Soest *Nikolai-Kapelle*, Ostönnen, Werl, Bad Sassendorf, Kneipp 1998; Knoche 2001, 53). Based on the evidence of Bad Sassendorf, falling into J. Kneipp's style group 69, La Hoguette elements existed in Westphalia at least in the middle Linearbandkeramik. The same is true for the Limburg pottery from Linearbandkeramik settlement pits in Bochum (style group 6; Kneipp 1998, 169, 173).

Linearbandkeramik as well as La Hoguette and Limburg pottery all represent the primary Neolithisation process in north-western Germany. La Hoguette, Limburg and comparable ceramic traditions mark an underestimated pre- and/or non-Linearbandkeramik input of Neolithisation deriving from south-western Europe, probably connected with asymmetrical arrowheads spreading across the River Rhine into the Westphalian Basin (Löhr 1994; Gronenborn 1997, 139; Strien 2000, 73).

In fact, only little is known about the trapeze-using Late Mesolithic in north-west Germany, represented by the so-called 'Retlager group' (Schwabedissen 1944; Arora 1976). A Mesolithic flint site has been recently discovered near Vreden (Kr. Borken) in west Münsterland, which dates according to ^{14}C data around 5000 cal BC (Stapel 2003; 2005, 22). It indicates a coexistence of hunters and gatherers with the Linearbandkeramik in the Westphalian Basin. Vice versa, a pit of the Linearbandkeramik settlement at Salzkotten *Dreckburg* (Kr. Paderborn) contained a 'Mesolithic' core axe (Knoche 2003). The first pollen evidence for woodland reclamation, connected with a fire layer in the *Zwillbrocker Venn* nearby Vreden, possibly date to this time or to the early Middle Neolithic with ^{14}C dates around 4800 cal BC (Burrichter 1980, 41; Meurers-Balke & Kalis 2005; Stapel 2005, 24). For the first time there were ephemeral anthropogenic interventions in the vegetation of the Münsterland caused by Late Mesolithic or by Neolithic groups expanding on a small scale into the areas north of the River Lippe. A connection between the Westphalian Hellweg zone and the north German plain up to the River Elbe is indicated by the spatial distribution of typologically west European *Felsrundbeile* (axes with round section). These *Felsrundbeile*, placed by K.H. Brandt in an older Neolithic context (Brandt 2002, 89; 1967, *Karte* 30), may be connected with early vegetation interventions in the West-Münsterland, possibly by La Hoguette or Limburg or other, so far unknown, groups. J.A. Bakker

prefers, however, an affinity to Swifterbant for the Dutch specimens in the IJssel and Vecht basins, (Bakker 1992, 92). The endemic *Rundbeil* province in the Emsland shows, for north-west Germany, group-specific behaviour in the adaptation of innovative features. There are – despite chronological uncertainties – good reasons for regarding La Hoguette and Limburg as active agents in the formation of a positive attitude towards crops and cattle in the Swifterbant and Ertebølle cultures of north-west Germany and the northern Netherlands (Klassen 2004, 310).

3. REFERENCES

- Arora, S.K. 1976. Die mittlere Steinzeit im westlichen Deutschland und in den Nachbargebieten. *Rheinische Ausgrabungen* 17, 1-65.
- Bakker, J.A. 1992. *The Dutch hunebedden. Megalithic tombs of the Funnel Beaker culture*, Ann Arbor (International Monographs in Prehistory).
- Brandt, K.H. 1967. *Studien über steinerne Äxte und Beile der Jüngerer Steinzeit und der Stein-Kupferzeit Nordwestdeutschlands*, Hildesheim (Münsterische Beiträge zur Vorgeschichtsforschung 2).
- Brandt, K.H. 2002. Nichtjägerische Elemente im nord-westdeutschen Flachland vor der Trichterbecherkultur, *Die Kunde N.F.* 53, 87-108.
- Burrichter, E. 1980. Pollenanalytische und vegetationskundliche Befunde zur Siedlungsgeschichte im westlichen und zentralen Münsterland. In: *Führer zu vor- und frühgeschichtlichen Denkmälern 45, Münster, Westliches Münsterland, Tecklenburg. Teil 1: Einführende Aufsätze*. Mainz, 40-51.
- Fritsch, Th. 2000. Keramik der Gruppe La Hoguette von Sehdorf. In: A. Miron (ed.), *Archäologische Untersuchungen im Trassenverlauf der Bundesautobahn A 8 im Landkreis Merzig-Wadern*, Saarbrücken (Bericht der Staatlichen Denkmalpflege im Saarland, Abteilung Bodendenkmalpflege, Beiheft 4), 219-225.
- Gronenborn, D. 1997. *Silexartefakte der ältestbandkeramischen Kultur*, Bonn (Universitätsforschungen zur prähistorischen Archäologie 37).
- Günther, K. 1991. Ein Gefäßrest der Gruppe La Hoguette aus dem Unteren Weserbergland, *Germania* 69, 153-154.
- Günther, K. 1995. Fortschritte und Nachholbedarf bei der Jungsteinzeitforschung im östlichen Westfalen. In: *Situation und Perspektiven archäologischer Denkmalpflege in Brandenburg und Nordrhein-Westfalen, Materialien zur Bodendenkmalpflege im Rheinland* 4, 83-90.

- Klassen, L. 2004. *Jade und Kupfer. Untersuchungen zum Neolithisierungsprozeß im westlichen Ostseeraum unter besonderer Berücksichtigung der Kulturentwicklung Europas 5500-3500 BC*, Aarhus (Jutland Archaeology Society Publications 47).
- Kneipp, J. 1998. *Bandkeramik zwischen Rhein, Weser und Main. Studien zu Stil und Chronologie der Keramik*, Bonn (Universitätsforschungen zur Prähistorischen Archäologie 47).
- Knoche, B. 1998. Das Michelsberger Grabenwerk Soest-Burgtheaterparkplatz, Stadt Soest, Kr. Soest. In: J. Biel, H. Schlichtherle, M. Strobel & A. Zeeb (eds), *Die Michelsberger Kultur und ihre Randgebiete – Probleme der Entstehung, Chronologie und des Siedlungswesens. Kolloquium Hemmenhofen, 21.–23.2.1997*, Stuttgart (Materialhefte zur Archäologie in Baden-Württemberg 43), 55-63.
- Knoche, B. 2001. Die Jungsteinzeit. In: *Der Kreis Soest. Führer zur archäologischen Denkmälern in Deutschland* 39, Stuttgart, 52-73.
- Knoche, B. 2003. Neolithikum. In: A. Haasis-Berner (ed.), *7000 Jahre Salzkotten. Besiedlungsgeschichte einer Region. Eine Dokumentation des Westfälischen Museums für Archäologie – Amt für Bodendenkmalpflege. Zu den Ausgrabungen 2000-2002 bei Salzkotten*, Paderborn, 9-24.
- Knoche, B. 2008. *Die Erdwerke von Soest (Kr. Soest) und Nottuln-Uphoven (Kr. Coesfeld). Studien zum Jungneolithikum in Westfalen*, Rahden/Westfalen (Münsterische Beiträge zur Prähistorischen Archäologie 3).
- Löhr, H. 1994. Linksflügler und Rechtsflügler in Mittel- und Westeuropa, *Trierer Zeitschrift* 57, 9-127.
- Lüning, J., U. Kloos & S. Albert 1989. Westliche Nachbarn der bandkeramischen Kultur: La Hoguette und Limburg, *Germania* 67, 355-393.
- Meurers-Balke, J. & A.J. Kalis 2005. Landnutzung in prähistorischer und historischer Zeit im Vredener Land. Ein Pollendiagramm von Ernst Burrichter neu betrachtet. In: H.-W. Peine & H. Terhalle (eds), *Stift – Stadt – Land. Vreden im Spiegel der Archäologie*, Vreden (Beiträge des Heimatvereins Vreden zur Landes- und Volkskunde 69), 83-90.
- Schwabedissen, H. 1944. *Die mittlere Steinzeit im westlichen Norddeutschland unter besonderer Berücksichtigung der Feuersteinwerkzeuge*, Neumünster (Offa-Bücher 7).
- Stapel, B. 2003. Letzte Jäger und Sammler, *Archäologie in Deutschland* 2003.3, 42.
- Stapel, B. 2005. Ein langdauernder Anfang der Steinzeit in Vreden. In: H.-W. Peine & H. Terhalle (eds), *Stift – Stadt – Land. Vreden im Spiegel der Archäologie*, Vreden (Beiträge des Heimatvereins Vreden zur Landes- und Volkskunde 69), 15-32.
- Strien, H.-Chr. 2000. *Untersuchungen zur Bandkeramik in Württemberg*, Bonn (Universitätsforschungen zur Prähistorischen Archäologie 69).

Fine plant temper and the origin of the Swifterbant culture

Claude Constantin

ABSTRACT

The presence of the same 'fine plant temper' in La Hoguette and Swifterbant pottery offers an additional means of elucidating the origins of Swifterbant pottery.

KEYWORDS

Neolithic, La Hoguette, Swifterbant, pottery, temper.

1. INTRODUCTION

A few years ago, we revealed use of a fine plant temper on 38 Middle Neolithic sites in northern France and Belgium (Constantin & Kuijper 2002).¹ These sites belong to the following sequence of cultures: Cerny, Epi-Rössen and Michelsberg. The temper was identified as moss, mainly *Neckera crispa* Hedw. (fig. 1-3). In addition to these 38 sites, we also included a single site that curiously lay completely outside this cultural setting: Ittervoort (Limburg, the Netherlands), with La Hoguette pottery and so-called *Begleitkeramik*. We included this site on the recommendation of its finder, F. Brounen. In fact he had noticed the use of plant temper in the vessels and through W. Kuijper was able to establish that it was the same plant as on the other sites.

Although it is obviously impossible to identify the plant species with the naked eye, this temper is quite easily recognizable on the surface of sherds through the shape and size of the imprints left after combustion. Rectilinear or slightly curved, the imprints are 0.1-0.3 mm in diameter and mostly 3-8 mm long.

1. This article provides me with the opportunity to add the site of Etaples *Les Sablins* (Pas-de-Calais) to this list (Piningre *et al.* 1991).



Figure 1 *Neckera crispa*. Scale 1:1. After Migula W. 1904. Director Prof. Dr. Thomé's Flora von Deutschland, Österreich und der Schweiz in Wort und Bild. Band V. Kryptogamen-Flora. Moose, Algen, Flechten und Pilze. Moose. Band I, Gera.

During the Leiden workshop I was able to recognise this temper, with which I have become quite familiar, both in La Hoguette or *Begleitkeramik* vessels and in Swifterbant pottery. Although use of a plant temper has generally been noticed by archaeologists studying the pottery from these sites, I think it is now possible to specify that this is the same 'fine plant temper' as had previously been identified.



Figure 2 Imprints of vegetal temper on the surface of a sherd from Blicquy *La Couture du Couvent*. 2x natural size.

2. FINE PLANT TEMPER, LA HOGUETTE POTTERY AND BEGLEITKERAMIK

Out of the 28 sites with La Hoguette pottery reviewed by Lüning *et al.* (1989), use of a plant temper is mentioned for at least five sites. This temper is supposedly composed of cereal threshing waste ('*Spelzen*'). Pottery from one of these sites, Bruchentrüben, was displayed at the Leiden Workshop (Maletschek, this volume) and I noticed the characteristic imprints of our 'fine plant temper' (moss). These can in fact be clearly seen on a published photograph (Lüning *et al.* 1989, fig. 29, 4). Furthermore, judging from another photograph, I would suggest that this temper was also used on the site of Anröchte (Lüning *et al.* 1989, fig. 33, 2).

In the Netherlands, plant temper has been recorded on at least five sites producing Limburg pottery and/or *Begleitkeramik* with slight cordons flanked by short parallel grooves:

- Ede *Frankeneng*
Schut 1988
- Haelen *Broekweg*
Bats *et al.* 2002
- Sint-Odiliënberg *Mortelshof*
unpublished; Brounen, appendix
- Sweikhuizen *De Hei*
Modderman 1987
- Ittervoort *Damszand*
unpublished; Brounen *et al.*, this volume

Apart from the site of Ittervoort, where the fine plant temper had already been identified (see Introduction

above), F. Brounen (appendix) specifies that a 'fine' plant temper is used at Haelen, Sint-Odiliënberg and Sweikhuizen.

One thus sees that fine plant temper is used for La Hoguette pottery and then for its subsequent development in the Netherlands, the *Begleitkeramik*,² from the time of the earliest Linearbandkeramik, before 5300 cal BC, to at least the end of this culture at around 5000 cal BC.

3. FINE PLANT TEMPER AND THE SWIFTERBANT CULTURE

Use of plant temper has been observed in Swifterbant pottery, and has been reported in various articles on sites or in broader overviews (Raemaekers 2004).

The Leiden Workshop provided me with the opportunity to examine the pottery from several Swifterbant sites. Once again, I noticed that the superficial imprints left by the temper presented the same characteristics as our 'fine plant temper'. This observation was made for the following sites, presented here in chronological order:

- Hardinxveld-Giessendam *De Bruin*
Louwe Kooijmans 2001, early period

2. In my opinion the so-called *Begleitkeramik*, decorated with slight cordons and rows of short parallel grooves, is quite simply a typological development from La Hoguette pottery, which from the beginning has the same type of cordon decoration. The term La Hoguette should therefore be applied to this pottery as well.

- Swifterbant S3
De Roever 1979, middle period
- Hazendonk, phases 1 and 2
Louwe Kooijmans 1974, end of the middle period
- Hazendonk, phase 3
Louwe Kooijmans 1974
- Schokland P14
Ten Anscher *et al.* 1993, contemporaneous with the late period

Thus the use of fine plant temper can be observed throughout the duration of the Swifterbant culture, from around 5000 cal BC to about 3700 cal BC.

Two sites in Belgium that can be attributed to the Swifterbant culture must also be included here on the basis of temper, although no details are available. The sites are Doel, where a plant temper is mentioned (Crombé *et al.* 2002), and Melsele, where voids left by organic matter are reported (van Berg *et al.* 1992).

4. LA HOGUETTE AND SWIFTERBANT: CHRONOLOGICAL AND GEOGRAPHICAL PROXIMITY

As far as chronology is concerned, one notes that the Linearbandkeramik culture, whose sites contain La Hoguette vessels, comes to an end shortly after 5000 cal BC, a time when early Swifterbant, with pottery, had already emerged at Hardinxveld-Giessendam *Polderweg*, phase 2. The second phase of *De Bruin* has also produced a vessel (Louwe Kooijmans 2001, figs 5.5, 5.16) that could originate from the Blicquy group, an immediate successor of the Linearbandkeramik (Constantin 1985).

As far as geography is concerned, only 50-60 km separate the northernmost site with La Hoguette pottery – Ede – from the most important Swifterbant sites, located to the west or the north. In addition, it is quite possible that the Swifterbant culture occupied more easterly parts of the Rhine estuary, which would make the distance even shorter. Nevertheless, the highest density of La Hoguette findspots in the Lower Rhine Area (including here sites with *Begleitkeramik*) is further south, in an area about 30 km north of the loess belt. This zone also contains large numbers of Linearbandkeramik arrowheads and adzes (Louwe Kooijmans 1993, fig. 11), making it

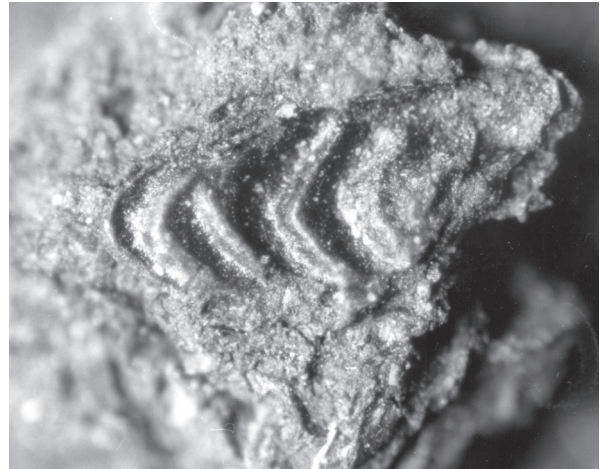


Figure 3 *Neckera crispa* leaf identified on a sherd from Amigny-Rouy. Photo: H. During.

all the more urgent to locate and excavate a site with an association between La Hoguette pottery and other artefacts, in order to identify the precise cultural context of this pottery.

5. CONCLUSION

The origin of Swifterbant pottery should not be sought to the north-east, in Denmark. Ertebølle pottery is not a good candidate since it appears slightly later (4700/4600 BC) and does not contain plant temper (S.H. Andersen, personal information), contrary to observations made by B. Hulthén (1977).³ To the south and south-east, important contacts have been shown between Swifterbant and the Danubian cultures of Belgium and the Netherlands. Particularly clear examples are the use of Rijckholt flint and the presence of Linearbandkeramik-type arrowheads (Louwe Kooijmans 2001). These arrowheads continue in use in the Blicquy group (Constantin 1985), whose pottery is found at Hardinxveld-Giessendam *De Bruin*.

The observation of the same type of fine plant temper in both La Hoguette and Swifterbant pottery enables one to formulate the convincing hypothesis that the whole technique of pottery-making was passed from one to the other. In fact, use of a particu-

3. The observations by B. Hulthén were possibly made on later pottery.

lar temper cannot just be copied by hear-say, nor by simple observation of a vessel. It is transmitted by people actually making pottery together. This would strongly suggest that, at the same time as temper, it was the whole pottery-making technique that Swifterbant populations received through actual contact with the potters who made La Hoguette vessels.

6. REFERENCES

- Anscher, T.J. ten, E.F. Gehasse & J.A. Bakker 1993. A pre-megalithic TRB and late Swifterbant complex at P14- Schokland, gemeente Noordoostpolder, the Netherlands. In: *Actes du 12^e Congrès international des sciences préhistoriques et protohistoriques, Bratislava 1991*, vol. 2, 460-466.
- Bats, M., P. Crombé, I. De Vriendt, R. Langohr, J. Mikkelsen, C. Ryssaert, J. Schreurs, A. Van De Water & M. Van Strydonck 2002. Onderzoek langs de omleiding N273 te Haelen (Prov. Limburg, The Netherlands): vroeg-mesolithicum en vroeg-neolithicum, *Notae Praehistorica* 22, 87-102.
- Berg, P.-L. van, L.H. Keeley, J.-P. Van Roeyen & R. Van Hove 1992. Le gisement mésolithique de Melsele (Flandre-Orientale, Belgique) et le subnéolithique en Europe occidentale. In: C.-T. Le Roux (ed.), *Paysans et bâtisseurs, l'émergence du Néolithique atlantique et les origines du mégalithisme*, Rennes (Actes du 17^e colloque interrégional sur le Néolithique, Vannes 1990. Revue Archéologique de l'Ouest, supplément 5), 93-99.
- Constantin, C. 1985. *Fin du Rubané, Céramique du Limbourg et post-Rubané. Le Néolithique le plus ancien en Bassin Parisien et en Hainaut*, Oxford (BAR International Series 273).
- Constantin, C. & W.J. Kuijper 2002. Utilisation de mousse comme dégraissant dans des céramiques néolithiques de France et de Belgique, *Bulletin de la Société Préhistorique Française* 99, 775-783.
- Crombé, P., Y. Perdaen, J. Sergant, J.P. Van Roeyen & M. Van Strydonck 2002. The Mesolithic-Neolithic transition in the sandy lowlands of Belgium: new evidence, *Antiquity* 76, 699-706.
- Hulthén, B. 1977. *On ceramic technology during the Scanian Neolithic and Bronze Age*, Stockholm (Theses and Papers in North European Archaeology 6).
- Louwe Kooijmans, L.P. 1974. *The Rhine/Meuse delta. Four studies on its prehistoric occupation and Holocene geology*, PhD thesis Leiden (Oudheidkundige Medelingen uit het Rijksmuseum van Oudheden 53-54).
- Louwe Kooijmans, L.P. 1993. The Mesolithic/Neolithic transformation in the Lower Rhine Basin. In: P. Bogucki (ed.), *Case studies in European Prehistory*, Boca Raton, 95-145.
- Louwe Kooijmans, L.P. (ed.) 2001. *Hardinxveld-Giessendam De Bruin. Een kampplaats uit het laat-mesolithicum en het begin van de Swifterbant-cultuur (5500-4450 v. Chr.)*, Amersfoort (Rapportage Archeologische Monumentenzorg 88).
- Lüning, J., U. Kloos & S. Albert 1989. Westliche Nachbarn der bandkeramischen Kultur: La Hoguette und Limburg, *Germania* 67, 355-393.
- Modderman P.J.R. 1987. Limburger aardewerk uit Sweikhuizen Gem. Schinnen, Prov. Limburg, *Analecta Praehistorica Leidensia* 20, 87-93.
- Piningre, J.-F., F. Bostyn, J. Couppé, C. Constantin & G. Delibrias 1991. L'atelier de taille du silex des Sablins à Etaples (Pas-de-Calais), *Gallia Préhistoire* 33, 83-135.
- Raemaekers, D.C.M. 2004. An outline of late Swifterbant pottery in the Noordoostpolder (Province of Flevoland, the Netherlands) and the chronological development of the pottery of the Swifterbant culture, *Palaeohistoria* 45-46, 11-36.
- Roever, J.P. de 1979. The pottery from Swifterbant – Dutch Ertebølle? Swifterbant contribution 11, *Helinium* 19, 13-36.
- Schut, P. 1988. Poteries du Néolithique ancien à Ede (Prov. de Gueldre), *Helinium* 28, 223-231.

The Swifterbant pottery tradition (5000-3400 BC)

Matters of fact and matters of interest

Daan C.M. Raemaekers & J. Paulien de Roever

ABSTRACT

This paper presents an overview of the pottery of the Swifterbant culture (5000-3400 cal BC). The Swifterbant culture is found in north-western Europe, between the river Scheldt in Belgium and the river Elbe in northern Germany. Most sites are located in the wetland areas of the Netherlands; its distribution across the sandy areas is as yet more difficult to determine due to the restricted preservation conditions. The production of pottery started in the Late Mesolithic; the source of inspiration for this innovation is still under debate. The debate focuses on the question to what extent contacts with LBK farmers and neighbouring hunter-gatherer groups is of relevance. A second point of discussion is the importance of the base morphology. The ceramics of the middle phase (4600-3900/3800 cal BC) reveal regional styles within a technological and morphological tradition. The late phase (3900/3800-3400 cal BC) seems restricted to the northern part of the Netherlands and northern Germany; in the southern part of the Netherlands the Hazendonk group developed.

KEYWORDS

Pottery, Neolithic, north-western Europe, Swifterbant culture.

1. INTRODUCTION

This paper presents the characteristics of the pottery of the Swifterbant culture and is intended to present the information, published in various Dutch-language site papers. The paper focuses on the major assemblages. Other Swifterbant assemblages are listed in table 1. The paper is divided in a section in which factual information on the Swifterbant pottery

is presented ('matters of fact') and a section with a number of issues under discussion ('matters of interest').

The Swifterbant culture is dated between 5000 and 3400 cal BC. It starts with the introduction of pottery in Swifterbant tradition in the Late Mesolithic and continues until the advent of the West Group of the Funnel Beaker culture around 3400 cal BC. The culture is named after the village of Swifterbant in the province of Flevoland, in one of the extensive polders reclaimed from the lake *IJsselmeer*. As the former sea floor became polder, prehistoric sites were discovered at 5 to 6 m below the present-day sea level. The *Biologisch-Archaeologisch Instituut* (BAI) of the University of Groningen conducted archaeological research in the period 1972-1979. From 2004 onwards new excavations are undertaken by the Groningen Institute of Archaeology (former BAI). The Swifterbant culture has been subdivided into an early phase (5000-4600 cal BC), middle phase (4600-3900 cal BC) and late phase (3900-3400 cal BC) on the basis of developments in pottery characteristics (Raemaekers 1999, 108-112). While in the early phase subsistence was based on hunting, gathering, fowling and fishing, in the middle and late phase it was partly based on agriculture as well (Raemaekers 1999).

Most settlements have been found in the wetland areas of the Netherlands and adjacent areas, but stray finds are also known from upland locations. The general distribution (fig. 1) suggests that Swifterbant sites may be found in wetland and sandy areas between the river Scheldt in the south-west and the river Elbe in the north-east. Sites in the wetlands typically yield large amounts of high-quality data thanks to their preservation conditions. The Swifterbant sites from the sandy areas as a rule comprise a small number of sherds and are little more than dots on the



Figure 1 The Netherlands with the major Swifterbant sites.

Swifterbant distribution map. The occurrence of a large number of perforated wedges (*Breitkeile*) in these areas indicates that human activities were more frequent than the ceramic evidence suggests (Van der Waals 1972, fig. 62; Raemaekers 1999, fig. 3.31; Verhart 2000, fig. 1.17).

2. MATTERS OF FACT

2.1 The Swifterbant pottery

The start of the pottery production is dated to the Late Mesolithic from circa 5000 cal BC onwards. This date is based on a large number of ^{14}C dates from two stratified river dune sites: *Polderweg* and *De Bruin*, both located near Hardinxveld-Giessendam (fig. 1). Pottery must have been used for cook-

Site	Description	Ceramics	Age	Reference
Bergschenhoek	Fowling station	several dozen	¹⁴ C: 4350-4050 cal BC	Louwe Kooijmans 1987
Ede <i>Rietkamp</i>	Loose find	one pot	¹⁴ C: 5200-4750 cal BC	Schut 1993
Schiedam	Loose find	one base fragment	<i>t.a.q.</i> 3800 cal BC	Modderman 1955; Louwe Kooijmans 1974
Winterswijk	Loose find	one sherd	typology: middle phase	Schut 1984
Meppel <i>De Gaste</i>	River dune site	unknown quantity	typology: Swifterbant	Van der Waals 1972
Rotterdam <i>Groenenhagen</i>	River dune site	212 sherds	¹⁴ C: 4650-4400 cal BC	Meirsman & Peters 2006
Emmeloord <i>J97</i>	Levee site	several dozen	¹⁴ C: Late Swifterbant	Bulten <i>et al.</i> 2002; Raemaekers 2003-'04
Urk <i>E4</i>	River dune site	c. 5000 sherds	<i>t.a.q.</i> 3400 cal BC	Peters & Peeters 2001
Weerdinge	Loose find	one sherd	typology: middle phase	Van der Sanden 1997

Table 1 Swifterbant assemblages not discussed in detail in text.

ing because of the many charred food remains and soot, which is found in and on the vessels. It may be assumed that they had a function as storage vessel as well. In some instances, the completeness and the depositional context of some vessels make a ritual or cultic deposition probable. This is for example the case with the pot of Bronneger (Kroezenga *et al.* 1991) and more or less complete vessels in the settlements of *De Bruin* (Raemaekers 2001b) and Urk *E4* (Verneau 2001). These pots must first have been used as a cooking pot, as all showed some incrustation of charred food remains. The largest assemblage comes from Swifterbant *S3* and allows an overview of the various pot sizes (De Roever 2004, 51-52 & table 7). Pot contents range from less than 1 litre (diameter 11-12 cm) to more than 15 litres (diameter 36-37 cm), but do not suggest that there are size groups. Food crusts are found on both the smaller and the larger pots.

The pottery was produced with stone grit and/or plant material as tempering material and with a simple coiling technique. The wall thickness is variable, but mostly around 8 to 10 mm. In general the vessels of the Swifterbant culture have a more or less S-shaped profile and a round, knob or Schiedam-type base.¹ The finishing of the walls is mostly simple.

1. Part of miscommunication is the generally loose way of reference to base morphology. In this contribution there is a distinction between a general description of point-based pottery (Dutch: *puntbodemaardewerk*) and two subtypes. These are a base with the morphology of an attached knob (see fig. 4: second row, left) here referred to as knob-type (Dutch: *knobbelbodem*; cf. Raemaekers 1999: pointed-based) and an elongated round base (see fig. 4: row six, middle and right) here

Some pots are decorated. There is a wide variety of decoration on the rim, while decoration of the wall surface consists of one or several series of impressions on the shoulder or all-over decoration. The quality of the pottery is not very good, but can vary from very brittle or soft to rather hard (see below).

2.2 Early phase

The early phase (5000-4600 cal BC) is documented in three areas that are presented from south-west to north-east. *Polderweg* and *De Bruin* near Hardinxveld-Giessendam contain a series of well-dated find layers on the slopes of two river dunes, of which the layers with ceramics date to the period 5000-4450 cal BC (Raemaekers 2001a; 2001b). Hoge Vaart-A27 is situated on a covered sand ridge of which the pottery dates to 4900-4600 cal BC (Peeters *et al.* 2001, table 8; Haanen & Hogestijn 2001; Peeters, this volume). Bronneger concerns a single pot; it is a dredged find, found together with two red deer antlers and dated around 4700 cal BC (Kroezenga *et al.* 1991). Hüde I (Lower Saxony) is left out of consideration here because of the problematic stratigraphy (Raemaekers 1999; Lanting & Van der Plicht 1999-2000, 23-25). The ¹⁴C dates and finds suggest that it was occupied in all three phases of the Swifterbant culture (see Kampffmeyer 1991 for the pottery and further references). Schokland *PI4* (Flevoland) is not discussed because the proposed stratigraphy is unpublished (Ten Anscher in prep.).

referred to as Schiedam-type (after the Schiedam find: Modderman 1955).

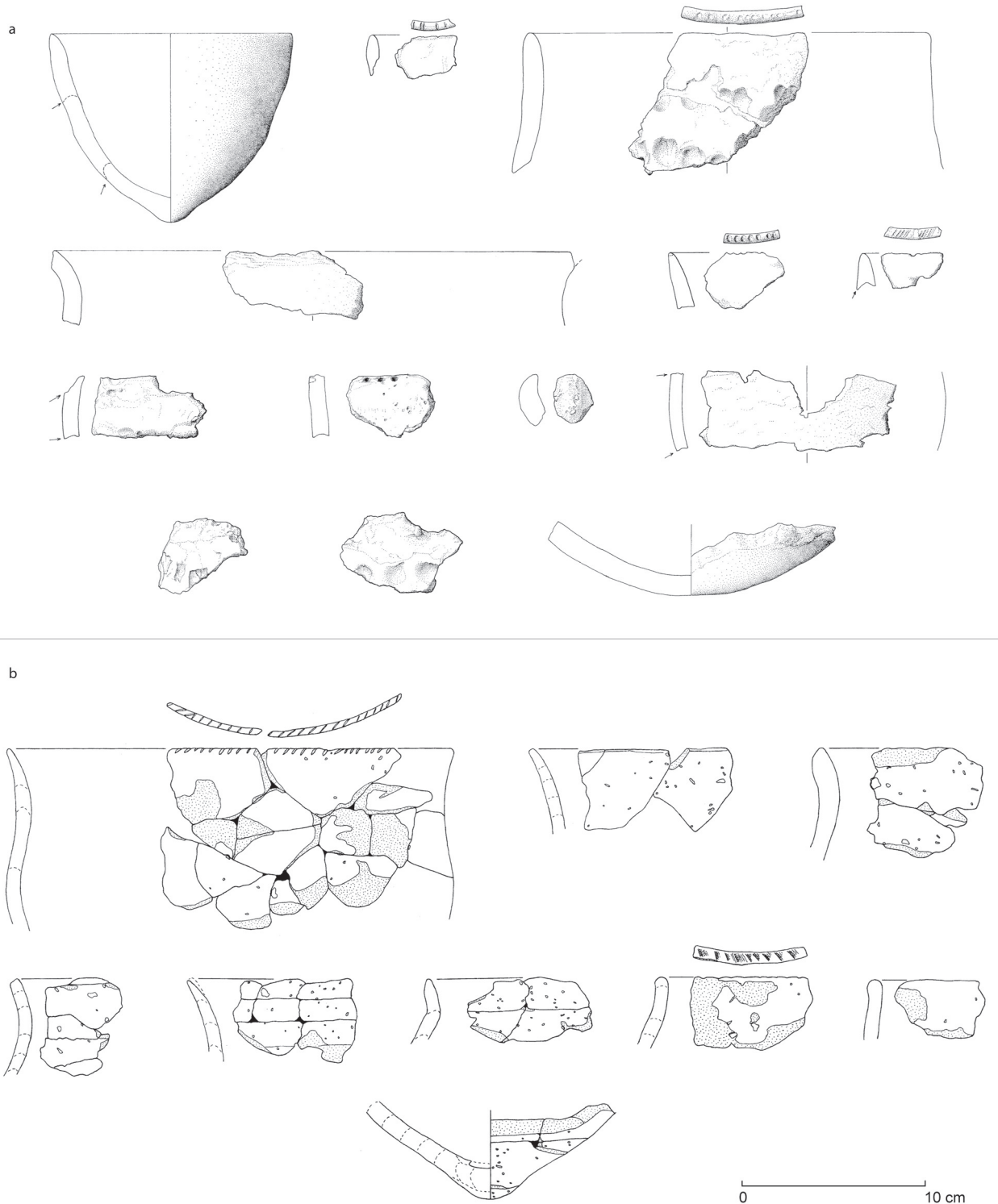


Figure 2 Pottery of the early phase. a: Hardinxveld-Giessendam *Polderweg* (after Raemaekers 2001b, fig. 3.27), b: *Hoge Vaart-A27* (after Haanen & Hogestijn 2001, fig. 6). Scale 1:3.3.

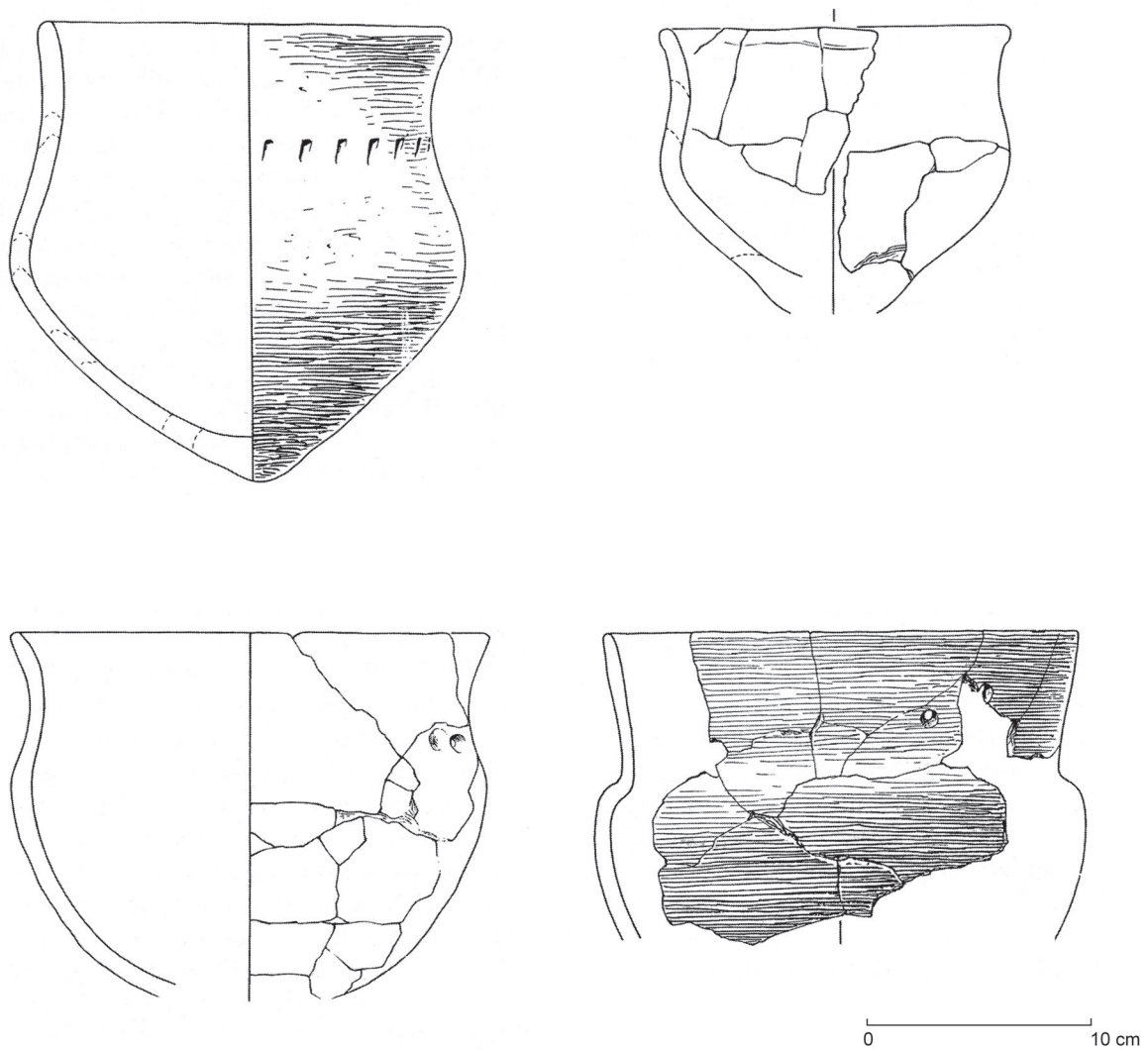


Figure 3 Pottery of the middle phase, from Swifterbant S3 (after De Roever 2004, fig. 9). Scale 1:3.3.

