

# Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek

jaargang 23, 1973

## AFKORTINGEN

<i>APL</i>	<i>Analecta Praehistorica Leidensia</i>
<i>BABesch.</i>	<i>Bulletin van de Vereeniging tot bevordering der kennis van de antieke beschaving</i>
<i>BAI</i>	Biologisch-Archaeologisch Instituut, Groningen
<i>BH</i>	<i>Brabants Heem</i>
<i>Bj</i>	<i>Bonner Jahrbücher</i>
<i>BKNOB</i>	<i>Bulletin van de Koninklijke Nederlandse Oudheidkundige Bond</i>
<i>BROB</i>	<i>Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek</i>
<i>IPP</i>	Instituut voor Pre- en Protohistorie, Amsterdam
<i>JMP</i>	<i>Jaarboek voor Munt- en Penningkunde</i>
<i>JROB</i>	<i>Jaarverslag van de Rijksdienst voor het Oudheidkundig Bodemonderzoek</i>
<i>JVT</i>	<i>Jaarverslag van de Vereeniging voor Terpenonderzoek</i>
<i>NAP</i>	Nieuw Amsterdams Peil (Dutch Datum Level)
<i>NDV</i>	<i>Nieuwe Drents(ch)e Volksalmanak</i>
<i>NKNOB</i>	<i>Nieuwsbulletin van de Koninklijke Nederlandse Oudheidkundige Bond</i>
<i>OML</i>	<i>Oudheidkundige Medede(e)lingen uit het Rijksmuseum van Oudheden te Leiden</i>
<i>PPS</i>	<i>Proceedings of the Prehistoric Society</i>
<i>PSHAL</i>	<i>Publications de la Société Historique et Archéologique dans le Limbourg</i>
<i>RMO</i>	Rijksmuseum van Oudheden, Leiden
<i>ROB</i>	Rijksdienst voor het Oudheidkundig Bodemonderzoek, Amersfoort
<i>Sj</i>	<i>Saalburg Jahrbuch</i>
<i>TZ</i>	<i>Trierer Zeitschrift</i>
<i>ZSAK</i>	<i>Zeitschrift für Schweizerische Archäologie und Kunstgeschichte</i>

## NOOT

Het aardewerk is op schaal 1:4 afgebeeld, tenzij anders aangegeven; de profielen van het handgevormde aardewerk zijn wit, die van gedraaid aardewerk zijn zwart getekend.

Unless otherwise stated, the pottery is drawn to a scale of 1:4; the profiles of hand-made pottery are represented in white, of wheel-made pottery in black.

BERICHTEN VAN DE RIJKSDIENST  
VOOR HET OUDHEIDKUNDIG BODEMONDERZOEK





ROIB

Berichten van de Rijksdienst  
voor het Oudheidkundig Bodemonderzoek

Proceedings of the State Service  
for Archaeological Investigations  
in the Netherlands

jaargang 23, 1973

## REDACTIE

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ISBN 90 12 00736 4

Grafische verzorging: Aart Verhoeven, Spanga, en H.J. Bloklander, ROB, Amersfoort

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# Prehistory in the Netherlands: An Economic-Technological Approach

With a contribution by D.P. Hallewas

figs. 1-7

## INTRODUCTION

This paper is intended as a survey of the technological and economic aspects of prehistoric cultures in the Netherlands. Certain restrictions have been imposed upon scope of the discussion, for it covers only part of the prehistoric period: from the Neolithic to the arrival of the Romans. The Palaeolithic and Mesolithic have, with a few exceptions, been excluded. While many finds (mainly flint assemblages) dating to these periods are known, insight into the Palaeolithic and Mesolithic economies is still very limited. In the near future, the results of the research carried out by R.R. Newell, R. Whallon Jr., and T.D. Price (BAI Groningen and University of Michigan) will certainly add to the knowledge of Mesolithic economies. With regard to the Palaeolithic, we wish merely to point out here that probably local flint was employed in the manufacture of tools. There is ample evidence of the widespread use of quartzite from Wommersom (Belgium) during the Mesolithic; the distribution area was bounded on the north by the central Dutch rivers, the Rijn (Rhine), Waal, and Maas (Meuse). The fairly extensive knowledge of this material's distribution is due largely to the fact that Wommersom quartzite is easily visually recognizable. With flint, however, the situation is in general vastly different: research in the Netherlands into the relationship between trace-element composition and origin has only just begun.<sup>1</sup>

Another restriction in this article is of a topographical nature, as only finds from the present territory of the Netherlands will be considered. This may seem incorrect from a methodic point of view, but we are, of course, quite aware that the Netherlands was always a part of and dependent upon larger economic systems, and wherever

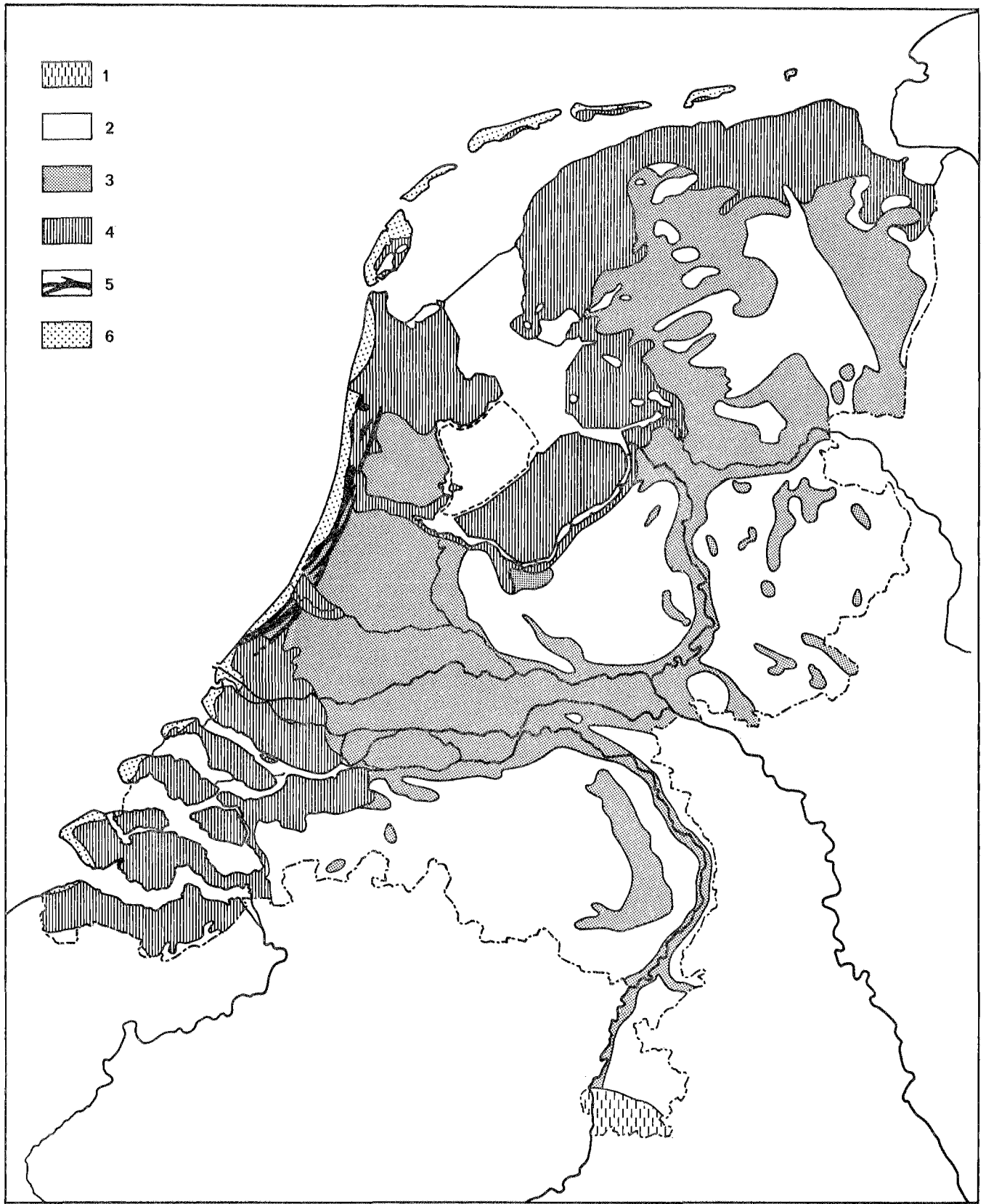
necessary this point will be made. There are, however, also cases in which we, starting from the principle of a minimum hypothesis (that is, the use of minimal means to explain phenomena), may arrive at what is in our opinion an interesting way of representing things.

The purpose of this article is to provide a survey of the most important economic and the thereto closely related technological aspects of the prehistoric cultures known in the Netherlands. As far as is possible, the starting-point will be the raw materials used there. The discussion will be based mainly upon published data, while occasionally unpublished data collected by the ROB are added. It is not the intention to give a complete inventory of all material directly or indirectly related to the subject. The examples have been sometimes selected rather arbitrarily. They serve primarily to illustrate the ideas developed in this paper, but they also provide a representative insight into the incidence, nature, and variety of the archaeological material available in the Netherlands. The map showing the sites dealt with (fig. 7, p. 40) clearly indicates the even distribution of our choice. Apart from the peat regions, three gaps in the material are evident: the Achterhoek and western Noord-Brabant, where indeed little archaeological work has been carried out, and Zeeuws-Vlaanderen, where despite much archaeological work the prehistoric period till now is only represented by some Mesolithic material.

Another object of this publication is the following. Because so much archaeological material from the Netherlands is published in Dutch, the reader unacquainted with the language may receive an unnecessarily vague impression both of the finds in the Netherlands and of its natural possibilities. It is a fact that the Netherlands possesses few minerals and that in general the material finds are rather poor, nevertheless we hope to demonstrate that people found it a quite attractive place to live in. In this connec-

1 De Bruin a.o. 1971; 1972; Van Haaren/Modderman 1973, 11-7: visually recognizable flint from Lousberg (near Aachen, West Germany).





tion we wish to stress some natural resources that were available in sufficient quantity to enable prehistoric economies to function adequately. Due to lack of knowledge concerning the available material, pre- and early historic periods are often largely ignored in economic-historical textbooks: a deficiency which may be met by this publication.

Finally, this account should be seen as an incentive to the systematic and detailed continuation, within a more limited geographical area, of J.G.D. Clark's wider-ranging work.<sup>2</sup> It could serve as kind of a program for future research in the Netherlands, where surveys of finds based on raw materials hardly exist. New finds, particularly those dating to the transition phase Bronze Age-Iron Age, could be examined and assessed in the light of the ideas developed here. It is hoped that this paper may stimulate further discussion.

The following headings are used:

- 1 Geology
- 2 Subsistence and fresh water-supply
- 3 Bone and antler
- 4 Stone and flint
- 5 Wood
- 6 Leather and textiles
- 7 Clay, loam, and sand
- 8 Metal
- 9 Amber and glass
- 10 Salt

## 1 GEOLOGY

In order to acquire insight into the economic and technological possibilities of the Netherlands in prehistory, it is first necessary to give a sketch of its geology so that the reader can appreciate the environment and the available natural resources (fig. 1). The Netherlands is situated in a temperate zone and has a sea climate. Surface water has always played an important role. Pre-quaternary surface materials are found in the east and southeast of the coun-

◁ Fig. 1 Generalized geological map of the Netherlands. After Jelgersma a.o. 1970, and W.C.H. Staring, 1856: *De bodem van Nederland*, Haarlem (frontispiece-map).

1 Cretaceous formations (marl) at or near the surface, 2 Mainly Pleistocene and Tertiary formations (sand and clay), 3 Holocene peat and fluvial deposits, 4 Holocene marine deposits, 5 Coastal barriers and Older Dunes, 6 Younger Dunes

2 Clark 1965.

try: clays in the east, and marl, in which flint banks are embedded, in the southeast. Apart from these older deposits, the land surface is covered exclusively with quaternary material: principally Pleistocene cover-sand dunes bordered by Holocene peat, changing towards the coast into marine clay and sand still in process of sedimentation. In the coastal areas, from the Mesolithic onwards, are coastal barriers on which sand-dune formation has taken place: the Older Dunes until the Roman period, the Younger Dunes since the 12th century A.D. The greatest altitude in the Netherlands, about +300 m NAP, is in the southeast, but in general the relief nowadays varies between -5 m and +60 m NAP, of which the highest points are ice-pushed ridges capped by cover-sand. The country is divided by the rivers Rijn, Waal, and Maas into two parts, a northern and a southern: the southern is characterized geologically by the absence of ice-pushed ridges. These rivers with their vast natural flood areas have often constituted a cultural barrier in north-south direction, but always favoured connections with the east.

Apart from sand, clay, marl, and flint, the Netherlands has no easily accessible minerals. The exception is bog iron ore, which is principally formed in the valleys of the streams in the eastern border-lands and which has had historically proven economic significance from the Middle Ages up to the end of the nineteenth century. In one area, a coal seam comes to the surface, but no traces of prehistoric or historic exploitation have been found there. The sea provides not only fish but also salt and shells. Useful material was supplied from time to time by large marine animals, especially the cetaceans. The hunting of these animals in prehistory is unlikely, but strandings occurred quite frequently before these mammals were exterminated in northern Arctic seas in historical times.<sup>3</sup>

This brief account of the geology of the Netherlands has not only significance as a background to certain prehistoric events. It may also serve to obtain an idea of the differences in conservation of objects and traces, which are the facts upon which every archaeological reasoning and interpretation is based. In this respect, the higher situated Pleistocene soils (mainly cover-sands) are in great contrast to the lower Holocene peat and clay regions. In the higher areas the organic material (wood, leather, textiles) is mostly decayed. This is also true of bone objects and skeletons, which decay because of lixiviation. Some finds of bone material are, however, known from the lime-rich marl district. On the other hand, many organic remains

3 Van Deirse 1931.

have been found in peat and clay regions. The reasons for conservation differ: in some cases the objects remained constantly below the water-table, in others they were conserved because of the acid conditions in peat layers or those produced by manure and domestic refuse (in terps, for example). A considerable quantity of bone material is also known from the lower areas, especially where calciferous marine clays and sands are present. Organic remains have also been conserved occasionally on the Pleistocene sandy soils because of exceptional circumstances. Bacterial action was sometimes counteracted by copper salts, and thus fabrics, wood, and bone were preserved; imprints in iron rust of woven patterns have also survived.

## 2 SUBSISTENCE AND FRESH WATER-SUPPLY

The Netherlands first came into contact with the Neolithic way of life in about 6000 B.P.<sup>4</sup> Farmers of the Linearbandkeramik culture settled on the fertile loess soils of southern Limburg. Their culture was very similar to that of the Linearbandkeramik groups in the western and central German hinterland: they lived in large wooden houses, grouped in villages, used pottery with linear decoration, and practised a mixed economy. Some imprints of emmer grains in pottery, flint flakes with a high gloss (probably parts of composed sickles), fragments of querns, and possibly also granaries in the Geleen settlement are indications of agriculture. Direct evidence of cattle breeding is scanty: practically no bone material has been conserved in the porous loess soil; only one cow's tooth has been found in the Sittard settlement. The importance of cattle may be concluded from finds on the same site of some pottery handles in the shape of cow heads. The design and size of the houses suggest that, at least in the *Grossbauten*, part of the dwelling was used for stabling cattle. Hardly any information on the technical aspects of the subsistence economy of the Dutch Linearbandkeramik groups is available. Pollen diagrams, which might give some information, are still lacking. The flint industry shows that there were contacts with local Mesolithic groups and indicates the importance of hunt-

ing. The acculturation process may have led, already in the earliest phase of the Linearbandkeramik culture, to the neolithization of Mesolithic groups in the Limburg valley contact area and to the subsequent development of the Limburg culture of Helden-Kessel and Melemborg.<sup>5</sup> The neolithization process of the remaining part of the Netherlands is still largely obscure. Scattered finds of Rössen *Keile* and a few sites with pottery or flint assemblages in Ertebølle-Ellerbek tradition indicate that this process occurred in the course of the 6th millennium B.P.<sup>6</sup> The later Neolithic, Bronze Age, and Iron Age cultures left a greater variety of information about their subsistence: indications in pollen diagrams, plough-traces, charred grain and seeds and their imprints in pottery, bones and other foodscrap, agricultural implements, querns, hunting- and fishing-gear, parcelling, construction remains inside and near settlements, and water-wells. Pollen analysis shows that from the Middle Neolithic onwards two types of farming can be distinguished in the northeastern part of the Netherlands: (1) Land use according to Troels-Smith, in which a small part of the deciduous forest was cleared for agricultural purposes, and cattle were kept in either a stable or an enclosure; and (2) land use according to Iversen, in which a large forest area was cleared not only for agriculture but also especially to obtain pasture land.<sup>7</sup> The middle Neolithic Funnel Beaker culture and the late Neolithic Bell Beaker culture appear to be related to the first type of land use, the late Neolithic Protruding Foot Beaker culture to the second. The main difference between the various economies was probably the numbers of cattle kept. This does not mean that people of the Protruding Foot Beaker culture were nomadic herdsmen. Pollen diagrams suggest at least a highly sedentary way of life; moreover, the finds of plough-traces and of charred grain in Protruding Foot Beaker settlements at Zandwerven and Aartswoud,<sup>8</sup> respectively, also point to a mixed economy. That cattle played an important role in it is apparent from the big enclosure at Anlo, which is considered a kraal.<sup>9</sup> Pollen diagrams of the early and middle Bronze Age indicate a difference in land use between the northern and southern parts of the Netherlands. North of the main rivers there was farming with

4 C-14 dates are given in years B.P. (Before Present), that is, before 1950. A correction is made for the Suess-effect but not for the De Vries-effect. The conventional half-life of radiocarbon (5568 years) is used.

5 Moddermans 1958-9; 1970; Waterbolk 1958-9; Bohmers a.o. 1958-9.

6 Van der Waals 1972.

7 Van Zeist 1967.

8 Oral communication, Dr W. Groenman-van Waateringe, 1971.

9 Waterbolk 1960.

many free-running cattle, while in the south the Troels-Smith economy was practised predominantly. Hardly any other indications for this division exist. The long houses of the Elp culture in Drenthe, those excavated at Elp and Angelslo,<sup>10</sup> for example, suggest that large numbers of cattle were being kept there. The houses of the contemporary Hilversum culture in the south, however, are not much smaller, and traces of wooden enclosures have been found not only in the Dodewaard and Zijderveld settlements<sup>11</sup> but also in those at Elp. On account of the scarcity of pollen diagrams nothing certain can be said about the situation during the late Bronze Age and Iron Age.

Information about the cattle bred and the crops cultivated on prehistoric mixed farms is obtained from bones and conserved grains. Right through prehistory wheat (chiefly emmer: *Triticum dicoccum*) and barley (*Hordeum vulgare* and *Hordeum vulgare var. nudum*) predominate. During the late Neolithic period, of the two barley varieties naked barley was grown almost exclusively; from the middle Bronze Age onwards this was replaced by hulled barley. This process came to an end at the beginning of the Iron Age, about 2400 B.P.; from this period onwards hulled barley only was cultivated.<sup>12</sup>

Arable land with ard traces is known from nearly all cultures during and after the middle Neolithic; an exception so far is the late Neolithic Vlaardingen culture, in which according to grain finds people were corn consumers. The picture of prehistoric agriculture is completed by finds of implements and parts thereof. These finds are mostly flint sickle blades which, in different shapes, have been used from the earliest Neolithic until the Iron Age. Bronze sickles are scarce, and iron sickles have never been found in a prehistoric context. Querns are known from the earliest Neolithic onward. Other agricultural implements are rare, such as a wooden harrow from a late Iron Age-early Roman period settlement at Dorregeest and some wooden and iron ard shares and spade blades;<sup>13</sup> chronologically such shares and blades are usually difficult to place, but at the earliest they can be dated to the Iron Age. Of the iron ard shares illustrated by Van der Poel only the

pointed wedge type can be considered for this function. The broad shape of the others implies that at the most they could be used as spade blades.<sup>14</sup> Furthermore, it is possible that iron ingots were shaped like ploughshares (see p. 29). In addition to house-plans, smaller square and right-angled post-hole configurations from the middle Bronze Age onwards occur. Most of these configurations are generally considered to be plans of granaries, especially those with between four and nine post-holes.<sup>15</sup> In fact, no concrete evidence supports this interpretation; a medieval book-illumination depicting a four-post granary, in which corn sheaves are stored, has influenced it a great deal.<sup>16</sup> Apart from the veracity of this explanation, some other questions remain: why as early as prehistoric times were special buildings needed for storing corn, and was corn stored in stalks, ears, or loose grains? One of the problems of corn storage is the prevention of germination. During the Bronze and Iron Age, the solution in the cretaceous areas of England was found by putting corn in cone-shaped storage pits, cut into the chalk bedrock. From experiments it became apparent that the atmosphere of such a corn-filled airtight silo develops a high carbon-dioxide (CO<sub>2</sub>) content after some time.<sup>17</sup> This gas, produced by the living corn, has a definite function in corn storage: it stops life processes and prevents germination. The principle of the airtight conical silo is still in use on the African continent. In the Fort Lamy (Chad) area millet is stored in silos made of loam which have been placed on platforms; these rest on posts approximately 1 m high in order to prevent damage by animals and moisture.<sup>18</sup> It is suggested that at least part of the plans usually considered as having been granaries could have been silos constructed on the same principle, used for storage of threshed corn. With this in mind it is plausible that a separate construction was needed for corn storage and also that this was built outside the house; in case of fire it was difficult to save corn loosely stored in an indoor granary. Its considerable weight, caused by the use of loam to obtain airtightness and the storage of corn grains instead of ears or sheaves, necessitated a strong foundation and may explain why these granaries often required

10 Waterbolk 1964; Van der Waals 1967.

11 Oral communication, Mr R.S. Hulst, ROB.

12 Van Zeist 1968, 159.

13 Van der Poel 1960-1.

14 Van der Poel 1960-1, *afb.* 13, nos. 14, 15, 16. Comparable spades: Fenton 1974.

15 Cf. Waterbolk 1964, 109; Beex/Hulst 1968, 125.

16 Husa a.o. 1967, fig. 24; also reproduced by Van Giffen 1941, *NDV* 59, *afb.* 37, who, however, does not quote the medieval source. We thank Dr J.M.G. van der Poel, Agricultural University, Wageningen, for the reference to Husa.

17 Bowen/Wood 1968.

18 *Unesco Courier* (Dutch Edition), February 1973, 25.

so many and usually deeply driven posts. This does not mean, of course, that food, and possibly also grain, was not kept in other ways. Indications of storage pits inside the houses are known for instance from the middle Bronze Age settlements at Nijnsel and Elp.<sup>19</sup> In general, however, the water-table is too close to the surface to allow this type of storage. Some large amphora-like ceramic vessels, found in the southern part of the country, could also have served for corn storage. At the beginning of the Roman Period reinforced corn storages outside the settlement itself appear: the enclosures of the Vries-type.<sup>20</sup>

The Iron Age provides clear indications of systematic land use in the form of the regular parcelling of Celtic fields, recognizable over large areas. It has been known for many years that Celtic fields existed in the central and northeastern parts of the Netherlands, but through recent air-photo-archaeological prospection such fields have been discovered practically everywhere on Pleistocene soil.<sup>21</sup> For earlier periods one has to imagine that land was cleared when needed and this was probably done without any particular system. However, this too can result in a more or less regular parcelling: for example the late Bronze Age ditched parcelling at Hoogkarspel.<sup>22</sup> As a rule corn plots do not show up on air-photographs, although the West-Friesland region, in which Hoogkarspel is situated, is the lucky exception. Few traces of manuring have come to light in the prehistoric period. It may be assumed that farmers attempted to restore the soil's natural fertility by letting the land lie fallow and by grazing cattle on it. In the Neolithic period and Bronze Age this method must have involved some sort of shifting cultivation. The Celtic fields show in their systematic lay-out the characteristics of multiple-course rotation, while there is evidence of the intentional importing of humus in the fields. The rise of this system is a major breakthrough in agricultural technology.

Animal bones are almost unknown from sandy soils, as special conditions are required for conservation. Finds from the conservation-favourable coastal areas show that throughout prehistory cattle were the most important of all domesticated animals; pig, sheep, and goat were

secondary.<sup>23</sup> This situation probably held good for the whole of the Netherlands. The importance of cattle, also on sandy soils, is apparent in the design of the houses, which contained large stalls. In a special way it is demonstrated by a wooden construction found in the peat of Bargerroosterveld and dated to the middle Bronze Age: a cult-building, decorated with wooden ornaments which could well be interpreted as stylized cattle horns.<sup>24</sup> Bone finds from Rijckholt-St Geertruid (food scraps from middle and late Neolithic flint miners, preserved in the lime-rich soil) present the same picture: among domesticated animals, cattle dominate while pig, sheep, and goat are secondary.<sup>25</sup>

After the beginning of the Bronze Age hunting is no longer an important source of meat. But in the Neolithic the contribution of game to the total diet varies also and appears to be related to environmental circumstances. The immediate environment of settlements of the late Neolithic Vlaardingen culture at Vlaardingen and Hekeelingen, situated along the borders of creeks, must have been less suitable for cattle breeding than the surroundings of the Zandwerven settlement. Consequently, the percentage of game in the first-mentioned settlements is higher than at Zandwerven.<sup>26</sup> The bones from several findspots are evidence that people of the Vlaardingen culture hunted red deer, beaver, brown bear, aurochs, wild pig, and smaller game like otter, pinemarten, polecat, and birds. Remains of grey seal may originate from hunting also, while remains of sturgeon and a fragmentary fish-trap (the latter found in the Vlaardingen settlement) point to fishery.<sup>27</sup> A Protruding Foot Beaker settlement at Aartswoud supplied, besides the bones of cattle, sheep, goat, pig, and dog, also the remains of beaver, roe-deer, birds, sturgeon, and pike.<sup>28</sup> The character of the Aartswoud and Zandwerven settlements, which are *Kökkenmøddinger*, shows that shell-food was an important part of the diet for the people of the Protruding Foot Beaker and Vlaardingen culture there.<sup>29</sup> Bone material from larger cetaceans, which turns up regularly in coastal settlements dating to the late Neolithic and after, probably comes from stranded animals.

19 Beex/Hulst 1968; Waterbolk 1964.

20 Trier 1969, 32; Brongers 1973, p. xxviii.

21 Müller-Wille 1965; Brongers, in preparation; Woltering, in preparation.

22 Bakker a.o. 1968, *afb.* 2.

23 Clason 1967.

24 Waterbolk/Van Zeist 1961.

25 Clason 1971.

26 Clason 1967.

27 Glasbergen a.o. 1966; Clason 1967; Groenman-van Waateringe a.o. 1968.

28 Oral communication, Mrs L.H. van Wijngaarden-Bakker, IFF.

29 Van Regteren Altena/Bakker 1966; Metz 1972.

Bones of horses were found in the Vlaardingen culture settlement of Hekelingen, but it is not certain whether these come from domesticated animals. The earliest finds of bones proved to belong to domesticated horses were found in a middle Bronze Age settlement of the Hilversum culture near Vogelenzang.<sup>30</sup>

The economic value of the cattle stock was based on its products, such as meat, milk, hides, and on its use for traction, while in some periods the animals themselves may have had an important trade value. It is generally accepted that the long three-aisled house with a breadth of about six metres, which is a more or less standardized feature throughout the Netherlands during the middle and late Bronze Age, was subdivided into stabling and living-quarters. In the long houses belonging to the different occupation phases of the middle-late Bronze Age settlement of Elp the stabling capacity was 20–30 head of cattle. Although this number, according to Brandt,<sup>31</sup> would provide the food and traction required by the normal extended family household (at least when the diet consists of approximately equal parts of both vegetable and animal food), the point should be considered that cattle or their products were of a still greater economic significance. When it is realized that during the Bronze Age one of the most vital requirements – the need for bronze axes and other tools – could only be met through import of the metal, thus necessitating a system of reasonably stabilized trade relationships, it seems not unlikely that, next to amber (see p. 33), cattle or cattle-hides also played a role in the bronze trade.<sup>32</sup> In this connection it is relevant to note that the copper ingots current in the east Mediterranean at the end of the Bronze Age were shaped like ox-hides.<sup>33</sup> It would be interesting to know whether the shortening of the houses in the Iron Age<sup>34</sup> was caused by a lessening interest in cattle, because then perhaps this phenomenon could be connected with the marked decline

in the import of bronze during this period. Concrete evidence of Bronze Age trade in cattle or cattle-hides cannot be provided.<sup>35</sup> From textual sources it is known that the Roman occupiers profited from locally bred cattle by levying taxes in cattle-hides from the people living in the coastal areas (see p. 21). Cattle-trading during that period is demonstrated by a wax-coated wooden writing-tablet, inscribed with the purchase deed of a Frisian cow, found in the terp of Tolsum.<sup>36</sup>

#### *Fresh water-supply*

The supply of fresh water is closely related to the subsistence theme. Although water is not a nutrient in the strict sense of the word, no living organism can function without it. It is an aid in the preparation of food and an ingredient indispensable to many dishes. A well-regulated fresh water-supply is also imperative for the growing of crops and the rearing of cattle. Several techniques used in crafts and industries, the manufacture of pottery and the tanning of leather, for instance, require fresh water.

In general, the fresh water-supply in the Netherlands in prehistory was no real problem, as the whole of the country, except for some high situated areas, was traversed by watercourses. Settlements of the Linearbandkeramik culture are, for instance, found on the loess soil along the small rivers.<sup>37</sup> The distribution of Protruding Foot Beaker and Bell Beaker culture graves in the Veluwe likewise concentrates in the river valleys.<sup>38</sup>

For a long time surface water was sufficient for domestic use. It was only during the Iron Age that a fundamental change in the fresh water-supply took place, when lined wells were constructed for the first time. These were shafts reaching to below the water-table, with sides prevented from caving-in by a wooden construction, wattle-work, or stacked sods. A round wood-lined well (diameter approximately 0.40 m) at Ermelo (hamlet Telgt) (C14: 2300 ±

30 Clason 1967, 11; Groenman-van Waateringe 1966.

31 Brandt, in press.

32 The word trade is used in the meaning of barter. Money in the strict sense was not known in the Netherlands during prehistory. Much prehistoric money (Celtic coins) is found in Belgium (*cf.* De Laet/Glasbergen 1959, 191), but only two reliable finds come from the Netherlands: gold coins from Kessel (Bloemers 1973, 25) and Hapert (oral communication, Mr J.P.A. van der Vin, Koninklijk Penningkabinet: Royal Collection of Coins, Den Haag). From indigenous settlements in the pre-Roman period no Roman coins are known. *Cf.* Van Es 1960; Boersma 1963 and 1967.

33 Clark 1965, 258–9.

34 Hulst, this vol., pp. 65–76.

35 There is at best slight evidence for a religiously based association between bronze and cattle, to which we refer merely in passing. It would be interesting to verify in how far it is a symbolic division in which copper, bronze, gold, and perhaps sun and fire are opposed to and in some way complementary to cattle, amber, and possibly also moon and water.

36 Halbertsma 1959.

37 Modderman 1970, *Taf.* 1.

38 Modderman 1962–3.

90 B.P. GrN 6407)<sup>38a</sup> and three round wells at Ede (hamlet Maanen), which all date from the Iron Age, are such examples. There are some indications of wells from earlier periods, but these are unlined holes, reaching to below the water-table (middle Bronze Age: Dodewaard and Zijderveld; early Iron Age: Den Burg, Texel).<sup>39</sup> A possible unlined well or cattle watering-place is known from the middle Neolithic Funnel Beaker culture settlement at Elspeet.<sup>40</sup> A lined cattle watering-place from the early Iron Age has been found at Wijchen.

It is possible that the construction of lined wells is related merely to the demand for more and better water by more people, who perhaps had caused a certain pollution of surface water. However, the result was that people were less dependent upon surface water, whereby the potential human habitat became greater. Enlargement of the occupation area is demonstrated by the above-mentioned well at Ermelo, which is situated high on an ice-pushed ridge capped with cover-sand and without surface water in the vicinity. The lining is evidently intended to prevent the caving-in of the well, which was constructed in loose sand. An extreme example of the extension of the habitable area during the Iron Age, connected with this technical innovation, is the occupation of the marsh area in the north of the Netherlands. To keep the settlements dry, mounds of earth (terps) were raised. On these terps the fresh water-supply was guaranteed by the construction of wells with an internal lining of wattle-work; Ezinge is an example. Finally, the security factor should be considered. During times of war a river might be dammed off or polluted upstream; a well, however, secures a constant fresh water-supply. The construction of wells is possibly also related to the increased unrest since the Iron Age, of which indications may be found in the chieftain's graves in the south of the country and the fortified granaries (enclosures of the Vries-type) in the north. Both seem to point to the emergence of local chiefs. Territorial ambitions may have led to friction and, consequently, to such safety measures as the construction of wells.

### 3 BONE AND ANTLER

Bone, with stone and wood, belongs to the oldest materials used and worked by man. It seems apparent from observations on the African continent that the first hominoids

obtained knowledge about this material by slaughter and the handling of meat; however, objects belonging to this osteodontokeratic culture are sometimes interpreted as bones bearing traces of gnawing by hyenas. It can be imagined that bones were split or opened in some other way to reach marrow and brains. Heads of joints and fragments of the mandible supplied blowing-weapons or hammer-like tools; pointed bone fragments for use as stabbing weapons or awl-like implements were obtained by splitting large bones. Bone-working in the Netherlands is reflected by many of the late Palaeolithic flint artefacts; bone finds, however, cannot be dated earlier than the Mesolithic period. Although it is not the intention to discuss this period in any detail, it is interesting to mention the bone and antler artefacts which have been fished up on the Bruine Bank, a shoal in the North Sea,<sup>41</sup> and the tools which are found regularly in wet places on the mainland, especially during the dredging and canalization of watercourses.<sup>42</sup> These finds show that bone and antler were made into barbed points, picks, axes, and adzes.

That relatively great numbers of bone and antler objects were found on the Dutch sea-bed and in rivers can be explained by the fact that conservation requires a humid environment. These materials can also be preserved in a lime-rich area: along the coast in shell-rich marine deposits, and in the cretaceous area in the south of the province Limburg. The conditions for conservation in peat are unfavourable because of its excessive acidity. In the surface Pleistocene deposits (the permeable lime-poor sands and loess) bone and antler have hardly survived. A few bone objects, fired during cremations, have been found in these areas; the firing process causes such physico-chemical changes in bone that it is preserved even in highly porous soils.

Only few bone and antler artefacts survive from the different Neolithic cultures. This is mainly a result of a choice of settlement in regions unsuitable for conservation, and consequently proves nothing about the use and distribution. Finds from elsewhere show that bone and antler as raw material for all types of tools were also important during the Neolithic period. No bone objects are known from the Linearbandkeramik culture, whose settlements are almost all situated on loess. Across the frontier, near Liège (Belgium) a comb-shaped bone tool was found; it was probably used for decorating pottery.<sup>43</sup> It was only in the

38a Feenstra/Riem 1974, 352-3.

39 Woltering 1973b, 127.

40 Bakker 1965.

41 Louwe Kooijmans 1970-1.

42 Elzinga 1962.

43 De Laet/Glasbergen 1959, 55.

6th millennium B.P. – after the Linearbandkeramik culture, which was limited to a particular region, had come to an end – that the neolithization process began to flourish in the Netherlands. T-shaped perforated antler axes are known from this phase;<sup>44</sup> in the Rijckholt flint mines, exploitation of which started before 5000 B.P., pickaxes of deer and elk antler were found.<sup>45</sup> No bone objects are known from the Funnel Beaker culture. The late Neolithic Vlaardingen culture settlements in the western coastal area supplied much worked bone and antler: bone awls and chisels, antler hammers and picks, semi-finished artefacts, refuse, and perforated bears' and dogs' teeth; the latter were presumably used as pendants.<sup>46</sup> In the Protruding Foot Beaker culture settlement at Aartswoud bone needles and points were found.<sup>47</sup> A pick-shaped antler implement and three bone fish-hooks were excavated in a Bell Beaker culture grave near Molenaarsgraaf.<sup>48</sup> Finds of Bronze Age worked bone are known especially from the Hilversum-Drakestein culture, whose settlements are found on the Pleistocene sandy soils and in the western coastal area. Awls, chisels, discs (probably buttons), and a hammer of bone came from a settlement situated on a former coastal barrier in Velsen. A remarkable find from this site is a bone object consisting of two connected rings; probably a girdle-fastener.<sup>49</sup> Cremation graves of this culture on sandy soils (in Oss and Toterfout) contained fired needles and beads, probably made from birds' bones. The tubular bone beads have transverse incisions and are perhaps imitations of segmented faience beads; a bead of this latter type was also found in a Hilversum-Drakestein context.<sup>50</sup>

From the Iron Age little manufactured bone is known, which might be an indication that interest in this material was diminishing. Some finds dating to the late Bronze Age-early Iron Age come from West-Friesland; these include an axe or hoe of elk antler from Hoogkarspel and a bone awl from Enkhuizen.<sup>51</sup> From later Iron Age settlements in the coastal area we know, among other objects, worked antler, a bone awl (from Santpoort), and diamond-shaped bone plates with a point, possibly tools for decoration of pottery (from Rockanje).<sup>52</sup> Because of the circumstances favourable for conservation (caused by

thick layers of dung and refuse) many bone objects have been preserved in the Frisian and Groningen terps. Up till now they have not been the subject of special study. Most of these are stray finds of uncertain date, which varies from Iron Age to the Middle Ages. It may be assumed, however, that bone flutes, sledge-runners, spindles, spindle-whorls, and clod-crushers made of deer and elk antler belong to the Iron Age.<sup>53</sup> A remarkable group is formed by the *rondelles* made from human skulls, which may be dated to the beginning of the Christian era. These were all found in the northern coastal area and indicate clearly an interest in the human head, which is also demonstrated by the find of a trepanned skull.<sup>54</sup>

#### 4 STONE AND FLINT

Flint and structurally related materials (*e.g.* hornstone, quartzite, obsidian), because of their special qualities, have always held an important position in prehistoric technologies. They have in common an isotropic structure, an intense hardness, and produce a characteristic conchoidal fracture with sharp edges when worked in percussion and pressure techniques. They are thus highly suitable as raw material for cutting tools. The many other lithic raw materials available to prehistoric man have in common only that they do not possess the above-mentioned qualities. They do, however, display a wide diversity in structure. Important in this connection are the less fixed possibilities to shape them through cleaving, pecking, sawing, piercing, grinding, *etc.* and usually their greater elasticity. Because of the hereto closely related large spectrum of application possibilities, stone, next to flinty materials, played a major role in most Neolithic economies.

In the Netherlands, flint and stone are present in several geological formations: in primary position flint is found in cretaceous deposits in Limburg; in secondary position both flint and stone are found, in the south and east as rather small river rolling-stones and in the north as small to very large erratics in Pleistocene boulder clay, sedimented by the Saale-glaciation. This boulder clay was deposited only north of the present river area and later eroded in many places or was overlaid by cover-sand and

44 Van der Waals 1972.

45 Felder/Rademakers 1971.

46 Glasbergen a.o. 1966, 51–5; Van Regteren Altena a.o. 1962; 1963; Groenman-van Waateringe a.o. 1968.

47 Oral communication, Mrs L.H. van Wijngaarden-Bakker, *IPP*.

48 Louwe Kooijmans 1974, 250–60.

49 Vons 1969; Clark 1963, 77, fig. 17.

50 Glasbergen 1969.

51 Bakker/Brandt 1966, 216, *afb.* 26; Woltering 1971.

52 Modderman 1960–1a, 234; Wind 1970, C-14 date 2060 ± 50 B.P. (GrN 6401) (Rockanje 1).

53 Van der Poel 1960–1, 179–80.

54 Brongers 1967; 1968.



marine sediments. The gravel deposits south of the great rivers for the most part also disappeared under cover-sand. Because of this, secondary flint and stone of useful dimensions appear only near or at the surface mainly in the northeast, east, and central Netherlands, and occasionally in the northwest. Although the Limburg cretaceous deposits are largely covered by loess, they emerge as outcrops at several places in the river-terraces, so that flint is amply available near the surface.

### Stone

Two important features of the Neolithic way of life are the clearance of forest for agriculture and the settlement of the population in large wooden houses. Both created an increasing need for good-quality axes and adzes. Stone and flint, used for these purposes, require a special quality which cannot be met by surface material. During the earliest Neolithic period axes and adzes were made primarily of stone. Different types of *Schuhleistenkeile* and *Flachhacken* are known: these accompanied the settlement on the loess soils by Linearbandkeramik farmers throughout middle and western Europe. Although formerly considered to be agricultural implements, these objects are generally accepted nowadays as being adzes, used for wood-working.<sup>55</sup> The very monumentality of the houses of the Linearbandkeramik people indicates quite clearly that the adze must have been an essential tool in their settlements. Approximately sixty such adzes are known from Dutch findspots, all in Limburg, forty of which originate from a cemetery near Elsloo.<sup>56</sup> The varieties of stone used are mainly amphibolite and basalt (about three-quarters of the total and in equal proportion) while the remaining adzes are made of lydite, quartzite, and schist. None of these rocks is present in Limburg, so that the materials must have been imported. Petrographic research into the origin of the stones used by the Linearbandkeramik culture supplied important information concerning far-reaching trade contacts. Most of the implements found in the Linearbandkeramik settlement Müddersheim (West Germany, between Aachen and Cologne), investigated by Schietzel, were, like those at Elsloo, made of amphibolite and basalt. Frechen, who identified the lithic material, states that the different types of basalt originate from the Siebengebirge, the Eifel, and

the Westerwald; he is quite positive about the source of a clearly recognizable type of amphibolite, of which almost half of the sixty-six studied tools were made. Apparently this type of amphibolite is found only near Sobótka (previously Zobten) in Silesia, 700 km from Müddersheim as the crow flies.<sup>57</sup> The perforated *Breitkeile* and *Schuhleistenkeile* attributed to the Rössen culture, which have a scattered distribution in northern Germany, Schleswig-Holstein, and the east of the Netherlands, consist also for the greater part of Zobten amphibolite.<sup>58</sup> However, results of petrographic research of the Dutch Linearbandkeramik adzes, a high percentage of which are made of Zobten amphibolite, show that there are other possibilities for the origin of the raw material than far-off Silesia.<sup>59</sup>

After the rise of the flint mines the importance of stone diminished as a material for making tools. In addition to flint tools, however, stone axes and adzes were also in use during the middle and late Neolithic period. A special category of stone implements is formed by shaft-hole battle-axes. The perforation and the often handsome, elaborate models caused flint to be less suitable for these tools. In the Netherlands, battle-axes were present since the middle Neolithic period: a group of *Knaufhammeräxte* with locally developed characteristics and a few battle-axes of other types can be associated with the Funnel Beaker culture.<sup>60</sup> The majority of Dutch battle-axes, however, should be dated to the late Neolithic and may be ascribed to the Protruding Foot Beaker culture, the Dutch branch of the Battle-Axe cultures. These battle-axes have been divided into three groups: (1) types of axes typical of the Einzelgrabkultur in Jutland and Schleswig-Holstein; (2) from these a series of local types developed; and (3) faceted battle-axes characteristic of the middle European Schnurkeramik culture and probably imported from that area.<sup>61</sup> Characteristic of the late Bronze Age and early Iron Age are the *nackengebogene Streitäxte*, which were presumably used (for cult purposes?) till well into Roman times.<sup>62</sup> A large number of the petrologically investigated battle-axes are made of diabase (*e.g.* thirty of the forty specimens described by Addink-Samplonius), a material which was also used for middle and late Neolithic axes. Diabase is one of the most frequently occurring northern erratics in the Netherlands, and it would be important to know if these erratics were used by prehistoric man for the manufacture

55 Rieth 1949-50, 28-38.

56 Modderman 1970.

57 Schietzel 1965, 39-43, 109-111.

58 Schwabedissen 1966, 411-5; Van der Waals 1972.

59 Oral communication, Miss C.C. Bakels, Institute of Prehistory of the University of Leiden.

60 Bakker/De Weerd 1969; Bakker 1973, v-58.

61 Addink-Samplonius 1968.

62 Achterop 1961; Modderman 1964b.

of axes and battle-axes. According to Boekschoten,<sup>63</sup> most diabases found at the surface, were certainly not suitable for this purpose, because of weathering, although it is possible that some of them still possessed a fresh core. Diabase, which has remained embedded in boulder clay, however, is very slightly weathered, and could very well have been used for making implements. Moreover, Boekschoten is fairly certain that most Dutch battle-axes, the faceted group perhaps excepted, were made of northern erratics. He uses as a strong argument that the types of diabase recognized during the investigation form such a heterogeneous group that they were probably not imported from discrete mining centres in Scandinavia or the German Rhine area. Although the erratics need not necessarily be found in the Netherlands – they were present also in the boulder-clay along the coasts of Jutland and Schleswig-Holstein – it seems probable that diabases were prospected for along the Dutch northern coastal boulder-clay cliffs, which at that time were situated at the northern boundary of the Drenthe Pleistocene sand area. They may also have been dug out of the inland boulder-clay layers near the surface.<sup>64</sup> Apart from the origin of the stone, the large number of semi-finished products indicates clearly that battle-axes were manufactured in the Netherlands, or at least were made out of imported half-finished products. In a primitive economy, stone has many other uses besides its application in the manufacture of axes and related tools. It would be beyond the scope of this paper to discuss these in detail and only some will be referred to in passing. Grit is generally used as tempering material for pottery. The inhabitants of the almost stoneless coastal and perimarine area imported stone also for this purpose: for instance, the people of the Vlaardingen culture, settled on the coastal barriers during the late Neolithic period<sup>65</sup> and, in the early Iron Age, the people living in the inland peat area near Assendelft.<sup>66</sup> The Dutch megalithic chamber tombs (hunebedden), belonging to the middle Neolithic Funnel Beaker culture, supplied not only axes but also other stone objects, such as mace-heads, round balls (perhaps used as bolas), hammerstones, querns, and

grindstones.<sup>67</sup> In the Netherlands hunebedden are the most important examples of the prehistoric use of stone as a construction material. They were built from large, locally found, northern erratics, and this concurs with their distribution along boulder-clay zones in the northeastern provinces.<sup>68</sup> Barrows containing nuclei or peripheral constructions of stone are known from the late Neolithic period and Bronze Age.<sup>69</sup> It seems, however, that stone was not used here in house construction during prehistory. Querns, as well as axes, are integral to an agrarian economy. For a long time these were small querns with an upper stone, usually made from sandstone or quartzite.<sup>70</sup> During the La Tène period querns were mostly made of basalt-lava (cocked-hat type).<sup>71</sup> These were export products from an industry in the environment of Mayen (Eifel, West Germany). During the late La Tène period the production in that area changed to rotary querns (*Pendelmühle*)<sup>72</sup>; but this type was only introduced into the Netherlands during Roman times.<sup>73</sup>

#### *Flint*

As a rule, surface flint is of poorish quality because of weathering. Also in view of the small-sized nodules usually found it was rather unsuitable for the manufacture of large tools. On the other hand, however, it was probably adequate to meet requirements during the pre-Neolithic period.<sup>74</sup> The trade in quartzite, extracted from outcrops near Wommersom (Belgium) mainly in the Mesolithic, has been referred to in the introduction to this paper. Although some worked pieces of Wommersom quartzite found recently in Hoevelaken (near Amersfoort) are documented at the ROB, the northern border of its distribution area seems to be formed for the most part by the Rijn, Waal, and Maas river area. This is partly due to the fact that these rivers are a natural barrier, but the distribution also suggests a relation with the occurrence of easily accessible surface flint. The scarcity of flint south of the rivers – the Limburg cretaceous area excepted – probably stimulated the import of Wommersom quartzite. The use of erratic flint is still rather obscure, but its appli-

63 Oral communication, Dr G.J. Boekschoten, Geological Institute of the State University, Groningen.

64 Bakker/De Weerd 1969.

65 Glasbergen a.o. 1966, 48–51; 1967, 111.

66 Hallewas 1971.

67 Knöll 1959, 31–4.

68 Wieringa 1968.

69 Van Giffen 1930; Hooijer 1966; Lanting 1969, 185.

70 *E.g.* Bohmers/Bruijn 1958–9, 207; Glasbergen a.o. 1966, 50, fig. 27.

71 *E.g.* Hulst 1971a; 1971b.

72 Röder 1958.

73 Harsema 1967.

74 *Cf.* Van der Waals/Waterbolk 1967, 184–6; Newell 1970, 177.

cation in the manufacture of small tools seems probable throughout prehistory. Only freshly mined flint, however, could be used in making large axes and adzes.<sup>75</sup> This fact resulted in flint mines and industries being established as early as the early Neolithic in several cretaceous areas of western Europe, from where semi-finished and finished products were traded over great distances. Such mines are known in the Netherlands from the Rijckholt-St Geertruid area and near Valkenburg (Limburg), where open-cast and shaft-mined flint was extracted on a large scale.<sup>76</sup> From a technical point of view, the mines in Belgium (*e.g.* Spiennes and Obourg),<sup>77</sup> in West Germany (near Aachen), and also in southern England (*e.g.* Grimes Graves)<sup>78</sup> display great similarities. As yet, little information has been collected on the social and economic background of this flint mining. Research on bones from filled-up mineshafts at Spiennes and Rijckholt-St Geertruid indicates that these originate from the normal Neolithic livestock (cattle, sheep, goat, pig), and thus it is possible that mining was carried out by inhabitants of agricultural settlements near by.<sup>79</sup> As these settlements have not yet been traced, nothing definite can be said about the relationship between mining and agriculture, the degree of the miners' specialization, or the organization and social implications of their activities.<sup>80</sup> Indications of specialization in flint working have also been found in a Linearbandkeramik settlement in Sittard, where a large quantity of waste flint was found in the refuse pits of one of the houses.<sup>81</sup> The exploitation of flint mines covers a long period. For those at Rijckholt-St Geertruid a number of radiocarbon datings around 5100 B.P. are available.<sup>82</sup> Mining at Spiennes started in about 5500 B.P.;<sup>83</sup> in a subsequent phase it is characterized by Michelsberg culture pottery, while the final stage, which may have lasted till after 3900 B.P., is associated with pottery of the Seine-Oise-Marne culture.<sup>84</sup> In the same period, or somewhat later, products of the French Grand Pressigny mines reached the Netherlands

for the first time. The characteristic daggers, made of honey-coloured flint, are found even in Drenthe; those found in graves are, almost without exception, associated with a Beaker group which shows hybridization of Protruding Foot Beaker and Bell Beaker elements and which takes an intermediate position from a chronological point of view. Radiocarbon datings lie between 4200 and 3900 B.P.<sup>85</sup> During the 5th millennium B.P. the northern part of the Netherlands also belonged to the distribution area of the Scandinavian flint mines and workshops which, like the Belgian and Limburg mines, initially exported mainly semi-finished axes.<sup>86</sup> These have been found in a number of depots in the province of Drenthe; for several reasons they are attributed to the Funnel Beaker and Protruding Foot Beaker cultures. The fact that there was also a trade in unworked flint appears from a hoard at Eenerschans which consists of a finished axe, two semi-products, and four flint nodules.<sup>87</sup> Another group of northern imports is that of the Scandinavian-type flint daggers.<sup>88</sup> About eighty specimens have been collected in the Netherlands, of which eight were found in a depot at Anderen. The distribution area is principally north of the main rivers. The few associations mainly consist of beakers with barbed-wire decoration, which are dated 3750 and 3350 B.P.<sup>89</sup> Within their distribution area the flint daggers of the Scandinavian type may have been the successors to the Grand Pressigny daggers. They were used well into the early Bronze Age.

In the Netherlands during the major part of the Bronze Age, bronze was always such a costly material that it never drove out flint completely. Flint axes and daggers may have been largely replaced by those made of bronze, but flint continued to be used for many other implements. An important category is formed by the one-piece flint sickles<sup>90</sup> which seem to have been in use especially during the Bronze Age<sup>91</sup> and Iron Age,<sup>92</sup> but which were probably not intended for harvesting purposes alone. A depot at Heiloo contained four of these sickles

75 Felder/Rademakers 1971, 40.

76 Felder/Rademakers 1971; Clason 1971, 3-10; Felder 1970; Engelen 1967; 1971.

77 Verheyleweghen 1966.

78 Clark 1965, 174-82.

79 De Laet/Glasbergen 1959, 63; Clason 1971.

80 Cf. Verheyleweghen 1962.

81 De Laet/Glasbergen 1959, 51.

82 Clason 1971, 10.

83 Vogel/Waterbolk 1967.

84 Verheyleweghen 1966.

85 Van der Waals 1964, 35, 53; Lanting a.o. 1973.

86 Cf. Becker 1958.

87 Bakker 1959; Achterop 1960.

88 Cf. Becker 1951.

89 Bloemers 1968; Lanting 1973.

90 Steensberg 1943.

91 Brunsting 1962; Bakker/Brandt 1966, 215; De Jong/Van Regteren Altena 1972, 57.

92 Groenman-van Waateringe/Van Regteren Altena 1961.

and also one made of bronze.<sup>93</sup> A small flint depot in a settlement of the middle Bronze Age Hilversum culture at Vogelenzang, which contained some flakes, a hammerstone, and a scraper, supplied proof that flint was worked there. The flint used was of inferior quality (pebble flint) and the working technique makes a poor impression. Other flint implements found in that settlement consisted mainly of scrapers and arrow-points.<sup>94</sup>

## 5 WOOD

Wood is one of the most important materials, at least in quantity, in a primitive culture. During the whole of prehistory, it was used as fuel and as a material for making implements or parts of implements, moreover it formed the most important element in larger constructions, such as houses and carts. Despite the special conditions required for conservation (*i.e.* embedded in air-tight layers, as in peat, or below the water-table), much prehistoric wood has survived. Indirect indications of the use of wood are, however, the most numerous. Many flint tools, which could only have been used if fitted with wooden shafts, are known from the Palaeolithic onwards. Pierced antler and bone tools were added in the Mesolithic; the oldest wooden objects found in the Netherlands date from this period. These are a dug-out canoe (made from a tree-trunk), found in peat at Pesse,<sup>95</sup> and a wooden figurine, found near Willemstad at a depth of 8 m.<sup>96</sup>

During the Neolithic numerous stone and flint axes and pierced stone battle-axes were used; these all required wooden shafts. Two of these shafts, made of yew and mountain ash, have been found in peat.<sup>97</sup> An important group, likewise originating from peat, is that of single-piece disc wheels of oak with C-14 dates between 4200 and 4000 B.P.<sup>98</sup> These wheels belonged to wooden wagons or carts; their existence in later periods was repeatedly demonstrated indirectly by trackway traces found during excavations. These traces also indicate the course of prehistoric roads (*e.g.* in the late Bronze Age urnfield at

Vledder).<sup>99</sup> Tripartite disc wheels are known from the Ezinge terp and can be dated to the Iron Age and Roman period. There is some evidence for the use of tripartite disc wheels during the late Bronze Age, as may be concluded from a possible clay model of such a wheel from Hoogkarspel.<sup>100</sup> In the Netherlands spoked wheels are not dated before the Roman period, where they are mostly found as foundations of water wells. Smaller wooden objects have been found mainly during excavations in coastal areas where conditions are favourable to conservation. Among these objects are an ashen staff, a fish-trap made of willow and rope, and a small box of birch bast, all found in the late Neolithic Vlaardingen culture settlement at Vlaardingen.<sup>101</sup> Bows are known from the late Neolithic (Stadskanaal) and Bronze Age (De Zilk).<sup>102</sup> There is a greater variety of wooden objects from the Iron Age: examples are an oaken returning boomerang from Velsen,<sup>103</sup> wooden hammers from Rockanje,<sup>104</sup> a small box from Krommenie,<sup>105</sup> and an ashen yoke for oxen from the Ezinge terp.<sup>106</sup>

Wood was also used for the manufacture of agricultural implements; the harrow from Dorregeest was mentioned in section 2. Ard traces from the Neolithic period onwards indicate that the land was worked with wooden ards. Complete ards have never been found in the Netherlands. Some possible wooden ard shares are known, but they cannot be dated with certainty.<sup>107</sup>

Indications for the use of wood in larger constructions are numerous, but again mainly indirect. House-plans, composed of post(hole) traces, are known from all archaeological periods starting with the early Neolithic Linearbandkeramik culture. These traces are sometimes so clear that it is even possible to recognize the shape of the wood used. Thus it became apparent that not only whole tree-trunks but also trunks cleft lengthwise into two or more parts were used for house construction in the Linearbandkeramik culture settlement at Stein: perhaps the earliest example of economic wood use in the Netherlands.<sup>108</sup> Wood employed for house constructions is conserved

93 Brunsting 1962.

94 Groenman-van Waateringe 1966, 86.

95 Van Zeist 1957a, C-14 date 8825 ± 100 B.P. (GrN 6257).

96 Van Es/Casparie 1968, C-14 date 6400 ± 85 B.P. (GrN 4922).

97 Van Zeist 1957b; Glasbergen 1957.

98 Van der Waals 1964.

99 Van Giffen 1938.

100 Bakker/Metz 1967, 222-4, *afb.* 10.

101 Glasbergen a.o. 1966.

102 Clark 1963. Stadskanaal: C-14 date 3970 ± 65 B.P.; De Zilk: C-14 date 3500 ± 100 B.P.

103 Calkoen 1962; Hess 1973.

104 Wind 1970.

105 Van Vliet 1971.

106 Van Giffen 1928, 31.

107 Van der Poel 1960-1.

108 Modderman 1970, *Taf.* 184, 186.

only in peaty or low-lying areas. Such finds are usually the bases of roof-posts, but sometimes parts of house walls occur also; in certain respects their state of preservation can compete with the remains found at the famous lake-border settlements in Switzerland. Well-known are the houses of the Iron Age settlement in the Ezinge terp, where not only roof-posts but also wooden doorsteps and the lowest parts of wattle walls have been found.<sup>109</sup> Other examples are the late Neolithic Vlaardingen culture houses at Vlaardingen (roof- and wall-posts with traces of wattle), a middle Bronze Age construction used for cult purposes from the peat at Bargerooosterveld,<sup>110</sup> and Iron Age houses at Assendelft<sup>111</sup> and Broekpolder (roof-posts and wattle walls).<sup>112</sup>

From the late Neolithic to the Iron Age, wood was used in the construction of paths and trackways in peaty areas. One of these trackways was more than 10 km long; it connected the sandy regions of southeast Drenthe and east Groningen.<sup>113</sup>

Especially during the Bronze Age wood was frequently used for grave structures. Many barrows were surrounded by circles of upright wooden posts; the number of posts needed for one burial could total several hundred. It is a remarkable fact that post circles appear almost exclusively on the originally well-wooded Pleistocene sandy soils, while barrows on the Holocene soils of West-Friesland are always surrounded by circular ditches. Here only one example can be given of conspicuous wood-consumption: a (burial)mound near Wervershoof, which was surrounded in two of its four construction phases by a double post circle. One of these circles, however, was of a temporary nature: apparently the posts were soon extracted and employed for other purposes.<sup>114</sup> This variation in ritual circling may have been due to differences in cultural tradition. It is, however, quite possible that in this way the ritual reflects the economic use of wood, and that the almost complete lack of timber circles in West-Friesland was partly due to a scarcity of construction wood. Botanical and zoological research indicates that the West-Frisian landscape was open and poorly wooded in the middle Bronze Age.<sup>115</sup> The assumption that ritual practice was influenced by an economic factor is strengthened

by the fact that the three barrows recently found on the Pleistocene nucleus of the island Texel near by were all surrounded by a double post circle.<sup>116</sup>

Wood was important as fuel: for domestic heating, for the manufacture of pottery, and, during some periods, also for cremation of the dead. Although surface coal was present in Limburg, its use during prehistory has never been proved. The earliest coal finds were made in Roman period settlements, and consist of coal of foreign origin.<sup>117</sup> Traces of prehistoric peat-winning have been found, but it is difficult to determine its distribution and extent.<sup>118</sup>

Metal-working entailed charcoal production which must have reached a peak during the Iron Age when iron was processed in the Netherlands. Just as land clearance, carried out for the laying out of Celtic fields, so an increasing demand for charcoal may have contributed to the partial deforestation of the Drenthe-Groningen Pleistocene area. The resulting sand-drifts have been established in many places.<sup>119</sup> They almost certainly stimulated the colonization of the Friesland-Groningen clay area but they are not likely to have led to complete depopulation of the sandy soils.

During the entire prehistoric period the need for wood must have been great, but this was met by trees and bushes, which grow almost everywhere in the Netherlands. Trade in wood hardly needs to be considered; moreover, its existence is difficult to prove. An exception were the newly deposited soils in the coastal area, such as West-Friesland, which became habitable during the middle Bronze Age, and the Friesland-Groningen clay area, which was colonized during the Iron Age. The Friesland-Groningen clay area was almost treeless during that period, and people were dependent for their wood supplies on the Pleistocene hinterland.<sup>120</sup>

## 6 LEATHER AND TEXTILES

### *Leather*

Hardly any objects indicating the direct or indirect use of leather in the prehistoric Netherlands have been found; the known findspots of organic material have yielded very little. A small number of objects of worked leather were

109 Van Giffen 1936.

110 Waterbolck/Van Zeist 1961.

111 Hallewas 1971.

112 Wind 1973, 90-103.

113 Van Zeist 1958; Van Zeist/Casparie 1966.

114 Van der Waals 1961.

115 Bakker/Brandt 1966, 188.

116 Woltering 1973a.

117 Trimpe Burger 1973.

118 Clason 1963.

119 Waterbolck 1962, 43-5, *Abb.* 27.

120 Körber-Grohne 1967.

found in the Drenthe peat: a shoe from Buinerveen (late Neolithic–early Bronze Age) and part of a shoe from Smilde (Iron Age).<sup>121</sup> A human body found in the Emmererscheidenveen peat (by palynology dated to the second half of the Bronze Age) was dressed in a fur coat and probably wore a leather cap on the head.<sup>122</sup> The fact that leather was used not only for clothing purposes appears from a peat find at Ane: a small late Neolithic axe (possibly Protruding Foot Beaker culture), the top of which was wound round with a piece of leather.<sup>123</sup> Obviously this improved the attachment of the axe to its shaft.

