



**Universiteit  
Leiden**  
The Netherlands

## **Early and middle Neolithic: introduction**

Louwe Kooijmans, L.P.

### **Citation**

Louwe Kooijmans, L. P. (2005). Early and middle Neolithic: introduction. In . Amsterdam University Press, Amsterdam. Retrieved from <https://hdl.handle.net/1887/11177>

Version: Not Applicable (or Unknown)

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

Downloaded from: <https://hdl.handle.net/1887/11177>

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

THE  
PREHISTORY  
OF THE  
NETHERLANDS

VOLUME 1

Edited by

L.P. Louwe Kooijmans



# The Prehistory of the Netherlands

Volume I

Edited by

L.P. Louwe Kooijmans

P.W. van den Broeke

H. Fokkens

A.L. van Gijn

AMSTERDAM UNIVERSITY PRESS

The publication of this book was made possible by grants from:

- the Netherlands Organisation for Scientific Research (NWO)
- Archol BV, Leiden
- The Prince Bernhard Cultural Foundation (PBCF)

Cover illustration: Flint arrowhead from the Middle Bronze Age burial at Was-senaar, c. 1700 BC, see feature L, p. 459 (photo J. Paupit, Faculty of Archaeology, Leiden University).

Cover design: Studio Jan de Boer BNO, Amsterdam

Lay-out: Perfect Service, Schoonhoven

ISBN 90 5356 160 9 (both volumes)

ISBN 90 5356 806 9 (volume 1)

ISBN 90 5356 807 7 (volume 2)

NUR 682

© Amsterdam University Press, Amsterdam 2005

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.

# Contents Volume I

Preface 13

## Introductory

- chapter 1 A prehistory of our time 17  
*Peter van den Broeke, Harry Fokkens and Annelou van Gijn*
- chapter 2 The discovery of prehistory in the Netherlands 33  
*Ayolt Brongers*
- chapter 3 Shaped by water, ice and wind: the genesis of the Netherlands 45  
*Kier van Gijssel and Bert van der Valk*

## Part I Hunters and gatherers

- chapter 4 Palaeolithic and Mesolithic: introduction 77  
*Wil Roebroeks and Annelou van Gijn* 500,000 years ago to 5300 BC
- chapter 5 Neanderthals and their predecessors 93  
*Lower and Middle Palaeolithic*  
*Wil Roebroeks*
- chapter 6 The first 'modern' humans 115  
*Upper Palaeolithic*  
*Eelco Rensink and Dick Stapert*
- feature A A lost craft 135  
*flint tool manufacture in prehistory*  
*Jaap Beuker*
- chapter 7 From tundra hunting to forest hunting 139  
*later Upper Palaeolithic and Early Mesolithic*  
*Jos Deeben and Nico Arts*
- feature B A drowned land 157  
*Mesolithic from the North Sea floor*  
*Leo Verhart*
- chapter 8 Living in abundance 161  
*Middle and Late Mesolithic*  
*Leo Verhart and Henny Groenendijk*

5300-2900 BC

- feature C      Mesolithic along the Overijssel Vecht    179  
camp sites and burial pits at Marienberg  
Ad Verlinde
- feature D      Hunting camps in the swamps    183  
the river dunes near Hardinxveld  
Leendert Louwe Kooijmans
- chapter 9      Hunters and gatherers: synthesis    187  
Jos Deebe and Annelou van Gijn
- Part II      The first farmers**
- chapter 10      Early and Middle Neolithic: introduction    203  
Annelou van Gijn and Leendert Louwe Kooijmans
- chapter 11      Colonists on the loess?    219  
Early Neolithic A: the Bandkeramik culture  
Marjorie de Grooth and Pieter van de Velde
- feature E      Mines in the marl    243  
the flint extraction at Rijckholt  
Marjorie de Grooth
- chapter 12      Hunters become farmers    249  
Early Neolithic B and Middle Neolithic A  
Leendert Louwe Kooijmans
- feature F      Stone Age farmers along the North Sea    273  
the Rijswijk-Ypenburg cemetery  
Hans Koot
- feature G      Import from all quarters    277  
stone axes in the northern Netherlands  
Jaap Beuker
- chapter 13      Megalith builders and sturgeon fishers    281  
Middle Neolithic B: Funnel Beaker culture and the Vlaardingen group  
Annelou van Gijn and Jan Albert Bakker
- feature H      Funerary buildings from erratic boulders    307  
the construction and function of the hunebedden  
Jan Albert Bakker
- chapter 14      The fruits of the land    311  
Neolithic subsistence  
Corrie Bakels and Jørn Zeiler
- chapter 15      The first farmers: synthesis    337  
Annelou van Gijn and Leendert Louwe Kooijmans

|                 |                                                           |                                                                                                               |
|-----------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Part III</b> | <b>Mixed farming societies</b>                            |                                                                                                               |
| chapter 16      | Late Neolithic, Early and Middle Bronze Age: introduction | 357 2900-1100 BC<br>Harry Fokkens                                                                             |
| chapter 17      | From stone to bronze                                      | 371<br>technology and material culture<br>Jay Butler and Harry Fokkens                                        |
| feature I       | Opening up the peat bogs                                  | 401<br>the timber trackways of Drenthe<br>Wil Casparie                                                        |
| chapter 18      | Longhouses in unsettled settlements                       | 407<br>settlements in Beaker period and Bronze Age<br>Harry Fokkens                                           |
| feature J       | Shell fishers and cattle herders                          | 429<br>settlements of the Single Grave culture in Westfrisia<br>Willem Jan Hogestijn                          |
| chapter 19      | Mounds for the dead                                       | 433<br>funerary and burial ritual in Beaker period, Early and Middle Bronze Age<br>Erik Drenth and Eric Lohof |
| feature K       | Barrow research and palynology                            | 455<br>methods and results<br>Willy Groenman-van Waateringe                                                   |
| feature L       | Bronze Age war                                            | 459<br>a collective burial at Wassenaar<br>Leendert Louwe Kooijmans                                           |
| chapter 20      | Mixed farming societies: synthesis                        | 463<br>Harry Fokkens                                                                                          |

## Contents Volume 2

1100-12 BC

|                |                                                                                                                                   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Part IV</b> | <b>Increasing diversity</b>                                                                                                       |
| chapter 21     | Late Bronze Age and Iron Age: introduction 477<br>Peter van den Broeke                                                            |
| chapter 22     | All-round farming 491<br>food production in the Bronze Age and the Iron Age<br>Otto Brinkkemper and Louise van Wijngaarden-Bakker |
| feature M      | Salt makers along the North Sea coast 513<br>the production of salt for the hinterland<br>Peter van den Broeke                    |
| chapter 23     | Hamlets on the move 519<br>settlements in the southern and central parts of the Netherlands<br>Kees Schinkel                      |
| chapter 24     | Farms amongst Celtic fields 543<br>settlements on the northern sands<br>Otto Harsema                                              |
| feature N      | Dwelling mounds on the salt marshes 557<br>the terpen of Friesland and Groningen<br>Jaap Boersma                                  |
| chapter 25     | Colonists on the clay 561<br>the occupation of the northern coastal region<br>Jaap Boersma                                        |
| feature O      | Oak or alder? 577<br>the use of wood in Iron Age farms<br>Caroline Vermeeren and Otto Brinkkemper                                 |
| chapter 26     | On unsteady ground 581<br>settlements in the western Netherlands<br>Robert van Heeringen                                          |
| feature P      | Peat farmers 597<br>settlements on the peat to the south of the Meuse estuary<br>Marco van Trierum                                |
| chapter 27     | Blacksmiths and potters 603<br>material culture and technology<br>Peter van den Broeke                                            |

|                       |                                                                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| feature Q             | Ancient attire 627<br>remains of prehistoric clothing<br>Willy Groenman-van Waateringe                                              |
| chapter 28            | Urnfields and cinerary barrows 631<br>funerary and burial ritual in the Late Bronze and Iron Ages<br>Wilfried Hessing and Piet Kooi |
| feature R             | <i>An alternative to the pyre</i> 655<br>Iron Age inhumation burials<br>Peter van den Broeke and Wilfried Hessing                   |
| chapter 29            | Gifts to the gods 659<br>rites and cult sites in the Bronze Age and the Iron Age<br>Peter van den Broeke                            |
| feature S             | Bog bodies 679<br>human remains from the northern part of the Netherlands<br>Wijnand van der Sanden                                 |
| chapter 30            | Increasing diversity: synthesis 683<br>Peter van den Broeke                                                                         |
| <br><b>Conclusion</b> |                                                                                                                                     |
| chapter 31            | The Netherlands in prehistory: retrospect 695<br>Leendert Louwe Kooijmans                                                           |

|                                                 |     |
|-------------------------------------------------|-----|
| Abbreviations                                   | 721 |
| Literature                                      | 722 |
| Location maps of regions and sites              | 797 |
| Site index                                      | 807 |
| Thematical index                                | 813 |
| Index of persons                                | 832 |
| Acknowledgement of the sources of illustrations | 833 |
| The authors                                     | 839 |

### **Note on the dates used in this book**

Dates before 50,000 are based on various physical dating techniques, other than radiocarbon, and expressed as 'years ago'.