In comparison with the later Swifterbant pottery, the pottery from the early phase seems to have little regional variation, but this impression may be the result of the limited number of sites. At *Hoge Vaart* stone grit was the major tempering agent, but at *De Bruin* plant temper was most common and stone grit (e.g. quartz) and grog occur as well. Coil building was done with U-, N- and/or Z-joins.² Generally, the

pottery is slightly S-shaped with a low or higher neck. Some pots have just slightly curved inward rims and may be characterised as closed forms. Base forms include knob-type, round and Schiedam-type

Kooijmans 1980, fig. 10). In northern Europe the term H-technique is used for a type of coiling never found in Swifterbant material (see Andersen 1973- '74). In other words, in papers on Swifterbant and Ertebølle pottery H-technique is mentioned, but these are different techniques.

2. In this article the international term U-technique is used. In the Netherlands these types of joins are called H-joins (Louwe

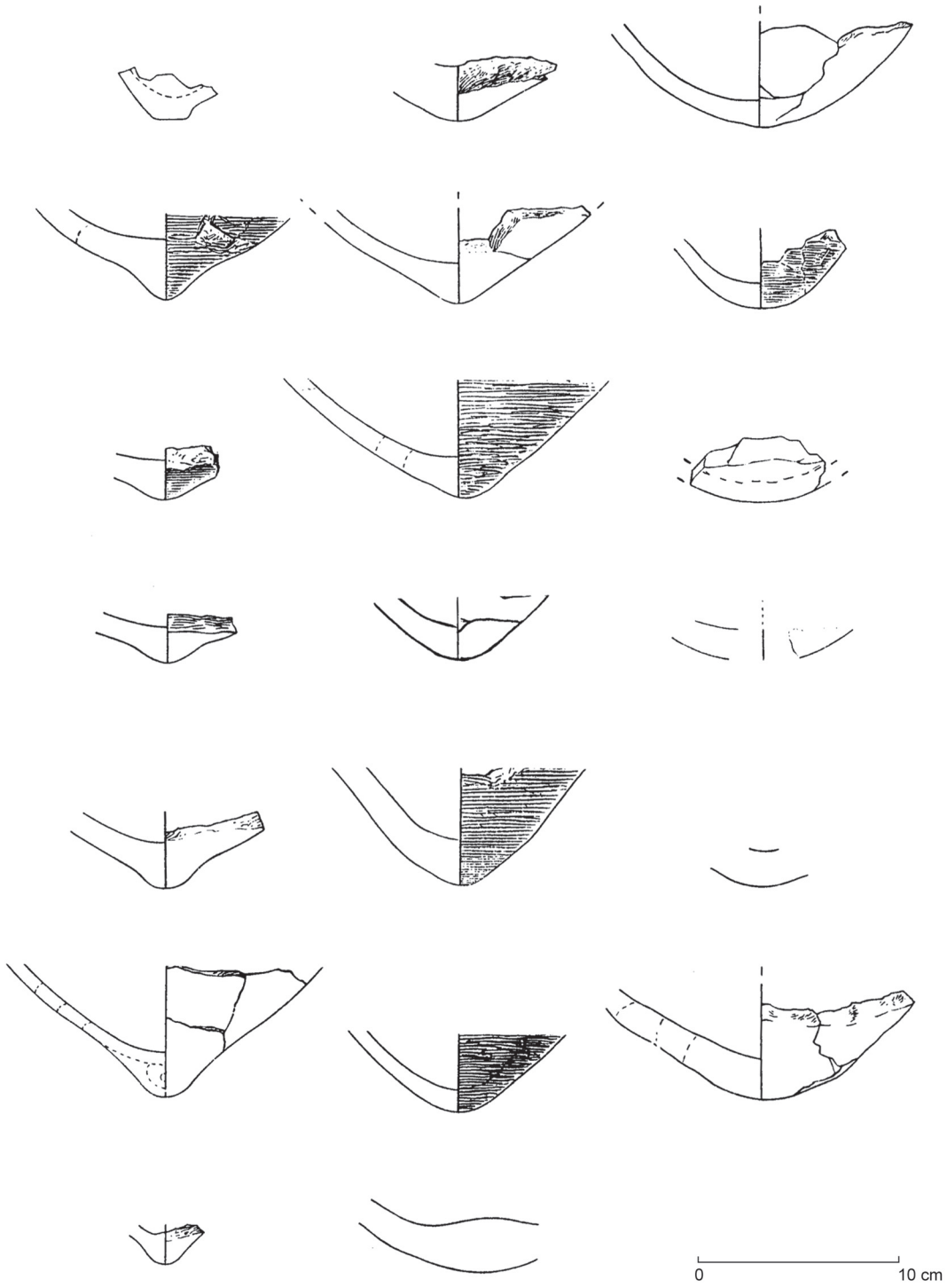


Figure 4 Pottery of the middle phase, base morphology from various sites of the Swifterbant cluster (after De Roever 2004, fig. 26). Scale 1:3.3.

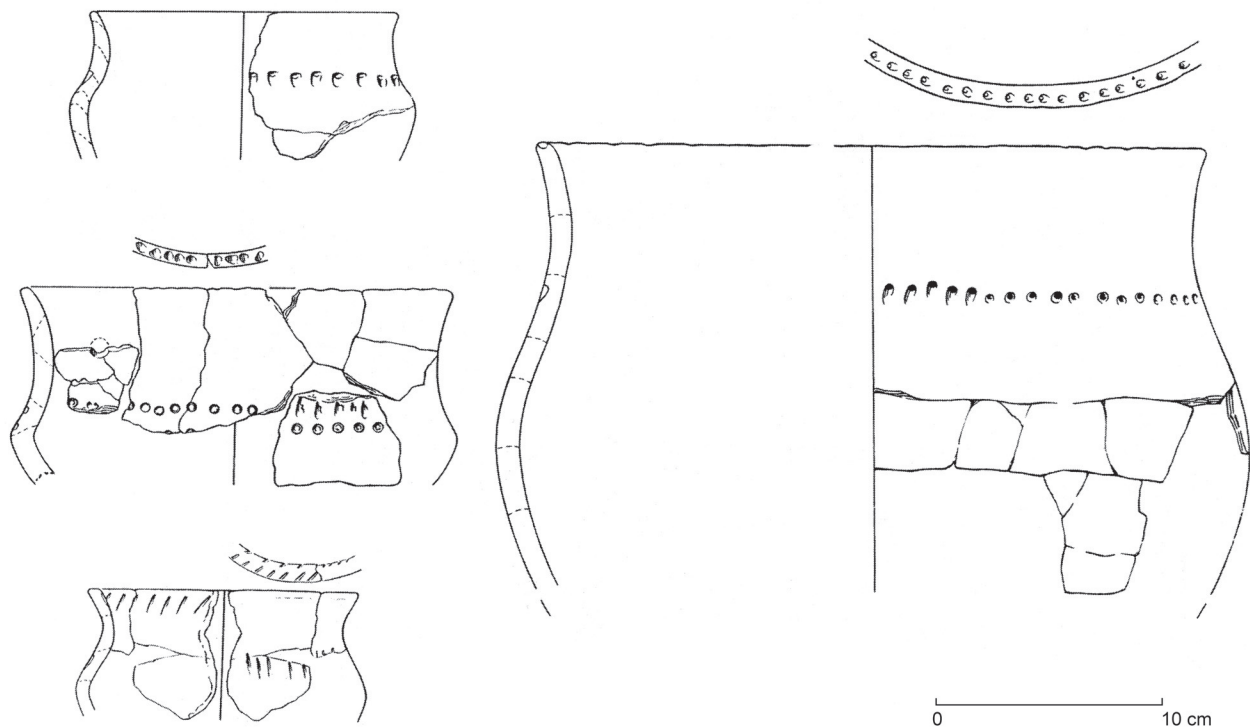


Figure 5 Pottery of the middle phase, decoration of a row of spatula impressions (after De Roever 2004, fig. 10). Scale 1:3.3.

bases. The rim diameters range between 20 to 35 cm, while the wall thickness mainly lies between 6 and 13 mm, with an average of 9 mm. A few sherds display a polished surface. The pottery is scantily decorated with spatula impressions on the top of the rim or not decorated at all (fig. 2). Knobs are also present.

At *De Bruin* another pottery style co-occurred. It concerns a small assemblage of a few vessels in a style known from the *Groupe de Blicquy* (Raemaekers 2001b). This pottery had more decoration on the wall in fields of parallel comb impressions and perforated knobs. Related finds were documented at Brandwijk (Raemaekers 1999, fig. 3.7.1) and Ede (Schut 1988, fig. 3).

2.3 Middle phase

In 1999 Raemaekers argued for a middle phase based on the ceramic finds from *J112* (Hogestijn 1991, 118). It concerns a small assemblage of poorly preserved sherds. The predominance of plant-tempered

sherds from *J112* was seen as distinctive in comparison with the pottery from the early phase (Raemaekers 1999, 108). The ceramics from *De Bruin* indicate that matters are more complicated: there are also assemblages in the early phase that are dominated by plant-tempered sherds. For now we conclude that the main difference between the ceramics of the early and late phase is the increase in the percentage of wall decoration (see Raemaekers 2003-'04, table 7 & figs 11 & 12). Furthermore the period between *c.* 4600 and 4300 cal BC needs more research. The most important site cluster dating to this period is Doel-Deurganckdok. The site is located on a covered sand ridge and dates to around 4400 cal BC (Crombé *et al.* 2002; 2004; Sergant *et al.* 2006).

Other major sites are Hazendonk and Brandwijk, two river dunes sites in the Rhine-Meuse area, the levee sites of Swifterbant and Hüde I (see above). While the pottery from the early phase reveals little regional variation, the middle phase may be divided into regional groups: one group in the IJssel-Vecht-Eem area (province of Flevoland), one group in the

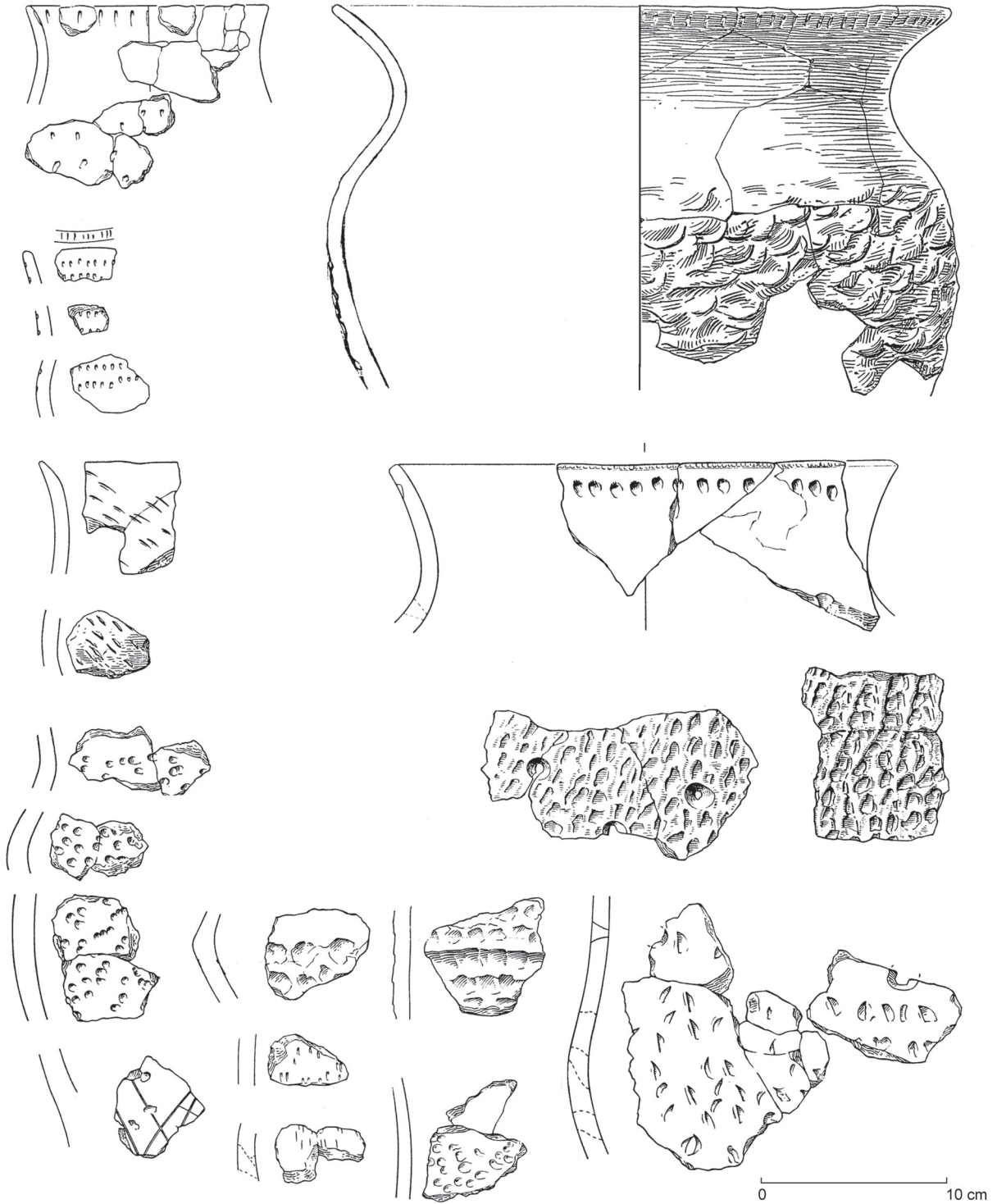


Figure 6 Pottery of the middle phase, wall surface decoration (after De Roever 2004, fig. 20). Scale 1:3.3.

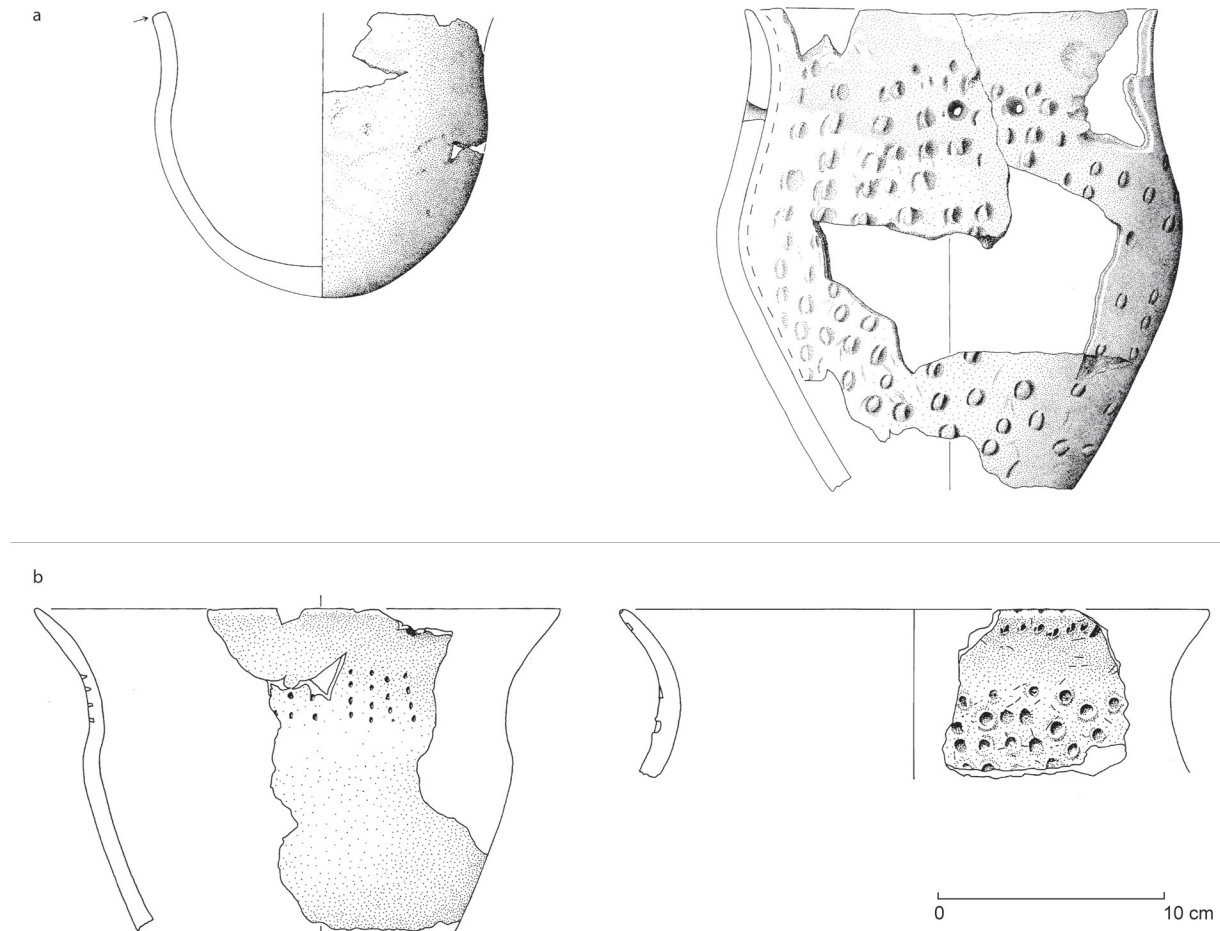


Figure 7 Pottery of the middle phase. a: Brandwijk, b: *Hazendonk* (after Raemaekers 1999, fig. 3.9, 3.11 and 3.17). Scale 1:3.3.

Rhine-Meuse area and one group in the Scheldt area. These groups share the technological and morphological characteristics of the Swifterbant pottery and may be distinguished on the basis of regional preferences in decoration schemes (Raemaekers 1999; 2003-'04).

The sites near Swifterbant constitute the largest assemblage of Swifterbant pottery (De Roever 1979; 2004). In the Swifterbant area plant tempering was very common and consisted of roughly crushed stalks of grass and other plants. It may also be crushed more finely, such as crushed charcoal. The plant temper was mixed with variable quantities of stone grit and/or sand. A minority of the pots had a temper of only stone grit and/or sand. It should be noted that rock is absent locally. The nearest regions

where one may find erratic boulders are at a distance of 10 to 25 km. Plant material on the other hand is very easy to come by. Nor would sand be a problem: it is found on the river dunes at a distance of one kilometre. People used the coiling technique, of which sometimes the joins are still visible. The base is normally formed from a lump of clay, but there is one recorded instance where the base too was made from coils. The inner surface may be scraped with a flint or a spatula to thin the wall. The wall thickness of the pots ranges from 5 to 14 mm, but is mainly 9-10 mm. The vessels mostly have a characteristic S-shaped profile and knob-type or Schiedam-type base. Some pots have round bases, although these are difficult to identify among the sherds (figs 3 and 4). Exceptional specimens are two simple bowls with

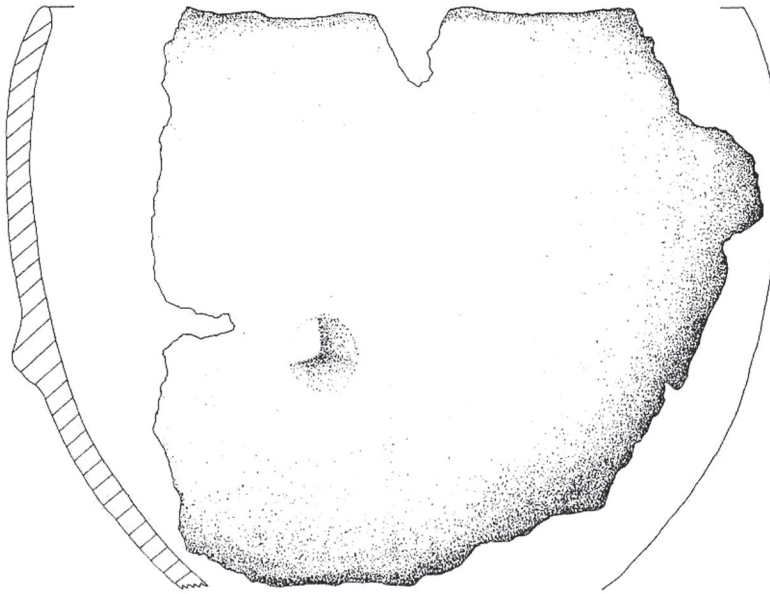


Figure 8 Pottery of the middle phase, Doel *Deurganckdok* (after Crombé *et al.* 2002, fig. 3). Scale 1:3.3.

an incurved rim. The smallest of these had no charred food remains and the other had been burnt secondarily.

Approximately 70% of the pots were decorated. The most common decoration consisted of one or more rows of impressions on the neck or shoulder, on the rim, or along the inside of the rim. The impressions are elongated, drop-shaped, formed by pressing a reed or stalk obliquely into the clay (fig. 5). Perpendicular impressions resulted in round imprints. Sometimes impressions were made by fingertips. Other kinds of decoration may occur on the belly of the pot, with impressions all over the surface or with 'rustication' made by pushing the clay up with the fingers (fig. 6).

The majority of the sherds are quite fragile. They will break easily, especially the plant-tempered ones. X-ray diffraction analysis showed that the pots were probably fired for a short period of time in an open fire, at a temperature below 600 °C. A minority of the pots was of good quality, especially the grit- and sand-tempered ones with thinner walls; they were probably fired somewhat longer.

The surface finishing was carried out in several manners. Mostly they were simply smoothed with the fingers. Sometimes impressions of grass indicate

that the smoothing was done with a bundle of grass. The good-quality pottery often was polished with a pebble or made very smooth by rubbing the surface with a wet finger.

One of the main questions is, whether pottery was imported or made locally. Some vessels must have been transported from the winter camp sites because technological research has demonstrated that some pots of good quality must originate from another area (De Roever 2004, 120-123). For the greater part, the pottery was made at the site itself. Testimony to such home production is a piece of a clay coil that had accidentally fallen into a hearth, where it was fired and preserved.

The Brandwijk (Raemaekers 1999, 44-55) and *Hazendonk* (Louwe Kooijmans 1976, 255-259, 263-265; Raemaekers 1999, 63-70) river dunes provide us with a series of smaller assemblages. These allow a detailed analysis of stylistic developments and regional variation in characteristics. Within the technological and morphological framework described above, the pottery from the Rhine/Meuse area is characterised by a higher frequency of pots with wall decoration and a higher proportion of pots with surface-covering decoration (fig. 7). While sites in this area dating to the early phase provided finds of Blic-

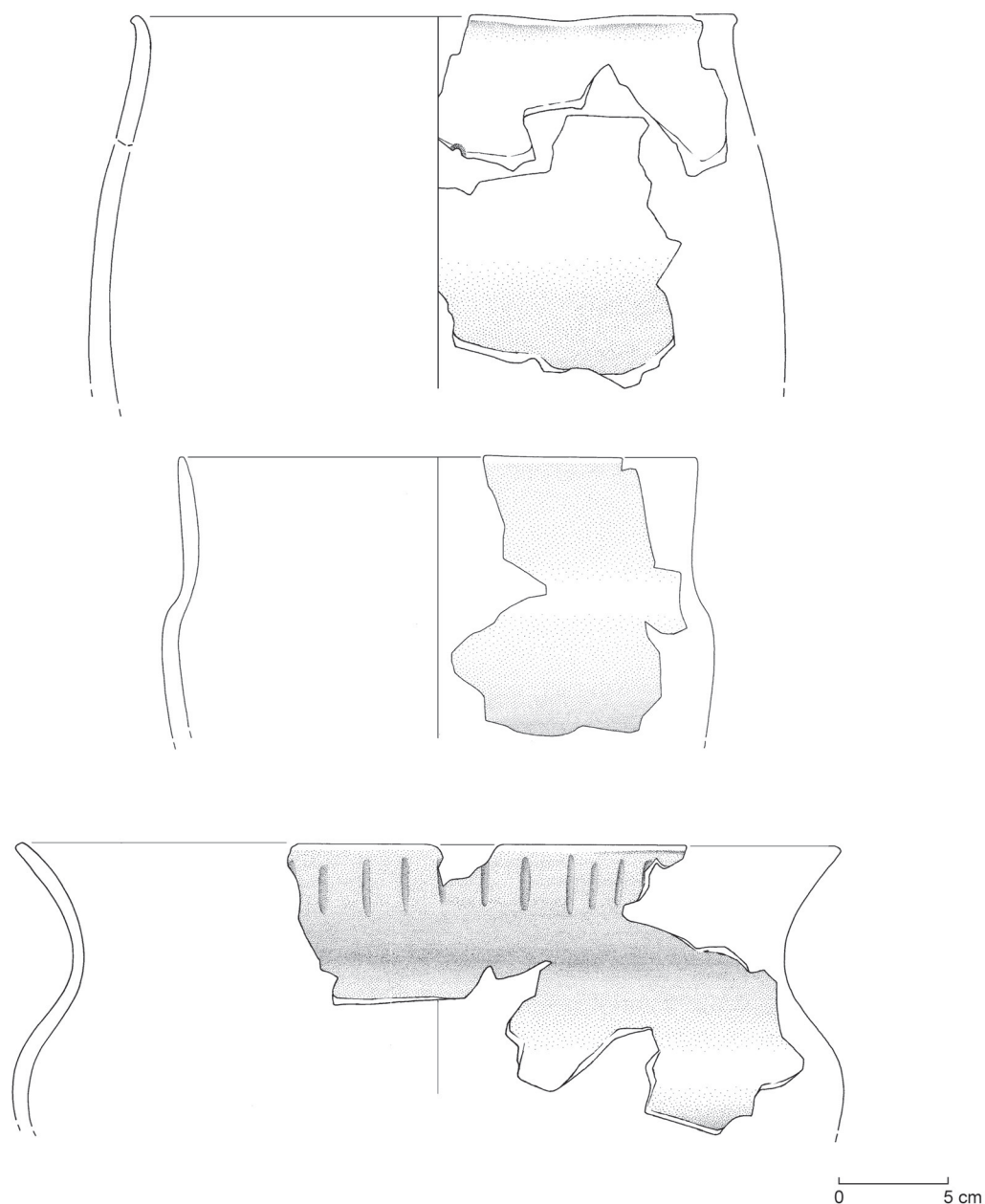


Figure 9 Pottery of the late phase, *Schokkerhaven* (after Raemaekers 2003-'04, fig. 9). Scale 1:3.3.

quy pottery, the Hazendonk 2 assemblage contains some pots in Michelsberg style (Louwe Kooijmans 1976, fig. 13; Raemaekers 1999, 66-70, fig. 3.19). These finds suggest that the southern contacts continued.

The Doel ceramics were found at three sites: sector B/C, sector J/L and sector M, all with similar pottery characteristics. It concerns grog and plant tem-

pered relatively thick-walled sherds. Pottery forms are mostly S-shaped with a rounded or Schiedam-type base, but there are also bowl-shaped pots (fig. 8). Decoration consists of *Randkerbung* and incidental fingertip impressions or small perforations underneath the rim. Knobs and lugs are found as well (Sergant *et al.* 2006, 56; Crombé, this volume).

2.4 Late phase

The start of the late phase is based on the perceived differences in pottery characteristics between Late Swifterbant Schokkerhaven and Middle Swifterbant Hazendonk 2. While the middle phase of the IJssel-Vecht-Eem area developed into Late Swifterbant, the middle phase of the Rhine-Meuse area developed into the Hazendonk Group (Louwe Kooijmans 1974; 1976; s.d.; Raemaekers 1999; Raemaekers & Rooke 2006). The limited information on Late Swifterbant ceramics is presented in Raemaekers 2003-'04. It cannot be stressed enough that because assemblages from this period are virtually absent, the issue of cultural continuity between Swifterbant and the TRB West Group must be considered with great care.

The most important assemblage is that of *Schokkerhaven* (Hogestijn 1991, 114-115). This pottery is mostly tempered with stone grit, but also with plant material and built with coiling technique. The pottery forms include S-shapes and closed forms (fig. 9). Decoration is less frequent, but continues to be applied both as series of impressions on the shoulder zone and as surface cover. Rim decoration is now exclusively found on the outside of the rim (Raemaekers 2003-'04).

The final stage of the Swifterbant pottery tradition may be found at Wetsingermaar, dated to around 3600-3400 BC (Feiken *et al.* 2001; Raemaekers *et al.* in prep.). The technological characteristics of the small number of sherds from this site are rather similar to those of the TRB West Group pottery, suggesting that this site may be interpreted as transitional between Late Swifterbant and the Early TRB West Group.

3. MATTERS OF INTEREST

3.1 The source of inspiration of the Swifterbant pottery tradition

Around 5000 cal BC pottery production in Swifterbant style appears. There are two competing theories on the sources of inspiration. According to Raemaekers, it might be relevant to notice that this pottery tradition starts some centuries after the start of the LBK in north-western Europe around 5300 cal BC. The existence of contact networks may be concluded on the basis of the spread of danubian artefacts in a

broad zone around the loess belt (see above for references). It might be that the production of pottery was inspired by means of the contacts between the hunter-gatherers and the farming communities (Ten Anscher in prep.; Raemaekers 1999, 182). In the earliest, experimental phase, the production of pottery would have been approached as a high-tech operation surrounded by strict technological and spiritual regulations. No surprise that the pottery from the early phase is rather homogeneous. Only after some generations of indigenous pottery production one would expect experimentation with the production process and the development of decorative schemes that might have been transposed from other items of material culture. The often supposed similarities to Ertebølle pottery are overestimated: although both are made with coiling techniques, but the specific way in which the coils are attached is so different that we should consider them as separate technological traditions (see Stilborg & Bergenstråhle 2000, fig. 5).

De Roever's perspective starts with the notion that the shape, decoration and construction method of pots of the Bandkeramik are quite different (De Grooth & Van de Velde 2005, 228). There are closer similarities to the pottery of other hunter-gatherer groups in Europe. These are the point-based morphology, the coiling technique and sparse decoration that are found in pottery of other 'hunter-gatherer' groups of north-western Europe: at Hüde and Ellerbek/Rosenhof in northern Germany, Ertebølle in Denmark, and further east in the river and lake areas of northern Poland (Ilkiewicz 1989) and Russia (Van Hoof 2005). 'Ceramic Mesolithic' pottery has been found in Belgium (Amkreutz *et al.*, this volume), and the Swifterbant pottery also shows similarities to Roucadour pottery, a Mesolithic-Neolithic culture in south-western France (Arnal 1995). Mesolithic groups passed on the technique of pottery making to each other, and developed their own individual styles while retaining the pointed base and the coiling technique as common features. It would seem that this pottery was a mark of hunter-gatherer-fisher identity. It appears that pottery production, in particular the coiling technique, finds its inspiration in basketry (De Roever 2004, 135-139). In making a basket or a fish trap out of withies, one starts with the base, from which the twigs are woven or sewn round and round. In pottery making, the twigs are replaced by clay

rolls, which are pressed onto each other, beginning around the base. The 'preference' for decorating with horizontal rows of impressions may be related to decorative bands in basketry, and may bear a symbolic meaning as well (see also Louwe Kooijmans, this volume).

3.2 The pointed base

A second topic on which the authors agree to disagree is the relevance of the base morphology. According to De Roever, it has always been a puzzle why people made such an inconvenient type of pot that could not stand without support. The pointed base may be inherent to the production method, or just a 'symbol', but still may have had a practical reason too. All these people in the water-rich regions used log boats for transport, and perhaps the point-based vessel was a convenient shape for transport in a log boat. Roman transport amphoras also had pointed bases. A pointed shape provides better resistance to breaking (Mr. G. Dragos, pers. comm.). In other Neolithic cultures, including the Michelsberg culture, one may also find point-based pottery. It has been suggested that this type was used for transporting salt from a salt mine (Lichardus 1976, 148). It is possible then that the idea that vessels with pointed bases facilitated transport had been transmitted from the hunter-gatherer period.

Raemaekers thinks that the general occurrence of point-based pottery is an indication that it is not a significant aspect of Swifterbant pottery; it is a too general characteristic. This opinion is underlined by the fact that although point-based pottery indeed occurs in the areas mentioned here, closer examination teaches us that the only thing they have in common is the term. A comparison of Swedish Ertebølle bases (in the shape of a knob) with Swifterbant specimens (compare Prangsgaard 1992, fig. 4 with our fig. 4) learns that that we are dealing with rather different base forms. Moreover, point-based pottery is found within Swifterbant pottery assemblages but always alongside other base forms. The focus on the pointed base is therefore unwarranted.

4. REFERENCES

Andersen, S.H. 1973-'74. Ringkloster, en jysk inlandbo-plads med Ertebøllekultur, *Kuml*, 11-108.

- Anscher, T.J. ten, in prep. *Neolithicum en bronstijd in de Noordoostpolder*, PhD thesis Amsterdam.
- Arnal, G.-B. 1995. Le Néolithique roucadourien. In: J.L. Voruz (ed.), *Chronologies néolithiques de 6000 à 2000 avant notre ère dans le Bassin rhodanien. Actes du Colloque de Ambérieu-en-Bugey, 19 et 20 sept. 1992*, Ambérieu-en-Bugey, 67-74.
- Bulten, E.E.B, F.J.G. van der Heijden & T. Hamburg 2002. *Emmeloord, Prehistorische visweren en fuiken*, Bunschoten (ADC rapport 140).
- Crombé, Ph., M. Bats, F. Wuyts & J.-P. Van Roeyen 2004. Een derde vindplaats van de Swifterbantcultuur in het Deurganckdok te Doel (Beveren, Oost-Vlaanderen, België), *Notae Praehistoricae* 24, 105-107.
- Crombé, Ph., Y. Perdaen, J. Sergeant, J.-P. van Roeyen & M. van Strydonck 2002. The Mesolithic-Neolithic transition in the sandy lowlands of Belgium: new evidence, *Antiquity* 76, 699-706.
- Feiken, H., M.J.L.Th. Niekus & H.R. Reinders 2001. Wetsingermaar. Een neolithische vindplaats in de gemeente Winsum (Gr.), *Paleo-aktueel* 12, 54-59.
- Grooth, M. De & P. van de Velde 2005. Colonists on the loess? Early Neolithic A: the Bandkeramik culture. In: L.P. Louwe Kooijmans, P.W. van den Broeke, H. Fokkens & A. van Gijn (eds), *The Prehistory of the Netherlands*, Amsterdam, 219-241.
- Haanen, P.L.P. & J.W.H. Hogestijn 2001. Deel 17. Aardewerk: morfologische en technologische aspecten. In: J.W.H. Hogestijn & J.H.M. Peeters (eds), *De mesolithische en vroeg-neolithische vindplaats Hoge Vaart-A27 (Flevoland)*, Amersfoort (Rapportage Archeologische Monumentenzorg 79).
- Hogestijn, J.W.H. 1991. Archeologische kroniek van Flevoland, *Cultuur Historisch Jaarboek van Flevoland* 1, 110-129.
- Hoof, L. Van 2005. Neolithisatie en ceramistatie: over puntbodemig aardewerk en hondbegravingen bij complexe jagers-verzamelaars-vissers in boreaal Eurazië. In: E. van Rossum, J. Hendriks, A. Bright & D. Smal (eds), *SOJAbundel 2002/2003, Symposium voor onderzoek door jonge archeologen*, Amsterdam/Leiden, 69-80.
- Ilkiewicz, J. 1989. From studies on cultures of the 4th millennium BC in the central part of the Polish coastal area, *Przełąd Archeologiczny* 36, 17-56.
- Kampffmeyer, U. 1991. *Die Keramik der Siedlung Hüde I am Dümmer. Untersuchungen zur Neolithisierung des nordwestdeutschen Flachlandes*, PhD thesis Göttingen.
- Kroezenga, P., J.N. Lanting, R.J. Kusters, W. Prummel & J.P. de Roever 1991. Vondsten van de Swifterbantcultuur uit het Voorste Diep bij Bronneger (Dr.), *Paleo-Aktueel* 2, 32-36.