Historical sources presume that the northern and western coastal area must have had a large native leather production. As mentioned before, the Romans after their arrival imposed upon the Frisians the obligation to supply cow-hides. Like the salt extraction, to be discussed later, a local industry was thus introduced into Roman economy. In A.D. 28 a revolt took place because the prefect Olennius raised his demands concerning the size of the hides to be supplied.<sup>124</sup> A material witness of this coastal leather production is perhaps a shoe of unknown origin and uncertain dating.<sup>125</sup> Based upon the pollen attached to it, the possibility exists that this shoe came from a terp. As a consequence of the difficulties encountered in dating the objects found during commercial digging away of terps, hardly any information has been published about leather finds from terps.

Only very few tools can be connected with leather working. One of the three socketed chisels found at Deurne<sup>126</sup> shows some similarity to a leather-worker's knife, because of its broad, rather worn, but originally sickle-shaped cutting edge. The object is dated to the late Bronze Age. Another possible leather-worker's knife is known from the terp of Uskwerd, but its dating is uncertain.<sup>127</sup> In this connection, we mention again the one-piece flint sickles. The shape of these objects is not in the least uniform and varies from concave-convex via plane-convex to bi-convex. While it may be assumed that the concave-convex specimens when fixed to a handle were used as sickles, a similar use of those with bi-convex edges seems rather improbable.

An alternative explanation of the function of both the bi-convex and flat-convex 'sickles' could be that they were used in one or more phases of leather manufacture. They may then be large hide scrapers, which served to remove fat and meat or to scrape off hair.<sup>128</sup> Large flint scrapers repeatedly found simultaneously with 'sickles' may also have played a role in the leather production. They occurred, for example, in the Bellingwolde peat depot, which consists of 'sickles' and scrapers.<sup>129</sup> Further research must show whether a connection exists between the frequent finds of 'sickles,' especially in low-lying areas (e.g. West-Friesland), and the relatively favourable circumstances for cattle-breeding in those regions.

#### *Textiles* (D.P. Hallewas) (table 1)

Textile finds in the Netherlands are scanty, because the special requirements for conservation are met only in a few cases. Usually these finds concern fragments of woollen fabrics; these may have been preserved as follows: embedded in peat; situated in manure layers of terps; lying alongside copper or its alloys (fragments are then completely impregnated by copper salts); near iron (the fragment is crusted over with oxide or it has left imprints in the oxide); the presence of bones (the fragment is saturated with calcium salts). The conservation of copper, iron, and especially bone requires, however, special circumstances. Linen is much less resistant than wool; in only one case, because of copper ions, has an early-medieval fragment been conserved. Imprints of linseed have been found on pottery as early as the Funnel Beaker culture.<sup>130</sup>

The oldest fabric fragments date from the Bronze Age. As generally only small and very small fragments have been conserved, it is usually impossible to determine their function. Some fragments obviously belonged to belts or bands; these are partly in plain weave (Weerdinge, Valkenburg-South Holland) and partly in *Brettchentechnik* (often in terps: Britswerd, Wijnaldum, and Ferwerd among others). The fragments found in Emmererscheidenveen probably belonged to one article of clothing.

121 Groenman-van Waateringe 1970, nos. 2 and 3.

122 Van Zeist 1956, no. 1.

123 Van Heemskerck Düker/Felix n.d., photo p. 82.

124 Tacitus, *Annales* IV, 72.

125 Groenman-van Waateringe 1970, no. 5.

126 Butler 1963a, 125, fig. 35. This knife could belong to type IV cf. Roth 1974. Note also the striking resemblance of the socketed chisel cf. Roth 1974, Abb. 2.3 and the left one cf. Butler

1963a, fig. 35. These 'chisels' could be leather-working instruments with an as yet unknown function.

127 Acker Stratingh 1849, 217, pl. 11, no. 31.

128 Compare the medieval iron tool depicted in Husa a.o. 1967, fig. 69, and also Singer a.o. 1967, III, fig. 130.

129 Van Regteren Altena, in preparation.

130 Van Zeist 1968, 162–3.

	plain weave	non-specified twill	oblique twill	herring-bone twill	diamond twill	knitting	plaited mesh	Brettchentechnik	wool	linen	conservation	date	
MARUM (Bursch 1936)	1								×		Ca	middle Bronze Age	
WEERDINGE (Van Giffen 1930)	1								×		Cu	middle Bronze Age	
EMMERERFSCHEIDENVEEN (Van Zeist 1956)	1								×		peat	2nd half Bronze Age	
OSS (Modderman 1964)	3				1				×		Fe	HaC1	
NIEUWENHAGEN (Ypey 1955)	1								×		Ca	HaD	
VALKENBURG ZH	1				1						?	ibc A.D.	
DEURNE (Leene 1973)	1			1					×		peat	ivA A.D.	
ESCH						1					Fe	ii A.D.	
IDE (Van Zeist 1956)			1						×		peat	III-V A.D.	
HAARLEMMERMEER (Evers 1966)	1										Cu	ivb-va A.D.	
HAPERT (Knippenberg 1952; Schlabow n.d.)	1									×	Cu	v A.D.	
FERWERD BURMANIATERP								1	×		dung	Roman period	
NIJMEGEN (Verslag 1907)	1 specimen, technique unknown											imprint	Roman period
											Fe		
												presumed date	
BEETGUM		1							×		dung	Roman period?	
BRITSWERD								1	×		dung	Roman/Medieval period	
EZINGE (Schlabow n.d.)	2								×		dung	Iron Age/Roman period	
KLOOSTERWIJTWERD (Schlabow n.d.)			2		3			1	×		dung	Roman/Medieval period	
LEEUWARDEN			1	1					×		dung	Roman period?	
ROSWINKEL (Van Giffen 1943; Schlabow n.d.)	1						1		×		peat	?	
SELLINGEN ZUIDVELD (Schlabow n.d.)					2			1	×		?	?	
WESTEREMDEN (Schlabow n.d.)			1		22			1	×		dung	Roman/Medieval period	
WESTEREMDEN DORPSWIERDE (Schlabow n.d.)					4				×		dung	Roman/Medieval period	
WIJNALDUM			1					1	×		dung	Roman period?	

TABLE I Summary of the textile finds in the Netherlands: prehistoric and Roman periods

They have at least one hem, while one fragment was pleated during hemming. The fabric from Ide probably originates from a coat of the type known from corpses found in German peat.<sup>131</sup> The linen fragment from Hapert belonged to a pouch containing a coin-hoard. Many fragments from terps are very worn, probably because they were used secondarily as rags.<sup>132</sup> Rolled or plaited cords of wool or horse-hair have been found in terps on

several occasions; a ball of wool was found in peat near Roswinkel.

Indications of spinning and twining are known from the

131 Schlabow n.d. During proof-reading was published: Schlabow 1974.

132 Schlabow n.d.

Neolithic onwards, for example, from the rope impressions present on the late Neolithic Protruding Foot Beaker culture pottery. Spindle-whorls of earthenware are known from the Protruding Foot Beaker culture (Voorschoten),<sup>133</sup> the Neolithic-Bronze Age (Dodewaard),<sup>134</sup> the middle Bronze Age Elp culture (Elp)<sup>135</sup>; finds from the start of the Iron Age are numerous.

Tools used for the manufacture of fabrics are known best through finds in terps in Groningen and Friesland. These objects (some of which may be dated to the Iron Age) consist of bone carding combs, wooden and bone spindles, earthenware loom-weights, wooden weaving-shuttles, and bone *Brettchen* with three or four holes.<sup>136</sup> Fabrics with selvages woven in *Brettchentechnik* and loom-weights indicate the use of a vertical loom.<sup>137</sup> Loom-weights, at least objects which may have served for this purpose, are known from the late Bronze Age-early Iron Age (Deventer,<sup>138</sup> Hoogkarspel<sup>139</sup>).

From the Bronze Age only fabrics in plain weave are known. From the Iron Age onwards textiles with a twill pattern were woven.<sup>140</sup> The number of fragments in diamond twill excavated from terps is remarkably large; there is, however, much uncertainty concerning the dating, especially of objects found during commercial digging in the 19th and the beginning of the 20th centuries. Possibly some of these fragments are of a medieval origin. A knitted fragment has been found in a Roman grave at Esch, dated to the second century A.D. Plaited mesh, a technique used in the Neolithic, occurred in the undated find at Roswinkel.

## 7 CLAY, LOAM, AND SAND

These materials were of great importance to the daily life of the primitive communities discussed in this essay, but because of their wide incidence they probably never constituted an economic limiting factor. Clay and loam were widely applied for the construction of houses, especially as a raw material for floors, and for plastering walls of wattle work (the well-known *huttenleem*). They are vital to the manufacture of pottery. For the latter three elements are required:

*a* Clay or loam, the chief ingredient.

*b* Tempering material: sand, grit (varying from coarse to fine), shells, or organic material such as straw and chaff. These materials serve to prevent too much shrinkage and resultant cracks during the drying and firing of the pottery.

*c* Fuel: during prehistory wood was used.

The clay and tempering material supply in the Netherlands presents no problems. Clay can be found everywhere in river-valleys and along streams, while in the coastal area marine-clay deposits are present. Loess is the principal ingredient of the Linearbandkeramik culture pottery from the south of the province Limburg. Sand, to be used as tempering material, is present almost everywhere. Northern erratics and river-gravel are found especially in the east, the middle, and the south of the country; they were imported, also for tempering purposes, by the inhabitants of the coastal area.<sup>141</sup> The coastal area itself, and the rivers also, provided shells.

The amount of wood needed for fuel was considerable but, with the exception of newly sedimented soils in the coastal area, this was abundantly available. In prehistory, pottery was always hand-made in the Netherlands. The south came into contact with the potter's wheel only during the Roman occupation.<sup>142</sup> The wheel's use, however, was temporary and limited to a number of factories which produced, on an industrial scale, exclusively foreign types of pottery (in Roman and Celtic tradition); this production was discontinued in the post-Roman period. Local potters adopted the wheel only in the later Middle Ages. By and large, during the prehistoric period, the manufacture of pottery was executed by non-specialists on domestic scale and for domestic use. The situation encountered among many non-Western peoples today suggests, however, that cases of individual or institutionalized part- or full-time specialization, and consequently trade in pottery and production for local markets, cannot be excluded.<sup>143</sup> An example of this may be the fine pottery of the middle Neolithic Funnel Beaker culture. In view of the topographical distribution of certain decoration patterns, Knöll assumed that the ware was produced in potters' workshops. He stated that, because of the technical perfection,

133 Glasbergen a.o. 1967, 17, 22.

134 Oral communication, Mr R.S. Hulst, ROB.

135 Waterbolk 1964, 110.

136 Boeles 1951, 533-4, pl. 28.

137 Schlabow n.d.

138 Modderman 1955, 30.

139 Bakker/Brandt 1966, 214, *a/b*. 23, 24.

140 Cf. La Baume 1955, 93; Singer a.o. 1958, I, 443.

141 Cf. The late Neolithic Vlaardingingen culture: Glasbergen a.o. 1966, 49.

142 Bruijn 1960-1; Van der Waals 1965.

143 Nicklin 1971.



these products could not have been home-made.<sup>144</sup> Comparable research on the typological and technical qualities of pottery found within a limited area has been made only incidentally since then, so that little can be said to support this idea. Among the material from some megalithic tombs near Emmeln (West Germany) Schlicht discovered groups of pottery which in many aspects clearly bear the signature of one potter; this could be an indication of the presence of a 'professional.'<sup>145</sup> Similar systematic research has not yet been made in the Netherlands. A slight indication of trade in or bartering of pottery by the people of the late Neolithic Bell Beaker culture was found in two Veluwe Bell Beakers from Lunteren, which were excavated from barrow graves lying 4 km apart. The remarkable similarities in decoration suggest that both beakers were made by the same potter, or that one beaker was a copy of the other.<sup>146</sup>

There has not yet been much research on the manufacture techniques of prehistoric pottery in the Netherlands. It may be assumed that firing was mostly done in an open fire. Only one prehistoric potter's kiln is known: it was found in Bemmeler-Ressen and dated to the middle Iron Age.<sup>147</sup>

## 8 METAL

The prehistoric economies discussed in this paper, from the early Neolithic period onward, were highly dependent on foreign materials. This dependence was related to the character of the agrarian society which, among other things, was marked by the clearance and cultivation of land and the use of wood for many purposes, especially house construction. Axes and adzes were therefore important implements, but suitable raw materials for their manufacture were insufficiently available in the Netherlands. Stone and flint were present, but were certainly often imported. Iron ore was found in such large quantities that it does not have to be assumed that this was imported. In fact, its mining and processing may have been an important source of income during the last phase of the

prehistoric period. All other metals which played a part during prehistory in the Netherlands (gold, silver, copper, tin, and bronze: the copper-tin alloy) must have been imported. The same is true for lead, which was only introduced during the Roman period.

### *Gold, silver, tin, and lead*

These metals are rare during the entire prehistoric period. The import of gold seems to be a side-line of the trade in copper and bronze, as these metals are often found together. The earliest gold objects date from the late Neolithic, and were encountered in barrow graves of the Bell Beaker culture, which also used copper: a necklace of gold foil from Bennekom, found with a Veluwe Bell Beaker, and two small ornaments of gold foil from Exloo, found together with a Bell Beaker, copper objects (dagger, awl, and spiral bracelet), and two amber beads.<sup>148</sup> From the early and middle Bronze Age several simple golden ear- and hair-spirals, frequently found in pairs, are known. Two belong to a rich grave-find from Drouwen (see also p. 26)<sup>149</sup>; two are part of a grave-find from Sleen, belonging to the Elp culture, and were excavated together with a bronze palstave, bracelet, pincers, and arrowheads<sup>150</sup>; another pair was found in a barrow in Valthe<sup>151</sup>, while stray spirals of similar type are known from Stroe<sup>152</sup> and Ootmarsum.<sup>153</sup> A chain of four double spirals was found in Susteren.<sup>154</sup> Three golden bracelets date from the late Bronze Age: two from Hijkersmilde and one from Lunteren.<sup>155</sup> The gold-inlaid hilt of an iron sword found in the chieftain's grave in Oss (see p. 28) is a rare example of the use of gold during the Iron Age, which is also a bronze-poor period. The possibility that *Rheingold* was washed in the Netherlands during prehistory does not seem plausible. Wesel (West Germany, near the Dutch-German border) is the nearest location where gold was extracted from the Rijn mud during an experiment in 1767.<sup>156</sup> Notwithstanding the application of the amalgam method (in which mercury is used to good effect), the yield was minimal and of no commercial consequence. Although silver was already known in the Near East and

144 Knöll 1952.

145 Schlicht 1971.

146 Oral communication, Mr R.S. Hulst, ROB, one of the beakers is published by Butler/Van der Waals 1966, fig. 7.

147 Oral communication, Messrs J.H.F. Bloemers and R.S. Hulst, ROB.

148 Glasbergen 1956a; Butler 1956; Van Giffen 1947; Butler/Van der Waals 1966, 62-3.

149 Butler 1969, 107-10, fig. 49.

150 Butler 1969, 110-4, fig. 50.

151 Bursch 1937, 46, *afb.* 19.

152 Bursch 1933, *Taf.* VI. no. 37.

153 Oral communication, Mr A. D. Verlinde, ROB.

154 Butler 1969, pl. 6.

155 Butler/Van der Waals 1960.

156 Martinet 1795, 327-34.

the eastern Mediterranean since the 5th and 4th millennia B.P., it only came into general use in central Europe during the late Iron Age (La Tène period), but it hardly seems to have reached the Netherlands before the Roman period. The only prehistoric silver find is a Thracian ornamental disc (*phalera*), found near Helden.<sup>157</sup> The object is dated La Tène C or D and was most probably looted from Thracian auxiliary troops of the Roman army.<sup>158</sup>

Tin is an important element in the fabrication of bronze, but was hardly ever used for other purposes. Two prehistoric tin finds are known in the Netherlands: the nails which decorate the horn hilt of a Únětice-type dagger found in Bargerosterveld,<sup>159</sup> and twenty-five small beads of the string from Exloo (see p. 32) which dates from the early or middle Bronze Age.

The likewise soft metal lead was not known until the early Roman period. An oval, unstamped ingot weighing more than 5 kilogrammes was found in a native settlement in Denekamp.<sup>160</sup> Presumably this is a local resmelting of originally Roman lead.

#### *Copper and bronze*

In quantity, copper and bronze take the most prominent position among Dutch metal finds. Butler's research in particular has supplied reliable information concerning the import and local processing of these metals. A detailed discussion of the subject is beyond the scope of this article. A brief summary, however, should be made if only to give an impression of the importance of these foreign materials to the economy of the Netherlands during more than a thousand years of prehistory. It is a fact that Dutch bronze finds compare unfavourably with the abundance of those in Germany and Denmark for instance, and it may be concluded from this that bronze was always a valuable article in the Netherlands. Yet its economic significance should not be underestimated. As more and more flint mines stopped production, bronze became increasingly irreplaceable as a material for the larger cutting tools such as axes and knives, and the Netherlands became more heavily dependent on its import.

Copper objects probably first reached this country during

the middle Neolithic. Two spirals and some strips of copper from Funnel Beaker culture megalithic tombs (hunebedden) at Buinen and Drouwen are known.<sup>161</sup>

At the end of the late Neolithic, copper was not only imported, but also worked locally. Copper objects have been found in the graves of the Bell Beaker culture, but they are limited in number: eleven small tanged knives, two awls, and a bracelet of copper wire.<sup>162</sup> Three gold-foil ornaments were also found. Only approximately one out of every twenty excavated graves contains metal objects, and it may be concluded that these were far from common possessions.<sup>163</sup> Yet there are marked indications that these objects were made by native smiths of the Bell Beaker culture. Two Bell Beaker culture graves in Lunteren and Soesterberg supplied polished, rounded rectangular stones (cushion stones, also met as stray finds), which can be explained as tools of metal workers: hammers and anvils, for instance.<sup>164</sup> Most of the Bell Beaker copper is arsenical copper with nickel as the main impurity. In common with many other elements of the Dutch Bell Beaker culture, the metallurgical knowledge could have originated in central Europe. In this respect it is relevant to note that the arsenic alloy increases the hardness of copper and produces a metal which anticipates the later bronze.

There are, however, very few indications of continuity from Bell Beaker metallurgy to that of the succeeding early Bronze Age. Finds of this period are not very numerous. Typologically they are mainly of western European character, while influences of central Europe are less important. Finds of typologically Irish halberds and low-flanged axes point to the existence of a trade route along the big rivers in the central part of the country, between metal centres in Ireland and central Germany.<sup>165</sup> The heterogeneous composition (typologically as well as metallurgically) of the Wageningen hoard (containing a halberd, see p. 27) and the fact that the low-flanged axes are not always made of Irish high-tin bronze but also of German metals of poor quality suggest the presence along that trade route of itinerant smiths. They were perhaps of Irish origin, importing real Irish products, but at the same time melting and casting Irish types in locally bought metal of various sources and

157 De Laet/Glasbergen 1959, 184, pl. 43.

158 Allen 1971.

159 Glasbergen 1956b.

160 Verlinde 1973.

161 Butler/Van der Waals 1966, 76; Bakker 1973, vi-33.

162 Butler/Van der Waals 1966; Hulst 1972.

163 Butler 1969, 87.

164 Butler/Van der Waals 1966, 63-75.

165 Butler 1963b, 185-90; Butler/Van der Waals 1966, 81-5.

composition. The good quality of the Irish bronze axes gave rise to local imitations in the various export areas, usually in inferior material. In the northeastern part of the Netherlands arose an industry that produced axes of Emmen type, which can be considered as the Dutch equivalent of the Scandinavian Pile type.<sup>166</sup>

Towards the end of the early Bronze Age, in the area between Ems and Elbe, the Sögel bronze industry developed. The marketing area reached from middle Jutland into the northeastern part of the Netherlands. One of the richest graves with Sögel products was found in Drouwen. Besides the characteristic dagger-sword and the axe *mit geknickten Randleisten*, it also contained a tanged razor of British origin (or a locally made imitation), two golden ear- or hair-spirals, nine flint arrow-heads, a grindstone, and a piece of flint, presumably used for striking fire.<sup>167</sup> After about 3400 B.P. the Sögel industry was influenced by the central European Hügelgräberkultur. During this Wohlde phase the export area expanded to the southern part of the Netherlands. An example is the hoard of Overloon with two sword blades, a Sögel-type axe, two spearheads, and a cloak-pin.<sup>168</sup>

During the middle Bronze Age the Netherlands imported an increasing flow of bronze objects from all directions, but particularly from the west and southeast, while the distribution area of some characteristic axe types indicates the presence of local bronze industries. An outstanding example of western bronze import from the beginning of this period is the trade-depot found in Voorhout, which consists of eighteen palstaves and a chisel of a south English type, and a flanged axe of uncertain origin.<sup>169</sup> Typical examples of southeastern bronze import are the objects present in a woman's grave in Weerdinge, which, besides a string of amber beads, a simple bronze bracelet, and a little ring, also contained four cloak-pins originating from the central German Hügelgräberkultur bronze industry.<sup>170</sup> In general, bronze finds from the middle Bronze Age are of a heterogeneous nature, and local products are found together with objects of various origins. Examples are: a small depot in Epe, consisting of a local flanged axe (a product of the Dutch northeastern bronze industry), and two imported objects—a British palstave and a central

European sickle; and the Lisse depot, containing (among other things) three cloak-pins from the early south German Urnenfelderkultur, a British chisel, and two central or north-European sickles.<sup>171</sup> Western-type palstaves, as found in the Voorhout depot, were traded and imitated throughout northern Europe. Also in the Netherlands they were the starting-point of the development of a number of local variants which, to judge from the distribution area, can be attributed to production centres in the northeast (mainly the province Drenthe) and the southeast (concentrated in the Maas valley).<sup>172</sup>

In view of the vastly increased number of finds, the import and local production of bronze objects reached a quantitative maximum during the late Bronze Age. Bronze was still imported from many quarters and in this respect there is little difference between this and the preceding period. Again, local bronze production has to be gauged mainly from the distribution of certain axe types. Especially the Hunze-Ems industry in the northeast of the Netherlands (it owes its name to the main distribution area near the rivers Hunze and Ems) supplied clearly recognizable products: mainly socketed axes with typical plastic decorations, and also knives and omega-shaped bracelets. Socketed axes from this industry have been found in depots from Schoonebeek<sup>173</sup> and Bargerooosterveld,<sup>174</sup> among other places. Of the omega-shaped bracelets, four come from a rich grave-find consisting of jewellery, found in the Drouwen urnfield. Imported objects, such as a belt-box and a two-piece fibula of Scandinavian origin, are also included in this find.<sup>175</sup> The bronze industry in the Maas area also produced socketed axes.<sup>176</sup>

As raw material for the manufacture of cutting implements, bronze was replaced during the Iron Age by the qualitatively superior and probably cheaper local iron. Because of this the immediate necessity of bronze import and its local manufacture mainly ceased to exist. Bronze, however, remained of some importance for ornamental purposes and as material for jewellery and other luxuries (e.g. bronze vessels, which appear for the first time), but it must have soon lost most of its significance for the Dutch economy. Bronze finds from this period are scanty. This is especially true for the northern provinces, which during

166 Butler 1963b, 187–90; Butler/Van der Waals 1966, 86.

167 Van Giffen 1930; Butler 1969, 107–10.

168 Butler 1959, 129–31.

169 Butler 1959, 131–4; 1963a, fig. 11.

170 Van Giffen 1930, 76, *Abb.* 66–7; Butler 1969, 114–6, pl. 12.

171 Butler 1959, 134–9.

172 Butler 1963b; 1973.

173 Butler 1961, fig. 21.

174 Butler 1960a, fig. 52; 1960b, fig. 12.

175 Butler 1965, figs. 1–2; 1969, 99–100, 120–3.

176 Butler 1973.

the final phase of the Bronze Age had a flourishing bronze industry but for the time being had to manage in the main without this metal. Among the few finds from this region, some imports from the south German-north French Hallstatt and La Tène cultures should be mentioned: a sheet-bronze situla from Meppen; a dagger with iron blade and bronze hilt in a bronze sheath from Havelte; a depot from Anlo containing, among other things, two bronze ornamental discs and fragments of bronze vessels; and a number of fibulae mainly found in terps. Local bronze-working as late as that period is suggested by a peat depot from Enter, consisting of semi-manufactured products of some La Tène bronzes and three large beads of presumably imported amber.<sup>177</sup> The south of the Netherlands imported incidentally Hallstatt and La Tène bronzes also. The beginning of the Iron Age there is marked by some relatively rich so-called chieftain's graves, probably the graves of local chiefs who could afford the luxury of expensive imports from the Hallstatt culture; the finds from Wychen and Oss are the most outstanding. The Wychen find contained many bronze parts of a four-wheeled wagon drawn by two horses (among other things axle-hubs, bits, and mountings);<sup>178</sup> the grave-goods from Oss mainly consisted of iron objects which were placed in a bronze situla together with the cremation ashes.<sup>179</sup>

The essence of the above is that during the late Neolithic copper and afterwards increasingly during the Bronze Age copper and bronze were being imported into the Netherlands, and that this import was associated from the start with local manufacture of final products. Very little information is available concerning the mechanism of this bronze trade and the local production: few finds throw any light on the matter. Only one find could be considered as a pure trade depot: the above-mentioned hoard of Voorhout, consisting of a more or less homogeneous group of ready-made products. There is a small number of depots which contain semi-products together with final products, parts of implements, damaged objects (obviously meant for resmelting), pieces of raw bronze, and tools possibly used for metal-working. These depots seem to indicate that, at least during part of the Bronze Age, the production of and trade in bronze objects were

closely related, and call up the picture known from ethnology of the itinerant specialists in whom the functions of smith and trader are combined by making and selling new products, and repairing or buying up old ones. A distinctive position is held by the stone tools of the coppersmiths from Lunteren and Soesterberg, both belonging to the Bell Beaker culture. Obviously, these grave goods, like the Bell Beaker metallurgy itself, are not connected with the itinerant smith tradition of which there is no evidence before the early Bronze Age. The Wageningen depot is known from this period; it consists of more or less finished merchandise (dagger, halberd, axe, and two bracelets made of bronze wire), parts of products (two rivets), possible metal-worker's tools (burin, stone axe), and raw material (bronze wire and sheet bronze).<sup>180</sup> Also the middle Bronze Age hoard of Ommerschans, on the evidence of its contents and occurrence in a peat bog most likely a votive one, can be explained as the property of an itinerant smith. In addition to some extraordinary objects (a Sicilian-type razor, a large ceremonial sword) and a fragment of a semi-finished product (bracelet), this depot contains some craftsmen's tools (among others, two chisels and six polishing stones), three fragments of unworked bronze, and a piece of spirally wound bronze wire.<sup>181</sup> The ceremonial sword has two parallels in France and one in the Netherlands (Jutphaas).<sup>182</sup> From the late Bronze Age a small bronze-founder's depot is known from Havelte, consisting of two socketed axes of the local Hunze-Ems industry and a casting jet, a residual of the axe production. The casting jet makes it likely that these objects belonged to a bronze-smith working in the Hunze-Ems tradition.<sup>183</sup> Finally, besides these bronze-founder's depots, two mould halves and the fragment of a third one supply fairly concrete evidence of a local bronze industry. These are a fragmentary palstave mould from the river Maas near Roermond and two socketed axe half-moulds from Havelte and (probably) the surroundings of Maas-tricht.<sup>184</sup>

This limited number of finds indicates the presence of bronze-smiths in the Netherlands, but it is hardly sufficient to deduce local industry. The existence of a local bronze production during almost the entire Bronze Age is consequently concluded mainly from the occurrence in the

177 Oral communication, Mr A.D. Verlinde, ROB.

178 Den Biesen 1963, 68-71.

179 Modderman 1964a.

180 Butler/Van der Waals 1966, 80-2.

181 Butler/Bakker 1961.

182 Butler/Sarfati 1970-1.

183 Butler 1961, fig. 14.

184 Butler 1973, 322, *Abb.* 1, 338, *Abb.* 15; 1961, 203-7, fig. 11-12; 1963a, 86-7, pl. XII.

Netherlands of characteristic bronze types with clear-cut regional distribution. These objects – mostly axes – should be seen as the products of smiths who had chosen a specific part of the country as working and marketing area. It is probable, however, that the local bronze industry was more extensive than is suggested by the occurrence of these regional types. This is indicated by the mentioned mould fragment and the two mould halves. They belong to axe types which, owing to their general distribution throughout western Europe, are not at first sight recognizable as regional products. The rarity of pure trade depots, the lack of recognizable bronze ingots, and the fact that established workshops have not as yet been found all confirm the impression that the prehistoric bronze industry in the Netherlands never went beyond the itinerant-smith phase.

If it is assumed that the inhabitants of the Netherlands in general came into possession of bronze objects through normal barter transactions, the question arises what made this area so attractive to bronze-smiths and bronze-dealers that it was part of their marketing area since the early Bronze Age, and that there was such a regular bronze import that regional style traditions could develop repeatedly. The returns may have been of a material or nonmaterial nature. In the latter category, for instance, smiths and traders en route may have used their wares to obtain free passage or protection from local chiefs. Because of its situation at the mouth of the rivers Rijn, Maas, and Schelde the Netherlands held a key trading position with the European hinterland and in historical times always benefited from this. As a material return amber should be mentioned in the first place. Although this substance is generally considered to be the basis of the Scandinavian bronze industry, its occurrence in the Netherlands has been largely neglected up till now, at least in archaeological circles. Among the products of the mixed farming known to have been practised during this period, only cattle and hides (leather) could have had any importance as goods for export. These materials are discussed elsewhere in this paper (sections 2 and 9).

### *Iron*

Owing to the specific qualities of this metal, the Dutch soil, and the climatological circumstances, few iron objects have been found during excavations which indicate its use during the prehistoric period. Sometimes a rusted

lump is mentioned as a grave-find, and on account of it the grave is dated to the Iron Age. Among the oldest iron finds are the objects from the chieftain's grave in Oss.<sup>185</sup> Several recognizable objects were found there: a ritually bent sword, a dagger, four knives, an axe, two bits, and rings. The grave is dated HaG1 (first part of the 7th century B.C.). From the southern Netherlands several other graves are known of this type in which iron objects were also found (Wijchen, Meerlo). Now and then iron objects also occur in urnfields: examples are a Hallstatt sword from Someren,<sup>186</sup> and a dagger and sheath, three arrow-heads, and a pin from a HaD-dated cremation grave at Haps.<sup>187</sup> The above-mentioned dagger from Havelte with iron blade and bronze hilt is an example of early iron import in the north of the Netherlands.

Much more resistant to the ravages of time are the slags found in various Iron Age settlements. In contrast to the known imported objects, these slags certainly indicate a local iron industry. Import should not necessarily be considered when one wonders where the prehistoric people obtained their iron ore. In view of a primitive economy, two very rich iron ore types were available in the Netherlands. Most important is the bog-iron ore, which originates in peaty areas. This iron ore betrays its presence by scanty vegetation and an oily red film which colours the water in the vicinity; bog-iron beds may also be traced quite easily with the aid of a pricker. After opencast ore extraction, new ore is formed in the pit over a period of approximately thirty years. In this way the supplies, when used carefully, are never exhausted. This results, however, in a disadvantage for archaeology, for prehistoric mining sites are thus not easily recognizable. Besides, they may have often been destroyed during bog-iron mining since the Middle Ages. Around 1870 approximately 3 million kilogrammes of iron a year was produced from bog-iron ore in the Netherlands, which, according to analyses, had an iron content of 40–50%. The most important industries were situated along the Oude IJssel. In 1890 the last *hoge oven* (blast furnace) was closed in Ulft, and since then the Netherlands is completely dependent on foreign ore. Since the Middle Ages, bog-iron ore was also used as a construction material (ironstone) for churches and fortified houses. During the nineteenth century it was frequently used and exported for the purification of commercial gas in gas works. Rounded iron concretions with a loose kernel (*klapperstenen*) are the other source of iron.

185 Modderman 1964a. See also note 190.

186 Kam 1956.

187 Verwers 1972, 55–62, *Abb.* 30–2.

When shaken, they make the onomatopoeic sound (Dutch *klapperen* – to rattle). These concretions are found in the Pleistocene sands of, for instance, the Gooi and the Veluwe.

A map (fig. 2) is provided to give an impression of the areas where iron ore may have been mined during prehistory. On it the distribution of bog-iron ore is drawn as marked in the first geological map, 1:50,000, of the Netherlands, made in the first half of this century.<sup>188</sup> Another map (fig. 3) indicates the places where ironstone was used in old buildings. Both sets of data complement each other. The maps show clearly that outside the natural iron-ore area, ironstone was not used for construction purposes. The Ermelo church is an exception. On fig. 3 also all known findspots of iron slags are noted. One of the difficulties is that nearly all the slag finds are undated. For the present the importance of both maps is to demonstrate merely that iron mining in the eastern border areas of the Netherlands may have been an important economic factor in prehistory. Only the production of wrought-iron from the bloom of iron (which was manufactured in the kilns from the ore) should be thought of in this connection. As the temperatures were not high enough, the iron did not melt.<sup>189</sup>

Only few traces of iron manufacture can be dated to the Iron Age with certainty<sup>190</sup> and these, however, are not confined to the ore-rich east. Slags are known from St Oedenrode and Santpoort.<sup>191</sup> The Santpoort slags were found in a middle Iron Age settlement, together with a ceramic tubular end of a pair of bellows and lumps of cindered clay. It is remarkable that no slags dating from the last periods of the Iron Age occupation have been found at Santpoort: possibly the iron ore in the dunes (it is still found on a small scale) was exhausted economically at that time. An iron ard share is dated to this last occupation period. One wonders, however, if it was used as such, for ard traces known from the Iron Age were hardly ever

shaped as those that would have been produced by this broad-share type. Only a few exceptions are known: the sod-turned plough traces from Velsen, Monster, Oudemolen, and Vries.<sup>192</sup> Such traces have not been found in Santpoort. An alternative interpretation of the Santpoort share (and some other shares of the same type, as illustrated by Van der Poel)<sup>193</sup> could be that this concerns ingots of iron. The well-known iron ingots, the *Spitzbarren* from the German area, have never been found in the Netherlands. The spade- or ploughshare-shaped iron ingot is widely known in Scandinavia, but dates from the Middle Ages.<sup>194</sup>

Iron slags are so common in native settlements from the Roman period that it may be assumed that at that time iron manufacture was a part of the normal set of technologies of agricultural communities. From this period the remains of a kiln with slags were excavated by the ROB in a native settlement at Dalfsen. The Romans also valued the possibilities of iron mining in the east of the Netherlands, for recent excavations at a first-century Roman site at Nijmegen have yielded many slags.<sup>195</sup>

## 9 AMBER AND GLASS

### *Amber*

Amber has long played an important role in discussions concerning trade contacts between widely spread areas of prehistoric Europe. The main north European areas of natural occurrence are considered to be the west coast of Jutland and Schleswig-Holstein, the Baltic east coast, and Samland where this fossil resin is washed ashore. Since the Neolithic period and particularly during the Bronze Age, amber was traded southward along the amber routes: the rivers Weser, Elbe, and Saale, among others. In this manner it seems to have reached the Mediterranean, where amber was allegedly found in Mycenaean kings' graves. It is generally accepted that the prosperous Scan-

188 We are indebted to Mrs M.F. van de Berg-Hamburger for mapping the ore locations.

189 Moerman 1957; 1960; 1968–9; 1970; Modderkolk 1970.  
190 During proof-reading some finds from Bargerboerveld were published (Van der Waals/Butler 1974): an iron pin from the peat, found on a plank of a wooden trackway (C-14 dates  $3145 \pm 35$  B.P., GrN 4342, and  $3120 \pm 50$  B.P., GrN 4199) and iron slags from a house site (C-14 date  $3090 \pm 60$  B.P., GrN 5775). In this connection it is relevant to point also to the unpublished and so far isolated early find of iron slags from Dalfsen (Lenthe), C-14 date  $2785 \pm 35$  B.P., GrN 6331. These finds are

evidence of a much earlier use and production of iron than was known till now. It was impossible to include this information in the tables figs. 5 and 6.

191 Beex 1967; Modderman 1960–1a.

192 Jelgersma a.o. 1970, photo 11; Waterbolk 1954, 61, 64; Mezger 1969, 13–4; Glasbergen 1954, II, 37, nos. 46–7; Müller-Wille 1965, 136.

193 Van der Poel 1960–1, *afb.* 13.

194 Johannsen 1953, 129–30.

195 Oral communication, Mr J.H.F. Bloemers, ROB.



Fig. 2 Distribution of bog-iron ore in the Netherlands

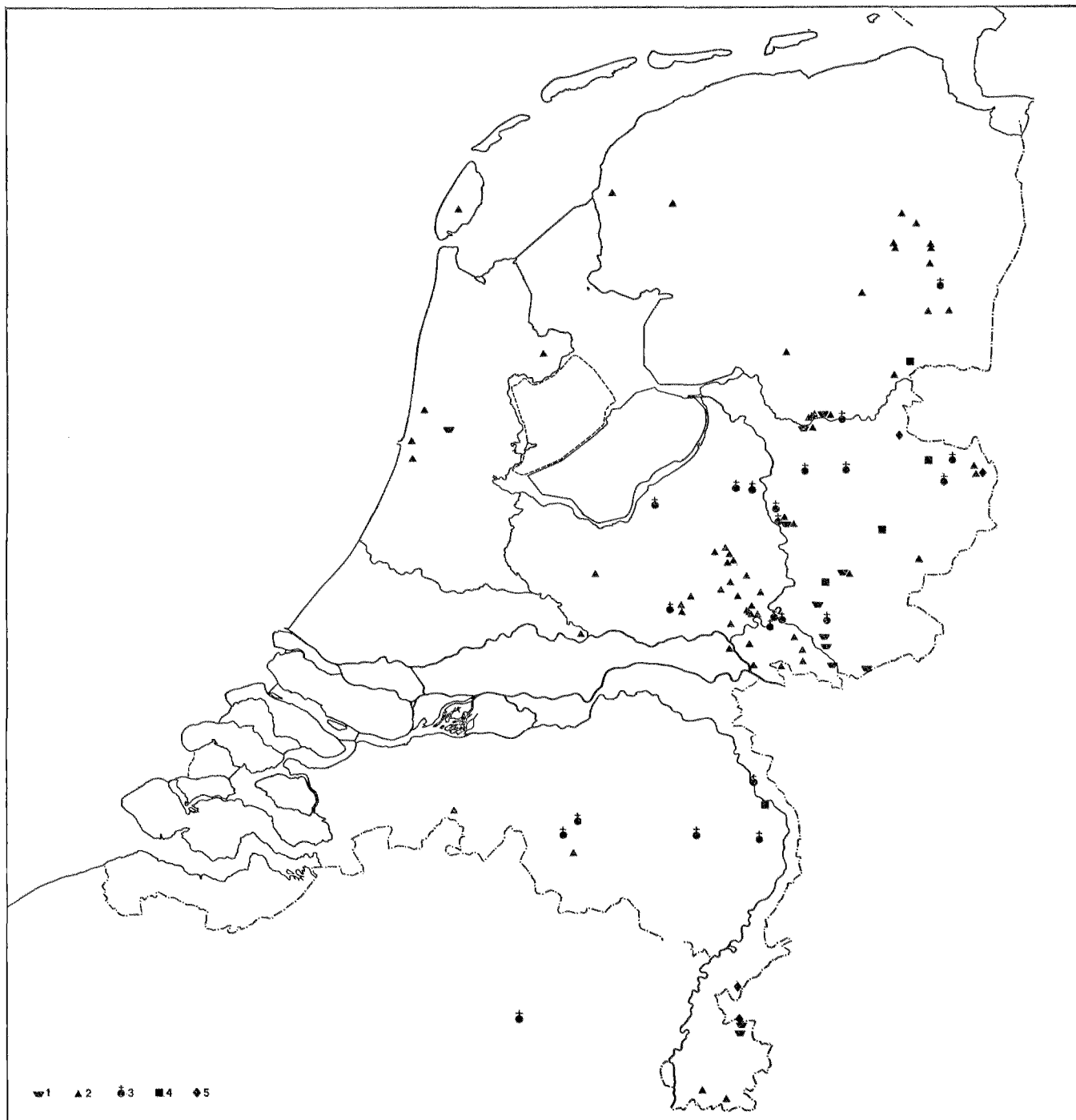


Fig. 3 Iron and ore production in the Netherlands  
1 Traces of iron smelting, 2 Iron slags, 3 Iron ore used as building material in a church, 4 Iron ore used as building material in a castle, 5 Occurrence of *klapperstenen* in a settlement



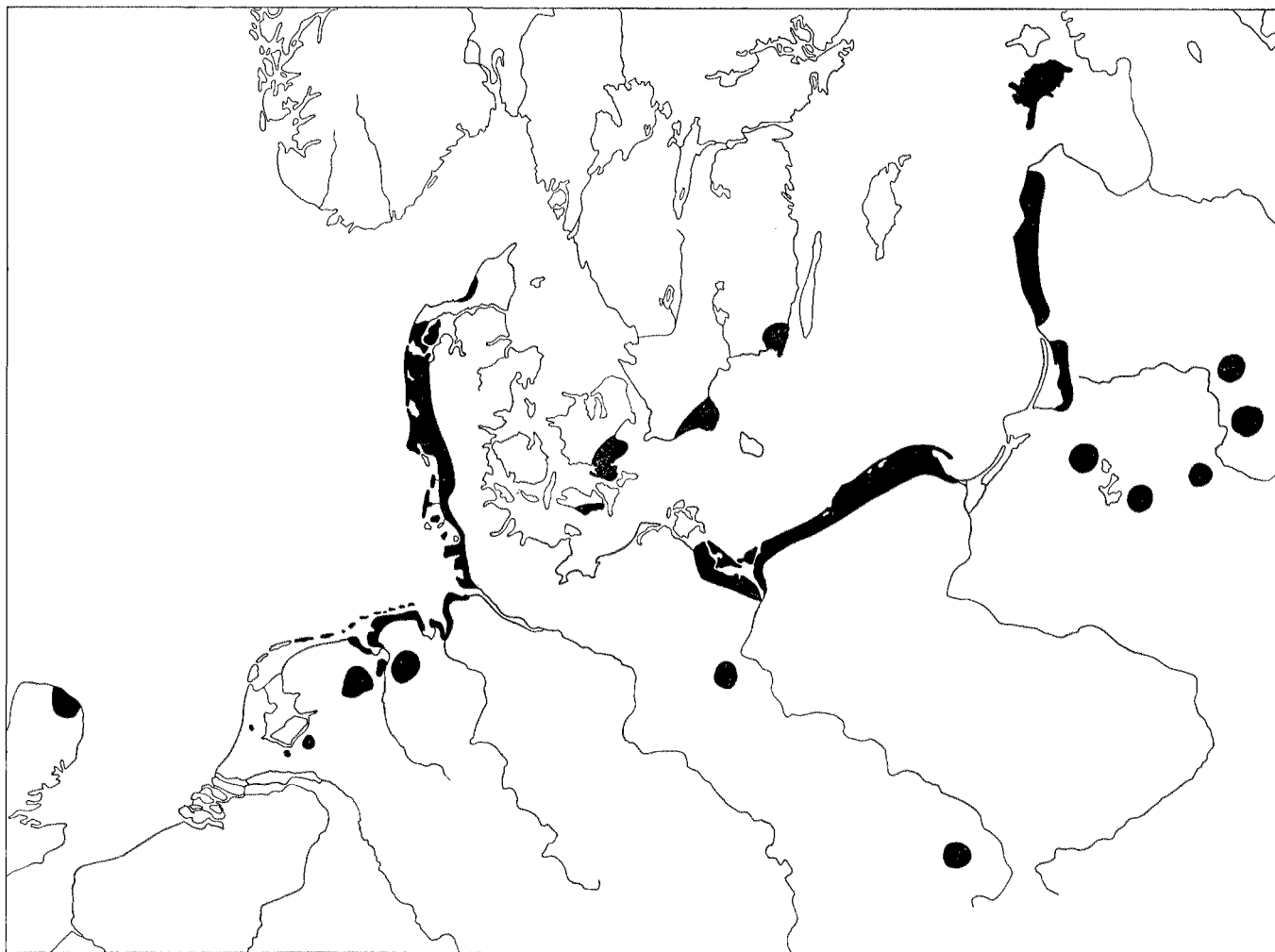


Fig. 4 Distribution of amber in northwestern Europe. After Faber 1961 and W. Hennig, 1969: Bernsteinfossilien, *Naturwissenschaft und Medizin* 6, 10–24, fig. 5

Scandinavian bronze industry was based on this amber export. The amber objects found in the Netherlands have always been considered Scandinavian export articles, and thus the well-known Exloo necklace consisting of beads of amber, tin, faience, and a piece of bronze foil could pass into history as an eminent Dutch example of far-reaching prehistoric trade contacts. The viewpoint that this piece of jewellery combines products from Scandinavia, England, and the east Mediterranean may be considered

superseded as far as the faience beads are concerned.<sup>196</sup> The opinion that amber beads – and Dutch amber in general – were imported only from south Scandinavia should also be revised. This reasoning overlooks the fact that amber is not only native to the Netherlands but until recently was obtained there for industrial purposes in sometimes rather large quantities. The presence of natural amber in the Netherlands was pointed out by Faber, among others, who grouped the finds on a map.<sup>197</sup> A

196 Newton/Renfrew 1970; Harding 1971.

197 Faber 1961.

distribution map, based partly on this information, is supplied (fig. 4). Although, particularly on Pleistocene soils, some more findspots could be drawn, it can be easily seen how the distribution line from the Jutland coast and Schleswig-Holstein is continued along the northern coast of the Netherlands. The area of the Ems mouth (Dollard) in particular must have been a place where amber was found in abundance: at the end of the nineteenth century the amber washed ashore there was bought up by varnish factories. Amber is also found along the Dutch west coast, though in more limited quantity: findspots in the province Noord-Holland are IJmuiden, Bergen aan Zee, and the Beemster.<sup>198</sup> Amber is present in the Tertiary sands in the subsoil of eastern Groningen, and in less quantity as erratics in the Pleistocene soils north of the big rivers.<sup>199</sup> Even in 1860 25 kilogrammes of amber was extracted from the Tertiary sand at Kloosterholt.<sup>200</sup>

Since the middle Neolithic period, amber in the Netherlands occurs in a cultural context. Amber beads are known from the megalithic tombs of the Funnel Beaker culture: the very careful excavation of a hunebed at Drouwenerveld (near Borger) supplied dozens of beads.<sup>201</sup> From the late Neolithic Bell Beaker culture several types of amber ornaments are known: simple, round beads, V-bored buttons, horseshoe- and lunula-shaped pendants.<sup>202</sup> Amber beads have also been found in a settlement of the late Neolithic Vlaardingeng culture in the western coastal area (Vlaardingeng).<sup>203</sup> During the middle Bronze Age, in particular, amber beads were a rather popular article in the northeast of the Netherlands. Necklaces and stray beads occur in Elp culture graves, for instance at Weerdinge and Angelsloo,<sup>204</sup> and, like the above-mentioned Exloo necklace, were also found in peat. Amber occurs rarely in the Hilversum-Drakestein culture in the middle and south of the Netherlands, but this seems primarily the result of this culture's custom of burning its dead together with their grave-goods. The occurrence in the Hilversum-Drakestein settlement at Velsen of a number of finished amber beads, semi-products, and beads cracked during piercing clearly shows the use of amber in this culture.<sup>205</sup> The working of amber into beads may

indicate also that pieces were collected on the North Sea beaches. In view of the number of finds, the use of objects (mostly beads) made of local amber seems to have gone out of fashion during the Iron Age; amber was probably replaced by other jewellery, made of glass, for example. The strong decline in bronze imports and the reduced significance of this metal during the Iron Age may also have led to a slackening of interest in local amber.

It is remarkable that Dutch finds indicate a relationship between amber and bronze, in that amber was always part of the material culture of copper- and bronze-using groups. This relation existed particularly during the Bronze Age (although the use of amber diminished during the last phase) but also in the late Neolithic Bell Beaker culture and, though less markedly, in the middle Neolithic Funnel Beaker culture.<sup>206</sup> In the Netherlands the Protruding Foot Beaker culture, chronologically between the Funnel Beaker culture and the Bell Beaker culture, used neither copper nor amber; only one amber find is known from the transition phase to the Bell Beaker culture: a bead necklace found in a barrow at Garderen.<sup>207</sup> A correlation may also exist between the natural presence of amber in the northeast of the Netherlands and the rise of local bronze industries in that area. This local bronze production was discussed in more detail in section 8, and attention is merely drawn here to the Emmen axe industry, the Sögel-Wohlde industry settled just across the Dutch-German border, the flanged-axe and palstave production attributed to the Elp culture, and finally the Hunze-Ems industry.

The foregoing makes it sufficiently clear that native supplies of amber amply met the prehistoric requirements in the Netherlands, and that there was little reason to import it from Scandinavia. At the same time this situation provides arguments for the supposition that, as in Scandinavia, the import of copper, bronze, and probably also gold, was based for the main part on amber export. The limited nature of these transactions may explain why the routes along which trading took place (amber routes originating in the Netherlands) have not been recognized until now. During the Iron Age amber was imported. The size and quality of beads attached to the Iron Age bronze

198 Van der Lijn 1935, 103; De Chalmot 1786, 368, column 2.

199 Oral communication, Dr G.J. Boekschoten, Geological Institute of the State University, Groningen.

200 Faber 1942, 210.

201 Glasbergen/Bakker 1968, 74-5.

202 Butler/Van der Waals 1966, 49-55.

203 Van Regteren Altena a.o. 1962, 31.

204 Butler 1969, pl. 9, fig. 51.

205 Vons 1970.

206 Cf. Kaelas 1959, 75-92, fig. 15.

207 Bursch 1933, 73-5, 116-7, no. 50, *Abb.* 69-70.

torques makes it highly improbable that local amber was used.

### Glass

The oldest glass find dates from the late Bronze Age (8th century B.C.). From this period two blue-green glass beads are known from a Drouwen grave-find, which can be considered as belonging to a rich woman.<sup>208</sup> Because other glass finds are very rare from the late Bronze Age, and the early and middle Iron Age,<sup>209</sup> the possession of glass must have been the exception to the rule.

In addition to imported amber beads, glass bracelets were used for jewellery in the late Iron Age. Approximately two hundred fragments are known, representing more or less the same number of bracelets. Most of these fragments, relatively many of which were distorted by fire, were found at Wijchen. About forty pieces are of the 3b type in Haevernick's classification, a type which occurs from c. 100 B.C. onwards.<sup>210</sup> This total is higher than given in the relevant literature concerning this type for the rest of Europe, so that the existence of a glass industry at Wijchen should be considered seriously during the last phase of the Iron Age, even though no ovens have been found.<sup>211</sup>

As far as the necessary raw materials are concerned, sand was in abundance while potash could be made from burnt wood. The purification of potash may have been copied from the salt-makers in the coastal area; they were experienced in purifying salts through re-crystallization. Chalk, the third raw material needed, is not supplied by the Dutch soil; the lime from the Limburg cretaceous area contains too many impurities. It is possible that chalk was replaced by calcium carbonate, supplied by shells from the rivers or the sea-shore; in the last case, contacts with people from the coastal areas may again be indicated.

Not far from Wijchen, near St Michielsgestel, an industry centre with glass finds from the Roman period has been discovered. Contact with the Wijchen industry is not likely, although early Roman material also occurs there. It is generally accepted that in other parts of Europe, too, local glass producers had little influence on the Roman

glass technique. Native colourless glass, already known during the middle La Tène period, only appears in Roman types during the 2nd century A.D.

### 10 SALT

Animals, man included, require sodium to maintain the functioning of their metabolism. This is sufficiently supplied by animal products such as meat, milk, and eggs; plants do not supply sodium but potassium. The theory was developed in literature that during the transition from a hunting and food-gathering economy to a more agrarian economy a physiological need of salt (sodium chloride) may have arisen, and indeed traces of salt extraction in Europe are found from the Neolithic period onwards.<sup>212</sup> This is a very attractive 'conclusive' hypothesis, but the human sodium requirement is so small that it is amply met by the use of milk, eggs, and some meat. It is suggested that the demand for salt was mainly caused by its use as a preservative, especially for meat and fish. Another factor was probably that food tastes markedly better when salt is added. Salt was not easily obtainable everywhere, and thus could become a luxury and a barter product.

In the Netherlands salt was extracted since the early Iron Age, from the sea and from peat impregnated with sea-water. There are no indications of a salt industry during earlier times. The sites are to be found in the area along the North Sea coast. Excavations in the Bos- en Gasthuispolder near Leiden and at Santpoort,<sup>213</sup> for example, supplied the characteristic cylindrical-shaped ceramic material necessary for *briquetage*. Indications of *briquetage* are also known from the Escamp polder near Den Haag and from Assendelft.<sup>214</sup> In various places (in the south in Rockanje<sup>215</sup> and near Domburg;<sup>216</sup> in the north at Tritsum and Paddepoel<sup>217</sup>) fragments of pierced earthenware plates have been found which, according to analogy with comparable finds from De Panne (Belgium),<sup>218</sup> may also be connected with salt-winning. One has to imagine that these porous ceramic objects were piled in tower-like structures along which sea-water was poured. Exposure to air,

208 Butler 1965, 182.

209 Modderman 1960-1b; Verwers 1972, 62.

210 Haevernick 1960.

211 Peddemors 1973; Peddemors 1975. We are indebted to Mr A. Peddemors, National Museum of Antiquities, Leiden, for his participation in writing the section on glass.

212 Nenquin 1961.

213 Modderman 1960-1a.

214 Helderman 1967.

215 Wind 1970, 252-3.

216 Van den Berg 1968.

217 Van Es 1968, 255-8.

218 Mariën 1952.

sun, and wind during the trickling down rapidly concentrated the brine, which was collected and sprayed over the structure again until the fluid was sufficiently strong to be used in the crystallization process with the help of fire. In this respect it is relevant to note that around 1836 in the vicinity of Leiden a comparable construction of wood (*gradeerwerk*) was used to concentrate sea-water,<sup>219</sup> a proof that this technique can be applied in the Dutch climate.

The Paddepoel salt industry, according to Van Es, was quite probably based on *moertering*. This is a process by which salt-impregnated peat or saliferous plants are burned; the ashes are then dissolved in water, and from this solution salt is obtained through evaporation. Intentional salt-water impregnation of peat in the Paddepoel area, situated far from the coast, should hardly be considered; in any case, the necessary salt-impregnated peat could be found in the near vicinity. In the opinion of Halbertsma,<sup>220</sup> the *tribunalia extracta manibus* as described by Plinius in his *Naturalis Historia* are not terps, as they were generally regarded, but salt-water impregnated peat mounds in the sea-inundated land. This may indicate a rather large-scale salt production.

When the Romans invaded the Netherlands, salt extraction in the coastal area must have been a widespread industry. As an extraction method *briquetage* probably disappeared. *Zelas*, the debris of *moertering*, has been found in several settlements (*e.g.*, Ritthem). Especially in the present province Zeeland a flourishing salt industry seems to have come into existence in the Roman period. Recently the remains of a series of hearths together with *zelas* were found near 's Heer Abtskerke. This kind of industry may have brought some prosperity to the area, which appears, for instance, from two sanctuaries dedicated to the goddess Nehalennia. These produced stone altars, offered by *negotiatores salarii*, salt merchants from Cologne.<sup>221</sup> Although presumably, according to inscriptions on other stones, these merchants also traded with England, it is unlikely that they despised local salt.

#### INTERPRETATION

From an economic point of view the Netherlands appears to have gone through two 'revolutions' during prehistory.

First, of course, the one in the Neolithic period: the transition to an agricultural economy. The south of the country was confronted with this in about 6000 B.P., when people of the Linearbandkeramik culture settled on the Limburg loess. Their stay was short – a few hundred years – and hardly contributed to a permanent neolithization of the Netherlands. After their disappearance it took more than a thousand years before real agricultural communities, those belonging to the middle Neolithic Funnel Beaker culture, appear again.

A second 'revolution' seems to have taken place during the transition phase Bronze Age-Iron Age. At that time a series of rather fundamental changes occurred in the economic system; some simultaneously, some in quick succession. These have been discussed before and are summarized in figs. 5 and 6. In these tables the changes which have played a role in this Iron Age 'revolution' are indicated with a grey bar. It is probable that a connection existed between most of these changes, and to postulate this produces an attractive working hypothesis. The nature of this connection does not always have to be a causal one. It is suggested, however, that it implies an increased coherence and mutual economic dependence during the Iron Age between different geographic areas, in which some of the listed factors dominated. This dependence seems, for instance, quite manifest among the terp inhabitants of the Friesland-Groningen coastal area, although this is difficult to prove archaeologically. They must have maintained good relations with the people living on the neighbouring Pleistocene sandy soils, not only to ensure their wood supply but after an inundation period also a part of their food supply (corn).<sup>221a</sup>

Societies in which these changes took place may be interpreted as social systems each being a part of a larger system (a culture), with many interdependent subsystems. Among these subsystems are those of food supply, techniques, craft and industries (like metallurgy), trade, communication, social structure, and ideology.

Hardly anything or nothing is known about some of these subsystems, such as social structure and ideology. The lay-out of the settlements and the differences in grave-goods and grave-structures sometimes give indications of a social stratification based on more than just sex and age. It may be supposed that the periodical raising of the terps

219 Anon. 1836.

220 Halbertsma 1970.

221 *Deae Nehalenniae*, 41.

221a This is not contradictory to the experiments of Van Zeist and Körber-Grohne, which proved a limited possibility of crop cultivation in the salt marsh area: Van Zeist 1974, 364–6.