Dates in the period 50,000-10,000 years ago are based on uncalibrated radiocarbon dates and expressed as 'years ago' or 'years BP' (= Before Present).

Dates in the last 10,000 years are based on calibrated radiocarbon dates and expressed as 'years BC'. Only these dates can be equated with calendar or solar years.

See chapter 1, section 'periods and dates' for the principles of radiocarbon dating.

## Part II

### The first farmers

The Neolithic comprises the last period of the Stone Age, a period in which technology was still entirely based on stone, but in which man slowly exchanged his hunting and gathering existence for a way of life based on crop cultivation and stock keeping. This was one of the most momentous transitions in the history of the development of human society. The increasing dependence on crop cultivation led to changes in the relationship between man and his environment, from one of dependence and equality to one in which man gained increasing control over nature. The era in which man had lived solely on what nature offered him was over. Man and nature came to oppose one another to an increasing extent. Crop cultivation and stock breeding also enabled population growth, with all its positive and negative consequences. Many technological innovations took place and social organisation became increasingly complex.

Farming originated in the Near East some 10,000 years ago, in developments in the area known as the Fertile Crescent. From there, the new knowledge and the associated way of life gradually spread to other areas, over a period spanning several thousands of years. The first farmers arrived in southern Limburg around 5300 BC. Their arrival marked the beginning of a period of confrontation and transformation of two communities that differed from one another in many respects: the farmers in the south and the native hunter-gatherers in the north. These communities established contacts with one another and influenced one another. In a lengthy process, which was to reach a conclusion only at the end of the Neolithic, the northern communities adopted the farming way of life. This process is also known as 'Neolithisation'.

Our understanding of this period is based mainly on evidence obtained in settlement research over the past forty to fifty years, in particular in the loess region in Limburg and in the Dutch wetlands. This is, however, also a period in which imposing monuments were built, such as the hunebedden, the burial chambers of the first farmers on the northern sandy soils. New technological developments took place at the end of this era, marking the start of a new epoch: the Bronze Age.

## 10 Early and Middle Neolithic: introduction

Annelou van Gijn and Leendert Louwe Kooijmans

### THE ORIGINS OF FARMING

The Neolithic was first defined in 1865, as the era of polished stone tools, to indicate the difference with the chipped stone tools of the Palaeolithic.<sup>1</sup> Later on, three more criteria were introduced, namely agriculture (crop cultivation and stock keeping), the sedentary existence it implies and pottery production. Over the years it became clear that these criteria are not inextricably linked. For example, we now know of hunter-gatherers who produced pottery (what is known as the 'Ceramic Mesolithic', e.g. the Ertebølle culture in Denmark) and of farmers who did not (Aceramic Neolithic, e.g. the 'Pre-Pottery Neolithic A and B' in the Levant). Nowadays, food production is regarded as the most distinctive feature of the Neolithic; this is now the only criterion used in practice.

The broad-spectrum economy of the Late Mesolithic in the Low Countries has been described in the previous chapter; in various regions it was possible to live an almost sedentary existence based at a location strategically positioned between different ecological zones offering an abundance of food resources. But mobility remained important for exploiting certain essential resources, although it was often only a small proportion of the community that temporarily left the settlement for this purpose. In the Near East a similar development took place towards a more settled mode of life with a broad-spectrum economy. There, the seeds of wild large-grained grasses (various wheat species and barley) constituted an important source of food. They presented the great advantage that under the prevailing relatively dry climatic conditions they could be easily stored for later consumption, in particular in seasons in which food was in short supply. That offered the people living in those areas an excellent basis for a sedentary existence. As cereal happens to be an ideal staple food it is not surprising that a form of 'management' of the wild grain fields gradually emerged (fig. 10.1). The earliest archaeological



fig. 10.1a Ears of emmer (left) and einkorn (right).

fig. 10.1b A wild einkorn field in the Zagros mountains in Iran. On the slopes of the mountains in the 'fertile crescent' in the Near East wild cereal species were an important source of food around the end of the last glacial. Shortly afterwards, they were to constitute the basis for the development of agriculture.

5300-2900 BC

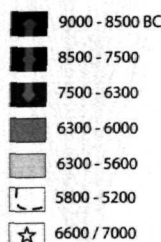
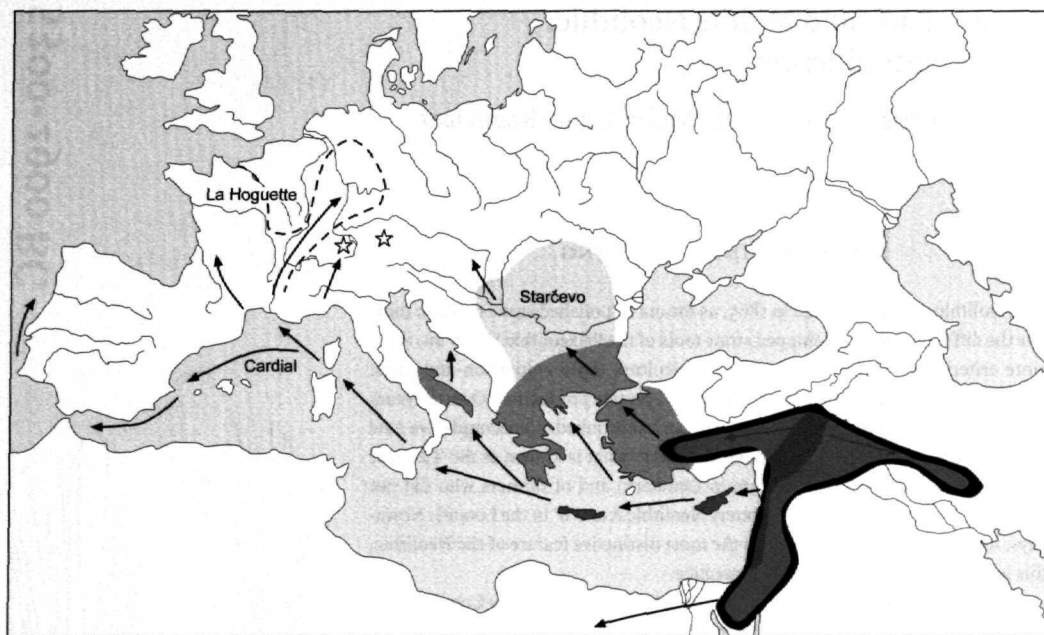


fig. 10.2

The origins of agriculture and its spread to Europe prior to 5500 BC. Until around 6000 BC agriculture and animal domestication were restricted to the Near East. After that time the new form of subsistence gradually spread westwards via two routes: via the coasts of the Mediterranean ('Cardial culture') into Western Europe ('La Hoguette') and via the Balkan to southeast Europe (Starčevo complex). The early pollen evidence from Switzerland at present however appears to be inconsistent with this pattern.

evidence for the domestication of these plants dates from the 10th millennium BC. The first plants to be domesticated were barley and emmer; various legumes followed shortly after. Sheep and goat were domesticated around the same time or possibly a little later.<sup>2</sup>