- Lanting, J.N. & J. van der Plicht 1999-2000. De ^{14}C -chronologie van de Nederlandse pre- en protohistorie. III: neolithicum, *Palaeohistoria* 41-42, 1-110.
- Lichardus, J. 1976. *Rössen-Gatersleben-Baalberge. Ein Beitrag zur Chronologie des mittel-deutschen Neolithikums und zur Entstehung der Trichterbecher-Kultur*, Bonn (Saarbrücker Beiträge zur Altertumskunde 17).
- Louwe Kooijmans, L.P. 1974. *The Rhine/Meuse delta. Four studies on its prehistoric occupation and Holocene geology*, PhD thesis Leiden (Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden te Leiden 53-54 / *Analecta Praehistorica Leidensia* 7).
- Louwe Kooijmans, L.P. 1976. Local developments in a borderland. A survey of the Neolithic at the Lower Rhine, *Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden te Leiden* 57, 227-298.
- Louwe Kooijmans, L.P. 1980. De midden-neolithische vondstgroep van het Vormer bij Wijchen en het cultuurpatroon rond de zuidelijke Noordzee circa 3.000 v. Chr., *Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden te Leiden* 61, 113-208.
- Louwe Kooijmans, L.P. 1987. Neolithic settlement and subsistence in the wetlands of the Rhine/Meuse Delta of the Netherlands. In: J.M. Coles & A.J. Lawson (eds), *European wetlands in prehistory*, Oxford, 227-251.
- Louwe Kooijmans, L.P. s.d. (2007). Nogmaals 'Hazendonk'. In: J.H.F. Bloemers (ed.), *Tussen D26 en P14: Jan Albert Bakker 65 jaar*, Amsterdam, 147-180.
- Meirsman, E. & F.J.C. Peters 2006. *Rotterdam Groenenhagen-Tuinhoven. Het documenterend archeologisch veldonderzoek van neolithische bewoning op de top van een rivierduin: vindplaats 13-78*, Rotterdam (BOORrapporten 284).
- Modderman, P.J.R. 1955. Neolithische vondsten bij Schiedam, *Westerheem* 4, 30.
- Peeters, J.H.M., E. Hanraets, J.W.H. Hogestijn & E. Jansma 2001. Dateringen: ^{14}C -analyse en dendrochronologie. In: J.W.H. Hogestijn & J.H.M. Peeters (eds), *De mesolithische en vroeg-neolithische vindplaats Hoge Vaart-A27 (Flevoland)*, Amersfoort (Rapportage Archeologische Monumentenzorg 79), Deel 12.
- Peters, F.J.C. & J.H.M. Peeters (eds) 2001. *De opgraving van de mesolithische en neolithische vindplaats Urk-E4 (Domineesweg, gemeente Urk)*, Amersfoort (Rapportage Archeologische Monumentenzorg 93).
- Prangsgaard, K. 1992. Introductie af Keramiek i den yngre Ertebølle-Kultur i Sydskandinavien, *LAG* 3, 29-52.
- Raemaekers, D.C.M. 1999. *The articulation of a 'New Neolithic'. The meaning of the Swifterbant culture for the process of neolithisation in the western part of the North European Plain (4900-3400 BC)*, PhD thesis Leiden (Archaeological Studies Leiden University 3).
- Raemaekers, D.C.M. 2001a. Aardewerk en verbrande klei. In L.P. Louwe Kooijmans (ed.), *Hardinxveld-Giesendam Polderweg. Een mesolithisch jachtkamp in het rivierengebied (5500-5000 v. Chr.)*, Amersfoort (Rapportage Archeologische Monumentenzorg 83), 105-118.
- Raemaekers, D.C.M. 2001b. Aardewerk en verbrande klei. In: L.P. Louwe Kooijmans (ed.), *Hardinxveld-Giesendam De Bruin. Een kampplaats uit het laat-mesolithicum en het begin van de Swifterbant-cultuur (5500-4450 v. Chr.)*, Amersfoort (Rapportage Archeologische Monumentenzorg 88), 117-152.
- Raemaekers, D.C.M., 2003-'04. An outline of Late Swifterbant pottery in the Noordoostpolder (province of Flevoland, the Netherlands) and the chronological development of the pottery of the Swifterbant culture, *Palaeohistoria* 45-46, 11-36.
- Raemaekers, D.C.M. & M. Rooke, 2006. The Schipluiden pottery. In: L.P. Louwe Kooijmans & P.F.B. Jongste (eds), *Schipluiden. A Neolithic settlement on the Dutch North Sea coast, c. 3500 cal BC*, Leiden (Analecta Praehistorica Leidensia 37-38), 119-135.
- Raemaekers, D.C.M., Y.I. Aalders, S.M. Beckerman, D.C. Brinkhuizen, I. Devriendt, H. Huisman, M. de Jong, H.M. Molthof, W. Prummel, M.J.L.Th. Niekus & M. van der Wal, in prep. Wetsingermaar (municipality of Winsum, province of Groningen). An early TRB settlement site?
- Roever, J.P. de 1979. The pottery from Swifterbant – Dutch Ertebølle?, *Helinium* 19, 13-36.
- Roever, J.P. de 2004. *Swifterbant-aardewerk. Een analyse van de neolithische nederzettingen bij Swifterbant, 5^e millennium voor Christus*, PhD thesis Groningen (Groningen Archaeological Studies 2).
- Sanden, W.A.B. van der 1997. Aardewerk uit natte context in Drenthe: het vroeg- en laat-neolithicum en de vroege bronstijd, *Nieuwe Drentse Volksalmanak* 114, 127-141.
- Schut, P. 1984. Een vroeg-neolithische scherf met graanafdrukken uit Winterswijk (Gld.), *Westerheem* 33, 214-215.
- Schut, P. 1988. Poteries du Néolithique ancien à Ede (prov. de Gueldre), *Helinium* 28, 223-231.
- Schut, P. 1993. Ede. In: R. Hulst (ed.), *Archeologische kroniek van Gelderland 1992*, Arnhem (Bijdragen en Mededelingen Vereniging Gelre 84), 206-207.
- Sergant, J., Ph. Crombé & Y. Perdaen 2006. The sites of Doel 'Deurganckdok' and the Mesolithic/Neolithic

- transition in the sandy lowlands of Belgium. In: J. Guilaine & P.-L. van Berg (eds), *The Neolithisation Process, Acts of the XIVth UISPP Congress, University of Liège, Belgium, 2-8 September, 2001, Symposium 9.2*, Oxford (BAR International Series 1520), 53-60.
- Stilborg, O. & I. Bergensträhle 2000. Traditions in transition. A comparative study of the patterns in the Late Mesolithic ceramic phase at Skateholm I, III and Soldatorpet in Scania, Sweden, *Lund Archaeological Review* 6, 23-42.
- Verhart, L.B.M. 2000. *Times fade away. The neolithization of the southern Netherlands in an anthropological and geographical perspective*, PhD thesis Leiden (Archaeological Studies Leiden University 6).
- Verneau, S.M.J.P. 2001. Aardewerk. In: F.J.C. Peters & J. H.M. Peeters (eds), *De opgraving van de mesolithische en neolithische vindplaats Urk-E4 (Domineesweg, gemeente Urk)*, Amersfoort (Rapportage Archeologische Monumentenzorg 93), 77-93.
- Waals, J.D. van der 1972. Die durchlochten Rössener Keile und das Frühe Neolithikum in Belgien und den Niederlanden. In: J. Lüning (ed.), *Die Anfänge des Neolithikums von Orient bis Nordeuropa*, Cologne (Fundamenta A3, Va), 153-185.

Early Swifterbant pottery from Hoge Vaart-A27 (Almere, the Netherlands)

Hans Peeters

ABSTRACT

This paper presents the Swifterbant pottery assemblage of Hoge Vaart-A27, phase 3. It is a typical Early Swifterbant assemblage with coil-built, grit-tempered pottery with S-shaped profiles and round to pointed bottoms. Decoration is rare and mostly restricted to incisions or imprints on top of the rims. Awaiting further functional analysis, charred remains on the interior wall suggest that at least some vessels can have been used as cooking vessels.

The assemblage was found in what can be regarded as the remains of a hunting camp. Its characteristics suggest that the pots were locally produced in the perspective of a short lifetime and were left behind as the group moved to another location.

KEYWORDS

Early Swifterbant, hunting camp, pottery, local production.

1. INTRODUCTION¹

Excavations at the Mesolithic to Early Neolithic site of Hoge Vaart-A27 in the Dutch Flevoland polders (fig. 1) delivered one of the earliest pottery assemblages from the Dutch coastal zone (Hogestijn & Peeters 2001; Peeters 2004; 2007). The site is located on a coversand ridge running along a low-lying, swampy area that was intersected by predecessors of the river Eem and tidal gullies. On the basis of a

large number of ¹⁴C dates,² stratigraphical and archaeological evidence, four phases of human occupation have been distinguished (for the most up-to-date phasing see Peeters 2007) dating to the Early, Middle and Late Atlantic (fig. 2). The phases 1 and 2 belong to the Mesolithic, the phases 3 and 4 to the Early Neolithic.



Figure 1 Geographical location of the site of Hoge Vaart-A27 (★ ; municipality of Almere, province of Flevoland, the Netherlands).

The pottery assemblage described in this paper belongs to phase 3. The phases 2 and 3 have rather

1. The paragraphs on pottery technology and morphology are based on the original excavation report on the Hoge Vaart pottery (Haanen & Hogestijn 2001). The other paragraphs are based on various reports in Hogestijn & Peeters (2001) and Peeters (2007).

2. All dates have been calibrated with Oxcal v3.10 (Bronk Ramsey 1995; 2001).

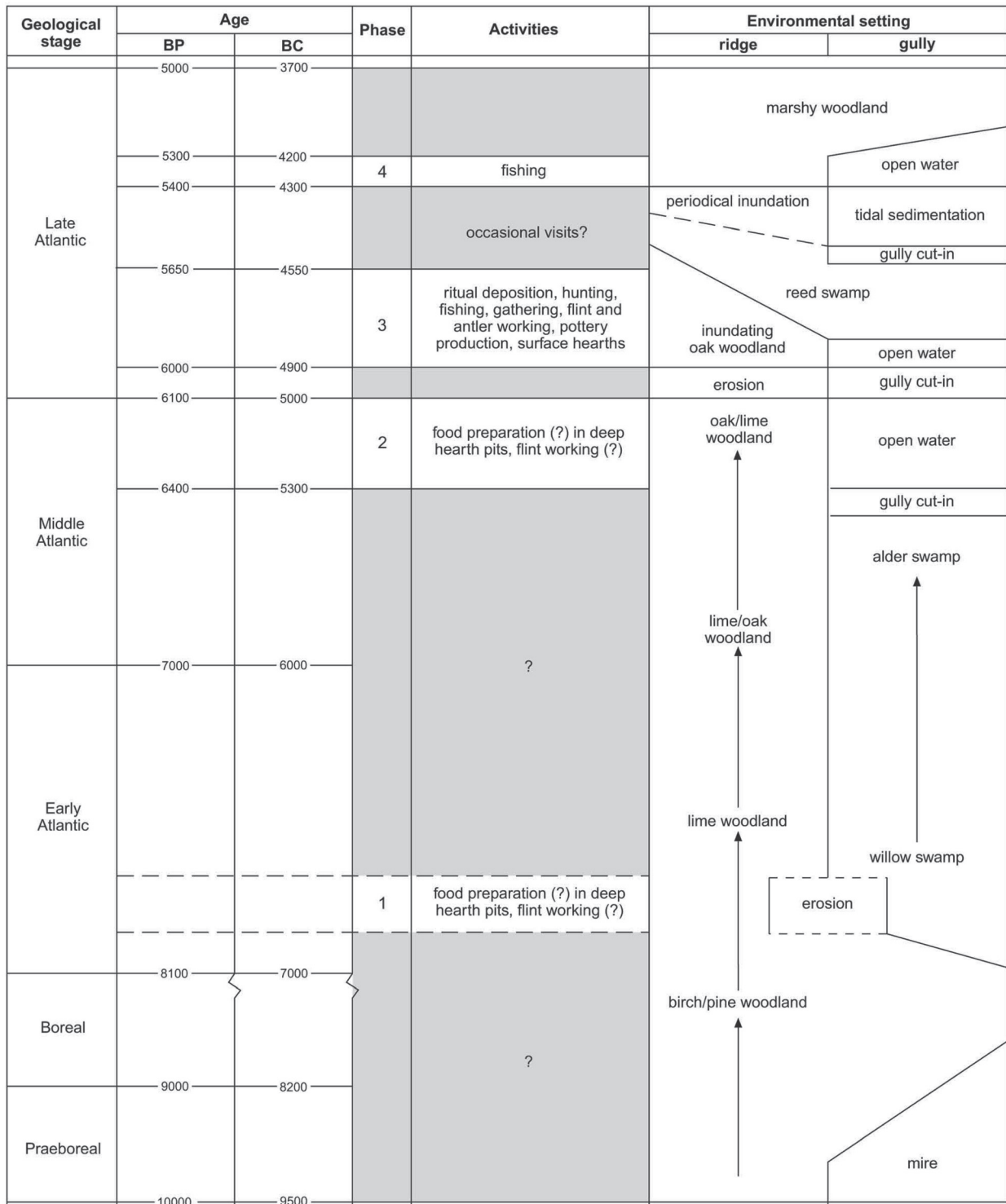


Figure 2 Chronological subdivision of archaeological phenomena in relation to local palaeoenvironmental developments at Hoge Vaart-A27 (from Peeters 2007).

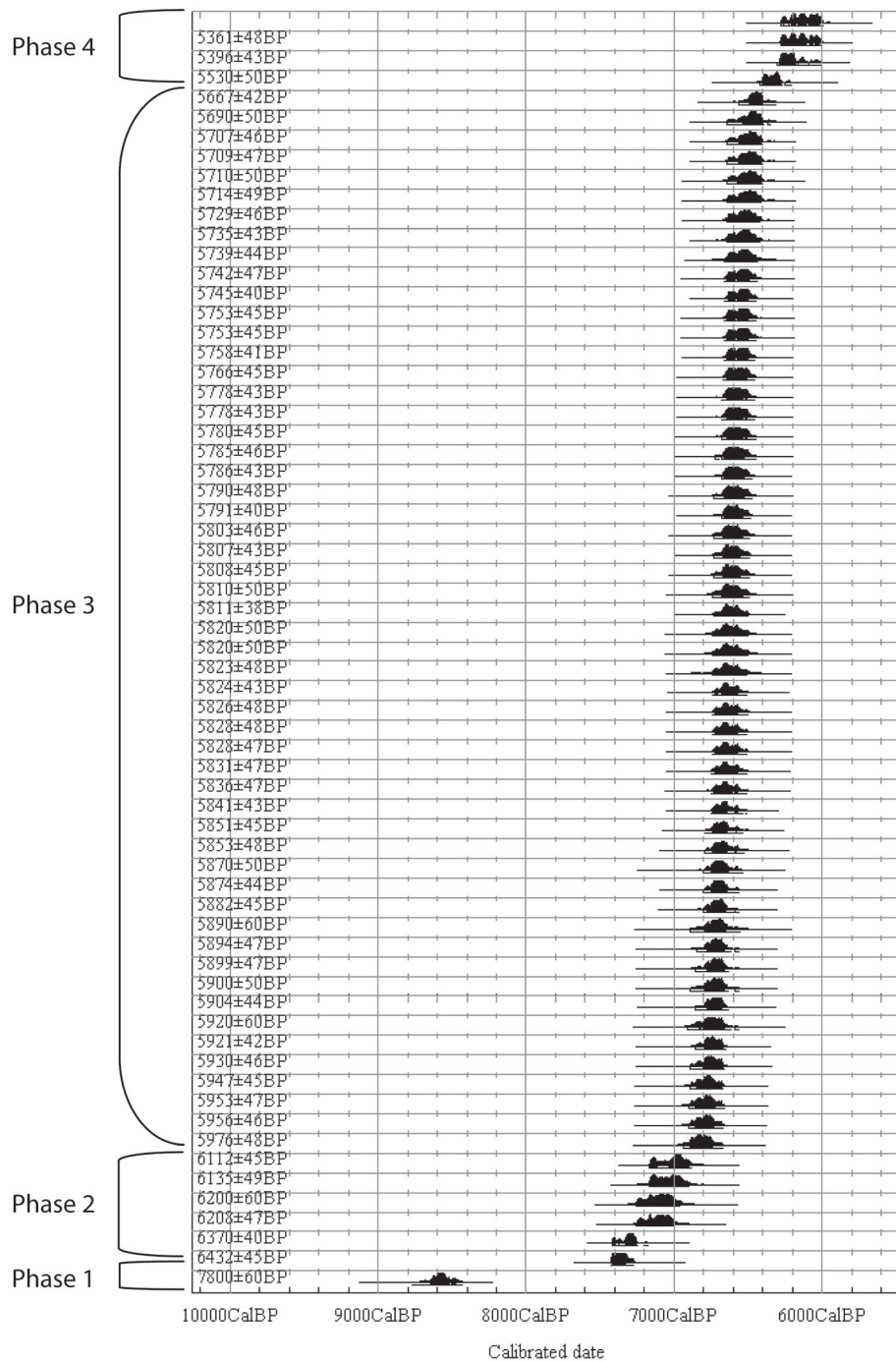


Figure 3 Calibration diagram (OxCAL v.3.10) of archaeological radiocarbon dates showing the (dis)continuity of occupation phases distinguished at Hoge Vaart-A27.

similar ¹⁴C dates (fig. 3), but can be distinguished on archaeological (deep pit hearths versus surface hearths) and stratigraphic grounds. The end of phase

2 is marked by an erosive event that cleared the phase 2 surface and truncated the soil profile. The subsequent phase 3 occupation occurred in a sedi-

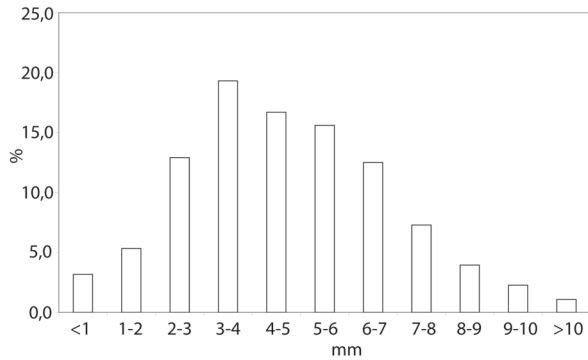


Figure 4 Relative frequency (total = 2666) of the maximum temper particle size.

mentary environment in which a chaotic unit was formed consisting of organic material and washed sand. By 5600/5500 BP (4500/4400 cal BC) the sand ridge completely disappeared below the water table (Peeters 2007; Spek *et al.* 2001).

Within the phase 3 unit, *c.* 34 kg of pottery (2012 sherds >1 cm²; 17,142 fragments <1 cm²) was found in close association with *c.* 120 surface hearths, large amounts of struck flint (blades, cores, flakes, trapeze arrowheads, scrapers, blade knives and a relatively small number of other tools) and other lithic materials, charred bone and hazelnut shells, charcoal and some other materials among which red ochre (Hogestijn & Peeters 2001; Peeters 2004; 2007). Most of the material was found in a 50 by 15 m wide strip on top of the sand ridge. In this zone, hundreds of stake holes (some containing wood, dated around 4600 cal BC) were recorded, but no structures could be identified. Uncharred bone (among which antler mattocks and bone tools) and larger flints and potsherds were found in the adjacent gully zone. Ritual depositions of flint objects were found on three locations in the surrounding peat zone (peat dated around 4700 cal BC).

2. POTTERY TECHNOLOGY

The early Swifterbant pottery of Hoge Vaart-A27 is built up from coils with an average height of *c.* 10 mm. The coils have been (weakly) fitted together by U-shaped joins, combined with NU- and ZU-shaped joins.³ A smaller number of N- and Z-shaped coils have been registered as well. It has not become clear whether or not there is a relationship between the type of join and its position in a pot due to severe

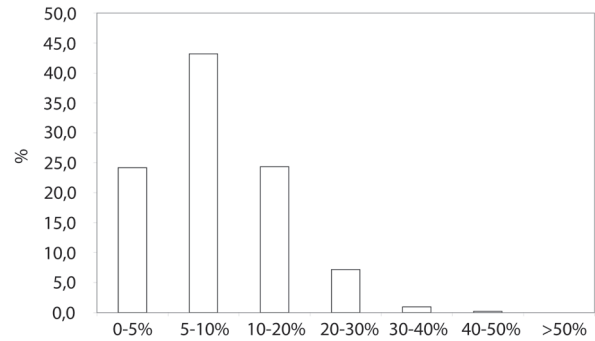


Figure 5 Relative frequency (total = 2667) of the percentage of temper.

fragmentation along coils and over joins. The building of pots was in a spiral up fashion. In some cases, small patches of clay were added at the inside of the pot at the bottom as to strengthen the joins, and at the outside of the pot to form a more accentuated point.

The fabric consists of clay, probably of local origin (Jansen & Peeters 2001), tempered with broken quartz (*c.* 70%) or granite (*c.* 27%). Quartz and granite temper are mutually exclusive. In a limited number of cases other constituents such as plant material, charred bone, grog or red ochre have been identified, but it is likely that these were incorporated accidentally. The dominance of quartz temper may be a result of differential decay, granite being more vulnerable to chemical weathering. Granite-tempered sherds may thus have desintegrated more rapidly. The maximum size of quartz and granite particles ranges from 1 to 10 mm, with a dominant range between 2 and 6 mm (fig. 4). The relative importance of smaller versus larger particles is variable (table 1), but the total amount of temper added is generally less than 20 vol% of the fabric (fig. 5).

The pottery surface is smooth (some sherds could be considered 'polished'), with little or no temper visible (fig. 6). The colour is predominantly grey, followed by buff and black tones. The relative quality is medium to crumbly. Fine pottery qualities are rare. The wall thickness varies between *c.* 5 to 12 mm, with a dominant range between 6 and 10 mm (fig. 7). It should be noted, however, that taphonomic pro-

3. In order to avoid confusion with the H-joins in Ertebølle pottery, the term U-join is used for a type of join that is called H-join in the Netherlands (Louwe Kooijmans 1980, fig. 10).



Figure 6 Photograph of sherds clearly showing that temper particles do not protrude the surface.

cesses may have led to differential preservation of the various qualities, *e.g.* the fine (thin-walled) qualities having been subject to severe fragmentation, for instance through trampling.

	N	%
predominance of small particles	495	18.6
predominance of large particles	937	35.3
homogeneous size distribution	1225	46.1
total	2657	100.0

Table 1 Relative importance of temper particle size (sizes not quantified).

3. POTTERY MORPHOLOGY, DECORATION & FUNCTION

Due to severe fragmentation no complete profiles of vessels could be reconstructed, despite the fact that dense concentrations of potsherds clearly belonging to a single pot were recorded in the field. As mentioned, most fractures followed the joins of coils, resulting in large amounts of elongated sherds. This hampered the reconstruction of vessel profiles by means of refitting. The general idea is, however, that all pots were S-shaped with round to pointed bottoms (fig. 8). True pointed bottoms are rare. Rim diameters of 70 recorded fragments vary between 10 and 35 cm. These values should however be considered with caution, since most fragments are rather small. The finer pottery generally has a slightly thinned rim with a round to somewhat flat finish.

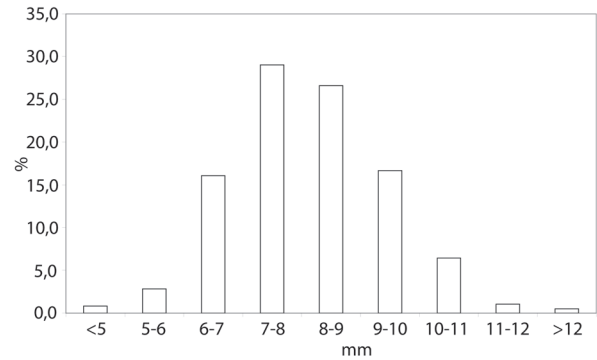


Figure 7 Relative frequency (total = 2178) of the wall thickness.

Coarser pots remain thick-walled at the rim, also with a round to flat finish.

Decoration is very rare and when occurring, very sparse. Decoration occurs mainly on top of the rim and involves simple incisions or imprints made with a pointed object. Nearly a third (N=23) of the 70 rim fragments are decorated as such. Only a single shoulder or body sherd displays decoration. This decoration consists of imprints made by means of a small, blunt or rounded object, probably the proximal extremity of a small bone (bird, small mammal?).

In total, 13 sherds with an unperforated knob have been registered. In one case it has been observed that it probably concerns a plugged knob. It is not very clear in which part of the pot these knobs were positioned, but the belly zone seems most probable. Finally, three perforated sherds were found. One perforation was made after firing, the other two prior to firing, when the clay was still weak. Again, it is not clear in which part of the pot these sherds should be positioned.

Due to severe fragmentation, there is no way of assigning a function to pots on the basis of morphological features. In 147 cases, 'charred food remains' have been documented on the inner wall, which suggests their use as cooking pots. However, chemical analyses are needed to confirm whether these residues actually are food remains. Another possibility is that pots were used as containers for other purposes, *e.g.* storage of wood tar. A limited number of sherds inspected with a binocular microscope, shows small cracks that are filled from the inside with a black, highly glossy, carbonaceous substance, rich in

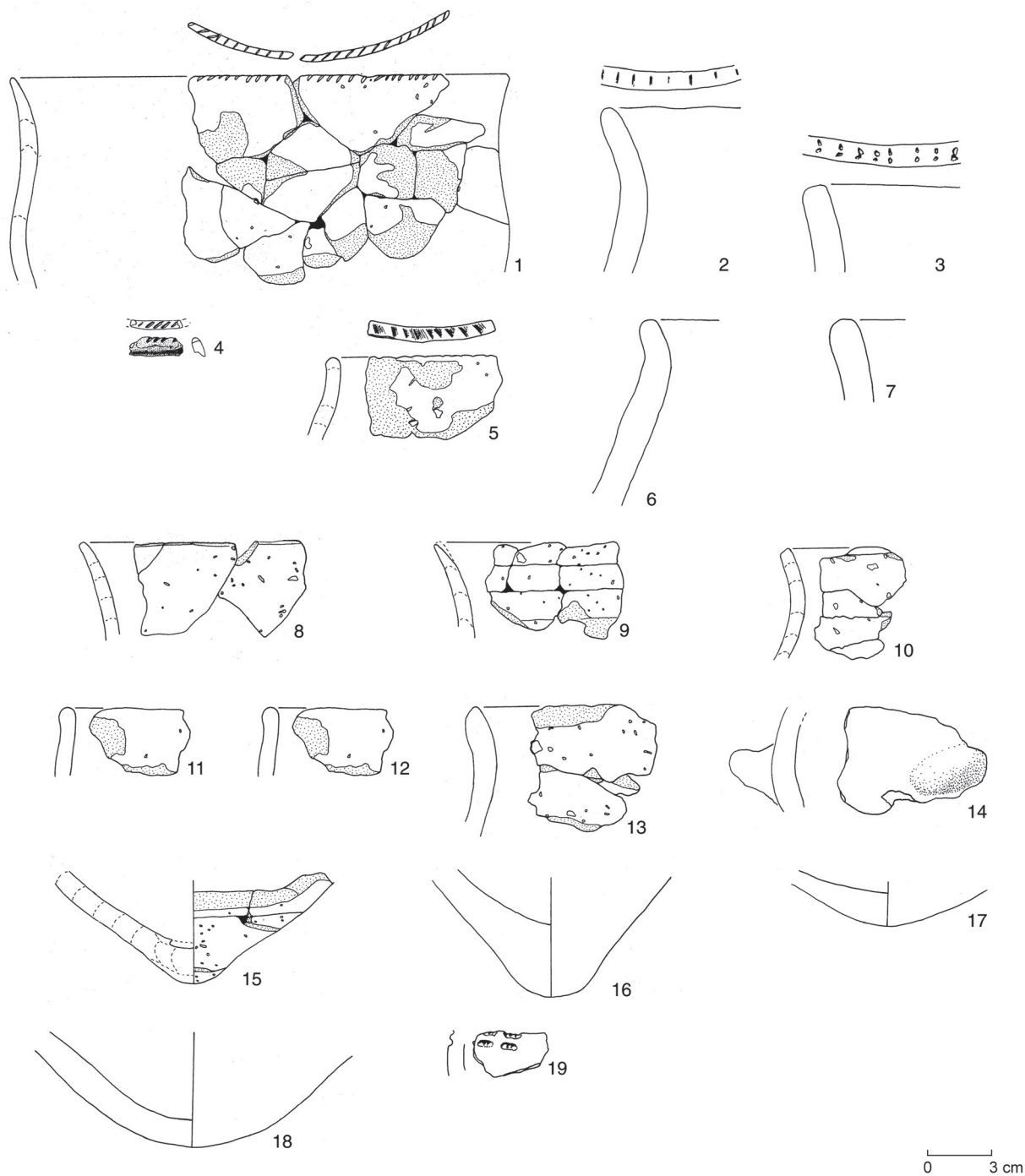


Figure 8 Hoge Vaart-A27 pottery. Decorated rim fragments (nos 1-5), undecorated rim fragments (nos. 6-13), body fragment with a knob (no. 14), pointed and rounded bottoms (nos. 15-18), body (?) fragment with decoration (no. 19). It should be noted that the 'decoration' on the rim of no. 5 is not necessarily intentional, e.g. may be the result of the production process in which mats (see fig. 10) may have served as a working floor. Scale 1:3.

graphite (Jansen & Peeters 2001, 45). It is possible that (some) pots were used for something other than cooking, but further analysis is required to substantiate this.

4. CHRONOLOGICAL, CULTURAL AND BEHAVIOURAL CONTEXT

The assemblage can be securely dated between 4939 and 4360 cal BC (at the 2σ error interval) on the basis of nine AMS dates on pottery (table 2) and a series of dates (N=42) on charcoal from the associated surface hearths. Since the pottery dates are obtained from charred food remains, it cannot be ruled out that these dates are somewhat too old due to a reservoir effect. On the basis of the $\delta^{13}\text{C}$ values of the dated samples (range -26.3 to -28.5) and in comparison to the $\delta^{13}\text{C}$ values of charred cereal grains (range -22.3 to -26.4; data from Raemaekers 2005, 14), this could indeed be the case. Additional measurements of $\delta^{13}\text{C}$ (range -25.1 to -27.5)⁴ and ^{15}N (range 2.4 to 15) values from Hoge Vaart-A27 samples also hint at reservoir effects (following Craig *et al.* 2007) but still remain inconclusive (pers. comm. Ph. Crombé). The AMS dates for pottery and charcoal from surface hearths (fig. 9) in any case overlap. This might be an argument to reject serious ageing of the pottery dates, but we have to consider the possibility of a ‘false set-off’ for the pottery dates compared to the surface hearth dates. The inundation date of the sand ridge, however, allows only for a limited reservoir effect. Furthermore, not all pottery dates would have to be affected by a reservoir effect. In view of these reservations, the range of dates obtained for the surface hearths can be considered as a secure age range for the pottery assemblage.⁵

4. Measurements by M. Van Strydonck (Royal Institute for Cultural Heritage, Brussels) and Ph. Crombé (Ghent University). It should be noted that the $\delta^{13}\text{C}$ values obtained by Van Strydonck and Crombé differ slightly (-0.2 to -1.6) from the values published by Peeters *et al.* (2001) and Peeters (2007) even though it concerns samples from the same potsherds.

5. In view of the possibility of establishing an independent start and end date (*i.e.* dated geological events) for phase 3, Bayesian statistics may provide a means to narrow down the age range. This will be conducted at a later moment.

Lab. nr.	Date BP	$\delta^{13}\text{C}$
UtC-5715	5778 ± 43	-26.8
UtC-4630	5882 ± 45	-27.5
UtC-4631	5894 ± 47	-27.4
UtC-4627	5900 ± 50	-26.3
UtC-4629	5920 ± 60	-26.9
UtC-4628	5930 ± 46	-27.8
UtC-5718	5947 ± 45	-26.7
UtC-5717	5953 ± 47	-26.9
UtC-5716	5956 ± 46	-28.5

Table 2 AMS dates on soot from potsherds.

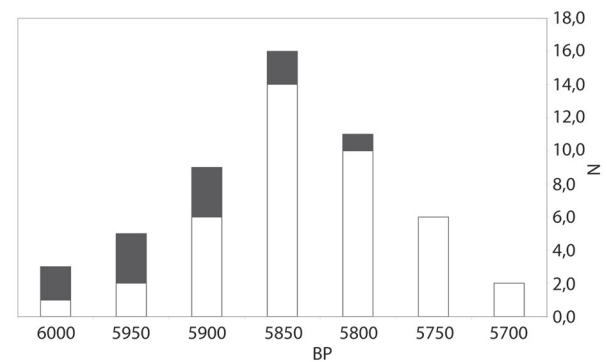


Figure 9 Absolute frequency of surface hearth dates (open bars) and pottery dates (black bars) in intervals of 50 radiocarbon years. The dates represent uncalibrated BP ages without error ranges.

In view of the technological and morphological characteristics of the pottery, the assemblage has been assigned to the Swifterbant culture. Together with the pottery from Hardinxveld-Giessendam *Polderweg* and *De Bruin* (Louwe Kooijmans 2001a, b) and Bronneger (Kroezenga *et al.* 1991), the Hoge Vaart-A27 assemblage represents the earliest phase of this culture. This being said, it should however be kept in mind that the ‘identification’ of the Swifterbant culture directly depends on the presence of pottery, other materials (*e.g.* flint, bone tools) not being distinctive enough compared to what would be called ‘Late Mesolithic’ assemblages (Peeters 2007). At present there is a consensus for the start date of the Swifterbant culture at *c.* 5000 cal BC. The earliest Swifterbant pottery shares no features, which may reveal influences from other pottery producing groups, such as LBK, Blicquy or La Hoguette. Thus, the appearance of pottery in the coastal zone may be conceived as the result of an autonomous process.

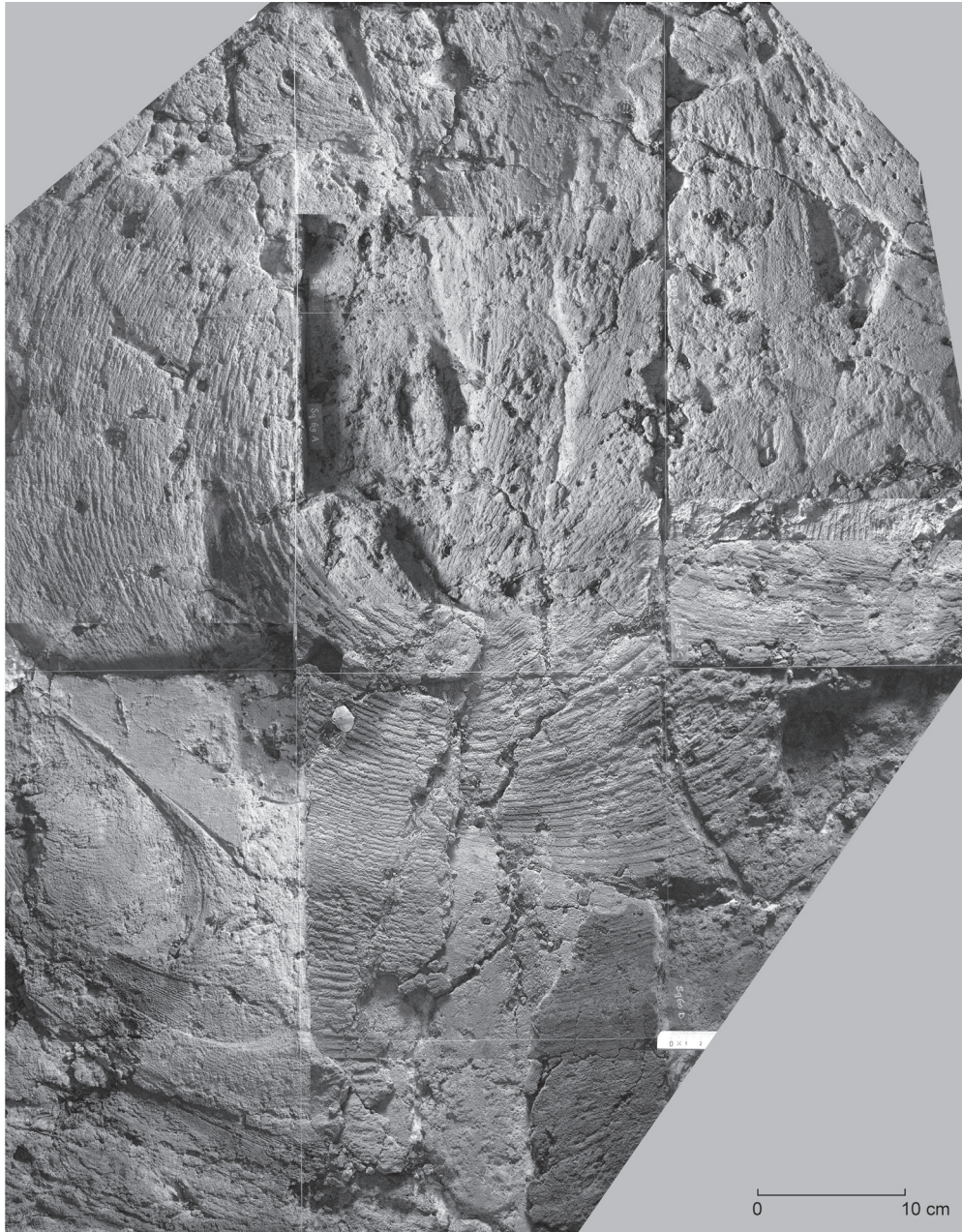


Figure 10 Imprints of basketry (mats) discovered inside a pit. At least four distinct levels with imprints have been recognised. Scale 1:5. Photo L. Klimby.

An interesting feature of Hoge Vaart-A27 is the evidence for on-the-spot production of pottery. Within the main find concentration on top of the sand ridge, a large slab of unfired clay mixed with broken white quartz (temper) was found, as well as some lumps of untempered clay within a few metres distance from this slab. Underneath, a pit appeared to be

present in which imprints of basketry (mats) were found, at least at four levels (fig. 10). At some places charred remains of plant fibres could be identified (Hamburg *et al.* 2001). It is thought that the very details of the basketry had remained visible in the sandy matrix, due to coverage of the fibres with a skin of clay. The association of these phenomena (lumps of

clay, unfired but tempered clay, pit with mats) provides evidence for local pottery production (Peeters & Hogestijn 2001).

The flint tool assemblage, as well as the spatial patterning of materials in relation to structural features, strongly suggest that the activities which led to the formation of the phase 3 palimpsest were centred around hunting (*i.e.* production/maintenance of hunting gear and processing of fresh hides) (Peeters 2004; 2007). From a 'traditional' perspective, the dominance of hunting-related tool types and spatial layout of the 'camp floor' would lead to an interpretation as a specialised hunting camp.

Such camps are not readily associated with pottery. Yet, there is pottery at Hoge Vaart-A27 and as argued above (at least partly) locally made. From the spatial distribution of sherds and field observations (fig. 11), it became apparent that several pots had collapsed on the spot. This suggests that the pots were in fact produced in the perspective of a short life time: these were left behind as the group moved to another location, and subsequently fell apart, *e.g.* due to weathering (the weak joins of the coils will certainly have added to the fracturing of these pots). With no evidence for crop cultivation and domestic livestock, it is argued that there is no reason whatsoever to disassociate pottery use with hunter-gatherer ways of life, or inversely to assume a causal relationship between pottery and agricultural and less mobile ways of life.