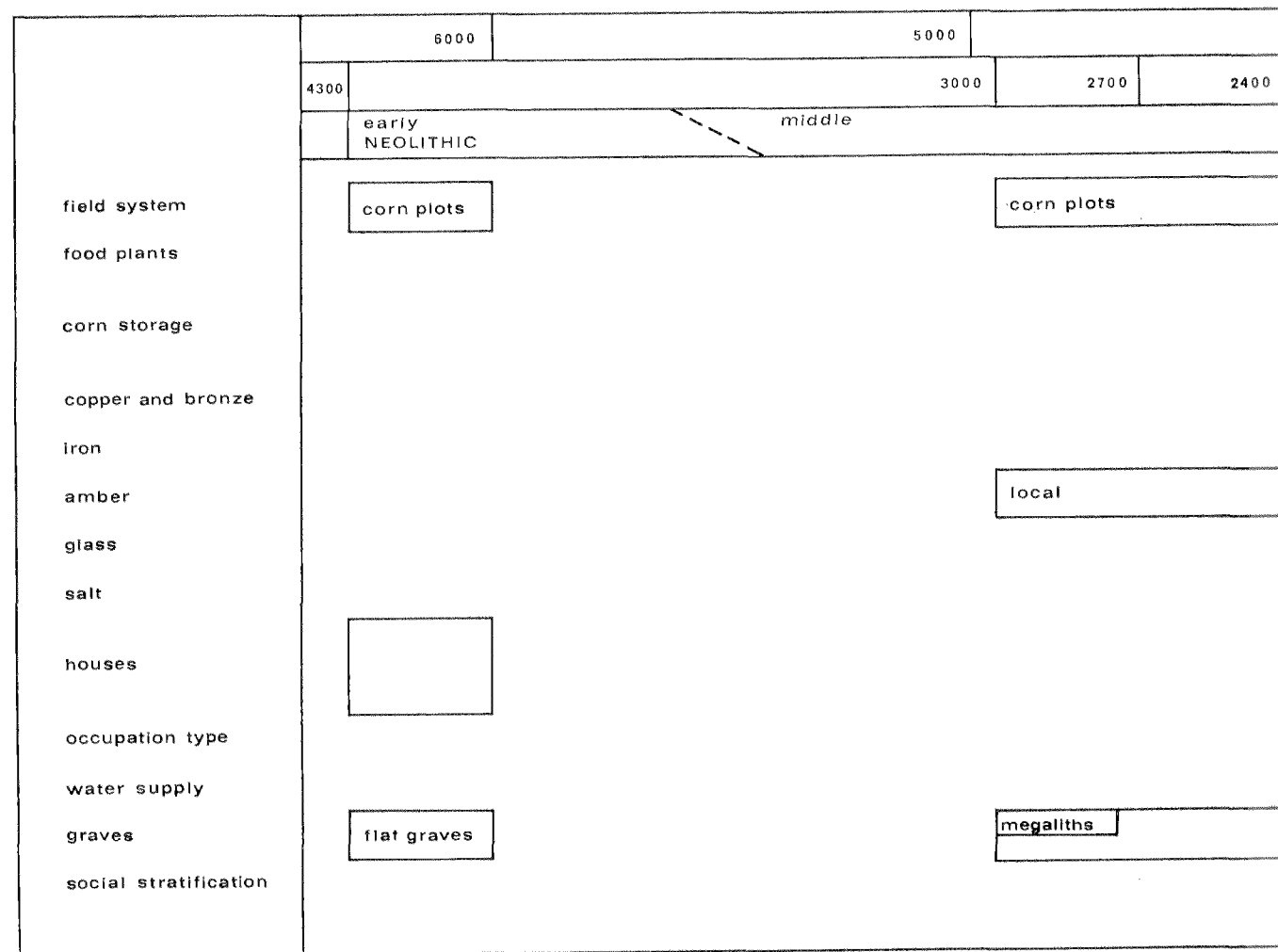
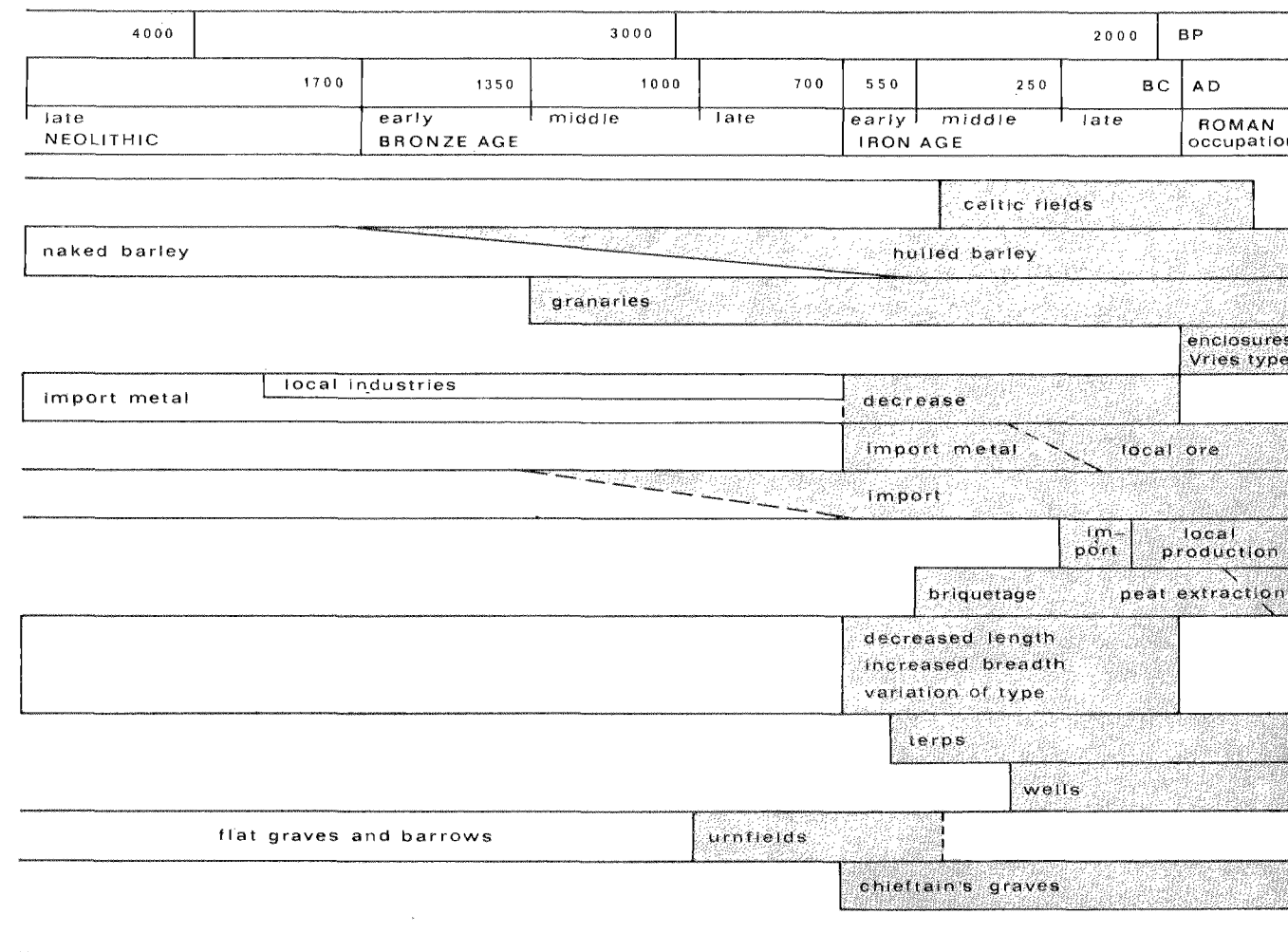


Fig. 5 Economic-technological changes in Dutch prehistory. Grey bars: changes relevant to the Bronze Age-Iron Age transition phase. Not included are some early iron finds (see note 190)

required some sort of central authority, but archaeological indications are lacking. The appearance of bronze objects during the Bronze Age created new possibilities for display of wealth and social status (which are mostly connected) through grave-gifts. As examples of this, we refer to the early and late Bronze Age grave-finds from Drouwen (see section 8). In the same way the early Iron Age chieftain's graves from the south indicate considerable distinctions in social status. It is not clear to what extent the enclosures of the Vries type, which appeared at

the beginning of the Christian era, were connected with changes in social structure. The variations in burial customs practised in prehistory will certainly have been partially a reflection of changes in ideology, although the mutual relation is far from simple. This appears from the fact, for instance, that during part of the middle Bronze Age inhumations and cremations were placed next to each other, often in the same barrow. The rise of the urnfields during the late Bronze Age, whatever the ideological background, is at least one of the changes that took place



at the beginning of the economic 'revolution' phase pointed out here. They reflect the economic use of land for burial purposes.

Essential changes occurred in the various economic subsystems: food supply (hulled barley becomes dominant, the Celtic field system comes into use); metallurgy (the mining of local ores and the resultant iron production); other techniques, crafts, and industries (corn storage in granaries, salt extraction, glass production); trade and communication (import of iron, glass, and amber; proba-

bly trade in local products such as iron, salt, and glass, and perhaps also some products of the subsistence economy). Undoubtedly, these changes were connected with an increase in population and the introduction of changes in the lay-out of settlements, such as the shortening of the houses and the diversification of the house types, the use of granaries, and the construction of lined-wells.

A detailed analysis of the causes and the course of these changes in the cultural system and especially the rise of a number of new economic subsystems (as Renfrew, for

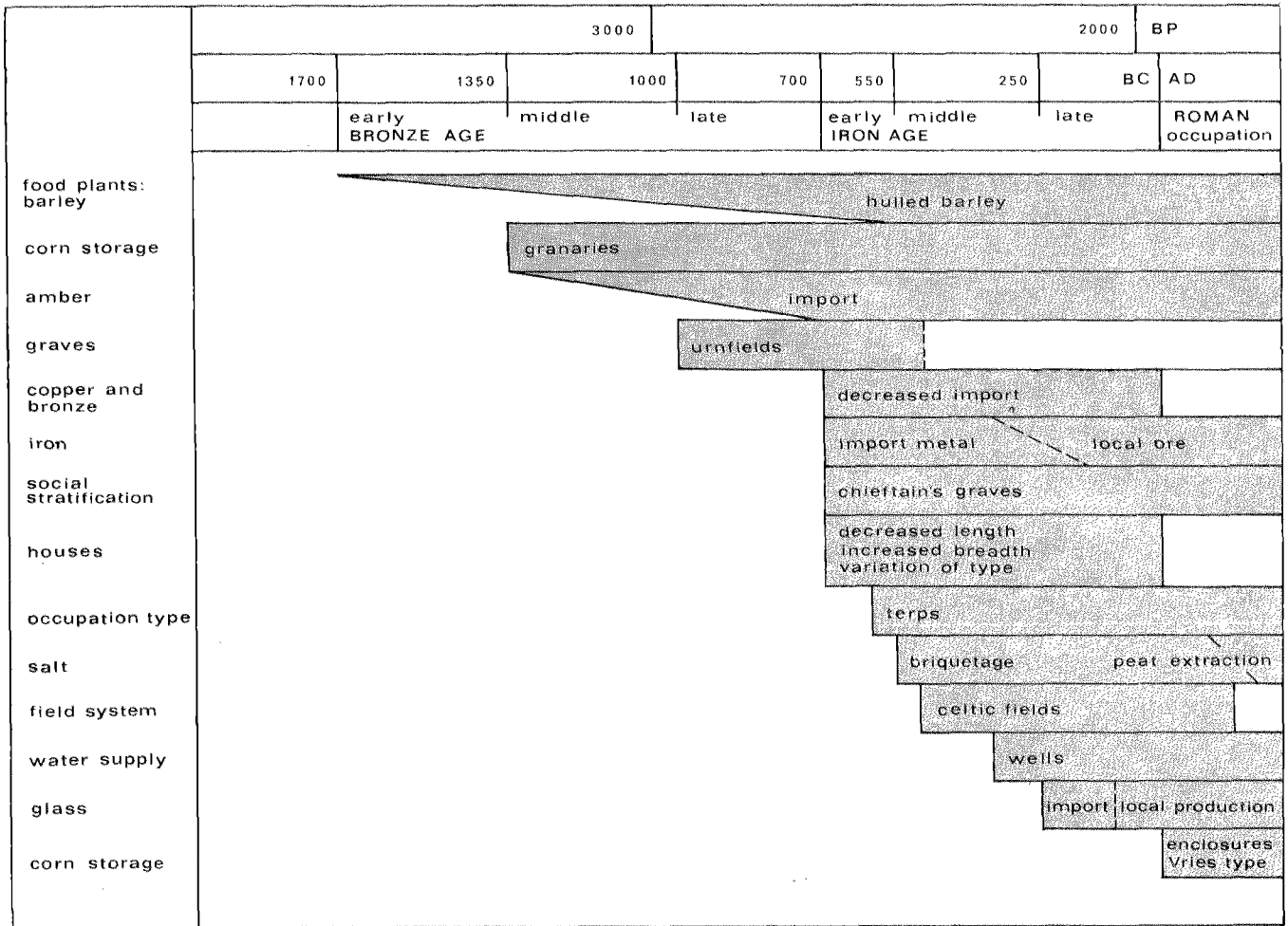


Fig. 6 Economic-technological changes relevant to the Bronze Age-Iron Age transition phase, represented in presumed chronological order

example, has done for the Mediterranean)<sup>222</sup> lies outside the scope of this article, and moreover could hardly be carried out on the basis of present available information. It must be assumed that most of the changes noted were not independent. For a cultural system is characterized by its structure: the internal relation between the subsystems.<sup>223</sup> Changes in some subsystems always invoke changes in others, a process which may be strengthened by a positive feedback. A series of related, often individu-

ally small changes in a number of subsystems can result (in terms of general systems theory) in a multiplier effect for the system.<sup>224</sup> Regulating mechanisms, which in normal circumstances guarantee a dynamic equilibrium in the system, are then inadequate; the process of cultural change increases its pace, after which the system establishes a new equilibrium, distinctly different from the previous one.

When an acceleration in the process of cultural change

222 Renfrew 1972.

223 E.g. Martindale 1960, 441-500.

becomes visible, it is usually called 'revolution.' The complex of mainly economic and technological changes which occurred in the transition period Bronze Age-Iron Age has also been indicated as a 'revolution.' From fig. 6 the relativity of this term appears clearly: some changes which played a role in this 'revolution' were already noticeable during the early and middle Bronze Age (the rise of hulled barley and the introduction of granaries), while other changes do not occur until during the late Iron Age or even the early Roman period (glass production, enclosures of the Vries-type). This period of accelerated change, of course, cannot be defined sharply. The actual inventions and innovations which gave rise to changes in the different subsystems generally escape observation; but it is clear that the conditions for their acceptance and further integration in the cultural system were created during previous periods. In this connection the rapid expansion and developments in the subsystems of trade, communication, and metallurgy during the Bronze Age are particularly noticeable. The interactions between changing subsystems clarify the complicated process of cultural change more than inventions and innovations, and their resulting developments in separate subsystems. Because cultural change advances in time, the chronological sequence in which changes become visible has also to be taken into consideration (fig. 6). Only some interactions and causal connections, for the greater part hypothetical, within the change-process of the Iron Age 'revolution' will be pointed out here. They are concerned primarily with the different subsistence-related subsystems.

The economic significance of granaries is, in the suggested interpretation, better corn storage. With a sufficiently large production, this practice may have had the following main functions: a) the possibility of having sufficient supplies in case of crop failures; b) the strengthening of the economic position of the socio-economic unities; c) more favourable conditions for population growth; d) greater cultural flexibility. One of these possible effects, the growth of population, is of primary importance. In general, growth of population is not possible without

increase in productivity. The cultivation of larger areas and the intensification and rationalization of agriculture, by which the same areas yield larger crops, are methods of increasing production. Intensification of farming can be obtained by improving the crops and manuring the fields. No reasons exist to assume that the replacement of naked barley by hulled barley was only the result of natural selection; hence, a purposeful selection may have been practised. The difference between naked and hulled barley lies in the fact that the hulled variety does not shed grain so easily,<sup>225</sup> so that losses diminish during harvesting. The result of this change, whatever the reasons, was a definite crop increase. Apart from the purposeful humus accumulation in Celtic fields manuring cannot be demonstrated in the Netherlands before the early Middle Ages. Whether pasturage of fallow-lying fields in multiple-course rotation, as for the first time may be assumed to be the case with Celtic fields, had the definite purpose of providing manure is not known, but it did have that function. The Celtic field system is evidence of a rational and economic use of land. It occurs for the first time during the middle Iron Age, and may have produced a corn surplus. This surplus must have been conditional for the colonization of the terp area, although other functions may be considered, such as the possibility of freeing specialists for the mining of iron ore, for iron production, and for salt-winning. Certain types of mutual economic dependence should also be considered between the inhabitants of the terps and coastal areas and those of the neighbouring Pleistocene sandy soils. These peoples may have been interdependent for cattle, pastoral products, fish, and salt, in exchange for agricultural products, wood, and iron.

The end of the economic-technological Iron Age 'revolution' is just as difficult to define sharply as the beginning, but the most important changes seem to have taken place before the Roman period. With the Roman invasion, the last phase of Dutch prehistory came to an end. During the subsequent centuries, the southern half of the Netherlands, south of the Rijn, was part of the Roman Empire, while the people of the northern half maintained trade relations with it.<sup>226</sup>

224 Renfrew 1972, 37.

225 Van Zeist 1968, 50.

226 Apart from the persons previously acknowledged, we wish to express our gratitude to Dr J.A. Bakker and Mr R.W. Brandt (Institute of Pre- and Protohistory of the University of Amsterdam), and Messrs J.F. van Regteren Altena and A. Bruijn (ROB)

for the critical reading of the manuscript, to Messrs H.J. Bloklander, H.M.C. de Kort, J.G. Lampe and W.A. van der Sluijs who made the drawings, to Mrs M.M.W.J. Broekhoven-van der Lans who did the typing work, and to Mrs B.J. der Weduwen-van den Boogert for the English translation.





◁ Fig. 7 Findspots and toponyms

Aartswoud	96	Enter	48	Maastricht	92	Soesterberg	56
Anderen	22	Epe	50	Marum	13	Someren	78
Ane	43	Ermelo	52	Meerlo	76	Stadskanaal	16
Angelslo	31	Esch	72	Melemborg	83	Stein	87
Anlo	21	Exloo	29	Meppen	36	Stroe	53
Assendelft	107	Ezinge	10	Molenaarsgraaf	63	Susteren	85
				Monster	120a		
Bargeroosterveld	41	Ferwerd	1			Tolsum	6
Beemster	104			Nieuwenhagen	90	Toterfout	79
Beetgum	2	Garderen	54	Nijmegen	67	Tritsum	5
Bellingwolde	15	Geleen	88	Nijnsel	74		
Bemmel-Ressen	65					Ulft	66
Bennekom	60	Haarlem	111	Ommerschans	44	Usquert	8
Bergen aan Zee	102	Haarlemmermeer	115	Oostwoud	97		
Borger	26	Hapert	80	Ootmarsum	46	Valkenburg (L)	91
Britswerd	7	Haps	70	Oss	69	Valkenburg (ZH)	117
Broekpolder	122	Havelte	34	Oudemolen	20	Valthe	30
Buinen	27	's Heer Abtskerke	129	Overloon	75	Velsen	109
Buinerveen	28	Heiloo	103			Vlaardingingen	123
		Hekelingen	125	Paddepoel	12	Vledder	33
Dalfsen	45	Helden	81	Pesse	35	Vogelenzang	112
Den Burg	95	Hoevelaken	55			Voorhout	116
Den Haag	120	Hoogkarspel	99	Ritthem	128	Voorschoten	119
De Zilk	113	Hijkersmilde	24	Rockanje	124	Vries	19
Denekamp	47			Roermond	84		
Deurne	77	Ide	18	Roswinkel	39	Wageningen	61
Deventer	49			Rijckholt	93	Weerdinge	40
Dodewaard	64	Jutphaas	57	Rijswijk (ZH)	121	Wervershoof	98
Domburg	127					Westeremden	11
Dorreveest	105	Kessel	82	Santpoort	110	Willemstad	126
Drouwen	25	Kloosterholt	14	Schoonebeek	42	Wijchen	68
		Kloosterwijtwerd	9	Sellingen	17	Wijnaldum	3
Ede	59	Krommenie	106	St. Geertruid	94		
Eenerschans	18a			St. Michielsgestel	71	IJmuiden	108
Elp	32	Leeuwarden	4	St. Oedenrode	73		
Elsloo	89	Leiden	118	Sittard	86	Zandwerven	101
Elspeet	51	Lisse	114	Sleen	37	Zeijen	19a
Emmererfscheidenveen	38	Lunteren	58	Smilde	23	Zijderveld	62
Enkhuizen	100						

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# The Distribution of Archaeological Finds on the Island of Texel, Province of North-Holland

figs. 1–5

## I INTRODUCTION

The history of archaeology on Texel begins in 1777. In that year a labourer, employed by a farmer named Symon de Brecker, when levelling a round hillock called the 'Sommeltjesberg' (site no. 5), came across a number of curious bronze and iron objects. Some of them, especially a bronze strainer and a skillet, were in such good condition that, after the farmer's wife had burnished them, they looked like new. In 1779 the artist Pieter van Cuyck, who often toured the island in summer, was allowed to see the treasures, or rather what was left of them. He recognized them as Roman and made accurate drawings of them, which he had published, together with a description, in 1780: the first work on the archaeology of Texel.<sup>2</sup> After this promising start the island had to wait a long time before serious interest was again taken in its early history. With the exception of the small-scale investigations by K.H. Jacob-Friesen in the centre of Den Burg (site no. 12) and by H. Halbertsma in the church of St Sixtus in the same village, no professional excavations were carried out between 1780 and the late 1950s. Some scattered stray finds, the earliest dating from the Neolithic, make up the whole archaeological harvest from this period. Even these scanty data, however, were sufficient to indicate that the area which is now Texel was inhabited at a very early date.

At the end of the 1950s a scheme of large-scale re-allotment of land was initiated on the island, a project that entailed extensive digging operations and road reconstruction. Moreover, at about this time some villages began to develop rapidly under the influence of tourism and the influx of new inhabitants. A group of devoted amateur archaeologists<sup>3</sup> undertook to make observations on every site where digging or building operations were carried out and to report their findings to the ROB. The result was a series of trial excavations – many were rather emergency cases – in many places, culminating in the

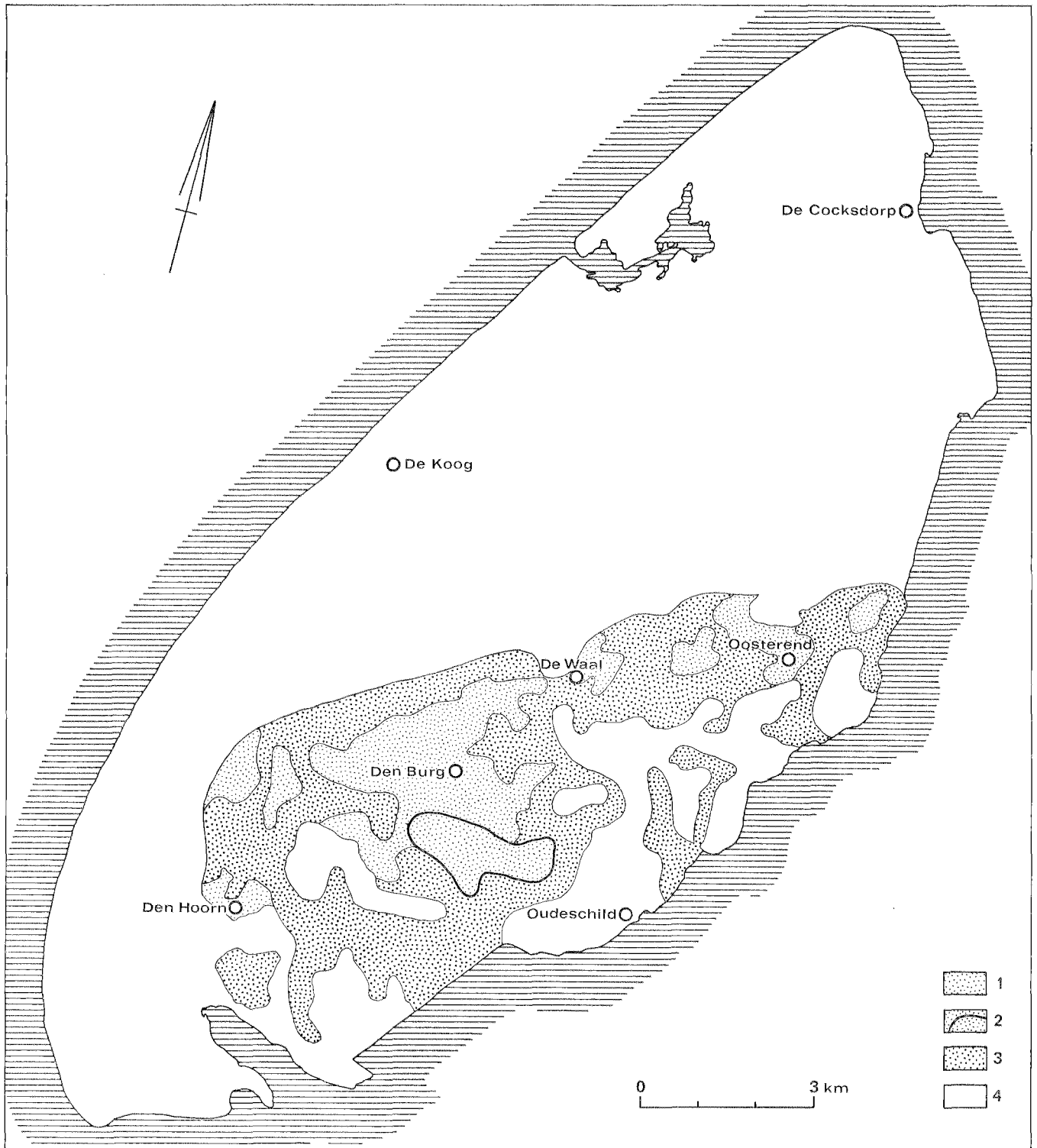


Fig. 1

<sup>1</sup> Both authors participated in the large Beatrixlaan excavations near Den Burg. Van Tent in 1967, the year in which he also carried out the archaeological stock-taking of Texel, which is the main basis of this article; Woltering since 1971 – he will publish the results in due time.

<sup>2</sup> Van Cuyck 1780.

<sup>3</sup> Messrs H. Alta, W. Conijn, G. Gerrits, G.J. de Haan, H.C.A. Kievits, and H.E. Peeters. Without them a publication in this form would have been impossible.



investigation of the large and important Beatrixlaan site near Den Burg (site no. 13).

On account of the work done both by professional and amateur archaeologists, our knowledge of the island's early history has increased enormously in the last fifteen years. It is now possible, therefore, to make an attempt at presenting an over-all picture of pre- and protohistoric occupation on Texel, in the form of both an index and distribution maps (figs. 3-5) of the known sites. Index and maps together are meant as a provisional stock-taking, published here because it allows of some interesting conclusions on the distribution of population in the various periods and on the history of occupation. For a full understanding of these, however, it is first necessary to give a brief survey of the geology of the island.

## 2 PHYSICAL ENVIRONMENT

The island of Texel is the northernmost part of the Dutch province of North Holland. It is the first of the Wadden Islands, an unbroken chain of islands which extends in an easterly direction, along the coasts of the provinces of Friesland and Groningen in the Netherlands and Ostfriesland in Germany, as far as the mouth of the river Weser. From the mainland of North Holland and from Vlieland, the next island in the chain, Texel is separated by inlets (respectively Marsdiep and Eijerlandse Gat), which connect the North Sea with the Wadden Sea. The latter is the name of the tidal-flat area lying between the islands and the Dutch and German mainlands.

From a geological point of view Texel's position among the Dutch Wadden Islands is a very special one. Whereas the other islands are accumulations of Holocene deposits (mainly dunes), a large area of Texel consists of Pleistocene material. In this respect it also differs from the rest of the Dutch coastal area, where the Pleistocene surface has been covered everywhere by peat and Holocene sediments. The only exception is the former island of

Wieringen, immediately South of Texel. As this is also a Pleistocene outcrop, the two islands have much in common. Both possess a core of glacial origin, consisting of fluvial sands and boulder clay deposited during one of the earliest phases of the Saalian glaciation in the Netherlands. In a later phase these deposits were thrust outwards and upwards by a tongue protruding from the ice-sheet to form an ice-pushed ridge in the shape of the letter U.<sup>4</sup> Probably as late as the twelfth century A.D. the water of the North Sea forced its way through this Pleistocene ridge in several places. The peat area between Texel and Wieringen, which until then may have formed a land connection between the two, was inundated and became impassable. A gully was eroded in the peat and gradually developed into the Marsdiep, the deep and wide sea arm now separating Texel from the mainland of North Holland. Since then the remains of the ice-pushed ridge, which has an approximately NE-SW orientation, have been the determining factor in the topography of both Texel and Wieringen.<sup>5</sup>

In several places on Texel glacial deposits occur on or near the surface. A salient feature is formed by a number of boulder-clay outcrops in the southeastern part of the island. The highest of these, called the Hoge Berg (High Hill), rises to a height of more than +15 m NAP (fig. 2:2). In most places the boulder clay has disappeared below later sediments. The slightly undulating cover-sands dating from the Weichselien must be mentioned as the first of these. They occur mainly as wide belts around the boulder-clay outcrops (fig. 2:1 and 3). In other places the cover-sands themselves have been covered by marine sediments dating from the Holocene. They have gradually been reclaimed, starting in the late Middle Ages. Along the west coast of the island a belt of young dunes has formed, mainly since the twelfth or thirteenth centuries. It is important to realize that since the last Ice Age a considerable area of Texel's Pleistocene core has remained fit for human habitation without a break. This continuity of habitability is in marked contrast with the fluctuating conditions to be observed in the greater part of the Dutch coastal area: there habitability increased and decreased, in accordance with the alternating periods of regressive and transgressive activity of the sea. Besides, many traces of human occupation have been destroyed or were covered by thick layers of marine sand and clay, peat, or dune sand. On the map in fig. 2 - which is based on the Soil

◁ Fig. 2 Generalized soil map of Texel, based on the Soil Map of the Netherlands (sheet 5), scale 1:200,000. The main villages are indicated. 1. Pleistocene: mainly medium high cover-sands; 2. Pleistocene: boulder clay at or near the surface; contour of the most extensive outcrop (the Hoge Berg area); 3. Pleistocene: predominantly low cover-sands; 4. Holocene: marine sediments and - at the west coast - dunes

4 Ter Wee 1962; Pons 1962, 162-8; Zandstra 1970.

5 Schoorl 1973, 44-57.

Map of the Netherlands, scale 1:200,000 – two kinds of cover-sands have been distinguished on the basis of pedological criteria: medium high and predominantly low.<sup>6</sup> The medium-high cover-sands (fig. 2:1) usually constitute good arable land and must be regarded as the most attractive parts of the island, at least to people with an agrarian economy. The cover-sands designated as predominantly low (fig. 2:3) are in fact a complex of different soil types with a large range of variation over short distances. They consist mainly of low-lying cover-sand, often covered by or mixed with a thin layer of marine clay. In places patches of medium-high cover-sand form small projecting ridges. Until recently most of the soils belonging to this complex were subject to flooding.

As already mentioned, the boulder clay lies on or near the surface here and there. This is the case in three places, but owing to the small scale of the NEBO map only the most extensive of these boulder-clay outcrops can be shown on the map (fig. 2:2). It is the area whose highest point is the above-mentioned Hoge Berg. Other outcrops occur under the villages of Den Hoorn and Oosterend. The medium-high cover-sands form an undulating landscape with heights – at least outside the boulder-clay areas – varying between 1 and 5 m + NAP. The surface of the predominantly low cover-sands and the marine sediments varies in height between –1 m and +1 m NAP.

### 3 DISTRIBUTION OF ARCHAEOLOGICAL SITES

All the sites shown on the distribution maps (figs. 3, 4, and 5) are listed, under the same reference numbers, in an index at the end of this article (section 5). This index represents the state of the writers' knowledge at the end of 1972. Listed, in roughly east–west order, are all the sites that can be dated earlier than *c.* A.D. 1000, not only those that have been the scene of full-scale excavations, but also the ones that have produced no more than a few stray finds. For each site a brief description is given of

- a* the find circumstances and excavation results, if any;
- b* some characteristic finds and their dating;
- c* main literature.

With only a few exceptions the name given to each site refers to the town or village (the whole island forms one municipality: that of Texel), in or near which it is situated; in many cases a second element, consisting in a relevant field-, road- or other name, is added.

<sup>6</sup> *De bodem van Nederland* 1965.

The following periods are distinguished: Mesolithic, Neolithic, Bronze Age, and early Iron Age (fig. 3); late Iron Age-early Roman period, Roman period proper, and late Iron Age and/or Roman period (fig. 4); Merovingian period, Carolingian period, and early Middle Ages (Merovingian and/or Carolingian period) (fig. 5).

The period indicated as 'late Iron Age-early Roman period' cannot at the moment be defined with much exactness. It covers the last one or two centuries B.C., but probably also the greater part of the first century A.D. It can be regarded as lasting until such time as Roman influence began to make itself felt, even as far north as Texel. The following wares are regarded as characteristic for this period on the island:

*a* S-shaped pots with fingertip impressions on the rim, often applied in such a way as to give a 'cabled' appearance, and sometimes fingertip impressions or all-over pinched ornament on the body. Characteristic for this type of pottery is the use of various kinds of tempering, such as grit, particles of shell or pottery, and organic material ('grass'-tempering). In the course of the Roman period proper 'grass'-tempering becomes predominant, to the exclusion of grit and shell particles.

*b* *Streepband*-ware, *i.e.* pottery decorated with one or more grooves around the base of the neck. A site is dated to this period, when either or both of these wares are present.

The datings 'late Iron Age and/or Roman period' and 'early Middle Ages' are given when no distinction can be made either between the late Iron Age-early Roman period and the Roman period proper, or between the Merovingian and Carolingian periods. This uncertainty may occur when the finds are not characteristic enough, or when they are not sufficiently well known.

One glance at the distribution maps is sufficient to show that in the main the sites are restricted to the Pleistocene core of Texel. The only significant exceptions are the finds from the western sea-shore (sites nos. 31–35). No find older than *c.* A.D. 1200 has ever been discovered in the polders to the north and south, or in the dunes west of the Pleistocene area. This will not come as a surprise after reading Section 2, on the geology of the island: all these polders were once (some of them as late as the nineteenth century) sea or salt-marsh, where no habitation was possible, while the formation of the dunes started only in the late Middle Ages. In the late Pleistocene and early Holocene, when the sea stood at a much lower level than it does now, at least part of the low-lying lands must of course have been accessible to palaeo-

lithic and mesolithic man, but no traces of their presence there have ever been discovered. The finds from the beach, including a (probably) Carolingian sherd, suggest that the habitable area extended further west than it does now: under the dunes and probably even some distance into what is now the North Sea. This hypothesis is confirmed by the results of geological and historical research, which indicate that the western extremity of the Pleistocene ridge was eroded by the sea probably as late as the advanced Middle Ages, in connection with the formation of the Marsdiep.<sup>7</sup>

On the Pleistocene ridge itself the distribution of the sites shows a clear pattern. It is evident from the maps that with only a few exceptions – which are, however, more apparent than real – all the settlements are situated on the medium-high soils. These soils, which constitute good arable land and were hardly liable to flooding, must have been most attractive to pre- and protohistoric man. No finds at all are known from the low-lying areas in the southeast, which are the remains of old creeks penetrating far inland. They are too low anyhow, and at least some of the creeks must have functioned until a fairly recent date. The one running right through the Pleistocene ridge from Oudeschild to De Waal, for instance, is known to have been dammed only in c. A.D. 1000. As to the predominantly low soils – the complex of high and low clayey and sandy soils – the maps do show three sites in this area (nos. 1, 38 and 43). However, two of them are actually situated on heights that are too small to be represented on a map with a scale of 1:200,000: the scale of the Soil Map of the Netherlands, on which figs. 2–5 are based. Site 1 (Zevenhuizen) lies on a small medium-high cover-sand ridge and thus fits into the pattern described above. The topographical situation of site 38 is rather high (about 2.5 m +NAP), lying, as it does, on the south slope of the Hoge Berg. Site 27 (old Den Hoorn) is situated on a narrow dune ridge; the pottery indicates that it cannot have come into existence much before the thirteenth century; only one sherd, now lost, may have been Carolingian. From all this it follows that the predominantly low soils were not in great demand as a settlement area, probably because they were too wet and subject to frequent flooding. It is of course possible that some settlement occurred in drier periods, but all traces of this must

have been washed away during subsequent transgressions. It will be some time before a reliable occupation history of the island can be written, but some trends can already be discerned. They will be briefly outlined below.

#### 4 OCCUPATION HISTORY

Nearly all the known finds from the earliest periods, the Mesolithic and the Neolithic (fig. 3, nos. 36 and 40–45), derive from the high ground around the Hoge Berg, the boulder-clay hill southeast of Den Burg. Such a concentration would seem to indicate that the Hoge Berg area enjoyed a special interest in the eyes of Stone Age man, but it is not quite certain how much significance is to be attached to the distribution pattern of this period. On the one hand, the Hoge Berg and its surroundings have for some time been a favourite field of exploration for amateur archaeologists in search of stone artefacts. It is well known on the island that stone axes are sometimes found among the plentiful erratic stone and flint appearing on the surface after ploughing in this area. The lack of Stone Age finds in other parts of the island may therefore represent a *Forschungslücke* rather than a fact. On the other hand, the occurrence of stone and flint in the boulder-clay may actually have been the cause of a special interest in this area on the part of mesolithic and neolithic man. Stone and flint occupied a very important position in mesolithic and neolithic economies. This may be the reason why, in a region which otherwise possessed hardly any sources of natural stone, people were attracted by the areas where such materials could be found in plenty, *i.e.* the boulder-clay hills of Texel and Wieringen.<sup>8</sup> The finds from the beach (fig. 3, nos. 31 and 32), which show that sites datable to the Mesolithic and the Neolithic may also have occurred further west on the Pleistocene ridge, do not contradict this theory.<sup>9</sup> Boulder-clay hills, now lying under water, are known off the west coast of Texel.<sup>10</sup> As yet little is known about the Bronze and early Iron Ages. The few facts available seem to indicate a shift of interest away from the surroundings of the Hoge Berg to the area of medium-high cover-sands west of Den Burg. The Beatrixlaan–Pontweg sites (fig. 3, nos. 13 and 14) were first occupied in the Bronze Age, whereas no finds, either from this period or from the early Iron Age, are

7 Schoorl 1973, 35–40.

8 Cf. Brongers/Woltering, in this volume.

9 Cf. the probably Mesolithic flint flakes from Koegras (on the mainland in the province of North Holland, near Den

Helder), situated on top of a rise of the cover-sand landscape and overlain by peat: Louwe Kooijmans 1974, 17.

10 *E.g.* an extensive area called *De Stenen* (The Stones): see Schoorl 1973, 37–8, note 3, fig. 5.

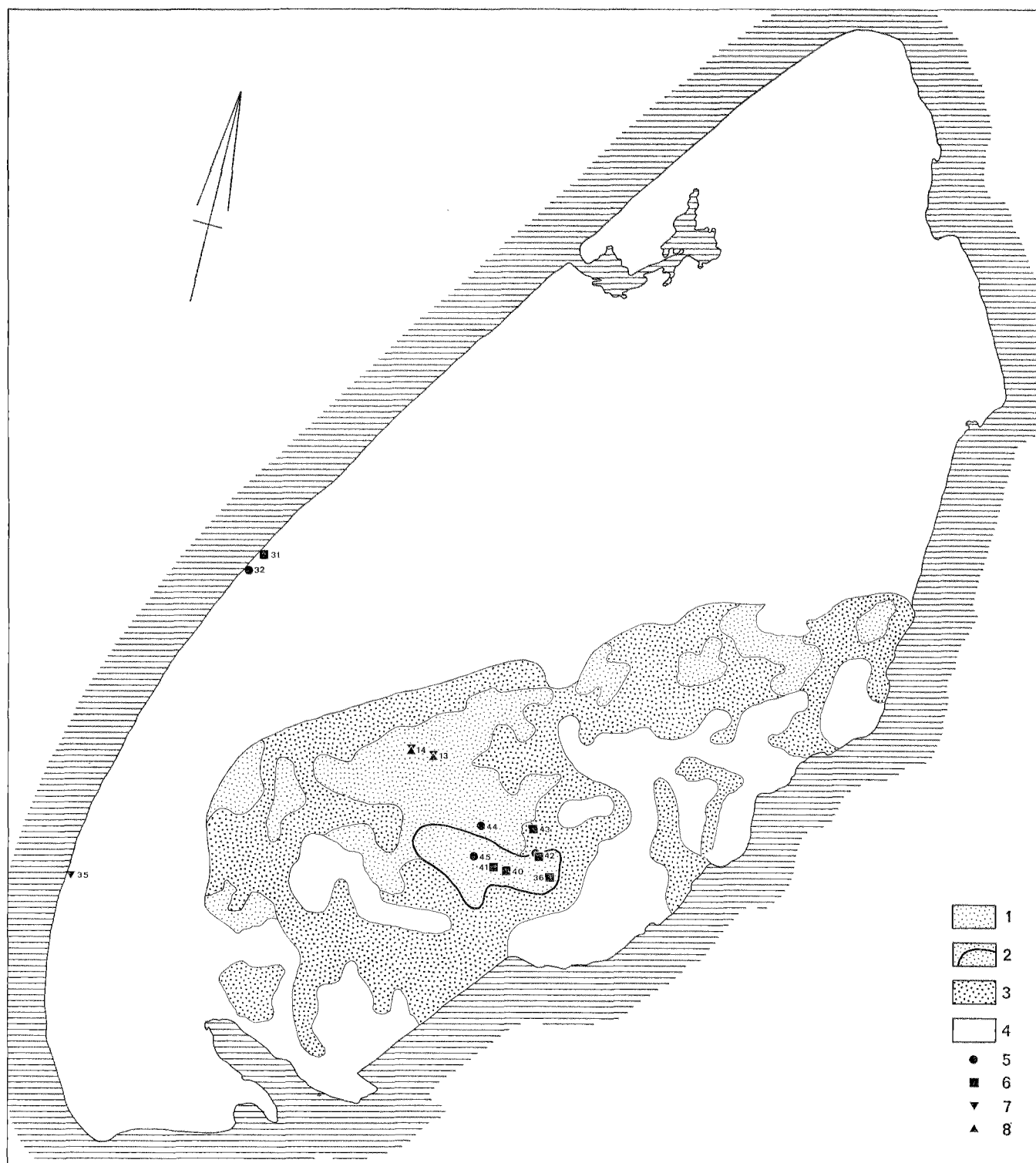


Fig. 3 The distribution of finds from Mesolithic – early Iron Age. 1–4: see Fig. 2; 5. Mesolithic; 6. Neolithic; 7. Bronze Age; 8. early Iron Age



Fig. 4 The distribution of finds from late Iron Age and Roman period. 1-4: see Fig. 2; 5. late Iron Age - early Roman period; 6. Roman period proper; 7. late Iron Age and/or Roman period

known from the Hoge Berg area. On the whole it may be said that from the Bronze Age onwards the sites seem to avoid the boulder-clay. This striking phenomenon may perhaps be accounted for by the pedological characteristics of the soil: the presence of boulder-clay on or near the surface often produces ground-water conditions that are unfavourable to agriculture. This may have prevented the settlement of agrarian communities in that area. However, this theory can only be verified by further finds and research.

In the centuries around the beginning of our era, a kind of population-explosion took place on Texel. Though the centre of gravity seems to have remained in the old heartland west of Den Burg, the settlements multiplied and spread all over the higher parts of the Pleistocene ridge, as far east as Zevenhuizen and as far west as the North Sea coast (fig. 4). Only the rather steep eastern and southern slopes on the Hoge Berg, where the boulder-clay gives way to sand, are known to have been occupied.

Continuity of occupation between the early and late Iron Age has not yet been proved.<sup>10a</sup> Observations made during the excavation of the Beatrixlaan site (no. 13) showed that, at any rate in some places, there was a gap between the two, caused by wind-blown sand covering the early Iron Age arable and occupation traces. Significant differences in distribution or density between the late Iron Age-early Roman period and the Roman period proper are as yet difficult to demonstrate.

A separate subject is the degree of Romanization of the Texel area. Roman imports – coins, bronze objects, and pottery – have been found on the following sites:<sup>11</sup> Zevenhuizen (no. 1), De Waal – Sommeltjesberg (no. 5), De Waal 1 (no. 6), Den Burg – Ruitersplaats (no. 8), Den Burg (centre) – Wezentuin (no. 12), Den Burg – Beatrixlaan (no. 13), Den Burg – Pontweg (no. 14), De Westen (no. 29), Den Burg – ‘Kikkert’s Terp’ (no. 23).

The number of imports is relatively large, especially for a region as far north as Texel. This is probably caused by the island’s position on the important south-north shipping-route by way of the river Vecht, Lake Flevo, and the Vlie, a position which was retained in the early Middle Ages.<sup>12</sup> If the Sommeltjesberg is really a native chief’s barrow, the number of expensive Roman bronze objects

that were buried with him shows that at any rate the upper classes participated in some of the more material aspects of Roman culture.

The Merovingian period is evidently marked by a decrease in population: from covering almost the whole of the Pleistocene ridge in the Roman period, the occupied area shrunk to the highest points of the island. Only the centre of De Waal (site no. 7), the area west of Den Burg (sites nos. 13, 15, 22, and 23), and the Hoge Berg (site no. 39) have produced finds that are recognizably Merovingian. Some Merovingian sherds may hide among the finds dated ‘early Middle Ages’ in the Index, but these will not alter the picture in essentials. The population increased again only in the Carolingian period.

The question whether there is continuity from the Roman into the Merovingian period has not yet been answered. The coins from De Waal (site no. 7), two *solidi* from Justinianus, and the *tiers de sou* from the Hoge Berg (site no. 39) indicate Texel’s position as an intermediate seaport on the coastal trade route between Gaul and Scandinavia in the second half of the sixth century.<sup>13</sup> A few rim-sherds of wheel-turned Merovingian ware, found on the Beatrixlaan site during the various excavation campaigns, may be dated back as far as the sixth or even the fifth centuries. They belong to wide-mouthed pots with a ridge below the rim and resemble cooking-pots of the type Alzey 33 in shape.<sup>14</sup> However, pottery of undoubtedly late-Roman date has never been found on the island. Perhaps the problem of continuity will be solved when the results of the Beatrixlaan excavations can be studied in depth.

Finally, attention should be drawn to a puzzling aspect of Texel’s occupation-history after A.D. 1000, though actually it falls outside the scope of this article: the scarcity of settlement finds dating from the tenth–twelfth centuries. De Waal (site no. 6) and Den Burg-Beatrixlaan (site no. 13) did produce a few Pingsdorf sherds, but these can hardly be regarded as indications of settlements. As a matter of fact, the excavations on the latter site have not yet revealed any settlement features that could be dated

Fig. 5 The distribution of early medieval finds. 1–4: see Fig. 2; ▷ 5. Merovingian; 6. Carolingian; 7. early Middle Ages

10a During proof-reading this statement appeared to be overtaken by the recent results of the continued Den Burg-Beatrixlaan excavations (site no. 13). At least two parts of the settlement area produced pottery of Ruinen-Wommels III type and occupation traces dating to the middle Iron Age.

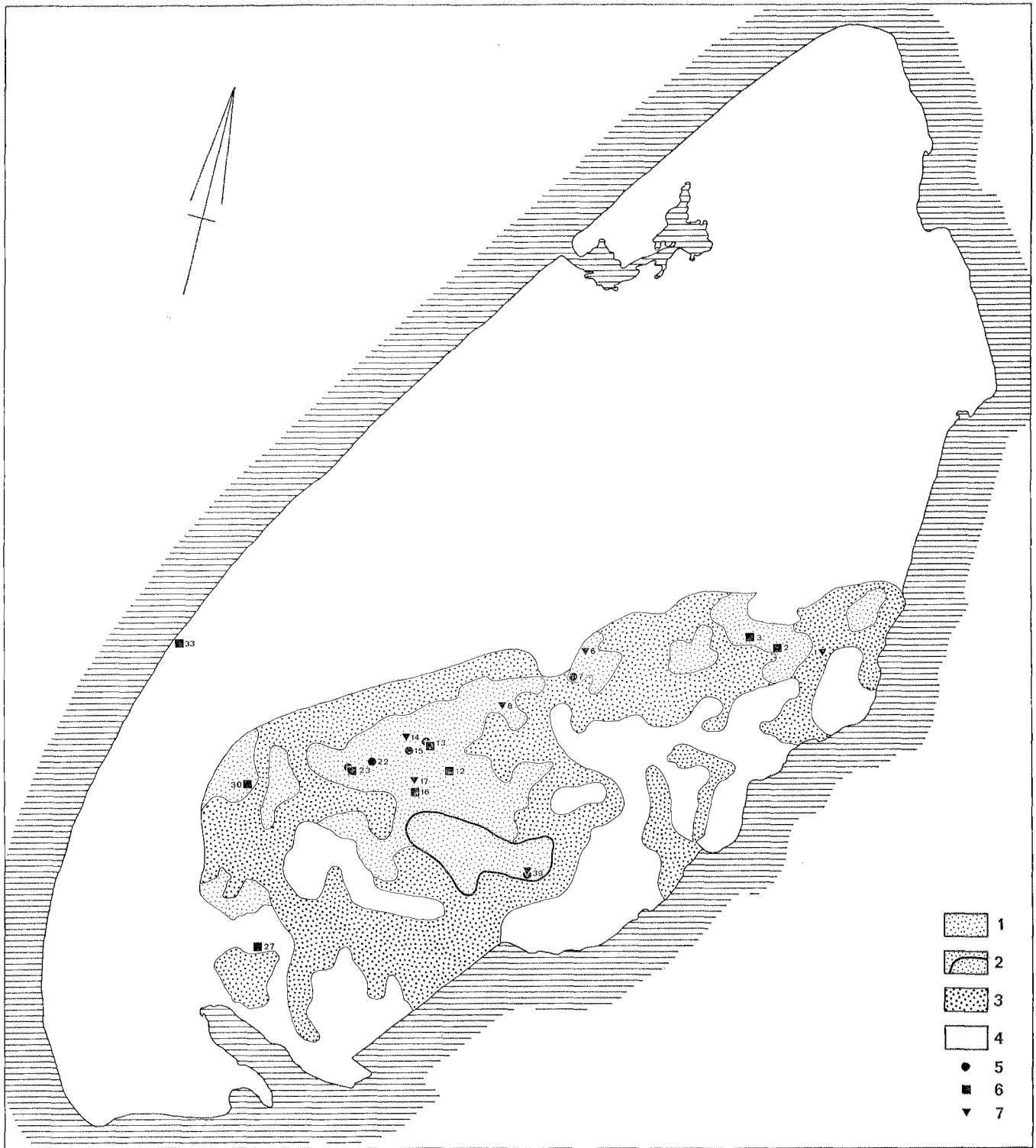
11 Compare also Alta/Gerrits 1969; Gerrits 1973.

12 Zadoks-Josephus Jitta 1961, 50–2; Blok 1968, 65.

13 Zadoks-Josephus Jitta 1961, 50–51.

14 See Van Es 1969, 133, fig. 4, no. 131.





later than *c.* A.D. 900; the Pingsdorf sherds appear to be associated with an arable phase subsequent to the occupation.<sup>15</sup>

If we allowed ourselves to be guided exclusively by the archaeological evidence, we should have to conclude that Texel was all but depopulated in the tenth–twelfth centuries. The written sources, however, present a quite different picture. In the case of De Westen (site no. 30), for instance, it is the written evidence, not the archaeological, which makes it possible to date the site to the tenth century.<sup>16</sup> According to Halbertsma, Texel must have possessed several churches, probably built of timber, as early as *c.* A.D. 900.<sup>17</sup> In all likelihood there were four of them: at Oosterend, De Waal, Den Burg, and De Westen. In the eleventh or twelfth centuries they were replaced by tuff structures. At Oosterend parts of such a tuff predecessor to the present church are still visible above ground; at De Waal, according to an eye-witness account, some parts were standing as late as the eighteenth century;<sup>18</sup> at Den Burg and De Westen foundations or fragments of tuff were found during excavations.<sup>19</sup>

Where there are churches, and even more where timber churches are being rebuilt in stone, there must be substantial settlements. So the lack of finds from this period cannot have been caused by a gap in the occupation of the island, but must be accounted for in other ways. The most satisfactory explanation is that foreign wares, such as Pingsdorf and Paffrath pottery, reached Texel only in very small quantities. The virtual absence of these 'distinctive fossils' makes it difficult to identify any features belonging to this period. It is of course possible that there were hand-made local wares in the tenth–twelfth centuries, but if so, they have not been recognized so far. It is not surprising that only few imports reached the island in the centuries immediately after the end of the Carolingian period. It is known from other sources that the south-north shipping route to Scandinavia, which had formed Texel's direct link with the Rhineland, lost much of its importance at the close of the ninth century. In a somewhat later period the ever-widening and deepening Marsdiep may have made communication with the mainland of Holland difficult.

15 During the 1974 campaign at site no. 13 many house-plans and other settlement traces (wells, ditches) dating to about the thirteenth and fourteenth centuries were discovered.

16 De Cock 1956.

## 5 INDEX OF ARCHAEOLOGICAL SITES

### 1 Zevenhuizen (fig. 4, 5).

Excavation by the ROB in 1961 and 1962 and stray finds. Settlement.

Some sherds of *streefband*-ware dating from the late Iron Age-early Roman period. Other pottery dating from the Roman period proper (*i.a.* terra sigillata) and from the early Middle Ages.

Halbertsma 1961; 1962.

### 2 Oosterend (Fig. 5).

Observations on construction site in 1969; settlement layers and pits with burnt loam, charcoal, and slags.

Some sherds of hand-made and wheel-turned pottery from the Carolingian period.

### 3 Oosterend–Harkebuurt (fig. 4, 5).

Stray finds from several recently dug ditches and pits.

Some sherds of hand-made native pottery, late Iron Age or Roman, and one sherd of wheel-turned ware, probably Carolingian.

### 4 De Waal – Oosterenderweg (fig. 4).

Stray finds from several recently dug pits to the north of the Oosterenderweg.

Some sherds of hand-made native pottery, late Iron Age or Roman.

### 5 De Waal – Sommeltjesberg (fig. 4).

Formerly a mound of a regular, round shape, most probably a tumulus. The finds were discovered when it was levelled in 1777.

Several pieces of metalwork, *i.a.* Roman imports, such as a bronze vessel with the stamp MATVTIOF and a bronze strainer with the stamp ADRAXIVSF on the handle. All the finds can be dated to the Roman period.

Van Cuyck 1780; Holwerda 1925, 189; Jacob-Friesen 1943a; Byvanck 1935, 222; 1947, 174; Van der Vlis 1949, 16–19; Van der Heide 1957–8, 96–98; Halbertsma 1964, 279–80; Woltering 1973a, 12–13.

### 6 De Waal 1 (fig. 4, 5).

Stray finds from the fields on the high ground immediately east of the polder Waal en Burg, formerly open to the North Sea.

At least one sherd with geometrical decoration and some pottery resembling *streefband*-ware, probably late Iron Age-early Roman.

17 Halbertsma 1971.

18 Van Cuyck 1789, 67.

19 Den Burg: Van den Berg 1955, 249; De Westen: Ponger 1942.

One silver coin, a *denarius* of Septimius Severus, and a large amount of pottery, both native and imported (*i.a.* second-century terra sigillata), from the Roman period proper. Wheel-turned sherds, at least one of grey, rouletted ware, from the early Middle Ages.

Van Tent 1968; Gerrits 1973, no. viii.

7 De Waal 2 (fig. 4, 5).

Observations and finds during the construction of sewers in the centre of the village in 1972. It was discovered that part of the mound, on which the modern village is situated, is artificially raised with occupation debris, dating from the Roman, Merovingian, and late medieval periods.

Sherds of hand-made native pottery from the Roman period. Wheel-turned and hand-made Merovingian pottery, *i.a.* one sherd of a stamped biconical pot.

Two gold coins, *solidi* of Justinianus (527–565), are most probably from the churchyard in the village, close to this site.

Pleyte n.d., 18; Byvanck 1947, 174; De Boone 1952, 90; Zadoks-Josephus Jitta 1961, 50; Woltering 1972c; Gerrits 1973, nos. ix and x.

8 Den Burg – Ruitersplaats (fig. 4, 5).

Trial excavation by the ROB in 1962; many stray finds in the years after that. Settlement on low ridge.

A large amount of hand-made native pottery, all dating, as far as can be ascertained, from the Roman period; some Roman imports, *i.a.* second-century terra nigra-like ware. Sherds of wheel-turned early medieval pottery.

Halbertsma 1962b.

9 Den Burg – Meyertboonsboschweg (fig. 4).

Stray finds from edge of raised field.

Some sherds of hand-made native pottery, late Iron Age or Roman.

10 Den Burg – extension of Waalderweg (fig. 4).

Stray finds from earth-bank along new road.

A few sherds of hand-made native pottery, late Iron Age or Roman.

11 Den Burg – Texla (fig. 4).

Stray finds when small mound was levelled in 1963. Some sherds of *streepband*-ware and rim-sherds with fingertip impressions, late

Iron Age-early Roman period. Other sherds of hand-made native pottery, in all likelihood dating from the Roman period proper.

12 Den Burg (centre) – Wezentuin (fig. 4, 5).

Excavation by K.H. Jacob-Friesen in 1942; trial and emergency excavations by the ROB in 1952, 1958, 1960, 1964, and 1967; stray finds from construction site in 1969. Evidence was found of a large, circular rampart with a broad ditch on the outside, situated in the old centre of the village. This fortification could be dated to the ninth century A.D. or a little earlier. Older traces, probably of late Iron Age date, were also present.

A number of hand-made body-sherds with pinched ornamentation; they are to be dated to the late Iron Age (not earlier, as was then the excavators' opinion. See Van Es, 1967b). Many sherds, both wheel-turned and hand-made, from the Carolingian period.

Reference must be made also to the three Roman coins mentioned by Van Cuyck (1789), Byvanck (1947), and Gerrits (1963): they date from the first and second centuries A.D. and, according to Van Cuyck, come from this site.<sup>20</sup>

Van Cuyck 1789, 11, 49; Bursch 1942; De Boone 1942; Byvanck 1947, 173; Van der Vliis 1949, 20–2; Halbertsma 1958a; 1960a; 1964a; Van Es 1967b; Gerrits 1973; 154–6, nos. I–III; Woltering 1973a, 17.

13 Den Burg – Beatrixlaan (fig. 3, 4, 5).

Trial excavation by amateur archaeologists in 1960: excavations by the ROB in 1965, 1967, and 1971–1975, extending to the adjacent Pontweg site (no. 14).

Extensive settlement area with features from many periods – middle Bronze Age: remains of some barrows, surrounded by double post circles; late Bronze Age: many circles of shallow pits with still unknown meaning (these can be dated only on stratigraphical grounds); early Iron Age: house-plans, granaries, pits, circular ditches, arable layers with ard scratches; late Iron Age: some fragmentary house plans, circular ditches; Roman period: house-plans, huts with sunk floors, wells, a system of small ditches, some inhumation graves; Merovingian and Carolingian periods: house plans, huts with sunk floors, wells. During the early medieval occupation and probably as early as the Roman period part of the area was gradually raised with occupation debris.<sup>21</sup> The site seems to have been deserted about the end of the ninth century: sherds of *Badorf* and *Reliëfband*

20 Byvanck mentions four *sesterces* instead of three. According to Gerrits this is caused by a wrong interpretation of Van Cuyck's text.

21 This case is not unique: comparable phenomena have been observed in the centre of De Waal (site no. 7). Besides, some reports of finds seem to indicate that there are several more of these artificially raised settlements on the island, all dating from

the Roman or early medieval periods (especially site no. 23, and possibly also sites nos. 2, 11, 25, and 28). Though this phenomenon is of general importance for the occupation history of Texel, its significance – especially the question whether these mounds are of a terp- or tell-like character – cannot be discussed here (*cf.* Woltering 1973b).

pottery are the youngest settlement finds.<sup>22</sup> The finds from all these periods, except the Bronze Age, are so numerous that no attempt will be made in this brief description of the site to enumerate them. In due time they will be discussed at length in the excavation reports.

Halbertsma 1960b; 1965; Van Es 1967a; 1969; Woltering 1972a; 1973a; 1973b; 1974; Gerrits 1973, nos. iv and v.

14 Den Burg – Pontweg (fig. 3, 4, 5).

Trial excavation by amateur archaeologists in 1961. Features dating from the late Bronze Age-early Iron Age, the late Iron Age-early Roman period, and the Roman period. It is certain that in most occupation periods the site formed part of the large settlement area no. 13. As the finds from this site will also be published in excavation reports, they are not discussed here. Mention must be made, however, of two second century Roman *sesterces*, one certainly of Antoninus Pius, the other probably. Van der Heide 1961; Gerrits 1973, nos. vi and vii; Woltering 1973b.

15 Den Burg – Eyercoogh (fig. 5).

Stray find, possibly indicating the place of a Merovingian cemetery, c. 100 m south of site no. 14.

Half of a hand-made Merovingian urn with cremation.

16 Den Burg – Hollewalsweg 1 (fig. 5).

Stray find from field.

*Alsengemme* with three figures.

Van Regteren Altena/Van den Berg-Hamburger 1967.

17 Den Burg – Hollewalsweg 2 (fig. 4, 5).

Excavation by amateur archaeologists in 1966, when part of a low ridge was levelled, and stray finds. Settlement.

Hand-made pottery, *i.a.* *streefband*-ware and sherds with fingertip impressions, all dating, in so far as can be ascertained, from the late Iron Age-early Roman period. Some sherds of wheel-turned early medieval pottery.

Gerrits a.o. 1966.

18 Den Burg – Hollewalsweg 3 (fig. 4).

Excavation by the ROV in 1964, when a low ridge was levelled. Granaries and circular ditches, evidently belonging to a settlement.

Pottery, including body-sherds with fingertip impressions, dating from the late Iron Age-early Roman period.

Halbertsma 1964b.

19 Den Burg – Hollewalsweg 4 (fig. 4).

Stray finds from escarpment on the boundary between levelled and unlevelled parts of ridge.

Pottery, especially rim-sherds with fingertip impressions, dating from the late Iron Age-early Roman period.

20 Den Burg – Immetjeshoeve (fig. 4).

Stray find from roadside.

Some sherds of hand-made native pottery, late Iron Age or Roman.

21 Den Burg – Akenbuurt (fig. 4).

Stray find.

Some sherds of hand-made native pottery, Roman period.

22 Den Burg – Akenbuurtsweg (fig. 5).

Stray finds on several occasions, the last time in 1968, from ditches dug on the south side of the Akenbuurtsweg. The finds indicate without any doubt that there is a Merovingian cemetery on the site, probably belonging to the Merovingian settlement on Kikkert's Terp (see site no. 23).

Some large sherds and complete pots of wheel-turned Merovingian ware, both coarse and burnished, a few of them containing cremations. One iron spearhead and some glass beads of the same period.

Gerrits/Conijn 1966; Van Tent 1969.

23 Den Burg – 'Kikkert's Terp' (fig. 4, 5).

Many finds from digging operations by the owner of the terrain, Mr J. Kikkert, before the Second World War. Stray finds since then. Probably series of settlements from various periods under and on an artificially raised mound.<sup>23</sup>

Hand-made native pottery, dating from the late Iron Age, and from the Roman period and one sherd of a Roman amphora. One body-herd of Saxon bossed pottery. Sherds, both wheel-turned and hand-made, from the Merovingian and Carolingian periods. Jacob-Friesen 1943a; Van der Vlis 1949, 15; Van der Heide 1957-8, 101-113; Halbertsma 1958b.

24 Den Burg – De Kamp (fig. 4).

Stray finds during road construction, c. 1955.

Sherds of hand-made native pottery, most likely dating from the late Iron Age-early Roman period.

Woltering 1972d.

25 Den Burg – De Oude Kamp (fig. 4).

Stray finds on several occasions, *i.a.* when a low knoll was levelled.

Hand-made native pottery, *i.a.* *streefband*-ware, dating from the late Iron Age-early Roman period and possibly also from the Roman period proper.

Woltering 1972d.

22 See, however, note 15 for recent late medieval finds.

23 See note 21.

26 Den Burg – De Top (fig. 4).

Stray finds, especially during reconstruction work on the Westerweg.

Hand-made native pottery, *i.a.* one large sherd of *streefband*-like ware, but with a decoration of fingertip impressions instead of grooves. Late Iron Age-early Roman period.

27 Den Hoorn – Old Den Hoorn (fig. 5).

Stray finds from sand-pit. The site is that of the old village of Den Hoorn, which was destroyed completely at the end of the fourteenth century or in the fifteenth. As rebuilding took place elsewhere, the site remained waste (*Wüstung*).