Our parts of Europe, with their wet climate, lacked a suitable equivalent of wild cereal. The occupants of these areas were therefore strongly dependent on a system of seasonal exploitation of diverse food resources that had to be consumed immediately. This necessitated greater mobility. Nevertheless, it is now increasingly often argued that farming evolved endogenously in these parts, too, via a certain degree of management of essential resources. The most important large wild animal, red deer, was hunted with such evident care that we may speak of 'selective cropping'. It has recently been suggested that the same can be said of certain plants, too.<sup>3</sup>

One of the questions that archaeologists ask over and over again is why people started producing food. In the past, this question was hardly ever asked, because it was implicitly assumed that prehistoric man aspired to a 'better existence'. In that evolutionistic outlook hunter-gatherers were inferior to farmers. In the 1960s, however, it was realised that some hunter-gatherers had in fact enjoyed a stable economy, supported by abundant resources, which invalidated the evolutionistic interpretation.<sup>4</sup> All kinds of reasons have been postulated for why people started practising crop cultivation and stock keeping. As far as the Near East is concerned, it is now generally believed that the cereal-harvesting hunter-gatherers of Natufian and related groups gradually started producing their food as they adopted a more settled way of life. The facilities for storing and processing the cereals had to be managed and maintained, which entailed social integration and possibly also social differentiation; the local permanent population expanded, but as it grew, it also became increasingly vulnerable to unforeseen food shortages. The transition from the management of wild cereals to their cultivation will then have been

a logical step, as it led to greater control over food resources. In economic terms, this can be seen as risk reduction. In this context it has been proposed that crop cultivation may have originated in areas where wild cereals did not occur in large quantities. But this is less likely, as the earliest evidence for domestication seems to come mainly from the primary zones. An important aspect of food production is that it enabled increasing social stratification; in that respect it laid the basis for the development of the later complex societies of the Near East.<sup>5</sup>

As for the origins of food production in Europe, it was for many years assumed that the 'enlightened' ideas on food production were spread in a westerly direction by colonists: the *Ex Oriente Lux* hypothesis. According to this view the Neolithisation of Europe was the consequence of the immigration of farmers who more or less forced the native occupants to accept the new, 'superior' form of subsistence. But there is actually little concrete evidence to support this colonisation model. Nowadays, archaeologists are therefore far more in favour of a combination of small-scale – and hence archaeologically virtually invisible – incursions and acculturation of Mesolithic hunter-gatherers. This may have been the case with, for example, the earliest *Bandkeramik* in Central Europe. The same arguments as those proposed to explain the origins of farming in the Near East can be used to support the adoption of a farming existence via acculturation, i.e. risk reduction and prestige, possibly with population growth as an impetus. Migration and the colonisation of new regions, whether or not already exploited by hunter-gatherers, can be related to stress in the colonists' area of origin, for example caused by a sense of 'overpopulation' and territorial competition, and the availability of a suitable new settlement area.

Whether or not this view is correct, it is certain is that farming gradually spread westwards from the Fertile Crescent via Anatolia and the Balkans, to the Danubian plain and then on to the Lower Rhine Basin on the one hand, and across the entire Mediterranean on the other hand (fig. 10.2). During this process of expansion, novel elements were added to the agricultural system along the way, for example in Anatolia and southeast Europe. Among these novel elements were pig and cattle. Around 5500 BC a new culture evolved in the western part of the Hungarian Plain, at the periphery of the contemporary farming communities: the *Bandkeramik*. Exactly how this culture spread across the whole of Central Europe is still poorly understood. The *Bandkeramik* farmers who lived in the Netherlands definitely came from elsewhere. They settled on the loess soil of southern Limburg around 5300 BC. There seems to have been no acculturation of the Mesolithic occupants of the Netherlands in this first phase; the first signs of agricultural activity to the north of the loess are of a much later date. There, the transition from a hunting-gathering way of life to a fully-fledged farming existence was a lengthy process that spanned almost the entire Neolithic (see chapters 14 and 15). An economy based predominantly on crop cultivation and stock keeping seems to have been fully established there only by the Late Neolithic. But the products of hunting and fishing and – to a lesser extent – foraging continued to supplement the diet, as they indeed still do today.

#### CLIMATE AND LANDSCAPE

In contrast to the preceding transition from the Palaeolithic to the Mesolithic at the beginning of the Holocene, the transition to the Neolithic was not characterised by major changes in environmental and ecological conditions. The *Bandkeramik* farmers spread across Europe and settled on the loess of southern Limburg

in the middle of the Atlantic, a period in which temperatures in Europe were a little higher than they are today, possibly 2 °C on an annual basis. That may not seem very much, but as far as the plant and animal life – and hence also farming – are concerned it was a substantial difference. The relatively mild climate will have influenced the *Bandkeramik* expansion towards the north and west, but we should not go so far as to see it as the prime cause of the migrations.

The transition from the Atlantic to the Sub-Boreal has been dated around 3500 BC on the basis of changes in the vegetation. In the past it was generally believed that the climate became a little drier in the Sub-Boreal, but this view has been modified to allow for the influence of the early farming communities on the primeval forests: the creation of clearances and the consequences for the hydrological regime. The Neolithic also coincides with the transgressive phases in which the Calais I-IV deposits were formed (chapter 3). By the beginning of the Neolithic the sea level had risen to about 9 m below the present Mean Sea Level and what is now the western part of the Netherlands had changed into a vast sedimentation zone. At first this zone was largely a tidal-flat area, protected from the open sea by a series of narrow coastal barrier islands separated by wide tidal inlets. On its landward side this tidal-flat area was bordered by a zone of tidal deposits and a peat belt.

From 3500 BC onwards the coastal barriers gradually consolidated, enabling the salt marshes and the peat to expand over the tidal flats, which they turned into clearly distinct tidal areas behind the major tidal inlets. Generally speaking, the environmental diversity of the coastal plain increased and the area as a whole became more attractive for settlement and exploitation. The coastal area must also have become more accessible in this period. As the delta comprised so many different ecological zones, it contained several types of vegetation. The dunes supported a mixed forest containing oak, elm and lime, with hazel stands in the more open parts. Alder carrs will have grown in the backswamps, while belts of reeds and sedges bordered the open water.

In the course of the early Holocene a rich brown forest soil formed beneath the lush forest vegetation of the higher sandy areas. It would probably not be correct to describe these regions as poor and marginal by analogy with present conditions, but they will have been vulnerable to crop cultivation without manuring. The forests in these areas will have consisted predominantly of oak; many alder stands were to be found in the valleys. An important environmental change was the formation of vast raised bogs, in particular in Drenthe, Overijssel and the eastern part of North Brabant. Together with the peat expanding from the coastal zone, these raised bogs, especially those in the northern part of the country, greatly reduced the area of land suitable for occupation.<sup>6</sup>

The Late Glacial relief of the loess zone had by this time consolidated as a result of forestation. We must assume that the weathering of hill slopes and the formation of colluvial deposits started with the creation of the first clearances in the Neolithic, although we have little concrete evidence to support this. What is still a topic of debate is the question as to whether water flowed through what are now dry valleys before the hills were deforested, and if so, how much water. As deciduous forest has a much higher evaporation rate (400 mm/year) than open (grass)land (200 mm/year) this is not very likely. A second unsolved question with respect to the environment concerns the nature and degree of soil formation. There are convincing arguments for assuming that the formation of the Grey Brown Podzolic soils, characteristic of the loess, began already during the *Bandkeramik* period. The reconstruction of the vegetation of the loess zone is a difficult issue; it is generally assumed that a lime forest grew on the plateaus and a mixed deciduous forest with a high percentage of oak in the valleys.<sup>7</sup>

Our knowledge of the fauna in the Neolithic is based on reconstructions of the former landscape and vegetation on the one hand, and on the faunal remains recovered in excavations on the other. The great ecological diversity of both the lowlands and the higher sandy soils with their many stream valleys and varied deciduous forest suggests that large amounts of game were to be found in these regions. The only areas where this was not the case will have been the loess region, with its impenetrable deciduous forest and its small amount of undergrowth, and of course the raised bogs. The excavated remains of large terrestrial mammals include aurochs, elk, red deer, roe deer, wild boar and brown bear. There were also many smaller fur animals, such as marten, polecat, beaver and otter. Marine mammals like common and grey seals, bottle-nose dolphin and porpoise were to be found along the coast. Remarkable birds among the many common species are Dalmatian pelican, flamingo, crane and white-tailed eagle, which suggests the presence of large stretches of open water. Conspicuous fish, besides the currently known freshwater species, are sturgeon and European catfish.<sup>8</sup>

fig. 10.3

Chronological-geographical scheme of the Neolithic cultures in the Netherlands and its wider environs.