5. REFERENCES

- Bronk Ramsey, C. 1995. Radiocarbon calibration and analysis of stratigraphy: The OxCal program, *Radiocarbon* 37, 425-430.
- Bronk Ramsey, C. 2001. Development of the radiocarbon calibration program OxCal, *Radiocarbon* 43, 355-363.
- Craig, O.E., M. Foster, S.H. Andersen, E. Koch, Ph. Crombé, N.J. Milner, B. Stern, G.N. Bailey & C.P. Heron 2007. Molecular and isotopic demonstration of the processing of aquatic products in northern European prehistoric pottery, *Archaeometry* 49, 135-152.
- Haanen, P. & J.W.H. Hogestijn 2001. Aardewerk: morfologische en technologische aspecten. In: J.W. H. Hogestijn & J.H.M. Peeters (eds), Deel 17.
- Hamburg, T., C. Kruijshaar, J. Nientker, J.H.M. Peeters & A. Rast-Eicher 2001. Grondsporen: antropogene
- sporen en structuren. In: J.W.H. Hogestijn & J.H.M. Peeters (eds), Deel 13.
- Hogestijn, J.W.H., & J.H.M. Peeters (eds) 2001. *De mesolithische en vroeg-neolithische vindplaats Hoge Vaart-A27 (Flevoland)*, Amersfoort (Rapportage Archeologische Monumentenzorg 79).
- Jansen, J.B.H. & J.H.M. Peeters 2001. Geochemische aspecten: verkenningen in enkele toepassingsmogelijkheden. In: J.W.H. Hogestijn & J.H.M. Peeters (eds), Deel 6.
- Kroezenga, P., J.N. Lanting, R.J. Kusters, W. Prummel & J.P. de Roever 1991. Vondsten van de Swifterbantcultuur uit het Voorste Diep bij Bronneger (Dr.), *Paleo-Aktueel* 2, 32-36.
- Louwe Kooijmans, L.P. (ed.) 2001a. *Hardinxveld-Polderweg. Een mesolithisch jachtkamp in het rivierengebied (5500-5000 v.Chr.)*, Amersfoort (Rapportage Archeologische Monumentenzorg 83).
- Louwe Kooijmans, L.P. (ed.) 2001b. *Hardinxveld-Giesendam de Bruin. Een kampplaats uit het laat-mesolithicum en het begin van de Swifterbantcultuur (5500-4450 v.Chr.)*, Amersfoort (Rapportage Archeologische Monumentenzorg 88).
- Peeters, H. 2004. The Mesolithic to Early Neolithic occupation at the Hoge Vaart (Almere, the Netherlands): forager land-use dynamics in the context of a drowning landscape. In: P. Crombé & P.M. Vermeersch (eds), *The Mesolithic (Acts of the 14th*

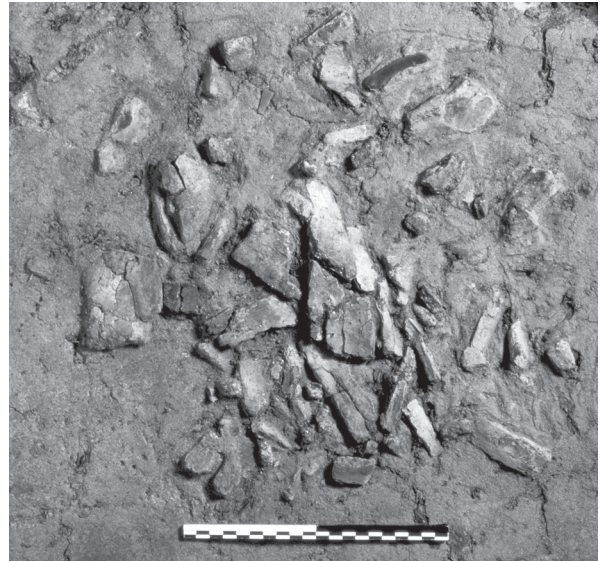


Figure 11 Concentrations of sherds belonging to a single vessel were found during the excavation. This suggests that (large parts of) pots collapsed on the spot. Scale bar in 1 cm units.

- UISPP Congress, University of Liège, Belgium, 2-8 September 2001*), Oxford (BAR International Series 1302), 27-38.
- Peeters, J.H.M. 2007. *Hoge Vaart-A27 in context. Towards a model of Mesolithic-Neolithic land use dynamics as a framework for archaeological heritage management*, PhD thesis Amsterdam, Amersfoort.
- Peeters, J.H.M. & J.W.H. Hogestijn 2001. Op de grens van land en water: jagers-vissers-verzamelaars in een verdrinkend landschap. In: J.W.H. Hogestijn & J.H.M. Peeters (eds), Deel 20.
- Peeters, J.H.M., E. Hanraets, J.W.H. Hogestijn & E. Jansma 2001. Dateringen: ¹⁴C-analyse en dendro-chronologie. In: J.W.H. Hogestijn & J.H.M. Peeters (eds), Deel 12.
- Raemaekers, D.C.M. 2005. An outline of Late Swifterbant pottery in the Noordoostpolder (province of Flevoland, the Netherlands) and the chronological development of the pottery of the Swifterbant Culture, *Palaeohistoria* 45-46, 11-36.
- Spek, Th., E.B.A. Bisdom & D.G. van Smeerdijk 2001. Bodemkunde en landschapsecologie II: aanvullend onderzoek naar landschapsvormende processen. In: J.W.H. Hogestijn & J.H.M. Peeters (eds), Deel 8.

Swifterbant pottery from the Lower Scheldt Basin (NW Belgium)

Philippe Crombé

ABSTRACT

Recent discovery of hunter-gatherer pottery in the Lower Scheldt Basin has led to a southern expansion of the territory of the Swifterbant Culture. Despite minor technological (temper), morphological (bowl-shaped vessels) and decorative differences (rim perforations), the Scheldt Basin pottery closely resembles Early Swifterbant pottery dated in the Netherlands to the first half of the 5th millennium cal BC. This typological dating, however, is not confirmed by absolute dates obtained on different organic samples from the Belgian Swifterbant sites, which rather point to a date in the second half of the 5th millennium cal BC.

KEYWORDS

Scheldt basin, Swifterbant Culture, radiocarbon dates, food crusts, reservoir effect.

1. INTRODUCTION

The discovery of the first Swifterbant pottery in Belgium is of relatively recent date. A first site yielding prehistoric pottery fragments in association with a Late Mesolithic lithic industry was found at Melsele *Hof ten Damme* in the 1980s (van Berg *et al.* 1992). These finds were, however, at that time not yet identified as belonging to the Swifterbant tradition. It is not until the discovery of three sealed sites (sector B, J/L and M) during the construction of the *Deurganck* harbour dock at Doel nearby Antwerp that the presence of the Swifterbant culture in Belgium was confirmed (Crombé 2005; Crombé *et al.* 2002; Sergeant *et al.* 2006).

All four sites are situated in the floodplain of the Scheldt, in the Lower Scheldt Basin close to the Dutch border. Geographically they link up with a

cluster of Swifterbant sites in the prehistoric Rhine-Meuse-Scheldt delta of the western Netherlands (Raemaekers 1999). All four are situated on relatively small coversand dunes covered by peat and alluvial clay. This covering generally started in the 5th millennium cal BC as a result of a gradual rise of the sea-level and continued until post-medieval times. At the time of the Swifterbant occupation these sand dunes were already reduced to small sandy islands within an overall wet environment consisting of swamps and creeks with a lot of stagnant water.

Compared to the site of Melsele *Hof ten Damme*, the sites of Doel *Deurganckdok* seem to be much more homogeneous, probably representing the remains of single-phased occupations. The pottery found on these sites is very uniform in terms of technique, morphology and decoration. So far the pottery of one of these sites – Doel *Deurganckdok-sector B* – was the subject of a first morpho-technological analysis (De Saeger 2003), the results of which will be briefly presented in this paper. This sector yielded 679 potsherds larger than 1 cm², among which 88.8% body, 6.6% rim, 5.3% shoulder, 4.8% neck and 0.9% base fragments.

2. THE POTTERY OF DOEL DEURGANCKDOK-SECTOR B

2.1 Pottery technology

Technically this pottery is very homogeneous. Most sherds are fired under a reduced atmosphere followed at the end of the firing process by an oxidized firing. This process resulted in the formation of a predominantly (light) brownish outer (97%) and inner surface (85%), and a dark grey to black core. Compared to potsherds from younger prehistoric phases found in similar stratigraphic positions – *e.g.* the Michelsberg pottery excavated in sector C of the *Deur-*

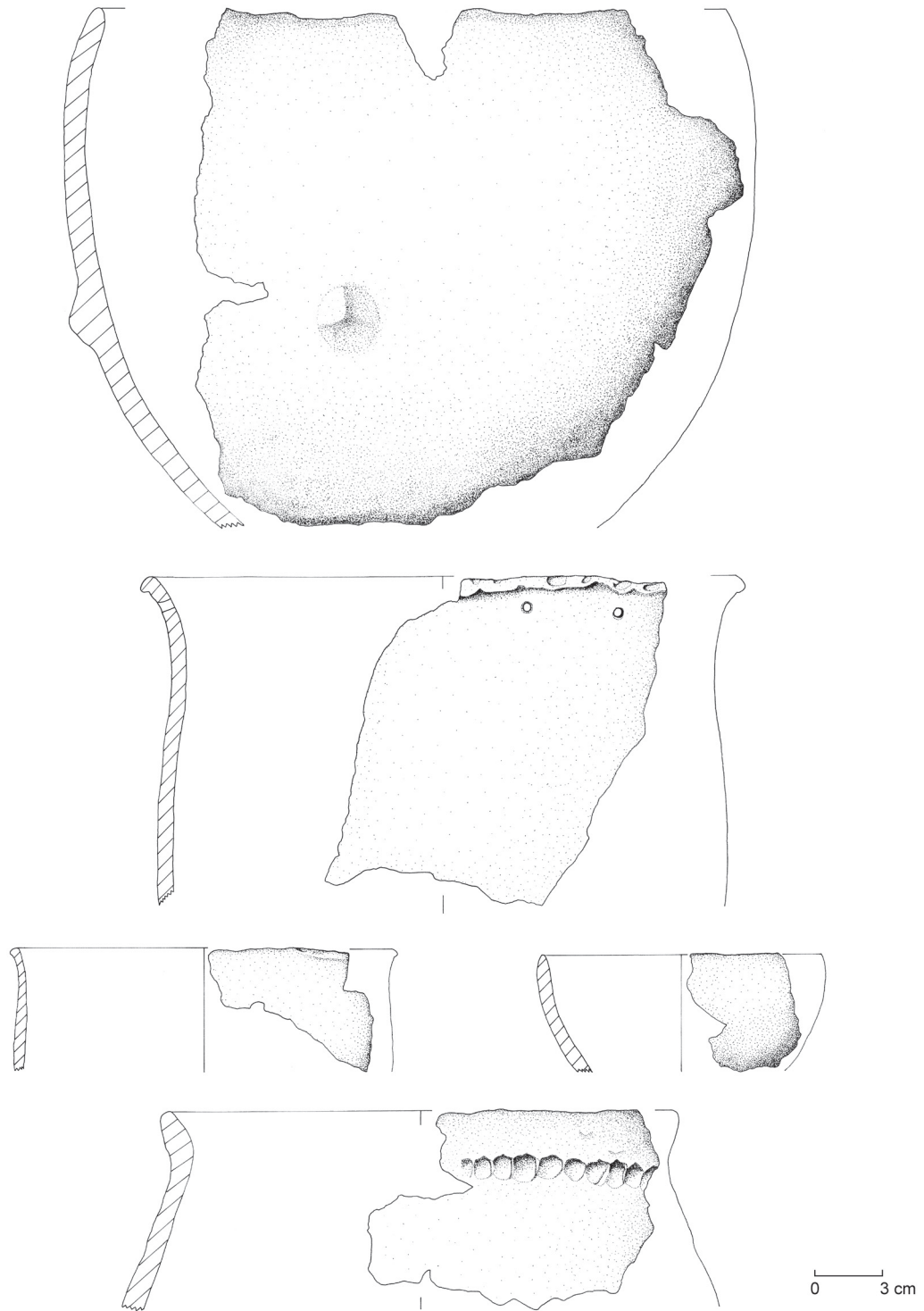


Figure 1 Swifterbant pottery from Doel *Deurganckdok*-sector B. Scale 1:3.

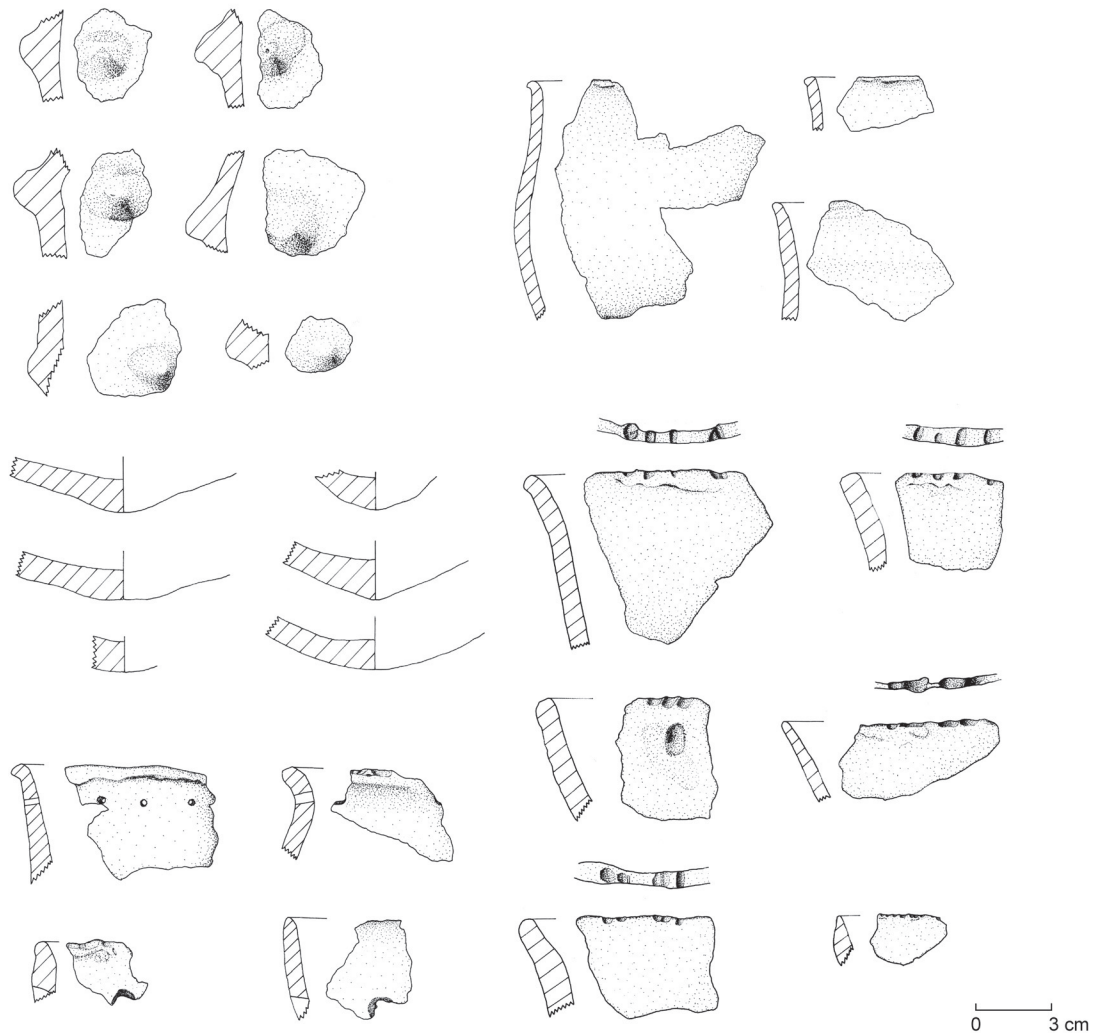


Figure 2 Swifterbant pottery from Doel *Deurganckdok*-sector B. Scale 1:3.

ganckdok (Crombé *et al.* 2002) – the pottery of sector B is well-fired and of a much better quality. Most surfaces are uneven to slightly smoothed, sometimes (c. 8%) displaying traces of brush marks (*Besentrich*) on the inner and/or outer side. The main tempers are grog (crushed pottery or *chamotte*; c. 90%) and plant material (c. 60%); both tempers are present in combination in almost 50% of all potsherds. Other tempers, such as flint or quartz fragments, only rarely occur, respectively in 1 and 11 potsherds. Based on these very low frequencies it can be assumed that these are accidental inclusions. The predominance of N and Z joins indicates the use of the coiling technique with overlapping coils.

2.2 Pottery morphology and decoration

Although refitting is still ongoing, some pot profiles could already be reconstructed partly (figs 1 & 2). Most common are weakly S-shaped vessels with a slightly outward bending or almost vertical rim combined with a round to conical bottom. The vessels are generally between 20 and 26 cm in diameter although smaller examples also occur. Bowl-shaped vessels are also present but in restricted number. One of these is a large bowl with a diameter of c. 28 cm and height of c. 24 cm. With an average sherd thickness of 8.47 mm, this pottery can be classified as

‘coarse ware’. Almost 80% of all sherds have a thickness between 6 and 10 mm; only 5% is thinner.

With hardly 7% of ‘decorated’ potsherds, this pottery can be classified as largely undecorated, in the same sense as Neolithic ‘undecorated pottery’. The principal decoration techniques consist of spatula impressions (c. 43%) followed by applied knobs (c. 30%) and perforations (c. 16%). Fingertip and fingernail impressions as well as perforated knobs or lugs occur only incidentally (c. 11%). Most decoration is situated on the top of the rim (so-called *Randkerbung*, mainly with a spatula) or just below it (mainly perforations). Body decoration only occurs on 3% of all wall fragments and mainly consists of imperforated knobs applied generally at the level of the largest diameter. The latter are generally circular.

2.3 Contextualisation

The pottery from Doel *Deurganckdok-sector B* presents the principal characteristics of the pottery of the Swifterbant culture, as known from several wetland sites in the Netherlands (cf. Louwe Kooijmans, this volume; Raemaekers & De Roever, this volume). The closest parallels are to be found within the Early Swifterbant pottery from the first half of the 5th millennium cal BC, as excavated at Hardinxveld-Giesendam *De Bruin* (Louwe Kooijmans 2001b), *Polderweg* (Louwe Kooijmans 2001a) and *Almere Hoge Vaart* (Hogestijn & Peeters 2001). Except for some minor differences, e.g. in tempering (plant and grit temper more important in Dutch pottery) and decoration (perforations less frequent in Dutch pottery), the Doel pottery is very similar.

On the other hand, the differences with pottery from the Middle Swifterbant phase, dated in the Netherlands to the last quarter of the 5th millennium cal BC, are more numerous and apparent. The Swifterbant pottery from sites in the Dutch Rhine/Meuse area, such as Brandwijk and Hazendonk phase 1 and 2 (Raemaekers 1999), differs mainly by the higher incidence of body decoration and more pronounced vessel profiles, as well as by the scarcity of knob and rim top decoration. Also the rarity of grog temper in the Dutch Swifterbant pottery is an important difference. Late 5th millennium Swifterbant pottery is mainly tempered with organic material and grit.

In conclusion, techno-typological features refer to an age in the 1st half of the 5th millennium cal BC for

the Swifterbant pottery of Doel *Deurganckdok-sector B*. This however is not entirely confirmed by the absolute dates. At the time of writing 11 dates are available for sector B (and another 2 for sector J/L) but the dating project is still ongoing (Crombé *et al.* in press; Boudin *et al.* in press). Direct dates were obtained on samples of food crusts preserved on the inner surface of numerous potsherds (c. 19%), while indirect dates were obtained from samples of carbonised hazelnut shells, burnt bones, charcoal and burnt seeds originating from presumed surface-hearths (Van Strydonck & Crombé 2005). The results indicate an important incompatibility between the food crust dates and the other dates, the former clustering in the first half (or even first quarter) of the 5th millennium cal BC, while the latter all date back to the second half of the same millennium (starting from around 4550 cal BC at its earliest). This discrepancy is currently explained by a possible reservoir effect in the food crust dates caused by the processing of (freshwater) fish in the Swifterbant pottery of Doel. In at least 5 food crusts ω -(o-alkylphenyl)alkanoic acid of C20:3 PUFA, a good indicator for aquatic fish oils, has been detected by gas chromatography mass spectrometry (Crombé *et al.* in press). Hence for the time being and awaiting further results the Swifterbant pottery of Doel *Deurganckdok-sector B* is dated to the second half of the 5th millennium cal BC on the basis of the radiocarbon dates obtained on carbonised plant remains.

3. REFERENCES

- Berg, P.L. van, L. Keeley, J.-P. Van Roeyen & R. Van Hove 1992. Le gisement mésolithique de Melsele (Flandre-Orientale, Belgique) et le subnéolithique en Europe occidentale. In: Ch.-T. Le Roux (ed.), *Paysans et bâtisseurs; l'émergence du Néolithique atlantique et les origines du mégalithisme, Actes du 17ème Colloque interrégional sur le Néolithique, Vannes, 28-31 octobre 1990*, (Revue Archéologique de l'Ouest. Supplément 5), 93-99.
- Boudin, M., M. Van Strydonck & Ph. Crombé in press. radiocarbon dating of pottery food crusts: reservoir effect or not? The case of the Swifterbant pottery from Doel ‘Deurganckdok’. In: Ph. Crombé, M. Van Strydonck, J. Sergeant, M. Bats & M. Boudin (eds), *Proceedings of the international congress ‘Chronology and Evolution in the Mesolithic of NW Europe’, Brussels, May 30 till June 1 2007*, Cambridge.

- Crombé, Ph. (ed.) 2005. *The last hunter-gatherer-fishermen in Sandy Flanders (NW Belgium); the Verrebroek and Doel excavation projects, Part 1: palaeo-environment, chronology and features*, Ghent (Archaeological Reports Ghent University 3).
- Crombé, Ph., Y. Perdaen, J. Sergeant, J.-P. Van Roeyen & M. Van Strydonck 2002. The Mesolithic-Neolithic transition in the sandy lowlands of Belgium: new evidence, *Antiquity* 76, 699-706.
- Crombé, Ph., M. Boudin & M. Van Strydonck in press. Swifterbant pottery in the Scheldt basin and the emergence of the earliest indigenous pottery in the sandy lowlands of Belgium. In: C. von Carnap-Bornheim, S. Hartz, F. Lüth & Th. Terberger (eds), *The earliest pottery in the Baltic. Dating, origin and social context (proceedings of the international workshop, Schleswig 20-21 October 2006)*, Mainz (Berichte der Römisch-Germanische Kommission).
- Hogestijn, J.W.H. & J.H.M. Peeters (eds) 2001. *De mesolithische en vroeg-neolithische vindplaats Hoge Vaart-A27 (Flevoland)*, Amersfoort (Rapportage Archeologische Monumentenzorg 79).
- Louwe Kooijmans, L.P. (ed.) 2001a. *Hardinxveld-Giesendam Polderweg. Een mesolithisch jachtkamp in het rivierengebied (5500-5000 v.Chr.)*, Amersfoort (Rapportage Archeologische Monumentenzorg 83).
- Louwe Kooijmans, L.P. (ed.) 2001b. *Hardinxveld-Giesendam De Bruin. Een kampplaats uit het laat-mesolithicum en het begin van de Swifterbant-cultuur (5500-4450 v.Chr.)*, Amersfoort (Rapportage Archeologische Monumentenzorg 88).
- Raemaekers, D.C.M. 1999. *The articulation of a 'New Neolithic'. The meaning of the Swifterbant culture for the process of neolithisation in the western part of the North European Plain (4900-3400 BC)*, PhD thesis Leiden (Archaeological Studies Leiden University 3).
- Saeger, J. De 2003. *Analyse van het Swifterbant-aardewerk van de site Doel-Deurganckdok in het kader van de neolithisatie in België en de contacten tussen laat-mesolithische en vroeg-neolithische groepen*, unpublished Master's thesis, Ghent University.
- Sergeant, J., Ph. Crombé & Y. Perdaen 2006. The sites of Doel 'Deurganckdok' and the Mesolithic/Neolithic transition in the sandy lowlands of Belgium. In: J. Guilaine & P.-L. van Berg (eds), *The Neolithisation process, Acts of the XIVth UISPP Congress, University of Liège, Belgium, 2-8 September, 2001, Symposium 9.2*, Oxford (British Archaeological Reports, International Series 1520), 53-60 .
- Strydonck, M. Van & Ph. Crombé 2005. Features: radiocarbon dating. In: Ph. Crombé (ed.), *The last hunter-gatherer-fishermen in Sandy Flanders (NW Belgium); the Verrebroek and Doel excavation projects, Part 1: palaeo-environment, chronology and features*, Ghent (Archaeological Reports Ghent University 3), 180-212.

The first pottery in South Scandinavia

Søren H. Andersen

ABSTRACT

Based on a description of the Ertebølle culture pottery technology and morphological aspects, this paper reflects on the origin and disappearing of the first pottery in South Scandinavia. It appears to enter Denmark as the mature endproduct of a long-lived morphological and technological pottery tradition. It was integrated in a purely Mesolithic economy and society with no other than a domestic use. The prevailing differences with Swifterbant pottery contradict the Swifterbant pottery tradition to be at the base of the Ertebølle culture pottery, as has been claimed in the past. Rather, Ertebølle pottery seems to have been imported from east to south-eastern direction, following the linear, social network of the Ertebølle culture along the coastlines and larger rivers in the south-western Baltic area.

Ertebølle culture pottery disappears suddenly around 4000 cal BC. Contrary to earlier ideas, the technological characteristics of Early Funnel Beaker pottery suggests a continuity in pottery tradition and thus a local and fast typological transformation during a short time span around c. 4000 cal BC. From this moment onwards pottery also seems to have obtained a ritual purpose next to its domestic use.

KEYWORDS

Ertebølle culture, point-based vessels, lamps, origin, domestic and ritual use.

1. INTRODUCTION¹

The oldest ceramic technology in south-western Scandinavia appears in the Late Mesolithic Ertebølle

culture (EBK, c. 5400-4000 cal BC) around the south-western part of the Baltic Sea. This culture is mostly known for its large coastal settlement sites with thick shell accumulations, *køkkenmøddinger* (Andersen 2000), but is also well documented from coastal sites without shell accumulations and inland sites, e.g. Ringkloster (Andersen 1973-'74; 1994-'95).

The Ertebølle culture is the best-known and researched Mesolithic period in northern Europe, partly because it was already recognised in the 1840s and partly because of the excellent preservation conditions for organic materials on these settlements. This preservation has, from the very beginning, promoted a tradition of close and fruitful cross-disciplinary research between archaeology and the natural sciences in conjunction with the investigations of these sites.

The Ertebølle subsistence pattern reflects a highly specialised hunting, fishing and gathering economy, and especially the marine component has been of the outmost importance; the only domesticated animal associated with EBK sites is the dog.

A characteristic aspect of this period is the appearance of a series of new artefact types and technological innovations reflecting close contacts between southern Scandinavia and the contemporary, agrarian cultures to the south.

Among these innovations the most important is the pottery, which appears suddenly and without any local prototypes at the beginning of the middle phase (c. 4800-4300 cal BC) of the Ertebølle culture. In the archaeological record pottery is of special importance, firstly as a new cultural aspect, secondly because it indicates change(s) in food preparation, and finally, as it has no local origin. Its first appearance is an indication of contacts between southern Scandinavia and regions outside this area.

1. English revision: Ken Ritchie. 8270 Højbjerg. Denmark.



Figure 1 The distribution of point-based pottery (shaded) and lamps (dots). Point-based vessels as well as lamps are found both on coastal and inland settlements. Small dots mark one lamp and the large dots two or more finds. The lamps have a clear south-south-eastern distribution in Denmark.

2. WHEN DO WE HAVE THE OLDEST POTTERY IN DENMARK?

The appearance of the first pottery is restricted to the EBK culture area alone and seems to be contemporaneous within the whole EBK region (c. 350 x 400 km E-W, N-S). In Norway and Sweden there is no pottery in contemporary cultures outside the Ertebølle network (fig. 1). Stratigraphic investigations as well as ^{14}C dates on charcoal, shells and bone from different sites in western Denmark (mainly, but not exclusively shell middens) all indicate that the earliest pottery appears c. 4700-4600 cal BC in these regions, both on inland and coastal settlements, *i.e.* the Middle Ertebølle period (fig. 2).

However, it should be stressed that all dates of the oldest EBK pottery are exclusively from the western part of Denmark (Jutland) and Schleswig-Holstein, while we still do not have any absolute dates for the first EBK pottery from Zealand and south Sweden. A fact which is problematic because the majority of previous statements concerning Ertebølle pottery all were based on studies of pottery from Zealand (Troels-Smith 1953; Nielsen 1986; Fischer 2002, 350) and therefore makes inter-Scandinavian / northern German comparisons difficult. The introduction of ceramic technology seems to be contemporaneous

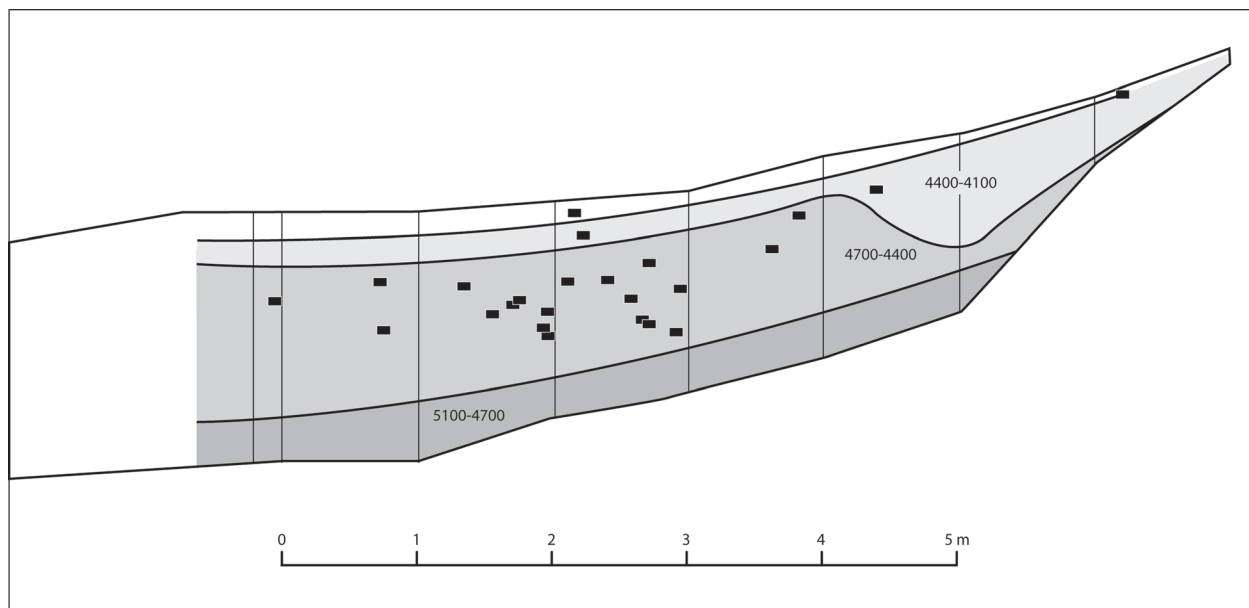


Figure 2 Vertical distribution of EBK sherds (black squares) in a one metre thick east-west section through the Ertebølle køkkenmødding (*locus classicus*). The datings of the levels are given in ^{14}C cal BC. L. Hilmar del.



Figure 3 Examples of EBK point-based vessels and lamps. a, d: scale 1:4; b, c: scale 1:3. Photo: Moesgård Museum.

in western Denmark and northern Germany, and the knowledge was dispersed swiftly.

When the earliest pottery appears in Denmark, it is as a mature end-product of a long-lived morphological and technological pottery tradition from outside this area. The pottery from the Ertebølle culture comprises only two morphological types: point-based vessels and oval bowls or lamps (fig. 3).

3. THE POINT-BASED VESSELS

The point-based vessels (fig. 3) are known from Denmark and southern Scandinavia on all types of settlement sites belonging to the middle and younger

phase of the EBK, but the number of vessels/sherds is variable with regards to type of site. Settlements in western Denmark for instance seem richer in pottery than contemporary sites in eastern Denmark and southern Sweden.

Because of the coarse structure and moderate burning, the EBK sherds are generally small (less than 5 x 5 cm) and badly preserved. Therefore the number of complete pots is – even today – only c. 12-15 pieces (fig. 4).

On the individual settlement sites pottery is not uniformly distributed in the deposits; they are found scattered on the old settlement surfaces, frequently – but not always – in association with the hearths and



Figure 4 The occurrence of whole, point-based EBK pottery in Denmark. L.Hilmar del.

also in the 'discard zone' in the prehistoric lake or sea deposits adjacent to the sites.

Generally, the number of sherds in the kitchen middens is not very high, only *c.* 1 to 6 pieces per m^2 , and also the number of point-based vessels is low. In the large Ertebølle shell midden (*locus classicus*) with an occupation period of *c.* 1100 ^{14}C years (Andersen & Johansen 1986, 50-51, figs. 16, 17a-b) the number of EBK vessels could for example be estimated at only 40 pieces.

3.1 Construction

The construction of the pot starts from a lump of clay (the point), which is pressed into a cone, onto which clay coils are laid in rings (Nielsen 1986, 109-111). Each ring is pressed onto the underlying one. Such a technique most probably reflects an origin in basketry, where a similar procedure is used in coiled basketwork. The vessels have been built up in four different ways, which are named: H-, U- 'oblique U-' and N-technique (fig. 5; Andersen 1973-'74, 57-58). The

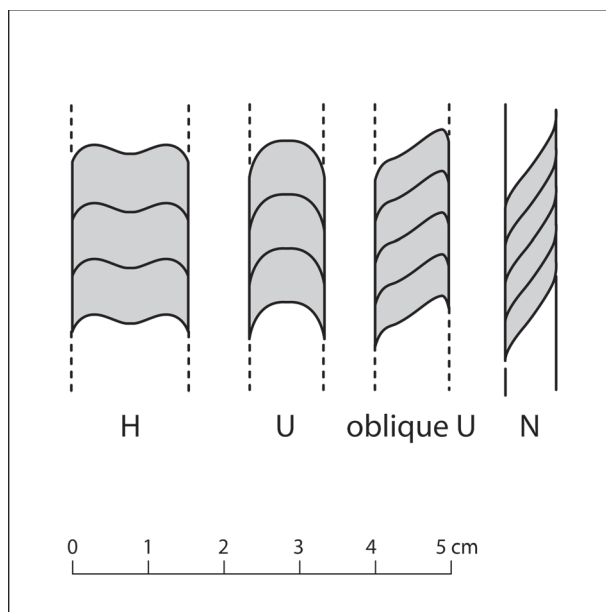


Figure 5 Different coiling techniques of EBK pottery. From left to right: H, U, oblique U and N-technique. The thickness of the illustrations also indicate the mean thickness of pottery constructed in the different techniques. The H-technique is mainly found in the east-

most characteristic technique is the H-construction, which is only known from Ertebølle pottery.

The H-technique dominates in northern and eastern Denmark and in south Sweden whilst the U-construction predominates in eastern and southern Jutland. The N-technique is characteristic for the latest Ertebølle and is frequent on settlements in eastern and southern Jutland. Because of the dominance of U- and N-technique in this EBK region, it is very difficult to distinguish between the Late Mesolithic Ertebølle and the following Early Neolithic Funnel Beaker pottery in this area, especially when dealing with material from settlement sites, where complete vessels or vessel profiles are not available.

The Ertebølle vessels are characterised by their coarseness and thickness of the sherds, which varies from *c.* 0.5 to 2.7 cm. The sherd thickness varies both with regard to the size of the pot and in time and space (geography). The thickest ware is found in northern Jutland and Zealand / southern Sweden, with a dominance of the H-technique and a variation of thickness of *c.* 0.9-2.6 cm. Sherds are clearly thin-

ner in the western and south-western part of Denmark, with a dominance of the oblique U- and N-technique and a thickness of 0.8-1.4 cm. At sites with a long occupation period, such as Ringkloster (Andersen 1973-'74; 1994-'95) one can observe a gradual change in both thickness and building technique as a function of time, with the thickest sherds (in H-technique) at the bottom of the cultural horizon (oldest layer) and gradually becoming thinner (and in N-technique) towards the top layer (youngest). At present, it is impossible to give a satisfactory explanation for this regional differentiation in sherd thickness and preferred construction technique.

The EBK pottery is tempered with red feldspar grains, measuring 2-7 mm, originating from burnt, crushed granite stones. Chamotte and sand have also been demonstrated, while bone and/or plant tempering never have been used. Many sherds also contain small remnants of charred plant material, but never in such quantities that would make it reasonable to regard these as a true tempering material. Ertebølle vessels in general have fewer, but larger tempering particles than vessels from later (Neolithic) periods (Nielsen 1986, 108-109; Hulthén 1977, 37).

No finds of kilns have been recorded, and it is the general assumption, that the pottery of this type was fired in open fires at temperatures of *c.* 500-600 °C (Hulthén 1977, 42).