Among the large amount of later medieval material there was one sherd of probably Carolingian date.

Van der Vlis 1949; Alta/Conijn 1965.

28 Den Hoorn – St. Donatus (fig. 4).

Stray finds during road construction. Probably a settlement situated on an artificially raised mound, which is still visible in the field.

*Streefband*-ware, rim- and body-sherds with fingertip impressions: late Iron Age-early Roman period. A large amount of hand-made, native pottery, which can be dated either to the late Iron Age or the Roman period proper.

29 De Westen (fig. 4).

Stray finds from sand-pit.

Hand-made native pottery, some with faceted rims, dating from the Roman period. One sherd of Roman terra sigillata.

30 De Westen – Torenhuis (fig. 4, 5).

Stray finds when Westerweg was reconstructed; some sherds of hand-made native ware, either late Iron Age or Roman period and of wheel-turned Carolingian ware.

The field north of the farm 'Het Torenhuis,' between Fonteinsweg and Westerweg, is the site of the old village church of De Westen. Both church and village have long since disappeared (the church tower went last: it was demolished in 1859), but their remains underground, if any, are of special interest, as the church is one of the oldest on Texel, mentioned as early as the tenth century. However, C.S. Ponger's excavation in *c.* 1940 did not throw much light either on the building history of the church or on the ground-plan of the village. The excavation finds, dated by the excavator to the tenth–sixteenth centuries, have been lost, so that their dating cannot be checked.

Ponger 1942; De Cock 1956.

31 Westerduinen 1 (fig. 3).

Stray find from the beach, *c.* 1965.

Flint axe with a roughly chipped surface and a ground cutting-edge, probably belonging to the late Neolithic Protruding Foot Beaker culture.

Woltering 1973a, fig. 9.

32 Westerduinen 2 (fig. 3).

Stray find from the beach, 1967.

Axe with shaft-hole, made from the base of a deer antler. Mesolithic or later.

33 Westerduinen 3 (fig. 5).

Stray find from the beach, 1968.

One sherd of hand-made, probably Carolingian pottery.

34 Westerduinen 4 (fig. 4).

Stray find from the beach, 1964.

One sherd, probably late Iron Age.

35 Westerduinen 5 (fig. 3).

Stray find from the beach.

Flint artefact of the type usually described as a 'sickle.' However, on account of the form, the function of the implement was probably that of a scraper. Bronze Age or early Iron Age.

36 Oudeschild – Hoge Berg 1 (fig. 3).

Stray find from sand-pit, *c.* 1968.

Piece of rock, probably diabase, of a pointed oval shape with a worked surface and an unfinished (shaft-?) hole on both sides. Neolithic?

37 Oudeschild – Hoge Berg 2 (fig. 4).

Stray finds on the edge of sand-pit, 1937.

A large amount of pottery, *i.a.* rim-sherds with fingertip impressions, mainly late Iron Age.

Woltering 1972d.

38 Oudeschild – Hoge Berg 3 (fig. 4).

Stray finds from field (1967) and construction site (1972).

Sherds of hand-made native ware. Roman period.

39 Oudeschild – Hoge Berg 4 (fig. 5).

Stray finds on several occasions (the coin in 1935) on the Hoge Berg itself.

One Merovingian gold coin, a *tiers de sou*, struck at Valence (France) by the moneyer Gaudelinus. One rim-sherd, probably early Merovingian. Some early medieval sherds.

The coin: C(alkoen) 1966.

40 Oudeschild – Hoge Berg 5 (fig. 3).

Stray finds from field, 1969.

Small polished stone adze; piece of rock with holes, made by pecking, on two opposite sides. Neolithic (the adze).

Woltering 1973a, fig. 9.

41 Oudeschild – Hoge Berg 6 (fig. 3).

Stray finds from field, *c.* 1964.

Stone axe and fragment of worn out stone shaft-hole battle-axe: Neolithic.

Halbertsma 1964b; Van Regteren Altena 1964.

42 Den Burg – Hallerweg 1 (fig. 3).

Stray finds from field, 1968.

One double flint scraper, late Palaeolithic or Mesolithic; one semi-circular flint scraper, late Neolithic or Bronze Age.

Gerrits 1970.

43 Den Burg – Hallerweg 2 (fig. 3).

Stray find, 1939.

Fragment of stone shaft-hole battle-axe. Neolithic.

Jacob-Friesen 1943a; Van der Vlis 1949, 14; Van der Heide 1957-8, 99, fig. 3, 4; Woltering 1973, fig. 10.

24 We wish to express our gratitude to Mr J.F. van Regteren Altena (ROB) for the critical reading of the manuscript, to Mr H.S. Simon, who made the drawings, to Mrs M.M.W.J.

44 Den Burg – Wezenland (fig. 3).

Stray finds on several occasions, from field.

Several flint implements, cores and flakes, some of them certainly, others possibly of Mesolithic date.

45 Den Burg – Noordhaffel (fig. 3).

Stray find from field.

Flint implement, probably Mesolithic.<sup>24</sup>

Broekhoven-van der Lans, who did the typing-work, and to Mrs F.M. Daendels-Wilson for improving the English text.

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# Reflections on Dutch Prehistoric Settlements

figs. 1–5

## INTRODUCTION

Since A.E. van Giffen published the first results of his research into prehistoric settlements in the early nineteen thirties,<sup>1</sup> the number of this type of investigation in the Netherlands has increased steadily. Since the fifties, such activities have accelerated. Soon after its foundation, the State Service for Archaeological Investigations also began to do this kind of research.<sup>2</sup>

If one now tries to survey and organize the available material, then a general view emerges that makes clear which periods and which regions have still not received any, or very little attention. It appears that despite the limited land area occupied by the Netherlands, there are still 'blank' areas; as such, the west-central Netherlands, a large part of the eastern Netherlands, and Friesland are noticed at once (fig. 1). Moreover, it is apparent that investigations for large parts of the Neolithic and Early Bronze Ages have not (as yet) produced the clear house-plans that we have come to expect from the excavation results of each such investigation into the Early Neolithic Bandceramic Culture in South Limburg and of the Bronze Age and Iron Age settlements. One thinks of Neolithic cultures such as Rössen, Swifterbant, Michelsberg, Seine-Oise-Marne Culture, Funnel Beaker Culture, and Protuding Foot Beaker Culture.

In considering the lines along which the data can be organized, we would choose a functional approach. That is to say, we would proceed on the assumption that the social and economic structure of a society is reflected concretely in the various material elements of the settlement, in their relationships, and in their totality. A thorough

discussion is beyond the scope of this paper. At the same time, one also realizes that the data do not always lend themselves to such a discussion. The fact is that a considerable number of excavations has a bearing only on a limited part of the settlement. Usually this concerns solely or principally a house-plan, as the most prominent feature.

## HOUSE-PLANS (figs. 2 and 3)

Our knowledge of the structure of the dwellings of Palaeolithic and Mesolithic hunters and foodgatherers is still very deficient. However, through the detailed investigations that have been and are being carried out on various settlement terrains, it may be expected that in due course the essential factors will be ascertained. With regard to the form of the home, a round hut is being considered on the basis of several suggestive observations in our country, and of information from abroad. Also there is frequent talk of dwellings dug into the ground (sunken huts, living and/or working-pits). And indeed in 1971 definite traces were discovered of two Mesolithic huts at St Oedenrode, province of North Brabant.<sup>3</sup> The diameter of these round huts (with cone-shaped roofs?) measures 3 to 3½ metres. The posts are placed in a flat living/working-pit.

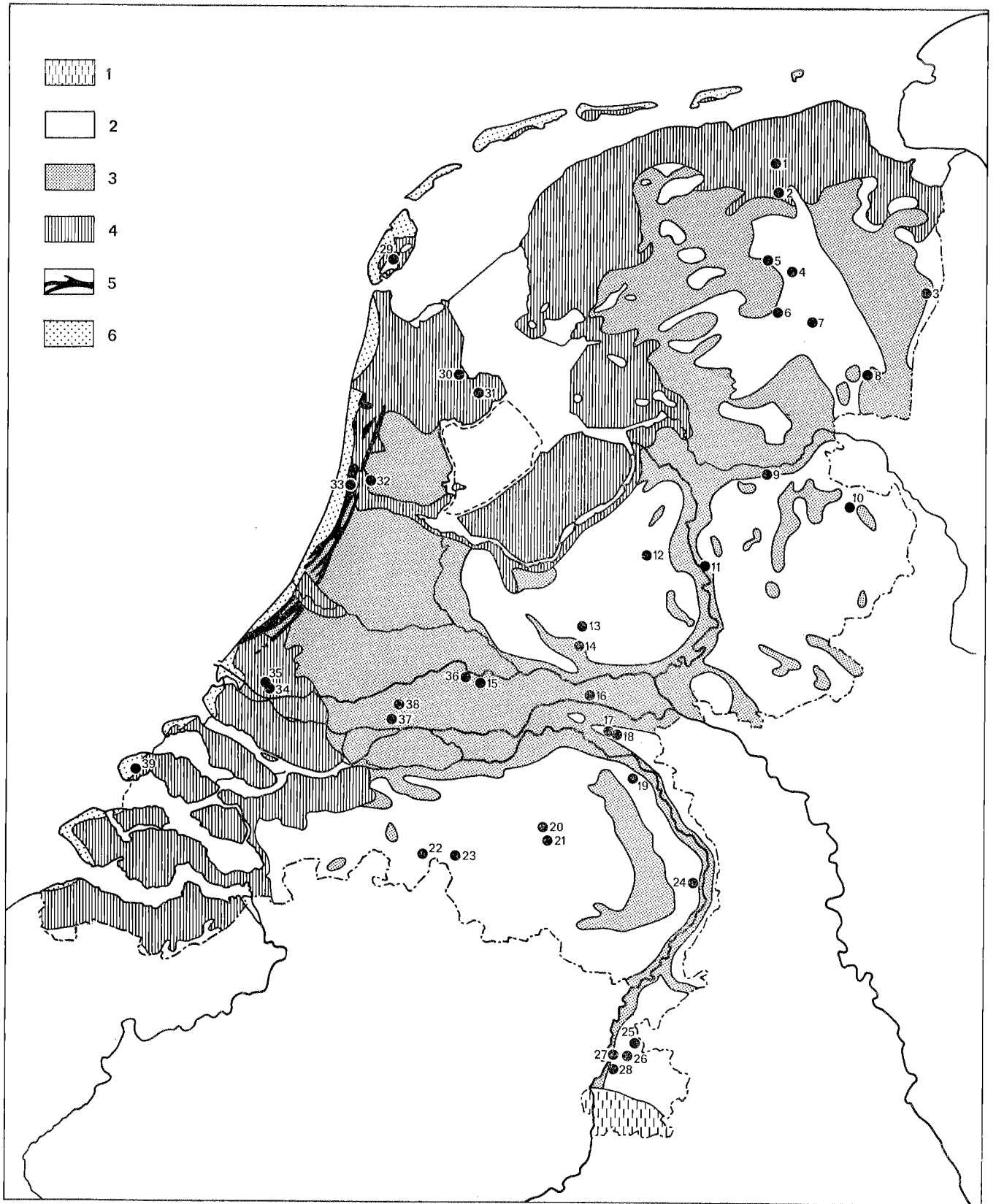
Rectangular house-plans are first known to us from the Early Neolithic period. The investigation of this phase, with Linear Bandceramic, has been so extensive that it is worth-while to give considerable attention to this now and later. In the Bandceramic, Modderman<sup>4</sup> ascertains a

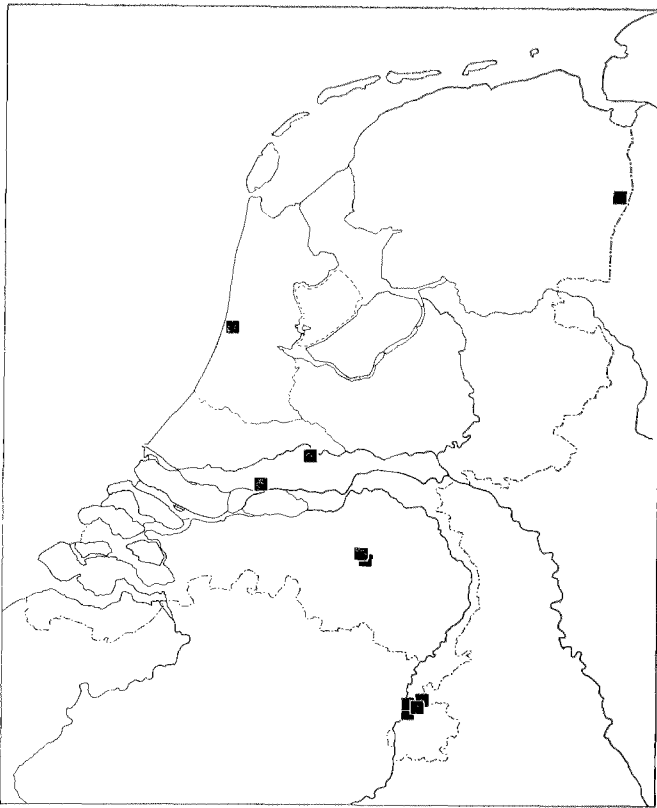
1 Van Giffen 1934 (Peest, municipality of Norg); in 1933 Bloemen published an investigation near Wijchen.

2 Modderman's investigation of the Bandceramic settlements of Sittard and Elsloo was entirely or largely completed in the 1950s.

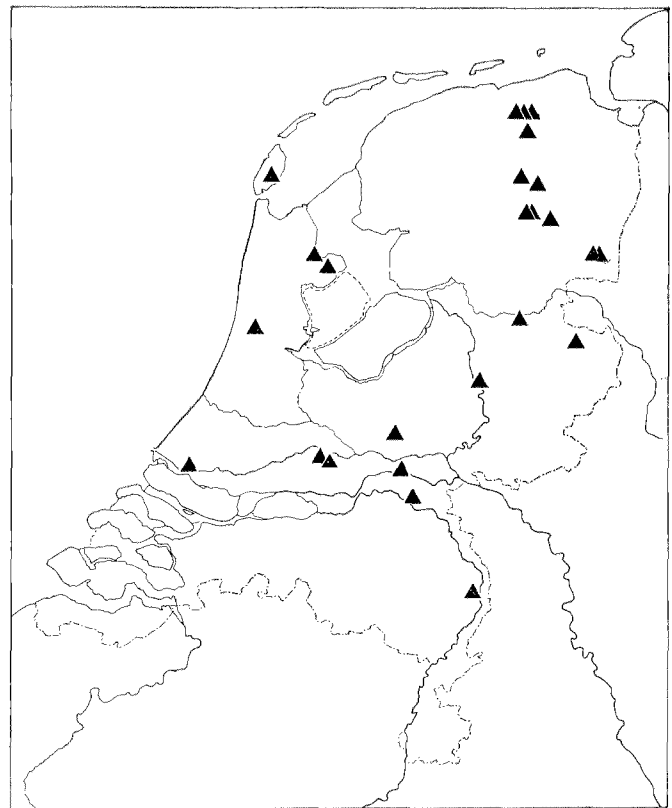
3 Heesters 1971.

4 Modderman 1970, 119.





a

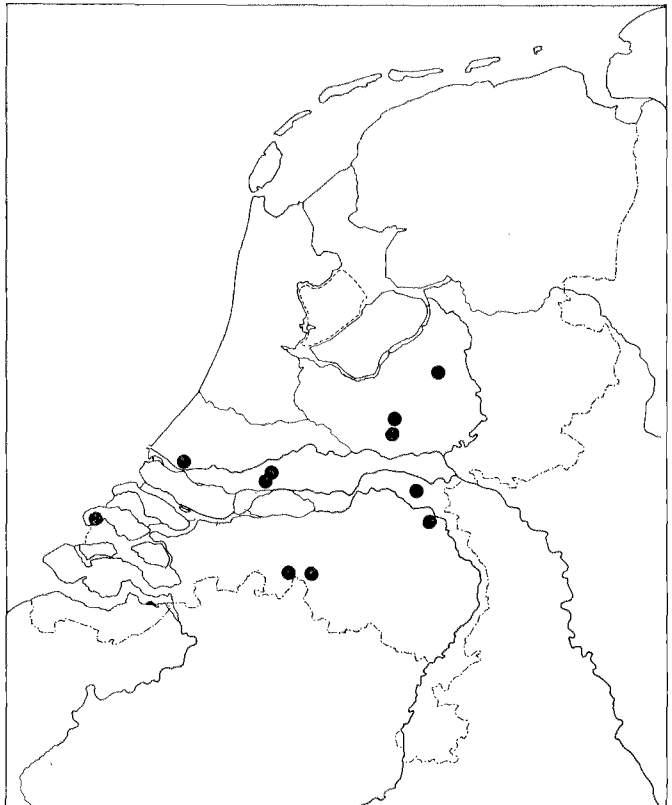


b

Fig. 2a-c Four-aisled (a), three-aisled (b), two-aisled (c) house-plans

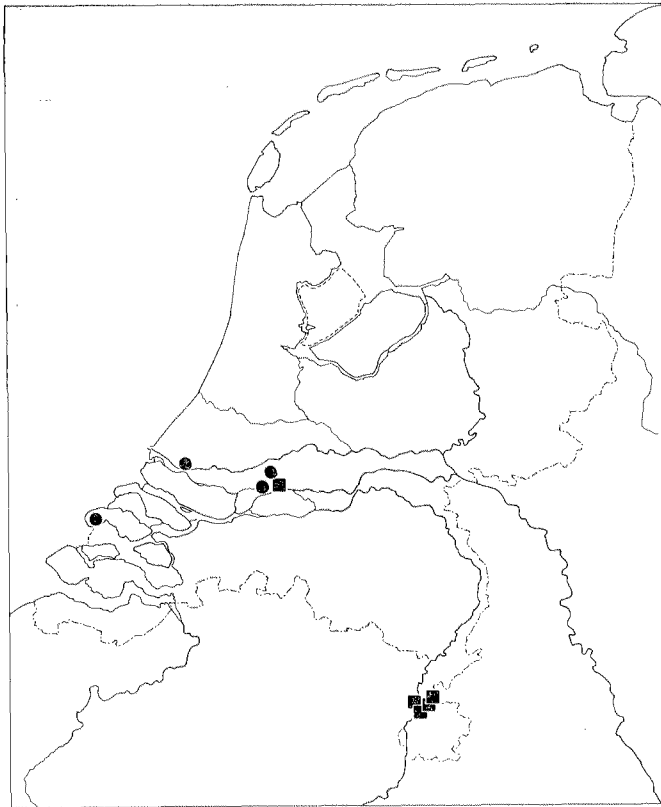
continuous attempt to reduce the number of posts in the interior of the four-aisled buildings. In the course of time, the distance between the roof-posts in the length of the building becomes steadily bigger. In addition, a search is made for a solution to transfer more of the weight of the roof to the walls. However, the latter does not result in a gain of interior space; in the Bandceramic the four aisles continue to keep the same width between them. The increased width in the Late Bandceramic is minimal.

It appears that in the Rössen Culture, for which no house-plans are known in the Netherlands however, a real gain in space is won in the width for the first time. The two outer rows of roof-posts are moved close to the walls, and this gives the two middle aisles more space. Sometimes the posts are placed so close to the wall that there is virtually no longer a four-aisled house plan, but rather it may be said to be a two-aisled house plan: Deiringen-Ruploh, Bochum-

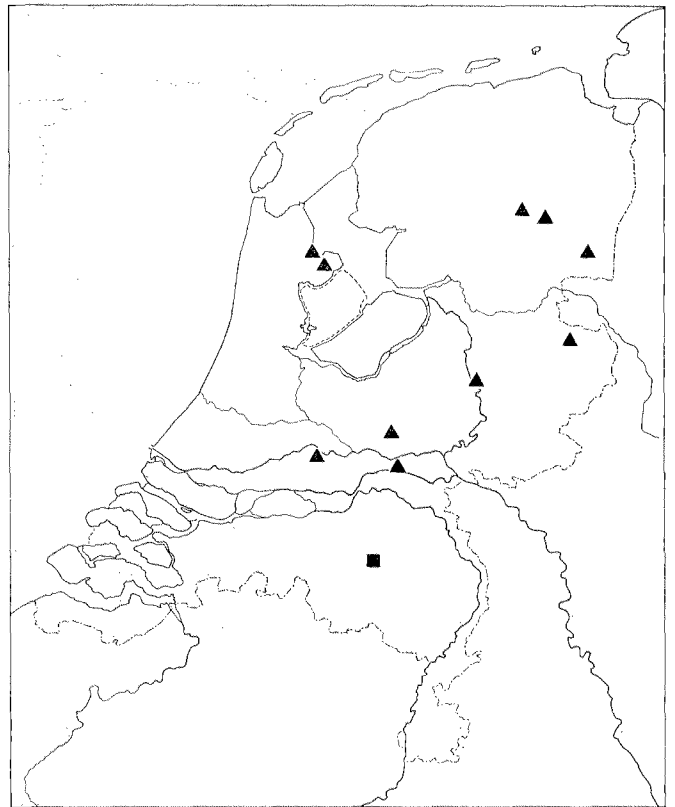


c

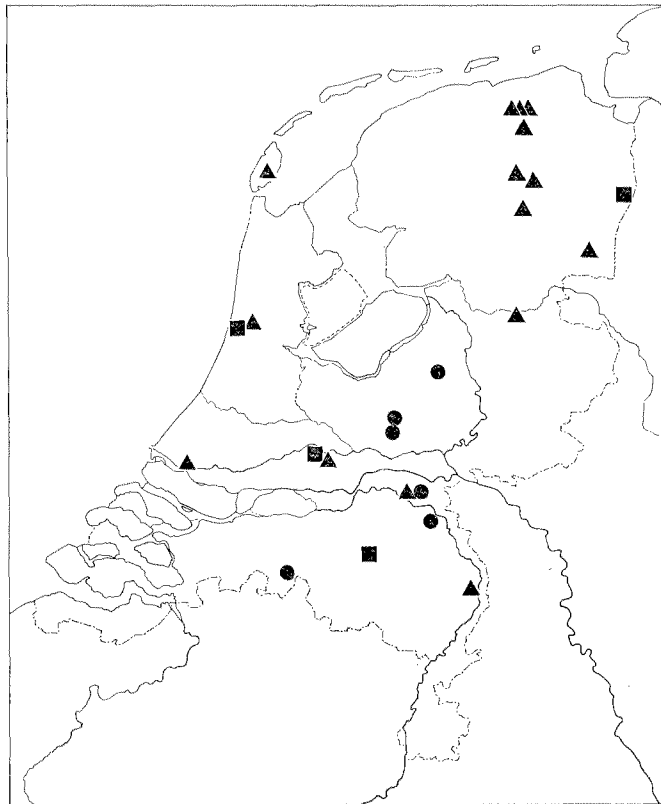
◁ Fig. 1 Sites of house-plans (see Appendix p. 75)  
 1 Cretaceous formations (marl) at or near the surface, 2 Mainly Pleistocene and Tertiary formations (sand and clay), 3 Holocene peat and fluvial deposits, 4 Holocene marine deposits, 5 Coastal barriers and Older Dunes, 6 Younger Dunes



a



b



c

Fig. 3a-c Neolithic (a), Bronze Age (b), and Iron Age (c) house-plans

■ Four-aisled, ● Three-aisled, ▲ Two-aisled

Hiltrop.<sup>5</sup> It is tempting to seize upon this outward trend and to think in terms of a development that would result in the widespread, two-aisled construction method of the Middle and Late Neolithic periods. However that may be, about the time of the transition from the Middle to the Late Neolithic period (Vlaardingen Culture) and of that between the Late Neolithic and Early Bronze Age (Molenaarsgraaf, Ottoland), the two-aisled tradition apparently existed in our country.

We then come to the Bronze Age, where the three-aisled style of building makes its appearance. It is surprising that a building style so obvious to us now should develop so late, after a history of rectangular construction of more than two and a half thousand years. Had there been no earlier inducement? Can one say that only then did activities occur indoors that made such a disposition of the posts necessary? If so, are there grounds for asking oneself whether a drastic change was then taking place – around

<sup>5</sup> Brandt 1954.

the transition from the Neolithic to the Bronze Age – in the manner in which activities were being carried out, or in the activities themselves, and possibly, in connection with them, in the economy?

To judge from several house-plans, the change-over in building style may have had a transitional stage in the form of a four-aisled division: Molenaarsgraaf (see above), Nijnsel (Middle Bronze Age).

A great diversity appears in the Iron Age. Besides the three-aisled construction, we now (again) encounter house-plans with two and four aisles and house-plans in which combinations are present.<sup>6</sup> In Angelslo-Emmerhout there is even a house-plan in which the posts have been placed outside the wall.<sup>7</sup> This divergence is a conspicuous phenomenon in the Iron Age. Again the question arises as to whether this is related to an increased economic (and/or cultural) diversity.

#### MEASUREMENTS AND OTHER CHARACTERISTICS OF THE HOUSE-PLANS (figs. 4 and 5)

House-plans form the most prominent component of settlement investigation. It is this element that has always received the most attention. This is not only understandable, but to a large degree also quite justifiable. Is not the home, the farm-house around which living is concentrated, the element that also pre-eminently reflects social and economic relationships? Simple factors like the length and breadth of the house have a function in this respect. Their significance may still largely be beyond our capacity to interpret, nevertheless it seems meaningful to record these factors. To that end, an attempt was made to collect the greatest possible number of these facts. The results are presented in tabulated form.<sup>8</sup>

In the Bandceramic, the so-called *Grossbauten*, *Bauten*, and *Kleinbauten* are encountered. The first form has a spatial disposition of a northwest part, a middle part, and a

southeast part; the second consists of a northwest part and a middle part; and the third of a middle part only.

The general development in the Bandceramic is, as has already been said, the increasing breadth of the buildings. This is very definitely present with the *Grossbauten* and the *Bauten*, and can, in any case, be distinguished in the *Kleinbauten*.<sup>9</sup> Within the *Grossbauten* group, the breadth increases from 5.00–6.00 metres in the Early Linear Bandceramic to 5.75–6.50 metres in the Late Linear Bandceramic. For the *Bauten*, breadths of 5.00–5.50 and 5.50–6.00 metres, respectively, apply. As to the length of the buildings, it can be ascertained that there is little indication of a change here. A slight decrease with the *Grossbauten* can be observed, and some increase with the *Bauten*. In this connection, it is interesting to note that the *Grossbauten* are concentrated in two (or three) length groups, which remain very stable in the course of time, that is, 17–22 (20) metres and 24.50–29 (28) metres (the third > 30 metres). To understand the significance of this requires penetrating study.<sup>10</sup> Another point is that with the *Grossbauten* and the *Bauten* there is a discernible tendency for the longest buildings to be also the broadest. Not only are the *Grossbauten* wider in general than the shorter *Bauten*, but in each of the categories, this relationship is present too. Because the *Grossbauten*, despite a greater breadth in the Late Linear Bandceramic, increased anything but in length, this relationship cannot, or cannot only, be based on purely technical building factors, but must also have been determined or changed to some extent by the builder himself.

The length of the different sections of the *Grossbauten* have been subjected to changes over the centuries.<sup>11</sup> Generally speaking, the middle section became longer at the cost of both other sections. The result was the somewhat diminished length of the *Grossbauten*, while this phenomenon may not be viewed apart from the great increase in the number of *Bauten* with their northwest and middle sec-

6 With regard to four-aisled construction, one may be permitted to doubt whether there really always is the question of a true four-aisled building. With this complex of problems, much depends on the disposition of the posts and the depth of the post-holes.

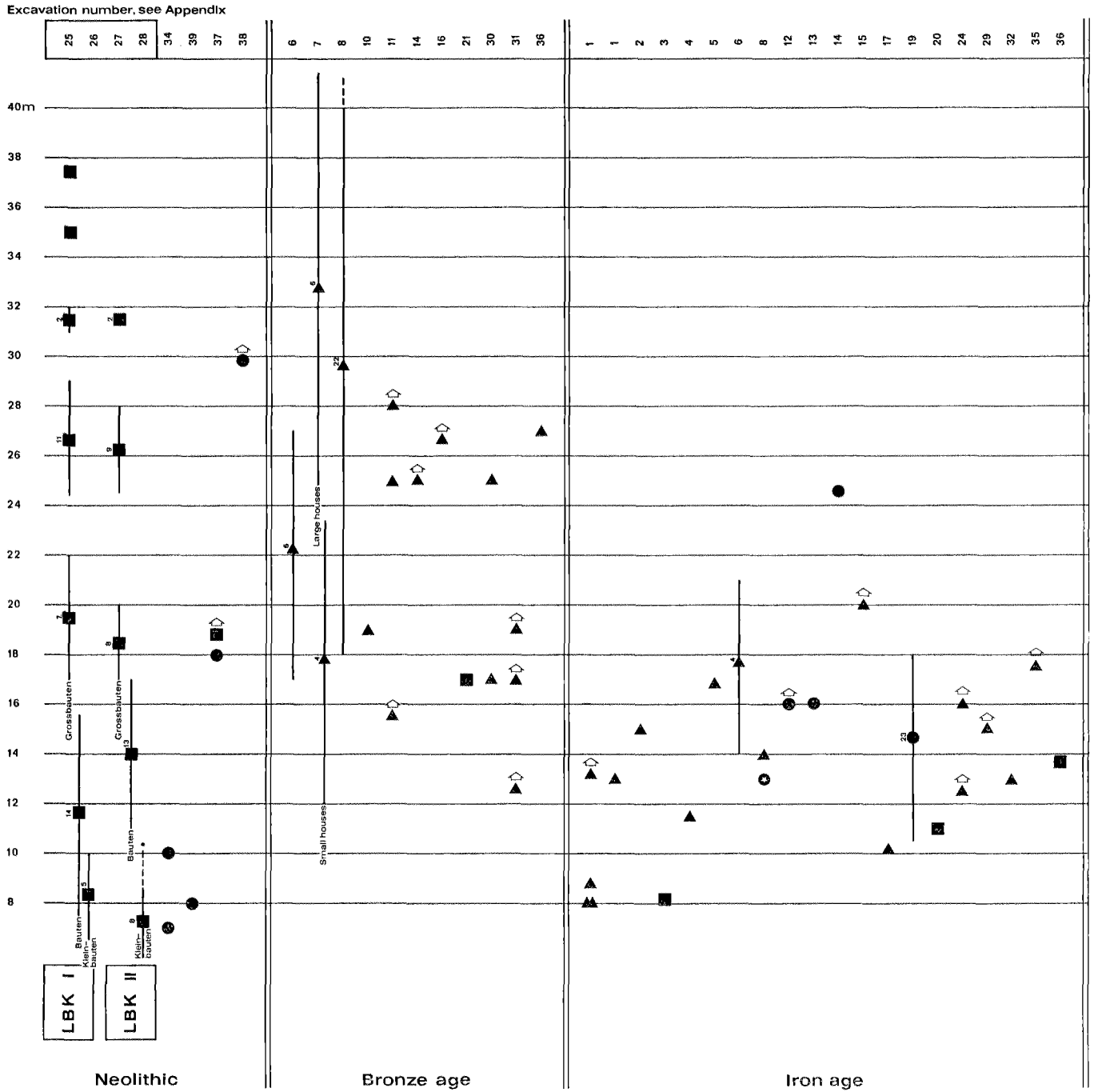
7 Van der Waals/Butler 1973.

8 Many colleagues have made their as yet unpublished data available. The writer of this paper is well aware of the possibility that various errors may have slipped into it. An incorrect evaluation of house-plans difficult to interpret is one source of error, for instance, and an inaccurate measurement is a second source.

9 The dissertation involves a total of 87 house-plans from settlements in Geleen, Sittard, Stein, and Elsloo, the *Grossbauten* 42 (Early *LBK* 22, Late *LBK* 20), *Bauten* 31 (13 + 18), and *Kleinbauten* 14 (5 + 9).

10 The majority of Elsloo buildings belong in the second group: 12 against 4 in the first. On the other hand, most of the buildings of Stein and Sittard belong in the first and smallest group: 10 against 7 in the second.

11 Modderman 1970, 100–7.



LBK I, II 1 ■ 2 ▲ 3 ● 4 ⊕ 5 — 6 ◊ 7

Legends to figs. 4 and 5:

1 Linear Bandceramic (LBK) Periods I and II (Modderman 1970),  
 2 Four-aisled, 3 Three-aisled, 4-Two-aisled, 5 Angelslo-Emmerhout (see p. 69), 6 Range of measurements and number of plans involved, 7 Plan incomplete, minimal length

Fig. 4 Measurements of house-plans: lengths

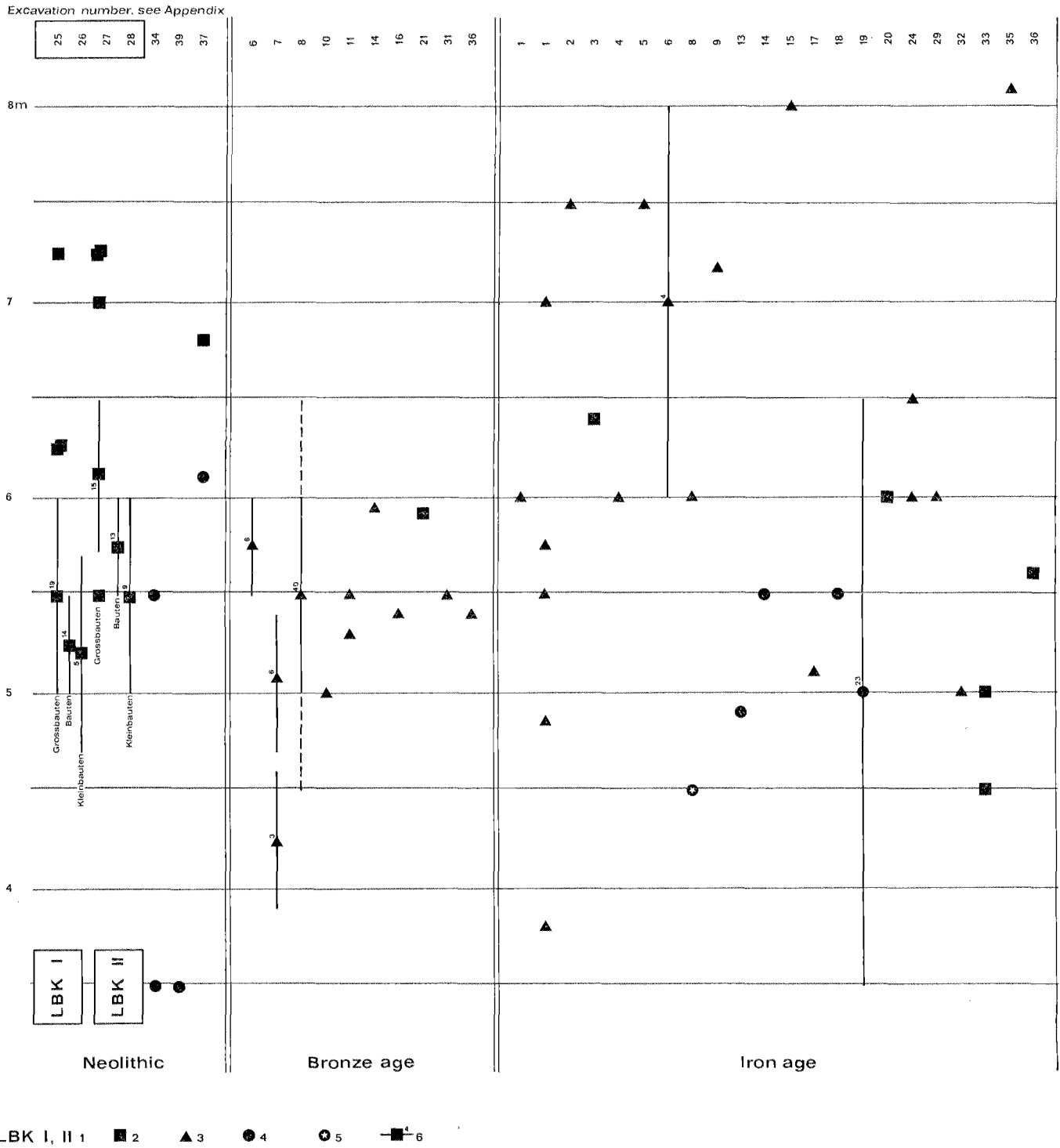


Fig. 5 Measurements of house-plans: widths

tions; at the same time, the *Grossbauten* diminished proportionately in number, and the *Bauten* became longer in contrast to the *Grossbauten*. Connected with this complex of problems is the question as to the functional significance of the three distinguishable sections in Bandceramic houses. It can only be said that the interpretation of the middle section as living-quarters seems to have much in its favour. All the rest is pure hypothesis.

The limited data from the later periods in the Neolithic Age – in the Netherlands, only from the Vlaardingen Culture – do not contradict facts met elsewhere in Europe: two-aisled houses of limited size. With regard to the Dutch Funnel Beaker Culture, we may perhaps also think of houses with small measurements, such as at Dümmersee and Wittenwater in northwest Germany.<sup>12</sup>

Owing to the considerable number of house-plans from the Bronze Age and the Iron Age, Dutch prehistory has at its disposal a series of facts which from the start does not seem to show any essential gaps. It looks very much as if the house-plans of Molenaarsgraaf and Ottoland, Late Neolithic-Early Bronze Age, can be placed at the beginning of the series.

The important changes in the measurements of the house-plans in this series are of great significance. The average house in the Bronze Age had a length of 25 m.<sup>13</sup> In the Iron Age the houses are considerably shorter. The average is 15 metres; houses of 20 m or more are already exceptional. Because a large part of Bronze Age houses was taken up by accommodation for livestock, it is obvious that livestock breeding (cattle) was of considerable importance in the Bronze Age. In this regard, it is surely of interest to know when the trend toward these long houses began. Is the beginning to be seen in the houseplans of Molenaarsgraaf and Ottoland?

The increasing variation in width measurement is also noteworthy. Most Bronze Age houses are between 5 and 6 metres broad. Against that, the picture in the Iron Age is not very coherent. Notably, the increase is a salient feature. There are houses with a breadth of 8 m. Involuntarily one is reminded of the diversity in building style which also is characteristic of the Iron Age (see above). A rela-

tionship is certainly not excluded, but this is definitely not of a direct nature. For it is remarkable that practically all houses wider than 6 m in the Iron Age were built in the already traditional three-aisled construction style.

The differences in building methods, the shorter length and the greater variation in the breadth of Iron Age houses, after the relatively 'uniform' Bronze Age, are facts that can probably be traced to a change and, at the same time, to a greater degree of diversity in the social and economic sectors. As appears from the character of the Early Iron Age houses at Een, Zijderveld, and elsewhere, these changes seem to have taken place at an early stage. In a great many cases, it is possible to show a division into functionally separate areas in the house-plans, or at least to make such a division plausible. When the original surface in and around a house has survived, the spread of the refuse makes clear where the living-quarters and where the working-area(s) must be sought. In such cases, there is also a good chance of coming across the hearth. In a house-plan, phenomena such as an alteration in the intervals between the roof-posts, one or more entrance points, a partition-wall, or a difference in wall construction often offer, separately or in combination, enough to go on.

At least from the Bronze Age on, we are accustomed to count on a two-part design in the house-plan. Of the two parts, the occupier reserves one for all those aspects of his 'family life' which take place indoors, in the living-area. The other is intended to house an important part of his goods and chattels which form the basis of his economy. In the first place, one may think of stabling for livestock. Traces of a stabling arrangement, such as cattle-boxes, have been found more than once.<sup>14</sup> The Bandceramic shows an entirely different picture in this regard. The three-part arrangement in the house-plan is a regular feature in this early Neolithic culture, even if one or two parts, always the same, are missing, such as is the case in the *Bauten* or *Kleinbauten*. It does seem certain that this difference is very directly related, on the one hand, to the absence of the so-called farmyard or outbuildings, and, on the other hand, to their presence, at least since the Bronze Age. In a formal sense, one could say that the

12 The configuration of posts under hunebed D VI at Tinaarlo, province of Drenthe (Van Giffen 1944), has nothing to do with a house-plan (oral communication Professor W. Glasbergen); cf. De Laet/Glasbergen 1959, 76.

13 A house-plan of 65 m in the settlement at Angelslo-Emmerhout is an extreme example.

14 Some house-plans from the Bronze Age lead to the supposition that there was a three-part arrangement, in which a second working-area (storage, working-space?) was located between the living-quarters and the stable (this vol. pp. 103 ff.).



third function in Bandceramic house-plans was later transferred to the outbuildings. As to the content of this function, one is inclined to assume that this was primarily related to storing crops and field products, food for man and beast.

#### FARMSTEADS

The farmyard buildings can be roughly divided into bigger and smaller barns, which are mostly shorter than the houses, and into the so-called granaries (*spicaria*).

As far as is known,<sup>15</sup> the barns seem to be constructed according to the same principle as the houses. In the literature on the Iron Age, however, there is never talk of barns, but only of dwellings or farm-houses and granaries.<sup>16</sup> Unless the barns were the same as or very like the houses, it has to be assumed that this image agrees with reality. This question is worth bringing up because investigations for both the Bronze Age and Roman period offer enough opportunities to determine the presence of barns.

Granaries are small sheds with a square or rectangular ground-plan. The most current are granaries with 4 (2 × 2), 6 (2 × 3), or 9 (3 × 3) posts.<sup>17</sup> The general idea is that crops or field products were stored on a floor placed on top of posts, raised off the ground to prevent decay and to prevent the crops from being eaten by animals. The impression is that granaries played a significant role in both the Bronze and the Iron Ages, in view of the number that are found in a settlement. There is no reason to assume that their importance was greater in one of these periods than in the other.

The number of cases in which more than the house-plan has been excavated is still not very large. Therefore it is surely too soon to give a well-grounded summary of the character and composition of a farmstead, to say nothing of doing justice to possible regional diversity and the development in the course of time.

15 It is understandable that farmyard buildings do not attract attention because of the frequent absence of accompanying habitation remains (finds). Therefore they appear by chance or only in the context of extensive investigation, which in recent years is increasingly becoming the normal procedure.

16 A good example is the settlement at Haps, where all 23 house-plans discovered are interpreted as dwellings. The settlement at Hijken is an exception.

17 A survey of the types of granaries is given by Müller-Wille 1966, 394–8 and fig. 21.

#### THE SIZE OF THE SETTLEMENT

We should now ask ourselves how many houses or farmsteads made up a settlement. A settlement is here understood to be the form of occupation that appears in a single context or within certain narrow boundaries.<sup>18</sup>

In respect of this question, obviously only those settlements can be of use where investigations have been carried out on a large scale. At the same time, one should have access, if possible in combination, to facts of stratigraphic kind, vertical or horizontal, a sufficient number of absolute dates, a certainty regarding the degree of continuity of occupation, and a knowledge of the average life-span of a house, possibly supplemented by facts relevant to the cemetery (-ies) of the settlement.

Such a complex of problems as this requires a total investigation, something which Dutch archaeology has still only achieved in a limited measure. Modderman has made an interesting attempt with respect to the Bandceramic in South Limburg.<sup>19</sup> On the basis of stratigraphic data and the total life-span (<sup>14</sup>C convent.) of the settlement at Elsloo, investigated on a large scale and combined with the total of the number of houses assumed on reasonable grounds, and with an also presumed average house duration (25 years), he calculated that a settlement phase consisted of an average number of 9–14 houses (Modderman 1968: 10–15 houses).<sup>20</sup> In addition, Modderman supposes that the settlement in the later phases of the Bandceramic could have been bigger than in the earlier phases. Demographic considerations, to which the Elsloo cemetery from the last phases of the Bandceramic give rise, cannot be brought into direct relationship with our question. With the addition of several suppositions not unreasonable in themselves, it appears, indirectly, that the conclusions to which these considerations lead are very much in agreement with the above calculation, however. No less interesting is the reasoning of Waterbolk, in this

18 In addition, there is room for a settlement form such as the hamlet, a number of scattered farmsteads which jointly use a single farming and grazing complex. However, within the conventional context of archaeological investigation, the hamlet is difficult to trace.

19 Modderman 1972, 82–3; 1970, chapter ix.

20 Earlier, Modderman had already supposed that there was a phase when the Sittard settlement was enclosed, possibly comprising 10 houses (1958–9, 115–6). This phase is part of Sittard phase 2, in the present division of Bandceramic phase 1 c.

instance concerning the Bronze Age settlement of Elp.<sup>21</sup> On the basis of the number of farmsteads that were present in the almost completely investigated settlement and the length of time of occupation (480 years <sup>14</sup>C convent., 550 years <sup>14</sup>C dendrochron.) and noting the regular spread in time of the relevant <sup>14</sup>C dating, we may conclude that the settlement had an *Einzelhofsiedlung* character. Consequently, a single farmstead must have had an average duration of 80 years, which leads Waterbolk to make allowances for interruptions in its occupation, quite rightly in our opinion.<sup>22</sup>

Regarding the more or less completely investigated settlement from the Iron Age (- Roman period?) at Haps, Verwers<sup>23</sup> observes that the average size consisted of five houses at most, albeit in an unknown number of differentiated phases. But Verwers also indicates that the actual number was very probably smaller.

The dwelling mound (terp) near Hoogkarspel, dated approximately to the transition from the Late Bronze Age to the Early Iron Age, seems to have been the site of a very limited number of farmsteads, if the number was greater than one, after all.<sup>24</sup>

The three oldest phases, all dating from the Iron Age, of the *epochemachende* terp of Ezinge<sup>25</sup> present the following picture. The oldest settlement vi, located under the terp, appears to have had two farm-houses; they separate into two sub-phases. The oldest terp phase v is considered as a unit of at least four farm-houses. The following phase iv, dated to the end of the Iron Age and to the early Roman period, shows a considerable expansion of the terp (diameter now about 100 m). The farmsteads are now arranged radially around the middle of the mound. The number of houses is unknown, but may be estimated at several. The Paddepoel settlement near Groningen<sup>26</sup> may be related to Ezinge, since centres i and iii are roughly contemporary with Ezinge iv. The impression is that the houses of centres ii and iii were arranged radially. The houses, initially at ground-level, were later built on individual terps (farm-house terp or platform). These plat-

forms gradually came closer to each other, but the erection of one single big terp failed to materialize (frustrated terps). The number of settlement houses present at the same time is not known. In any case, the number was very limited.

These examples will have to suffice. At any rate there is but little that can be added. This survey makes several matters clear. As far as can now be determined, the Bandceramic occupies a very special place in Dutch prehistory. Villages as large as those of the Bandceramic appear to be unknown in the subsequent course of prehistory. The largest imaginable size of a settlement in the Bronze Age or Iron Age seems to have been five houses or farmsteads. Rather, it can be noted that a settlement form consisting of one farmstead (*cf.* Elp) perhaps occurred frequently.

More than once, the so-called Mesolithic period base camps appear to have consisted of a restricted number of dwellings (R.R. Newell, oral communication). The settlement of the type site of the Vlaardingeng Culture also does not seem to have been larger than a few houses at most.<sup>27</sup> The Bronze Age settlement at Angelslo should be considered as a hamlet comprising at least two or three houses or farmsteads.<sup>28</sup> Even the medium-sized farming complex of the Iron Age, like the Celtic fields near Vaassen,<sup>29</sup> in fact appears not to have had more than two farm-houses, at least in the primary clearance phase. It is possible that afterwards – at the end of the Iron Age and also at the beginning of the Roman period – the settlement was larger in size. It may be that Ezinge iv indicates that at the end of prehistory a development occurred, though perhaps still not everywhere nor at the same tempo, that led to the formation of larger settlements.

One of the determining factors for the size of the settlement is the character of the terrain – and of the soil. In the Netherlands, the elements of this factor are often characterized by a rapid variation in terms of space. The small scale of the Dutch landscape, a consequence of this, did not facilitate prehistoric settlements of considerable size.

21 Waterbolk 1964; 1970, 10.

22 Note should be taken of the considerable difference in duration that Modderman assumes for Bandceramic houses. Investigations in West Germany (Kossack 1970) and Denmark (Vebæk 1970) seem to indicate a duration of about 40 (?) to 60 years. The frequent observation that in Ezinge iv, 5 to 10 houses were built on top of each other on a single site calls for a further investigation (Van Giffen 1936, 44).

23 Verwers 1972, 120–1.

24 Bakker/Brandt 1966.

25 Van Giffen 1936; De Laet/Glasbergen 1959, 175–8.

26 Van Es 1968.

27 Van Regteren Altena a.o. 1962, 23–4; Waterbolk 1970, 9.

28 Biological-Archaeological Institute 1920–1970, explanation of exhibition 1970, 18.

29 Brongers 1972.

## APPENDIX

*Sites of House-Plans and Relevant Literature**Groningen*

- |   |           |                 |
|---|-----------|-----------------|
| 1 | Ezinge    | Van Giffen 1936 |
| 2 | Paddepoel | Van Es 1968     |
| 3 | Sellingen | Van Giffen 1939 |

*Drenthe*

- |   |                    |                           |
|---|--------------------|---------------------------|
| 4 | Rhee               | Van Giffen 1940           |
| 5 | Een                | Van der Waals 1963        |
| 6 | Hijken             | Harsema 1971              |
| 7 | Elp                | Waterbolk 1964            |
| 8 | Angelslo/Emmerhout | Van der Waals/Butler 1973 |

*Overijssel*

- |    |          |                                      |
|----|----------|--------------------------------------|
| 9  | Varsen   | Verlinde 1972                        |
| 10 | Vasse    | Oudheidkamer Twenthe,<br>unpublished |
| 11 | Deventer | Modderman 1955                       |

*Gelderland*

- |    |           |                           |
|----|-----------|---------------------------|
| 12 | Vaassen   | Brongers 1972             |
| 13 | Lunteren  | Verwers 1972              |
| 14 | Ede       | ROB, unpublished          |
| 15 | Culemborg | Louwe Kooijmans 1966      |
| 16 | Dodewaard | Hulst 1967                |
| 17 | Wijchen   | Bloemen 1933              |
| 18 | Wijchen   | Bursch 1935; Verwers 1972 |

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*North Brabant*

- |    |               |                 |
|----|---------------|-----------------|
| 19 | Haps          | Verwers 1972    |
| 20 | St. Oedenrode | Beex 1969       |
| 21 | Nijnsel       | Beex/Hulst 1968 |
| 22 | Alphen        | Binck 1945      |
| 23 | Hilvarenbeek  | Verwers 1970    |

*Limburg*

- |    |              |                  |
|----|--------------|------------------|
| 24 | Grubbenvorst | Bloemers 1970    |
| 25 | Sittard      | Modderman 1958-9 |
| 26 | Gelcen       | Waterbolk 1958-9 |
| 27 | Stein        | Modderman 1970   |
| 28 | Elsloo       | Modderman 1970   |

*North Holland*

- |    |             |                               |
|----|-------------|-------------------------------|
| 29 | Den Burg    | Woltering 1973                |
| 30 | Medemblik   | Van Regteren Altena a.o. 1968 |
| 31 | Hoogkarspel | Bakker a.o. 1968              |
| 32 | Assendelft  | Hallewas 1971                 |
| 33 | Santpoort   | Modderman 1960-1              |

*South Holland*

- |    |                |                                      |
|----|----------------|--------------------------------------|
| 34 | Vlaardingen    | Van Regteren Altena a.o. 1962        |
| 35 | Vlaardingen    | Havelaar 1970                        |
| 36 | Zijderveld     | Hulst 1966 and this vol. pp. 103 ff. |
| 37 | Molenaarsgraaf | Louwe Kooijmans 1974                 |
| 38 | Ottoland       | Louwe Kooijmans 1969                 |

*Zeeland*

- |    |           |                    |
|----|-----------|--------------------|
| 39 | Haamstede | Trimpe Burger 1958 |
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# Grabfunde mit frühen Glockenbechern aus Gelderland und Limburg

Abb. 1–19

## EINLEITUNG

Bei der Untersuchung eines Grabhügels unter Doorwerth wurde 1972 ein reicher Grabfund geborgen, der aus einem Becher vom Typ 211d, einem zweiten Becher, einem GP-Dolch und einem kleinen Beil aus Feuerstein bestand. In den Niederlanden sind schon früher vergleichbare Fundassoziationen mit Bechern vom nah verwandten Typ 211a zum Vorschein gekommen, die noch nicht oder unzulänglich veröffentlicht wurden, nämlich Funde aus Baexem und Helden-Koningslust (Abb. 1). Wir wollen die Gelegenheit wahrnehmen, das Material bezüglich dieser interessanten Becherassoziationen und noch einiger hiermit zusammenhängender Funde kritisch zu besprechen. Die kulturhistorische Bedeutung dieser Gruppe von Funden wird in anderen Aufsätzen beleuchtet,<sup>2</sup> dennoch werden wir am Schluss dieses Artikels versuchen, einige der hier besprochenen Funde in den grösseren Zusammenhang einzuordnen.

## DOORWERTH (R.S.H.)

Am 4. und 6. Oktober 1972 haben der Verfasser dieses Abschnitts und Herr K. Greving, technischer Mitarbeiter, bei Doorwerth-Kievidsdel (Abb. 2 und 3) die behelfsmässige Untersuchung eines Grabhügels vorgenommen, der bis dahin nicht mit Sicherheit als solcher bezeichnet werden konnte.<sup>3</sup> Die Untersuchung fand mit Hilfe von

Rijkswaterstaat, Arrondissement Arnhem statt. Der Hügel wurde an den oben erwähnten Tagen im Rahmen der Verlegung der Reichsverkehrsstrasse Rhenen–Arnhem zwischen Renkum und Heelsum durch Maschinen entfernt.

Der Hügel liegt auf den fluvioglazialen Ablagerungen an der Nordseite des südveluwschen Stauchwalls nahe bei dem steilen Südrand des Erosionstales des Heelsumer Baches (Abb. 2). Die Ablagerungen erwiesen sich dort als schwach lehmig und in hohem Grade kieshaltig. Etwa 0,25 m unterhalb der Bodenoberfläche befindet sich ein sogenannter 'Geröllboden'. Bei der Abgrabung des westlichen Teiles, eines Teiles der nördlichen und der südlichen Seite des ca. 20 m breiten und ca. 2 m hohen Hügels sind keine Nachbestattungen, ebensowenig Verfärbungen oder andere relevante Erscheinungen festgestellt worden. Eine Ausnahme bildete eine vage grabenförmige Verfärbung, die an einer Stelle im westlichen Hügelteil unter der alten Oberfläche entdeckt wurde (siehe unten). Auch kamen hier und da vereinzelt Keramikscherben, die aus der Eisenzeit datieren, zum Vorschein. Am südlichen Hügelrand wurden ein Randfragment handgeformter und ein Wandfragment gedrehter römischer oder frühmittelalterlicher Keramik gefunden. Mit Ausnahme des Kernhügels, dessen Beschreibung hier folgt, entzieht sich der Hügel jeder Möglich-

1 Übersetzt von Frau Röling-Gellinek (Ezinge).

2 Lanting/Mook/Van der Waals 1973; Lanting/Van der Waals, in Vorbereitung.

3 Nach der Untersuchung wurden wir auf die Mitteilung hingewiesen, die E.J. Demoed in seinem Buch 'Van een groene zoom aan een vaal kleed' (Oosterbeek 1953) in Hinsicht auf diesen Hügel macht (S. 115). Er schreibt, dass 1925 beim Bau der Wohnung Utrechtsestraat 456 in Doorwerth in einem bei dieser Wohnung gelegenen Hügel 'einige Urnen' gefunden

worden sind. Diese Adresse ist die gleiche wie die Adresse der Anfang Oktober 1972 ebenfalls abgerissenen Wohnung, hinter der der fragliche Hügel lag. Deutlich war auch zu sehen, dass der Hügel zum Teil senkrecht abgegraben war, anscheinend um dem Haus Platz zu machen. Vermutlich sind bei dieser Gelegenheit die oben erwähnten Funde gemacht worden. Auf einer Karte (S. 104–105) gibt Demoed die in seinem Buch angeführten Fundplätze an. Auf dem betreffenden Gelände ist ein Grabhügel mit der Notiz 'Urnen (1925)' eingezeichnet.

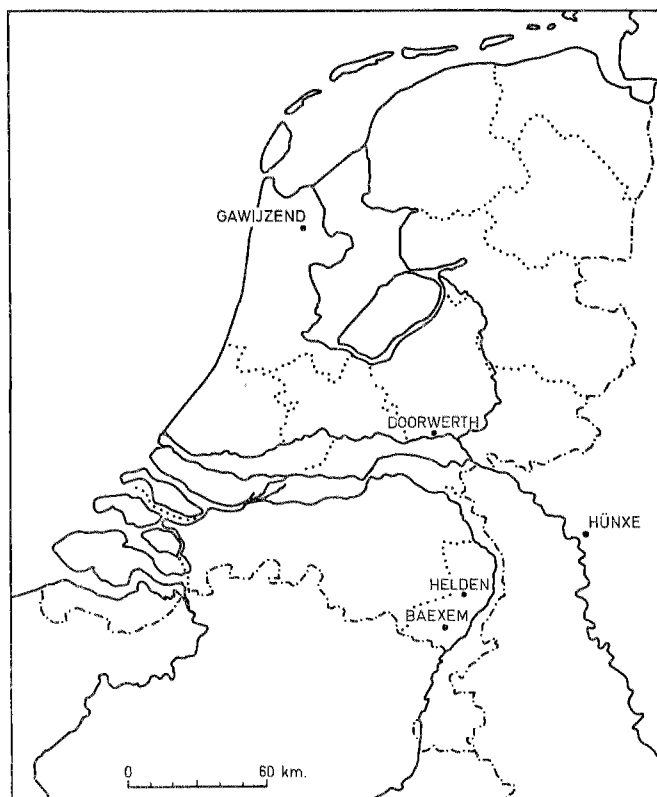


Abb. 1

keit der Einsicht in Strukturen, Periodisierung und Datierung. Im Zentrum war jedoch ein deutlicher Kern vorhanden, der offensichtlich, wie unten näher dargelegt wird, als die älteste Periode eines Zwei- oder Mehrperiodenhügels betrachtet werden kann.

*Kernhügel* (Abb. 4): Der Kernhügel war auf einem 'Holt'-Podsol<sup>4</sup> mit einem grauen, in dunklen und hellen Flecken gebrochenen A-Horizont, einem hell orangebraunen, nach unten vager werdenden B-Horizont und einem gelben C-Horizont. Der A-Horizont enthielt einige vereinzelte Holzkohlenpartikel. Ungefähr 3 m nördlich des Hügelzentrums befand sich eine ziemlich umfangreiche Konzentration grösserer Teile Holzkohle. Auf der alten Oberfläche lag eine 0,06 m dicke Schicht sauberen gelben Sandes. Man hatte den Eindruck, dass diese Schicht zum

4 De Bakker/Schelling 1966.

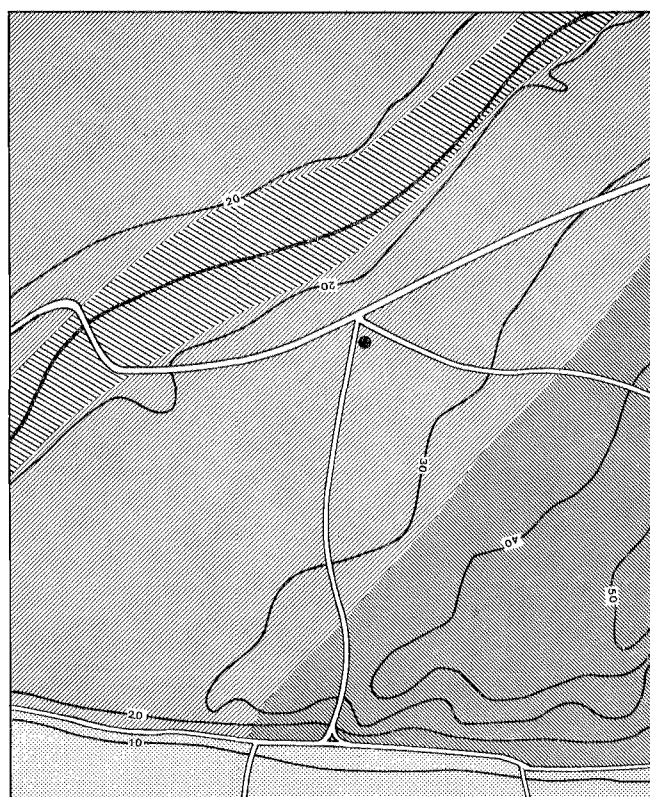


Abb. 2 Doorwerth. Geologische Lage des Grabhügels, 1 : 25.000; 1. glaziale Stauchwall; 2. fluvioglaziale Ablagerungen; 3. Talböden; 4. holozäne Flussablagerungen

Hügelrand hin verlief. Der Hügel selbst war aus B-Material aus dem ursprünglichen Bodenprofil mit verschiedenen Teilen aus dem A-Horizont aufgebaut; letztere ähnelten sehr stark Plaggen. Im Hügelkörper kamen Fibern vor. In einer Höhe von max. 1,00 m war ein durchschnittlich 0,20 m dicker, etwas diffuser Horizont von schmutziggrauer Farbe festzustellen. Es ergab sich entschieden der Eindruck, dass dieser Horizont die oberste Schicht des Kernhügels bildete. Bei einer unvollständigen Untersuchung wie dieser besteht über den Umfang dieses Hügels keine Gewissheit. Aus einzelnen bekannten Tatsachen wie der Lage des Zentrums und dem Verlauf der obersten Schicht kann man darauf schliessen, dass an einen Hügel mit einem Durchmesser von 11 bis 12 m und einer Höhe von ca. 1 m gedacht werden kann. Im Hügelzentrum konnte ein Teil, der 4 × 5 m gross war, eingehend untersucht werden. Hierbei wurden zwei Entdeckungen gemacht: ein wahrscheinlich

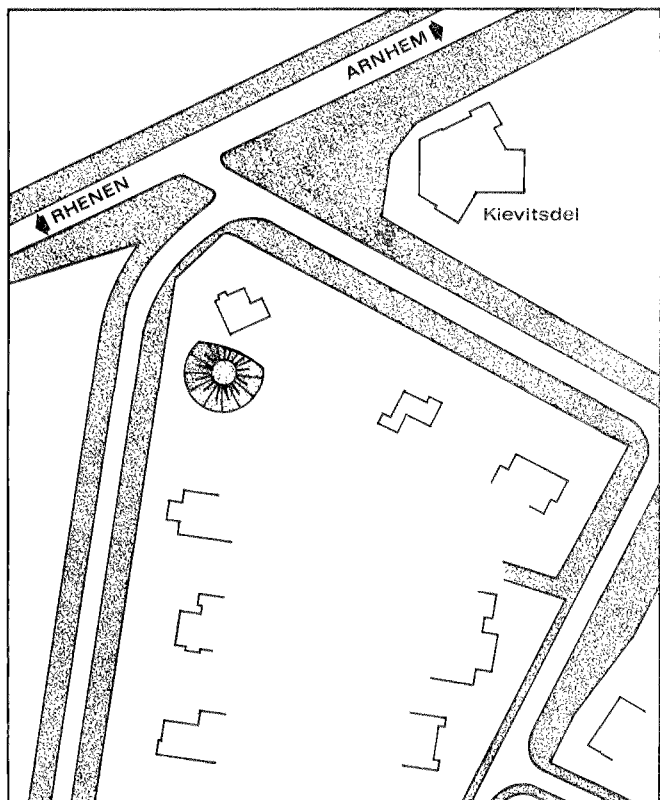


Abb. 3 Doorwerth. Lage des Grabhügels, 1:2000

sekundäres Grab und die Strukturen der primären Beisetzung. Das sekundäre Grab zeichnete sich im Hügelkörper dicht oberhalb der alten Oberfläche als eine  $1,90 \times 1,90$  m grosse, mit dunkler Humuserde oder Plaggen gleichmässig gefüllten Grube ab. In der östlichen Hälfte löste sich diese Grube auf der Höhe der alten Oberfläche bis max.  $0,10$  m darunter in eine  $1,30 \times 0,60$  bis  $0,70$  m grosse, rechteckige, nordsüdlich gerichtete Grube auf, die eigentliche Grabgrube. Spuren des Toten und/oder eventuelle Beigaben fehlten.