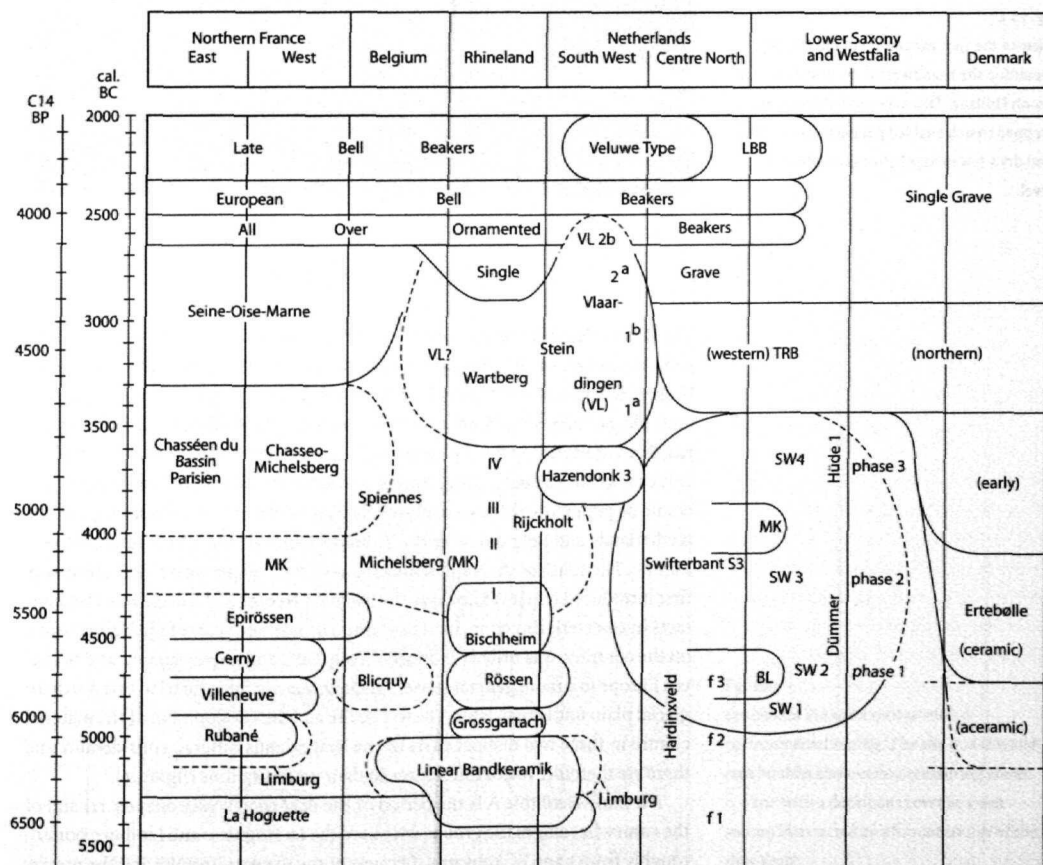
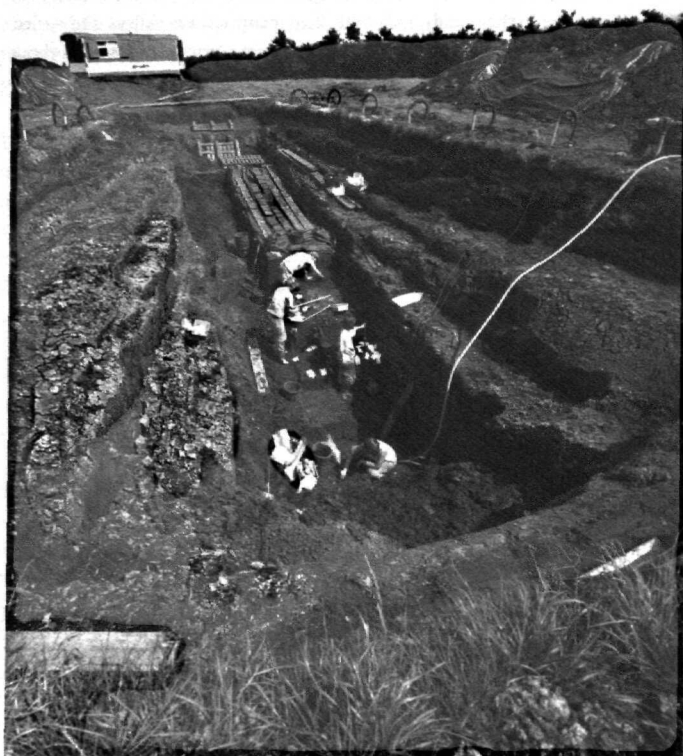


fig. 10.4

View of the 1991 excavation of the Middle Neolithic site Brandwijk in the peat district of South Holland. Drainage by well points and a stepped trench enabled people to work safely and dry a few metres below groundwater level.



#### CULTURAL UNITS

The Dutch Neolithic spans the period from 5300 until 2000 BC, i.e. the period from the arrival of the first farmers in southern Limburg until the first use of bronze. It would be convenient if we were able to set up a uniform chronological and cultural framework for the whole of the Netherlands and its surrounding areas. But unfortunately the Netherlands is dissected by the boundary of two major cultures which existed before, during and after the Neolithic. Throughout the whole of prehistory there were close relations between the southern part of the Netherlands and Belgium, with the Rhineland and, via the latter region, Central Europe. The south of the Netherlands is one of the regions where agriculture was first introduced (what is known as the 'primary Neolithic'). There were also contacts in a westerly direction, with England. The northern part of the Netherlands, on the contrary, was oriented towards Westphalia and Lower Saxony, and northern Europe in a more general sense. Farming was not introduced in this northern glacial plain until much later. The way of life and the development of the material culture in these two distinct parts of the Netherlands differed considerably and there are therefore major differences in their periodisations (fig. 10.3).

The Early Neolithic A is the period of the *Bandkeramik* (see chapter 11) and of the somewhat enigmatic groups who used the *La Hoguette* and *Limburg* pottery, roughly from 5300 BC onwards. Because of the great uniformity and the novelty

of the Bandkeramik as a whole, we assume that this culture was introduced into the loess zone of the Netherlands and Belgium by colonists, notably from the Rhineland. The areas north of the loess zone were inhabited by predominantly spatially separated Mesolithic hunter-gatherers. The nature of the relationship between the Bandkeramik people and the Mesolithic groups living in their surroundings is still poorly understood. It seems that the Bandkeramik culture had little influence on the way of life of these hunter-gatherers; there is no clear evidence to suggest the existence of exchange networks between the two communities either. But we should be careful in drawing such conclusions as only very few contemporary Late Mesolithic sites have so far been found.

A later phase of the Bandkeramik saw the first signs of the disintegration of this population into smaller social units: the material culture reflects increasing regionalisation. Around the same time, Bandkeramik society seems to have become less egalitarian: indications of social stratification have been found in both the settlements and the cemeteries of the later phases of the Bandkeramik.<sup>9</sup> These changes may be connected with an increase in the density of the population of the most favourable area, the fertile loess zone.