3.2 Size, shape and decoration

Vessels might vary both in size and shape, which probably indicates different purposes. The bodies of the vessels have an S-shaped outline with conical or cylindrical upper and lower parts. A characteristic of the EBK vessels is that the conjunction between the upper and lower part of the vessel is positioned rather low on the 'corpus' (see fig. 3); a double conical outline is the most common. The rims and necks are also varying, with a clear preference for splaying rims.

A considerable part of the vessel variation is related to the shape of the point, which could be pointed, rounded, stud-shaped or (rarely) with double-points. The shape of the point-based pots varies in geographical respect, indicating at least three style regions. In northern Jutland the vessels have a cylindrical upper part, while they are conical in southern and eastern Jutland. In southern Sweden the pots



Figure 6 Although the data set is very small, there seems to be some regional variation in the the vessel shape and the pointed bottom within the Ertebølle pottery. L. Hilmar del.

are characterised by a thick stud-shaped bottom (fig. 6).

There does not seem to be any significant variation in the shape of Ertebølle pottery as a function of time.

The vessels are of three to four different sizes, but without any clear boundaries between the groups. There are small cups, *c.* 8-15 cm high, small vessels *c.* 25 cm high, medium sized vessels *c.* 30-35 cm high and finally, large vessels *c.* 40-50 cm high. The small cups have a rim diameter of *c.* 5-6 cm, the medium pots of 10-15 cm and the large pots of 15-25 cm; the volume also varies from *c.* 0.5 to 20 litres (fig. 7). The most common vessel type is the large vessel, which clearly predominates on all settlements. The small beaker-type is very rare and also seems to be a late phenomenon.

The EBK vessels are without any lugs, handles or knobs, and they are generally without any decoration. In some cases, finger impressions are found on the upper part of the rim; this aspect is an early feature in Jutland. However, in Scania and on the island of Bornholm in the Baltic Sea the whole surface of

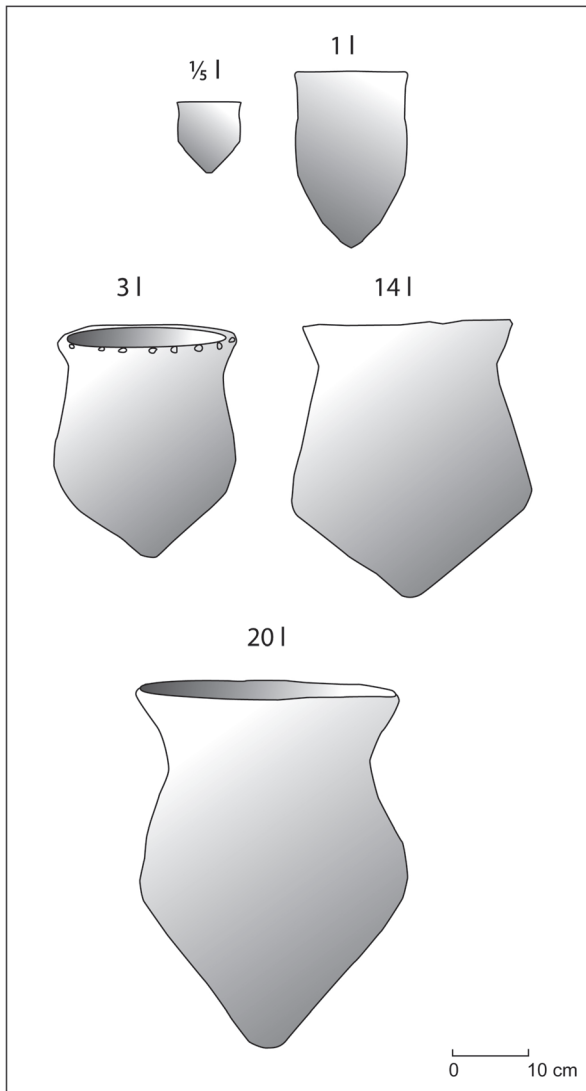


Figure 7 Different sizes of point-based EBK pottery. The most common size is the large vessel, while small cups are very rare. L. Hilmar del.

the vessel can be decorated with finger impressions, which is clearly a regional style of decoration. In a small region in central eastern Jutland there is a group of sites at which a minor number of the pots have surface decoration executed as rows of small dots or incisions forming rhombic patterns. Such decoration probably reflects a template of patterns, which are well known from contemporary art in bone, antler and amber (fig. 8).

The surfaces of the vessels are smooth with a red-brownish to black colour. The interiors of the pots are

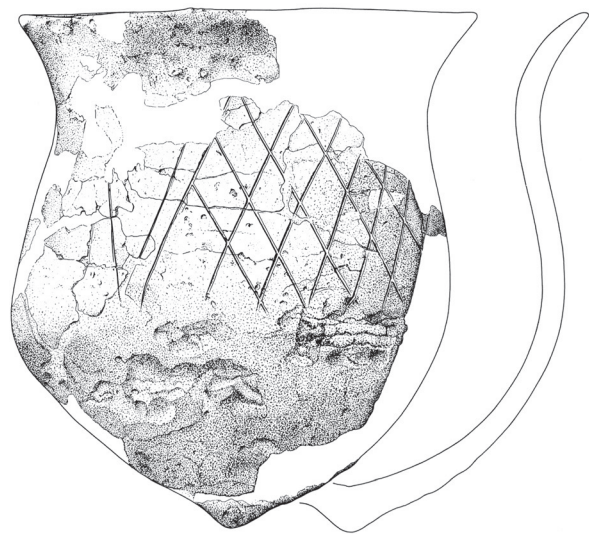


Figure 8 Ertebølle pot decorated with a mesh pattern on a part of the surface. Such decoration is extremely rare and is always irregular and occasional. Photo: Moesgård Museum. Illustration: O. Svendsen del.

always black and the large vessels are frequently coated with charred food. Modern analyses of macroscopic food remains combined with pollen analysis have given interesting and new information on the content of these vessels (see below).

4. LAMPS

This type of pottery (fig. 3) is known from both inland and coastal settlements in Denmark, but it has a more restricted geographical distribution in Denmark than the point-based vessels; they are for instance not found in the northern part of Denmark (fig. 1).

Lamps are usually very few compared to the vessels on the settlements – only 1-3 pieces per site. However, in a few cases lamps appear in greater numbers, but even on such sites, e.g. Ronæs Skov, they are always far less numerous than the pots. The number of lamps on EBK settlements increases towards the south and this type of EBK pottery is especially common on north German settlements.

Lamps are built in two different ways, either by coiling (as the pots) or from a lump of clay (Van Diest 1981, *Abb.* 2, 304). They always have an oval or oblong outline with pointed or rounded ends. They vary in size – from c. 8-30 cm in length and c. 2-15 cm in width. The cross-section is usually round, but flat bottoms are also known from a few examples. The rims are in most cases rounded, but could also be flat with finger impressions or transverse hatches, similar to the decorations on the rims of the point-based vessels. The outside of these vessels is never decorated.

There are no observable differences in the sizes and shapes of the lamps with regard to geography and/or time, but in Denmark they have a distinct eastern to south-eastern distribution (fig. 1). The larger lamps often have charred crusts on their rims, especially in the pointed ends.

Analysis of the clay from the Ertebølle lamps shows that they have been made of fine-textured clay mixed with lime and tempered with fine sand, quartzite or grog.

5. FUNCTIONS

5.1 Domestic

The point-based pots have been used for cooking and general domestic use. Points of such vessels have been found *in situ* in hearths, and sherds are normally found around the fireplaces. Traces of use are, moreover, seen on the surface of the vessels in the form of heavy wear on lower parts and points, and c. 1-3 mm thick crusts of charred food are very common on

both the inner and outer surfaces of the pots, especially the larger types. Traces of repair are few, but ligature holes are known; such repairs are especially common at the Ertebølle shell midden (*locus classicus*; Madsen *et al.* 1900, 76, fig. 6).

Analyses of the charred food crust from the EBK vessels demonstrate that they have, in fact, been used for cooking purposes and pollen analyses show a content of herbs belonging to the grass family (*Gramineae*), mistletoe (*Viscum album*) and three species of plantain (*Plantago sp.*). In a single instance, bones and scales of cod (*Gadus morhua*) have also been found in the food crust (Andersen & Malmros 1984, 86-89).

The oblong bowls have been interpreted as lamps for heating, lighting and cooking on the basis of ethnographic analogies (Mathiassen 1935), and such a use has been supported by chemical analyses demonstrating traces of animal fat in the clay (Mathiassen 1935, 145, 151-152; Hulthén 1980, Van Diest 1981).

5.2 Ritual?

In only one case has an Ertebølle vessel been found in association with a burial (Asing 2000, 32-33). It was, however, impossible to prove that this vessel was part of the grave inventory. In a few cases Ertebølle pots have also been found individually in lake deposits at some distance from the settlements (Koch 1998, 157-158). These finds have been interpreted as ritual offerings in the lakes, but in all such situations the find circumstances are questionable. So, we still lack finds which convincingly demonstrate a sacrificial use of pottery, a fact which is in contrast to later (Neolithic) periods.

6. ORIGIN

Since there was no prior knowledge of pottery production in the Danish area, this technology and know-how must have been acquired from the outside. From which European region came the ideas and technology that led to the oldest pottery in Scandinavia? From a geographical and chronological point of view, it must be from somewhere to the south.

Some authors have argued for a connection between the Ertebølle and Swifterbant pottery from the Netherlands (De Roever 2004), an opinion which is



Figure 9 The origin and the direction of distribution of the Ertebølle pottery tradition in the Baltic Sea. L. Hilmar del.

based on a general similarity between the pottery and which also seems supported by the fact that the oldest Swifterbant pottery appears *c.* 5000 cal BC, that is three to four centuries earlier than the first EBK pottery.

Unfortunately, there is a wide geographical zone in north-western Germany (*c.* 250-300 km) without any contemporary and comparable finds to support the idea of contacts between the Swifterbant and the Ertebølle cultures. Moreover, in my opinion, a closer comparison between Swifterbant and Ertebølle pottery does not support such an idea. Quite the contrary, a comparison discloses rather clear differences.

Firstly, the number of pots on the Swifterbant settlements (300-1000 pots per site; De Roever 2004, 160) clearly exceeds what is known from *any* EBK site. This fact makes it obvious that pottery played a much more important role in the Swifterbant culture than in the Scandinavian EBK. The Dutch pottery does not have the strongly splayed rim, which is so characteristic for the EBK vessels, and the conjunction between the upper and lower part of the vessels is clearly much 'higher' in the profile than in the Ertebølle.

Secondly, the Swifterbant vessels show a well-defined and distinct bend at the shoulder of the pots, quite different from the more 'soft' and S-shaped

profile of the EBK pottery. Swifterbant vessels generally have thinner walls (*c.* 1 cm; De Roever 2004, 161) than EBK pottery. They are, moreover, very often decorated in horizontal and structured patterns, a feature which is *never* seen on Ertebølle pottery; besides the Swifterbant decoration is mainly located on the shoulder of the vessel.

There is also a difference with regard to the choice of tempering materials, with the Swifterbant potters using plant material, in contrast to EBK potters using large particles of crushed stones. The only feature in common is the pointed base. Also noteworthy is that there are *no* lamps in the Swifterbant, a type which is very typical for the Ertebølle culture. The absence of this type in the Netherlands (and north-western Germany; Deichmüller 1965) is remarkable; lamps are clearly not a western type, but rather an eastern one.

Finally, the rest of the Swifterbant inventory in flint, stone etc. is also very different from the Ertebølle inventory.

Apart from typological features on a very general level – *e.g.* the pointed base and finger imprints on the rims – I do not see any convincing similarity between the Swifterbant and Ertebølle pottery. In my opinion, social contacts, impulses and influences of a technological as well as economic type must have been spread by watercraft, following the linear, social network of the Ertebølle culture along the coastlines and larger rivers in the south-western Baltic area. From a Danish point of view this means that the origin of the Ertebølle pottery must be found along the (Baltic) coastline towards the south-eastern Baltic, where both the point-based vessels *and* the lamps are an integrated part of the ceramic tradition (Hallgren 2004; fig. 9). This opinion is also supported by the occurrence of lamps in Denmark, a type, which is documented on settlements towards the east and south-east into the Baltic region (fig. 3).

What does the introduction of pottery in the Ertebølle Culture indicate? First and foremost it demonstrates a need for vessels for cooking and storage purposes. However, despite the good preservation conditions on most Ertebølle settlements, we still do not have any clear indications of what factors could have caused a need for a change in food preparation from the Middle Ertebølle period. Such a need could have been an intensified use of herbs and vegetables for food, a fact, which now seems to be documented

by the results of the recent analyses of food crusts on the Danish Ertebølle vessels.

7. WHEN DOES THE ERTEBØLLE POTTERY DISAPPEAR?

¹⁴C dates of horizons in the stratified middens clearly demonstrate that Ertebølle pottery disappeared abruptly and within a short time span *c.* 4000 cal BC and are replaced by new types of pottery with thin walls, rounded or flat bottoms and frequent use of decoration. From then on the pottery seems to be used in two different aspects within the society: vessels for domestic use and a finer ware for ritual purposes.

The disappearance of the EBK pottery in western Denmark is contemporaneous with the transition from the Mesolithic to the Neolithic, *c.* 4000 cal BC in the Danish area, and is also contemporaneous with its disappearance in Schleswig-Holstein (Hartz & Lübke 2006, 61-63, fig. 1 and 3).

Previously, the appearance of the oldest pottery from the (Early Neolithic) Funnel Beaker culture has been described as an abrupt typological change in pottery. However, during the last years of excavations of Danish EBK settlements with long occupation periods, we now have a clear indication of a gradual change from thick-walled to a more thin-walled pottery and from a dominance of the H-technique towards the N-technique. We have, moreover, now also found more examples of transitional forms between the point-based EBK pots and the more thin-walled and round-based Funnel Beakers. Additionally, we can also observe a gradual change from thick-walled pots in 'H- and U-technique' in the oldest Ertebølle horizons towards a more thin-walled ware in 'N-technique' in the youngest settlement layers.

Such finds and observations seem to indicate a local and fast typological transformation during a short time span around *c.* 4000 cal BC.

8. CONCLUSIONS

The earliest pottery of the west Danish Ertebølle culture made its first appearance 4700/4600 cal BC and this type of pottery disappears just as abruptly around *c.* 4000 cal BC. Both the appearance and disappearance of the oldest pottery seem to be contemporary in the western Danish and northern German

Ertebølle culture. The origin of the Ertebølle pottery is most probably to be found in east to south-eastern direction, in the Baltic area.

The EBK pottery is an example of a ceramic tradition in a purely Mesolithic economy and society. The appearance of the oldest pottery most probably is an indication of a change(s) in food preparation, but until now we have not been able to document any 'archaeologically visible' differences between the subsistence of the settlements before and after the introduction of the first pottery.

The pottery includes only two types: point-based vessels and lamps, which appear in a few sizes and which were used in connection with food preparation (the vessels) and heating or lighting (the lamps), *i.e.* in a purely domestic use. We do not see clear indications of this type of pottery being used in any sort of ritual context.

More recent comparative studies of Ertebølle- and Funnel Beaker pottery have demonstrated significant similarities in respect of construction technique, wall thickness, tempering technique, structure and firing temperature (Hulthén 1977, Nielsen 1986, Koch 1998), all pointing towards a continuity of tradition.

In the Early Neolithic, the number of types and sizes and the use of decoration increases. One functional group disappears (the lamps) and new ones appear (clay discs, bowls and flasks). The new types of flasks are particularly interesting, in that they seem to have had some social or ritual purpose and were not purely functional, demonstrating a change from vessels for purely domestic use to pottery for both domestic *and* ritual purposes.

9. REFERENCES

- Andersen, S.H. 1973-'74. Ringkloster, en jysk indlandsboplads med Ertebøllekultur (English summary: Ringkloster. An inland Ertebølle settlement in Jutland), *Kuml*, 11-108.
- Andersen, S.H. 1994-'95. Ertebølle trappers and wild boar hunters in eastern Jutland. A survey, *Journal of Danish Archaeology* 12, 13-59.
- Andersen, S.H. 2000. 'Køkkenmøddinger' (shell middens) in Denmark: a survey, *Proceedings of the Prehistoric Society* 66, 361-384.
- Andersen, S.H. & E. Johansen 1986. Ertebølle Revisited, *Journal of Danish Archaeology* 5, 31-61.
- Andersen, S.H. & C. Malmros 1984. 'Madskorpe' på Ertebøllekar fra Tybrind Vig ('Food crusts' in

- Ertebølle vessels from Tybrind Vig), *Aarbøger for nordisk Oldkyndighed og Historie*, 78-95.
- Asing, P. 2000. Helgenæs – manden i møddingen. In: S. Hvass & Det Arkæologiske Nævn (eds), *Vor skjulte kulturarv. Arkæologien under overfladen. Til Hendes Majestæt Dronning Margrethe II 16 april 2000*, Copenhagen, 32-33.
- Deichmüller, J. 1965. Die neolithische Moorsiedlung Hüde I am Dümmer, Kreis Grafschaft Diepholz, *Neue Ausgrabungen und Forschungen in Niedersachsen* 2, 1-18.
- Diest, H. van 1981. Zur Frage der ‘Lampen’ nach den Ausgrabungsfunden von Rosenhof (Ostholstein), *Archaeologisches Korrespondenzblatt* 11, 301-314.
- Fischer, A. 2002. Food for Feasting? In: A. Fischer & K. Kristiansen (eds), *The Neolithisation of Denmark. 150 years of debate*, Sheffield, 343-393.
- Hallgren, F. 2004. The introduction of ceramic technology around the Baltic Sea in the 6th millennium. In: H. Knutsson (ed.), *Coast to coast: arrival, results and reflections. Proceedings of the Final Coast to Coast Conference October 2002, Sweden*, Uppsala, 123-142.
- Hartz, S. & H. Lübke 2006. New evidence for a chronostratigraphic division of the Ertebølle culture and the earliest Funnel Beaker culture on the southern Mecklenburg Bay. In: C.-J. Kind (ed.), *After the ice age. Settlements, subsistence and social development in the Mesolithic of central Europe*, Stuttgart (Materialhefte zur Archäologie in Baden-Württemberg 78), 59-74.
- Hulthén, B. 1977. *On ceramic technology during the Scanian Neolithic and Bronze Age*, Stockholm (Theses and Papers in North-European Archaeology 6).
- Hulthén, B. 1980. Ertebøllekulturens lampor, *Ale* 1980-4, 1-5.
- Koch, E. 1998. *Neolithic bog pots from Zealand, Møn, Lolland and Falster*, Copenhagen (Nordiske Fortidsminder B16).
- Koch Nielsen, E. 1986. Ertebølle and Funnel Beaker pots as tools. On traces of production techniques and use, *Acta Archaeologica* 57, 107-120.
- Madsen, A.P., S. Müller, C. Neergaard, C.G. Joh. Petersen, E. Rostrup, K.V.J. Steenstrup & H. Winge 1900. *Affaldsdynger fra Stenalderen i Danmark. Undersøgte for Nationalmuseet*, Copenhagen.
- Mathiassen, Th. 1935. Blubber lamps in the Ertebølle culture? *Acta Archaeologica* 6, 139-152.
- Roever, J.P. de 2004. *Swifterbant-aardewerk. Een analyse van de neolithische nederzettingen bij Swifterbant, 5^e millennium voor Christus*, PhD thesis Groningen (Groningen Archaeological Studies 2).
- Troels-Smith, J. 1953. Ertebøllekultur – Bondekultur. Resultater af de sidste 10 års undersøgelser i Åmosen, *Aarbøger for nordisk Oldkyndighed og Historie* 1953, 5-62.

Technological and typological analysis of Ertebølle and early Funnel Beaker pottery from Neustadt LA 156 and contemporary sites in northern Germany

Aikaterini Glykou

ABSTRACT

The Ertebølle hunter-gatherer-fisher culture of southern Scandinavia and northern Germany decreased in significance during the late 5th millennium cal BC. The decrease is seen in both economic and cultural aspects of the society as the influence of southern Neolithic cultures increased.

Pottery of both Final Mesolithic Ertebølle and earliest Neolithic Funnel Beaker periods are found in many settlement sites from northern Germany. A safe cultural attribution of undecorated pottery based on technological characteristics is of great significance in order to distinguish between the two phases and therefore to shed light on the circumstances of the transition in sites where both ceramic inventories are apparent.

KEYWORDS

Ertebølle, Funnel Beaker, northern Germany.

1. INTRODUCTION

The occurrence of Final Mesolithic Ertebølle and Earliest Neolithic Funnel Beaker pottery in the same assemblage is almost a typical phenomenon in northern Germany and indicates either the incidence of transitional sites or the mixture of the debris of two successive and independent occupations at the same site. It has to be clarified under which circumstances the transition from the Final Mesolithic to the Earliest Neolithic took place. Were these sites continuously occupied by communities, who adopted the new way of life under the influence of southern Neolithic cultures and who transformed their hunter-gatherer-fisher subsistence into an agrarian one? Or

were the sites abandoned by the Final Mesolithic inhabitants and later repopulated by the Neolithic Funnel Beaker people? Did a population movement from south to north take place and did the immigrants mix with the local population?

Some of these aspects can be elucidated by the study of pottery in addition to other parameters. While the typological classification of the ceramics especially concerning decorated rim sherds or base sherds is quite easy, it is rather difficult to classify undecorated belly sherds.

Observations of the technological characteristics from both Ertebølle and Funnel Beaker ceramics have defined certain technological criteria for each ceramic assemblage (Andersen 1973-'74; Koch Nielsen 1986), allowing the attribution to one or the other phase of undecorated and therefore problematic belly sherds, which are very common in archaeological contexts. If these sherds could be classified then a stratigraphic plotting of them may contribute to clarify whether there existed a transitional period during which both point-based vessels and Funnel Beaker wares were in use. The basic prerequisite is a clear stratigraphy, which enables the evaluation of pottery as a chronological indicator. Potentially direct radiocarbon dating of cereal grains found in the pottery or of charred food crusts could solve the problem. However, the influence of the marine reservoir effect (Fischer & Heinemeier 2003; Hartz & Lübke 2004; 2006) cannot be defied, especially since the original composition of these encrustations has not been analysed yet. Taking into consideration this parameter the ¹⁴C dates could be used as indications but not as secure dates.

An observation of the ceramic technology as a whole is required in order to survey the technological development and to establish the existence of one ce-

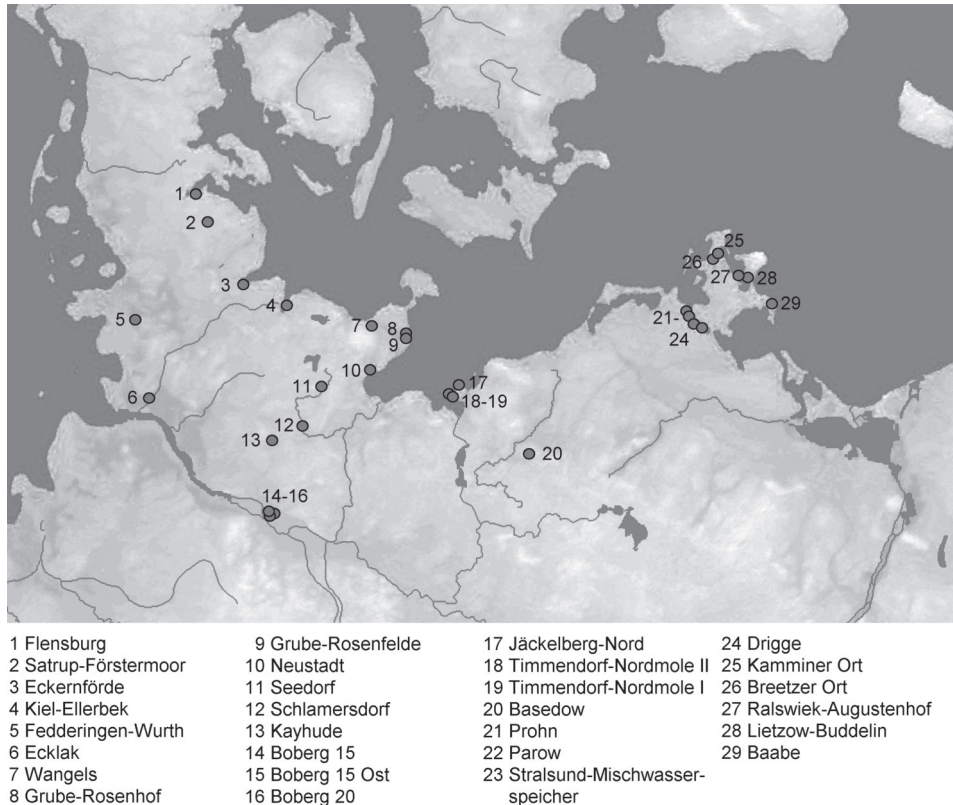


Figure 1 Map of northern Germany with Ertebølle sites. Illustration by Harald Lübke.

ramic tradition which was developing and perhaps improved during the ages, leading from the Ertebølle to the Funnel Beaker pottery. If not then the discrepancy would indicate two independent ceramic traditions. For these reasons the technological analysis of both Ertebølle and earliest Funnel Beaker pottery is of great importance.

In northern Germany Ertebølle and Funnel Beaker pottery was found either during regular excavations (Neustadt, Rosenhof, Wangels) or surface collecting (Ecklak). Neustadt (Hartz *et al.* 2001) and Timmendorf *Nordmole I* (fig. 1; Lübke 2000; 2002; 2004) were both coastal settlement sites currently lying underwater, whereas Rosenhof (Schwabedissen 1981; Schwabedissen 1994; Hartz 1999) and Wangels (fig. 1; Hartz 1997-'98; Grohmann 2004) lay in protected positions near the coast and are now situated inland. Schlammersdorf (Hartz 1997) already was an inland site during the Ertebølle period. The focus of this study lies on the Ertebølle pottery from Neustadt because it represents the so far largest pottery inventory from a recently excavated site of the Ertebølle period

in northern Germany (Hartz *et al.* 2001; Hartz 2004). The most prominent feature of this site is the fact that the majority of the pottery in Neustadt belongs to the Ertebølle phase and only a restricted number of sherds date from the Funnel Beaker phase. This offers the possibility to further investigate under which circumstances the Mesolithic-Neolithic transition took place in northern Germany. The typological and technological analysis of the pottery from Neustadt is being carried out in the context of a PhD research, and this article aims at presenting its first results.

First the results of the technological analysis and the typological observations on the Ertebølle and Funnel Beaker pottery will be presented, leading to a concluding comparison and to an outline of further research. Due to the lack of extensive publications on technological observations on Ertebølle pottery in northern Germany, the comparison to the contemporaneous sites Rosenhof, Wangels, and Timmendorf *Nordmole I* is only possible to a certain extent.

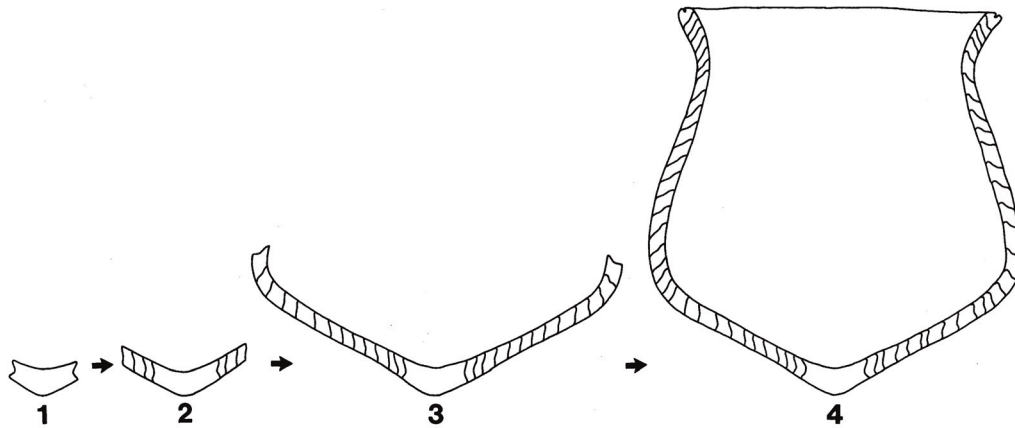


Figure 2 Reconstruction of the stages of manufacture of an Ertebølle vessel. Pointed base made in one stage (after Koch Nielsen 1986, fig. 6).

2. ERTEBØLLE POTTERY

2.1 Technology

Ertebølle pottery in Schleswig-Holstein and Mecklenburg-Vorpommern is represented by two types: on the one hand vessels with a pointed base and a S-profile, and on the other hand shallow oval dishes known also as ‘lamps’ as they are assumed to have served as blubber lamps (Mathiassen 1935; Van Diest 1981). In the following the latter will therefore be referred to as ‘lamp’.

Temper

The use of an appropriate paste is the first step for manufacturing a pot. The ware from Neustadt has only been studied microscopically but not yet in thin sections. The clay used for Ertebølle pottery is mostly tempered with burnt and crushed granite, as is shown by the sharp angular grains and by the abundant presence of red feldspar. This predominant use of granite is followed by quartz temper. Often the clay is sandy with abundant mica and quartz, or in other cases is mixed with granite. Birgitta Hulthén classified the tempering material at Rosenhof into four different qualities (Hulthén 1977). The principal tempering materials are crushed granite and sandy clay in different proportions. The occurrence of grog or crushed flint known from the Rosenhof ware has not been recognised so far in the ware from Neustadt,

obviously due to the lack of thin section analysis. Hulthén’s analyses indicate two types of clay: a coarse one, used for the point-based ware, and a fine-structured one used mainly for the lamps. This observation may also be true for the ware from Neustadt. It is interesting to note that the Ertebølle and Funnel Beaker pottery at Neustadt differ in tempering: granite is the dominant tempering material in the Ertebølle ware, whereas equal proportions of sand and granite with red feldspar are observed in the Funnel Beaker ware.

Manufacturing of point-based vessels

The shaping of the point-based vessel is carried out in three stages. After the shaping of the pointed base, coils of clay are added on top of one another and finally the rim is shaped. The techniques of these three stages are described below.

Manufacturing the pointed base

Eva Koch was the first to illustrate the manufacturing technique of pointed bases. According to her investigations the pointed base is formed in one stage by pressing a lump of clay into a cone, onto which clay coils are laid in rings (fig. 2; Koch Nielsen 1986, 109). This technique appears to be the most common one for the ware from Neustadt and the exclusive one for the ware from Wangels (Grohmann 2004, 72).

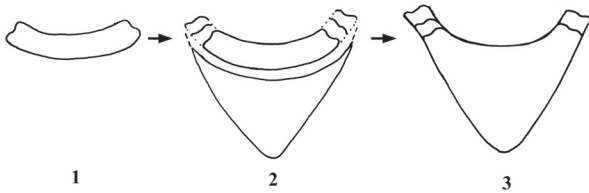


Figure 3 Reconstruction of the stages of manufacture of an Ertebølle pointed base made in two stages. Drawing A. Glykou.

In the meanwhile two examples from Neustadt are manufactured in a different technique, in two steps: At first a lump of clay is pressed with the fingers into an oval shape. Then a second lump of clay is formed into the well-known pointed end and fixed from beneath to the upper oval lump, smoothing the surface at the same time. Afterwards clay coils are laid in rings onto the base (fig. 3).

A third method is represented by pointed bases made of one clay coil arranged in a spiral.

Manufacturing and shaping the upper part of the pot

After shaping the base each clay coil is put onto the subjacent one and pressure is exerted by the fingers so that the coils integrate with each other. This procedure was carried out in three different ways, called H-, U- and N- techniques (fig. 4; Andersen 1973-'74; Hulthén 1977).

The characteristic manufacturing technique for the pointed bottom vessels is the H-, showing obvious

finger impressions on the surface of the coil (Andersen 1973-'74).

A similar technique is the U-technique. The only difference to the H-technique lies in the fact that during the U-process of manufacturing the clay coils are pressed gently with the fingers so that the surface of the coils gives the impression of smooth waves. Finger impressions on the surface of the coils are discerned on several sherds from Neustadt manufactured by the U-technique. This means that the coils are not only fixed to each other by smoothing the surfaces of the pot through beating (Hulthén 1977, 34), but also by pressing gently with the fingers.

In the N-technique the clay coils are placed obliquely onto each other (Andersen 1973-'74). Usually finger pressure is exerted during this manufacturing process so that fingertips are often to be observed on the surface of the coil (Koch Nielsen 1986).

Having studied over 2500 sherds until now, I have noticed a great variation in the appearance of these three techniques. Form and appearance of each one of them seem to be strongly affected by the position of the sherd in the pot, by the size of the grain of the tempering material, by the direction of smoothing and by the thickness of the sherd. Sometimes a simple U-technique may look like an H-technique in a ware with big-sized grain temper, but the main problem is to distinguish between H- and N-technique with finger impressions. In particular if a sherd made in H-technique belongs to a part of the pot with a change in the profile, either from the rim to the belly or from the belly to the base, its profile will be oblique and it might therefore be wrongly identified as an N-technique with finger impressions (fig. 5).

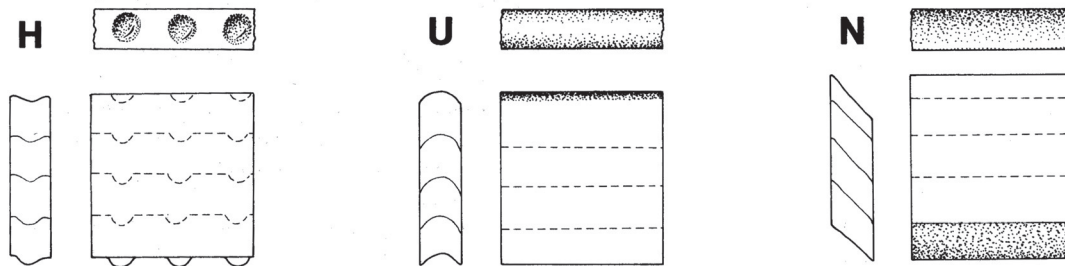


Figure 4 Drawing of H-, U- and N- built Ertebølle ware (after Koch Nielsen 1986, fig. 7).

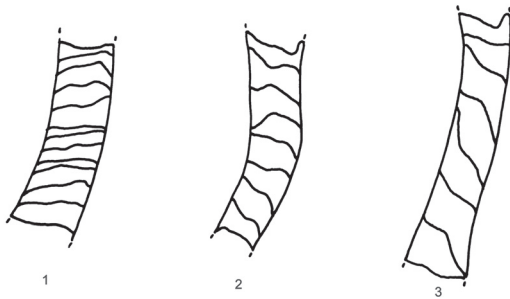


Figure 5 Drawing of H- and N- built on sherds from Neustadt. 1 and 2: H-technique, 3: H- or N-technique with finger impressions (?). Drawing A. Glykou.

This example underlines the necessity of a very careful determination.

While the H-technique is most characteristic for the point-based ware from Neustadt, U-technique dominates for the same ware from Wangels (Grohmann 2004, 71).

The N-technique is the typical manufacturing technique for the Funnel Beaker pottery (see below). Until now the use of N-technique with finger impressions has not been observed on Funnel Beaker sherds.

Ertebølle rim ornamentation can be connected with the use of clay coils in H- and U-technique for manufacturing the pot. As mentioned before, the clay coils are pressed by the fingers in order to fuse with each other. In the case of the last clay coil – the rim coil – the finger pressure is applied carefully and properly. Thus, ornamentation results from manufacturing the pot (fig. 6).

Lamps

Helga van Diest carried out a technological study of the lamps from Rosenhof (Van Diest 1981) and classified them in the three following categories: The first technique starts with gently pressing a thick lump of clay in order to shape the bottom; then clay coils are put onto this lump and pressed by the fingers onto the other so that finger or nail impressions are often present (fig. 7.1). The second technique of manufacturing a lamp consists of putting several layers of clay one on top of the other and working them out until the rim is shaped (fig. 7.2). The third one is a combination of both techniques. The base is shaped out of a thick lump of clay according to the



Figure 6 Rim sherd of point-based ware with finger and nail impressions. Coil sherd from the same ware made in H-technique with fingertip impressions, Neustadt. 1.5x natural size.

first technique, after which the rest of the lamp is shaped according to the second technique (fig. 7.3). While the first two techniques can be observed on the lamps from Neustadt there is no indication of the last one until now.

2.2 Typology

Point-based vessels

The point-based vessels vary in size and form. Among the ware from Neustadt small, medium-sized and large vessels occur with an average rim diameter of 35 cm. As they are robust and usually made from one lump of clay, the pointed bottoms are more often preserved than the other parts of the vessel, which generally fall apart along the coil joins. Exceptionally even a complete vessel is preserved but in most

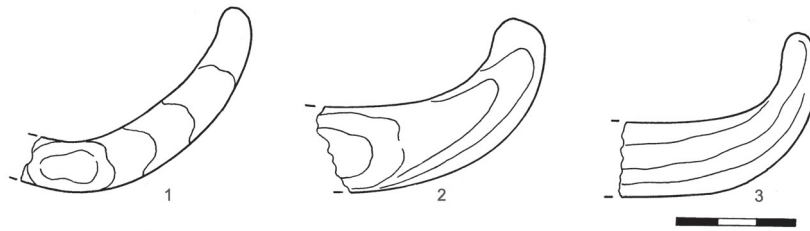


Figure 7 Reconstruction of manufacturing the lamps, Rosenhof (after Van Diest 1981, *Abb. 2*).