Das primäre Grab (Abb. 4): Bestimmendes Element in dieser primären Struktur ist ein eckig-runder Graben. Ausschliesslich die Tiefe dieses Grabens ist genau zu bestimmen ( $0,60$  m). Dadurch, dass sich der anstehende Boden an beiden Seiten des Grabens (über eine Totalbreite von  $1$  bis  $1,5$  m<sup>2</sup>) gesenkt hat, kann die Breite nur annähernd angegeben werden: ca.  $0,60$ — $0,80$  m. In einer

Tiefe von  $0,25$  m unterhalb der alten Oberfläche beträgt die Breite ca.  $0,40$ — $0,50$  m. Der ursprüngliche Aussendurchmesser des Grabens hat ca.  $3,75$  höchstens  $4,00$  m betragen. In der Grabenfüllung wurde einige runde humushaltige Flecke festgestellt. Sie bieten jedoch nicht genug Anhalt für die mögliche Rekonstruktion eines Pfahlkranzes, wenn man überhaupt annehmen will, dass es sich um Pfahlspuren handelt. Die Füllung des Grabens besteht überwiegend aus gelbem Sand und humushaltiger Erde, die aller Wahrscheinlichkeit nach vor allem aus der auf der alten Oberfläche gelegenen Schicht gelben Sandes, von der alten Oberfläche selbst und – als Folge des Senkens – vom Hügelkörper stammen. Innerhalb des Grabens kann man kein eindeutiges Bild gewinnen. Es ist ungewiss, inwiefern die alte Oberfläche hier intakt geblieben ist. Auch besteht der Eindruck, dass die gelbe Sandlage hier gefehlt hat. Fest steht jedenfalls, dass die Beisetzung ungefähr auf der Höhe der alten Oberfläche gesucht werden muss. Die Tatsache, dass die Beigaben in einer Tiefe von  $0,10$ — $0,15$  m unterhalb der alten Oberfläche gefunden wurden, könnte noch ausreichend durch ihre Randposition und das sich Senken des Bodens im Graben und zum Graben hin erklärt werden. Eine minimale Konzentration fein verteilter Holzkohle, die auf dem selben Niveau wie die Beigaben festgestellt wurde, kann jedoch, wenn sie zum Grab gehört, durch ihre zentrale Position bedeuten, dass die Beisetzung doch auf einem vertieften Niveau, ca.  $0,10$  m unterhalb der alten Oberfläche stattgefunden hat.<sup>5</sup>

Die Beigaben<sup>6</sup> sind an drei Stellen gefunden worden (Abb. 4):

- a an der Nordseite Becher Nr. 3, auf einer Seite liegend, die Öffnung nach aussen gerichtet;
- b ca.  $0,70$  m westlich von diesem Becher ein Dolch aus GP-Feuerstein, in nordsüdlicher Richtung liegend, Nr. 4;
- c an der Ostseite Becher Nr. 2a, auf einer Seite liegend, die Öffnung nach aussen gekehrt; am Fuss des Bechers ein Beil aus Feuerstein, mit der Schneide zum Becher in nördlicher Richtung liegend, Nr. 2b.

Im südwestlichen Teil des Zentrums befand sich eine kleine, untiefe, mit humushaltiger Erde gefüllte Grube. Eine im Zentrum bis ca.  $0,30$  m unter die alte Oberfläche

5 Das Totalbild der Grabstruktur entspricht der Definition des 'Bienenkorbgrabes' (Lanting/Van der Waals 1971, 100, Anm. 7; siehe unten S. 96).

6 Die Funde sind ins Gemeentemuseum Arnhem, provinciaal depot van archeologische bodemvondsten, aufgenommen worden.

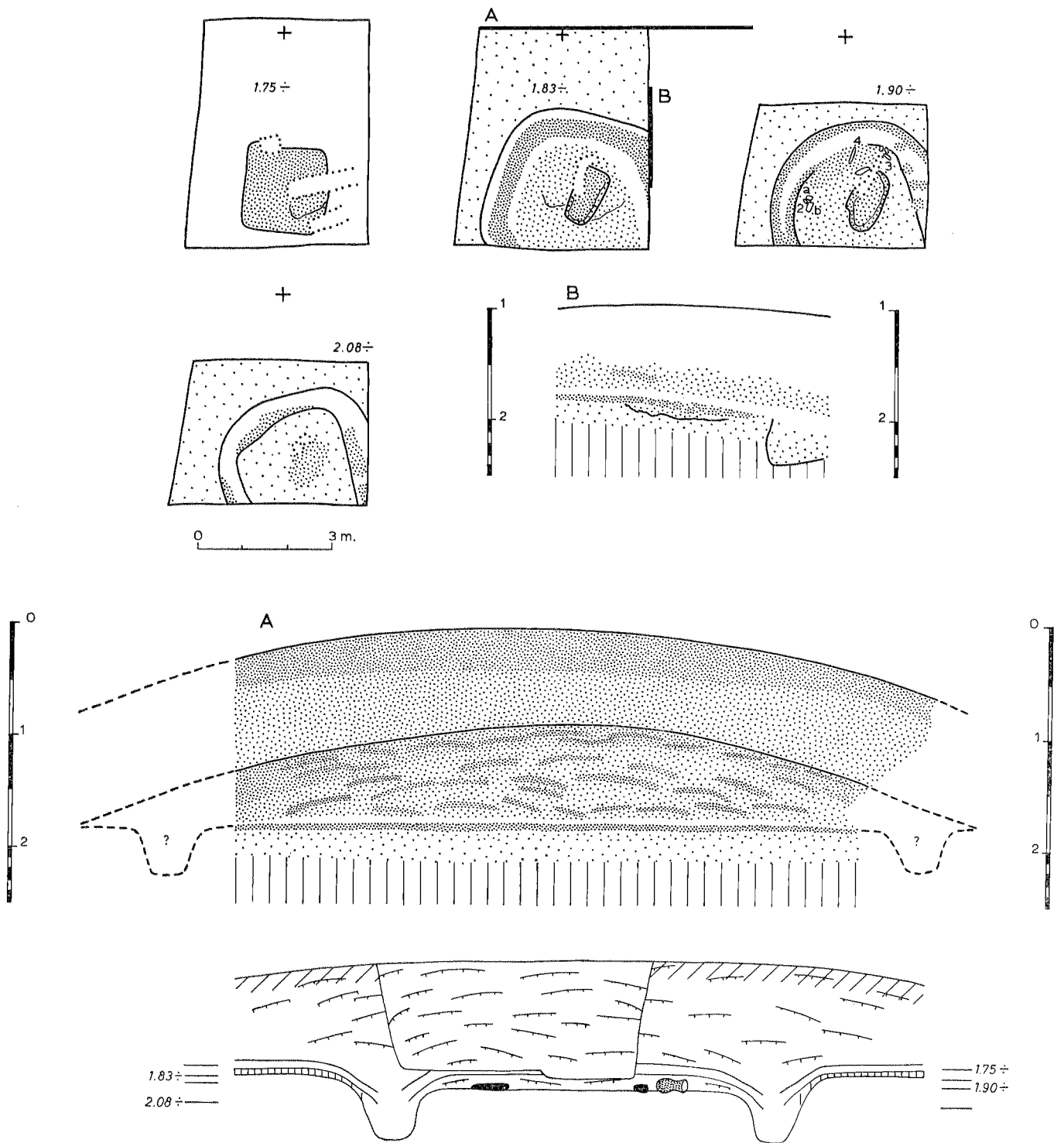


Abb. 4 *Doorwerth*. Detailzeichnungen des primären Grabes, Profile, und Rekonstruktion des primären Hügels aus dem Grabungsbefunden. Zeichnung: K. Greving/G. Delger



reichende Verfärbung (keine Störung) des Untergrundes kann sowohl mit dem primären, als auch mit dem sekundären Grab, das dicht darüber lag, zusammenhängen.

*Randgraben:* Es besteht ein geringer Hinweis darauf, dass der primäre Hügel einen Randgraben besessen hat. Während der Entfernung des Grabhügels erhielt man an einer Stelle den Eindruck, dass ein mit hellgefärbter Erde gefüllter Graben vorhanden gewesen ist. Nachträglich gesehen scheint der Ort der Beobachtung mit der Lage des Fusses des primären Hügels übereinzustimmen. Berechnet man übrigens die Menge Sand, die sich auf dem Mähfeld unter dem primären Hügel befindet, stellt sich auch heraus, dass diese bei weitem nicht nur aus dem intermediären Graben stammen kann.

#### *Die Funde (Abb. 5):*

*a* Becher (Nr. 3) mit fließendem Profil, schmaler Fuss, flacher Boden, hoch angebrachte Halseinbuchtung, kurzer, weit nach aussen gebogener Hals, abgerundeter Rand. Magerung höchstens mit feinem Sand und/oder Keramikgruss. Dicke gelbe Aussenschicht, sehr dünne gelbe bis graue Innenschicht und dunkler Kern. Verzierung auf der gesamten Oberfläche, bestehend aus einer horizontalen Reihe horizontaler, bohnenförmiger Eindrücke und darunter einer horizontal verlaufenden Reihe schräg nach links stehender Spachteleindrücke.

Höhe 26,4 cm, Randedurchmesser 21,1–21,7 cm, Bauchdurchmesser 20,7 cm.

*b* Becher (Nr. 2a) mit fließendem Profil, ausgezogener oberer Hälfte, hohe Halseinbuchtung, kurzer, nach aussen stehender Hals, flacher Boden, abgerundeter Rand. Innen und aussen ockergelb, im Kern grauschwarze Keramik. Magerung höchstens mit feinem Sand. Verzierung der gesamten Oberfläche, die aus 13 horizontal verlaufenden Zonen mit abwechselnd nach links und nach rechts gerichteten diagonalen Eindrücken eines faserigen, nicht gezähnten Spachtels besteht (Eindrücke teilweise glattgestrichen). Die Zonen sind siebenmal durch drei horizontal verlaufende Eindrücke und fünfmal durch zwei horizontal verlaufende Eindrücke einer S-gezwirnten ziemlich groben Schnur voneinander getrennt. Der Rand ist an der Innenseite mit drei horizontal verlaufenden Schnureindrücken (beim untersten Überlappung) verziert.

Höhe 19,0–19,5 cm, Durchmesser Rand 14 cm, grösster Durchmesser Bauch 14,7 cm.

*c* Spandolch, angefertigt aus vor allem an der Basis gebogener Klinge von braunweiss geädertem, undurchsichtigem Feuerstein, der höchstwahrscheinlich aus Le Grand Pressigny stammt. Spitze oval abgerundet, Basis unter dem Schlagbuckel abgestumpft. Ausschliesslich die Rückseite ist mit sehr regelmässiger, parallel verlaufender diagonalen Oberflächenretusche, die sich von den Rändern zur Mitte erstreckt, bedeckt. Ausserdem sind

die Ränder mittels sehr feiner Marginalretusche gezähnt. Von einer eventuell anfänglich geschliffenen Oberfläche sind keine Reste bewahrt geblieben.

Länge 22,8 cm, maximale Breite 3,8 cm, maximale Dicke 1,0 cm.

*d* Kleines Beil aus hell- und dunkelgrau geflecktem, weissgepunktetem, kaum durchsichtigem (südlichem?) Feuerstein. Spitzovaler Querschnitt, breiteste Seite bildet die Schneide, Seiten zur Spitze hin konvergierend, Spitze abgestumpft. Auf den Flächen finden sich Spuren der groben Vorbearbeitung, teilweise geschliffen (noch gerade 'Ganzschliff' im Sinne von Malmer).

Länge 10,2 cm, Breite (an der Schneide) 5,1 cm, maximale Dicke 1,8 cm.

HELDEN (J.N.L. & J.D.V.D.W.)

1938 untersuchte Dr. F.C. Bursch für das Rijksmuseum van Oudheden in Leiden zwei Urnenfelder im Norden der Gemeinde Helden, die  $1\frac{3}{4}$  km nordwestlich des ehemaligen Klosters Koningslust liegen (Abb. 6). In dem Urnenfeld auf dem Gelände der Familie Janssen in Helden untersuchte er auch einen spätneolithischen Grabhügel. Hier wollen wir nur diesen letzteren Teil der Ausgrabungen von 1938 besprechen.

Die Dokumentierung, die sich in Leiden fand, besteht aus einer Übersichtskarte der Ausgrabungen auf dem Gelände Janssen, einer detaillierten Feldzeichnung (Grundriss und Querschnitt) des Grabhügels (Abb. 7) und einer für die Veröffentlichung bearbeiteten Fassung dieser Zeichnung (Abb. 8). Eine Ortsbestimmung des Geländes Janssen fehlte, und auf den Zeichnungen war keine Orientierung angegeben. Fotos waren nicht vorhanden. Die Funde wurden in Leiden erst 1942 inventarisiert. Es handelt sich um einen Becher vom Typ 21a, einen Gr-Dolch und eine Pfeilspitze, die nach dem Inventarverzeichnis 'im Kuppelgrab Nr. 1' gefunden wurden. Auf der Feldzeichnung werden nur der Becher und der Dolch erwähnt. Die Stelle der Ausgrabung wurde uns am 22. April 1969 in Helden von Herrn Janssen, dem Sohn des Besitzers 1938, gezeigt. Bei einem zweiten Besuch am 9. Oktober 1970 zeigte er uns ausserdem die Stelle an der sich die Suchgräben von 1938 befunden hatten. Einige Probelöcher bestätigten die Richtigkeit seiner Angaben. Als nun der richtige Platz feststand, war es auch möglich die Suchgräben auf Luftaufnahmen von 1949 (Archiv Topographische Dienst, Delft) zu erkennen. Dank dieser Fotos war auch die Orientierung der Suchgräben leicht festzustellen. Ein Vergleich der Luftaufnahmen von 1949 mit denjenigen von 1965 und der Situation an Ort und Stelle liess ausserdem erkennen, dass die Hügelsohle

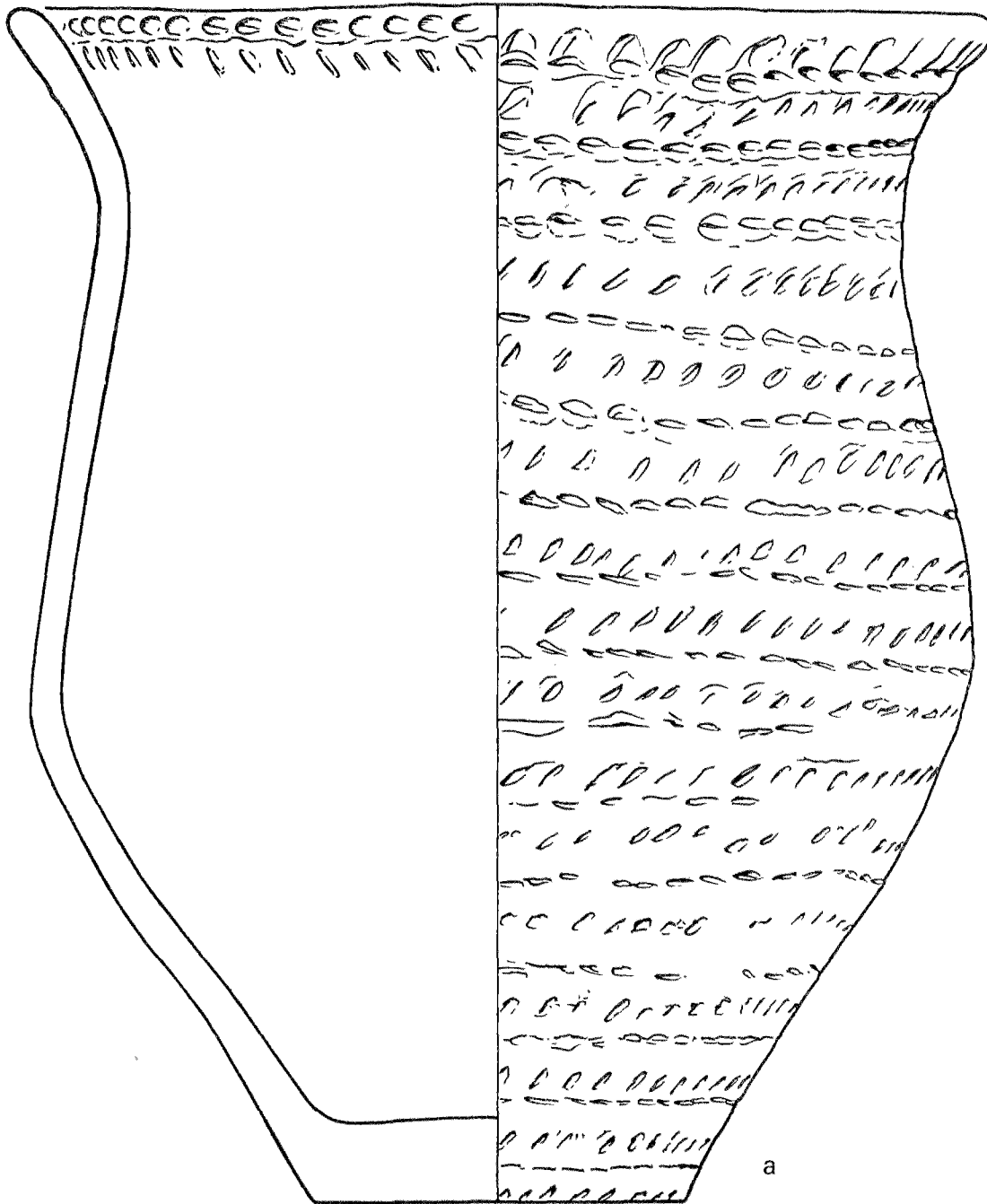
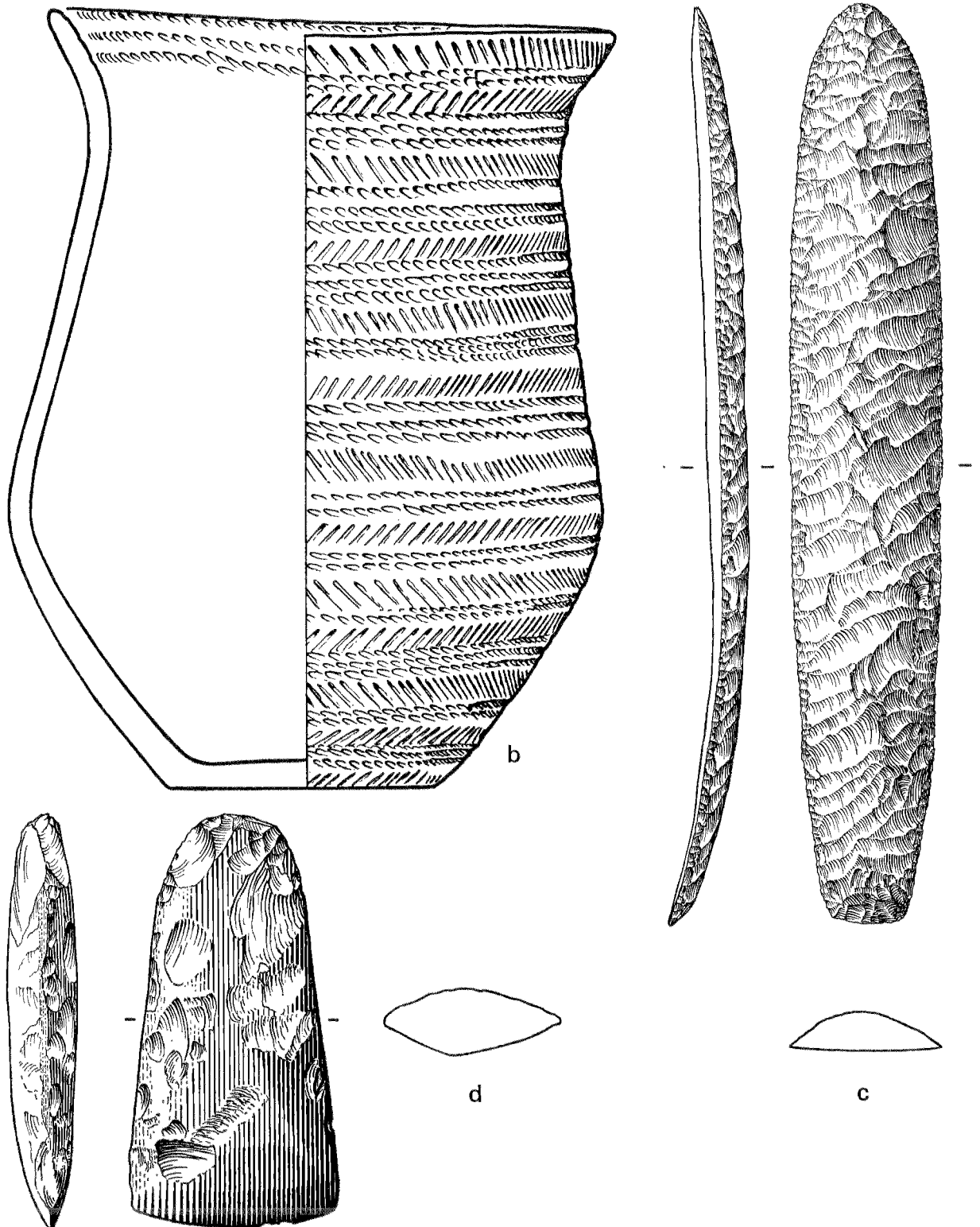


Abb. 5 *Doorwerth*. Beide Becher, Dolch aus Grand-Pressigny  
Feuerstein und Feuersteinbeil aus dem primären Grab.  
M. 2:3, Zeichnung H.J. Bloklander (Keramik), J.M. Smit  
(Feuerstein)



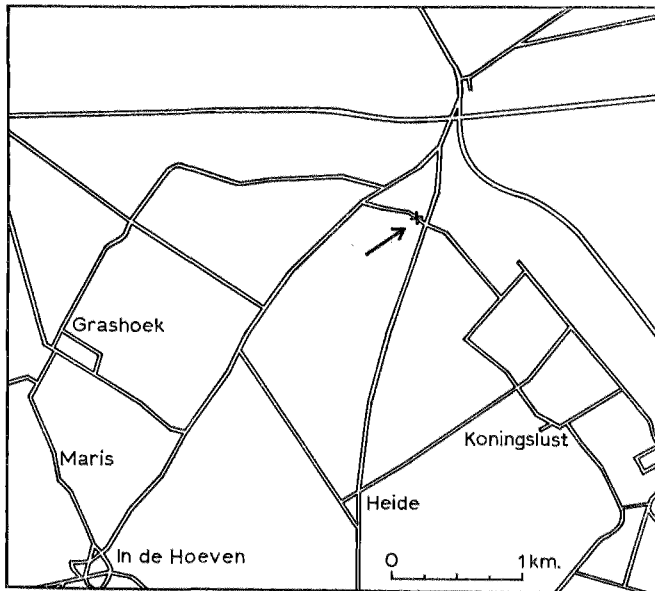


Abb. 6 Helden. Lage des Grabhügels und des Urnenfeldes, NW des ehemaligen Klosters Koningslust

durch die Verlegung eines Weges inzwischen verschwunden war, sodass leider keine Nachforschungen mehr möglich waren.<sup>7</sup>

Die Feldzeichnung von 1938, auf die sich die hier folgende Beschreibung gründet, zeigt einen niedrigen Hügel mit einem Durchmesser von ca. 15 m und einer Höhe von nicht mehr als 0,5 m (Abb. 7). Nach dem Grundriss wurde ungefähr im Zentrum ein rechteckiges Grab entdeckt; Orientierung ca. NNW-SSO, Umfang 1,8 × 1,1 m. Um das Grab ist ein Graben in Kreisform gezeichnet; Durchmesser des Kreises ca. 9½ m, Breite des Grabens maximal 0,25 m, an der ssw-Seite eine Öffnung, die 3 m breit ist. Nur in der Ausgrabungsfläche nördlich vom Profildamm wurde anscheinend ein Teil einer zweiten kreisförmigen Bodenverfärbung festgestellt der von dem bereits erwähnten Grab geschnitten wird. Diese wird auf der Feldzeichnung als 'Streifen geäderten weissen Plaggenbodens mit viel Holzkohle auf ÷ 60 Kuppe' bezeichnet.

Der Querschnitt zeigt uns einen Hügelkörper aus 'grauer Erde' mit einigen Störungen aus späterer Zeit, der auf einer dunklen Schicht liegt, die mit 'alte Heide' bezeichnet

<sup>7</sup> Wir danken Herrn J.E. Driessens aus Venlo für seine Hilfe beim Zurückfinden des Ausgrabungsgelände von 1938.

net wird. Im Zentrum war diese Schicht über eine Fläche von ca. 4 m nicht vorhanden. Hier wird die Anwesenheit eines kleinen Kernhügels aus 'braungeädertem Sand' suggeriert.

In diesem Kern, der ungefähr 10 cm höher als die obere Seite der 'alten Heide' ist, ist ein dunkler, horizontaler Strich eingezeichnet (Länge 1,1 m). Bei diesem Strich ist vermerkt: 'Platz der Leiche'. Schliesslich müssen die beiden Querschnitte eines Grabens erwähnt werden von denen derjenige an der Westseite durch die 'alte Heide' überdeckt wird, derjenige an der Ostseite die 'alte Heide' anscheinend durchbricht.

Die Interpretation der hier beschriebenen Unterlagen bietet durchaus einige Schwierigkeiten. Diese betreffen: a die Lage der alten Oberfläche unter dem Hügel, b die Frage, ob wir es mit einem Ein- oder Zweiperiodenhügel zu tun haben, c die Tiefe des Bechergrabes, d den Charakter der kreisförmigen Bodenverfärbungen.

Diese Probleme hängen eng mit der Tatsache zusammen, dass Querschnitt und Grundriss auf der Feldzeichnung (Abb. 7) mangelhaft aneinander anschliessen. Der Durchmesser des Hügels in Profil und Grundriss ist gleich. Der Abstand der Grabenquerschnitte im Profil beträgt von der einen Mitte bis zur anderen 10,3 m. Dies stimmt mit dem Abstand der beiden Enden des Streifens 'geäderten weissen Plaggenbodens', auf dem Grundriss am Profil entlang gemessen. Der Durchmesser des unterbrochenen Grabens ist auf dem Grundriss beim Profil einen Meter kleiner. Doch ist eine Gleichsetzung des Grabens im Profil mit dem 'Streifen geäderten weissen Plaggenbodens' im Grundriss schwierig, weil dann die Lage dieser Verfärbung in Bezug auf den Hügel Fuss im Profil und im Grundriss um ungefähr einen Meter differiert. Die Differenz wird noch grösser, wenn man annimmt, dass mit dem horizontalen Streifen, der im Profil als 'Platz der Leiche' umschrieben wird, das Grab vom Grundriss gemeint wird. Als Beweis für diese Annahme könnte die Tatsache gelten, dass die Länge des Streifens im Profil genau mit der Breite des Grabes auf dem Grundriss übereinstimmt. Lässt man jedoch den Hügel Fuss von Profil und Grundriss zusammenfallen, dann zeigt sich, dass das Grab im Profil 1½ m in östliche Richtung verschoben ist. Lässt man die Gräben auf die oben erwähnte Weise zusammenfallen, dann beträgt diese Verschiebung sogar reichlich 2 m.

Anscheinend hat auch Bursch nach seiner Rückkehr von den Untersuchungsarbeiten die Diskrepanz in seinen

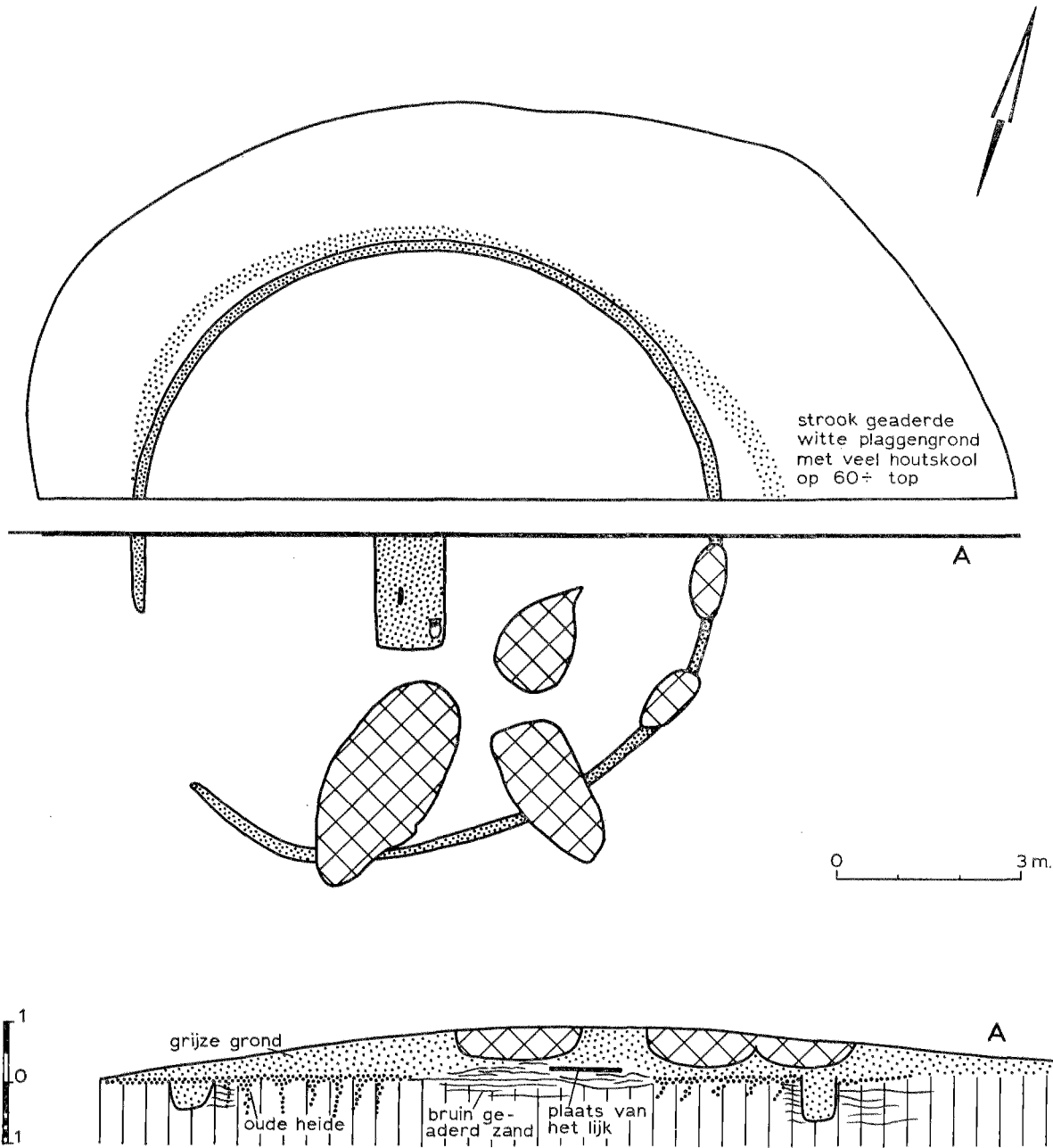


Abb. 7 *Helden*. Grundriss und Profil des Hügels nach der Feldzeichnung von F.C. Bursch 1938.  
Zeichnung: G. Delger

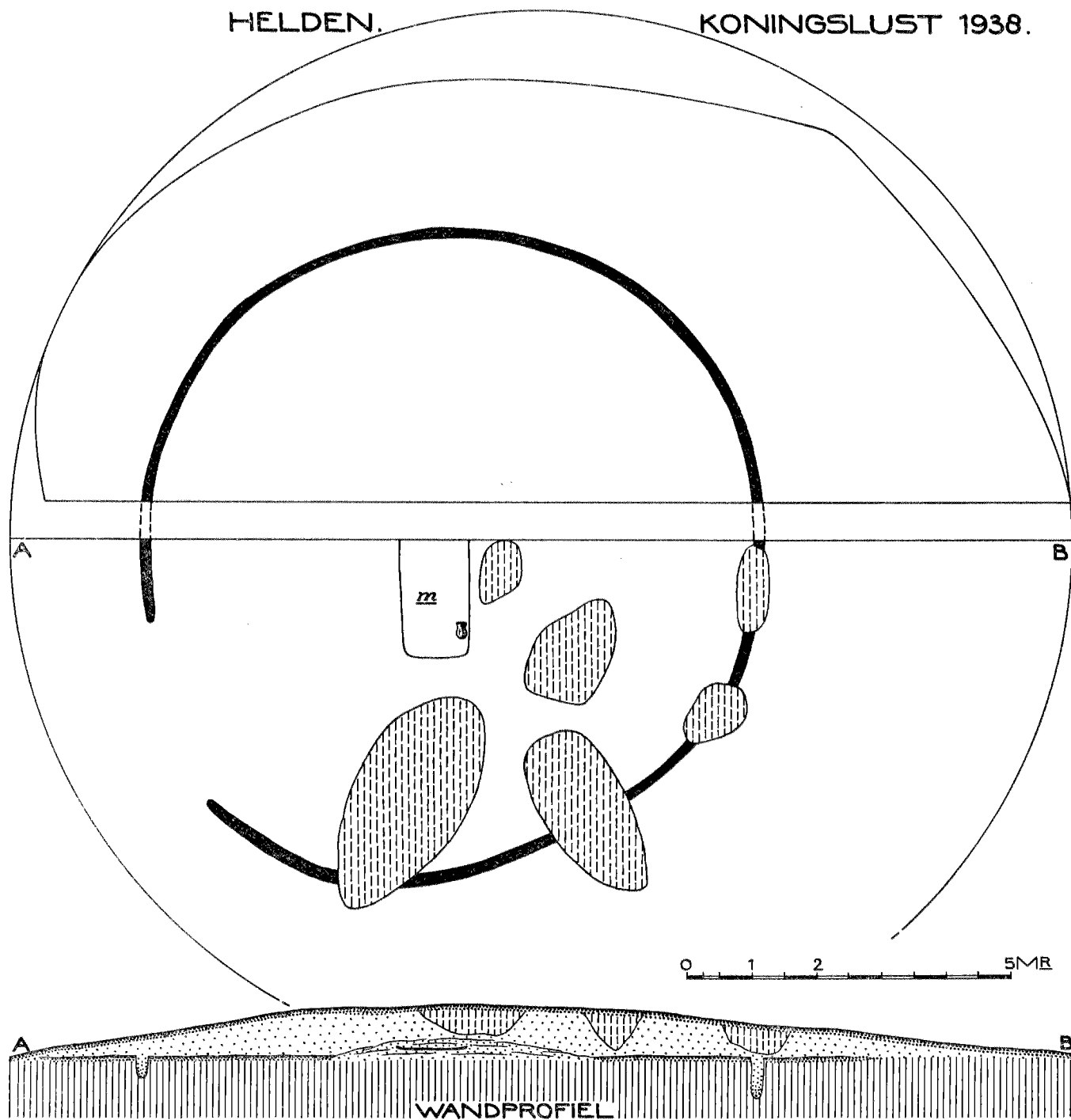


Abb. 8 *Helden*. Grundriss und Profil des Hügels in der 1938 für Veröffentlichung bearbeiteten Fassung.  
Zeichnung: D. Versloot (RMO-Leiden)

Zeichnungen bemerkt. In der endgültigen Zeichnung, die für die Veröffentlichung angefertigt wurde (Abb. 8), sind im Profil Änderungen angebracht worden, die alles in Übereinstimmung mit dem Grundriss brachten und die schwerlich von jemand anderem als vom Ausgraber selbst stammen können. Diese Änderungen sind deshalb wichtig, weil sie uns die Antwort von Bursch auf einige der oben gestellten Fragen geben.

Der 'Platz der Leiche' im Profil weist in der Tat auf das Bechergrab hin. In der endgültigen Zeichnung des Profils ist der besagte Streifen soweit verschoben, dass er sich genau an der Stelle des Grabes in der Fläche befindet. Höchst wahrscheinlich dürfen wir hieraus schliessen, dass das Grab auf der alten Oberfläche gelegen hat. Auf der Feldzeichnung ist am deutlichsten sichtbar, dass der Streifen auffallend höher als das Niveau der 'alten Heide' liegt. Wir vermuten jedoch, dass diese 'alte Heide' nicht die Humusschicht des alten Bodenprofils darstellt, sondern den möglicherweise sekundär verstärkten Infiltrationshorizont (Ortsteinschicht). Dies wird vor allem durch die schnabelförmigen vertikalen Anhängsel suggeriert, die normalerweise bei Ortsteinschichten und nicht bei Humusbändern zu sehen sind. Auch in Hinsicht auf den Graben (die Gräben) wird durch die Änderungen manches geklärt. Nach der Auffassung des Ausgrabers gehören die Querschnitte auf dem Profil anscheinend zu dem Graben mit der Öffnung an der ssw-Seite, wie aus der Verschiebung der Querschnitte im Profil und ihrer beträchtlichen Verschmälerung auf der endgültigen Zeichnung hervorgeht. Über die Datierung und den Charakter des Grabens erhalten wir jedoch hierdurch auch keinen Aufschluss. Es ist möglich, dass der unterbrochene Graben in Hinsicht auf den Hügel sekundär ist, dass jedoch diese Eingrabung durch die Bildung des schweren Podsol über dem Hügel beinahe unsichtbar geworden ist. Jedenfalls hatte der nahe gelegene Urnenhügel Nr. 2 ebenfalls einen unterbrochenen Graben, mit einem Querschnitt von  $10\frac{1}{2}$  m.

Obwohl auf dem Grundriss keine Leichensilhouette in das Bechergrab eingezeichnet ist, gibt es doch einen Hinweis darauf, dass seinerzeit ein Leichenschatten festgestellt wurde. Herr W. Joosten in Helden, der 1938 als Arbeiter an der Ausgrabung mitgearbeitet hatte und den wir am 9. Oktober 1970 besuchten, war diese Leichensilhouette als auffallendstes Detail bei der ganzen Ausgrabung in Erinnerung geblieben. Ausdrücklich wies er darauf hin, dass 'der Becher auf der Leiche stand'. An die Lage und Orientierung und die weiteren Grabgaben konnte er sich nicht erinnern.

Sogar in Hinsicht auf die Grabfunde herrscht Unsicherheit. Gemäss der Zeichnung wurden im Grab ein Becher und ein Messer aus Feuerstein gefunden. Nach der Inventarliste des Rijksmuseum van Oudheden in Leiden (die vier Jahre nach der Ausgrabung aufgestellt wurde!) sind im 'Kuppelgrab Nr. 1' ein Becher, ein GP-Dolch und eine Pfeilspitze aus Feuerstein mit Schaftdorn und Widerhaken gefunden, und als die Nummern I 1942/7. 1a-c inventarisiert. Die Tatsache, dass diese drei Gegenstände die Nummern 1a-c haben, könnte, wenn man den Leidener Brauch in Betracht zieht, darauf hinweisen, dass es sich um assoziierte Funde handelt, obwohl nicht ausdrücklich vermerkt wird, dass auch die Pfeilspitze aus dem Grab stammt. Diese könnte auch ein vereinzelter Fund aus dem Hügelkörper sein; auf der Feldzeichnung wenigstens wird sie nicht vermerkt.

#### *Die Funde (Abb. 9):*

I 1942/7. 1a. Becher (aus vielen Scherben rekonstruiert) mit fließendem Profil, hoch ausgezogener oberer Hälfte, kurzem, abstehendem Hals, schräg nach aussen abgeplattetem Rand und flachem Boden. Keramik innen grau, aussen graubraun. Auf der ganzen Oberfläche verziert mit sechzehn horizontalen Zonen aus abwechselnd nach links und nach rechts gerichteten Kerbspachteleindrücken, die jeweils durch die Eindrücke einer S- und einer Z-gezwirnten Schnur (Pseudo-Häkemaschen) getrennt werden. Nur zwischen der ersten und der zweiten Kerbspachtelzone von oben dreifache Schnureindrücke. Auf dem nach aussen abgeschrägten Rand diagonale Kerbspachteleindrücke. Auf der Innenseite des Halses eine horizontal verlaufende Zone von schräg hochstehenden Kerbspachteleindrücken, teils kreuzweise, teils in einer Zickzacklinie. Diese Zone wird unten durch zwei, oben durch drei Schnureindrücke begrenzt. AOO-Glockenbecher Typ 211a.

Höhe 18,5 cm, Durchmesser Rand 11,8 cm, grösster Durchmesser Bauch 11,9 cm.

I 1942/7. 1b. Spandolch, angefertigt aus regelmässig gebogener Klinge, von gelbbraunem, weiss gepunktetem, etwas körnigem Feuerstein, der aus Le Grand Pressigny stammt (Typ La Claisière). Die Rückseite weist in der Mitte möglicherweise die Negative der Querbearbeitung des Kernsteins auf. Ziemlich steile regelmässige Stufenretusche an den Rändern, die stellenweise in Oberflächenretusche übergeht.

Spitze dick und scharf, Basis flach abgestumpft, vermutlich unterhalb des Schlagbuckels.

Länge 15,1 cm, maximale Breite 2,8 cm, maximale Dicke 1,0 cm.

I 1942/7. 1c. Dreieckige Pfeilspitze aus grauem Feuerstein mit geraden Seiten, rechteckigem Schaftdorn und Widerhaken. Im Querschnitt spitzoval.

Höhe 2,8 cm, Breite Basis 2,0 cm, maximale Dicke 0,5 cm.

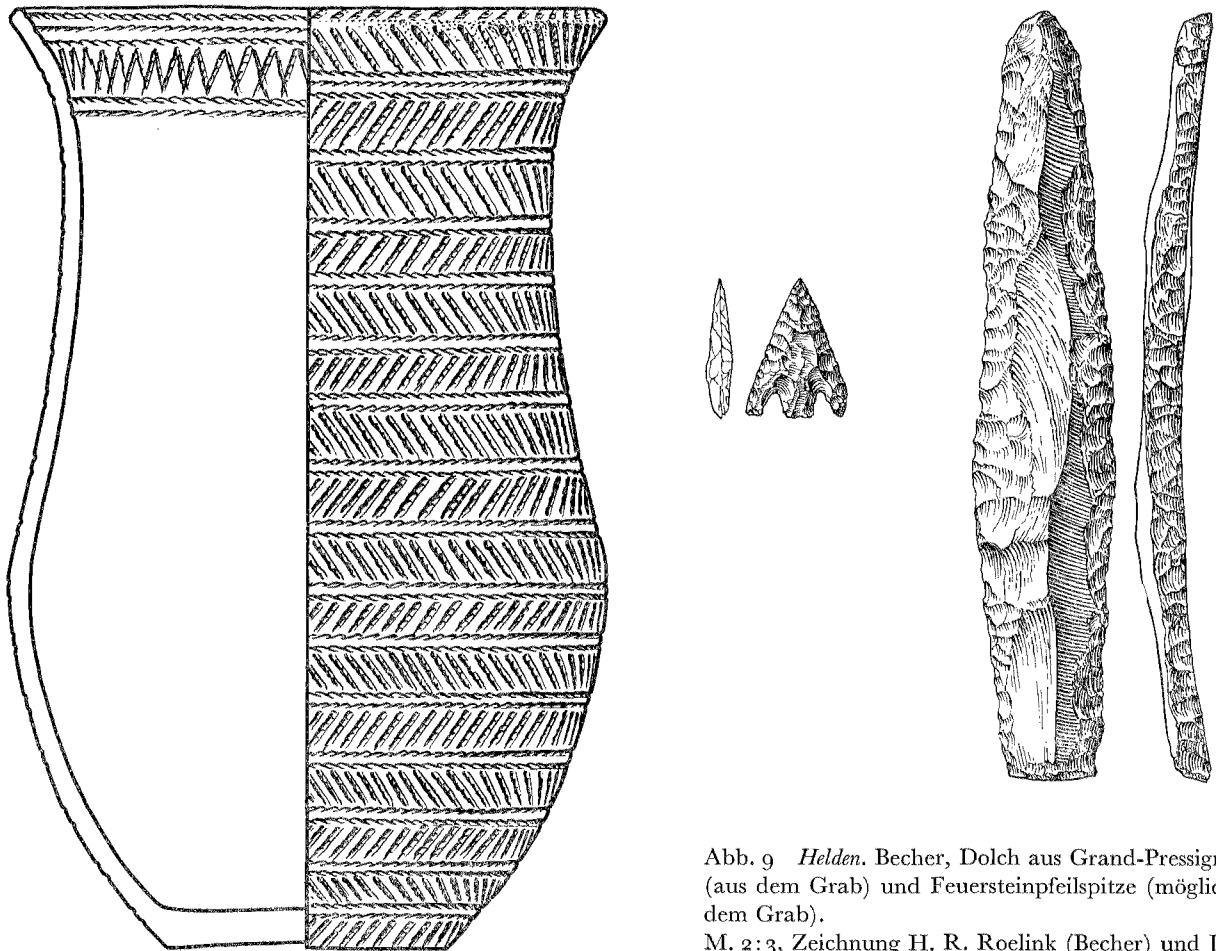


Abb. 9 *Helden*. Becher, Dolch aus Grand-Pressigny Feuerstein (aus dem Grab) und Feuersteinfeilspitze (möglicherweise aus dem Grab).  
M. 2:3, Zeichnung H. R. Roelink (Becher) und J. M. Smit

BAEXEM (J.N.L. & J.D.v.d.w.)

#### *Der Weyersberg*

Der Weyersberg oder die Bergheide ist ein hügeliges Gelände, das etwas mehr als 2 km WNW von Baexem liegt. Das Relief wird vor allem durch subrezente Wanderdünen und vom Wind ausgehöhlte Vertiefungen gebildet. An der Westseite liegt jedoch ein langgestreckter NS, teils SW-NO gerichteter Decksandrücken. Sehr deutlich wird diese Situation auf der topographischen Karte wiedergegeben, die um 1805 unter der Leitung des franzö-

sischen Militärkartographen Tranchot angefertigt wurde.<sup>8</sup> In den vergangenen Jahren sind auf dem Weyersberg mehrere Male archäologische Funde gemacht worden (Abb. 10). 1926 wurden an der NW-Flanke bei Rodungsarbeiten mehrere Urnen und das Fragment eines Bechers mit Schnurverzierung gefunden, der offenbar zum Typ

8 Vergl. Kartenblatt 38 – Heijthuizen der ‘Kartenaufnahme der Rheinlande durch Tranchot und von Müffling 1803–1820’, hrsgg. vom Landesvermessungsamt Nordrhein-Westfalen 1969 (Publikationen der Gesellschaft für Rheinische Geschichtskunde XII-2. Abteilung – Neue Folge).



211b gehört.<sup>9</sup> 1967 wurden von J.H.J. Berghs aus Baexem auf dem oben erwähnten Decksandrücken am nördlichen Rand eines Ackers (dem östlichen Teil der Katasterparzelle Baexem, Sektion C Nr. 333) Scherben eines Bechers vom (maritimen) Typ 21a und eines Bechers vom Typ 211a gefunden<sup>10</sup> (dieser Artikel Abb. 14a, b). Diese Scherben lagen beieinander. Auf demselben Acker fand Berghs mesolithisches Feuersteinmaterial und eine Pfeilspitze aus Feuerstein, die aus der Bronzezeit stammt.<sup>11</sup> 1967 fanden die Herren J.H. und P.M. Houben aus Nederweert in der Sandgrube südlich dieses Ackers einige Urnen<sup>12</sup> und 1969 einen Glockenbecher (Abb. 14d). Letzterer befand sich ca. 100 m südlich von der Fundstelle der oben erwähnten Glockenbecherscherben. Anscheinend handelte es sich um einen Grabfund, wenn wir auch bezweifeln, ob der unregelmässig gewundene Graben wirklich das Überbleibsel einer Standspur war.<sup>13</sup>

1970 wurde die Arbeit in der Sandgrube eingestellt und der Steilhang mit dem nördlich angrenzenden Acker unter Profil gebracht. Dabei wurde aufs neue ein Glockenbechergrab zerstört. In dem durch den Bagger zum Abrutschen gebrachten Sand sammelten die Herren Houben Scherben von einem Glockenbecher vom Typ 211a, ausserdem ein kleines Beil aus Feuerstein und zwei aneinanderpassende Fragmente einer in mehrere Teile zerbrochenen Klinge aus Feuerstein<sup>14</sup> (dieser Artikel Abb. 13).

Das Vorhandensein von 2, möglicherweise sogar 3 oder 4 (Flach-) Gräbern aus einer frühen Phase der Glockenbecherkultur im Abstand von ca. 100 m rechtfertigte eine Untersuchung des Ackers, denn man hoffte, noch mehr Gräber zu entdecken.

9 Über die Urnenfunde von 1926 meldet *De Maasgouw* 1926, Nr. 5-6: 'Durch Vermittlung von Pater de Leeuw S.J. aus Exaeten und Dr. Beckers aus Beek erhielt das Museum eine Anzahl von Urnen und anderen Gegenständen, die auf dem gerade gerodeten Gelände zwischen Weyerenberg und dem Aldenhof nordwestlich von Baexem gefunden worden waren.' Die Urnen werden im Bonenfantenmuseum in Maastricht aufbewahrt. Nach dem Inventarbuch lag der Fundplatz auf den Katasterparzellen Baexem Sektion C Nr. 137-8. Diese Parzellen sind inzwischen in der Parzelle Sektion C Nr. 594 aufgegangen.

10 Hulst 1967.

11 Eigentümer dieser Parzelle sind die Kinder Wetemans in Baexem, Benutzer ist W. Slots in Baexem.

12 Vergl. Bloemers 1968. Es handelt sich vor allem um Kerbschnitturnen, die in eine frühe Phase der südniederländischen Urnenfelder gehören. Soweit man feststellen konnte, waren die

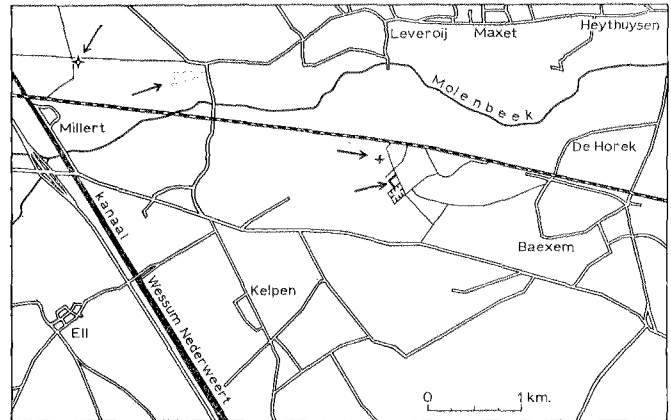


Abb. 10 Baexem-Millert. Von links nach rechts: Lage des Grabhügels bei Millert, der Sandgrube bei Kelpen (punktiert), der Fundstelle der totalschnurverzierten Scherbe 1926, des Ausgrabungsgeländes 1971 und der Sandgrube auf dem Weyersberg

Vom 16. bis zum 27. August 1971 fanden die Untersuchungsarbeiten statt, die vom BAI (Biologisch-Archäologisches Institut) in Groningen ausgingen.<sup>15</sup> Im ganzen wurden 1200 m<sup>2</sup> untersucht (Abb. 11). Dabei wurden zwar Siedlungsspuren und Brandschüttungsgräber aus der späten Bronzezeit, jedoch keine neuen Glockenbechergräber gefunden. Dahingegen wurde bei dem Steilhang zur Sandgrube hin an der Stelle, an der die Brüder Houben ihren Grabfund geborgen hatten, die n-Hälfte eines Grabens entdeckt, der zweifellos das Grab umgeben hat (Abb. 12). Der Aussendurchmesser betrug

Urnengräber nicht von kreisförmigen Gräben umgeben. Dies stimmt mit unseren Beobachtungen während der Ausgrabungen 1971 überein. Auf dem Acker wurden ebenfalls einige Urnengräber gefunden, die nicht von Kreisgräben umgeben waren. 1970 wurde auf der Parzelle westlich von der Sandgrube ein kleiner Teil eines Urnenfeldes mit unterbrochenen kreisförmigen Gräben untersucht. Es wurde dort keine Keramik gefunden (vergl. Bloemers 1973, S. 27-28; Grathem).

13 Verlinde 1969; Bloemers 1973.

14 Bloemers 1973.

15 Die Ausgrabung konnte stattfinden dank der Hilfe folgender Studenten der Reichsuniversität zu Utrecht: die Damen S.E. Keller, H. van Wijck, I. Hamers, C. Slot, H.C.M. Wooning, R. Haentjes Dekker, T. Springer-Stam, C.P.M. van Leeuwen-van Koppes, und die Herren G. Schoch, A. Saaltink, P.H. Deckers.

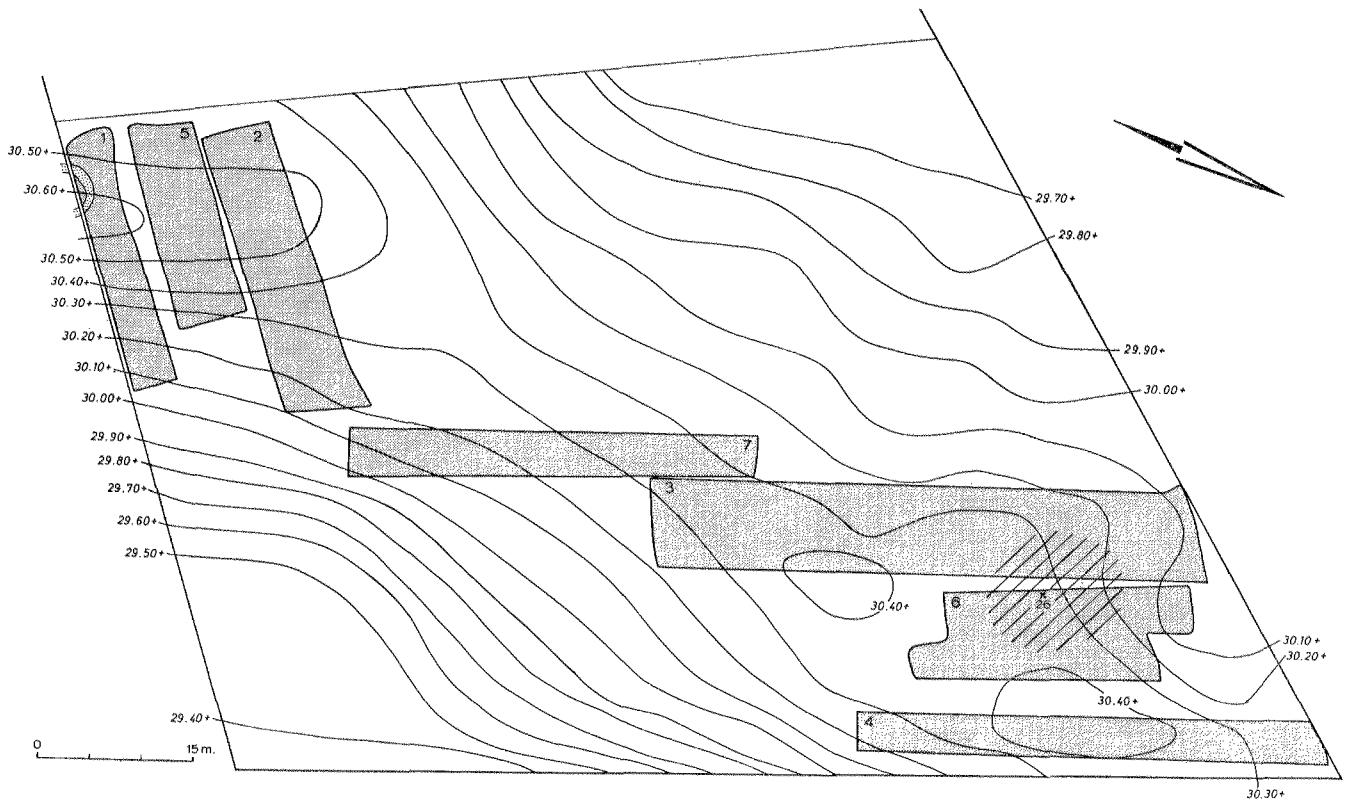


Abb. 11 *Baexem* 1971. Plan der Ausgrabungsschnitte. In Schnitt 1 der Graben des Glockenbechergrabes von 1970, in Schnitt 6 die Fundstelle der Glockenbecherscherbe Nr. 26.

Schraffiert die ungefähre Fundstelle der in 1967 gefundenen Glockenbecherscherben.  
Zeichnung: G. Delger

ca. 6,4 m, die Breite 0,4-0,5 m. Da die ursprüngliche Bodenoberfläche nicht mehr vollständig vorhanden war, kann die Tiefe des Grabens nicht mehr bestimmt werden. Diese wird jedoch mit mindestens 0,8 m anzusetzen sein. Der Graben wies an der nw-Seite eine Verbreiterung an der Innenseite auf. Pfahlsuren wurden in der Füllung nicht wahrgenommen.

Ein ow-gerichtetes Profil an der Parzellengrenze zwischen Acker und Sandgrube entlang, an der Stelle des Grabens war, wie sich leider herausstellte, grösstenteils zerstört (nämlich der Teil innerhalb und westlich des Grabens). Da, wo es sich direkt an die Ostseite des Grabens anschloss, war es jedoch noch intakt. In diesem Profil war ein Bodenprofil in der Form einer 25 cm dicken Bleichsandschicht und eine schwach entwickelte Infiltrationszone erkennbar. Unter dieser Infiltrationsschicht war eine leicht humushaltige Zone zu sehen, die wir für die

Unterseite einer alten Kulturboden halten. Aus welcher Periode dieser Kulturboden datiert, ist schwer zu sagen. Wir können jedoch darauf hinweisen, dass der gleiche durchgearbeitete Boden auch weiter nördlich festgestellt wurde, und dass sich darin örtlich begrenzte Konzentrationen von Keramik aus der späten Bronzezeit fanden (u.a. Kerbschnittkeramik aus der frühen Urnenfelderperiode).

Ein Hügel hat sich hier seit der Bildung dieses bearbeiteten Bodens sicher nicht mehr befunden. Aller Wahrscheinlichkeit nach haben wir es mit einem Flachgrab zu tun.