The process of regionalisation continued in the Early Neolithic B in the Rhineland, in the Grossgartach and Rössen cultures, successively. Only the latter culture is represented in the Netherlands, notably in southern Limburg. Belgium clearly lay in a different, French, sphere of influence in this period. There, the Omalian (a local variant of the Bandkeramik) evolved into the Groupe de Blicquy in the Hainault. The distribution area of the so-called Rössener Breitkeile, which extends all the way into Denmark, suggests that contacts with the neighbouring hunter-gatherers

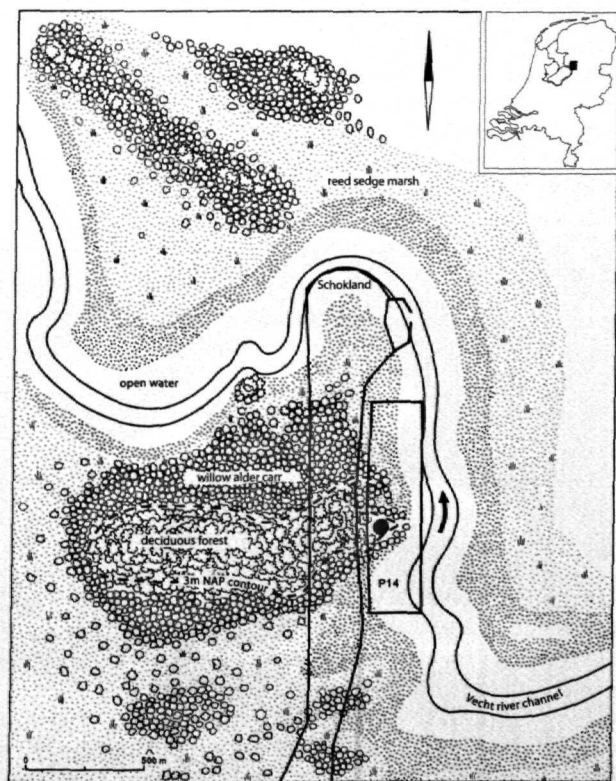


fig. 10.5  
Settlement P14 in its reconstructed environmental setting. The site was situated on a boulder clay outcrop measuring about 0.5 km<sup>2</sup> with a deciduous cover in a vast swamp intersected by a former course of the river Vecht.

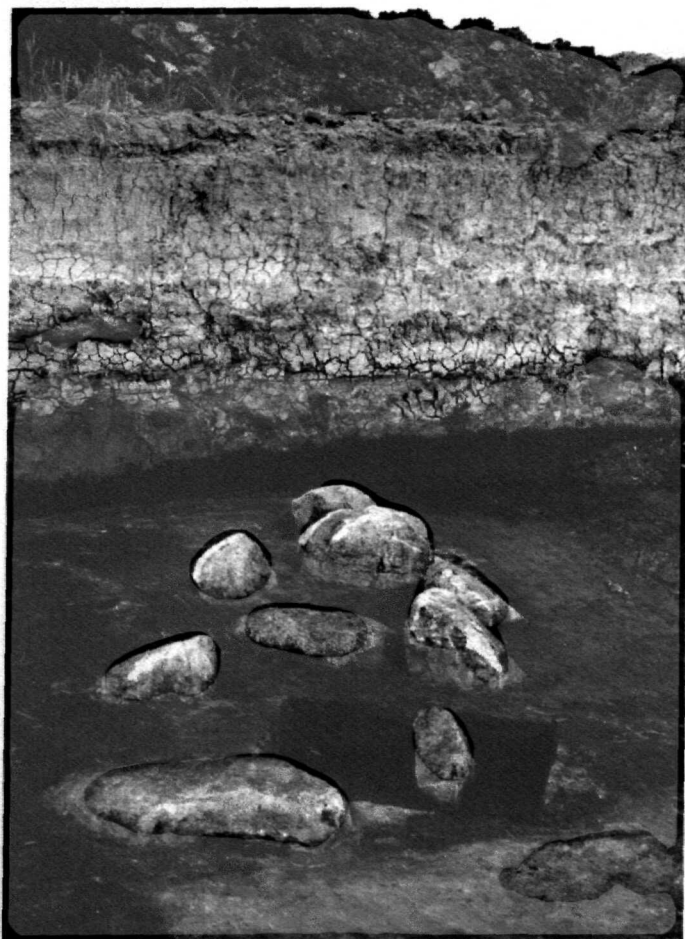
had intensified since the Bandkeramik. Only one Rössen settlement has so far been excavated in the Netherlands: the site of Maastricht-Randwijck, which included no house plans, only pits.

Until recently, little was known about the period of the Rössen culture in the northern zone. However, finds from Drenthe and Flevoland have now shown that between 4900 and 4600 BC this area was definitely inhabited by pottery-producing groups, who may be regarded as the immediate predecessors of the occupants of the settlements on the levees near Swifterbant (Swifterbant 1 and 2). But we do not yet have any information on the economy in this early phase.

Our understanding of the history of the occupation of the northern part of the Netherlands remains poor up to 4200 BC, the beginning of the Middle Neolithic A, the period of the sites on the levees near Swifterbant which gave the Swifterbant culture its name (phase 3). It is believed that in the higher sandy areas occupation concentrated in and along the stream valleys in this period. The people of the Swifterbant culture seem to have maintained contacts mainly with people further east, but there are also indications of contacts with the Rössen communities.<sup>10</sup> The sites that have come to light on river dunes in the western coastal zone, such as Hazendonk (phase 1) and Brandwijk, are also classed as belonging to the Swifter-

fig. 10.6

The rescue excavation, in 1983, of the Heveskeslooster *terp* near Delfzijl led to the chance discovery of a megalithic monument. The structure is not a hunebed 'proper', but only a fairly small funerary chamber or 'dolmen' built on a sandy elevation. The monument was first covered by peat, after which the *terp* was built on top of it. That ensured its excellent preservation. Two conspicuous features of the dolmen are that it was not covered with an earth mound and that it was disturbed at some time in the past, possibly already in the Beaker period.



bant culture (fig. 10.4). Cereals have been found both at Swifterbant and Hazendonk, but they were probably not grown locally. It is believed that the occupants of the sites on the higher sandy soils exploited the natural resources of the delta. According to the present views, hunting and fishing were still very important in these communities' broad-spectrum economy, although they had begun to supplement their diet with the products of agricultural activities.

The southern part of the Netherlands was in this period occupied by a new 'Northwest Group' of the Michelsberg culture and its successors, the Hazendonk 3 group. Their remains seem to indicate that the Neolithisation process had reached a much further stage in the south than further north. This is also the period of the first systematic flint (shaft) mining activities in the chalk regions (see feature E). Well-known mining sites from this period are Rijckholt in the Netherlands and Spiennes in Belgium. A large number of Michelsberg sites fortified with earthworks are known in the Rhineland and in Belgium. Many smaller sites have been found on the loess and on the sandy soils in the Netherlands. The settlements on the sandy soils were probably also inhabited by farming communities, but in the coastal area in this period some sites were still used predominantly for the exploitation of natural resources, such as the aforementioned Hazendonk.

Until recently, no sites dating from 4000-3500 BC were known in the northern part of the country. In other words, regarding chronological counterparts of the later Michelsberg sites in the south there appeared to be a hiatus in this part of the Netherlands. However, an assemblage has now been found at site P14 in the Noordoostpolder, which shows close stylistic affinities with an early phase of the TRB culture in Schleswig-Holstein known as Fuchsberg. This material has provisionally been called 'pre-Drouwen' or 'Swifterbant 4' ware (fig. 10.5).<sup>11</sup>

Although the Neolithisation process can be said to have started in the Swifterbant 3 period in the north of the Netherlands, we cannot really speak of true Neolithic societies until the time of the emergence of the TRB communities of the Middle Neolithic B, after 3400 BC. The origins of the TRB culture are still unclear. Some see clear indications of continuity in the pottery of the Swifterbant culture, that of the pre-Drouwen phase and that of the TRB.<sup>12</sup> The TRB pottery of the Drouwen phase however shows unmistakable signs of northern influence.

In the Netherlands, the TRB culture is best known for the hunebedden, which were built until approximately 3200 BC, but remained in use until the end of the TRB period (fig. 10.6). The oldest flat graves date from the early TRB period, but they are still few in number; with time, however, interment in a flat grave gradually came to be the predominant form of burial. The TRB settlements that have so far come to light in the Netherlands consist of nothing more than artefact scatters.

The later phases of the TRB coincide with the period of the Vlaardingen group in the coastal area, which is closely related to the Stein group in Limburg and the Wartberg culture in Hessen.<sup>13</sup> The sites of the Vlaardingen group show considerable functional differentiation. Some of the sites were indisputably bases for fishing, large-game hunting, trapping and fowling. These sites, which formed part of the settlement system of people with southern origins, indicate that hunting, fishing and gathering were still being practised alongside agriculture.