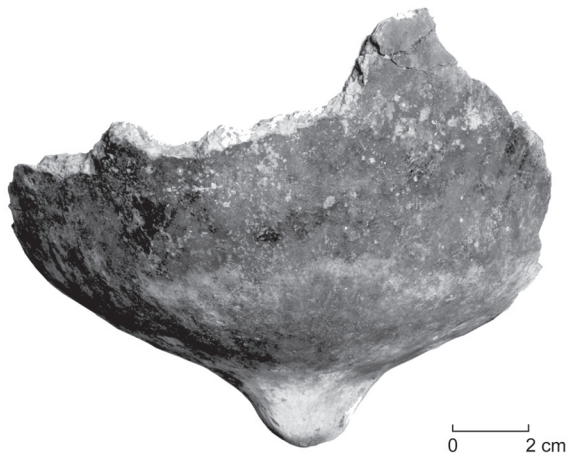


Figure 8 Point-based ware, Neustadt. Scale 1:2.

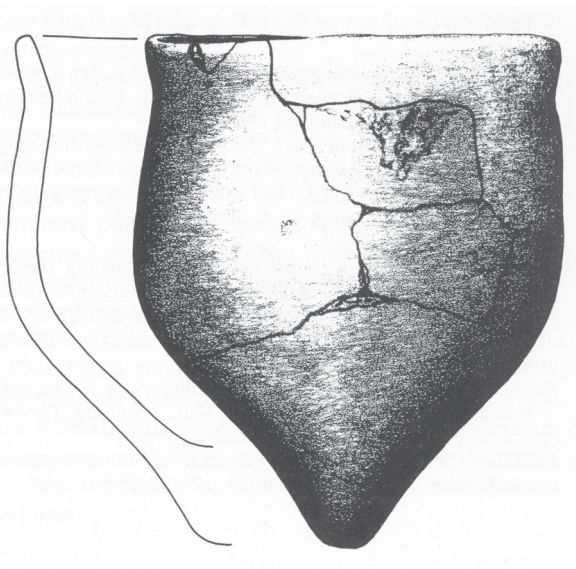


Figure 9 Point-based ware, Ecklak. Scale 1:2 (after Schwabedissen 1994, 382).

cases the pointed bottom is the feature, which allows a typological attribution.

A comparison of sites from the Final Mesolithic and Earliest Neolithic has revealed the existence of several different shapes of pointed bases, four of which are at any rate represented at Neustadt: typical pointed bases (fig. 8), bases possessing a robust conical shape (fig. 9), bases with a very small but sharp pointed end (fig. 10) and bases with a partially or completely rounded pointed end (fig. 11) from Neustadt, Ecklak, Rosenhof, Wangels and Timmendorf

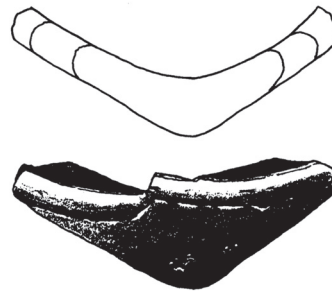


Figure 10 Pointed base, Rosenhof. Scale 1:2 (after Schwabedissen 1994, 399).

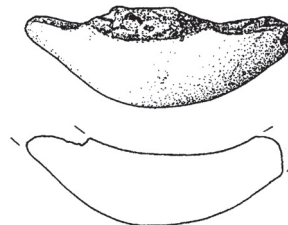


Figure 11 Pointed base, Timmendorf *Nordmole I*. Scale 1:2 (after Lübke 2004, 101).

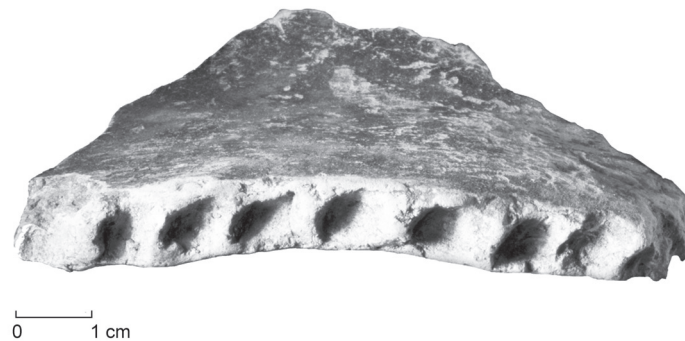


Figure 12 Rim sherd of point-based ware with finger and nail impressions, Neustadt.

Nordmole I. In Neustadt and Rosenhof all types are present, while in the other sites only one or two types are identified, obviously because of the restricted quantity of pottery found there.

Vessels can be further classified according to the shape of the body, if they are completely or for the greater part preserved. There are pots with a cylindrical profile without any distinct transition from neck to body (Rosenhof; Schwabedissen 1994, 399, fig. 1), vessels with the maximum width approximately in the middle of the belly (Wangels; Grohmann 2004, tab. 16) or at the lower part of the belly (Rosenhof; Schwabedissen 1994, 399, fig. 3).

Rims do not reveal a particular variation of the shape. The typical rim is everted, but upright or in-turned rims often appear as well. Generally the rim is either undecorated or shows an ornamentation consisting of a variety of finger or nail impressions or a

combination of both (fig. 12). Rare is the ornamentation obtained by the use of a stamp, probably a bird bone or a straw, which creates a pattern of small regular or irregular circles (fig. 13).

While the typical Ertebølle ornamentation appears on the rim, there are only a few examples of bands of stab impressions on the outer surface of the pot: so far one from Neustadt (fig. 14), one from Rosenhof (fig. 15; Schwabedissen 1981, 137), one from Timmendorf *Nordmole I* (fig. 16; Lübke 2004, 100), one from Schlamersdorf (Hartz 1997, 179), one from Bomberg 15 (Schindler 1961; Laux 1986) and one from Hüde I am Dümmer (Deichmüller 1965). This unusual kind of decoration for the Ertebølle culture is represented only by these few examples from northern Germany and several more parallels from Denmark (Andersen 1973-'74; 1994-'95). In the past it has been interpreted as a decoration created under the influence of the Rössen culture (Schindler 1961)



Figure 13 Rim sherd of point-based ware with a decoration of small regular circles made with a stamp, Neustadt.

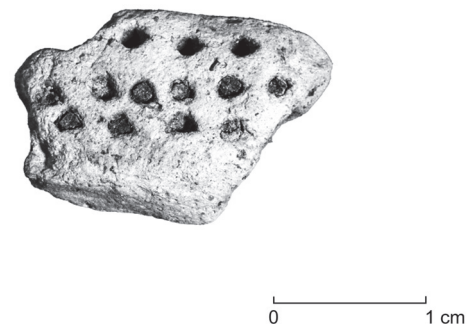


Figure 14 Sherd of point-based ware decorated with stab impressions, Neustadt.

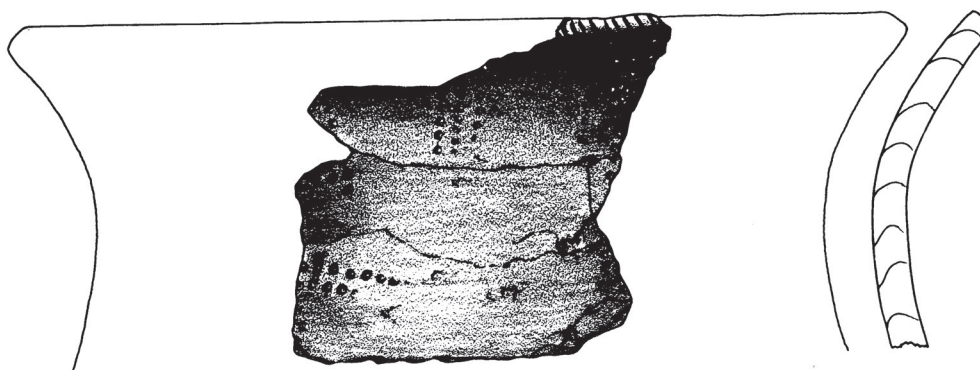


Figure 15 Sherd of point-based ware decorated with stab impressions, Rosenhof. Scale 1:2 (after Schwabedissen 1994, 398).

or the Stichbandkeramik (Schwabedissen 1981; Laux 1986). Nowadays it is regarded as an autochthonous type of decoration (Klassen 2004, 117).

Lamps

Lamps have an oval shape with either rounded or pointed ends and show a great variation in size. A refitted lamp from Neustadt with a maximal length of 30 cm and a maximal width of 11 cm is considered to be one of the largest examples among the Ertebølle lamps at all (fig. 17). The lamps are usually undeco-

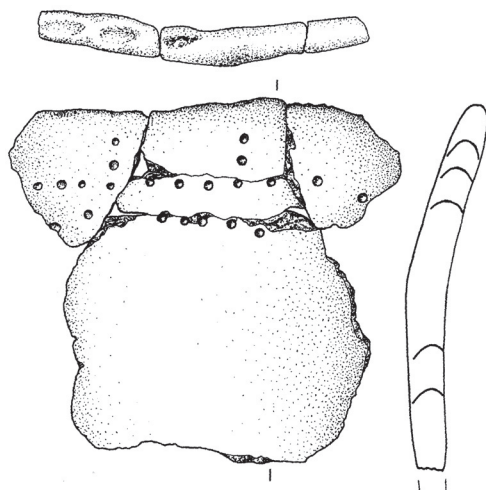


Figure 16 Sherd of point-based ware decorated with stab impressions, Timmendorf Nordmole I. Scale 1:2 (after Lübke 2004, 101).

rated and the rims are simply rounded by smoothing. If they are decorated, this decoration is presented exclusively on the rim, showing a simple variation of nail impressions or stamp (fig. 18). These characteristics are common on all sites, where lamps occur.

3. FUNNEL BEAKER POTTERY

3.1 Technology

The Funnel Beaker ware from Neustadt consists of a small number of sherds. All are manufactured in the N-technique. No finger impressions are discerned between the clay coils. On two belly sherds a change in the direction of the clay coils was detected at the transition from the neck to the belly, which is a typical characteristic for the Funnel Beaker pots (Koch Nielsen 1986, 112, fig. 6).

The base of a rather large pot is made from two layers of clay. The same technique has been employed for the bottom of a small flask. Unfortunately there are only a few examples of Funnel Beaker pottery from Neustadt. It is however essential to note that these possess the well-known typical characteristics of the early Funnel Beaker ware (Koch Nielsen 1986, 111-112, fig. 6).

3.2 Typology

Indications of the shapes of the earliest Funnel Beaker ware from Neustadt are only provided by a restricted number of rims and bottoms. The Funnel



Figure 17 Lamp, Neustadt. Scale 1:2.

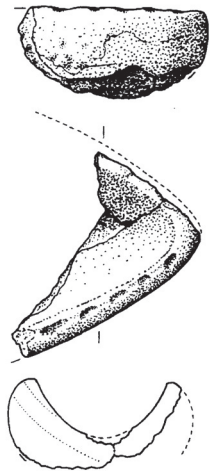


Figure 18 Lamp fragment, Wangels (after Grohmann 2004, *Tab.* 19).

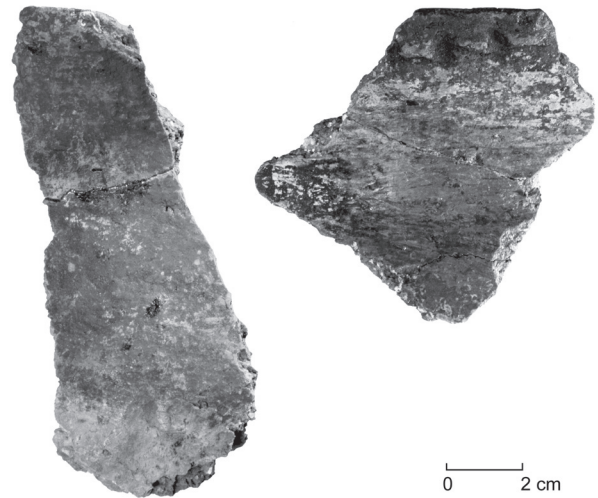


Figure 19 Rim sherds of Funnel Beakers, Neustadt. Scale 1:2. b: With an applied list of clay with finger impressions, Neustadt.

Beaker pots vary in sizes and shape. There are small flasks or pots with a rounded rim, a splayed out funnel-shaped neck and a slightly curved belly (fig. 19a). Others possess a very short or a medium-high funnel-shaped neck. Some belly sherds with lugs belong to lugged jars.

The Funnel Beaker vessels are either undecorated or only have a simple decoration, which is always found below the rim. This means a significant difference compared to the Ertebølle pottery. The Funnel Beaker ornamentation comprises either of an applied list of clay with finger impressions below the rim or of a horizontal row of vertical stamp marks below the rim (fig. 19b).

4. CONCLUSION

The problem of a proper cultural attribution of undecorated rim sherds and in particular belly sherds is evident on settlement sites that contain both Ertebølle and earliest Funnel Beaker pottery. A technological analysis is necessary in order to achieve a classification of these sherds (Mathiassen *et al.* 1942; Andersen 1973-'74; Koch Nielsen 1986).

Concerning the tempering material there is a tendency for the Ertebølle ware to be mostly tempered with burnt and crushed granite with red feldspar whereas the Funnel Beaker ware is mainly tempered with sand.

With regard to the manufacturing technique the Ertebølle ware is mainly shaped in H- and U- coiling techniques (Andersen 1973-'74), but the N- technique, both with and without finger impressions, was also applied. Similarities between the N-technique with finger impressions and the H-technique may lead to incorrect attributions. Although both are considered as typical Ertebølle techniques (Koch Nielsen 1986), a critical observation is still indispensable.

The earliest Funnel Beaker pottery is always shaped in the N-technique, which creates the problem of classifying undecorated sherds showing a N-construction. Those sherds with a change of the direction of the coil belong with certainty to Funnel Beaker pottery (Koch Nielsen 1986)., Eva Koch (1998) furthermore attributes sherds constructed in N-technique and with a thickness of over 1.3 cm to Ertebølle pottery, whereas those with a thickness below 1.3 cm cannot be classified, because thin-walled

Ertebølle pottery exists as well. A number of sherds thus often remains unclassified.

5. TOPICS OF FURTHER RESEARCH

The typological and technological variation of the Ertebølle ware is a main aspect of further investigation. Does this variation represent a kind of 'regional dialect', is it the result of individual expression, and/or are there chronological or functional differences? The comparison of different contemporary and well-stratified sites from northern Germany and southern Scandinavia should allow us to establish whether the variation of the point-based pottery has chronological causes and whether transitional types to the Funnel Beaker pottery exist (Koch 1998).

If a chronological sequence cannot be established at well-stratified sites, this variation may depend on function and/or it may be seen as a simple ethnic or individual expression. Concerning the function of the point-based ware, analyses carried out on charred food crusts of pottery from Tybrind Vig in Denmark (Andersen & Malmros 1984) have shown that the pots served as cooking vessels. Fish remains detected in charred food crusts on Ertebølle pottery from Neustadt support this interpretation. However, it has not yet been examined whether the distribution of the encrustations on the Ertebølle pottery differs according to size and type, which would reflect a functional differentiation. Similar studies on Funnel Beaker ware from Denmark have shown that large and medium size pots have principally served as cooking vessels, while a restricted number of small vessels has been exposed to fire (Koch Nielsen 1986; Koch 1998). Further chemical and isotopic analyses of the encrustations aim at determining their composition, in particular with regard to the question whether dairy products are present on Ertebølle pottery (Craig *et al.* 2005). This hypothesis arises from the occurrence of the first domesticated animals in these inventories. Bones from domestic cattle and from sheep/goat are found among the material from Neustadt and it should be verified whether they belong to the Ertebølle or to the earliest Funnel Beaker phase. Direct radiocarbon dating of these bones does not provide any arguments for attributing the process of domestication to the one or the other culture, as long as the chronological boundary between the Final Me-

solithic and the Earliest Neolithic in northern Germany is not fixed.

6. ACKNOWLEDGEMENTS

I would like to express my profound gratitude to Eva Koch who initiated and inspired me in the study of pottery. Also Sönke Hartz for providing me access to the finds from Neustadt for my PhD thesis and Prof. Johannes Müller for his constructive review and critical comments. Especially thanked are Harald Lübke and Doris Miscka for their valuable remarks. Claudia Janke and the photographic laboratory of the Museum, *Stiftung Schleswig Holsteinische Landesmuseen Schloss Gottorf*, for taking the photos of the pottery. I would also like to thank Ingrid Ulbricht and Mara-Julia Weber for revising the English.

7. REFERENCES

- Andersen, S.H. 1973-'74. Ringkloster, en jysk inlandaboplads med Ertebøllekultur, *Kuml*, 11-108.
- Andersen, S.H. 1994-'95. Ringkloster. Ertebølle trappers and wild boar hunters in eastern Jutland. A survey, *Journal of Danish Archaeology* 12, 13-59.
- Andersen, S.H. & C. Malmros 1984. Mads koper på Ertebøllekar fra Tybrind Vig, *Aarbøger for nordisk Oldkyndighed og Historie*, 78-95.
- Craig, O.E., J. Chapman, C. Heron, L.H. Willis, L. Bartosiewicz, G. Taylor, A. Whittle & M. Collins 2005. Did the first farmers of central and Eastern Europe produce dairy foods? *Antiquity* 79, 882-894.
- Deichmüller, J. 1965. Die neolithische Moorsiedlungen Hüde I am Dümmer, Kreis Grafschaft Diepholz, *Neue Ausgrabungen und Forschungen in Niedersachsen* 2, 1-18.
- Diest, H. Van 1981. Zur Frage der 'Lampen' nach den Ausgrabungsfunden von Rosenhof (Ostholstein), *Archäologisches Korrespondenzblatt* 11, 301-314.
- Fischer, A. & J. Heinemeier 2003. Freshwater reservoir effect in ¹⁴C dates of food residue on pottery, *Radiocarbon* 45, 449-466.
- Grohmann, J.M. 2004. *Die Keramik der Ertebølle- und frühen Trichterbecherkultur aus Wangels, Kr. Ostholstein*, unpublished Master's thesis, Cologne.
- Hartz, S. 1997. Ertebøllekultur im Travetal. Ausgrabungen auf dem Fundplatz Travenbrück LA 5 (Gemarkung Schlamersdorf), Kreis Storman. Ein Vorbericht, *Stormaner Hefte* 20, 171-186.
- Hartz, S. 1997-'98. Frühbäuerliche Küstenbesiedlung im westlichen Teil der Oldenburger Grabenniederung (Wangels LA 505). Ein Vorbericht, *Offa* 54-55, 19-41.
- Hartz, S. 1999. *Die Steinartefakte des endmesolithischen Fundplatzes Grube-Rosenhof. Studien an Flintinventaren zur Zeit der Neolithisierung in Schleswig-Holstein und Südkandinavien*, Schleswig/Neumünster (Untersuchungen und Materialien zur Steinzeit in Schleswig-Holstein 2).
- Hartz, S. 2004. Aktuelle Forschungen zur Chronologie und Siedlungsweise der Ertebølle- und frühesten Trichterbecherkultur in Schleswig-Holstein, *Bodendenkmalpflege in Mecklenburg-Vorpommern* 52, 61-81.
- Hartz, S. & H. Lübke 2004. Zur chronostratigraphischen Gliederung der Ertebølle-Kultur und frühesten Trichterbecherkultur in der südlichen Mecklenburger Bucht, *Bodendenkmalpflege in Mecklenburg-Vorpommern* 52, 119-142.
- Hartz, S. & H. Lübke 2006. New evidence for a chronostratigraphic division of the Ertebølle culture and the earliest Funnel Beaker culture on the southern Mecklenburg Bay. In: C.-J. Kind (ed.), *After the ice age. Settlements, subsistence and social development in the Mesolithic of central Europe*, Stuttgart (Materialhefte zur Archäologie in Baden-Württemberg 78), 59-74.
- Hartz, S., D. Heinrich, K. Jungk & H. Kraus 2001. Neustadt-Marienbad wieder entdeckt – Jäger und Fischer der Ertebøllekultur an der ostholsteinischen Ostseeküste, *Archäologische Nachrichten aus Schleswig-Holstein* 12, 7-26.
- Hulthén, B. 1977. *On ceramic technology during the Scanian Neolithic and Bronze Age*, Stockholm (Theses and Papers in North-European Archaeology 6).
- Klassen, L. 2004. *Jade und Kupfer. Untersuchungen zum Neolithisierungsprozess im westlichen Ostseeraum unter besonderer Berücksichtigung der Kulturentwicklung Europas 5500-3500 BC*, Aarhus (Jutland Archaeological Society 47).
- Koch, E. 1998. *Neolithic bog pots from Zealand, Møn, Lolland and Falster*, Copenhagen (Nordiske Fortidsminder B16).
- Koch Nielsen, E. 1986. Ertebølle and Funnel Beaker pots as tools. On traces of production techniques and use, *Acta Archaeologica* 57, 107-120.
- Laux, F. 1986. Die mesolithischen und frühneolithischen Fundplätze auf den Boberger Dünen bei Hamburg. Überlegungen zum Beginn des Neolithikums im Niederelbegebiet, *Hammaburg* 7, 9-38.
- Lübke, H. 2000. Timmendorf-Nordmole und Jäckelberg-Nord – Erste Untersuchungsergebnisse zu submarinen

- Siedlungsplätzen der endmesolithischen Ertebøllekultur in der Wismar-Bucht, Mecklenburg-Vorpommern, *Nachrichtenblatt Arbeitskreis Unterwasserarchäologie* 7, 17-35.
- Lübke, H. 2002. Steinzeit in der Wismarbucht. Ein Überblick, *Nachrichtenblatt Arbeitskreis Unterwasserarchäologie* 9, 75-88.
- Lübke, H. 2004. Spät- und endmesolithische Küstensiedlungsplätze in der Wismarbucht – Neue Grabungsergebnisse zur Chronologie und Siedlungsweise. *Bodendenkmalpflege in Mecklenburg-Vorpommern* 52, 83-110.
- Mathiassen, Th. 1935. Blubber Lamps in the Ertebølle culture? *Acta Archaeologica* 6, 139-151.
- Mathiassen, Th., M. Degerbøl & J. Troels-Smith 1942. *Dyrholmen. En Stenalderboplads paa Djursland. Det Kongelige Danske Videnskabernes Selskab, Copenhagen (Arkæologisk-Kunshistoriske Skrifter Band I, nr. 1).*
- Schindler, R. 1961. Rössener Elemente im Frühneolithikum von Boberg, *Hammaburg* 7, 9-29.
- Schwabedissen, H. 1981. Ertebølle/Ellerbek – Mesolithikum oder Neolithikum? *Veröffentlichungen des Museums für Ur-und Frühgeschichte Potsdam* 14-15, 129-142.
- Schwabedissen, H. 1994. Die Ellerbek-Kultur in Schleswig-Holstein und das Vordringen des Neolithikums über die Elbe nach Norden. In: J. Hoika & J. Meurers-Balke (eds), *Beiträge zur frühneolithischen Trichterbecherkultur im westlichen Ostseegebiet. 1. internationales Trichterbechersymposium in Schleswig vom 4. bis 7. März 1985*, Schleswig, 361-401.

The earliest pottery in Britain and Ireland and its Continental background

Alison Sheridan

The “Anglo-Saxonne” perception [of the Continental background to the British and Irish Neolithic] is largely drawn from Anglophone publication of selected European highlights, visionary perhaps but lacking breadth or bottom... (Kinnes 2004a)

ABSTRACT

This presents an overview of the earliest pottery of Britain and Ireland, whose appearance is linked with the arrival of new, Neolithic, ways of life. Multiple strands of Neolithisation from the Continent are described: one from southern Brittany, extending northwards along the Atlantic façade and around the northern coast of Ireland, and dating to between 4300 and 4000 BC; another, the ‘Carinated Bowl Neolithic’, spreading widely from northern France to much of Britain and most of Ireland in the first quarter of the fourth millennium; and a contemporary, ‘trans-Manche ouest’ strand, linking Normandy with southern and south-west England.

KEYWORDS

Neolithisation, pottery, Britain, Ireland, Continental links.

1. INTRODUCTION

The appearance of pottery in Britain and Ireland is inextricably associated with the appearance of other novelties, Continental in origin, that betoken the arrival of new – Neolithic – lifestyles and ideologies. Yet there have been precious few attempts, since that of Alasdair Whittle for southern England in the 1970s (Whittle 1977), to characterise this earliest pottery and/or to place it in its Continental context (Cassen 2000; Cleal 2004; Herne 1988; Louwe Kooijmans

1976; Sheridan 1995; 2003a; 2004; 2007 and *cf.* Bradley 2007 for a general discussion). There is currently much confusion and lack of clarity (not least in the use of terminology), and certain myths have taken root, such as the idea, adopted from Herne, that carinated bowls were initially used exclusively for ceremonial use (*e.g.* Thomas 1999, 99). Furthermore, some recent contributions to the debate about ceramic origins (*e.g.* Thomas 2004; 2008) have displayed a woeful ignorance and misunderstanding of the pottery in question, both in Britain and Ireland and on the Continent.

The reasons for this state of affairs are varied. They include the fact that in Britain, before ‘materiality’ came into vogue recently as the must-have interpretative approach (as reflected, for example, in contributions to the *Journal of Material Culture*), material culture studies had long been unfashionable, being associated in some people’s minds with outdated culture-historical archaeology. The documenting of ceramics and ceramic developments has been left in the hands of a dwindling group of experienced specialists. Furthermore, a persistent reluctance, and in many cases linguistic inability, to look beyond our shores for the bigger picture and to engage with the archaeology of our Continental neighbours has created the impression of parochial insularity in British and Irish archaeology – a situation mirrored, to some extent, in France. And where individuals, such as Ian Kinnes, have succeeded in crossing the Channel (in his case both literally and metaphorically), the emphasis has been on the difficulty in identifying the precise areas where the forerunners of ‘our’ pottery are to be found (*e.g.* Kinnes 1988; 2004a; 2004b). Added to this, our understanding of fundamental aspects such as chronology is currently undergoing radical change through new discoveries and new research (such as the programmes of radiocarbon dating funerary monuments and causewayed enclaves



Figure 1 The proposed strands of Neolithisation. 1. North-west France to south-west Ireland (Ferriter's Cove); 2. the Atlantic, 'Breton' Neolithic; 3. The 'Carinated Bowl Neolithic' (overall extent and routes taken from northern France remain open to discussion); 4. The 'Trans-Manche west' strand.

wares: see, for example, Whittle *et al.* 2007). Styles of pottery that used to be regarded as belonging to the earliest Neolithic – ‘Windmill Hill Ware’ in southern England, and ‘Hembury Ware’ in south-west England (Smith 1974; these styles subsequently re-labelled as ‘the Decorated style’ and ‘the South-Western style’ respectively by Whittle 1977) – are now known to post-date the earliest ceramic traditions in Britain: they belong to the second quarter of the fourth millennium, rather than to the first (Healy 2006; Whittle *et al.* 1999; 2007). On the Continent, too, the understanding and characterisation of ceramic developments has been undergoing significant changes (as exemplified by Serge Cassen’s and Pascale François’ re-evaluation of the concept of the Chasséen ‘culture’ in Armorica in 2006).

This paper attempts to cut through the fog, and to present an overview of the earliest Neolithic pottery from Britain and Ireland, together with some suggestions regarding its Continental background. This is based on almost a quarter century’s experience of studying Early Neolithic pottery, mainly in Ireland (*e.g.* Sheridan 1985; 1995) and Scotland (*e.g.* Sheridan 2003a; 2007); and it is hoped that the questions that it raises will stimulate more of the international debate that has characterised this author’s interactions, over the years, with the editors of this volume.

2. SEVERAL ‘EARLY NEOLITHICS’

As Stuart Piggott argued over half a century ago in his *Neolithic Cultures of the British Isles* (1954), the Mesolithic-Neolithic transition in Britain and Ireland was not a unitary process of change: we are not dealing with one ‘Neolithic’, but with several, deriving from different areas along the adjacent part of the Continent, and arriving at different times, for different reasons. It is not proposed to rehearse the well-worn arguments regarding the agency of this change; suffice it to say that the ‘acculturation’ model as persistently promoted by Julian Thomas (*e.g.* 1991; 1999; 2003; 2004; 2007), in which indigenous communities are cast as being the active agents for change, acquiring domesticates, novel technologies and novel practices from the Continent through their alleged long-standing pre-existing cross-Channel contacts, finds no evidential support whatsoever. There is, quite simply, no British or Irish parallel for the kind of phenomenon as witnessed, for example,

in the Swifterbant and Ertebølle ‘cultures’ on the Continent. Rather, as more and more commentators are coming to accept, it seems that we are dealing with actual immigrations, of varying scales, as the key agent of change (*e.g.* Kinnes 2004a; 2004b; Richards 2004; Rowley-Conwy 2004; Schulting 2000; 2004; Sheridan 2007). Thomas’ view that *it is impossible to imagine how anything other than a colossal invasion of Neolithic people* would be needed to explain the observed changes (Thomas 2004, 117) is based on a false premise. The question of how indigenous communities responded to these hypothetical new settlers once they had arrived is a separate issue, and one that is far from being resolved (see, for one suggestion, Whittle *et al.* 2007, 135). One clear possibility, given the paucity of evidence for the survival of recognisably ‘Mesolithic’ traditions (*e.g.* in lithic technology) after *c.* 4000 BC, is that indigenous groups ‘bought in’ to the new lifestyle fairly rapidly once the ‘Carinated Bowl Neolithic’ (see below) appeared.

To this author there appear to be three, possibly four separate ‘strands’ to this Neolithisation process (fig. 1). The status of one of these – a possible small-scale movement from western France to south-west Ireland at some time prior to 4250 cal BC – is currently being reassessed, and since no pottery has been associated with the evidence in question (from Ferriter’s Cove), it will not be discussed in detail below. The first, and earliest, clear strand arguably concerns a movement up along the Atlantic façade, probably from the Morbihan area of Brittany, during the last three centuries of the fifth millennium BC. The second, and most widespread, is what I term the ‘Carinated Bowl Neolithic’: this seems to have appeared over much of Britain and most of Ireland during the first two centuries of the fourth millennium, and is likely to have originated in or near the *Nord-Pas de Calais* region of northern France. The third and latest strand, which I shall term ‘*Trans-Manche ouest*’, involves one or more episodes of movement, probably from Normandy, probably during the 39th or 38th century BC, to south-west and southern England. These three (or more) alleged movements were independent of each other, and resulted from different causes (*contra* Thomas 1999; 2003; 2004).

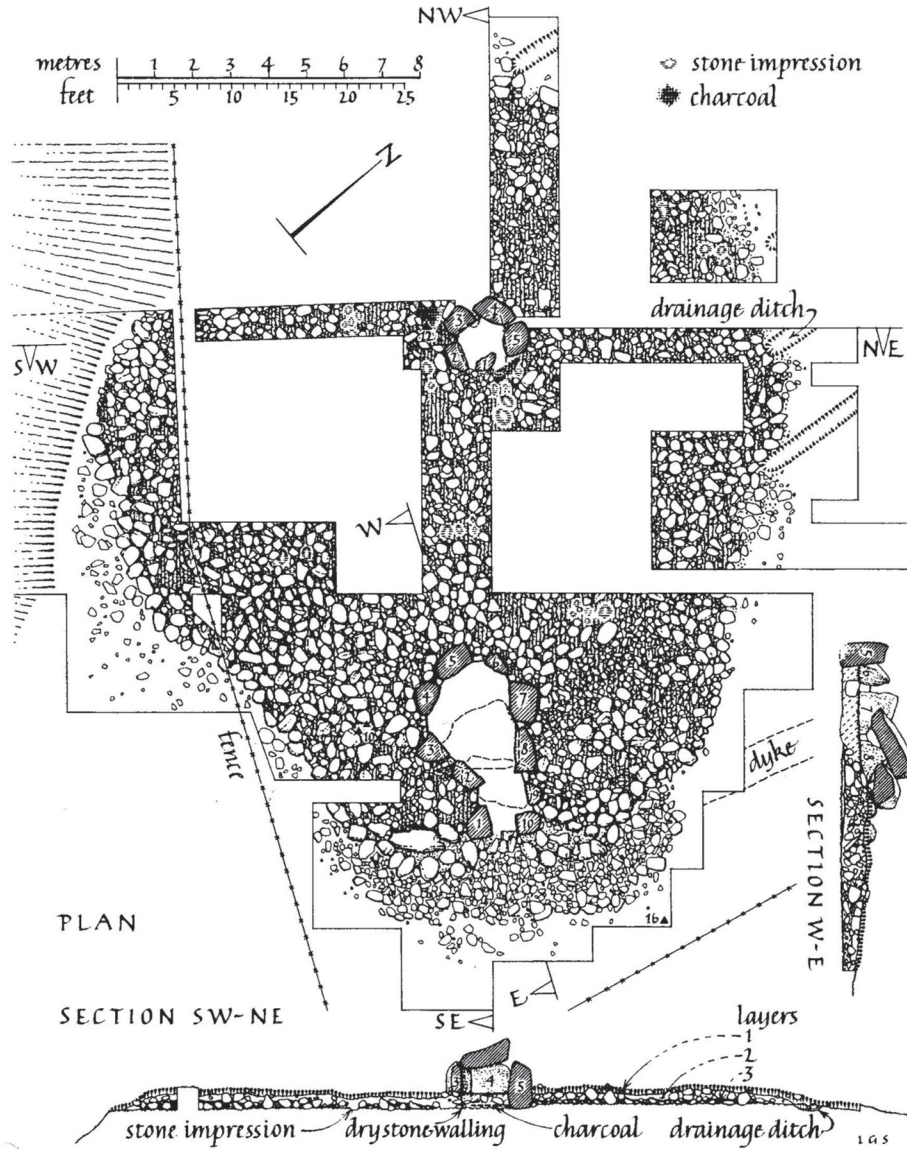


Figure 2 Achnacreebeag: plan and sections (From Ritchie 1970, reproduced courtesy of the Royal Commission on the Ancient & Historical Monuments of Scotland and the Society of Antiquaries of Scotland).

2.1 A ‘false start’ in south-west Ireland? The evidence from Ferriter’s Cove, and its reassessment

The discovery of seven bones of domesticated cattle, and a tooth from a domesticated sheep, within a Late Mesolithic settlement at Ferriter’s Cove, County Kerry, in south-west Ireland, raised the possibility of an early episode of contact with the Continent, since both these species would have had to be imported

Woodman *et al.* 1999, 90, 144-51; Woodman & McCarthy 2003). Initial dating of one of the cattle bones to 5510 ± 70 BP (OxA-3869, 4500-4230 cal BC at 2σ ; Woodman *et al.* 1999, 219) suggested that this had occurred during the second half of the fifth millennium; another cattle bone, from a different context, subsequently produced a yet earlier date of 5825 ± 50 BP (OxA-8775, 4800-4540 cal BC at 2σ , Woodman & McCarthy 2003). An attempt to date the

sheep tooth failed. It was argued (*ibid.*; Tresset 2003) that the most plausible area of origin for these animals was western France, and a possible explanatory scenario was proposed, featuring a very small-scale immigration of pioneering farmers from France; the hunting of their stock by the indigenous inhabitants of Ferriter's Cove; and the consequent failure of a Neolithic way of life to take root at that point, owing to the absence of a critical mass of people and of domesticates (Sheridan 2003a; Tresset 2003). Since then, the reliability of the earlier cattle date has been thrown into doubt, as the bone had been charred (Woodman pers. comm.); and, since all other claims for the presence of domesticated animals prior to the 'Carinated Bowl Neolithic' in Ireland have been convincingly dismissed (Woodman & McCarthy 2003), the entire argument for a precocious Neolithic presence hinges on a single date and on the contextual evidence for the Ferriter's Cove remains. Unless further and clearer evidence for our hypothetical early pioneering farmers emerges, the Ferriter's Cove evidence will have to be treated with caution. It should be noted that other, previous claims for a precocious start to farming (long before the elm decline), based on the discovery of cereal-sized pollen in cores from the west of Ireland, have now been dismissed (O'Connell & Molloy 2001, 118).