Über das Glockenbechergrab selbst ist wenig zu berichten. Fest steht nur, dass die Funde südlich von der Grenzlinie, bis zu der der Bagger gegraben hat, zum Vorschein kamen. Wenn jedoch die Grube weniger als 50 cm tief gewesen wäre, dann könnte sie sich bis in die Fläche, die

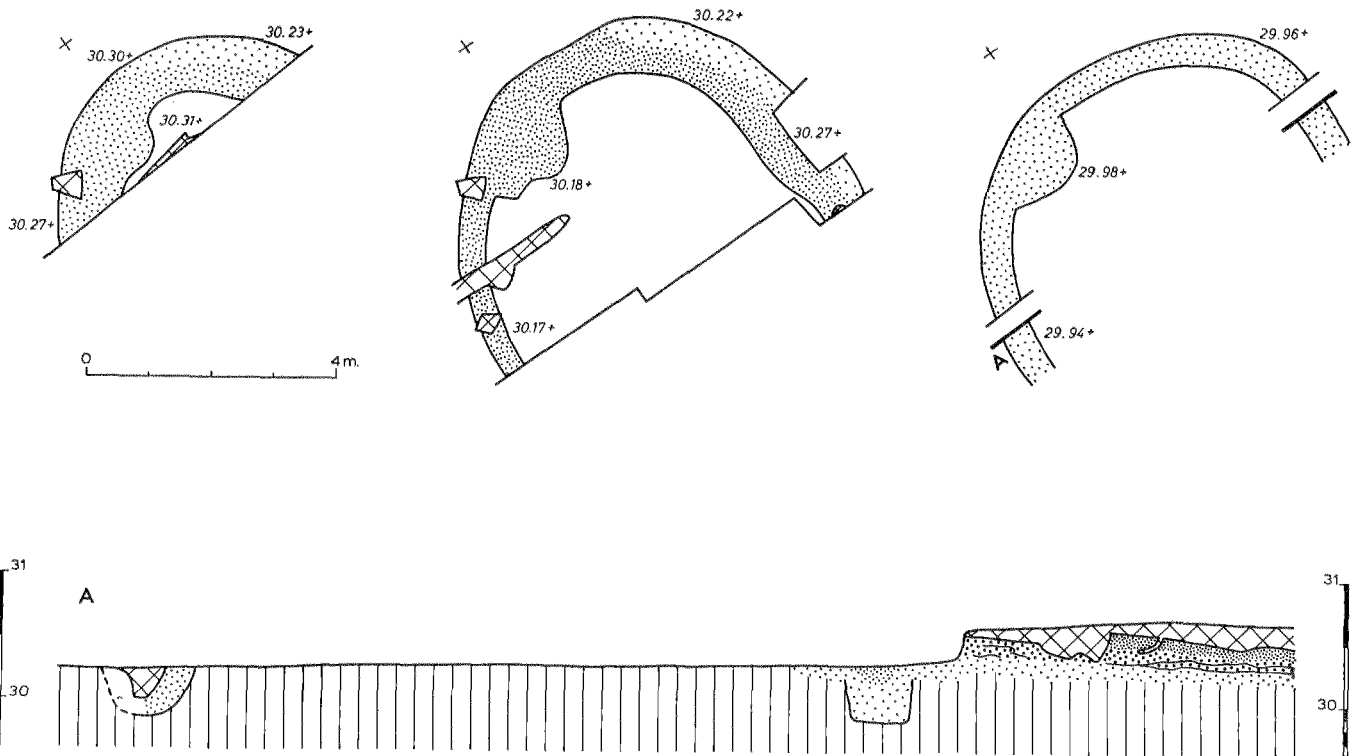


Abb. 12 *Baexem* 1971. Graben um den Glockenbechergrab: Detailzeichnungen und Profil. Zeichnung: G. Delger

wir untersucht haben, erstreckt haben. Reste eines Grabes sind jedoch nicht entdeckt worden.

Die Untersuchungsarbeiten von 1971 erstreckten sich auch über denjenigen Teil des Rückens, wo Berghs seine Becherscherben gefunden hatte. Auch hier befanden sich unter der Ackerkrume Anzeichen für menschliche Tätigkeiten in der späten Bronzezeit, wie wir sie auch bei dem oben erwähnten Graben gefunden haben. In einem alten Kaninchenloch kam eine kleine Wandscherbe zum Vorschein, die, wie sich herausstellte, an eine der 211a-Becherscherben aus der Sammlung Berghs passte (Abb. 14a). Im übrigen wurde nichts gefunden, das auf Gräber an dieser Stelle hinweisen könnte.

Auf dem Weyersberg kann mit Sicherheit nur von zwei Gräbern (Funde 1969 und 1970) die Rede sein. Die Wahrscheinlichkeit ist jedoch gross, dass es sich bei den Funden von Berghs von 1967 um zerpflügte Grabfunde

handelt. Ob nun ein Grab mit einem 211a- und einem 211a-Becher vorhanden war – was durchaus denkbar wäre – oder zwei Gräber, ist nicht mehr zu ermitteln.

#### Die Funde:

1 Glockenbecherscherben 1967 (Sammlung Berghs).

a (Abb. 14a). Grosses Rand-Wandfragment und einige Wandscherben eines totalverzierten Bechers Typ 211a. Keramik innen und aussen ockergelb, dunkler Kern. Zonen voneinander getrennt durch Eindrücke einer S- und einer Z-gezwirnten Schnur (Pseudo-Häkeltaschen), auf dem Bauchumbruch durch  $2 \times 2$  Eindrücke. Auf der Innenseite des Randes 3 Zonen Kerbspachteleindrücke, voneinander getrennt und unten begrenzt durch jeweils zwei Schnureindrücke.

b (Abb. 14b). Vier Wandscherben eines Bechers Typ 211a (maritimer Glockenbecher). Keramik innen und aussen braun, dunkel im Kern. Aussenseite poliert. Eindrücke eines sehr

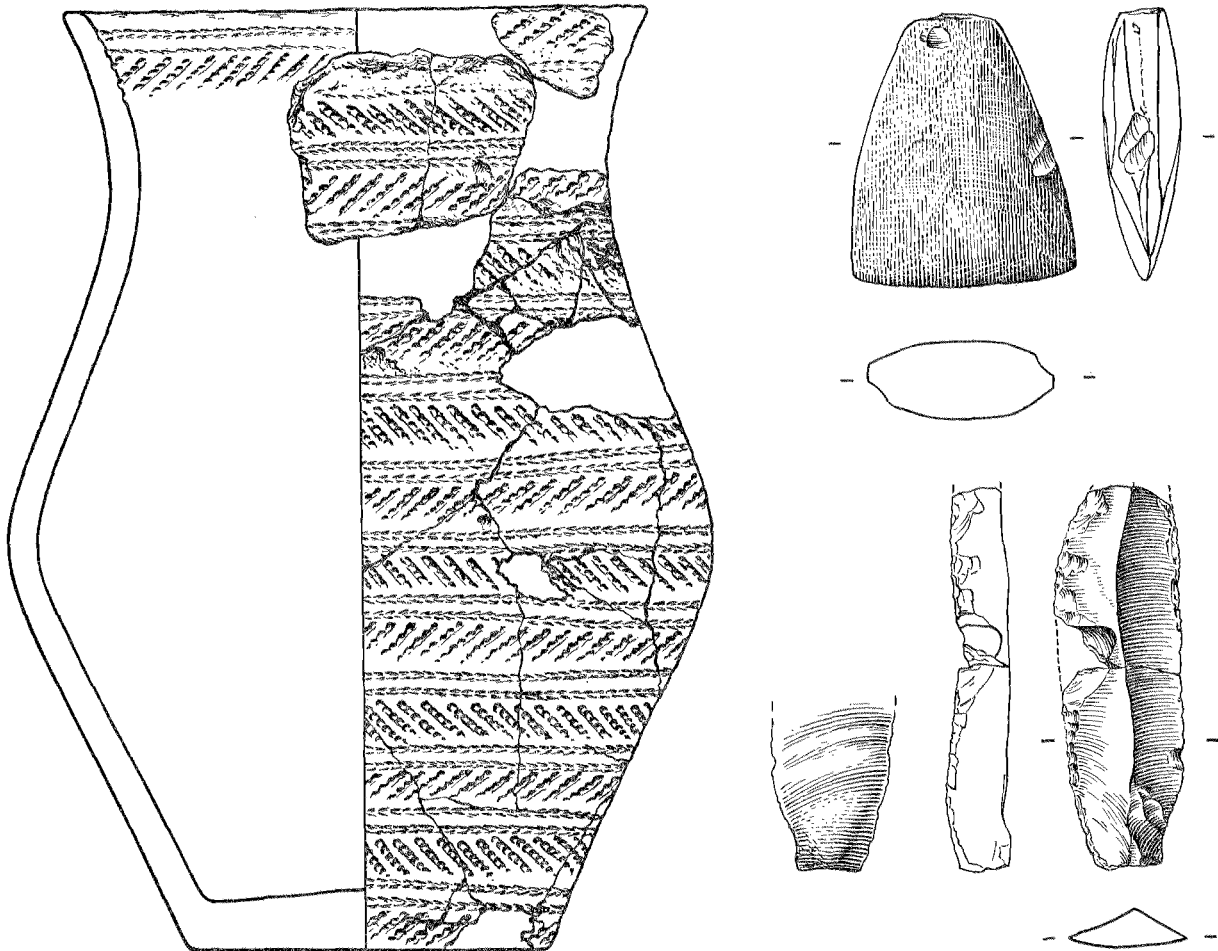


Abb. 13 *Baexem*. Becher, Feuersteinbeilchen und Feuerstein-  
klinge, 1970 gefunden von H.J. und P.M. Houben, und sehr  
wahrscheinlich herrührend aus einer völlig zerstörten Grab-  
grube innerhalb des Kreisgrabens.

M. 2:3, Zeichnung J.M. Smit

feinen Kerbspachtels. Zonen begrenzt durch Eindrücke von  
zwei sehr feinen, S-, resp. Z-gezirrten Schnüren (Pseudo-  
Häkeltaschen).

2 Glockenbechergrab 1969 (Abb. 14d).<sup>16</sup>

3 Glockenbechergrab 1970 (Sammlung Houben Nr.  
195; Abb. 13).

a Zahlreiche Fragmente, die zusammen den grössten Teil  
eines Bechers bilden: vollständiges Profil. Rekonstruktion

Durchmesser des Randes jedoch nicht ganz sicher. Becher mit  
flachem Boden, mit doppelkonischem Bauch, nach oben flies-  
sender Übergang in kurzen, abstehenden Hals. Mit Sand ge-  
magerter Ton. Farbe hellbraun mit grauen Flecken, sowohl  
innen als auch aussen. Dunkler Kern. Verzierung auf der ge-  
samten Oberfläche, bestehend aus 13 horizontal verlaufenden  
Zonen mit abwechselnd nach links und nach rechts gerichteten  
diagonalen Eindrücken eines Kerbspachtels. Die Zonen sind

16 Für Beschreibung sehe Verlinde 1969.

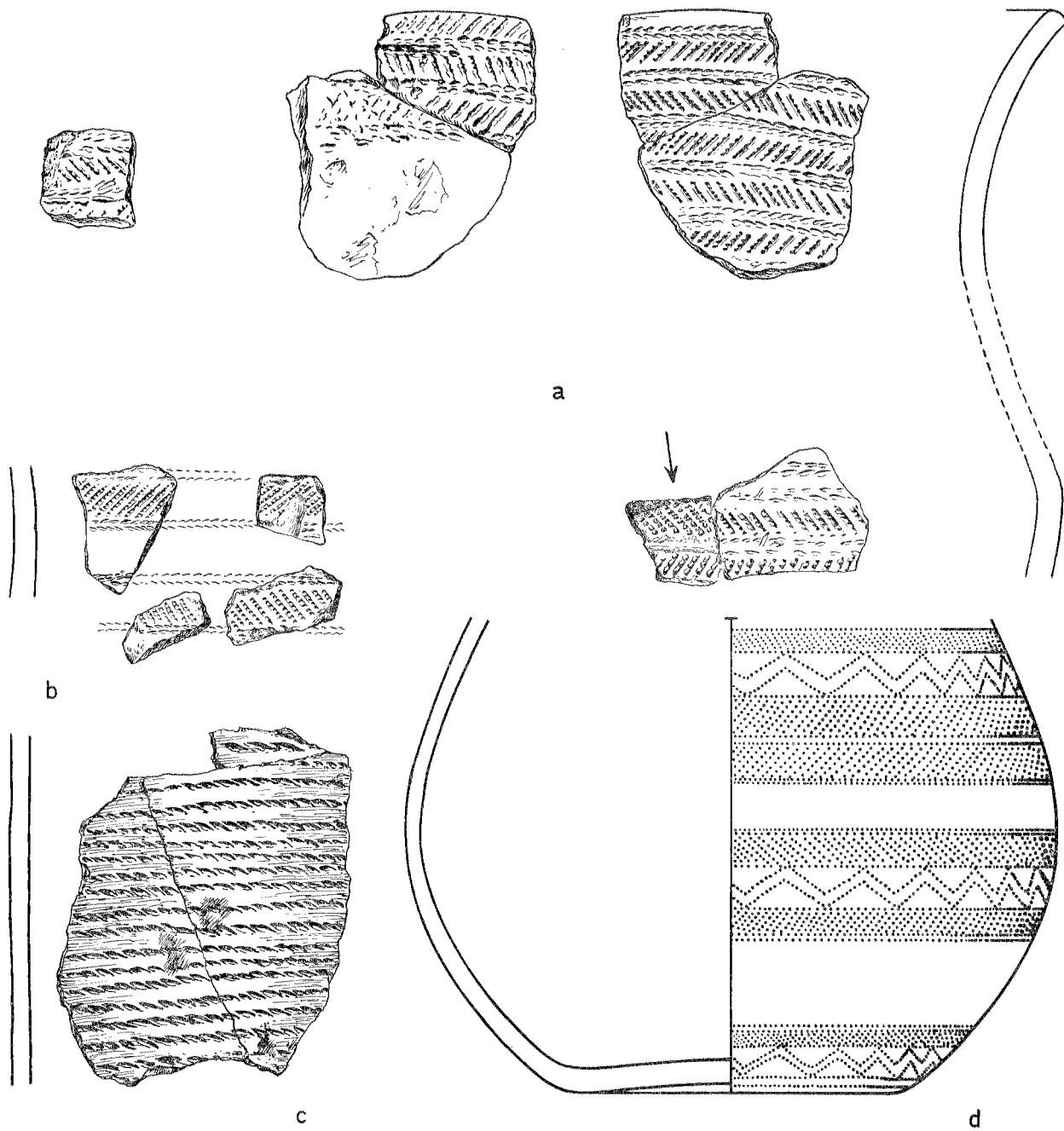


Abb. 14 *Baexem*. Glockenbecherfunde vom Weyersberg.  
 a Scherben eines Bechers Typ 211a, gefunden von J.H.J. Berghs 1967. Die mit einem Pfeil angedeutete Scherbe wurde 1971 während der Grabung gefunden (Fundnr. 26).  
 b Scherben eines maritimen Glockenbechers, Typ 21a, gefunden 1967 bei a.

c Scherbe eines totalschnurverzierten Bechers, Typ 21b, gefunden 1926.  
 d Glockenbecher von lokalentwickeltem Typ, gefunden 1969 von H.J. und P.M. Houben (nach Verlinde 1969).  
 M. 2:3, Zeichnungen J.M. Smit (a-c) und H.M.C. de Kort

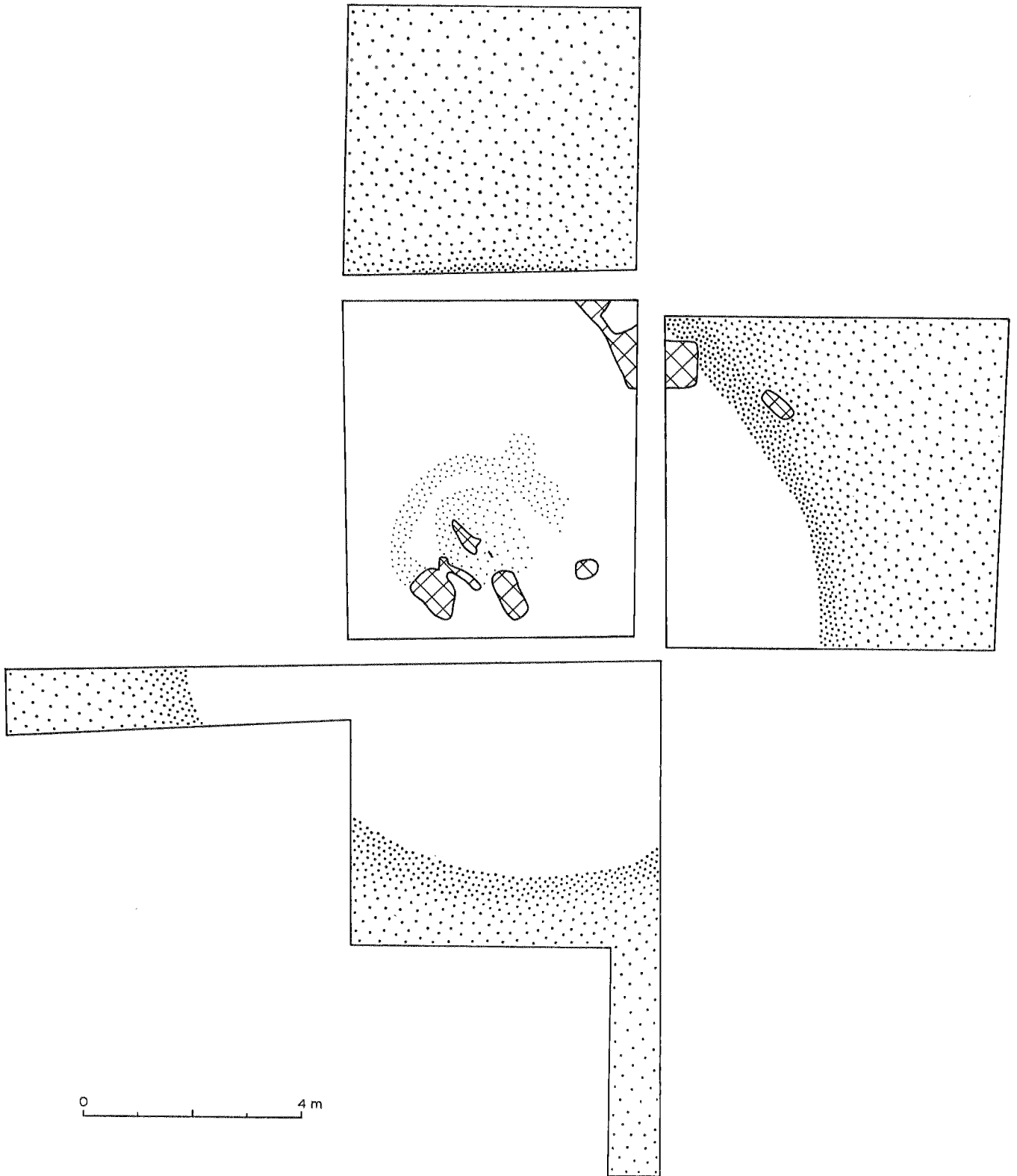


Abb. 15 *Millert*. Grundriss des eingebneten Grabhügels.  
Zeichnung: A. Meijer/G. Delger

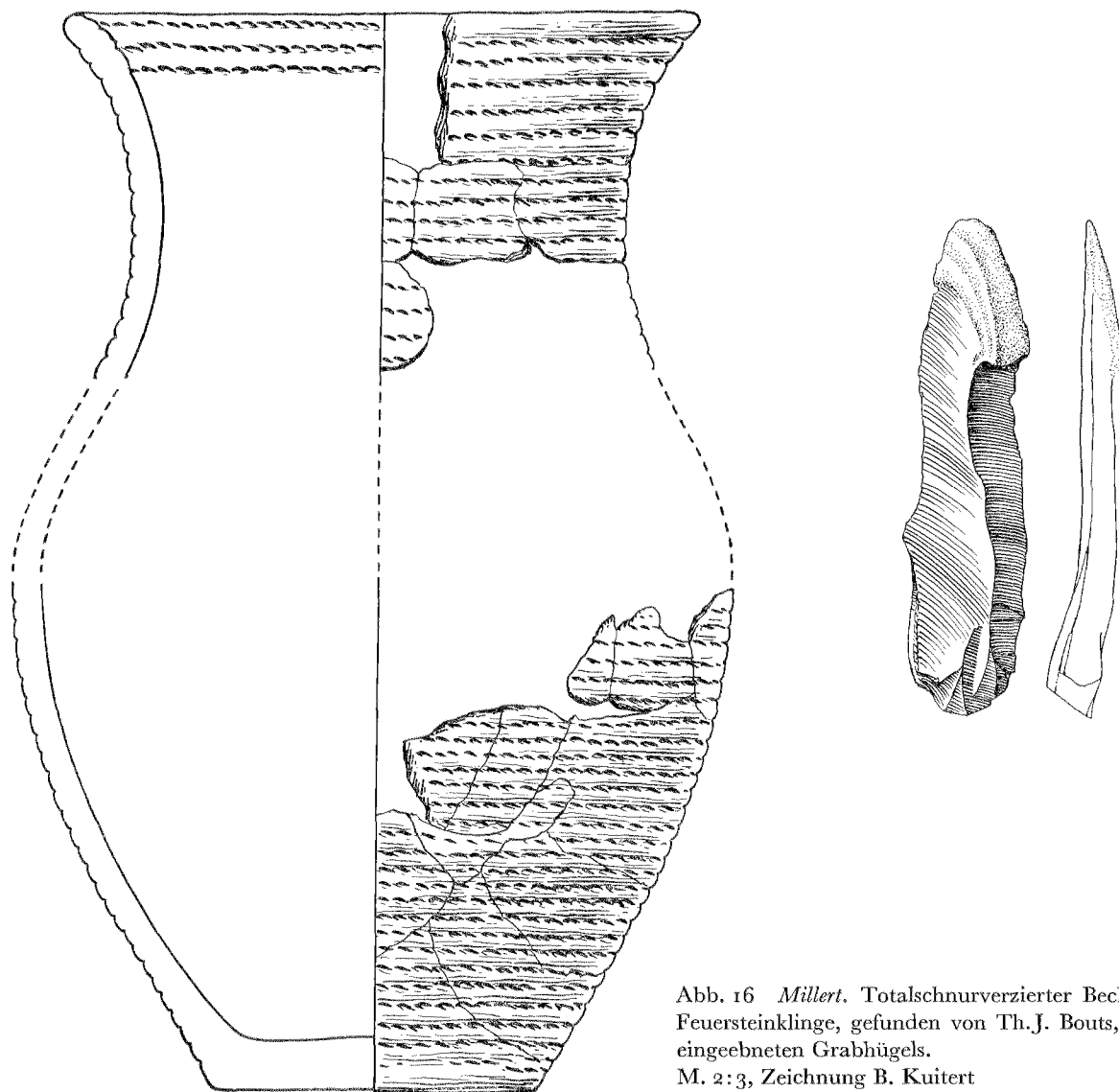


Abb. 16 *Millert*. Totalschnurverzierter Becher Typ 2nb und Feuersteinklinge, gefunden von Th.J. Bouts, an der Stelle des eingebneten Grabhügels.

M. 2:3, Zeichnung B. Kuitert

jeweils voneinander getrennt durch 2 mal 2 Eindrücke einer S- und einer Z-gezwirnten Schnur (Pseudo-Häkeltaschen). Der Rand ist an der Innenseite mit drei horizontal verlaufenden Schnureindrücken und eine Zone von diagonalen Kerbspachtelindrücken verziert.

Höhe 18,7 cm, Raddurchmesser ca. 11,5 cm, Bauchdurchmesser 14,0 cm.

b Beil aus grauem, dunkelgeflecktem Feuerstein. Trapezoidale Form, gewölbte Flächen. Doppelt abgestumpft-ogival auf Querschnitt. Gerade abgestumpfte Spitze. Ganz geschliffen, mit Ausnahme der Spitze. Leicht fazettiert.

Länge 5,4 cm, Breite (an der Schneide) 4,4 cm, maximale Dicke 1,5 cm.

c Klinge aus hellgrauem, dunkelgrau geflecktem Feuerstein. Breite Schlagfläche und Schlagbuckel. Im Querschnitt dreieckig. Spitze abgebrochen. Unbearbeitet. Spuren von Gebrauchsretusche am ganzen Rand entlang.

Länge noch 7,6 cm, maximale Breite 2,5 cm, maximale Dicke 1,1 cm.

*Weitere Glockenbecherfunde in der Umgebung des Weyersberges*

Zu den hier aufgezählten Gräbern reihen sich einige Funde in nächster Nähe (Abb. 10):

a Ungefähr 300 m nordwestlich von dem Ausgrabungsgelände von 1971 wurde 1926 bei Arbeiten, die der Urbarmachung dienten, das Fragment eines 211b-Bechers gefunden (Abb. 14c).

b In einer Sandgrube bei Kelpen wurden verschiedene Male Scherben von 211b-Bechern gefunden.<sup>17</sup>

c Ungefähr 4 km WNW vom Ausgrabungsgelände entfernt bei Millert, Gemeinde Nederweert fand Th.H. Bouts 1947 in einer grossen runden gelben Fläche innerhalb von Ackerland Scherben eines 100c-Bechers (Typ 211b), die er durch Graben in der Ackerfurche zum grössten Teil vervollständigen konnte. Zwischen den Scherben entdeckte er ausserdem eine unbearbeitete Klinge aus Feuerstein (Abb. 16).

Da die Annahme, dass es sich hier um einen Grabfund aus einem eingeebneten Grabhügel handelte, berechtigt war, wurde vom 23. bis zum 27. Sept. 1957 eine Untersuchung auf dem Fundort angestellt. Dass an dieser Stelle tatsächlich ein Grabhügel gelegen hatte, ging aus der Infiltration um den Fuss des verschwundenen Hügels und aus dem Fehlen dieser Infiltration weiter nach innen hervor. Schwache Verfärbungen in der Umgebung des Zentrums könnten darauf hinweisen, dass es um ein Grab innerhalb einer Standspur ging (Abb. 15).

*Die Funde* (Sammlung Th. J. Bouts, Herten; Abb. 16):

a Unterhälfte und grosses Rand-Wandfragment eines total-schnurverzierten Bechers, Typ 211b. Flacher Boden, sekundär verzogen. Keramik aussen ockerbraun, örtlich graubraun, innen matt-graubraun. Kern schwarz. Verziert mit den Eindrücken einer spiralig umziehenden, S-gezwirnten Schnur. Auf der Innenseite des Randes drei Eindrücke eines S-gezwirnten Schnur, eine vierte Eindruck liegt auf dem Rand.

b Klinge aus hell- und dunkelgrau geflecktem, undurchsichtigem Feuerstein. Schlagfläche teilweise, und Schlagbuckel vorhanden. Bei der Spitze noch Teil der Rinde. Nicht bearbeitet. Länge 10,2 cm, maximale Breite 2,5 cm.

17 Z.B. Bloemers 1973, S. 20, Abb. 4: 7.

18 So z. B. bei Van der Waals und Glasbergen 1955.

19 Lanting/Mook/Van der Waals 1973; Lanting/Van der Waals, in Vorbereitung.

## ZUSAMMENFASSUNG UND SCHLUSSBETRACHTUNG

Die hier erwähnten (Grab-)Funde haben besondere Bedeutung, weil sie in der Diskussion über das Verhältnis der Standfussbecherkultur (nordwestdeutsch-holländische Einzelgrabkultur) zur Glockenbecherkultur eine Rolle spielen. Hauptsächlich auf Grund von typologischen Erwägungen bezüglich der Keramik wurden diese Funde früher oft als Resultat einer Vermischung der beiden Kulturen im Mittel- und Niederheingebiet und in den Niederlanden betrachtet.<sup>18</sup> Nimmt man jedoch eine Reihe C14 Datierungen, Fundassoziationen und Grabformen in Betracht, dann ergibt sich der Eindruck, dass diese Funde viel eher eine Übergangsphase darstellen, welche die Standfussbecherkultur und die Glockenbecherkultur in dem oben umschriebenen Gebiet in einer fortlaufenden Entwicklung verbindet. An anderem Ort findet der Leser eine eingehendere Diskussion dieser Problematik.<sup>19</sup> Hier wollen wir einige Punkte, die mit den hier beschriebenen Funden zusammenhängen, näher erörtern.

Das Bienenkorbgrab von Doorwerth (Abb. 4) darf als flaches Bienenkorbgrab aufgefasst werden. Über Bienenkorbgräber haben wir früher folgendes bemerkt<sup>20</sup>: 'Gräber von abgerundet-rechteckiger, ovaler oder runder Form, deren direkte Begrenzung durch einen Graben gebildet wird, der tiefer als der Boden des Grabes reicht und auf höherer Ebene mit der Grube ein Ganzes bildet. In einigen Fällen zeigte sich, dass der Graben eine Standspur war. Gräber von diesem Typ sind zum ersten Mal von van Giffen (1930: Onnen, Taf. 90–91; Langendijke Tum. II, Taf. 99, 101) Bienenkorbgrab genannt worden.'

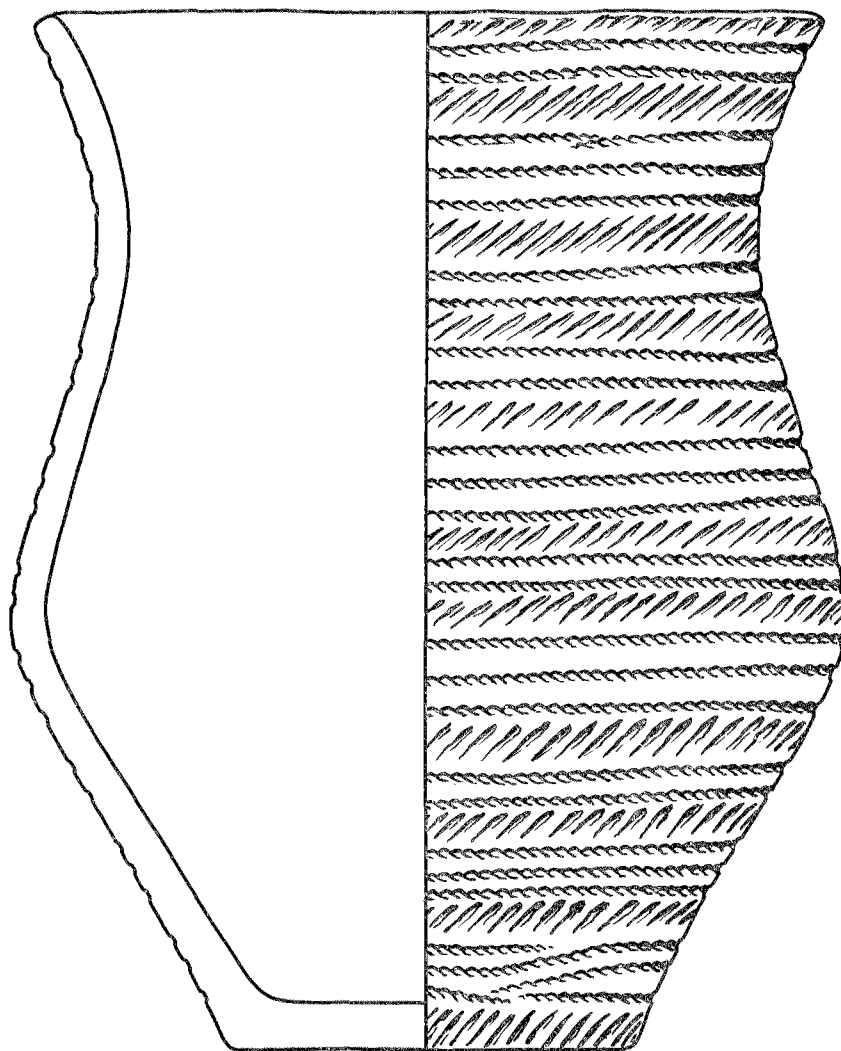
In der hier zitierten Definition ist von einem Bienenkorbgrab nur die Rede, wenn eine vertiefte Grube vorhanden ist. Diese Grube kann manchmal sehr untief sein. Dies war zum Beispiel in Tumulus 1 in Vaassen der Fall.<sup>21</sup> Auch das Grab von Doorwerth war sehr untief. In diesem Licht betrachtet ist es plausibel, dass auch 'Bienenkorbgräber auf Bodenniveau' bestanden haben. In der Praxis können jedoch nur die abgerundet-rechteckigen Bienenkorbgräber auf Bodenniveau als solche bezeichnet werden, weil Gräber auf Bodenniveau innerhalb eines kreisförmigen Grabens von nur einigen Metern Durchmesser als eine gleichartige Entwicklung der Schachtgräber innerhalb eines Standgrabens aufgefasst werden können.

20 Lanting/Van der Waals 1971, Anm. 7.

21 Lanting/Van der Waals 1971.



Abb. 17 *Gawijzend.* Becher Typ 211d  
(siehe Braat 1932).  
M. 2:3, Zeichnung J.M. Smit



Bienenkorbgräber treten schon in der frühesten Phase der Standfussbecherkultur auf (Gräber mit A-Streitäxten in Hijkerveld und Odoorn-Eeserveld).<sup>22</sup>

Auch aus dem 100-Zusammenhang waren bereits Bienenkorbgräber bekannt. Ausser in Doorwerth wurde ein untiefes Bienenkorbgrab wahrscheinlich auch in Emst-Hanendorp gefunden, in diesem Fall mit einem total-

schnurverzierten Becher (Typ 211b), einem späten Standfussbecher (Typ 1e) und einer Dolchklinge von Grand-Pressigny Feuerstein.<sup>23</sup> Ein abgerundet-rechteckiges Bienenkorbgrab auf Bodenniveau mit vier totalschnurverzierten Bechern (Typ 211b) wurde in Tumulus 3 in Swalmen gefunden.<sup>24</sup>

Zur Vermeidung von Missverständnissen weisen wir

<sup>22</sup> A.E. Lanting, in Vorbereitung.

<sup>23</sup> Holwerda/Evelein 1911, S. 19; man achte vor allem auf den Hinweis auf das Grab von Enkhout, Holwerda 1911, Abb. 1.

<sup>24</sup> Ausgrabung Bursch 1936; Lanting/Van der Waals 1974.

darauf hin, dass sowohl bei der Standfussbecher- als bei der A00-Bechergruppe auch normale Gräber auf Bodenniveau, teilweise innerhalb enger oder weiter Standspuren vorkommen.

Die Becher der hier behandelten Fundgruppen gehören grösstenteils zu der Gruppe der totalverzierten Becher, die früher meistens als Mischformen der Standfussbecher und Glockenbecher betrachtet wurden. Entsprechend der geänderten Arbeitshypothese ist es jedoch typologisch eben so sehr möglich, diese Becher in eine Entwicklungsreihe aufzunehmen, und zwar als Glied zwischen die (typologisch früheren) Standfussbecher und die (typologisch späteren) Glockenbecher.<sup>25</sup> Einfachheitshalber können wir die Becher dieser Gruppe als A00 (= All-Over-Ornamented) andeuten.

Der Becher von Millert (Abb. 16) und die Scherbe von Baexem (Abb. 14c) gehören zu dem am meisten vorkommenden Typ dieser Gruppe: der totalschnurverzierte Becher (= A0C, Typ 211b), wovon die meist auffallende Konzentration in den Niederlanden ebenfalls aus Mittel limburg, und zwar aus Swalmen, stammt.<sup>26</sup>

Viel seltener sind die totalverzierten Becher vom Typ 211a, wie die von Helden (Abb. 9) und Baexem (Abb. 13), die bereits den echten maritimen Glockenbechern (Typ 21a) nahe stehen.

Dem kleinen Becher von Doorwerth (Abb. 5) entspricht in den Niederlanden der Becher von Gawijzend<sup>27</sup> (Abb. 17). Auch dieser Becher weist an der Aussenwand Eindrücke von grober Schnur und diagonale Eindrücke eines glatten Spachtels auf. Der Unterschied zwischen den Bechern von Doorwerth und Gawijzend liegt darin, dass die Spachtelindrücke auf dem Becher von Gawijzend alle die gleiche Richtung haben, während diejenigen auf dem Becher von Doorwerth abwechselnd entgegengesetzt diagonal gerichtet sind. Ausserdem fehlt bei dem Becher von Gawijzend die Innenrandverzierung des Bechers von Doorwerth. Obwohl die Becher von Doorwerth und Gawijzend anscheinend eng verwandt sind mit den Bechern vom Typ 211a, wie sie bei Helden und Baexem gefunden wurden, unterscheiden sie sich von letzteren durch die Tatsache, dass die Spachtelindrücke von einem glatten (Standfuss-

becher-) und nicht von einem gezähnten (Glockenbecher)-Spachtel stammen. Bis vor kurzem wurden sie nicht als getrennte Typen beschrieben, doch wir waren der Meinung, dass ihnen gemäss dem Entwurf der üblichen Typologie<sup>28</sup> doch eine eigene Bezeichnung zukommt, und wir nennen sie deshalb Typ 211d.<sup>29</sup>

Der grosse Becher von Doorwerth (Abb. 5) besitzt, soweit uns bekannt ist, in den Niederlanden keine Parallele, doch wurde bei Weissenthurm, Kreis Koblenz, ein den Massen nach sehr vergleichbarer Becher gefunden<sup>30</sup> (Abb. 18). Mit ihrer nicht glatt gemachten Oberfläche, ihren grossen Massen und ihren ziemlich groben Spachtelindrücken könnte man die Becher von Doorwerth und Weissenthurm als Prototypen des Topfbeckers betrachten.<sup>31</sup> Auf dem Weyersberg sind auch Fragmente von zwei voll entwickelten 'echten' Glockenbechern zum Vorschein gekommen.

Die Scherben, die 1967 zusammen mit Scherben eines A00-Bechers vom Typ 211a gefunden wurden (Abb. 14a,b), stammen von einem maritimen Glockenbecher, Typ 21a, mit doppelter Schnurbegrenzung der verzierten Zonen, das heisst, von derjenigen Art maritimer Becher, die noch am meisten Verwandtschaft mit den totalverzierten Bechern vom Typ 211a aufweist. Wenn die Scherben von beiden Bechern wirklich aus ein und demselben Grab stammen, dann würde diese Assoziation eine schöne Illustrierung der genetischen Verwandtschaft beider Typen bilden.

Der Glockenbecher aus dem Grab von 1969 (Abb. 14d) muss wahrscheinlich etwas später datiert werden. Der Becher kann am besten als eine Entwicklung aus dem maritimen Typ gekennzeichnet werden, wobei als neues Element horizontale Zickzacklinien auf den unverzierten Zwischenzonen auftreten. Für unser Gebiet ist diese Art von Becher neu, trotzdem kann man ihn am besten bei den Bechern mit beginnender Zonenkontraktion unterbringen,<sup>32</sup> wie es Verlinde<sup>33</sup> auch tut. In anderen Gebieten, namentlich in Frankreich, kommen diese Bereicherungen des maritimen Verzierungsschemas öfter vor.<sup>34</sup>

*Beile aus Feuerstein* kommen in Gräbern der Standfussbecherkultur regelmässig vor, doch sie sind auch in Grä-

25 Lanting/Mook/Van der Waals 1973, Fig. 1.

26 Lanting/Van der Waals 1974.

27 Braat 1932; Van der Waals 1955.

28 Van der Waals/Glasbergen 1955.

29 Lanting/Mook/Van der Waals 1973.

30 Gatermann 1943, S. 115.

31 Lanting 1973.

32 Van der Waals/Glasbergen 1955, Typ 21b.

33 Verlinde 1969.

34 Vergl. Treinen 1970, Fig. 15: 4, 12: 3, 16: 3; L'Helgouach 1963, Typ IIIe.

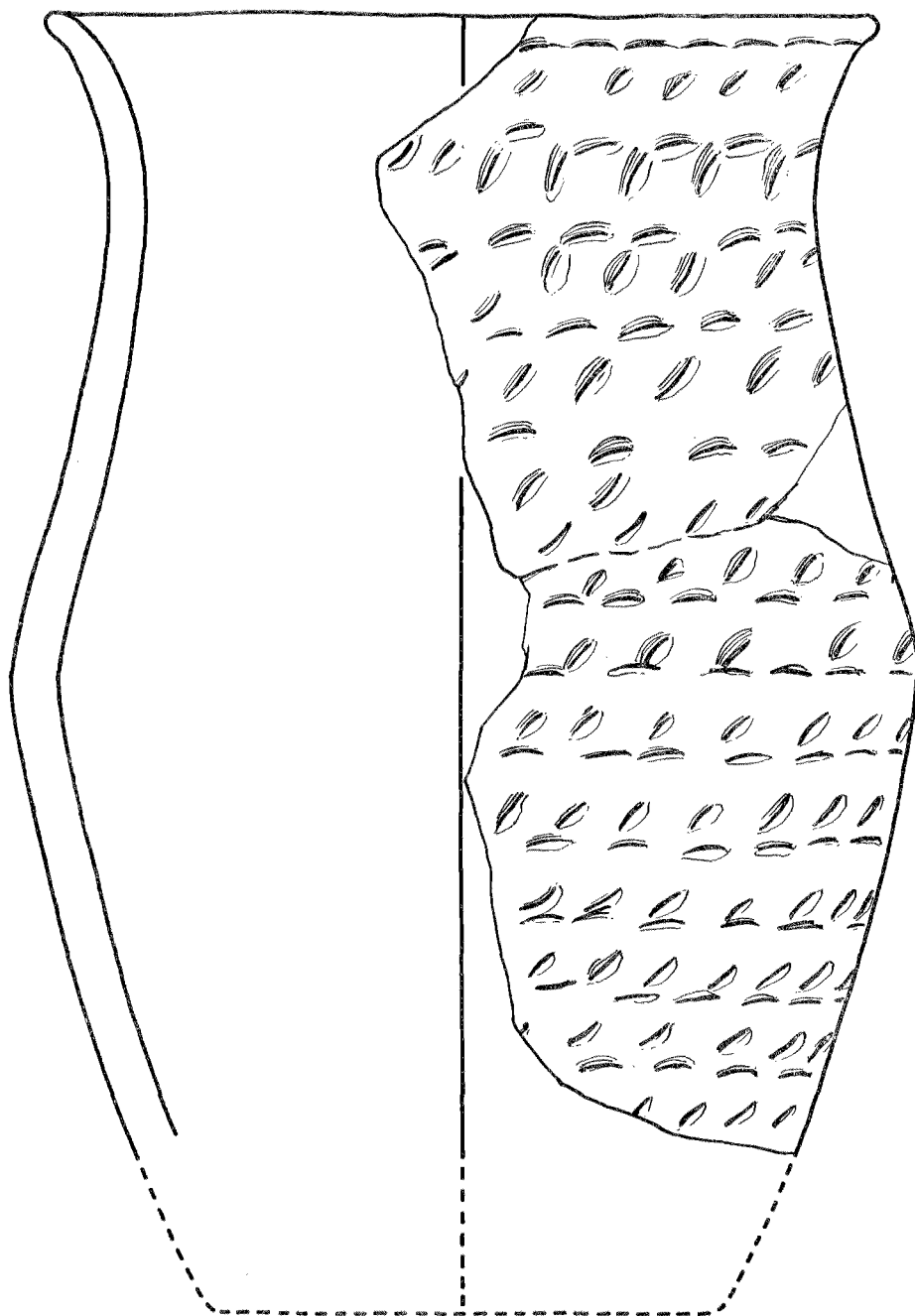


Abb. 18 *Weisenthurm*, Kr. Koblenz. Grosser Becher mit groben Spachteleindrücken (RGM-Köln, P 5140).  
M. 2:3, Zeichnung H.R. Roelink

bern der AOO-Gruppe nicht selten.<sup>35</sup> Während jedoch in den Gräbern mit totalschnurverzierten Bechern (Typ 211b) von Greven<sup>36</sup> und Garderen, Tum. 4<sup>37</sup> Beile mit rechteckigem Querschnitt vom Standfussbechertyp vorkommen, wird im 'Süden' diese Rolle von kleinen Flintovalbeilen<sup>38</sup>, Beilen mit trapezoidalem Umriss, abgerundeter Spitze und (abgestumpftem) linsenförmigem Durchschnitt übernommen. Dies gilt nicht nur für die Beile aus den Gräbern von Doorwerth und Baexem, sondern auch für das eng verwandte Grab von Hünxe-Hamweg,<sup>39</sup> das ausserdem durch einen totalschnurverzierten Becher (Typ 211b) und eine Dolchklinge aus Grand-Pressigny Feuerstein charakterisiert wurde. Diese Erscheinung muss im Licht der von Brandt festgestellten Seltenheit von kleinen Flintovalbeilen im Nordwesten, westlich von der Hunte, und nördlich der Hase betrachtet werden. Die südniederländisch-niederrheinischen Bechergruppen bezogen ihre Beile aus Feuerstein anscheinend aus den sogenannten westeuropäischen Produktionszentren.<sup>40</sup>

*Dolchklingen von Feuerstein aus Le Grand Pressigny* sind in einer Anzahl von Gräbern mit späten Standfussbechern (Typ 1d und Zickzackbecher) und vor allem in Gräbern mit AOO-Bechern gefunden worden. Während einer bestimmten Periode, die wohl mit der Bodengrabzeit der südsandinavischen Einzelgrab-Chronologie zusammenfällt, scheinen sie in diesen Gräbern die einfachen Feuersteinklingen, die in Gräbern der Standfussbecherkultur und der AOO-Gruppe häufig auftreten, zu ersetzen.<sup>41</sup> Die Grabfunde mit Grand-Pressigny Dolchklingen von Doorwerth und Helden reihen sich zwanglos in diese Gruppe ein. Betrachtet man die Becher der Typen 211a und 211d, die am engsten mit den maritimen Glockenbechern verwandt sind, als die jüngsten Typen der AOO-Becher, dann gehören die Gräber von Doorwerth und Helden wahrscheinlich zu den jüngsten Gräbern mit Grand-Pressigny Messern. In Gräbern mit typologisch späteren Glockenbechern sind sie bisher nicht angetroffen worden.

35 Lanting/Mook/Van der Waals 1973, Tabelle S. 46.

36 Albrecht 1934.

37 Bursch 1933.

38 Brandt 1967.

39 Stampfuss 1941.

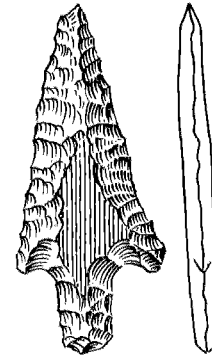


Abb. 19 *Hünxe-Hamweg*, Kr. Dinslaken. Pfeilspitze aus Grab B (siehe Stampfuss 1941: die zugehörige Scherben eines Bechers Typ 211b sind verloren).

M. 1:1, Zeichnung J.M. Smit

*Pfeilspitzen mit Flügeln und Schaftdorn*, die in späteren Glockenbechergräbern häufig vorkommen, sind als Bestandteil von AOO-Grabfunden eine Ausnahme. Umso mehr ist es zu bedauern, dass von der Pfeilspitze von Helden nicht feststeht, ob sie wirklich in dem Grab gefunden worden ist. Man kann jedoch auf ein Gegenstück im AOO-Zusammenhang verweisen. Stampfuss fand 1934 bei Hünxe-Hamweg in Grab B vereinzelt Leichenbrandreste, Scherben eines totalschnurverzierten Bechers (Typ 211b) und eine Pfeilspitze mit Flügeln und Schaftdorn<sup>42</sup> (Abb. 19). Die Scherben des Bechers sind leider verloren gegangen, die Pfeilspitze wird jedoch im Niederrheinischen Museum in Duisburg aufbewahrt (Inv. Nr. H34: 189a). Sie ist beidseitig bearbeitet und scheint aus dem Fragment eines Feuersteinbeiles angefertigt zu sein. Auf einer der Flächen sind noch Schleifspuren zu sehen.

40 Brandt 1967, S. 82f und Karte 21-23; Bakker 1973, V, S. 23-25.

41 Vergl. Bakker/Van der Waals 1973, S. 39-41; Lanting/Mook/Van der Waals 1973, S. 45-46.

42 Stampfuss 1941, S. 550.

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# A Contribution to the Study of Bronze Age and Iron Age House-plans: Zijderveld

figs. 1-2

This paper (merely a descriptive and preliminary report) offers the opportunity of discussing a couple of house-plans in some detail. A Bronze Age plan and an Iron Age plan, both from the same site, were selected. They have been examined during extensive ROB excavations in 1965, 1966, and 1971 at Zijderveld (mun. Everdingen), situated south of the Lek, the lower course of the Neder-Rijn. The attraction of these house-plans lies in the fact that the ground-levels concerned were covered by a 0.50 m phased deposit of clay. Both house-plans were partly destroyed by trenches of the medieval reclamation, but the disturbance was not essentially significant. The subsoil wood of the Iron Age house-plan has been conserved, in contrast to that of the other house-plan situated 0.30 m higher.

## *The Bronze Age House*

Pottery found in association with the ground-plan dates to the late Drakestein/Laren phase of the Hilversum Culture, *i.e.* the second half of the Middle Bronze Age.<sup>1</sup> The house-plan (fig. 2:1) was oriented almost due west-east. It was situated on the highest part of a natural elevation, *c.* 0.30–0.40 m above the immediate surroundings. Only part of the house-plan is extant, as may be concluded from fig. 2:1. The reconstruction of the eastern section has been based on the evidence of the terminal wall of a 4.50-m-long extension added some time later to the east end of the house in eastern direction. Only the first phase will be discussed here.

The total inner length was *c.* 27.00 m. The inner width of the western part was 5.00–5.50 m. The impression was that the building gradually widened eastwards to a maximum of 6.00 m.

<sup>1</sup> See Glasbergen 1969 for ceramic terminology, phasing, and dating.



Fig. 1 Situation of Zijderveld

The house-plan consisted of 7 ridge-poles, 2 × 11 roof-posts, and 2 × 2 parallel rows of wall-posts, and 2 × 2 entrance-posts. Trenches ran parallel to the house on both sides. The ridge-poles and roof-posts divided the interior into four aisles of roughly identical width. In relation to each other, the ridge-poles and walls were positioned symmetrically. It was remarkable that the

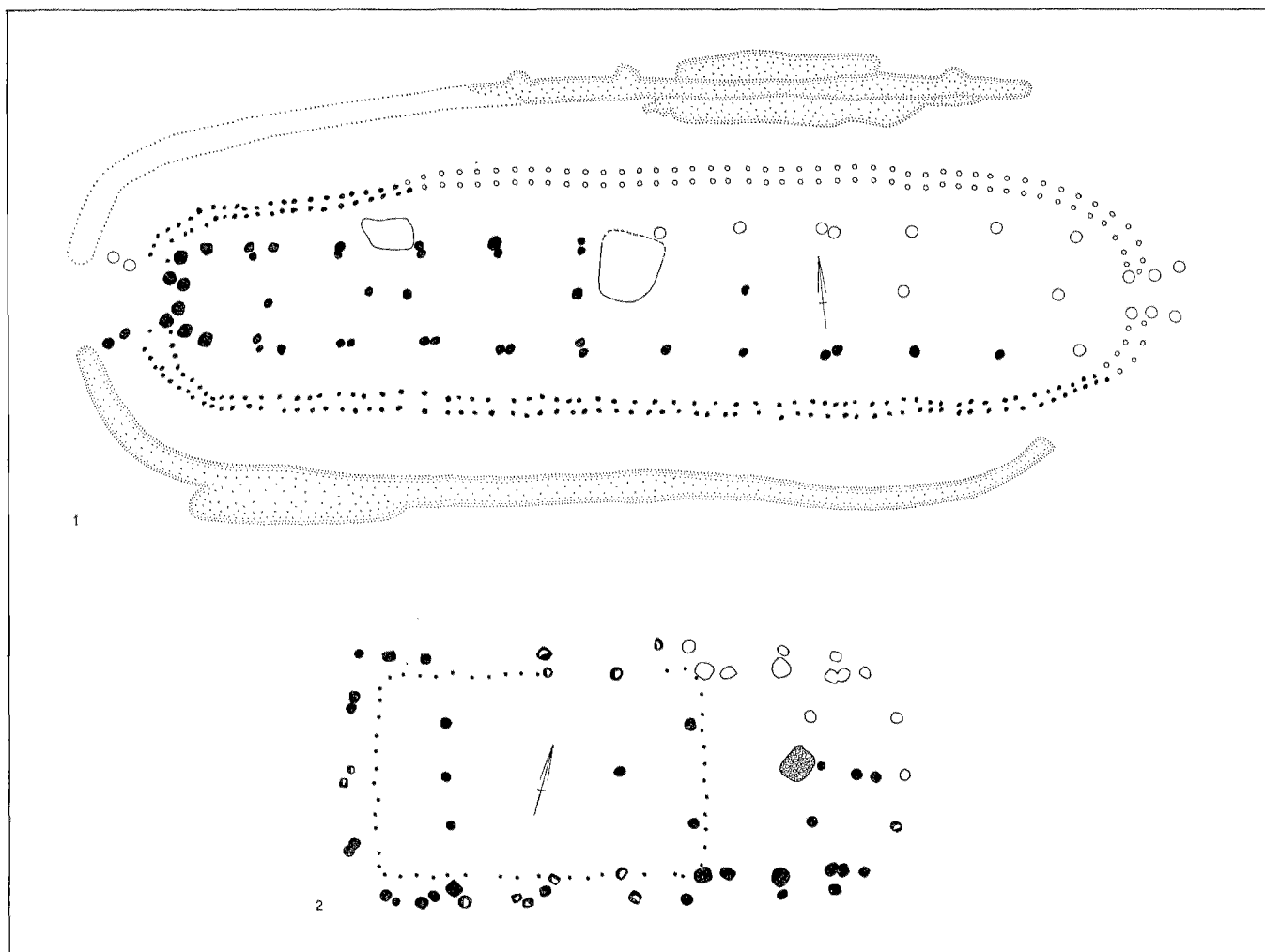


Fig. 2 1 Bronze Age house-plan, 2 Iron Age house-plan (scale 1:200)

roof-posts of the west part of the construction did not fit into this symmetry. Posts were set at regular intervals throughout the house-plan. At every alternate beam, ridge-poles were placed next to roof-posts. The second ridge-pole, counting from the west, was 'doubled' by an extra post. These posts were 0.46–0.66 m deep with an average of 0.56 m.

The average distance between roof-posts was *c.* 2.30 m, measured over the long axis of the house-plan. The post-holes differed greatly in depth, *i.e.* 0.40–0.88 m. The average depth is 0.65 m, including the 'double' posts (see

below), which is almost 0.10 m more than the ridge-poles. This difference clearly indicates the outstanding function of roof-posts in what appears here to be a four-aisled type of building, and this is even more true when the lesser length of these posts is considered in comparison with that of the ridge-poles. Some problems, however, emerged when the roof-posts were examined. First, there was the 'duplication' which occurred systematically in the western part of the house-plan. A comparison of the depths of the posts in question makes it unlikely that this concerns replacement of old posts. A very great difference



in the depths of the 'doubles' occurred too frequently. Also the question arises why this phenomenon was found only in the western part. It is more plausible to assume that this doubling was intended from the start, although the objection could be raised that some doubles were placed lengthwise and others sideways, apparently at random.

Second, the obvious concentration of posts near the short west wall. The interruption in both the wall and the outside trench indicates the presence of an entrance. Two posts (with a depth of 0.56 and 0.80 m situated on either side in line with the wall) were a part of this slightly more than 0.80 m-wide entrance.<sup>2</sup> It is obvious that the entrance was blocked off by a number of other posts, although, strictly speaking, this can be said of only one post (the four posts behind the entrance were 0.55–0.85 m deep, averaging 0.76 m). Hence, the inference could be drawn that the construction of the short west wall was changed at least once, possibly even more often. These modifications may also have led to a regrouping of roof-posts. The total number of roof-posts in the western part was 4 (2 × 2) more than was actually required for the plan itself (from west to east these posts were sunk to depths of 0.94 and 0.91 m, and 0.45 and 0.55 m, respectively). It is tempting, but naturally not demonstrable, to make a synchronous connection between these alterations and the aforementioned eastern extension of the house.

The wall consists of two parallel rows of small posts or stakes and should undoubtedly be considered to have been a double wattle wall. The average distance between the two rows is 0.30 m. The widening of the space within the short west wall is remarkable: it reached 0.75 m. The stakes in the rows were placed at a distance varying from 0.30–0.60 m. The average distances in the straight sections of the walls were 0.40–0.44 m. The stakes were closer together in the curved parts, *i.e.* 0.30–0.35 m. The stakes in the two rows were almost always placed opposite each other. This could indicate a cross-connection, thus resulting in a stronger wall which could then carry the weight of the roof more efficiently. The variation in the wall's thickness becomes important when the question arises whether the space between the walls was filled or not. Although the field investigation supplied no positive evidence, the structure of the wall suggests the possibility. In the opinion of the present writer this filling may well

have consisted of bundles of reed or straw, whether in combination with daubing or not.

Outside both entrances 2 × 2 posts were found. In view of their size and depth, these may well have had a supporting function. The two posts found on the west side were at depths of 0.65 and 0.50 m, inner and outer, respectively. The posts near the entrance of the extension show likewise a mutual difference in depth. These posts may have supported the roof, which projected considerably over the entrance, thus providing good shelter, possibly serving as a kind of covered porch.

The trenches along almost the total length of the house have had, at ground-level, a width of *c.* 1.00–1.50 m. Their depths varied from 0.40–0.75 m. The distance from the axis of the trench to the outside of the long wall was *c.* 2.00 m. A good case could be put forward that, apart from acting as enclosures or separating elements, these trenches functioned mainly as drains.

The following observations can be made concerning the planning of the different functions of the house. The exclusive occurrence of the finds and of the darkly coloured (dirty) old surface in the western part of the house-plan clearly indicated the location of the living-quarters. This area extends up to the double ridge-poles. On the borderline a (storage?) pit was found in the northern aisle. It was remarkable that no traces of a hearth were found. Cattle could have been stabled in the area east of the living-quarters. The question remains whether the entire eastern area was used for this purpose. In another context an attempt will be made to demonstrate that some doubts at least exist on this point.<sup>3</sup> It seems certain, however, that the farm could accommodate a considerable number of cattle (20–30 head).

#### *The Iron Age House*

The great quantity of pottery found mainly within the house-plan dates the house to a late phase of the Early Iron Age *c.q.* the beginning of the Middle Iron Age.<sup>4</sup> The house-plan (fig. 2:2) was oriented nearly west-east and consisted of 3 ridge-poles, 3 × 2 roof-posts, wall-stakes, and outer posts. The measurements of the house were 15.15 × 6.75–7.00 m, including the outer posts; the inner measurements were 13.75 × 5.60 m. The house was divided into four parts of equal width – four aisles – by inside posts.

<sup>2</sup> For the entrance posts, compare Beex/Hulst 1968.

<sup>3</sup> Publication 'Bronze Age Settlements at Zijderveld and Dodewaard' in preparation.

<sup>4</sup> For the different periods, see Verwers 1973, 123 ff.

The ridge-poles were spaced regularly throughout the house-plan. The middle pole was situated exactly in the middle of the total length. This pattern did not apply to the roof-posts. In the eastern part they stood at a distance of 3.25 m from each other. In the western part, however, the inter-distance was more than doubled, 6.70 m. The intention of this could only have been to create here (in the storage or cattle area) as much room as possible. Ridge-poles and roof-posts were of the same size; they had a diameter of 0.13–0.15 m and reached to a depth of 0.65–0.71 m.

The wall consisted of two parts. The cattle area had a wattle wall. This wall formed an integral part with a cross-wall of identical material, which separated the stall from the living-quarters. The living-area, about half the size of the barn, was bounded by a wall of posts. The stakes of the wattle wall, at an average inter-distance of 0.46 m, were driven into the ground to a depth of 0.50–0.60 m. The four corners of this wall were rounded off. An entrance, marked by posts, was made in both long walls at the level of the middle ridge-pole and 1.90 m west of that point. These posts were made of trunks cleft lengthwise into halves, with a diameter of 0.16–0.18 m. They were placed in 0.49–0.55-m-deep pits. It was noteworthy that the stakes of the wall were continuous, at the southern entrance. They may have served to secure a wooden threshold.

The wall-posts of the dwelling area were 0.15–0.25 m in diameter; the pits were 0.42–0.67 m (average 0.52 m) deep. Only the southern wall was complete; only one post belonging to the eastern wall was found. The position of the posts in the southern wall is remarkable. At each of both ends two posts were situated close together. A fifth post stood in the middle. A sixth post may indicate some repairs. It was difficult to establish how the wall was closed off: with heavy twigs or branches, or with beams or planks. If the post (of identical size) situated in the middle of the inside of the short side is considered to have been part of this wall, it could be assumed that this wall had indeed a beam-construction. In any case there is the definite impression that the wall must have been of much heavier construction than the wattle wall of the barn.

A row of posts ran outside the wall at a distance of 0.50–0.90 m, following the walls all around the house. The depth of the post-holes varies from 0.25–0.50 m, on average 0.38 m. The number of posts and their position make it probable that either some posts were replaced by others or some were added to the original number. The diameter was 0.15–0.20 m. A considerable number con-

sisted of segments of posts cleft lengthwise. The posts along the short walls were set at a regular distance from each other. It seemed that the posts along the long walls were situated in four groups of two. The large interspace, 3 m long near the entrances, is remarkable.

An interesting question is the function of these outer posts. There is nothing to indicate that these posts had been planted obliquely so that they supported the walls (*Wandstreben*). Consequently, the posts seem to have been vertical. The appearance of both a light wattle wall and outer posts is thus a clear illustration of the phenomenon of a division between the *tragende* and *abschliessende* part of the wall as found by Trier,<sup>5</sup> and which started in the late Hallstatt period. The posts carried the eaves by means of beams connected to them lengthwise. Thus an effective shelter for the wall against weathering was created. The question remains open, however, whether some of the roof's weight below the roof-posts was carried by the wall-posts of the living-quarters. In any case, this is a possibility. The posts beside the entrances may also partly have had this function.

One problem is how the bridging (*Seitenpfetten*) of the two pairs of roof-posts in the barn should be interpreted. A distance of 6.70 m without an additional support for an element as important as the *Seitenpfette* is almost unimaginable.

It was clear that the roof above the short walls had *Walmdach* characteristics. The distance of the ridge-poles from the wall and the outer posts was less here than was the case with the long walls. If the eaves were of the same height all round the house, this situation could be reconstructed as a cracked *Walmdach*.

The hearth was in the middle of the living-area. The fire was made on a frame of large fragments of pottery, placed on a layer of boulders situated at ground-level. It was noticed that these potsherds showed no traces of fire damage. The foundation of the hearth was presumably changed from time to time; charred wood remains were found even below the stone layer. The soil between the hearth and the partition wall was very dirty, this in contrast to the part between the hearth and the short outer wall. It would seem, therefore, that most domestic activities had been concentrated in that part of the living-area.