The transition from the TRB to the Single Grave culture has been taken to mark the beginning of the Late Neolithic. According to current views, the Single Grave culture (which used to be known as the Protruding Foot Beaker culture in the Netherlands) was predominantly a native development and not, as previously assumed, a culture introduced by belligerent nomadic tribes.<sup>14</sup> The transformation of the Vlaardingen group into a 'Beaker culture' seems to have been a slightly later – and

| site           | Wateringen 4      | Bergschenhoek        | Swifterbant s3    | Hazendonk 1-3        | Gassel              |
|----------------|-------------------|----------------------|-------------------|----------------------|---------------------|
| date           | 3600 BC           | 4100 BC              | 4000 BC           | 4000 - 3600 BC       | (3600 BC)           |
| 'culture'      | Hazendonk 3       | Swifterbant 3        | Swifterbant 3     | Swift 3 - Haz 3      | Hazendonk 3         |
| geography      | coastal dune      | peat margin          | gully - levee     | riverdune (donk)     | cover sand margin   |
| grain pres/abs | +                 | -                    | +                 | +                    | - quern stones      |
| % dom. animals | 50%               | 0%                   | 50%               | 10%                  | -                   |
| flint          | coastal + terrace | -                    | erratic           | terrace + Rijckholt  | terrace + Rijckholt |
| time span      | short (years)     | short (years)        | long (decades)    | long (3x decades)    | short (years)       |
| season         | (year round)      | winter               | summer            | var. seasons         | -                   |
| function       | permanent         | hunting/fishing camp | summer settlement | hunting/fishing camp | campsite            |

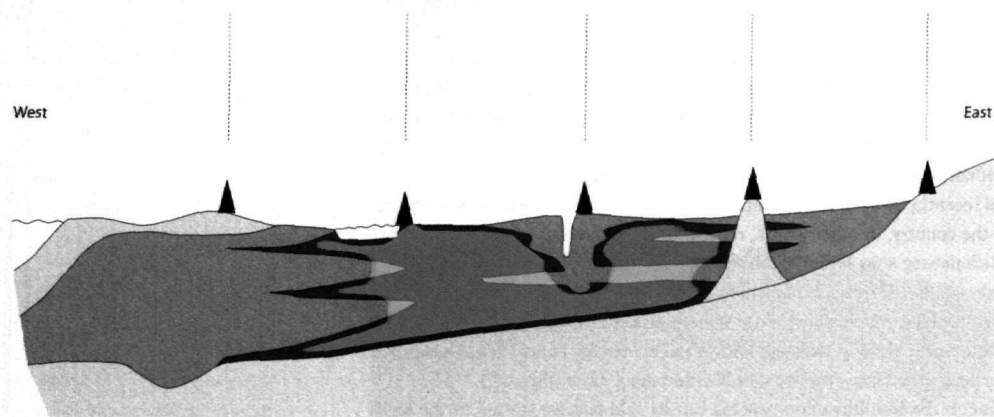


fig. 10.7

West-east cross-section of the Netherlands showing the typical locations of Neolithic settlement sites in different phases of the Neolithic. The sites differed substantially in size, length of occupation, subsistence strategies and type of hinterland as reflected by the types of flint used. The sites are therefore interpreted not as the settlements of isolated groups of 'delta occupants' but more as wetland hunting camps of communities whose bases lay on the sandy soils.

possibly also more gradual – development. A few early Single Grave artefacts have been found at Vlaardingen, but elsewhere this transition took place in the phase of the 'All-Over-Ornamented beakers'.

#### THE REPRESENTATIVITY OF THE EVIDENCE

Two general processes have distorted the archaeological record of this period. In the Early Neolithic the sea level was still rising at a high rate. As a result, archaeological remains in the lowlands rapidly became buried beneath thick sediments in some places or were washed away in others. What were then the peripheries of the higher sandy soils constituted relatively favourable occupation areas with high groundwater levels and good access to the ecologically varied delta, but it was the coversand surface of precisely this zone that was covered with organic and clastic sediments, which rendered it inaccessible to normal methods of archaeological research. The old land surface now lies at depths of between 9 and 3 m below NAP, the average sea levels in 5200 BC and 2900 BC, respectively. In discussions of Neolithic occupation insufficient allowance is made for the 'invisibility' of this zone, which is quite wide in some parts of the flat coversand area.<sup>15</sup> In the higher sandy areas the main problem is on the contrary the absence of sedimentation, owing to which occupation remains from different periods have become mixed and many objects have decayed or have been fragmented (fig. 10.7).

Three aspects are of importance with respect to the question of the representa-

tivity of the evidence. In the first place, no sites whatsoever are known from certain periods and certain areas. This is for example true of the entire Early Neolithic: we have virtually no information on the Late Mesolithic hunter-gatherers who lived in the areas outside those containing the Bandkeramik settlements. A second problem is whether we may regard the sites that are known from a particular period as representative of the whole range of site types and, if so, whether they accurately reflect the activities of their prehistoric occupants. For example, for some archaeological cultures we have settlement remains but no burials, whereas for others we have burial evidence but few settlement remains. We may, moreover, assume that the settlements themselves varied considerably, from permanent settlements to extraction camps, because people still frequently practised hunting, fishing and gathering besides agriculture. A complicating factor is that we do not have much information on off-site activities either, as little research has been carried out in areas beyond the limits of the find scatters.

The third aspect concerns the representativity of the material culture. In the delta, organic remains, such as wooden and bone objects, have survived beneath the groundwater level. Such objects tell us more about technology and the use of raw materials than can be inferred from inorganic remains alone. Analyses of the wood, seeds and pollen that have been preserved at the sites in this area, moreover, enable us to reconstruct these sites' former environment in great detail, while archaeobotanical and archaeozoological remains provide insight into subsistence activities, from which a site's function in the overall settlement system can sometimes be inferred. The situation in the delta hence forms a marked contrast with that on the sandy soils, where only pottery (often severely eroded), flint and stone remains have survived.

#### HISTORY OF THE RESEARCH

Being so conspicuously visible above the surface, the *hunebedden* and barrows were the first Neolithic remains to attract attention. They were described in 1660 already, by Johan Picardt.<sup>16</sup> Many *hunebedden* and barrows have been robbed, or were excavated in what we would now term a careless manner. Between 1910 and 1955 Van Giffen investigated and restored a large number of *hunebedden*. Since the Second World War, *hunebed* D26 and the newly discovered *hunebed* beneath the Heveskeslooster *wierde* in the province of Groningen have been excavated (the former in 1968-1970), and a few monuments have been re-investigated, but otherwise very little fieldwork has been carried out into these monuments. Instead, research has concentrated on different aspects of the pottery from the *hunebedden*.<sup>17</sup>

With the exception of the *hunebedden* relatively little research has been carried out into Neolithic burial practices. A spectacular discovery was the Bandkeramik cemetery that was found at Elsloo, but otherwise we know of only small cemeteries like those of Swifterbant and plot P14 in the Noordoostpolder, or of cremation burials such as those of the Vlaardingen site Hekelingen III. For the TRB culture we have, besides *hunebedden*, a few flat grave cemeteries, such as that of Allardsoog. Flat graves are often found by chance during settlement research. A different kind of funerary monument, which also came to light during the excavation of settlement remains is the burial chamber of Stein. Such chance discoveries provide insight into other, less conspicuous, types of burial.<sup>18</sup>

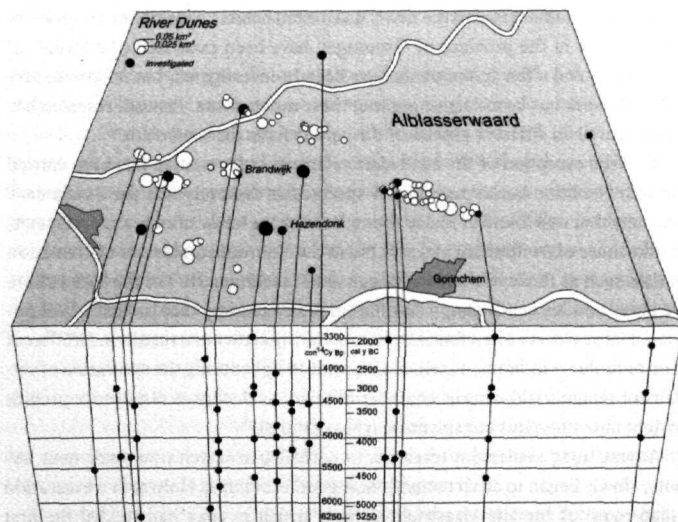
Around 1925 settlement research, in particular research into settlement layouts, slowly began to attract attention. A good example is Holwerda's excavation (1926-1930) of the site Maastricht-Caberg, which in 1925 had yielded the first