2.2 The Atlantic, Breton strand

Since this strand has already been discussed in detail elsewhere by the present author (Sheridan 2000; 2003a; 2003b; 2004; 2005), only its salient points will be repeated here. During the late 1960s, the excavation of a two-phase monument at Achnacreebeag (fig. 2), on the west coast of Scotland, produced an assemblage of three Neolithic pots (Ritchie 1970 and fig. 2.1-3). One (fig. 3.1) is a fine-textured, thin-walled bipartite bowl with carefully-smoothed surface, decorated with a fringed rainbow motif, the second (fig. 3.2) is an apparently undecorated bowl of gritty fabric, with a bevelled rim, and the third (fig. 3.3) has stab decoration on its bevelled rim and above and below its cordon-like carination. They were found in the second-phase structure, a simple passage tomb; this had been added to a pre-existing low kerbed cairn some 18 metres in diameter, surrounding a small polygonal boulder-built and drystone chamber. At the time, the pots were believed to be of Late

Neolithic date, with Pot 1 allegedly deriving from a west Scottish ceramic tradition, Scott's 'Beacharra ware' (Scott 1964; 1969). Following reassessment by the present author, however, a radically different identification was proposed. Pot 1 was recognised as a classic example of Breton 'Late Castelleic' pottery – an Armorican Middle Neolithic II tradition, found in Brittany and Normandy with its epicentre in the Gulf of Morbihan, that dates to c. 4300-4000 BC (Cassen 2000; pers. comm.). Fine, bipartite bowls with rainbow decoration are a highly distinctive element in the Castelleic repertoire. They appear in its early phase (c. 4700-4300 BC) as bowls with long, near-upright necks (as at Le Castelleic itself: fig. 3.4), and they continued to be used into the late phase, with the neck becoming more inclined, as can be seen for example on a vessel from Vierville (fig. 3.5) – a Norman outlier, believed to have been imported from Brittany (Cassen pers. comm.) – and on vessels from *Er Grah* in the Morbihan (fig. 3.6). The similarity between the Achnacreebeag pot and examples from Brittany and Normandy – not only stylistically, but also in the thinness of the walls and the fineness of the fabric – is so strong that it cannot be explained away as a chance resemblance. Pots 2 and 3 were also recognised as being typical of the kind of pottery found associated with Late Castelleic assemblages in Brittany and Normandy (and indeed Pot 3 may fall within the Late Castelleic tradition: Cassen pers. comm.). Overall, according to Serge Cassen (pers. comm.), the assemblage can be dated to the final phase of the Castelleic tradition; comparable pottery found at *la Table des Marchand* has been radiocarbon-dated to 4200-4000 BC. As such, the Achnacreebeag assemblage does not *derive* from any Scottish ceramic tradition; rather, it constitutes the *precursor* to the so-called Beacharra tradition (and to related pottery in Ireland, with ceramic 'descendants' continuing to be made for several centuries; see Sheridan 2003a for details). Furthermore, it would appear that this is the very earliest pottery in Britain and Ireland.¹

1. As for the question of whether the Achnacreebeag pots may represent actual imports – as Cassen suggests for the Norman example from Vierville – rather than vessels made locally in the French tradition: thin-section analysis, kindly undertaken for the author by Breton pottery specialist Gwenaëlle Hamon, did not, unfortunately, produce conclusive results.

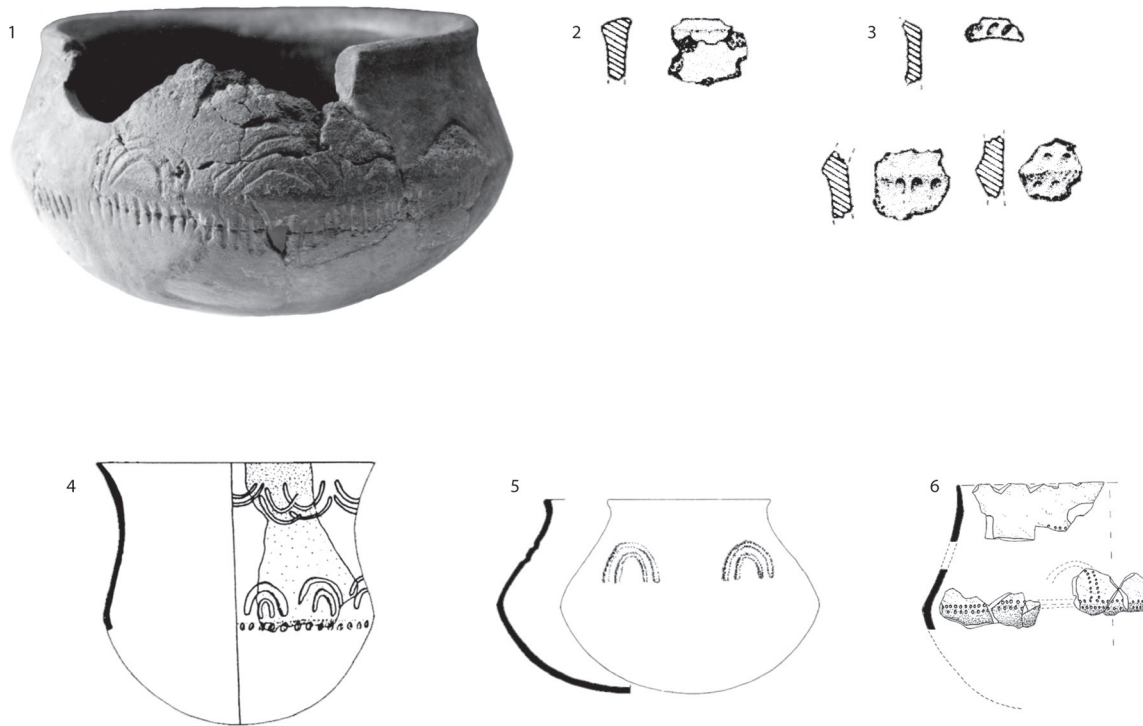


Figure 3 The French-style pots from Achnacreebeag (1-3) and some *comparanda* (4-5). 1. Late Castelleic-style bowl with fringed rainbow decoration. Photo: NMS; 2-3. Undecorated and decorated bowls. From Ritchie 1970; 4. Early Castelleic bowl from Le Castelleic, Brittany. From Bailloud 1975; 5. Late Castelleic bowl from Vierville, Normandy. Photo: Musée de Normandie. Line drawing from Verron 2000; 6. Late Castelleic bowl from *Er Grah*, Morbihan. From Cassen 2007.

The Breton connection is not limited to ceramic links, nor is it attested only at Achnacreebeag. Funerary monuments consisting of small closed chambers with circular mounds, and of small, simple passage tombs in mounds, are known from Brittany (Cassen 2000); and the presence of rock crystals in several of these monuments (Boujot & Cassen 1992; Cassen 2000, 271-276) is a further point of similarity with Achnacreebeag, where one was found (albeit among later artefacts, in the passage tomb's blocking material). Late Castelleic and associated pottery has been found in these Breton monuments (Cassen 2000: 439-443), and also in the drystone-built simple passage tomb at Vierville, on the Cotentin peninsula of Normandy (Verron 1986; 2000). As Frances Lynch pointed out as long ago as 1975, similar monuments are to be found along the Atlantic façade of Britain and around the northern half of Ireland (fig. 4). All are near the coast. One of the seven (or possibly

eight) Welsh examples, a simple passage tomb at Carreg Samson, Dyfed, has produced a large deep U-profiled bowl (fig. 5). While this vessel does not appear to fit comfortably with other Welsh Neolithic pottery (Lynch 2000; Peterson 2003), it is consistent with the Armorican Middle Neolithic II ceramic repertoire (Cassen and Pailler pers. comm.).

While no material suitable for radiocarbon dating was found either at Achnacreebeag or at Carreg Samson, the cemetery of closed chambers and simple passage tombs at Carrowmore in County Sligo, north-west Ireland, has produced dates for tomb construction that fall within the time frame for the currency of Late Castelleic and related pottery (Sheridan 2003b). Unfortunately, the artefactual finds and bones from these tombs are likely to date to their secondary re-use in the second half of the fourth millennium, so they are unlikely to shed any light on the tombs' original users.

No clear evidence relating to other aspects of these tomb-builders' lives has yet come to light. A field-work campaign to locate the settlements relating to the Carrowmore tomb-builders during the 1980s by Göran Burenhult was unsuccessful (Burenhult 1984); and no attempts have yet been made to investigate the areas around other Breton-style megalithic tombs in Britain and Ireland.

Ceramically, then, our evidence for this particular strand of Neolithisation is limited to just four pots from two findspots, so much more fieldwork is called for. However, the facts that: 1) these constitute the very earliest pottery for Britain and Ireland – a wholly new technology; 2) they are clearly the products of a well-established ceramic tradition; and 3) convincing *comparanda* for both the pots (stylistically and technically) and their associated monument types exist in Brittany, support the view that they were made by small immigrant groups, probably from the Morbihan area of southern Brittany. The reasons for this hypothetical emigration have been discussed elsewhere (*e.g.* Sheridan 2003b): Boujot and Cassen had argued that the appearance of simple passage tombs in the Morbihan towards the end of the fifth millennium marked a key stage in the lengthy process of Neolithisation in that region (Boujot & Cassen 1992; 1993; 1997; Cassen 2000, 579 and 590). This involved both economic change (in

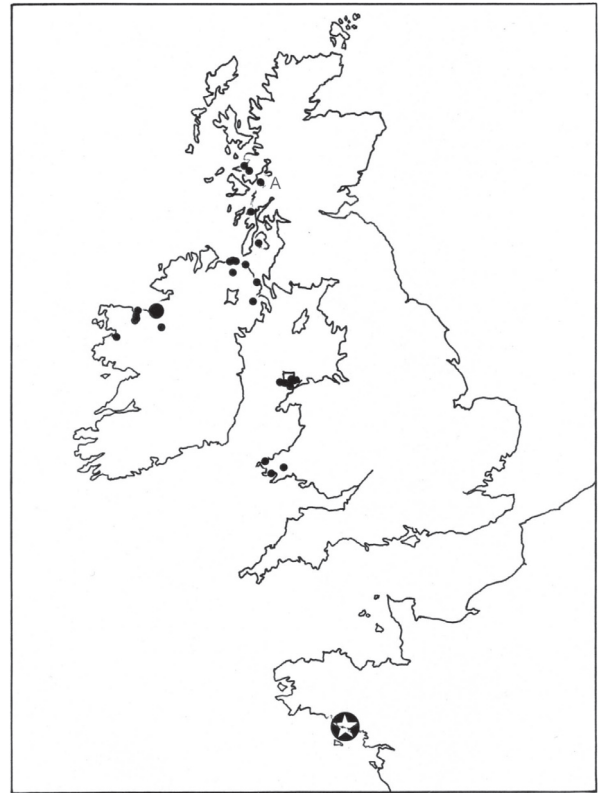


Figure 4 Distribution of Breton-style closed chambers and simple passage tombs in Britain and Ireland. A= Achnacreebeag; star indicates the likely source area in the Morbihan area of Brittany. From Sheridan 2004.

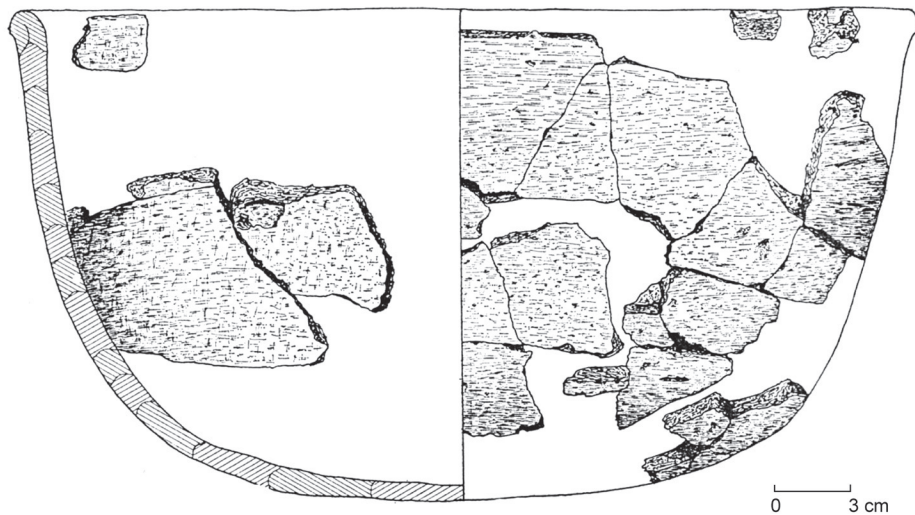


Figure 5 French-style bowl from *Carreg Samson*, Dyfed. Scale 1:3. From Lynch 1975.

the final transition to a dependence on agriculture) and ideological change (which occasioned the tearing down, destruction and re-use of the symbols of an older ideology – the huge standing stones, with their carvings of iconic creatures and artefacts). The desire of some individuals to seek a new life elsewhere – without knowing their ultimate destination – is understandable in this context of *bouleversements*; and there is good evidence to suggest that the Breton communities were perfectly capable of long-distance navigation, as there had already been connections with Spain during the second half of the fifth millennium (as shown in the importation of variscite beads to the Morbihan; in the copying of Morbihan-style axeheads made of jadeite² in Galicia; and in the sharing of megalithic designs: Cassen and Vaquero 2000; Herbaut and Querré 2004; Pailler in press). Furthermore, that the *Morbihannais* were undertaking northward journeys by sea is suggested by the presence of late Castelleic-style pottery in northern Brittany and Normandy, outside of its area of origin (Cassen 2000, 437 and fig. 135).

Given that this Breton strand of Neolithisation is likely to have appeared between 4300 and 4000 BC, this leaves the distinct possibility that our hypothetical French settlers at Achnacreebeag were contemporary with the Late Mesolithic people whose remains have been found in shell middens on Oronsay (in the Inner Hebrides, some 75 km, or a good day's sailing, to the south west as the crow flies) and whose diet was markedly marine-rich (Meiklejohn *et al.* 2005; Richards & Sheridan 2000). It is quite possible that the population density was so low at that time, and the number of immigrants from Brittany so small, that these different groups co-existed in ignorance of each other for some time. However, it can also be noted that the Oronsay bones relate to the latest use of the shell middens in question; so it may be that contact with farming groups shortly after the turn of the millennium triggered a change in subsistence practice.

2. The term 'jadeite', which is the mineralogically correct way to describe the rock (as opposed to 'jadeite', which is a constituent mineral'), is now the preferred usage among those actively researching such axeheads (Pétrequin *et al.* 2008).

2.3 The 'Carinated Bowl' Neolithic

This strand has also recently been discussed at length elsewhere (Sheridan 2007), so only the salient features will be presented here. Essentially, we seem to be dealing with a veritable 'package' of novelties which appeared, diaspora-like, over much of Britain and most of Ireland within the first two centuries of the fourth millennium BC. The rapidly-growing body of data for the 'Carinated Bowl Neolithic' – thanks largely to finds from developer-funded archaeology, especially in Ireland – afford us a much fuller view of this strand than is the case with the others discussed here. Its key features can be summarised as follows:

- Use of domesticated cattle, sheep and pigs, and of wheat (including the environmentally-demanding bread wheat), barley, flax, field bean and probably brassicas, all imported; also use of wild terrestrial resources,
- construction of houses of various sizes, ranging from the long rectangular structures with convex or straight ends, up to 24 m long and 11 m wide, found in Scotland and southern England (see Hey & Barclay 2007 on the southern English examples); to smaller rectangular and square structures; and to more slightly-constructed buildings, perhaps for less permanent use,
- causewayed enclosure construction (at Magheraboy, Co. Sligo, in north-west Ireland: Danaher 2007. This is currently the earliest such enclosure in Britain and Ireland, pre-dating better-known examples such as Hambledon Hill in Dorset by up to 300 years: Healy 2006),
- construction of trackways (such as the Sweet Track in Somerset, dendro-dated to 3807/3806 BC) across wetland areas,
- use of various non-megalithic funerary monuments – rectangular 'linear zone' mortuary structures featuring split oak trunks (some associated with timber façades and long rectangular or trapezoidal post enclosures), many of which were burnt before being covered with long or round mounds; cremation sites covered with round or ring-cairns; a plank-lined rectangular grave (from Blackwall, London: Hey & Barclay 2007). There are also non-monumental interments in caves (Dowd 2008),

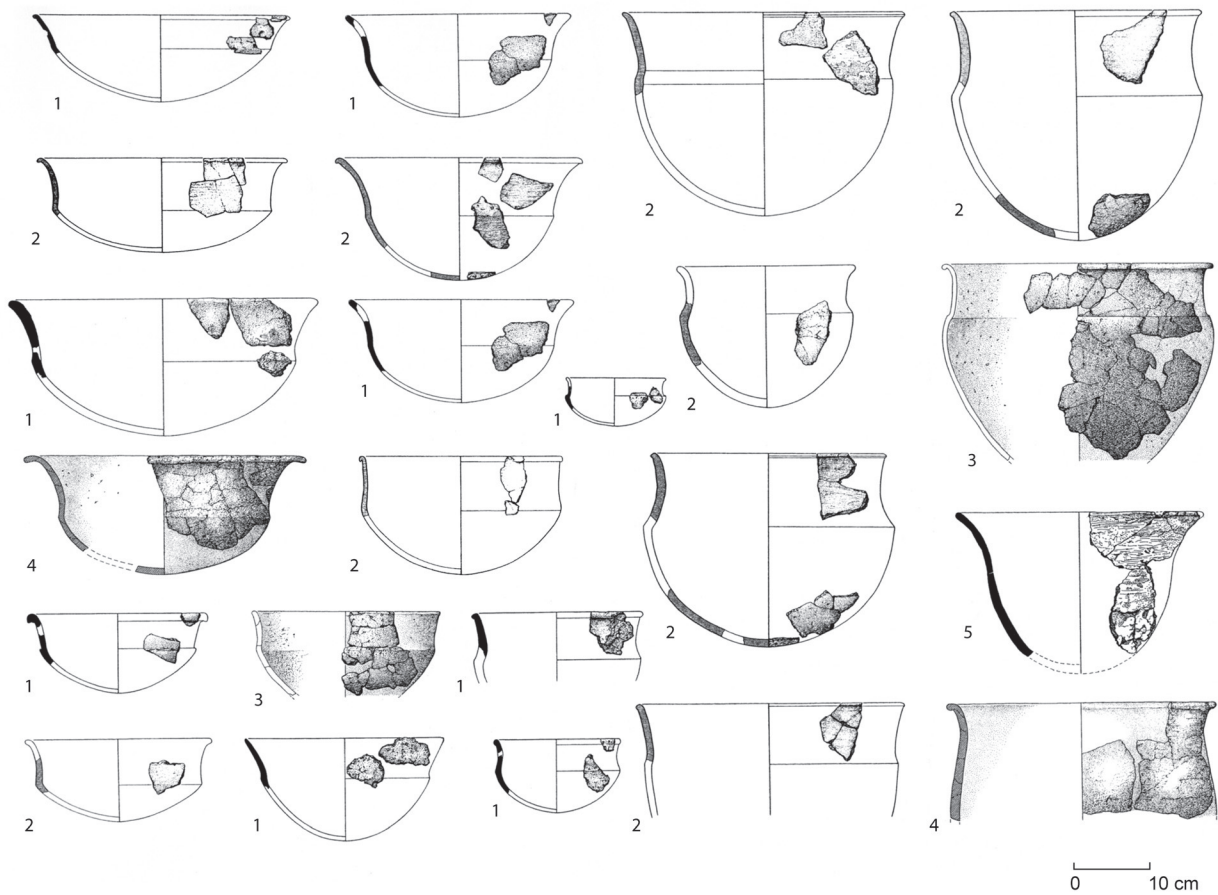


Figure 6 Examples of Carinated Bowl pottery from northern Britain, showing the range of carinated and S-profiled forms. Key: 1. Claish, Stirling; 2. Biggar Common, South Lanarkshire; 3. Newbridge, City of Edinburgh; 4. Carzield, Dumfries & Galloway; 5. Auchategan, Argyll & Bute. From Sheridan 2007.

- use of pottery (see below and figs 6 & 7) and of new styles of lithic artefacts (*e.g.* leaf-shaped arrowheads); new style of working flint,
- use of ground and polished stone axeheads, including some special-purpose examples made of jadeitite and other stones from the Italian Alps, which were old when imported and which probably represented the immigrants' treasured ancestral possessions (Sheridan *et al.* 2007; Pétrequin *et al.* 2008); opening of the first flint mines in southern England, and exploitation of hard rock sources, *e.g.* at Great Langdale and Tievebulliagh;
- establishment and maintenance of networks of contacts, over which various materials, artefacts, ideas and people passed: examples include flint

and stone axeheads, flint from north-east Ireland and Arran pitchstone.

No overall distribution map yet exists for the 'Carinated Bowl Neolithic', but it is particularly well represented in northern Britain (as far as Caithness in the far north of Scotland) and Ireland; it is also found in parts of Wales and in eastern and southern England, but the distribution thins markedly to the south-west, with few (if any) definite examples to the south and west of the Sweet Track.

Although the term 'Carinated Bowl' is used to describe the ceramic tradition (as well as all these other characteristics), the repertoire of forms was not limited to carinated bowls, as fig. 7 demonstrates. Carinated and S-profiled bowls dominate, however; an

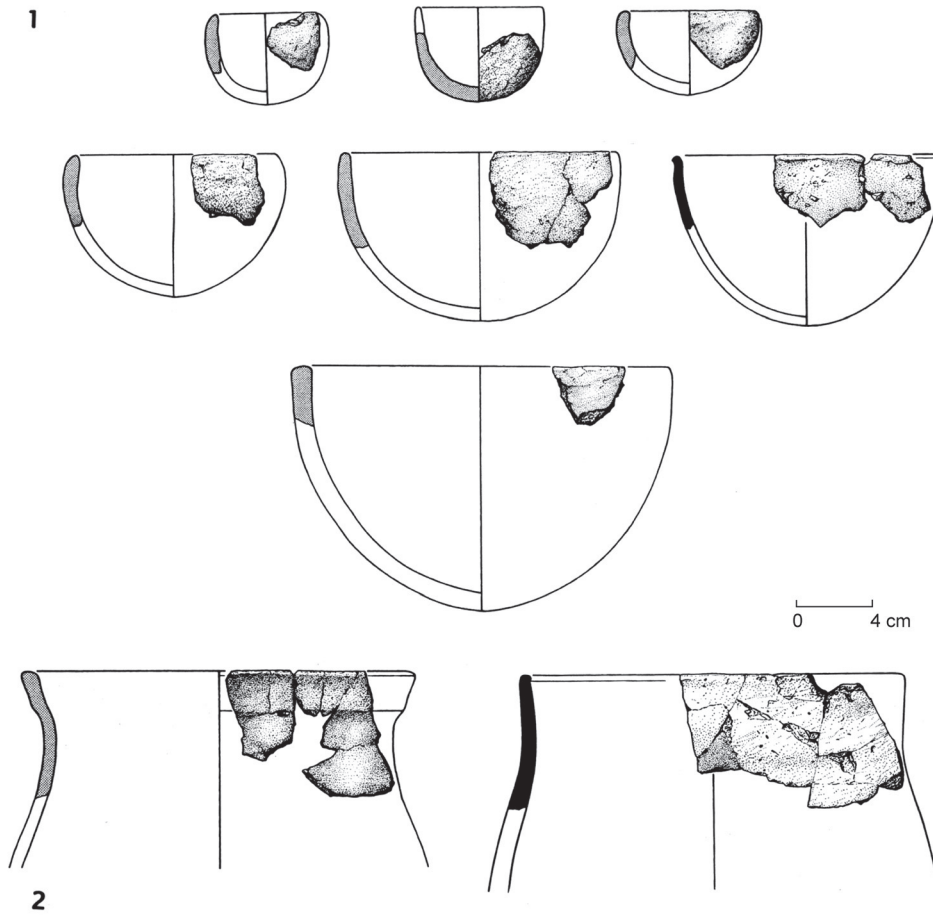


Figure 7 Examples of Carinated Bowl pottery from northern Britain, showing uncarinated (1) and collared (2) forms. Examples with blacked-in sections are from Clais, Stirling; others from Biggar Common, South Lanarkshire. Scale 1:4. From Sheridan 2007.

idea of the range of shapes and sizes is given in fig. 6. The necked jars shown in fig. 7 are rare; even rarer is the ceramic spoon. There is marked technical homogeneity, as well as stylistic homogeneity, throughout the distribution area. Hard, thin-walled, fine-textured vessels containing sparse, small stone inclusions tend to dominate, although within assemblages there can be some variety in wall thickness, fineness of texture and surface finish, reflecting different uses. The thinnest vessels have walls just 4 mm thick; considerable skill must have been involved in constructing large, thin-walled pots. Surface finish ranges from simple smoothing to polishing (possibly with leather) and burnishing; decoration is absent, except for occasional vertical

fingertip fluting or ripple-burnishing. Regional diversification – ‘style drift’ – occurred from an early stage, as can be seen with the ‘North-East Style’ of Carinated Bowl pottery in Scotland and its Irish congener (Sheridan 1995; 2007).

Various attempts have been made over the years to pinpoint the source of the ‘Carinated Bowl Neolithic’, and ceramically, attention has been drawn to both Chasséen and Michelsberg characteristics (see Sheridan 2007, 468-469 for details), and yet no Continental assemblage offers an *exact* match for the Carinated Bowl ceramic repertoire. To cut a long story short, to the author it seems that the most likely area where such an assemblage will eventually be found is the *Nord-Pas de Calais* region of northern

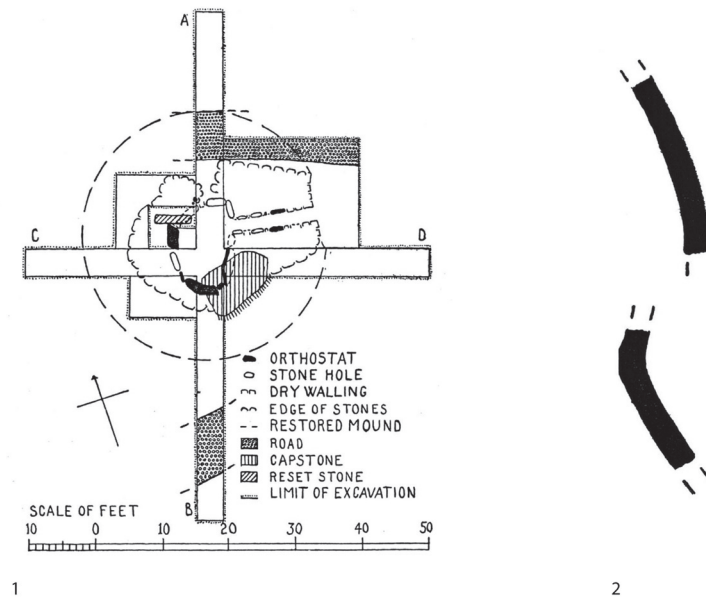


Figure 8 The French-style simple passage tomb at Broadsands, Devon: 1. plan; 2. Early Neolithic pottery from the tomb (two pots represented). From Radford 1953, reproduced by permission of the Devon Archaeological Society.

France. It may well be that ‘our’ Carinated Bowl tradition – and all the associated parts of its Neolithic package – originated as one of several regionally-specific cultural facies that emerged around 4000 BC in northern France and the Low Countries. These include the ‘Group of Spiere’ in the Scheldt Basin (Vanmontfort 2004; 2006) which, like the Carinated Bowl tradition, fills a gap between *Chasséen septentrional* and Michelsberg pottery (an observation seemingly lost on Thomas 2008 in his latest critique of the colonisation hypothesis). Parallels for other aspects of the Carinated Bowl ‘package’ can be found in and/or near the far north of France at this time: these include leaf-shaped arrowheads, and the use of flint mines, causewayed enclosures and even occasional long barrows (e.g. at Ottenburg: Vanmontfort 2004, 243).

The reason why such a regionally-distinctive facies should emerge – and then be exported wholesale, by groups on the move – at this time relates to more widespread changes around 4000 BC, as detailed by Crombé and Vanmontfort (2007) for the Scheldt Basin in Belgium, and by Louwe Kooijmans (2007) for the Lower Rhine Basin. These relate to the emergence (probably in the north-east Paris Basin: Jeunesse 1998) and expansion of the Michelsberg

‘cultural complex’ from c. 4300 BC, as an aspect of significant social change: *Neolithic society is restructured and ... the basic unit shifts to a higher level, from the village in a segmentary society towards groups for which supra-local enclosures have a central function, a development seen over wider tracts of western and northern Europe. It is in this stage ... from 4300 cal BC onward, that the wide spaces between the restricted Neolithic enclaves in Belgium are filled in ... The Michelsberg complex also demonstrates an expansion to the north ...* (Louwe Kooijmans 2007, 297). Furthermore, *These changes were not gradual developments but crises, involving drastic changes in the communities’ culture ...* (Louwe Kooijmans 2005, 269). It is arguably against this background of turbulent times that we can set the emergence of the ‘Carinated Bowl Neolithic’; its ‘emigration’ to Britain and Ireland could be because of a combination of infilling of the landscape, and dissatisfaction with the local conditions, which may not have been conducive to successful farming.

2.4 *Trans-Manche ouest*: Normandy to southern and south-west England

This final strand (or group of strands) of Neolithisation is attested by three sets of evidence, namely: 1) the simple passage tomb at Broadsands, on the Devon coast near Paignton; 2) the so-called *rotunda* monuments (drystone-built closed corbelled chambers and simple passage tombs) of the Severn-Cotswold region; and 3) two early fourth millennium pottery assemblages from Wessex that are not part of the Carinated Bowl tradition. In all cases, the evidence comes from findspots that are close to the coast or to rivers that would have been easily accessible from north-west France and the Channel Islands.

The passage tomb at Broadsands (fig. 8.1) is situated facing the north-western tip of the Cotentin peninsula and the Channel Islands. It consists of a polygonal, roughly D-shaped chamber that had been constructed using orthostats and drystone walling, and capped by at least one capstone; a short passage, constructed using low orthostats and drystone walling, set slightly eccentrically to the chamber; and a small, near-circular kerbed drystone cairn just over 12 metres in diameter (Radford 1953). The chamber had been rifled, mainly during the Medieval period, but sufficient survived at the time of excavation to show that there had been at least two episodes of human interment, separated by a layer of flat slabs that extended over much of the chamber floor. From various locations, including underneath this paving, came sherds from at least two thin-walled, fine-textured carinated bowls (fig. 8.2); the sherds are black throughout, fairly hard, and contain very sparse, tiny fragments of stone filler; their surfaces had been polished to a low sheen. Sherds of Middle Neolithic, Beaker and later pottery were also associated with the tomb. Radiocarbon dates recently obtained for each of the individuals within this tomb demonstrate that the earliest two, from beneath the paving, date to within the first three centuries of the fourth millennium cal BC (OxA-17164, 5011 ± 32 BP and OxA-17165, 4999 ± 31 BP respectively: Schulting pers. comm. The later dates correspond with the Middle Neolithic and Beaker period re-use of the tomb).

While the Broadsands tomb appears to be unique within Devon and Cornwall, compelling *comparanda* can be found across the sea, from among the simple passage tombs of mainly drystone construction

found in lower Normandy (e.g. at Vierville: Verron 1986; 2000, fig. 62), the Channel Islands (at La Sergenté, Jersey: Patton 1993) and Armorica (e.g. at Carn: Giot *et al.* 1996). The only difference between these tombs and Broadsands is that they have corbelled roofs. Although some still countenance a pre-4300 BC start for this tradition (e.g. Scarre 2002), evidence is growing to support the view (as expressed, for example, by Boujot & Cassen 1992; Cassen 2000; 2003; Cassen & François 2006; Verron 2000) that they belong within the north French Middle Neolithic period – as counterparts of the simple passage tombs as seen in the Morbihan – and were built between *c.* 4300 BC and *c.* 3700 BC. The latter half of this date range accords with the dates for Broadsands. Furthermore, while the carinated bowls from Broadsands are undeniably similar in shape and fabric to some vessels in the Carinated Bowl tradition, they are also comparable with some of the post-Castellic Middle Neolithic II pottery that has been found in Normandy, Armorica and the Channel Islands (e.g. at La Sergenté: Patton 1993, fig. iv.3). The fact that this pottery shows links with, and influences from, northern French Chasséen pottery (Cassen & François 2006) accounts for the generalised resemblance of the Broadsands pots to Carinated Bowl vessels.

Further north, the *rotundae* found in the Severn-Cotswold region (fig. 9; Darvill 2004, 60-66) may well represent a further expression of the same funerary tradition. These small monuments consist of drystone-built closed chambers and simple passage tombs within round, drystone cairns (fig. 9.1); unlike Broadsands, these do have the corbelled roofing as seen in the north French and Jersey examples. Unfortunately, very little pottery has been found in them, and what survives – from Sale's Lot in Gloucestershire (O'Neil 1966) – consists of such small sherds (fig. 9.2) that meaningful comparisons cannot be made. Stratigraphically, it is clear that these monuments pre-date the well-known Severn-Cotswold megalithic chamber tombs which, as is clear from the dating programme of Whittle *et al.* (Bayliss & Whittle 2007), were not built until *c.* 3750 BC or later. Attempts to establish their date of construction through radiocarbon dating have, however, met with only limited success (Smith & Brickley 2006). At Notgrove, Gloucestershire, where a Severn-Cotswold tomb was built around a closed-chamber *rotunda*,

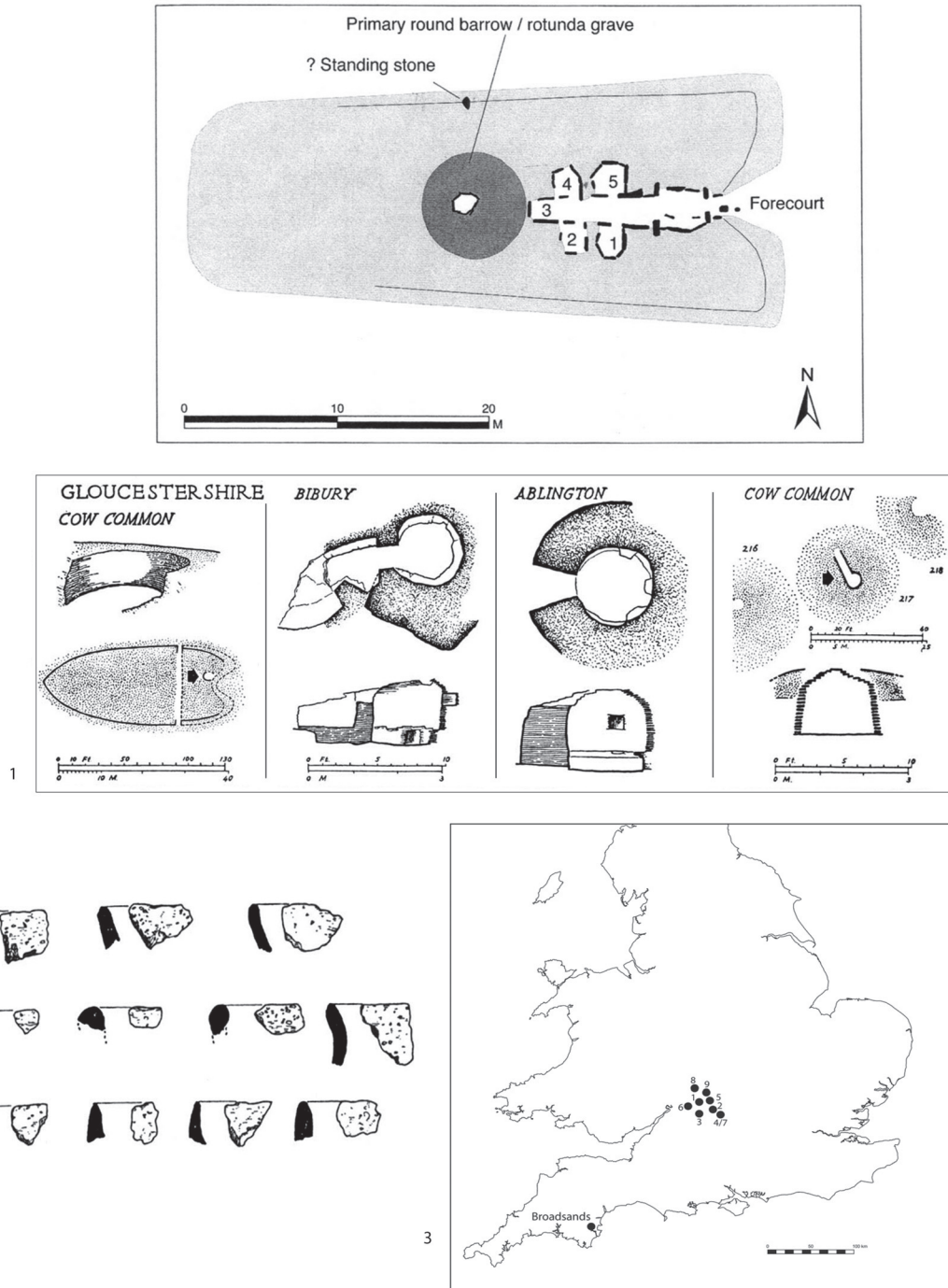


Figure 9 *Rotundae* (closed chambers and simple passage tombs within round cairns, partly or wholly drystone-built) in the Severn-Cotswold region. All examples from Gloucestershire. 1. Notgrove (from Darvill 2004) and other examples (from Grimes 1960); 2. pottery from Sale's Lot (from O'Neil 1966); 3. Distribution (which also shows the location of the simple passage tomb at Broadsands; by David Mullin.) Key: 1. Notgrove; 2. Ablington; 3. Miserden; 4. Bibury; 5. Cow Common Long and Round; 6. Sale's Lot; 7. Saltway Barn; 8. Bevan's Quarry; 9. Kinton Thorns.

Neolithic II pottery that was in use in Normandy and northern Armorica (*i.e.* in the *Chasséen septentrional* and *MNII Armoricaïn* traditions). The two vessels described above can be paralleled within the *Chasséen septentrional* assemblage, dating to 4000-3800 BC, from Louviers, Eure, in upper Normandy (Giligny 2005, fig. 180). The vessels that resemble Carinated Bowl tradition forms find generalised parallels among the *Chasséen septentrional* and *MNII Armoricaïn* repertoire. Given that much still remains to be clarified about the development of MNII pottery in Armorica and Normandy (Giligny & Dubouloz pers. comm.), and indeed in the Channel Islands, it may well be that closer and more specific parallels, at an assemblage-wide level, will eventually be found.