According to the disposition of the stalls, and the assumption that the entire barn was used for stabling, 14–18 head of cattle could have been housed there.

5 Trier 1969, 91 ff.

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# Two Barrows from the Middle Bronze Age at Gammelke, Municipality of Weerselo, Province of Overijssel

with a contribution by W.A. Casparie

figs. 1–6; pl. 1

## INTRODUCTION

In the early summer of 1971 two mounds were observed on a terrain recently cleared of trees, between Gammelke and Oldenzaal near the Weernink estate. Since the area was soon to be used for agricultural purposes, an emergency excavation was conducted from 9 August to 22 September 1971 by the State Service for Archaeological Investigations.

The two burial mounds lay 100 metres apart on the cover-sand, due west of the eastern Twente ice-pushed ridge (fig. 1). This cover-sand consisted of very poor, nonloamy, fine sand.<sup>1</sup> The undisturbed surface of the site displayed two clearly visible ridges of cover-sand running in WNW–ESE direction; the barrows were situated on these ridges. They lay at the local 27 m altitude line marked on the map, north of the valley of the Schabekke, a tributary of the Gammelke stream. The excavation site was afforested in 1926, according to the owner. On maps showing the situation from 1848 to 1933, the area is indicated as heathland. A heath due north of the two barrows was the site of an urnfield which had been dug up in the previous century and at the beginning of this one, before (and during) the reclamation of the heathland. A number of urns and accessory vessels from this cemetery are to be found in the museums of Enschede, Oldenzaal, and Zwolle. Several test-cuttings were made in the site under excavation, taking into consideration the possibility that there could be flat graves or the remains of an urnfield in the area. However, no such traces were found.

## TUMULUS 1<sup>2</sup>

### *Description*

The height and diameter of this round, asymmetric

mound were initially difficult to determine, since the incline of the mound and the ridge of cover-sand ran into one another very gradually. During the excavation these measurements proved to be 50 cm and 13 m, respectively. The mound was raised on top of a largely disturbed floor profile. Of the probably original heather podzol (Du.: *haarpodzol*) there remained only the B-layer (iron pan) and the fibres below. Under the central part of the mound even these faint floor fragments were missing. Towards the centre the B-layer disintegrated to such an extent that an increasing outflow of humus from this level under the mound appears to be the correct explanation. The absence of an actual A2 – layer (leaching layer) – although locally a grey level at the bottom of the mound gave the impression of belonging to a disturbed A2 – layer – may perhaps be explained by local sod-cutting, obviously prior to the erection of the barrow. No traces of ploughing were found.

The profiles of the mound gave no indication that the barrow comprised several periods (fig. 3). Most of the mound consists of dark grey, humous sand, in which there are only vague and sporadic signs of a sod-structure. The profiles are often interrupted by grave-pits and animal burrows, while the centre is fully taken up by recent disturbances. The entire mound as well as the remains of the floor display a large number of round stains of the so-called ‘pantherskin structure’ (Du.: *rijksdaalderstructuur*). The uppermost 20 to 25 cm of the barrow are stirred, grey and dusty-brown, with traces of one season’s ploughing. Directly beneath this recent layer there is, especially in the western profile, a thin secondary iron pan belonging to the surface of the mound.

The plan in fig. 2 comprises all the data of two drawn

1 Soil Map of the Netherlands, scale 1:200,000, legend number 107.

2 Coordinates: 28 H – 256.50/482.03.

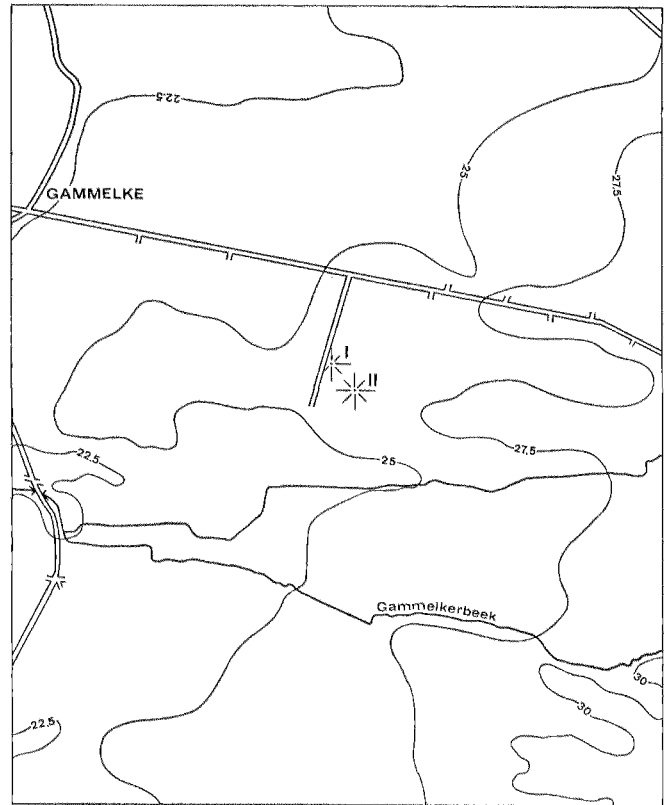


Fig. 1 Gammelke: Situation of the two barrows (scale 1:25,000)

levels with the exception of the animal, vegetable, and some recent human disturbances. The picture is now dominated by a large number of grave-pits, apparently laid out rather haphazardly. At least 34 grave-pits can be definitely counted. If we add to them doubtful cases and the lost grave-pits in and around the centre, the total number of grave-pits amounts to about 45. The most southeasterly grave-pit in the northwest quadrant was examined in section only. The direction indicated on the map is based on the discolourations in the horizontal plane.

The majority of the grave-pits both along the edge and more to the centre were laid out tangentially. Roughly one quarter of the grave-pits were dug radially or in another direction. The distribution of the grave-pits over the mound is concentrated mainly in the eastern half. About three quarters of the pits are situated there.

The length of the grave-pits varies between 1 m and c. 1.70 m, the width between 50 and 80 cm, and the depth

between 40 cm and 1 m in relation to the present surface of the mound. Only one grave-pit was found to contain grave-goods, namely three small *Kümmerkeramik* beakers (find no. 1). None of the grave-pits contained cremation remains, but some such traces were found with the urn-fragments nos. 2 and 3.

The mound was bordered by a widely spaced circle of posts with a diameter of 12.75 m (centre distance). There were eighteen post-holes/pits, 2.25 m apart (centre distance). The two most northern post-holes in the southeast quadrant, however, are 2.50 m apart and are located slightly outside the circle. The very dark fills of the post-holes, whose diameter varies between 25 and 30 cm, display flat and slightly rounded floors in section. The border structure cannot be attributed to any specific burial. It is evident, though, that the circle of posts belongs neither to the first nor to the last burial, since one of the post-holes in the southeastern quadrant overcuts a grave-pit, where-

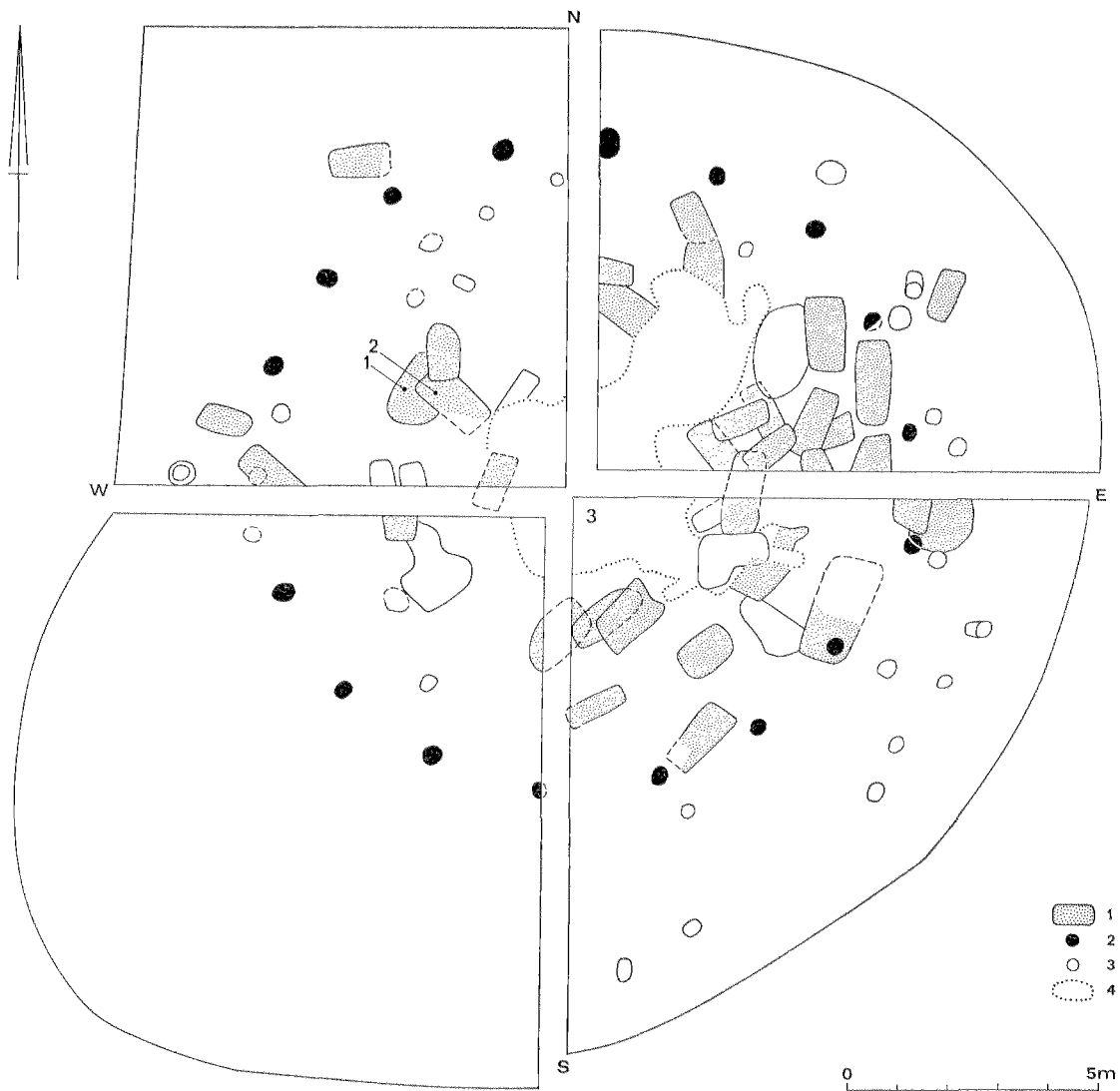


Fig. 2 Gammelke: Plan of Tumulus I (scale 1:150)  
 1 Grave-pit, 2 Post circle, 3 Diverse discolourations, possibly from post-holes and (grave-)pits, 4 Boundary of recent disturbances

as the most southern post-hole in the northwestern quadrant was visible only underneath a grave-pit. The complex nature of the barrow is further complicated by a variety of different discolourations, some of which may possibly be attributed to one or two grave-pits. These

discoloured areas are marked undotted on the plan. Work was severely hampered by the large extent of animal burrowing. It was remarkable that the animal disturbances were generally the oldest observable soil-traces. Apparently animals chose the barrow as their dwelling-place

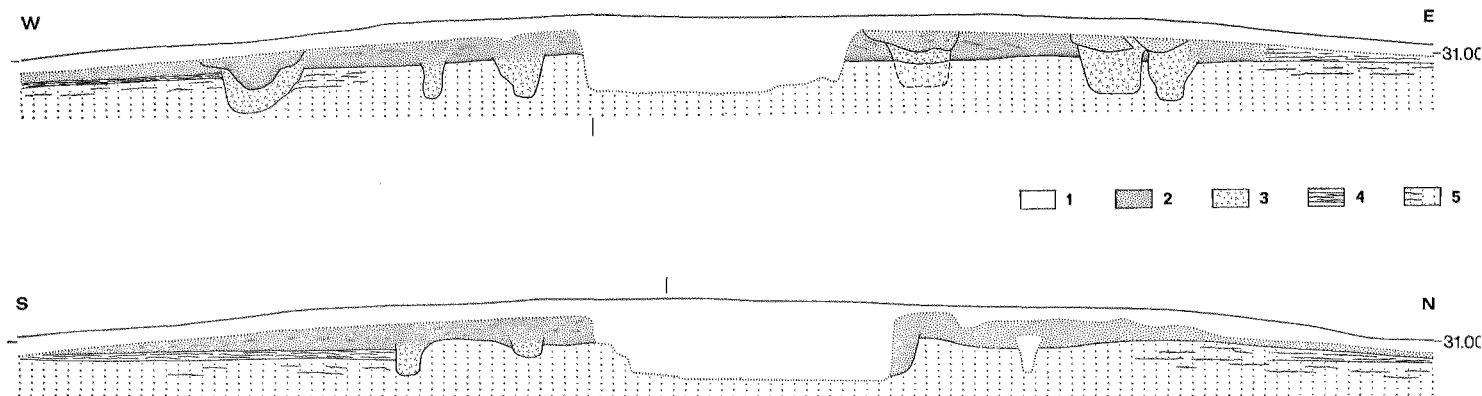


Fig. 3 Gammelke: Profiles of Tumulus 1 (scale 1:100)  
 1 Recent, 2 Mound, 3 Grave-pits, 4 Iron pan of original floor profile, 5 Undisturbed soil, with or without fibres

soon after it was raised. For the sake of clarity, these traces have not been marked on the plan. Finally, mention must be made of a number of post-holes and circular discolourations which cannot be grouped together within a particular structure.

#### *The grave-pits*

The plan of Tumulus 1 is remarkable on the one hand for the large number of grave-pits (c. 45), and on the other for the fact that these pits are so short (1–1.70 m). Since mutual overcutting is not uncommon in barrows with considerably fewer secondary burials than this one, we need not elaborate this point. It may simply indicate that the mound was in use for a long period of time, namely longer than one generation. More interesting, however, is the overcutting of relatively large and small grave-pits – this is clearly visible in three or four cases, the smaller pit always being a later addition. This circumstance suggests that the secondary burials tended toward small grave-pits. In Tumulus 1 relatively much larger grave-pits are laid out fairly regularly and tangentially over the burial mound. They represent a situation common to many middle Bronze Age burial mounds in the northern Netherlands. The smaller and generally younger grave-pits would then be a ‘development’ and the main cause of the irregular and complex pattern of distribution, partic-

ularly in the south of the northeast quadrant. We know no parallel instances of the described development, unless the partially excavated and summarily described ‘Meelworstenberg’ at Schaarsbergen<sup>3</sup> is considered as such.

The ‘Meelworstenberg’ is also one of the two barrows whose large number of secondary burials can be compared with those of Tumulus 1. This three-period mound contained, in the excavated area, no fewer than nine find-less, tangential grave-pits some classified as small. A second parallel in this respect is Tumulus 5 of the Bergsham near Garderen,<sup>4</sup> which was similarly excavated in part only. This mound comprised at least five periods, without border structure. The excavated area yielded twenty-two find-less graves, ten of which were inhumations. The total number of graves was estimated at slightly more than fifty.

In the Middle Bronze Age it was common usage in the northern Netherlands to lay the dead in an extended position in tree-coffins in large grave-pits, 2 m or more long. In addition, smaller children’s graves occur regularly. Tumulus 1 contained small grave-pits only, which can hardly have been dug for children’s graves exclusively.<sup>5</sup> According to Waterbolk,<sup>6</sup> inhumation without tree-coffins also occurred in the Bronze Age, which suggests that the method of extended inhumation might have been adopted for some of the longest grave-pits in our mound. However,

3 Glazema 1951, 93–4, and Waterbolk 1954, 95–9. Information by R.S. Hulst.

4 Van Giffen 1937. Cf. also Hulst 1971.

5 The large number of grave-pits and their different ages exclude, for instance, the possibility of an epidemic.

6 Oral information.



the pre-dominance of short grave-pits in this barrow points in all probability, in our view, to burial in sleeping position,<sup>7</sup> although the absence of corpse silhouettes and (tree)-coffin traces prevents us from proving this assumption.

It should be borne in mind that the sleeping position is not unknown in Middle Bronze Age burials in this country<sup>8</sup>. Tumulus II near Oostwoud (North Holland)<sup>9</sup> contained at least ten skeletons in the sleeping position. A flat grave at Zwaagdijk (North Holland)<sup>10</sup> contained a child's skeleton with the knees drawn up. A Bronze Age barrow in Nijlande (Drenthe)<sup>11</sup> contained a primary grave-pit with corpse silhouette in sleeping position, which Van Giffen suggested could be Neolithic. In the concentration of flat graves in Elp (Drenthe)<sup>12</sup> one silhouette with slightly drawn-up knees was observed. Finally, mention must be made of the rows of flat graves at Weerdinge, Oudemolen, and Elp,<sup>13</sup> where the grave-pits are for the most part small. Waterbolk dates these rows of flat graves to the late Middle Bronze Age, which accords with the relatively late dating of the small grave-pits in Tumulus I. The sleeping position, then, fits in with the diversity of burial customs in the Middle Bronze Age – and, although rarely, appears to have been favoured towards the end of this period.

In our description we have already mentioned the remarkable concentration of grave-pits in the eastern part of Tumulus I, which accounts for about three quarters of the total number of graves. This pattern of distribution occurs both among the older, large grave-pits and the later, small pits. By a comparison with other Bronze Age barrows, it is possible to determine whether this concentration is accidental or reflects a deliberate preference for burial in the eastern section.

Comparison of dozens of barrows dating from the Middle Bronze Age in the northern Netherlands has shown either that the majority reveals a fairly regular distribution of grave-pits or had too few grave-pits to permit

reasonable comparisons. However, a large proportion of the barrows – more than a quarter of the total number of burial mounds in view – does exhibit a specific pattern of distribution of secondary burials. This pattern is almost without exception most dense in the eastern part of the barrow. Reference may be made to a barrow at Elp,<sup>14</sup> Tumulus II at Wessinghuizen,<sup>15</sup> a single barrow at Zuidvelde,<sup>16</sup> Aalden,<sup>17</sup> Sleen,<sup>18</sup> Nijlande,<sup>19</sup> respectively, and Tumulus II at Weerdinge.<sup>20</sup> The only exceptions we know of are the barrow at Erica,<sup>21</sup> municipality of Emmen, where all the grave-pits occur in the northern part, and Tumulus 3 at Emmen,<sup>22</sup> where most of the grave-pits occur in the western part, these being secondary burials in a barrow dated to the Beaker cultures.

From the above summary we may conclude that Middle Bronze Age man in the northern Netherlands had a slight preference for burial in the eastern part of the barrows (see also Gammelke, Tumulus II).

#### *The post circle*

The slight irregularity in the east of the post circle is, in our view, a clear illustration of the way the circle of posts was erected. With the aid of a string tied in the centre it is a simple operation to plot a fairly accurate circle. With a stake or a similar object as the desired length-unit it is then easy to mark off equal distances on the circumference of the circle. Unless previous corrections are made, the last distance (*i.e.* the one remaining between the last post and the first) to be marked off will be only accidentally equal to the others.<sup>23</sup> Hence one different, longer or shorter distance in an otherwise regular formation can indicate where the plotting starts and finishes. In our case the start and finish are situated in the ESE. The lines connecting opposite posts will, under these circumstances, not pass exactly through the centre of the circle – Tumulus I is a case in point.

Far from being unique, the irregularity of the border

7 Sleeping position is preferred by us to squat (German: Höcker), which implies a vertical position.

8 Cf. also Lanting 1973, note 3.

9 Van Giffen 1961.

10 Modderman 1964.

11 Van Giffen 1941a.

12 Waterbolk 1964.

13 Waterbolk 1962.

14 Waterbolk 1964.

15 Van Giffen 1930.

16 Van Giffen 1941b.

17 Van Giffen 1940a.

18 Van Giffen 1940b.

19 Van Giffen 1941a.

20 Van Giffen 1943.

21 Van Giffen 1948.

22 Bursch 1936.

23 In another context A. Bruijn has demonstrated how a fairly regular, widely spaced circle of posts could have been plotted by a tangential placement of the posts to be erected. Unpublished.

structure of Tumulus 1 is a rather common feature of widely spaced circles of posts in both the north and the south of the Netherlands. The singular irregular distance generally occur in the south and in the east of the post circle. The following tumuli may serve as examples: in Elp,<sup>24</sup> Zeijen (Tumulus 112),<sup>25</sup> Zuidvelde (Tumulus 2),<sup>26</sup> Nijlande,<sup>27</sup> and Toterfout-Halve Mijl (Tumulus 15),<sup>28</sup> the irregularity is located in the southern part, in Toterfout-Halve Mijl Tumuli 5 and 14<sup>29</sup> in the southeast, in Angelloo<sup>30</sup> and Someren<sup>31</sup> in the east. This type of irregularity, which can thus be explained by the way the circle is laid out, has often been taken for an entrance.<sup>32</sup> The latter should not be confused with the 'blocked entrances' which occur for instance in Tumuli 5 (in the southwest) and 16 (in the northeast) at Toterfout-Halve Mijl.

The problem of how to close the last unequal gap between posts was sometimes solved in a different way. The widely spaced circle of posts in Wapse,<sup>33</sup> for instance, is completed in the southeast by three posts that are equally spaced but closer together than the posts elsewhere on the circumference: evidently the remaining distance was divided up equally among the last three posts to be placed. Several irregularities have been observed in many widely spaced post-circles, apparently owing to relaxed standards of perfection. The post-circle at Westervelde<sup>34</sup> may serve to illustrate this kind of 'nonchalance': in an otherwise fairly regular circle, the distances between the easternmost post and its neighbours are unequal.

#### *The finds*

Since Middle Bronze Age graves in the Netherlands are seldom found to contain grave-goods, it is not surprising that only one grave-pit yielded grave-goods in the two barrows discussed here (fig. 2 and 4 no. 1). High in the grave-pit and c. 30 cm above the bottom of the grave-pit, just above the highest-drawn level, lay three small *Kümmkeramik* beakers along the western edge of the pit. The incomplete beaker no. 1c lay directly beneath nos. 1a and 1b. The beakers are of a brittle, rough-walled ware tempered with fairly coarse granite-grit. The colours are, according to the Munsell soil colours charts:

1a – strong brown (7,5 YR 5/6)

1b – reddish yellow (7,5 YR 6/8)

1c – strong brown (7,5 YR 5/6) and dark grey (7,5 YR N4/).

Similar small beakers have been found in some Middle Bronze Age barrows in the north of the Netherlands (both as stray finds and in grave-pits), while they also occur in long-barrows of the Gasteren type<sup>12</sup>. The only extraordinary typological feature is the small vertical knob-ear of no. 1b, for which we know no parallels. The urn fragments 2 and 3 point to secondary burial in the Late Bronze Age, and are presumably connected with the depleted urnfield mentioned in the introduction. No. 2 was found – in fragments, and with very little cremation – secondarily in a grave-pit. The two sherds with rustication (no. 3) came, together with some cremation remains, from the disturbed central part of the mound.

#### TUMULUS II<sup>35</sup>

##### *Description*

This more or less oval burial mound lay on the eastern end of a ridge of cover-sand running WNW–ESE; the orientation of the barrow was the same. With the exception of the west side, the flanks of the barrow merged smoothly with the incline of the coversand ridge, making the barrow look like a rise in the actual ridge. The barrow was 27 m long, 6–8 m wide, and barely 50 cm high.

The illustrated plan (fig. 5) comprises the total data of four to eight drawn levels, excluding the animal, vegetable, and recent human disturbances, which were most extensive in the middle-north sector. The plan shows, in addition to the primary grave, thirteen secondary burials, twelve of which were tangential grave-pits placed fairly regularly along the edges of the mound, as well as a grave-pit in the eastern focus. As in Tumulus 1, most of the graves were dug in the eastern part of the mound.

The mound was raised over a well-preserved, although locally eroded, heather podzol, including the humous A 1 level, in which no charcoal particles were found. This floor profile had bent down around most of the grave-pits,

24 Waterbolk 1964.

25 Van Giffen 1949.

26 Van Giffen 1941b.

27 Van Giffen 1941a.

28 Glasbergen 1954.

29 Glasbergen 1954.

30 Ruiter/Swart-Poelman 1967.

31 Modderman 1955.

32 Waterbolk 1964; Modderman 1955.

33 Waterbolk 1957.

34 Van Giffen 1940c.

35 Coordinates: 28 H – 256.56/481.96.

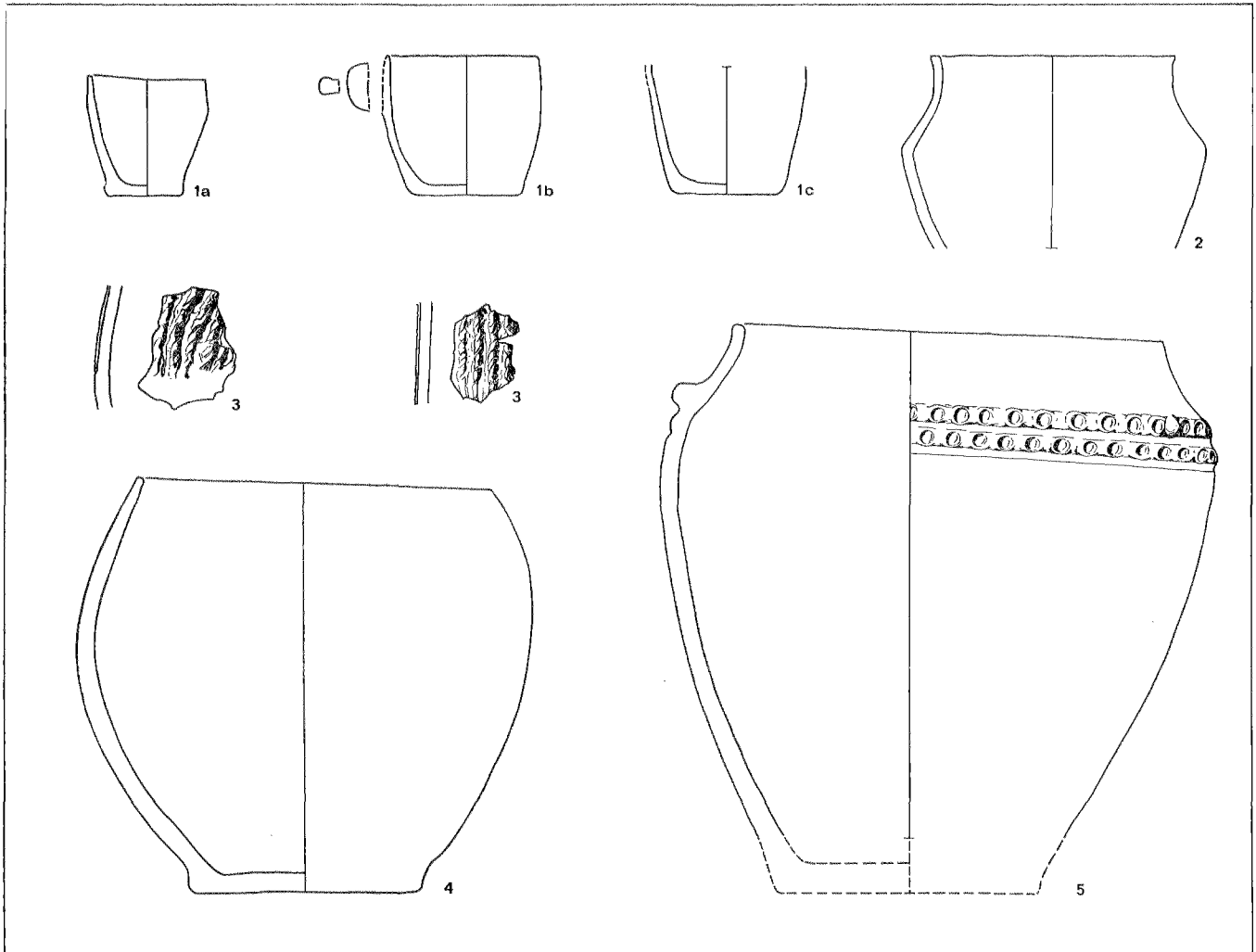


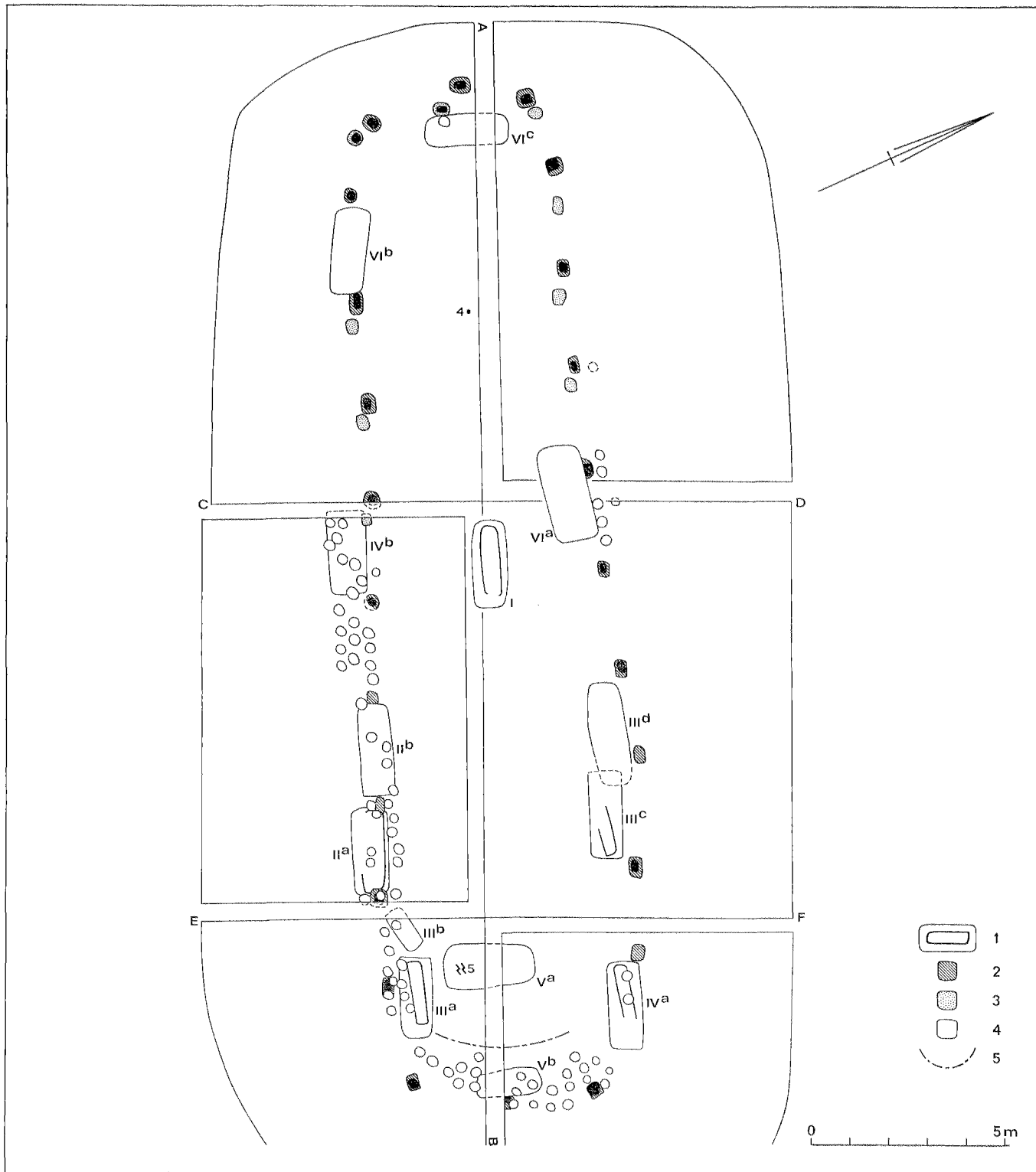
Fig. 4 Gammelke: 1a-c Three *Kümmerkeramik* beakers from grave-pit, Tumulus 1 (find no. 1), 2 Urn fragment from Tumulus 1 (find no. 2), 3 Urn-sherds from disturbed area of

Tumulus 1 (find no. 3), 4 Drakestein urn from Gammelke, found near the Weernink estate, 5 Drakestein urn from the environs of Weerselo, probably from Gammelke or Haarle

and along the grave-pit in the eastern focus had subsided as much as 20 cm. Especially the profiles of the barrow indicate that the mound was raised in one operation, except for an extension of 2 m toward the east (fig. 6). The structure of overturned sods was much more obvious here than in Tumulus 1. A thin level of yellow sand from the primary grave separates the sod-structure and the old surface around the primary grave. The mound sagged considerably over and around the grave-pits. As in Tu-

mulus 1, the mound and the floor beneath it display the 'pantherskin structure.' The uppermost 20 cm of the mound are disturbed; directly beneath there is, and more than in Tumulus 1, a secondary iron pan belonging to the podsolization of the surface of the mound.

The grave-pits measured *c.* 2.25 m long, almost 1 m wide, and 1-2 m deep in relation to the surface that was dug into. The very small grave in the southeastern sector and the slightly more than 1.50-m-long eastern grave may be



considered children's graves. Five graves, including the primary grave, have yielded convincing soil-traces of tree-coffins. However, not a single corpse silhouette was observed. None of the graves contained grave-goods. Some cremation remains were found on the floor of the grave in the eastern focus – these remains are, in view of the very small quantity and the fine texture, presumably of animal origin (find no. 5).

The mound is bordered by three wooden structures. One setting of posts encloses the entire mound, and is, like the mound itself, broader in the east than in the west. The flat-bottomed posts of this setting were in post-pits, dug down to below our level 4 (measured from the top). The posts are 2.50 m apart, except for one irregular spacing in the northeast and several in the western bend. The second border structure, likewise a row of posts in post-pits, occurs only in the western half, reaching down to our level 3 or 4. The posts in this 'incomplete' structure are regularly spaced 2.30 m apart. The third border structure consists of a multiple palisade enclosing the eastern half of the mound. Along the longitudinal axis of this structure in the western grave-pit there is a post-hole similar to those of the palisade, probably of a 'mark post' in this open structure. The posts were driven down to our level 1 or 2. The slight depths of these posts may explain the absence of such traces in the northern sector in particular.

Finally, mention should be made of a concentration of flintstone fragments (find no. 4) under the leached sand of the old surface and a number of hollows (not drawn on the map), mostly in the leached layer, which did not bear any recognizable relation to the actual barrow. A few metres beyond the northern and southeastern foot of the barrow, ten greenish hollows with charcoal particles were observed. They are generally considered to be Mesolithic fire-places, but a different dating is here quite conceivable. Find no. 4 should perhaps be attributed to this complex.

#### *Chronology*

The chronology of the border structures described above is most probably as follows: the complete post configuration (*a*), the structure of posts in the west (*b*), and the multiple palisade in the east (*c*). Structure *a* is without doubt older than *c*, as is shown by several instances of direct

overcutting in the southeast and by the overcutting of grave-pit 5 *b* in the east. Structure *a* is not demonstrably older than *b*. Both are cut across in the west by two of the three youngest grave-pits (6 *a* and 6 *b*). Structure *b*, however, cuts across grave 4 *b*, and appears to belong to grave 5 *a* or 5 *b*. The palisade most probably postdates structure *b*, because the palisade is of later date than all the graves in the eastern part (graves 3 *c* and 3 *d* on the basis of interpolation), and because the supposed 'mark post' of the palisade in grave 6 *c* is younger than structure *b*. On the basis of the chronology of the border structures and their overcuttings, the stratigraphic order of graves 1, 5 *a*, and 5 *b* (see profile), as well as the position of the tangential grave-pits in relation to the border structures, the history of the barrow may be reconstructed as follows.

1 The first 'phase' consists of digging the primary grave and the subsequent raising of the burial mound over it, reaching in the east to a point between graves 5 *a* and 5 *b* (see profile).

2 Since structure *a* cuts across the secondary burial 2 *a* and probably grave 2 *b* also, these grave-pits are classed in the second 'phase.'

3 The only grave-pits that lie entirely inside structure *a* (nos. 3 *a*, *b*, *c*, and *d*) may belong, together with structure *a*, to the third 'phase' (graves 5 *a* and 6 *c* are of later date for other reasons).

4 The fourth 'phase' comprises, in our view, graves 4 *a* and 4 *b*, the former because of the regular succession of the graves (for which the layout of the graves gives strong evidence), the latter because it is cut across by structure *b*.

5 Structure *b* most probably belongs to grave 5 *a* or 5 *b*, the latter being stratigraphically the more recent. That grave 5 *a* is of later date than 'phase' 3 is suggested but not proved by the sunken surface around the extraordinarily deep grave 5 *a* (pl. 1:2) – the sunken area cuts across grave 3 *a*. Almost the entire eastern extension of the barrow (see profile) belongs to grave 5 *a*. Nevertheless it is conceivable that structure *a* belongs to grave 5 *a*, which would help to explain the location so far east of the three easternmost posts of structure *a* in relation to the primary eastern foot of the mound.

6 The last 'phase' comprises the multiple palisade and the three western graves, which consistently appear to be the more recent in cases where they are cut across. By virtue of its situation on the axis of the palisade, grave 6 *c* most probably belongs to the palisade, although it seems strange that the possible 'mark post' should have been driven through the grave instead of beside it.

The above differentiation in 'phases' is, in our view, sup-

◁ Fig. 5 Gammelke: Plan of Tumulus II (scale 1:150)

1 Grave-pit, with or without tree-coffin, 2 Post-structure *a*, 3 Post structure *b*, 4 Palisade *c*, 5 Eastern boundary of the primary mound

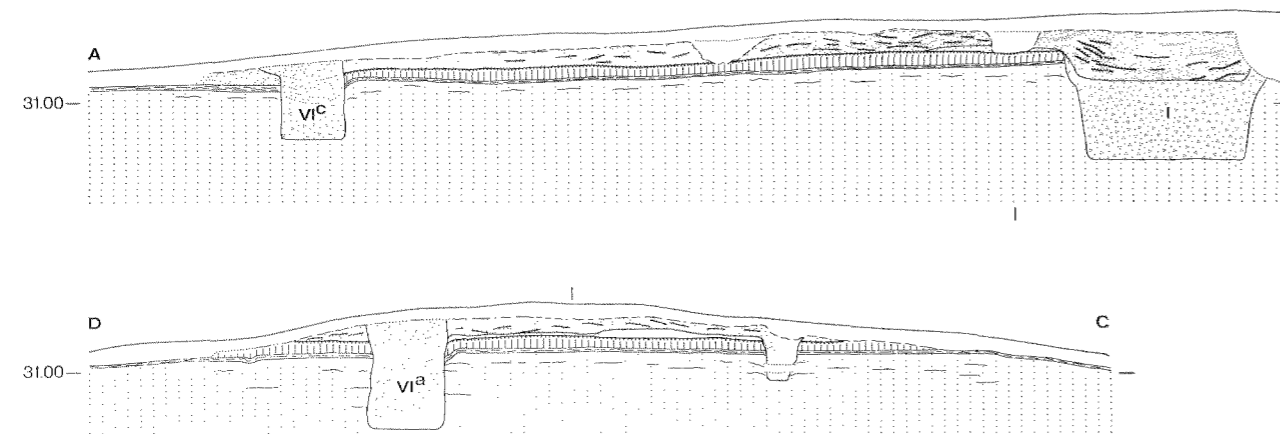


Fig. 6 Gammelke: Profiles of Tumulus II (scale 1:100)  
 1 Recent or disturbed, 2 Secondary iron pan, 3 Mound structure with sods, 4 Grave-pit, 5 Yellow sand from grave-pit, 6 Old surface, 7 Leached sand, 8 Iron pan, 9 Undisturbed soil

ported by the highly regular occurrence of the grave-pits in the first three or four 'phases,' whereas graves 5 a and 6 c differ unmistakably in their relation to the axis of the mound and grave 6 a in relation to grave 4 b. Indeed, there is no sign of a grave opposite grave 6 b. In addition Tumulus II, like Tumulus I, gives evidence of a preference for burial in the eastern half, first by the comparatively high proportion of graves in this half, second by the extension toward the east in 'phase' 5, and third because the latest burials were made in the western part. The graves in the west were therefore evidently more widely spaced than in the east. Most noteworthy is the fact that the oldest border structure belongs to one of the secondary graves and not, as might be expected, to the primary grave. A comparable situation may be observed in the multiple palisade, which does not belong to the 'enclosed' grave 5 a.

#### Parallels and dates

Tumulus II belongs to the small but varied group of elongated barrows from the Early/Middle Bronze Age, which we will briefly describe below. First, we will give a summary of published examples from the north of the Netherlands.

1 The barrow at Weerdinge, municipality of Emmen,<sup>36</sup> a circular burial mound, three times extended toward the south, bordered by a 'phased' structure of stones.

2 The tumulus at Hijken, municipality of Beilen,<sup>37</sup> a circular mound, extended toward the south, bordered by a ring of stakes, a widely spaced circle of posts, and a ditch, the oval mound likewise bordered by a ditch.

3 Tumulus 6 at Emmen,<sup>38</sup> a round barrow, probably extended toward the southwest, both parts enclosed by a widely spaced post-structure.

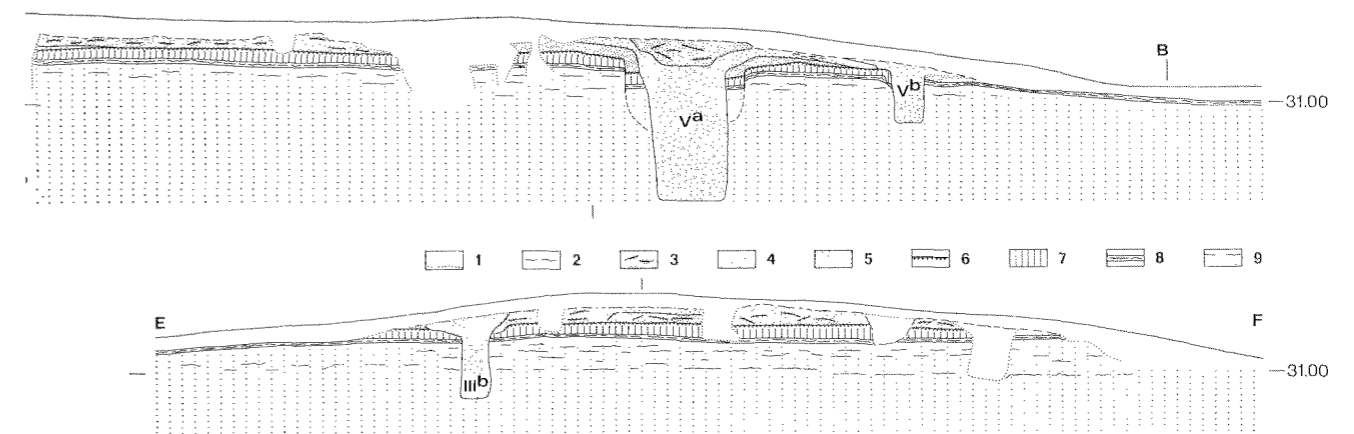
4 A levelled tumulus at Mander, municipality of Tubbergen,<sup>39</sup> with s-n orientation, enclosed by a long, oval ditch.

5 Tumulus 4 at Odoorn,<sup>40</sup> SSE-NNW orientation, bordered by a ditch (and a structure of stones?).

6 Tumulus I at Odoorn,<sup>41</sup> SW-NE orientation, bordered by a structure of stones.

7 Tumulus IV at Eext, municipality of Anlo,<sup>42</sup> s-n orientation, with a very incomplete structure of stones at the foot.

The documentary material of the ROB<sup>43</sup> lists at least three elongated barrows that have not yet been excavated – in



Tongeren, municipality of Epe, in Ede-Hondslog, and in Rhenen.<sup>44</sup>

The elongated barrows of Haps, Berghem, and Kneegsel discussed by Verwers<sup>45</sup> probably date from the Early/Middle Bronze Age of the southern Netherlands; all have a more or less east-west orientation and are surrounded by a multiple palisade or closely spaced post-structure. The same is true of the hand-mirror-shaped barrow plan from Nijmegen,<sup>46</sup> and Tumulus 22A from Toterfouthalve Mijl.<sup>47</sup>

Among the Early/Middle Bronze Age elongated burial mounds in the northern Netherlands (nos. 1–7) with orientations varying between south-north to southwest-northeast, Tumulus II at Gammelke stands out because of its different orientation (WNW-ESE), which should better be explained as an adaptation to the local natural landscape than as an influence from the south. Pollen analysis (see appendix) showed, however, that the site location of the barrow corresponds best with the central part of the Netherlands. Tumulus II should most probably be dated to the Middle Bronze Age in view of the wooden structures and the occurrence of deep shaft-graves exclusively.

Tumulus I appears to be of the same period, but somewhat younger.

Two possible parallels in the north of the Netherlands may be pointed out for the supposed 'mark post' on the axis of the multiple palisade. In the south of the tumulus at Hijken<sup>48</sup> there is, besides the longitudinal axis, a post-hole which is older than the oval ditch. Van Giffen suggests that this could point to a stele or other mark post. In the southwest of Tumulus IV at Eext<sup>49</sup> there is one stone lying opposite the structure of stones around the northeastern foot – this stone may be a second parallel. In this context it would probably be too far-fetched to refer to the heel-stone of Stonehenge, because marks of this kind are not known in South-Netherlandish tumuli.

#### POSTSCRIPT

In Dutch prehistory the overwhelming majority of graves can be regarded as individual burials. The megaliths of the Funnel Beaker Culture and the burial chamber in Stein (Seine-Oise-Marne Culture) are the only known exceptions. In our view the family grave-mounds from the

36 Van Giffen 1930, and 1956.

37 Van Giffen 1956.

38 Bursch 1936.

39 Hijzeler 1958.

40 Bursch 1937.

41 Bursch 1937.

42 Van Giffen 1944.

43 Information by R.H.J. Klok.

44 East-west orientation, 45 m long; information by W.J. van Tent.

45 Verwers 1972.

46 Louwe Kooijmans 1973.

47 Glasbergen 1954.

48 Van Giffen 1956.

49 Van Giffen 1944.

North Netherlandish Middle Bronze Age, to which category the two Gammelke barrows belong, should also be counted among the collective burials, since the (individual) burials in one barrow are no more individual than the (individual) burials in a cist. Burial chamber and barrow serve the same purpose, *i.e.*, the more or less planned burial of several bodies over a certain period of time. In fact the distinction between the terms 'individual' and 'collective' strikes us as somewhat artificial when applied to prehistoric graves. The sometimes incorrectly applied term 'mass grave' has quite another implication, namely the 'burial' of a large number of bodies at the same time – a phenomenon unknown in the prehistory of the Netherlands.

To complete the data already known on the Middle Bronze Age of Gammelke we submit the following two Drakestein urns.

The undecorated DKS urn<sup>50</sup> (fig. 4:4) was found near the Weernink estate, and is consequently almost certainly from the (later) urnfield mentioned above. The pottery is rough-walled, brittle, and tempered with a lot of fairly coarse stone-grit. Colour: red (10 R 4/6) and above the shoulder especially, very dark grey (7 ½ R N 3/).

The decorated DKS urn<sup>51</sup> (fig. 4:5) came, along with several late Bronze Age/Early Iron Age urns from the collection of the Rev. J.H. Stork, in Weerselo. These urns were found in the environs of Weerselo, very probably at Gammelke or Haarle (mun. of Tubbergen). The brittle, rough- to smooth-walled ware of the DKS urn is tempered with fairly coarse stone-grit, which is partially slip-covered. Colour: yellowish brown (10 YR 5/4) with reddish yellow and dark grey patches. The decoration consists of two relief bands with impressions. Three small, regularly spaced knob-ears occur on the upper relief band.

#### ACKNOWLEDGEMENTS

We are grateful to A.H. Mentink at Gammelke for his permission to excavate on his land. The excavation was conducted under the technical supervision of C. van Duijn and K. Greving. The photographs were supplied by S.J.A. Kuppens, and the drawings by H.J. Bloklander and

J.G. Lampe. Thanks are also due to J.F. van Regteren Altena for the valuable information which he contributed.

#### APPENDIX

W.A. Casparie

##### *Pollen Analytical Investigation of the Subsoil of the Gammelke Burial Mound II*

Sample 3b was taken for pollen analysis from the very humic A1 level of the old surface under the elongated mound, from one of the profiles not recorded here. The sample was prepared in the usual way for pollen analysis of sandy material: KOH treatment, HF treatment, acetolysis, dyeing with saffranin, suspension in silicon oil. The table below lists all the identified pollen types, the tree-pollen sum, etc. The types of pollen are given in percentages calculated on the tree-pollen sum in which *Betula* is excluded. This kind of pollen sum is normal for burial mounds.

The low values for Gramineae, *Plantago lanceolata*, *Artemisia*, the not very high value of *Calluna*, and the small number of other herbaceous pollen types, which were encountered only in minimal quantities, indicate that the barrow was not raised on deserted arable land but in a small clearing in the woods, where *Calluna* was already growing. The herbal pollen also suggests that there was no arable land in the immediate vicinity. It may be concluded from the low value of *Betula* that there were no large tracts of deserted arable land in the area at the time when the burial mound was raised.<sup>52</sup> A site was therefore chosen quite far away from the land that was being farmed and not close to the settlement. The high value of *Alnus* indicates that there must have been a brook in the neighbourhood (*i.e.*, in the Schabekke valley).

The excellent conservation of the pollen excludes the effect of selective corrosion, and hence also of selective conservation. For dating purposes, the pollen spectrum 3b is therefore very suitable for comparison with pollen diagrams of organic deposits. The good conservation and especially the richness in pollen of the sample indicate that the observed pollen represent a much longer period in the vegetational history than is usual for barrow samples. This circumstance adds to the difficulties en-

50 Collection Oudheidkamer Twente no. 691.

51 Collection Provincial Overijssel Museum, no. 50 since 1887. The Drakestein urn was reproduced formerly by W. Pleyte (1885, Pl. VII: 11, and pp. 17–8), with a serious drawing error

regarding the decoration and the knob-ears, and was published by Bursch (1942, 62) in a photograph only.

52 Van Zeist 1967.

TABLE 1 Pollen spectrum of the subsoil of the barrow II at Gammelke. All percentages are based on the tree-pollen sum ( $\Sigma$  AP), excluding *Betula*.

Alnus	alder	56.4
Corylus	hazel	25.3
Quercus	oak	13.8
Ulmus	elm	0.8
Tilia	lime	1.5
Fraxinus	ash	0.2
Fagus	beech	0.6
Carpinus	hornbeam	0.3
Salix	willow	0.2
Pinus	pine	0.8
Picea	spruce	0.1
$\Sigma$ AP - <i>Betula</i>		990
Betula	birch	8.4
Calluna	ling	29.7
Gramineae	grasses	3.6
<i>Plantago lanceolata</i>	ribwort plantain	0.3
Rumex	sorrel	0.1
Artemisia	mugwort	0.2
Jasione	sheep's bit	0.3
Potentilla type	cinquefoil type	0.1
Galium type	bedstraw type	0.2
Pteridium	bracken	0.5
Dryopteris	fern	0.2
Sphagnum	peat-moss	0.3

countered in dating the old surface under the mound by pollen analysis. Two detailed pollen diagrams from the eastern part of the Netherlands have been published by Daniels.<sup>53</sup> His Aamsveen diagram originates from *c.* 15 km SSE of Gammelke. The Aamsveen is situated in the same type of landscape as Gammelke. The diagram is not absolutely dated by radiocarbon dates. For the purpose of dating the subsoil of the barrow, however, this does not present serious problems.

In the barrow spectrum, *Corylus* has a value of 25%, which is characteristic for the Subboreal. In the Subatlantic, the values of *Corylus* are generally less than 10%; in the Aamsveen diagram it is *c.* 8%. The 1.5% value of *Tilia* suggests that the barrow spectrum accords with the continuous *Tilia* curve in the diagram, *i.e.* before the end of the Subboreal. The percentage of *Fagus* indicates that the Gammelke 3b sample is of Subboreal age. The presence of *Carpinus* means that the spectrum can be fitted into the

second half of the Subboreal or the beginning of the Subatlantic. In view of the above, a dating of the subsoil under the barrow to the second half of the Subboreal seems most likely.

This date could be narrowed down if peat growth in the Aamsveen is assumed to have occurred regularly during the Subboreal. The transition from Atlantic to Subboreal (3000 B.C.), which occurs at 300 cm in the diagram, and the transition from Subboreal to Subatlantic (800 B.C.), which may be placed at a depth of 205 cm or 215 cm at the most, are the fixed levels which by interpolation permit a more accurate dating of Gammelke 3b. The Gammelke 3b spectrum fits best into the course of the continuous *Tilia* curve with values for *Fagus* and *Carpinus* of less than 1%, *i.e.* between 235 and 240 cm. The subsoil of Gammelke may therefore, with the necessary reservations, be dated to 1300–1600 B.C. In view of the fact that the 3b sample contains pollen from a relatively long period of the (Subboreal) vegetational development, the barrow should be dated somewhat later, to the Middle Bronze Age. This corresponds with the archaeological dating.

In the spectra of the Aamsveen pollen diagram, *Betula* is included in the tree-pollen sum; it is not included in the Gammelke 3b barrow spectrum. These different calculation methods do not seriously affect the conclusions arrived at.

The pollen content of Gammelke is rather different – as regards the frequencies of a number of herbaceous pollen types – from those we know of Early and Middle Bronze Age barrows in the province of Drenthe.

There is, however, considerable correlation with tumuli 3, 4, 5, and 6, especially nos. 5 and 6, of Schaarsbergen, Veluwe.<sup>54</sup> These tumuli, too, have low values for *Plantago lanceolata*, *Rumex*, *Gramineae*, and relatively low values for *Calluna*, indicating that they, like the Gammelke barrows, were not erected on (deserted) arable land.

Until now only a very small number of barrows in the area of Twente have been subjected to pollen analysis. A small number of late-Neolithic burial mounds in Mander, about 16 km NNW of Gammelke, were excavated by Hijzeler in 1971 and subsequently subjected to pollen analysis. Those mounds appear to have been raised on deserted arable, on which *Betula* had regenerated. As regards the selection of the site for the erection of a barrow, Gammelke appears, on the basis of pollen analytical results, to correspond more with the customs obtaining in the central part of the Netherlands than with practices in the northern region of the country.

53 Daniels 1964.

54 Waterbolk 1954; Van Zeist 1967.



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# Excavations along the Limes

figs. 1-9; pls. II-III

From 1947 to 1972 the State Service for Archaeological Investigations ('Rijksdienst voor het Oudheidkundig Bodemonderzoek' - ROB) conducted various excavations along the Roman *limes* (fig. 1) in the Netherlands. Attention was paid not only to the military settlements proper, *i.e.* the *castra* and *castella*, but also to the evidence of civilian settlements in their immediate vicinity. We propose to give a brief summary of both types of excavation in this section. Proceeding from the western to the eastern part of the country, we shall consider the following sites:

- 1 Katwijk - Cleijn Duin;
- 2 Valkenburg (province of South Holland) - De Woerd;
- 3 Leiden - Meerburger Polder;
- 4 Alphen aan de Rijn;
- 5 Utrecht - Domplein ('Dom'<sup>1</sup> Square);
- 6 Bunnik - Vechten;
- 7 Nijmegen - *Castra* and Waalkade (quay running along the river Waal).

Excavations were also carried out on other sites along the *limes*, such as Zwammerdam and De Meern, during the period of 25 years to be discussed here. However, as they were carried out by other institutions, *viz.* the Institute for Prehistory and Protohistory of the Municipal University of Amsterdam (Instituut voor Pre- en Protohistorie) and the Utrecht Archaeological Institute (Archeologisch Instituut te Utrecht), they fall outside the scope of this commemorative volume.

## KATWIJK - GLEIJN DUIN

A trial excavation of limited extent was carried out in the Cleijn Duin development project area in 1967. During this investigation some Roman settlement traces

were discovered, such as a north-south ditch about 3 m wide and at least 50 m long, and palisades running north-south and east-west. The context of these phenomena is not quite clear, nor can anything definite be said about the nature of the settlement.

Most finds date from the second and third centuries A.D. Worthy of mention are seven tile fragments bearing the stamp EXGERINF and one bearing the stamp SVBIV.<sup>2</sup>

## VALKENBURG (SOUTH HOLLAND) - DE WOERD

In 1947 and 1948 Professor H. Brunsting, with the help of the ROB, dug a few trenches on the high-lying site 'De Woerd', about 1 km south of the village of Valkenburg (fig. 2:2). He found Roman settlement layers dating from the middle of the first century, the Flavian period, and from the second and third centuries. In the direction of the Old Rhine (Oude Rijn), to the east of the excavation, the layers were interrupted by a dam of sandy soil running more or less NNW-SSE. The dam was about 6 m wide and still had a height varying from 1.5 to 2 m; it was strengthened by palisades on both sides. Further east the excavators came upon the bank of a river-bed that was completely silted up. As the finds show, this must also date from Roman times. Rows of posts, running more or less parallel to the course of the old river, would seem to be evidence of sheet-piling or quays.

Brunsting interpreted the sand dam as a Roman causeway, or *moles*. It must have been part of the military road running along the river from Utrecht to Katwijk. As the silted-up river-bed was probably that of the Rhine, its course in Roman times must have been different from the present one. Today the Rhine flows in a wide bend round

1 'Dom' means 'Cathedral', or 'Great Church' in Dutch.

2 *JROB* 1967, 20.

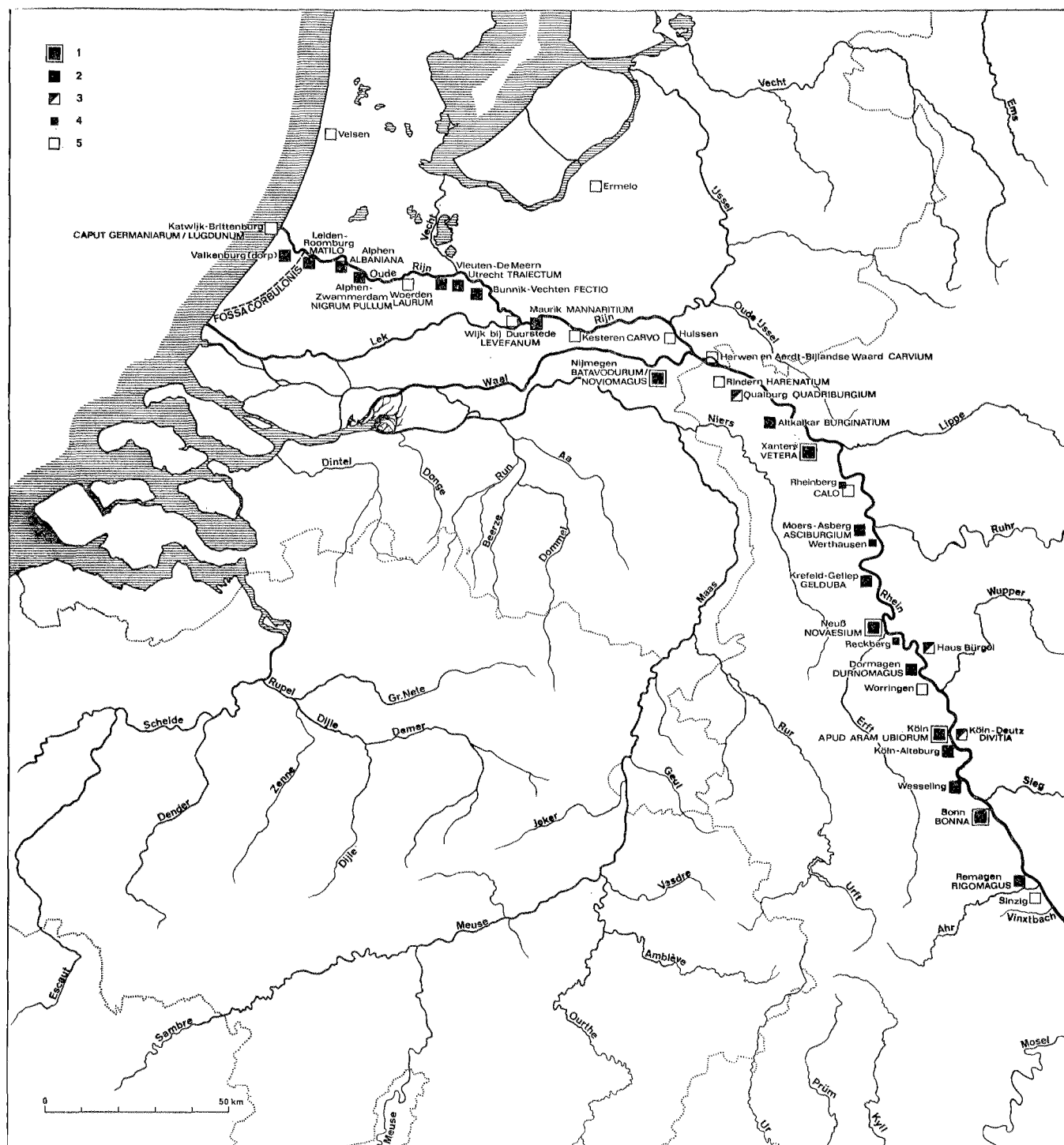


Fig. 1 The Roman limes in Germania Inferior (after Von Petrikovits and Bogaers)

De Woerd and comes very close to the village of Valkenburg further to the west. In the Middle Ages the river-bed must have been so close to that village that the remains of the Roman *castellum* (fig. 2:3) in its centre were partly eroded by the action of the water. It is clear that in Roman times the situation was the exact opposite: then the river hugged the settlement on De Woerd and gave a wide berth to the *castellum* in what is now the village centre. These new data have an important bearing on the interpretation of the nature of the settlement. The fortification reconstructed by Remouchamps, 1928, in the area immediately south of Brunsting's trenches (fig. 2:1) has, in all likelihood, never really existed. The settlement must rather be assumed to have been a civilian one and to have had the function of a port. It is, of course, possible that it was fortified at some later period. In spite of the new evidence Brunsting's excavations have brought to light, many problems remain obscure. They may well be solved when the large-scale excavations begun by the ROB on De Woerd in 1972 have been completed.