Bandkeramik finds in the Netherlands. More settlement remains were found near Stein (1926) and Geleen (1933). A great surprise was the discovery of settlement remains in the wet lowlands in the west, at Zandwerven;<sup>19</sup> they showed that this region had also been occupied. It was after the Second World War that settlement research really began to make progress. Inspired by the discoveries made by Buttler and Haberey at Cologne-Lindenthal (1929-1932), Dutch archaeologists began to organise large-scale rescue excavations of Bandkeramik sites on the loess of southern Limburg that were soon to disappear beneath new estates. The excavation of these sites – Elsloo, Sittard, Geleen and Stein, all of which lie along the peripheries of the large middle terrace of Graetheide<sup>20</sup> – had a profound international influence. The research at Rosmeer and Darion in Belgium and the large-scale Aldenhoven Plateau Project (1965-1980) in the Rhineland loess region have also contributed much to our understanding of Bandkeramik settlements in the lower Rhine region.<sup>21</sup>

Over the past few decades more and more settlement research has been carried out in the delta, too. Hekelingen was partly excavated in 1948.<sup>22</sup> In the early 1960s an entirely new approach was adopted in the excavations of Vlaardingien, Voorschoten and Leidschendam, which were investigated on a smaller scale, per square metre. As no clear house plans were found, attention focused on material objects and their distributions. Pioneering stratigraphic research was carried out in the excavation of Hazendonk (1974-1976). Around that same time the excavations at Swifterbant had a profound influence on settlement research. A key question in the latter investigation was whether crop cultivation and cattle keeping had been practised locally; many ecological samples were taken and vast volumes of soil were sieved for the purpose of finding an answer to this question.<sup>23</sup> The Swifterbant project is the earliest example of a large-scale interdisciplinary project. Something that all the aforementioned wetland sites have in common is that the excellently preserved organic remains amply compensate for the scarcity of features. The delta research in the western and northern Netherlands and the way in which the sites were excavated attracted much international interest, for these sites are important not only with respect to our understanding of Dutch prehistory, but also for their uniqueness from a European viewpoint (fig. 10.8).<sup>24</sup>

fig. 10.8

Block diagram of the lower courses of the rivers of the river district showing the *donken* (river dunes). The dunes that have been investigated by means of manual coring are indicated in black. Also indicated in the cross-section are the <sup>14</sup>C dates obtained for the Mesolithic and Neolithic occupation horizons. They show that the river dunes as a group were systematically used as settlement sites from at least 5200 BC (the greatest depth reached in the coring) until the Beaker period. See also feature D.



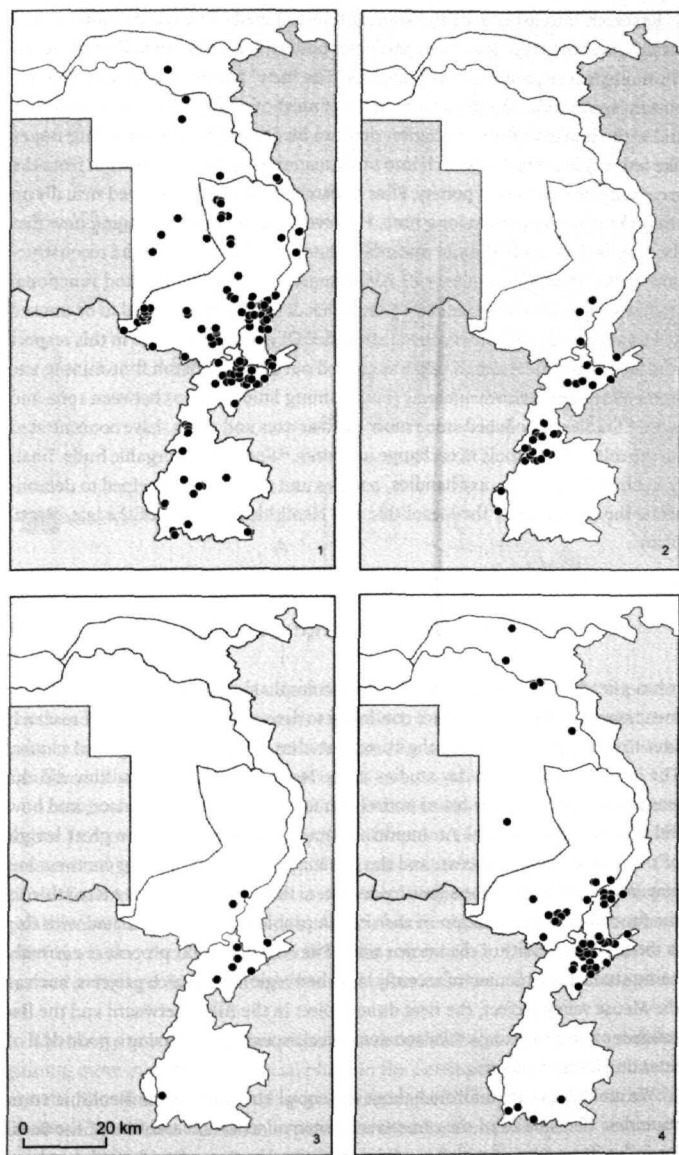


fig. 10.9

Distribution of findspots, interpreted as settlement sites, from the Late Mesolithic and three phases of the Neolithic in the area surveyed in the Meuse valley project. In the periods of the Bandkeramik and the Rössen culture occupation was restricted to the southern part of this area, the peripheral parts of the loess zone. The Neolithic way of life was to spread to the rest of the area only in the period of the Michelsberg culture.

- 1 Late Mesolithic
- 2 Bandkeramik
- 3 Rössen
- 4 Michelsberg

Other Neolithic settlement research has been less spectacular. Only one Rössen settlement and a small number of sites of later Neolithic cultures like the Michelsberg and TRB cultures have been investigated. With the spectacular exception of the multiple palisade of Anloo, no features came to light in those investigations. House plans of the TRB culture have been unearthed in the adjacent part of northern Germany, though.

To conclude, the settlement research in the coastal region (the wetland sites) and on the loess has led to methodical innovations, both in the field and in the later processing of the finds and other data. The evidence obtained in the research in the delta, in particular, has been of major importance for our understanding of the Dutch Neolithic.

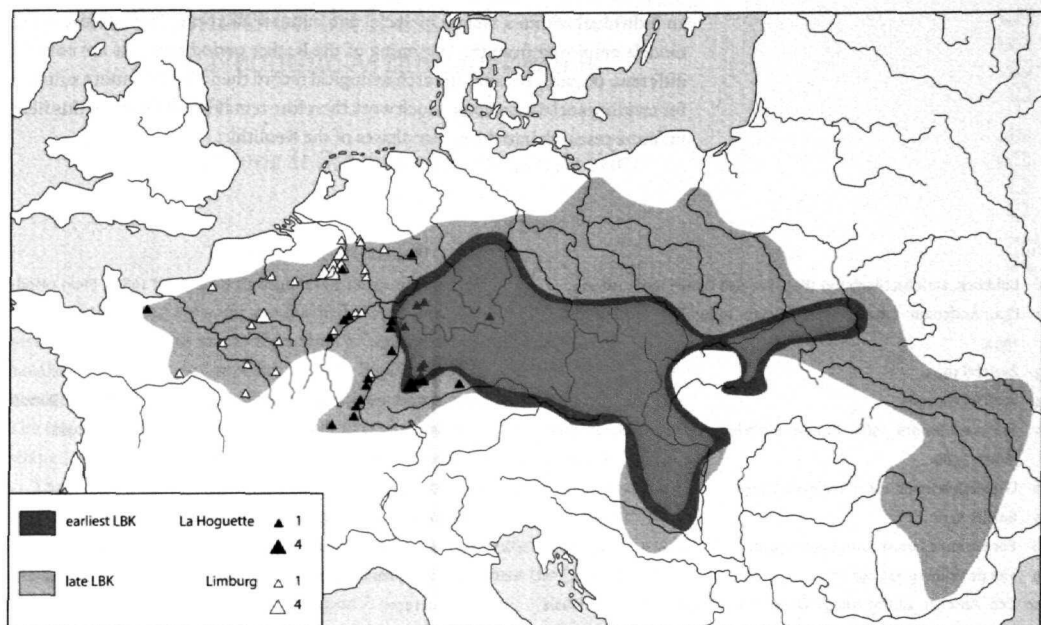
Research into aspects of material culture originally focused on cultural-historical questions: type fossils, in particular pottery, were studied to determine the chronological sequence of the findspots. The 'new' pottery proved to be an important source of inspiration, both in the context of cultural-historical questions and with respect to the information that can be derived from it regarding issues like (ethnic) identity.<sup>25</sup> Research into other materials suffered somewhat from the great scientific interest in pottery. Flint research, for example, received virtually no attention whatsoever for a long time. However, this is rapidly changing now that the emphasis is shifting more towards technological aspects like the reconstruction of the reduction sequence of *Bandkeramik* tools via refitting and functional analyses. Such analyses have shown that what at first sight appeared to be unused and unmodified artefacts were used after all.<sup>26</sup> Of great importance in this respect was the large-scale research that was carried out at the Rijckholt flint-mining site by the *Werkgroep Vuursteenmijnbouw* (Flint-Mining Study Group) between 1964 and 1972.<sup>27</sup> Studies of polished stone tools, such as axes and adzes, have concentrated on the role of these tools in exchange networks.<sup>28</sup> Spectacular organic finds, finally, such as traps, bows, axe handles, paddles and the like, have helped to demonstrate the continuity of the Mesolithic and Neolithic traditions of the late-glacial plain.