Here, then, is evidence suggesting some kind of movement from north-west France to southern and south-west England, probably during the first quarter of the fourth millennium. As with the other strands of Neolithisation, these monuments and artefacts appear as pure novelties, without a hint of integration with the pre-existing Mesolithic milieu. Within a British context the pottery arguably provides a basis for the subsequent development, during the 38th century, of Whittle's 'South-western' (*i.e.* Hembury) pottery. (Indeed, Frances Healy has suggested (pers comm.) that the Coneybury Anomaly assemblage could simply represent an early-dated example of South-western style pottery.) There is evidence for continuing (or renewed) contacts between southern and south-west England and north-west France during the second quarter of the fourth millennium: certain French ceramic design features, such as trumpet lugs, may well have been 'borrowed' by English potters and used within a tradition that, by now, had a clear English identity of its own. Furthermore, some, at least, of the rare imports of stone axeheads from Brittany (*e.g.* of metadolerite from Plussulien) may have arrived during this period.⁴ But by the second quarter of the millennium we are dealing with contacts between well-established farming communities on either side of the Channel. This contrasts with the situation during the first quarter, where the evidence suggests a one-way movement of pioneering settlers

from France. As for why these hypothetical settlers should have chosen to travel northwards, the reasons are unclear; much remains to be understood about the social dynamics of Middle Neolithic communities in north-west France and the Channel Islands.

3. CONCLUSIONS

This brief review has sought to disentangle and clarify the several strands of Neolithisation that produced the earliest pottery in Britain and Ireland, and to suggest their areas of origin. The Breton, Atlantic strand, arriving during the last quarter of the fifth millennium, seems to have originated in the Morbihan. The unidirectional movement northwards (to destinations that would have been unknown to the emigrants) will have been occasioned by social, economic and ideological changes – and indeed facilitated by the prevailing currents and winds, as Roger Mercer has noted in a different context (Mercer 2003). The Carinated Bowl 'diaspora', arriving within the first two centuries of the fourth millennium, can be related to wider changes affecting northern France and the Low Countries; once again, the movement seems to have been unidirectional⁵ and, for areas not visible from Nord-Pas de Calais, the destinations unknown. The shorter-hop '*Trans-Manche ouest*' strand (or strands) that, for reasons unknown, brought Norman/north Armorican Jersey Middle Neolithic traditions of funerary monuments and pottery to southern and south-west England, marked the beginning of longer-lasting cross-Channel contacts between these areas. These three strands were independent of each other, and occasioned by different factors.

Much remains to be understood about each of these strands, on both sides of the sea. But by cutting through the fog of ignorance and misconception, it is hoped that this contribution has provided some pointers for fruitful future research.

4. Space does not permit a discussion of whether some Alpine axeheads arrived in Britain through this route: see Pétrequin *et al.* 2008 for a discussion.

5. Notwithstanding any subsequent contacts linking Britain with the Continent that may have involved influences from British Carinated Bowl pottery – as Louwe Kooijmans has previously argued in the case of some Swifterbant design elements: Louwe Kooijmans 1976.

4. ACKNOWLEDGEMENTS

Leendert Louwe Kooijmans is most warmly thanked for his support and interest in the author's work over the last quarter century, and for his patience as an editor. Bart Vanmontfort is also thanked for his advice and patience; and the following are thanked for their information, advice and opinions: Serge Cassen, Philippe Crombé, Ian Kinnes, Yvan Pailler, Pierre Pétrequin, Rick Schulting and Alasdair Whittle. Thanks are extended to all who have allowed the reproduction of images; to Dave Mullin for having produced the *rotunda* distribution map; and to Karsten Wentink for his help in producing figure 1.

5. REFERENCES

- Bailloud, G. 1975. Les céramiques 'cannelées' du Néolithique morbihannais, *Bulletin de la Société Préhistorique Française* 72, 343-367.
- Bayliss, A. & A. Whittle (eds) 2007. Histories of the dead: building chronologies for five southern British long barrows, *Cambridge Archaeological Journal* 17, supplement S1.
- Boujot, C. & S. Cassen 1992. Le développement des premières architectures funéraires monumentales en France occidentale, *Revue d'Archéologie de l'Ouest*, Supplément 5, 195-211. Boujot, C. & S. Cassen 1993. A pattern of evolution for the Neolithic funerary structures of the west of France, *Antiquity* 67, 477-491.
- Boujot, C. & S. Cassen 1997. Néolithisation et monumentalité funéraire: explorations du tertre de Lannec er Gadouer à Erdeven (Morbihan, France). In: A. Rodríguez-Casal (ed.), *O Neolítico Atlántico e as Orixes do Megalitismo*, Santiago de Compostela, 211-232.
- Bradley, R. 2007. *The Prehistory of Britain and Ireland*. Cambridge.
- Burenhult, G. 1984. *The Archaeology of Carrowmore: environmental archaeology and the megalithic tradition at Carrowmore, Co. Sligo, Ireland*, Stockholm (Theses and Papers in North-European Archaeology 14).
- Cassen, S. & P. François 2006. Du Chasséen Armoricaïn à l'Auzay-Sandun: un apport de l'ACR 2003-2006 sur le site de la Table des Marchand (Locmariaquer, Morbihan), *Internéo* 6, 77-98.
- Cassen, S. & J. Vaquero [Vaquer] 2000. La forme d'une chose. In: S. Cassen, *Éléments d'architecture. Exploration d'une tertre funéraire à Lannec er Gadouer (Erdeven, Morbihan). Constructions et reconstructions dans le Néolithique morbihannais. Propositions pour une lecture symbolique*, Chauvigny, 611-656.
- Cassen, S. 2000. *Éléments d'architecture. Exploration d'une tertre funéraire à Lannec er Gadouer (Erdeven, Morbihan). Constructions et reconstructions dans le Néolithique morbihannais. Propositions pour une lecture symbolique*, Chauvigny.
- Cassen, S. 2003. Barnenez. In: P. Bogucki & P.J. Crabtree (eds), *Ancient Europe 8000 BC – AD 1000. Encyclopaedia of the barbarian world. Volume 1: The Mesolithic to Copper Age (c. 8000-2000 BC)*, New York, 408-412.
- Cassen, S. (ed.) 2007. *Autour de la table. Explorations archéologiques et discours savants sur une architecture néolithique restaurée à Locmariaquer, Morbihan, Vannes*.
- Cleal, R. 2004. The dating and diversity of the earliest ceramics of Wessex and south-west England. In: R. Cleal & J. Pollard (eds), *Monuments and material culture*, Salisbury, 164-92.
- Crombé, Ph. & B. Vanmontfort 2007. The Neolithisation of the Scheldt basin in western Belgium. In: A.W.R. Whittle & V. Cummings (eds), 263-285.
- Danaher, E. 2007. *Monumental beginnings: the Archaeology of the N4 Sligo inner relief road*, Dublin.
- Darvill, T. 2004. *Long Barrows of the Cotswolds and surrounding areas*, Stroud.
- Dowd, M. 2008. The use of caves for funerary and ritual practices in Neolithic Ireland, *Antiquity* 82, 305-317.
- Giligny, F. 2005. *Louviers "La Vilette" (Eure): Un site néolithique moyen en zone humide*, Rennes. Giot, P.-R., J. L'Helgouach & J. Monnier 1996. *Préhistoire de la Bretagne* (3rd ed.), Rennes.
- Grimes, W.F. 1960. *Excavations on defence sites, 1939-1945. 1: mainly Neolithic – Bronze Age*, London.
- Healy, F. 2006. Pottery deposition at Hambledon Hill. In: A. Gibson (ed.), *Prehistoric pottery: some recent research*, Oxford (BAR International Series 1509), 11-38.
- Herbaut, F. & G. Querré 2004. La parure néolithique en variscite dans le sud de l'Armorique, *Bulletin de la Société Préhistorique Française* 101, 497-520. Herne, A. 1988. A time and a place for the Grimston Bowl. In J.C. Barrett & I.A. Kinnes (eds), *The archaeology of context in the Neolithic and Bronze Age: recent trends*, Sheffield, 9-29.
- Hey, G. & A. Barclay 2007. The Thames Valley in the late fifth and early fourth millennium cal BC: the appearance of domestication and the evidence for change. In: A.W.R. Whittle & V. Cummings (eds), 399-422.
- Jeunesse, Chr. 1998. Pour une origine occidentale de la culture de Michelsberg? In: J. Biel, H. Schlichtherle,

- M. Strobel & A. Zeeb (eds), *Die Michelsberger Kultur und ihre Randgebiete – Probleme der Entstehung, Chronologie und des Siedlungswesens*, Stuttgart, 29-45.
- Kinnes, I.A. 1988. The cattlehip Potemkin: the first Neolithic in Britain. In: J.C. Barrett & I.A. Kinnes (eds), *The archaeology of context in the Neolithic and Bronze Age: recent trends*, Sheffield, 2-8.
- Kinnes, I.A. 2004a. Trans-manche: l'entente cordiale or vive la différence. In: J. Cotton & D. Field (eds), *Towards a new Stone Age: aspects of the Neolithic in south-east England*, York (Council for British Archaeology Research Report 137), 191-195.
- Kinnes, I.A. 2004b. Context not circumstance: a distant view of Scottish monuments in Europe. In: I.A.G. Shepherd & G.J. Barclay (eds), *Scotland in ancient Europe: The Neolithic and Early Bronze Age of Scotland in their European context*, Edinburgh, 139-142.
- Louwe Kooijmans, L.P. 1976. Local developments in a borderland. *Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden te Leiden* 57, 227-297.
- Louwe Kooijmans, L.P. 2005. Hunters become farmers. Early Neolithic B and Middle Neolithic A. In: L.P. Louwe Kooijmans, P.W. van den Broeke, H. Fokkens & A.L. van Gijn (eds), *The prehistory of the Netherlands. Volume 1*, Amsterdam, 249-271.
- Louwe Kooijmans, L.P. 2007. The gradual transition to farming in the Lower Rhine Basin. In: A.W.R. Whittle & V. Cummings (eds), 287-309.
- Lynch, F.M. 1975. Excavations at Carreg Samson, Mathry, Pembrokeshire, *Archaeologia Cambrensis* 124, 15-35.
- Lynch, F.M. 2000. The earlier Neolithic. In: F.M. Lynch, S. Aldhouse-Green & J.L. Davies, *Prehistoric Wales*, Stroud, 42-78.
- Meiklejohn, C.R., D.C. Merrett, R.W. Nolan, M.P. Richards & P.A. Mellars 2005. Spatial relationships, dating and taphonomy of the human bone from the Mesolithic site of Cnoc Coig, Oronsay, Argyll, Scotland, *Proceedings of the Prehistoric Society* 71, 85-105.
- Mercer, R. 2003. The early farming settlement of south western England in the Neolithic. In: I. Armit, E. Murphy, E. Nelis & D.D.A. Simpson (eds), *Neolithic settlement in Ireland and Western Britain*, Oxford, 56-70.
- O'Connell, M. & K. Molloy 2001. Farming and woodland dynamics in Ireland during the Neolithic, *Proceedings of the Royal Irish Academy* 101B, 99-128.
- O'Neil, H.E. 1966. Sale's Lot long barrow, Withington, Gloucestershire 1962-1965, *Transactions of the Bristol & Gloucester Archaeological Society* 85, 5-35.
- Pailler, Y. in press. Neolithic fibrolite working in the west of France. In: G. Cooney & B.V. O'Connor (eds), *Materialitas*, Oxford.
- Patton, M. 1993. *Statements in stone: monuments and society in Neolithic Brittany*, London.
- Peterson, R. 2003. *Neolithic pottery from Wales: traditions of construction and use*, Oxford (BAR British Series 344).
- Pétrequin, P., J.A. Sheridan, S. Cassen, M. Errera, E. Gauthier, L. Klassen, N. Le Maux & Y. Pailler 2008. Neolithic Alpine axeheads, from the continent to Great Britain, the Isle of Man and Ireland. 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*, Leiden (Analecta Praehistorica Leidensia 40), 261-279.
- Piggott, S. 1954. *The Neolithic cultures of the British Isles*, Cambridge.
- Radford, C.A.R. 1953. The chambered tomb at Broad-sands, Paignton, *Proceedings of the Devon Archaeological Exploration Society* 5 (5,6), 147-167.
- Richards, M.P. 2004. The Early Neolithic in Britain: new insights from biomolecular archaeology. In: I.A.G. Shepherd & G.J. Barclay (eds), *Scotland in ancient Europe: the Neolithic and Early Bronze Age of Scotland in their European context*, Edinburgh, 83-90.
- Richards, M.P. & J.A. Sheridan 2000. New AMS dates on human bone from Mesolithic Oronsay, *Antiquity* 74, 313-315.
- Ritchie, J.N.G. 1970. Excavation of the chambered cairn at Achnacreebeag, *Proceedings of the Society of Antiquaries of Scotland* 102, 31-55.
- Rowley-Conwy, P. 2004. How the West was lost. A reconsideration of agricultural origins in Britain, Ireland, and southern Scandinavia, *Current Anthropology* 45, 83-113.
- Scarre, C. 2002. Contexts of monumentalism: regional diversity at the Neolithic transition in north-west France, *Oxford Journal of Archaeology* 21(1), 23-61.
- Schulting, R. 2000. New AMS dates from the Lambourn long barrow and the question of the earliest Neolithic in southern England: repacking the Neolithic package? *Oxford Journal of Archaeology* 19 (1), 2535.
- Schulting, R.J. 2004. An Irish sea change: some implications for the Mesolithic-Neolithic transition. In V. Cummings & C. Fowler (eds), *The Neolithic of the Irish Sea: materiality and traditions of practice*, Oxford, 9-21.
- Scott, J.G. 1964. The chambered cairn at Beacharra, Kintyre, *Proceedings of the Prehistoric Society* 30, 134-158.

- Scott, J.G. 1969. The Clyde cairns of Scotland. In: T.G.E. Powell, J.X.W.P. Corcoran, F.M. Lynch & J.G. Scott (eds), *Megalithic enquiries in the west of Britain*, Liverpool, 175-222.
- Sheridan, J.A. 1985. *The role of exchange studies in 'social archaeology', with special reference to the prehistory of Ireland from the fourth to the early second millennium B.C.*, PhD thesis Cambridge.
- Sheridan, J.A. 1995. Irish Neolithic pottery: the story in 1995. In I.A. Kinnes & G. Varndell (eds), *'Unbaked urns of rudely shape': essays on British and Irish pottery for Ian Longworth*, Oxford, 3-21.
- Sheridan, J.A. 2000. Achnacreebeag and its French connections: vive the 'Auld Alliance'. In: J.C. Henderson (ed.), *The prehistory and early history of Atlantic Europe*, Oxford (BAR International Series 861), 1-15.
- Sheridan, J.A. 2003a. French connections I: spreading the marmites thinly. In: I. Armit, E. Murphy, E. Nelis & D.D.A. Simpson (eds), *Neolithic settlement in Ireland and Western Britain*, Oxford, 3-17.
- Sheridan, J.A. 2003b. Ireland's earliest 'passage' tombs: a French connection? In: G. Burenhult & S. Westergaard (eds), *Stones and bones: formal disposal of the dead in Atlantic Europe during the Mesolithic-Neolithic interface 6000-3000 BC*, Oxford (British Archaeological Reports International Series 1201), 9-26.
- Sheridan, J.A. 2004. Neolithic connections along and across the Irish Sea. In: V. Cummings & C. Fowler (eds), *The Neolithic of the Irish Sea: materiality and traditions of practice*, Oxford, 9-21.
- Sheridan, J.A. 2005. Les éléments d'origine bretonne autour de 4000 av. J.-C. en Écosse : témoignages d'alliance, d'influence, de déplacement, ou quoi d'autre ? In: G. Marchand & A. Tresset (eds), *Unité et diversité des processus de néolithisation sur la façade atlantique de l'Europe (6^e-4^e millénaires avant J.-C.)*, Paris (Société Préhistorique Française Mémoire 36), 25-37.
- Sheridan, J.A. 2007. From Picardie to Pickering and Pencaig Hill? New information on the 'Carinated Bowl Neolithic' in northern Britain. In: A.W.R. Whittle & V. Cummings (eds), Oxford (Proceedings of the British Academy 144), 441-492.
- Sheridan, J.A., P. Pétrequin, M. Errera & Y. Pailler 2007. Green treasures from the magic mountains, *British Archaeology* 96, 22-27.
- Smith, I. 1974. The Neolithic. In: C. Renfrew (ed.), *British prehistory: a new outline*, London, 100-136.
- Smith, M. & M. Brickley 2006. The date and sequence of use of Neolithic funerary monuments: new AMS dating evidence from the Cotswold-Severn region, *Oxford Journal of Archaeology* 25 (4), 335-355.
- Thomas, J.S. 1991. *Rethinking the Neolithic*, Cambridge.
- Thomas, J.S. 1999. *Understanding the Neolithic*, London/New York.
- Thomas, J.S. 2003. Thoughts on the 'repacked' Neolithic revolution, *Antiquity* 77, 67-74.
- Thomas, J.S. 2004. Recent debates on the Mesolithic-Neolithic transition in Britain and Ireland, *Documenta Praehistorica* 31, 117-130.
- Thomas, J.S. 2007. Mesolithic-Neolithic transitions in Britain: from essence to inhabitation. In: A.W.R. Whittle & V. Cummings (eds), 423-439.
- Thomas, J.S. 2008. The Mesolithic-Neolithic transition in Britain. In: J. Pollard (ed), *Prehistoric Britain*, Malden/Oxford, 58-89.
- Tresset, A. 2003. French connections II: of cows and men. In: I. Armit, E. Murphy, E. Nelis & D.D.A. Simpson (eds), *Neolithic settlement in Ireland and Western Britain*, Oxford, 18-30.
- Vanmontfort, B. 2004. *Converging worlds. The Neolithisation of the Scheldt Basin during the late fifth and early fourth millennium cal BC*, PhD thesis Katholieke Universiteit Leuven.
- Vanmontfort, B. 2006. Can we attribute the Middle Neolithic in the Scheldt and Middle Meuse Basins to the Michelsberg culture? In: P. Duhamel (ed.), *Impacts interculturels au Néolithique Moyen. Du terroir au territoire (Actes du 25^e Colloque Inter-régional sur le Néolithique, Dijon 20-21 octobre 2001)*, Dijon, 109-116.
- Verron, G. 1986. Les civilisations néolithiques de la Normandie. In: J.-P. Demoule & J. Guilaine (eds), *Le Néolithique de la France. Hommage à Gérard Bailloud*, Paris, 193-206.
- Verron, G. 2000. *La Préhistoire de la Normandie*, Rennes.
- Whittle, A.W.R. 1977. *The Earlier Neolithic of southern England and its continental background*, Oxford (British Archaeological Reports, Supplementary Series 35).
- Whittle, A.W.R., A. Barclay, A. Bayliss, L. McFadyen, R. Schulting & M. Wysocki 2007. Building for the dead: events, processes and changing world views from the thirty-eighth to the thirty-fourth centuries cal BC in southern Britain, *Cambridge Archaeological Journal* 17, supplement S1, 123-147.
- Whittle, A.W.R. & V. Cummings (eds) 2007, *Going Over: the Mesolithic-Neolithic transition in north-west Europe*, Oxford (Proceedings of the British Academy 144).
- Whittle, A.W.R., J. Pollard & C. Grigson 1999. *The harmony of symbols. The Windmill Hill causewayed enclosure, Wiltshire*, Oxford.

Woodman, P.C. & M. McCarthy 2003. Contemplating some awful(ly interesting) vistas: importing cattle and red deer into prehistoric Ireland. In: I. Armit, E. Murphy, E. Nelis & D.D.A. Simpson (eds), *Neolithic*

settlement in Ireland and Western Britain, Oxford, 31-9.

Woodman, P.C., E. Anderson & N. Finlay 1999. *Excavations at Ferriter's Cove, 1983-1995: last foragers, first farmers on the Dingle Peninsula*, Bray.

Early pottery traditions in the Lower Rhine Area

Concluding remarks

Leendert P. Louwe Kooijmans & Bart Vanmontfort

1. INTRODUCTION

It is not surprising that pottery is generally regarded as one of the markers of the Neolithisation process in Europe. It appears everywhere around the time of the introduction of agricultural practices or in the ‘availability phase’ of the Mesolithic-Neolithic contacts. There are, however, several cases – like in other parts of the world – of the production and use of pottery well before the introduction of animal husbandry and crop cultivation (see *e.g.* Timofeev 1998). Two clear examples are the Ertebølle and Swifterbant cultures (see the contributions of Andersen, Glykou, Louwe Kooijmans, Peeters, Raemaekers & De Roever in this volume). The earliest Swifterbant pottery is dated around 5000 cal BC and predates the direct indications for domestic animals (*c.* 4850/4500 cal BC) by around three, and for crop cultivation (*c.* 4200 cal BC)¹ by eight centuries. The time lag is seven centuries in Ertebølle context as well, between 4700 and 4000 cal BC. Pottery can therefore not simply be regarded as a derivative of agriculture but rather is an indicator of changed habits in food preparation independent of the factual introduction of domesticates, as argued by Andersen, Louwe Kooijmans and Peeters.

Several experts have shed their light in this volume on various aspects of the early pottery traditions in or near the Lower Rhine Area. Below, a number of concluding remarks and reflections are made on the basis of their contributions.

1. For the period before 4500 cal BC there is an attested absence of cereals in Swifterbant context. No archaeological information is however available for the period between 4500 and 4200 cal BC and it can therefore not be excluded that crop cultivation was introduced during this period.

2. EARLY AND DEVELOPING POTTERY TRADITIONS

Both Ertebølle and Swifterbant are nowadays known as established pottery traditions, clearly distinguishable from the known fully Neolithic pottery traditions in the Lower Rhine Area, such as those of the Linearbandkeramik (LBK), Blicquy/Villeneuve-Saint-Germain (BQY/VSG) or the Großgartach/Rössen cultures. To this day, the debate continues how these new pottery traditions came into existence and developed their specific style and technology. Either they were rooted in or inspired by the available Neolithic pottery traditions, as argued by Constantin and Raemaekers, or as local variants of a wider sphere of Mesolithic pottery as suggested by De Roever.

Elsewhere in the LRA, where preservation conditions are less favourable, early pottery regularly occurs in the form of highly fragmented and weathered sherds in small and mixed upland surface assemblages. The variable contexts of the sherds and their equally variable characteristics point to a similar status as pottery seems to have had in the early Swifterbant phase, including the possibility of pottery experimentation stages by late hunter-gatherer groups. Peeters, for instance, supposes that the Hoge Vaart site pottery was produced on the spot, with merely a short use in mind, and that it was left behind when the mobile, Mesolithic group moved on. Amkreutz *et al.* suggest that some of the pottery found in Late Mesolithic context in the Belgian Campine region may be interpreted in this way as well. The variability may be interpreted as the expectable result of the development of pottery production that crystallised to a mature state in the Swifterbant pottery tradition.

Another point of debate in the development of the early pottery traditions, is how easily these may be influenced by other traditions. Constantin and Con-

stantin *et al.* assume that technology is the most conservative aspect of pottery, and that style and especially decoration are freer and therefore more easily influenced. Crucial in the comparison and evaluation of such early pottery traditions is therefore the use of fixed standards in their description and illustration. This, however, is one of the flaws of current research. It is often impossible to surpass the mere presence/absence of the kind of temper in comparisons on the basis of the usual simple descriptions, and illustrations rarely help to bypass this problem. The best way to assess the similarity of pottery assemblages remains the comparison of the original material. The workshop on early pottery in the Lower Rhine Area, of which this publication is the written outcome, appeared therefore to be very useful.

A related aspect is the lack of clear definitions of the pottery styles and traditions, setting standards for the allocation of sherds, vessels and assemblages to (or exclusion from) one of the known pottery traditions. Even for the LBK, commonly regarded as a well-defined and easily recognisable tradition, Claßen identified a chronologically significant technical variability. Van de Velde, Bosquet and also Lodewijckx pose the question of where the LBK tradition or canon ends in view of frequently found ‘odd’ vessels and sherds, and their interpretation. Contrary to Pétrequin *et al.* (2009), Constantin *et al.* argue that technical characteristics of both the La Hoguette and Limburg pottery show that they may have been an intrinsic part of the LBK phenomenon. Is it possible (and desirable) to give and use a strict definition of La Hoguette at the one hand and of *Begleitkeramik* at the other hand and to what extent are both intrinsically linked? On which criteria should BQY and VSG pottery be distinguished from Limburg pottery? Would Swifterbant pottery be recognised as such if it were to be found in the coversand area? And should we not be careful with the underlying assumption that all of our assemblages should be part of the known and defined pottery traditions (see above)? These are just some of the questions that clearly underline the current problems generated by the lack of unambiguous definitions of the early pottery traditions.

3. ON THE INTERSECTION OF THREE SPHERES

It has for several decades been apparent that the early pottery traditions in the Lower Rhine Area reflect three main cultural spheres, and this has been confirmed by the content of this volume. These are a Central European (Danubian) sphere, a Western European sphere represented by the La Hoguette and Limburg wares, and thirdly a northern sphere represented by the Swifterbant and Ertebølle pottery traditions. Some of the enigmatic pottery in Mesolithic context found in the Belgian Campine region is here, lacking better hypotheses, interpreted as part of this northern sphere.

The Central European tradition is introduced in the Lower Rhine Area by the *Linearbandkeramik*. It is the most easily recognizable and best defined pottery tradition in the area. LBK pottery is generally only found in LBK cultural context. A relatively small number of sites north of the loess belt, where some LBK pottery sherds are associated with a small LBK lithic assemblage (*e.g.* Echt-Annendaal, Brounen 1985), should be interpreted as special activity or expedition camps of LBK communities. Some isolated finds of LBK pottery beyond the traditional settlement cluster areas in Belgium may either be interpreted in the same way, or point to as yet unknown formal LBK settlements (see Crombé & Vanmontfort 2007; Jadin & Hauzeur 2003). LBK pottery in reliable association with Mesolithic flint scatters, as presented by Amkreutz *et al.* from Lommel *Molse Nete*, is extremely rare. The Blicquy/Villeneuve-Saint-Germain complex (BLQ/VSG) can be regarded as part of the Danubian cultural sphere. It developed in the northern Paris Basin out of the Rubané Récent et Final du Basin Parisien (RRBP and RFBP), as is shown not only by pottery, but also by its lithic technology, palaeoeconomy and the stylistic development of dwelling structures (*e.g.* Allard 2007; Constantin & Ilett 1997).

In quite a number of LBK sites and pottery assemblages, some sherds or vessels are found that deviate so much from the ‘LBK canon’ that they are separated off as distinct ‘wares’ as was already done as early as 1936 by Buttler & Haberey with their *Importgruppen* in their publication of Köln-Lindenthal. Their attribution to the LBK pottery tradition is still debated. This is the case for the La Hoguette (Jeu-

nesse 1987) and Limburg (Modderman 1970) wares and for the *Begleitkeramik* of La Hoguette (Jeunesse & Sainty 1991), but also for a number of enigmatic vessels occasionally found in LBK assemblages, as presented by Bosquet and Van de Velde and which have until present not been attributed to any known pottery tradition. Van de Velde pleads to acknowledge this category rather than to categorise all non-Hoguette or non-Limburg ware at LBK sites as LBK. There is no doubt that the recognition of its separate status will help to identify this category on many other LBK sites. Bosquet *et al.* were already able to prove that at Fexhe this pottery was produced elsewhere, contrasting with the locally produced LBK pottery. Continuing this research should determine whether this is also the case at other sites.

La Hoguette, *Begleitkeramik*, Limburg pottery can in any case be regarded as typical for Western Europe. All authors seem to agree on the fact that La Hoguette and Limburg pottery should be regarded as separate, established pottery traditions. The debate focuses on their origin and status within LBK assemblages. Constantin *et al.* propose that they should be regarded as an intrinsic part of the LBK. Others (*e.g.* Gronenborn 1999, 138; Jeunesse 1994; Price *et al.* 2001, 593) consider both as a separate entity, rooted in a hunter-gatherer substrate. Brounen & Hauzeur contribute to the related discussion on the status of what is known since the early 1990s as *Begleitkeramik* of La Hoguette and its relationship with La Hoguette pottery (Jeunesse 1991, but also Brounen & Hauzeur, this volume). Neither of both hypotheses has, however, provided us with conclusive arguments and it seems as if the debate on the 'non LBK elements' (Cahen *et al.* 1981) has made very little progress in the last two decades (compare with Jeunesse 1987). Still, a number of points should be made.

First, the pottery is clearly an exotic element within the LBK context. La Hoguette vessels represent less than 2% of the total number of vessels in Bruchénbrücken. The same is true for the non-LBK vessels at Geleen Janskampveld reported here by Van de Velde. Second, it is remarkable that the mutual stylistic influences between La Hoguette/Limburg and LBK pottery traditions remain restricted (contra Jeunesse 2000).

The La Hoguette, *Begleitkeramik* and Limburg pottery finds beyond the loess-bound LBK territory

and without associated LBK pottery suggest a separate position of these wares, and a special role in the relation with the later hunter-gatherer groups occupying the coversand area north of the loess belt, whether both would have been an intrinsic part of the LBK, or not. There is, however, at present no reliable association of La Hoguette with the (contested) claim for a 'precocious neolithisation' phase before the arrival of LBK (Richard 1994). If La Hoguette pottery was the product of non-Danubian populations, rooted in the local Mesolithic, the claim for an agrarian character of their subsistence still rests on contentious evidence.

Some mutual influence between La Hoguette and LBK pottery traditions is claimed: as Maletschek states, at Bruchénbrücken the La Hoguette ware is produced in the same, local raw material as the LBK pottery and is most often *tempered with organic material, sand and/or grog, giving the vessels a more Bandkeramik appearance*. The use of bone temper at some (late) LBK sites as is shown by Constantin *et al.* suggests an influence in the other direction. The link between La Hoguette and Swifterbant pottery claimed by Constantin is remarkable in this context. Elements of the manufacturing process, like the use of the coiling technique and the point-based shapes indeed suggest that the La Hoguette pottery tradition is closely related to other traditions known to be the result of pottery producing and using communities. These differences could be explained based on the claim of Van de Velde that the foreigners integrated in LBK society were mainly women and assuming that pottery production was part of the female domain, whereas lithic tool production rather belonged to the male domain (see also Louwe Kooijmans). These ideas do not impede the status of La Hoguette and Limburg as separate pottery traditions, perhaps rooted in the late hunter-gatherer populations and fits with the idea of an integration of these traditions within LBK society. It would also explain why more than only the mature pottery traditions of La Hoguette and Limburg are found in LBK context (see Bosquet and Van de Velde). The most difficult question to align with this hypothesis is how the La Hoguette and Limburg traditions obtained and retained their homogeneity over vast areas and periods. This must relate to close contacts between the producers of the pottery. Future research should be able to test this hypothesis, for instance by performing large sets

of chemical analyses on non-LBK ware from LBK context.

The third interacting sphere in the LRA is that what can be labeled as a North European phenomenon. It comprises the Swifterbant and Ertebølle pottery traditions, which should be regarded as in origin comparable phenomena: the ceramisation of hunter-gatherer communities. It should be noted, however, that Swifterbant and Ertebølle cultures differ with regard to their lithic and bone artefact typology and that they are characterised by different trajectories with regard to their Neolithisation: in Swifterbant context the neolithisation started somewhat earlier and proceeded more steadily. The pottery remains the strongest link between these cultures. The question therefore is to what extent these pottery traditions are related. Both Andersen and Raemaekers stress the technical and stylistic differences and regard them as different technological traditions. The somewhat younger Ertebølle pottery tradition should not be regarded as a development from early Swifterbant pottery, but was according to Andersen introduced in its mature state from the Baltic area to the east. The Swifterbant pottery tradition on the other hand, came into existence several centuries earlier. It was possibly inspired by Danubian Neolithic examples as both Louwe Kooijmans and Raemaekers claim, or in some way connected with the La Hoguette pottery tradition (see Constantin). These diverse origins and the geographical distance could explain most of the differences, such as temper, the type of coiling method used and the shape of the pointed base. The general similarities – their construction method (coiling), grit temper of Ertebølle and later Swifterbant pottery, basic shapes, thick walls, rudimentary finishing, lack of decoration and apparent function as cooking vessels – can be regarded as basic characteristics of hunter-gatherer pottery in north-western Europe. The convergence of Swifterbant and Ertebølle can be explained by the continuation of millennia old west-east contacts in addition to newly formed north-south contacts with farming communities on the loess (see Louwe Kooijmans 1998, Figure 5).

4. CONCLUSION

The papers of this volume show the ongoing nature of the debate on the origin of the early pottery tradi-

tions, their mutual link and the meaning of pottery in the Neolithic society. Part of the problem is the balance between the presumed conservative character of a pottery tradition and its variability as caused by intercultural influence as well as by the large geographical and chronological space in which it occurs. The workshop showed that the real-life comparison of the pottery can actually help to orientate the debate and identify critical points of discussion. The main problem, however, is the absence of reliable associations and unequivocal proof of the chronological and cultural context of many of the non-LBK Early Neolithic pottery traditions. Hopefully the near future will reveal new sites and complexes that add to the debate and multiple occasions will emerge for such a real-life comparison of the newly gathered data.

5. REFERENCES

- Allard, P. 2007. The Mesolithic-Neolithic transition in the Paris Basin: a review. In: A. Whittle and V. Cummings (eds), *Going over: the Mesolithic-Neolithic transition in north-west Europe*, Oxford (Proceedings of the British Academy 144), 211-223.
- Brounen, F.T.S. 1985. HVR 183, vroeg-, midden- en laat-neolithische vondsten te Echt-Annendaal, *Archeologie in Limburg* 24, 66-71.
- Cahen, D., C. Constantin, P.J.R. Modderman & P.-L. van Berg 1981. Éléments non-Rubané du néolithique ancien entre les vallées du Rhin inférieur et de la Seine, *Helinium* 21, 136-159.
- Constantin C. & M. Ilett 1997. Une étape terminale dans le Rubané Récent du Bassin parisien. In: C. Jeunesse (ed.), *Le Néolithique danubien et ses marges entre Rhin et Seine. Actes du 22ème colloque interrégional sur le Néolithique, Strasbourg (27-29/10/1995)*, Strasbourg (Cahiers de l'Association pour la Promotion de la Recherche Archéologique en Alsace. Supplément 3), 281-300.
- Crombé, P. & B. Vanmontfort 2007. The Neolithisation of the Scheldt basin in western Belgium. In: A. Whittle & V. Cummings (eds), *Going over: the Mesolithic-Neolithic transition in north-west Europe*, Oxford (Proceedings of the British Academy 144), 263-285.
- Gronenborn, D. 1999. A variation on a basic theme: the transition to farming in southern Central Europe, *Journal of World Prehistory* 13, 123-210.
- Jadin, I. & A. Hauzeur 2003. Des découvertes isolées qui parsèment le territoire. In: I. Jadin (ed.), *Trois petits tours et puis s'en vont... La fin de la présence*

- danubienne en Moyenne Belgique*, Liège (Études et Recherches de l'Université de Liège 109), 81-113.
- Jeunesse, C. 1987. La céramique de La Hoguette, un nouvel 'élément nonrubané' du Néolithique ancien de l'Europe du Nord-ouest, *Cahiers Alsaciens d'Archéologie, d'Art et d'Histoire* 30, 5-33.
- Jeunesse, C. 1994. Le Néolithique du sud de la plaine du Rhin supérieur. Recherches et découvertes récentes, *Praehistorische Zeitschrift* 69, 1-31.
- Jeunesse, C. 2000. Les composantes autochtone et danubienne en Europe centrale et occidentale entre 5500 et 4000 av. J.-C.: contacts, transferts, acculturations. In: A. Richard, C. Cupillard, H. Richard & A. Thévenin (eds), *Les derniers chasseurs-cueilleurs d'Europe occidentale. Actes du colloque international de Besançon, octobre 1998*, Besançon (Annales Littéraires 699, Série Environnement, sociétés et archéologie 1), 361-378.
- Jeunesse, C. & J. Sainty 1991. Bischoffsheim 'Le Village' (Bas-Rhin): un habitat rubané avec Céramique de La Hoguette (avec une annexe de François Lambach), *Cahiers de l'Association pour la Promotion de la Recherche Archéologique en Alsace* 7, 15-57.
- Louwe Kooijmans, L. P. (1998). Understanding the Mesolithic/Neolithic frontier in the Lower Rhine Basin, 5300-4300 cal. BC. In: M. Edmonds & C. Richards (eds), *Understanding the Neolithic of north-western Europe*, Glasgow, 407-427.
- Modderman, P.J.R. 1970. *Linearbandkeramik aus Elsloo und Stein*, Leiden (Analecta Praehistorica Leidensia 3).
- Pétrequin, P., R. Martineau, P. Nowicki, E. Gauthier & C. Schaal 2009. La poterie Hoguette de Choisey (Jura), les Champins. Observations techniques et insertion régionale, *Bulletin de la Société Préhistorique Française* 106 (3), 491-515.
- Price, T.D., R.A. Bentley, J. Lüning, D. Gronenborn & J. Wahl 2001. Prehistoric human migration in the Linearbandkeramik of Central Europe, *Antiquity* 75, 593-603.
- Richard, H. 1994. Indices polliniques d'une néolithisation précoce sur le premier plateau du Jura (France), *Comptes rendus de l'Académie des Sciences* 398, 993-999.
- Timofeev, V.I. 1998. The beginning of the Neolithic in the Eastern Baltic. In: M. Zvelebil, R. Dennell & L. Domańska (eds), *Harvesting the sea, farming the forest*, Sheffield (Sheffield Archaeological Monographs 10), 225-236.