#### CURRENT RESEARCH TOPICS

It has already been outlined above how the emphasis gradually shifted to settlement research. Settlements have continued to determine the direction of research over the past few years, only the current studies are of a more regional nature. The key issue in present-day studies is the Neolithisation process: how did the transition to an economy based entirely on food production take place, and how did this differ per region? An important question, considering the great length of the Neolithisation process, and the fact that hunting and fishing continued to play important parts in the subsistence system throughout the entire Neolithic, is the functional differentiation of the sites. A problem closely associated with this is the representativity of the known sites. The Neolithisation process is currently being studied in a number of recently launched regional research projects, such as the Meuse valley project, the river dune project in the Alblasserwaard and the IJsselmeer project (fig. 10.9).<sup>29</sup> Palaeo-ecological aspects are receiving a good deal of attention in these projects.

We are still poorly informed about the social structure of the Neolithic communities. The studies of the cemeteries, pottery decoration and flint of the *Bandkeramik* culture have provided some insight into this matter<sup>30</sup> and much has been written about the role of the hunebedden in TRB society.<sup>31</sup> As far as the other Neolithic phases are concerned, an analysis of raw material procurement strategies could yield information on mobility and social networks.<sup>32</sup>

Although our understanding of the Neolithic in the Low Countries is steadily widening, a number of important questions still remain unanswered. One of these questions concerns the great homogeneity of the *Bandkeramik*. This is usually explained by assuming that the bearers of this culture were colonising pioneers. But if so, how did this colonisation come about in such a short time span, what sort of relationship existed between the colonists and the native population, why did such a colonisation take place and how did the pioneers retain their identity? These are but a few of the questions that can be asked with respect to the *Bandkeramik*. Of importance in this context is the meaning of the Limburg and La Hoguette pottery,



which has been found outside the loess, too. Are we to interpret this as pottery produced by Mesolithic groups or does it reflect, for example, specific activities of people belonging to the Bandkeramik culture (fig. 10.10)?<sup>33</sup> The abrupt end of the Bandkeramik is also an intriguing topic.

Another current research topic is the transition from the Swifterbant culture to the TRB culture: when did the Neolithisation process start in the north of the country and how are we to envisage the communities that lived there before this process started? The research that is currently being carried out in the IJsselmeer polders may throw some light on this issue. *Something else that is not yet entirely clear is whether the TRB culture reflects the colonisation of the sandy soils or is instead to be regarded as the outcome of the acculturation of local hunter-gatherers.*

Thanks to intensive, detailed research in the various regions we are now slowly gaining more insight into a crucial phase in the development of prehistoric society: the transition from a hunting-gathering way of life to farming. Besides the obvious logistic consequences, in particular the adoption of an entirely sedentary existence, this transition also implied tremendous changes in terms of social organisation. Food production gave a community – or at least some of its members – the possibility of creating a surplus. If control of this surplus was an exclusive right, it may have been used to acquire a higher status within the community and reduce other members of the community to a position of dependence. The transition to food production, moreover, led to an entirely different relationship with nature, from a relatively equal relationship to one in which man enjoyed greater control over nature. Apart from that, it also laid the basis for the emergence of social differentiation. Although our knowledge of the subsistence system is steadily expanding, we are unfortunately still insufficiently informed about social structure and social organisation, partly because these are not important topics in the theoretical context within which much Neolithic research is carried out.<sup>34</sup> Neolithic man is still seen predominantly as a food consumer, and too little as

fig. 10.10

Distribution of the earliest phase of the Bandkeramik in Central Europe from around 5500 BC onwards, and its later expansion to the west, north and east after 5300 BC. The 'western Neolithic', which is characterised by La Hoguette and Limburg pottery, is known almost exclusively from Bandkeramik pit fills.

an individual within a system of social and cultural alliances. The interpretation models employed from the beginning of the Beaker period onwards are entirely different, possibly because the archaeological record then becomes more suitable for tackling social questions. Much work therefore remains to be done in this field in future research into the earlier phases of the Neolithic.

#### NOTES

- 1 Lubbock, *see* John (Avebury) 1865. *See also* Daniel 1967: 118-124.
- 2 O.a. Anderson 1992; Harris/Hillman 1989; Reed 1977; Zohary 1992.
- 3 Zvelebil 1994.
- 4 Lee/DeVore 1965.
- 5 *See a.o.* Binford 1968; Braidwood/Willey 1962; MacNeish 1991; Moore 1989.
- 6 Griede/Roeleveld 1982; Roeleveld 1974.
- 7 Bakels 1978.
- 8 For example Louwe Kooijmans 1993a.
- 9 Van de Velde 1979a, 1979b.
- 10 Ten Anscher forthcoming; Deckers *et al.* 1982; Van der Waals 1972.
- 11 Ten Anscher forthcoming.
- 12 Ten Anscher forthcoming.
- 13 Louwe Kooijmans 1983.
- 14 Fokkens 1986, 1988b; Van der Waals 1984.
- 15 An exception is for example Fokkens' study of the plateau of Friesland and Drenthe (1991a, 1998a).
- 16 Picard 1660.
- 17 Bakker 1979; Brindley 1986; Voss 1982.
- 18 Elsloo (Van de Velde 1979a); Swifterbant (Meiklejohn/Constandse-Westermann 1978); Hekelingen III (Hoogland 1985); Stein (Modderman 1964).
- 19 Van Giffen 1930.
- 20 Modderman 1985.
- 21 For Rosmeer, excavated 1952-1966, *see* Roossens 1962; for Darion *see* Cahen *et al.* 1986; for Aldenhovener Platte *see* Lüning 1982.
- 22 Modderman 1953.
- 23 *See* Deckers *et al.* 1980.
- 24 For example Louwe Kooijmans 1987; Waterbolk 1981.
- 25 Voss 1982; Hodder 1982.
- 26 Reductiesequenties en refitting: De Grooth 1987; functional analysis: Van Gijn 1990.
- 27 Felder 1980.
- 28 For example Bakels 1978, 1987a; Van der Waals 1972.
- 29 IJsselmeerproject (Hogestijn 1992; Hogestijn *et al.* 1995; Ten Anscher/Gehasse 1993); Alblasserwaard (Verbruggen forthcoming); Maas Valley Project (Wansleben/Verhart 1990).
- 30 Van de Velde 1979a, 1979b, 1990; De Grooth 1987, 1991.
- 31 For a summary *see* Bakker 1992.
- 32 For example De Grooth 1991.
- 33 Brounen 1985; Lüning *et al.* 1989.
- 34 An exception is the research carried out by Van de Velde (1979).