A recent, still unpublished study of the finds confirmed Brunsting's view that Roman occupation of De Woerd started about the middle of the first century A.D., *i.e.* in the reign of Claudius. The settlement must certainly have existed up to the middle of the third century because various sherds of ornamented Treves terra sigillata, among others one in the style of *DVBITATVS*, cannot be dated much earlier. An interesting find deserving special mention is a body-sherd of an ornamented terra sigillata bowl (Drag. 37), which bears the signature of the Treves potter *VICTOR* (fig. 3).<sup>3</sup>

#### LEIDEN – MEERBURGER POLDER

In 1962 and 1963 Professor J.E. Bogaers, then curator of the ROB, conducted excavations in the Meerburger or Roomburger Polder near Leiden (fig. 4a), not far north of the spot where J.H. Holwerda found traces of the Roman *castellum* *MATILO* in 1927. Bogaers' excavations showed that in Roman times there must have been a west-east watercourse along the former boundary of the municipalities of Leiden and Zoeterwoude (fig. 4b and fig. 5, II, III, IV, and V, south). The bed of this watercourse was about 60 m wide and at least 4 to 5 m deep. Originally it must have been a natural creek belonging to the Rhine estuary,

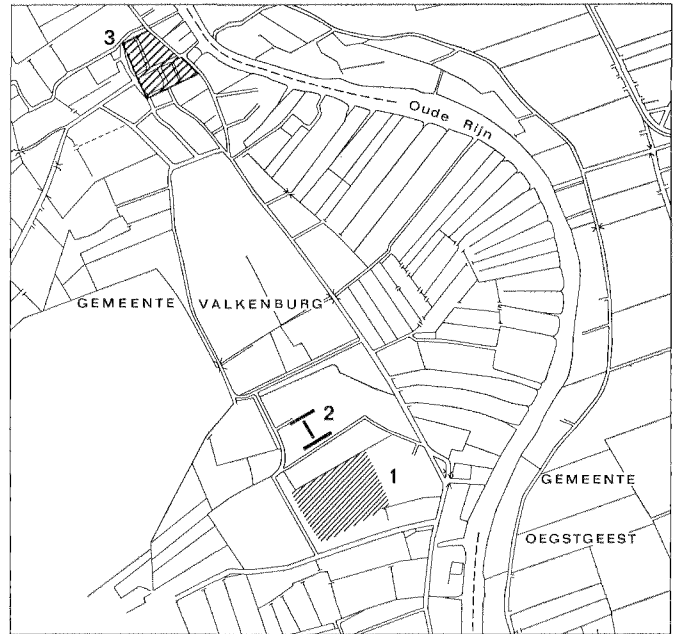
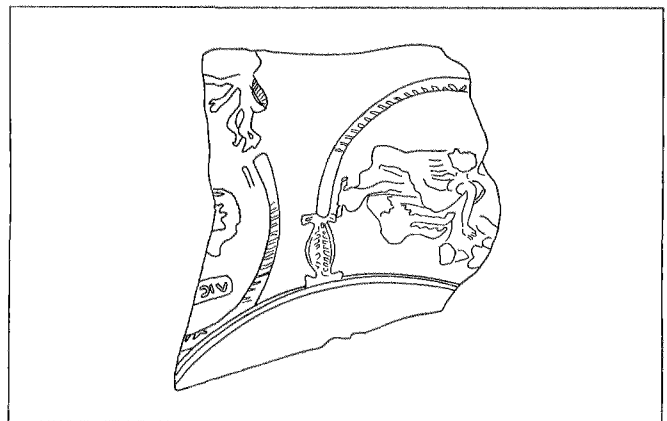


Fig. 2 Valkenburg (South Holland) – De Woerd: Situation of the settlement on 'De Woerd' and the *castellum*: 1 'De Woerd': Area excavated by A.E. Remouchamps in 1922–26; 2 'De Woerd': Trenches excavated by H. Brunsting in 1947–48; 3 Village of Valkenburg: Site of the Roman *castellum*

Fig. 3 Valkenburg (South Holland) – De Woerd: Sherd of decorated terra sigillata, Drag. 37, with part of the stamp of *VICTOR* (Treves)



<sup>3</sup> Bogaers 1964; Glasbergen 1945; *Leidsch jaarboekje* 40, 1948, 9, and 41, 1949, 22–3; Remouchamps 1928; Van Tent 1973.

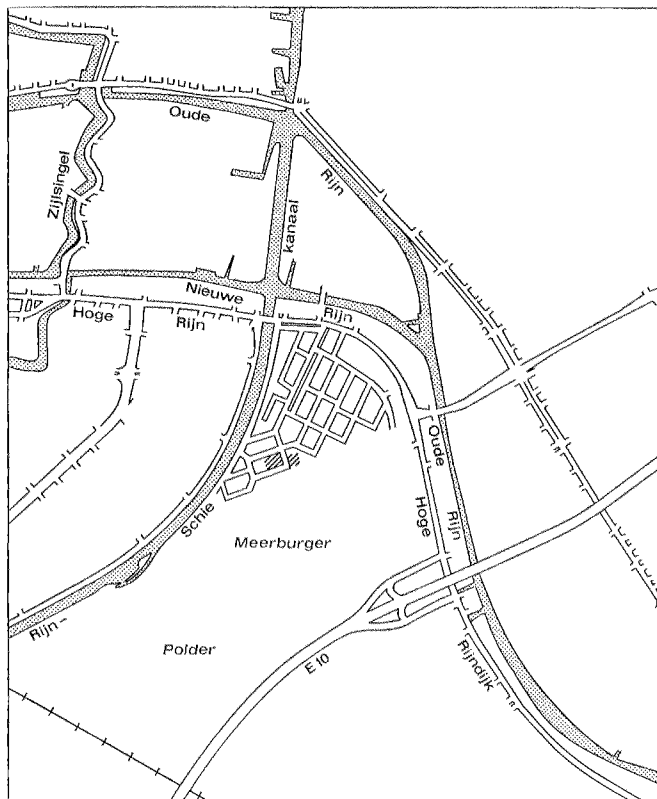
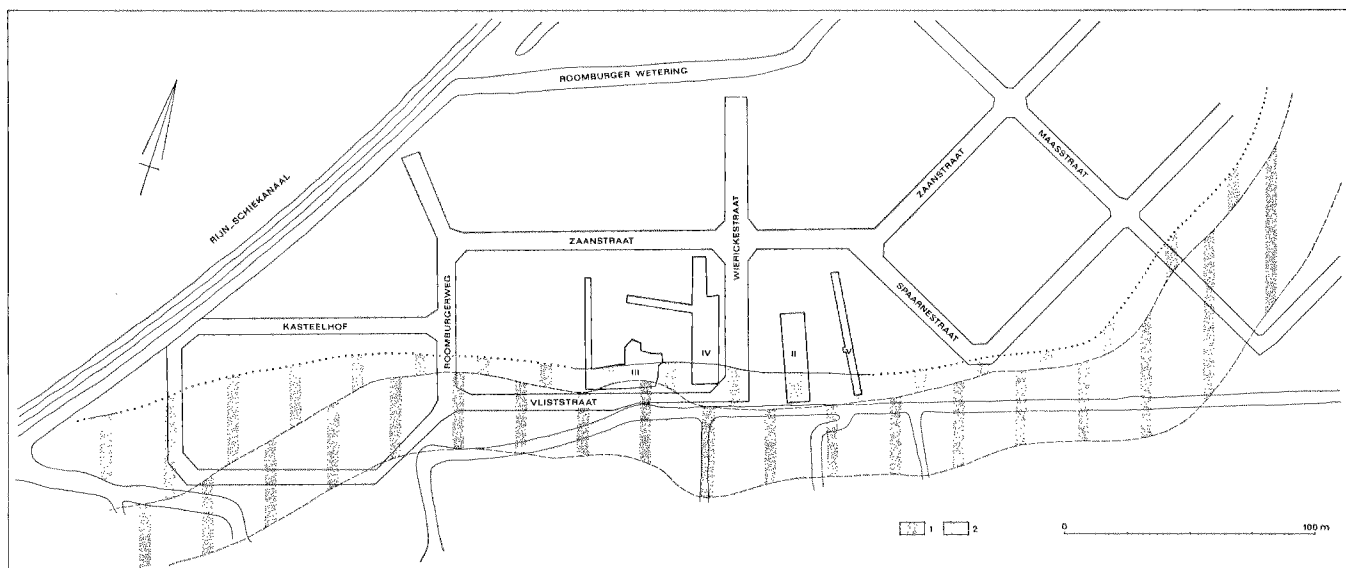


Fig. 4b Leiden - Meerburger polder: Situation of the excavation trenches and of the possible *fossa Corbulonis*; 1 Deepest part of creek bed; 2 Shallower part along the bank



which was filled with water at high tide. On its northern bank, however, some features were observed which might indicate that the shape of the bed is at any rate partly due to human activity. Bogaers is of the opinion that digging operations may have been carried out to alter the declivity of the bank. Since, in addition to this, the finds show that the earliest human activities on the site date from about the middle of the first century A.D., the creek, as adapted by human activity, may well be the *fossa Corbulonis*, or Corbulo's Canal. The canal is known to have been dug in A.D. 47 by order of Cn. Domitius Corbulo, Governor and Commander-in-Chief of Germania Inferior.

On the north side of the *fossa*, along part of its length and parallel to its course, ran an open palisade of vertical stakes, which must have been constructed in the second century (fig. 5, II, IV and V, centre). Amidst the stakes a horse's grave was found (fig. 5, V, centre). In some places, moreover, a wall of sods, about 2 m wide, had been raised behind the palisade (fig. 5, II, centre). Further north there must have been timber structures (fig. 5, II, north).

Fig. 4a Leiden - Meerburger polder: Situation of the excavation in 1962-63

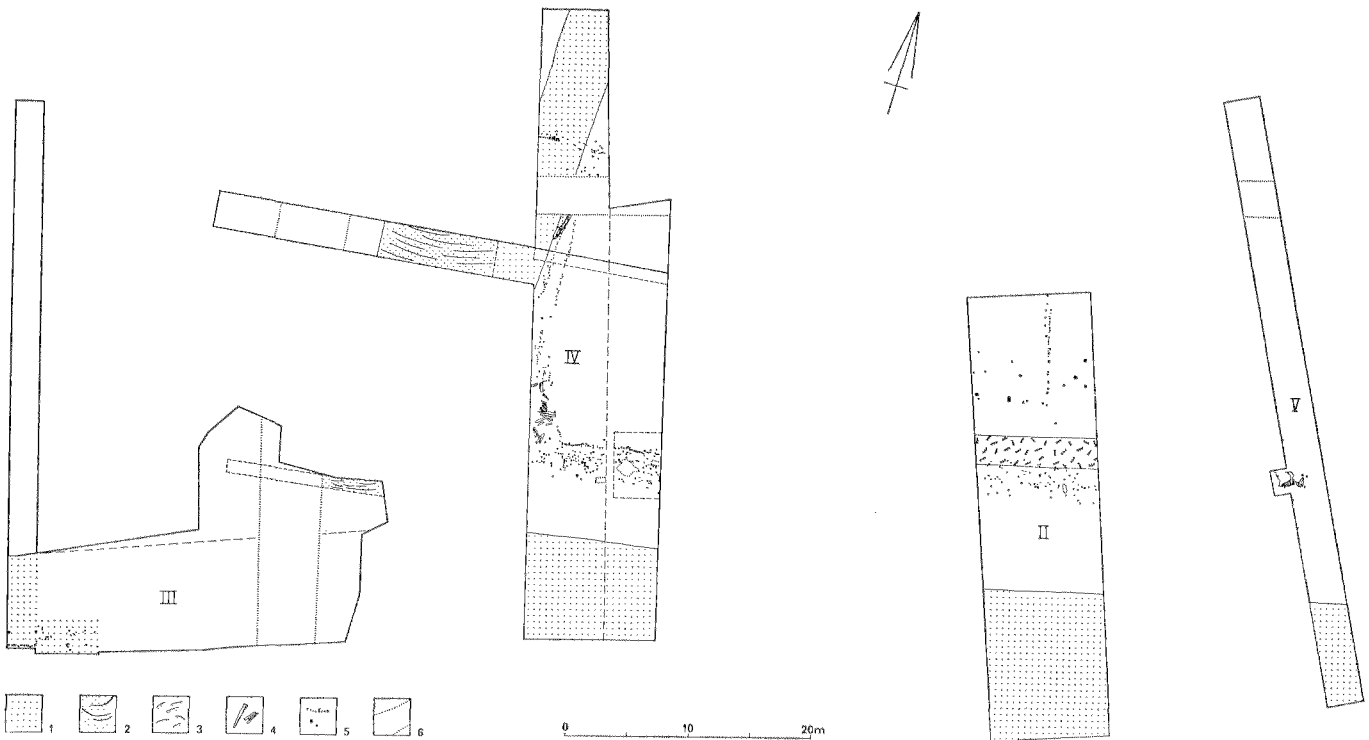


Fig. 5 Leiden - Meerburger polder: Excavation plan: 1 Filled-up river bed (*fossa Corbulonis* and creek); 2 Filled-up harbour; 3 Wall of sods; 4 Horizontal timbers; 5 Vertical stakes; 6 Recent disturbance

All these features were bounded on the west by a creek, about 5 m wide, running north-south (fig. 5, IV, north). This creek must already have been wholly silted up in Roman times. West of it, and partly overlapping the filled-up creek, a deep, rectangular, pit-like feature running north-south was found. It was about 10 m wide and about 33 m long. It probably dates from about A.D. 200 or a little later (fig. 5, IV, west, and III, north-east). Bogaers interprets this feature as a harbour, constructed on the spot where the creek used to debouch into the *fossa Corbulonis*. The banks of the harbour, at any rate on its eastern and northern sides, had been reinforced with timber (fig. 5, IV, north).

The finds show that Roman occupation of the site lasted from about the middle of the first century (A.D. 47, when the *limes* was founded?) up to about A.D. 250. Shortly before and just after 200, *i.e.* during the reigns of the Emperors Septimius Severus and Caracalla, human ac-

tivity in the area seems to have reached its peak. A tile fragment bearing the stamp CGPF, of the *Classis Germania Pia Fidelis*, also deserves mention in this context.

Finds dating from the early Middle Ages, about 700 and later, were also made. Moreover, some timber work and masonry, which must date from the same period, were found at the westernmost end of the excavated area, in the bed of Corbulo's Canal, which, at that time, was clearly already partially silted up. Since they are outside the scope of this article, they are not shown on the excavation plan fig. 5.<sup>4</sup>

#### ALPHEN AAN DE RIJN

At this site, where in all likelihood the *castellum Albaniana*, known from the *Tabula Peutingeriana*, must be situated,

4 Bogaers 1962; Bogaers 1963; Holwerda 1927.

the ROB has been able to carry out only a few investigations of short duration. So far, therefore, it has not been possible to obtain a clear picture of this military settlement.

Minor excavations were carried out in 1959, not far from the Dutch Reformed Church, immediately south of Schoolstraat. At least three periods can be distinguished in the traces of Roman occupation that were discovered. To the first period, about the middle of the first century A.D., belong the remains of a timber structure consisting of beams and posts. At a height of about 30 cm below Amsterdam Ordnance Datum (NAP) this structure possessed a floor made of boards. To the second period, which cannot be precisely dated, only fragmentary remains of timber structures can be assigned. Stone came into use only in the third period, which covers about the end of the second and the first half of the third century. The foundations of one of the structures made of this building-material were uncovered. They had a width of about 1.8–2 m and consisted of piles made of elm.

Among the tiles found there were some bearing the stamps of the *Exercitus Germanicus Inferior*, the *Legio I Minervia Antoniniana* and the *Legio XXX*.<sup>5</sup>

#### UTRECHT – DOM SQUARE

The plan of the Roman *castella* in the Dom Square in Utrecht had become well known as a result of the major excavations carried out before and in the second world war. The object of the excavation undertaken by Professor A.E. van Giffen in 1949, when part of the *via praetoria* immediately north of the *principia* was uncovered, was therefore merely to supplement in some respects the picture already established.

According to Van Giffen, the excavation showed conclusively that there were at least five successive *castella* in the Dom Square during the period up to about A.D. 260. The first two date from A.D. 47 to 69, the third from the last thirty years of the first century, the fourth from the second century, and the fifth, the first to be built of stone, from the first half of the third century.

The remains of the fifth *castellum*, however, were themselves found to be cut by traces of at least two buildings, which must therefore be of a later date. Van Giffen sees

a connection between these and some fourth-century finds, which were made earlier in the Dom Square. He holds the view that they are indications of renewed Roman activity under the Emperor Julianus (355–363). This would increase the total number of Roman building-periods to six.

Further, it became clear in 1949 that the site had been raised in its entirety by means of sods or sandy clay starting from its very first occupation by the Romans. New information on building activity in the Dom Square in the Middle Ages also came to light, but these finds will not be discussed in this article.

In 1956 excavations were carried out in the cloisters of the Dom or Great Church, in cooperation with the Utrecht Public Works Department. Traces of Roman barracks were uncovered.<sup>6</sup>

#### BUNNIK – VECHTEN

A short report on the excavations carried out by Van Giffen east of the Roman *castellum* 'Fectio', near Vechten (municipality of Bunnik), in 1946 and 1947 has already appeared in print.<sup>7</sup> As, moreover, Van Giffen's investigation took place before the birth of the ROB, its results will not be discussed here.

In 1970 the ROB investigated part of the area adjoining the *castellum* to the north and east, in and close to the old, silted-up Rhine arm on which it was originally founded (fig. 6). The timber structures along the bank, which Dr W.C. Braat had observed as early as 1936 and 1937,<sup>8</sup> were expected to continue in that area. The excavation covered a narrow strip, over 300 m long, south of and running parallel to Motorway no. 12. The width of the strip was about 15 m over most of its length. It was only near the military approach road to the nineteenth-century Vechten Fortress, which forms the eastern boundary of the area investigated, that the excavation could be extended about 25 m further south.

The bed of the old Roman Rhine already referred to, which runs approximately ENE–WSW, was cut by this southern extension of the excavation. It was found to be filled partly with alternating layers of sand and clay, deposited in the course of natural sedimentation, and partly with layers of very dirty, peaty soil sloping down north-

5 *NKNOB* 1959, 58, 84, and 98–9.

6 Van Giffen 1944–8, 15–21; *NKNOB* 1949, 257–8; 1950, 170 and 1956, 82 and 110.

7 Van Giffen 1944–8, 30–3.

8 Braat 1939.

wards. The latter was clearly refuse and debris from the settlement deliberately dumped into the river. It was especially this dirty soil which yielded a wealth of finds from the second century A.D. It contained many objects of organic material, such as wood and leather, which had been preserved extremely well in the moist, oxygen-poor environment. An interesting find was an object closely resembling a chessman, a bishop, of a shape still known today (plate II: 1). Metal tools came to light as well, such as an iron chisel bearing the mark SVRIOP, stamped four times (plate II: 2 and 3). All this was overlain by a practically horizontal layer of debris and rubble, which among other things contained pottery sherds from the first half of the third century. Though it was not possible for the river-bed to be investigated in its entirety, it must be assumed, on the basis of the above data, that the Rhine arm on which 'Fectio' was situated was completely filled up about or just after A.D. 200, on account both of natural causes and human activities. As was expected, many upright and horizontal posts and stakes were found in association with the layers of debris (plate III: 2). They were arranged in rows bending at right angles, running perpendicular to and parallel with the bank. Since the configuration of the various strata in the sections showed clearly that the river was barely navigable when the posts were put in position, the structures formed by them cannot have served as landing-stages or quays for the mooring of ships. This would seem to conflict with Braat's views, expressed in 1939, but then he referred to timber structures situated closer to the south bank and dating from an earlier period. The structures discovered in 1970 probably had the function of revetments containing the soil used for filling up the river-bed. They represent a much later stage in the filling-up operations than Braat's. These later operations should be regarded as an intentional extension of the south bank, carried out systematically and possibly parcel by parcel, which eventually resulted in the river being dammed completely. At the present stage of the investigation it is not easy to understand why this was done. Land hunger (in the civilian settlement near the *castellum*?) will undoubtedly have been an important factor. Military considerations and the possibility of more adequate water control may also have played a part.

At some later period the water must have forced its way again through the original bed, partly eroding the layers of refuse and debris dating from Roman times. What is left of this 'dam-burst' is a winding gully, running approximately east-west, which could be followed along the

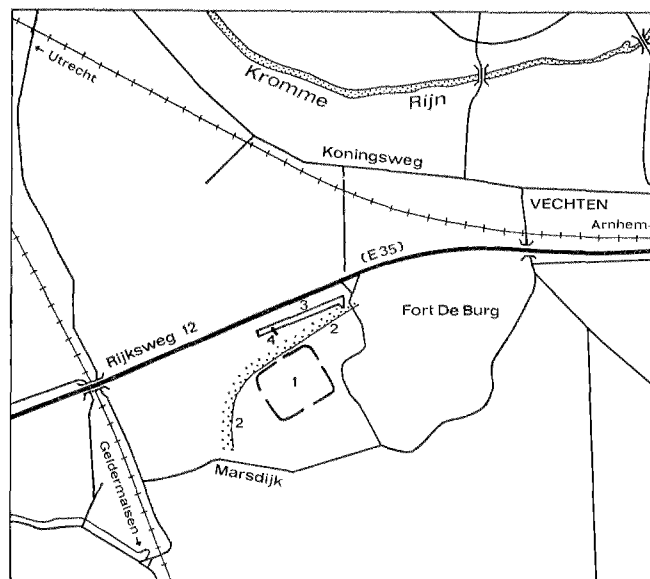
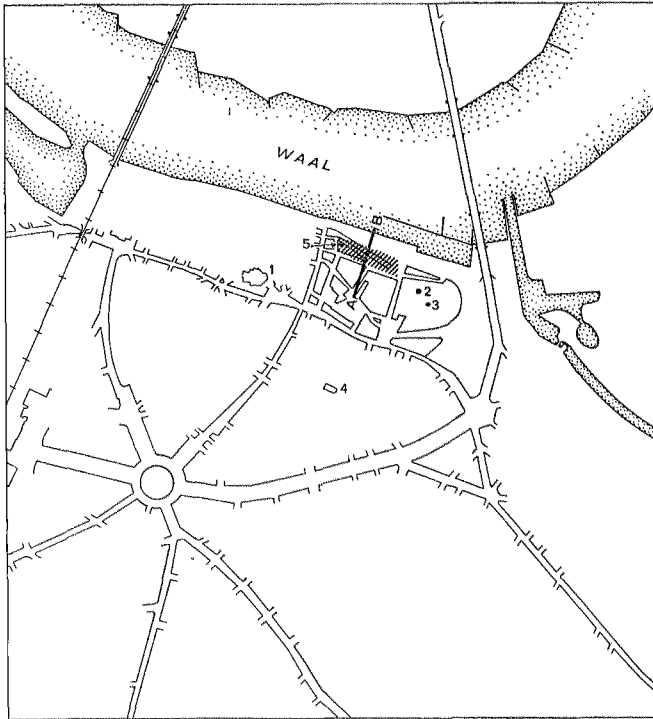


Fig. 6 Bunnik – Vechten: Situation: 1 Site of the Roman *castellum*; 2 South bank of the Rhine in the Roman period; 3 Excavation trench 1970; 4 Causeway of tufa boulders, excavated in 1969

entire excavation area. The gully was about 20 m wide and at least 2 m deep. At the bottom, the sediment filling the gully consisted of gravel and coarse sand, higher up of clayey sand gradually changing to heavy clay. From this it follows that the water must have flowed very fast during and for some time after the 'dam-burst.' Fairly soon, however, the gully must have silted up to such a level that all that remained was a marshy, low-lying area. It was now clear that the causeway made of tufa boulders positioned transversely, which was discovered in 1969 and for which no satisfactory explanation could be given at the time,<sup>9</sup> must have served to bridge the marshy depression at a spot situated near the *castellum* proper (fig. 6: 4). Great difficulties are encountered in dating the gully resulting from the 'dam-burst.' It is stratigraphically later than all the Roman remains on the site, including the layers of debris from the first half of the third century (see above). A date of c. A.D. 250 can therefore be regarded as *terminus post quem* for the gully. *Terminus ante quem* is the tufa causeway, because it was constructed when the gully had

9 Kalee/Van Tent 1969.

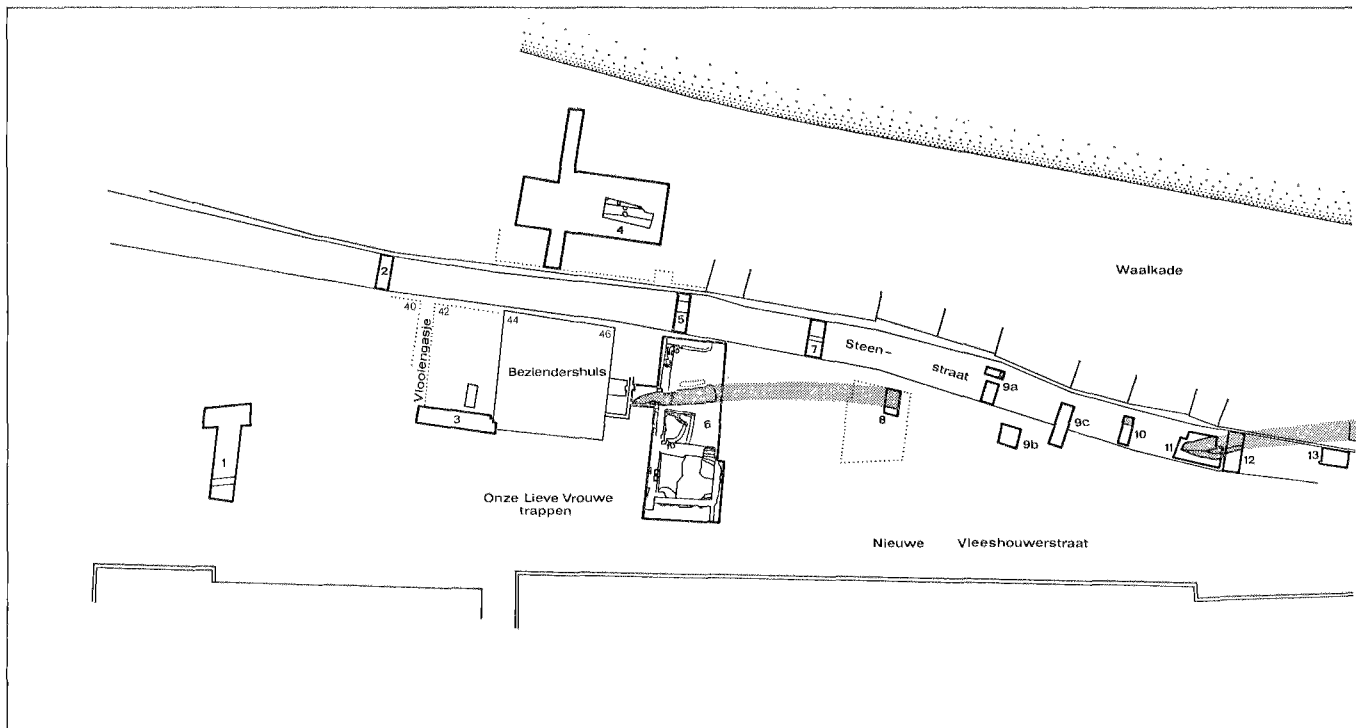




almost completely silted up. However, the latter cannot be dated with any degree of exactness either. A not too unlikely date is perhaps afforded by the period shortly after 723. In that year the ruins of the *castellum* were presented by Karel Martel to the Anglo-Saxon missionary Willibrord, who may have used them as a quarry for the re-building of his churches at Utrecht. If so, it must have been impossible to transport the heavy building-materials across the marshy area in front of the *castellum* without some sort of metalled road. The tufa causeway

Fig. 7 Nijmegen – Waalkade: Situation of the excavation in 1954–55: 1 St Stephen’s Church; 2 ‘Carolingian’ chapel on the Valkhof; 3 Remains of Barbarossa chapel on the Valkhof; 4 Mariënburg; 5 Beziendershuis; A–B Position of the schematic section fig. 9

Fig. 8 Nijmegen – Waalkade: Provisional excavation plan: a Excavation trench; b Excavated stretch of Roman wall; c Presumed course of Roman wall; d Occupation features; e Inhumation grave; f Existing building; g Demolished building



discovered in 1969 may well be the solution, or one of the solutions, Willibrord's workers found for this problem.

NIJMEGEN – WAALKADE (WAAL EMBANKMENT)

Over a period of many years Professor Hendrik Brunsting, on behalf of the State Museum of Antiquities at Leiden and in co-operation with the ROB, directed extensive excavations in the Roman settlements of the Nijmegen area. His main objectives were the *castra* or legionary fortress in the east part of Nijmegen, the fourth-century cemetery in the city centre itself, and the civilian settlement along the bank of the river Waal to the north of the

old city. The results of his work are summarized in a number of articles in the periodicals *Numaga* and *Nieuwsbulletin van de Kon. Ned. Oudheidkundige Bond*, and in a brief survey of all that is known about Roman Nijmegen.<sup>10</sup> As the reader can be referred to these publications,<sup>11</sup> no attempt will be made here to give a description of these sites or the research done on them, with the exception of the excavations in Steenstraat and on the Waalkade, in the north of the old city near the river Waal, in 1954 and 1955 (fig. 7).<sup>12</sup>

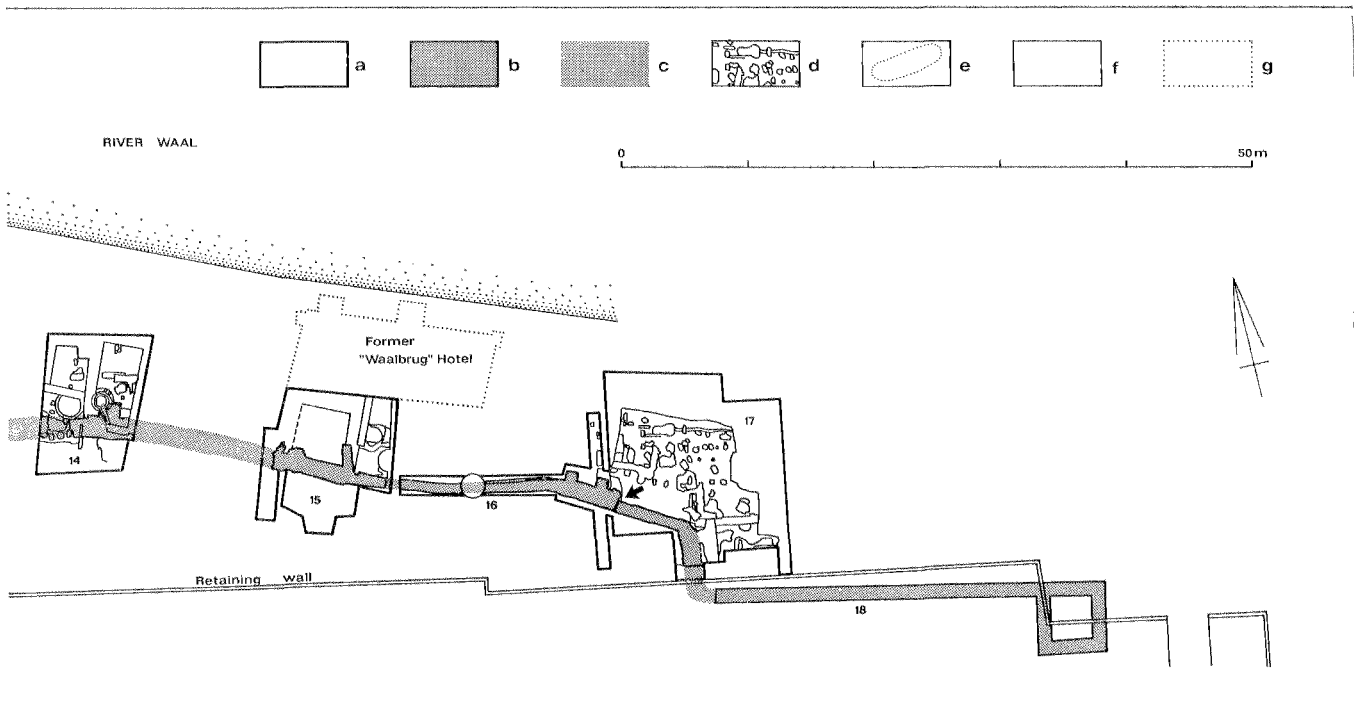
When in 1941 the sixteenth-century dwelling-house *De Drie Kolven*, nowadays – erroneously – called *Beziendershuis*, Steenstraat nos. 44–46 (fig. 7: 5 and fig. 8), was being

10 Brunsting 1969.

11 For a complete bibliography of Roman Nijmegen see the museum guide: *Rijksmuseum G.M. Kam – Museum van Romeins Nijmegen*, 2nd ed., Nijmegen 1972, 72–9.

12 In compiling this article I made use of the most extensive outline of the excavation results published so far: Brunsting 1955 (a complete list of the existing literature will appear in the publication referred to below in this note). However, Professor Brunsting was so kind as to provide me with much additional

information and to give me permission to use it in this article. He also allowed me to include the – provisional – excavation plan and a few other illustrations. Mr S.L. Wynia, of the Archaeological Institute of the Free University, Amsterdam, assisted in the preparation of the latter. I wish to express my thanks to them both. A more detailed publication, in which special attention will be paid to the finds, will appear in due time.



restored, the foundation and the lower part of a Roman wall were discovered below it and immediately east of it (under the so-called *Onze Lieve Vrouwe Trappen* – the Stairs of Our Lay). The foundation consisted of rubble (boulders, pieces of tuff, and tile fragments) and mortar, the wall itself of a rubble and mortar core with a facing of tuff blocks. Its width was *c.* 1.4 m, its orientation approximately west–east. The excavations in 1954 and 1955, on the sites of some old houses in the neighbourhood, which had been pulled down in connection with a reconstruction plan for the quarter, were carried out in order to trace this wall to the west and the east of the so-called *Beziendershuis*.

On the west side the excavators were not successful. They did find a foundation consisting of tuff and rubble under the back of the house, now demolished, called *De Dom van Keulen*, Steenstraat no. 40 (fig. 8). The foundation materials, however, were mixed with medieval bricks and the foundation-trench contained thirteenth-century pottery: if it was ever there, the Roman wall must have been removed to make room for the medieval one. That there were no Roman remains in the *Vlooiengasje*, the narrow alley adjoining *De Dom van Keulen* on the east, had already become clear during trial-trenching in 1946 and 1949.

East of the *Beziendershuis* the Roman wall appeared again (fig. 8, trench 6).<sup>13</sup> It was built in the same way as the stretch of wall found under the *Beziendershuis*, *i.e.* with a rubble and mortar foundation and a rubble and mortar core with tuff facing, and had the same width. It had been preserved to a considerable height; in fact, the top of it can still be seen above ground – if only just – in the small shrubbery that now covers the excavation-trench. The pottery found in the foundation-trench dates the building of the wall to the reign of Trajan, *c.* A.D. 100. Some 40 m to the east, in the middle of Steenstraat (fig. 8, trenches 11 and 12), another large fragment of Roman wall was discovered. Though it is not in line with the wall immediately east of the *Beziendershuis*, the similarity in construction and in dating suggests a connection. It is possible that they, together with the fragments found in some of the trenches in between (fig. 8:8 and 10), formed part of one and the same wall, running in a rather wavy line from west to east. However, in that case the absence of any traces in trenches 9 a–c is difficult to ex-

plain. It must be assumed that either there was a gap in the wall at this point, or that at some period its remains were removed so completely that no traces were left at all. Further excavation on the sites of demolished houses between Waalkade and Steenstraat revealed that the Roman tuff wall continued for some 65 m in an easterly direction (fig. 8, trenches 14–17). In some places it was well preserved, especially in the east part of trench no. 15, south of the former Waalbrug Hotel, where it stood to a height of no less than 4 m above the bottom of the foundation (plate III: 1). In the upper part of its north face, the remains of a niche could be seen (plate III: 1, top left corner). In trench no. 17 the wall bends south, to be cut by the recently built retaining wall bordering the steep northern escarpment of the Nijmegen plateau. There is no doubt that, after bending east again, it joined the west–east stretch of tuff wall ending in a cellar, which is shown as no. 18 in fig. 8. This stretch was discovered and mapped by surveyors of the city public works department when the retaining wall already mentioned was being built. There are indications that the whole eastern part of the wall is of later construction than the western. In the first place, the foundations of the latter lie at a much greater depth than those of the former; in places the difference is more than 1.5 m. In the second place, in trench no. 17, on the spot indicated with an arrow in fig. 8, it appeared clearly that the eastern wall had been joined to the western at a time when the latter already existed. The finds in the foundation-trench indicate that this must have happened in the third century or perhaps as late as the fourth.

North of the tuff wall, especially in the trenches nos. 4, 6, 14 and 17, many occupation features were discovered, such as foundations of buildings, post-holes, pits, and even two or three inhumation graves. Apart from the graves, which were probably dug in the Middle Ages for strangers found drowned along the bank of the river, most of the features could be dated to the Flavian period/first half of the second century and to the fourth century. Finds from the later second and third centuries, and even from the Carolingian period (*i.a.* Badorf pottery), are present, but are fewer in number. It could not be ascertained how far the settlement, or rather series of settlements, extended to the north. When in the Middle Ages the river Waal shifted its bed southwards, a large part of the area must have been swept away. In the sections this erosion shows in the abrupt ending of the occupation layers even before they reach the Waalkade.

The well-made masonry of the north facing of the tuff wall and the presence of the niche-like recess mentioned

<sup>13</sup> As mentioned in note 12, the plan, fig. 8, is a provisional one: only the Roman wall is marked by dark stippling, the other features are either not shown, or left blank.

above indicate that this side of the wall, *i.e.* the one fronting the river, was meant to be exposed. The sections tell the same story; in fact, they show that the north face was only gradually covered by the occupation debris accumulating against it. Less trouble had evidently been taken with the masonry of the south facing, suggesting that it was not meant to be seen. As, moreover, the wall was situated directly against the steep lower slope of the Nijmegen plateau (fig. 9), we may assume that its south side was completely hidden from sight. Probably the wall was not a free-standing structure at all: the sections seem to indicate that it was fitted as closely as possible against an almost vertical face cut into the hill-side. The narrow, wedge-like space left between the two had a fill so clean and undifferentiated that it cannot possibly have remained open for long. It must have been filled in as soon as building operations had been completed, thus joining wall and slope together.

The results of the excavation can be said to establish that in Roman times part of the steep slope on the northern edge of the Nijmegen plateau was bordered by a thick and probably high wall built of tuff, with an over-all length of at least 140 m. It was not a continuous structure, nor was the whole of it built at one and the same date. The evidence of trenches g a–c indicates that there was at least one gap separating what may have been two different sections of wall, both dating from *c.* A.D. 100. Another section again was formed by the easternmost stretch of wall, built in the third century or even later. Though for convenience sake we shall continue using the word wall in the singular, it should be kept in mind that actually there was not one wall, but rather a series of at least three. If, as has been argued above, the wall did not stand free of the slope, it must have been a retaining wall, probably supporting several terraces. In that case its rather winding course is easy to explain: it must have followed the natural contours of the hill-side. There is no means of knowing what was on the terraces, but the cellar, joined to the wall at its eastern extremity, indicates that there may have been one or more buildings. The drum of a column, which was found in the cellar, suggests a superstructure of rather grand proportions. Roman occupation of the hill-side is further demonstrated by finds of pottery

14 Daniëls (1955), 270–1. Nowadays Vleeshouwerstraat runs at the foot of the modern retaining wall, built in 1953–54, and is almost at a level with Steenstraat. The 'old' Vleeshouwer-

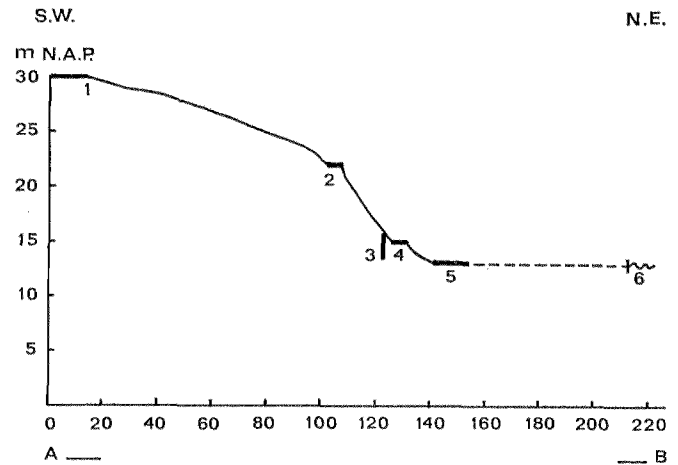


Fig. 9 Nijmegen – Waalkade: Schematic section through north slope of Nijmegen plateau: situation before modern retaining wall was built: 1 Ridderstraat; 2 Vleeshouwerstraat; 3 Position of Roman wall; 4 Steenstraat; 5 Waalkade; 6 River Waal

and other objects which are reported to have been made in the district from the seventeenth century onwards. Not much is known about the shape of this hill-side settlement, but one aspect of it may perhaps be deduced from the discovery, some fifty years ago, of fragments of tuff wall, identical in construction to the one discussed above, in the old Vleeshouwerstraat.<sup>14</sup> Though there are many other explanations, it is not impossible that these fragments represent a second Roman retaining wall built higher up the slope. If so, we can visualize the settlement as consisting of several tiers of terraces, the one rising above the other: an imposing sight to all travellers along the river.

Unfortunately, the tentative conclusions arrived at above concerning the shape of the settlement on the hill-side must remain largely hypothetical. Nor can anything definite be said about its exact date. We are, however, better informed about the area at the foot of the escarpment, immediately along the river bank, even though most of this area has been destroyed by the Waal. Evidently it was densely populated and, what is more, occupied continuously, or with only short interruptions, from the first to the fourth centuries. So far this is a unique

straat, however, was situated much higher up the slope. In places, the difference in height between it and Steenstraat amounted to 7 m (fig. 9).

occurrence in the Nijmegen region, but it can easily be explained by the settlement's position on the waterfront: its commercial importance must have been so great that, if it was ever deserted, it was reoccupied as soon as conditions improved a little. When in the fourth century Nijmegen was reduced to the status of an outpost of the Roman imperium and the inhabitants, or what was left of them, withdrew to the safe heights of the Valkhof and the Hunerpark (fig. 7), the settlement down by the river still functioned as a port.

One last observation should be made. Several names have been handed down for the Roman settlements in the Nijmegen area. One of these is *Ulpia Noviomagus*. The second element of this name is known from the *Tabula Peutingeriana*; the first element was added by the emperor Trajan, who at the same time probably conferred certain market privileges on the settlement now graced with his family name. It is usually accepted that the name *Ulpia Noviomagus* belongs to the civilian settlement situated west of the later medieval city, but actually our knowledge of this part of Roman Nijmegen is so scant that the identifica-

tion cannot be absolutely certain. Only two buildings have been excavated completely enough to ascertain their shape and function: they were a pair of Romano-Celtic temples, standing within a large walled precinct with a total area of about 4500 m<sup>2</sup>.<sup>15</sup> A temple enclosure of such dimensions suggests a centre of religious rather than commercial activities. On the other hand, the excavations in 1954 and 1955 revealed a civilian settlement of undoubted commercial importance. Moreover, it was occupied more or less continuously from the first to the fourth centuries, contrary to the settlement further west, which did not start before the Flavian period and had probably disappeared by the middle of the third century.<sup>16</sup> Of course, nothing can be proved, but all these considerations give at least some justification to the view that of the two settlements discussed in this paragraph the one along the Waal embankment has as strong a claim to the name *Ulpia Noviomagus* as the one to the west of the medieval city. The latter may not be a town at all, but some kind of temple settlement, which developed along a Roman road running west.<sup>17</sup>

15 Daniëls 1927.

16 This dating is based on the finds from the associated cemetery: see Brunsting 1937, especially pp. 198–201.

17 The course of this Roman road may be indicated by the Weurtseweg, formerly called Koningstraat – King Street: see Daniëls 1927, 107.

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# The Islands of Zeeland and South Holland in Roman Times

figs. 1-8; pls. iv-viii

The coastal area of what are today the islands of Zeeland and South Holland was already inhabited in various places several centuries before Christ. Traces of settlements have been found both in the Old Dunelands and in the fens behind them, which extended to the higher sands of Brabant and Flanders. It is still very difficult to make a comprehensive study of the many Iron-Age finds from this area because of the lack of a reliable typology and chronology of pottery. In that respect we are much better informed about the finds and settlements from the Roman period. Now that southwestern Holland has been fully inventarised, it has become possible to compile a provisional map showing the distribution of Roman finds and other material pertaining to the Roman period (fig. 1).<sup>1</sup>

In Zeeland the earliest find of Roman origin – not counting the coins – dates from *c.* 70 A.D. It is a sherd from a terra sigillata bowl (type Drag. 29) of South-Gallic make, found in an indigenous settlement at Koudekerke on the island of Walcheren. In the early days of the Roman period – for Holland this has been established at *c.* 12-9 B.C. – the coastal area of Zeeland and environs was fairly densely populated. However, there seems to have been no question of Roman influence at that time although such a possibility exists in theory. The Romanization of the islands of Zeeland and South Holland (the 'delta' of the southwestern Netherlands today), was not undertaken on a big scale until the last quarter of the first

century, witness the many (well-datable) finds of 'Roman' pottery unearthed on the islands of Rozenburg (from or in the neighbourhood of the Helinium), Putten (Spijkenisse), Goeree (Ouddorp), Schouwen (Brabers near Haamstede; duneland of Westenschouwen), Tholen (the south coast near St Maartensdijk, and Poortvliet), North Beveland (Kats/Colijnsplaat), Walcheren (Koudekerke, Ritthem, Domburg), and western Zeeuws-Vlaanderen (Aardenburg). In the course of the second century Roman influence and the number of indigenous and Roman settlements steadily increased, reaching a culmination point between *c.* 170 and *c.* 270. Habitation was concentrated mostly near the coast; the less numerous settlements in the 'interior' should presumably be considered particularly in relation to the former courses of the rivers. A normal network of roads did not exist in the extensive fenlands, so that transport and contact with the world outside depended for the most part on the waterways. These waterways and the proximity of the North Sea were undoubtedly of decisive importance in the considerable development of the delta area in Roman times. Several large trade centres were flourishing in the Rhineland, such as Trier and especially Cologne.<sup>2</sup> A considerable portion of the trade products went through the Rhine-Scheldt delta to the west and south, to Britain and the coasts of the Atlantic. Of course much merchandise came along this route from the opposite direction, too, even from Spain (oil and wine, etc.).

1 The provisional distribution map (fig. 1) of the Roman findspots in the southwest of the Netherlands and part of Belgium is based on data supplied by: the Archaeological Working group for the Netherlands (AWN), sections Helinium, Lek and Merwede area, the Nieuwe Maas, and Zeeland; Municipal Works, Rotterdam, department of Archaeological Research; the Geological Service, Haarlem; the Foundation for

Soil Survey, Wageningen; the State Service for Archaeological Investigations, Amersfoort; the Royal Zeeland Society for Sciences, Middelburg; various museums and archaeological collections, private individuals, and publications. Cf. *Deae Nehalenniae* 1971, fig. 5, 48-9; with some modifications and additions.

2 Byvanck 1943, II, 547.

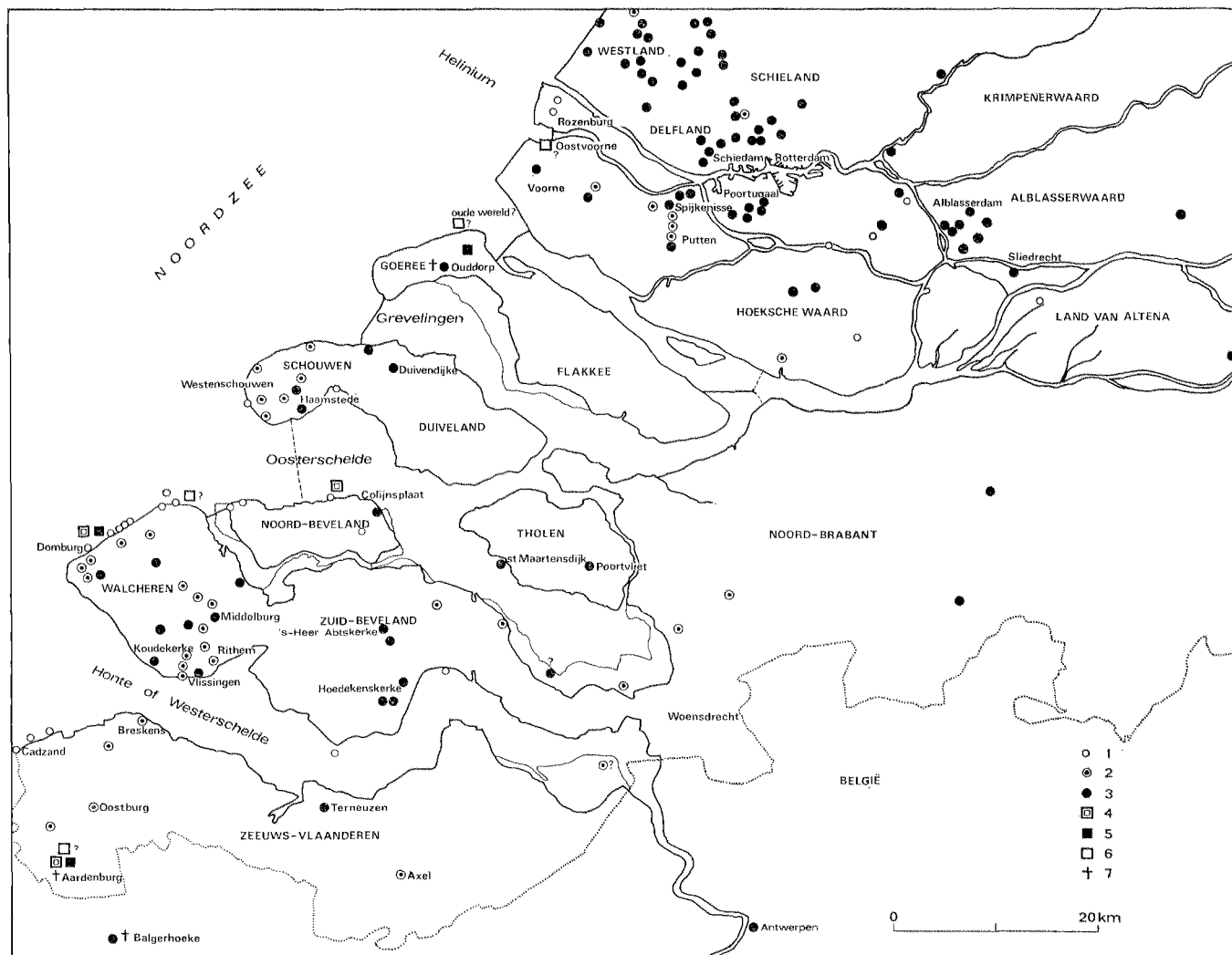


Fig. 1 Roman findspots in southwestern Holland and part of Belgium 1 silted-up find, 2 stray find, 3 settlement traces, 4 sanctuary, 5 vicus, 6 castellum?, 7 cemetery

Important trade routes and trading centres demanded protection. Indeed, traces of fortifications have been found, of which possibly one was built at Oostvoorne (to the south of the Helinium), others at Ouddorp ('The Old

World?'),<sup>3</sup> and at the mouth of the Scheldt between Domburg and Schouwen,<sup>4</sup> and possibly at Aardenburg, too. Danger probably threatened from the sea rather than from the interior. After several invasions by Chaukian

3 Trimpe Burger 1960-1, 201-2.

4 On a seventeenth-century map by Nicolaas Visser, a point is marked between Walcheren and Schouwen, with the remark: 'Den Roompot een voornaem Casteel bij the Rhomeynen gebouwd pleegh alhier te leggen' (Den Roompot, an important

Castel built by the Romans, used to be situated here). This map is reproduced in De Bruin Wilderom 1961, 56, fig. 14. Moreover it has repeatedly been suggested that a Roman fortification stood near the old Fort de Haak, to the north of Vrouwenpolder on Walcheren.

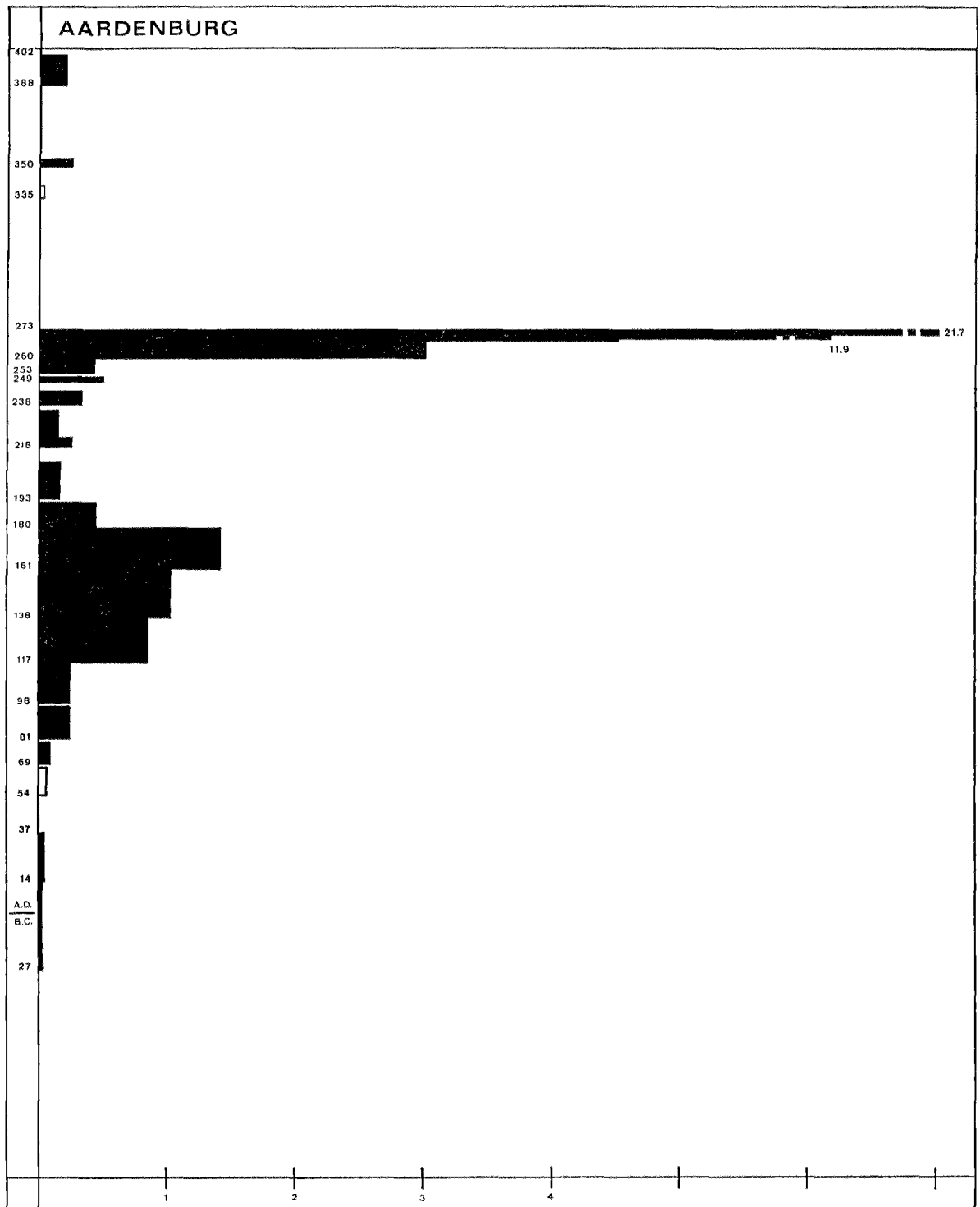


Fig. 2 Graph of the coins found in Aardenburg (after Boersma 1967, fig. 5)



pirates around 172–4, it was particularly the Franks and Saxons who, from the mid-third century onwards, ravaged the coast and undertook looting expeditions to the interior.<sup>5</sup>

The study of the numismatic evidence (fig. 2)<sup>6</sup> and the dating of the imported Roman pottery show that the Roman influence in the delta area may be considered as having come to an end around the year 270, with the exception of a number of late third and fourth-century finds in the environs of Aardenburg and the Old Dune coast. A little further south, on what is today Belgium's coastal area, slightly more late-Roman finds occur (as in the Balgerhoeke grave-field,<sup>7</sup> Damme,<sup>8</sup> and the castellum Oudenburg annex cemetery<sup>9</sup>). Archaeological investigations in Aardenburg have indicated that this site was totally destroyed around the year A.D. 273.<sup>10</sup> The remains of a trade settlement in Ouddorp give the same picture of fire and destruction, although the 'end date' could in this case be established with less accuracy due to insufficient numismatic material. It is not certain whether all settlements in the delta area were destroyed by human violence in the fatal period of the third quarter of the third century. Also rising soil-water, periodic flooding and siltation of the inhabited area (drinking water problems!) etc. could have made life difficult, at any rate outside the area of the Old Dunes and the Pleistocene sands higher up. At all events the influence of the sea in the low-lying coastal area increased significantly around the fourth(?) century (Dunkirk II transgression; end *c.* eighth century?) whereby the landscape underwent a profound metamorphosis. Some hundreds of years before, around the beginning of the first century, the landscape had been dominated by the Old Dunes and the hinterland of huge fens with their rich vegetation. Various small rivers wound their way through the fens to reach the sea via a number of breaks in the chain of dune formations and beaches. Thus at one time the 'Roman Scheldt' and the Striene flowed through Zeeland, and no doubt there were other drainage streams unknown to us that joined the main stream before reaching the sea. The existence of a former

river or estuary can often still be established by careful investigation of the soil.<sup>11</sup> Indications are even believed to have been found of man-made drainage systems.<sup>12</sup> During the so-called pre-Roman transgression period(s), the damming of the river-water and inland waters caused, at high tides, clay sediments to be deposited on the peat. Thus as early as in pre-Roman times in the northern part of Walcheren, under the influence of the mouth of the Scheldt, a broad section of the fenland was covered with sandy clay deposits; in places of deeper watercourses the peat has eroded. The same happened in the Westland, on the islands of Voorne-Putten, Goeree, and here and there on the coastal plains of Flanders. Towards the interior these deposits diminish or do not occur at all, depending on the breadth and depth of the estuary, the height of the land (peat) and the water-holding area inland. Moreover many of these older sediments were washed away over extended areas particularly during the Middle Ages (post-Roman transgressions, Dunkirk II and IIIA–IIIB), so that a reconstruction of the landscape with its ancient watercourses is fraught with difficulties. Human intervention, too, erased many important traces in later times, such as in the Middle Ages by the large-scale salt-making and in our time certainly by large-scale ground-works. Both the distribution maps (*cf.* fig. 1) of the findspots from the Iron Age and Roman times and the soil maps of the delta area require a circumspect interpretation, particularly regarding the reconstruction of the former courses of rivers. Reasons for the lack of findspots or settlements in a relatively large area can be any of the following:

- a* they never existed (e.g. due to environmental factors),
- b* they were erased by floods, siltage, peat-cutting,
- c* the area has not yet been satisfactorily explored or surveyed (intensive soil survey for agricultural purposes, followed by redistribution of the land in particular, increases the chances of discovering new findspots).

Despite the above difficulties, soil experts believe they have found evidence of an old Scheldt channel which in Roman times presumably flowed through South Beveland to the west of North Beveland, to reach the North Sea

5 De Boone 1954, 29 et seq.; Mertens 1958, 15 et seq.; Mertens 1962; Mertens/Van Impe 1971.

6 Boersma 1967.

7 De Clippele 1968.

8 Favorel 1960, 13. The origin of the finds reported in Damme appears to be unreliable (oral information from H. Thoen, Seminary for Archaeology of the State University at Ghent).

9 Mertens/Van Impe 1971.

10 Excavations by the ROB since 1955; research not yet concluded; publications in preparation.

11 The delta area was surveyed by the Foundation for Soil Survey, Wageningen, and by the State Geological Service, Haarlem. A series of publications has been issued on their findings.

12 Ovaa 1971, 14.

between Walcheren and Schouwen.<sup>13</sup> The southern river course thought to have flowed through South Beveland is more or less marked by finds in 's Heer Abtskerke,<sup>14</sup> Hoedekenskerke (three findspots), Ellewoutsdijk (silt-up find – pl. iv: 2 – from the Western Scheldt), possibly Terneuzen, and possibly also by the numerous findspots in the eastern part of Walcheren. The remains of a most important sanctuary devoted to the goddess Nehalennia, found near Colijnsplaat in 1970/71, are, however, an unmistakable indication that a waterway must (also) have existed along the present northcoast of North Beveland.<sup>15</sup> Was this the site of the main course of the Roman Scheldt? Or was it a tributary that formed a link between the Scheldt-mouth to the north of Domburg and the big rivers in central Holland? The soil experts, moreover, believe that the former Gouwe (between Schouwen and Duiveland) possibly already existed in Roman times.<sup>16</sup> This waterway could in that case have been of great importance for the 'north-south connection,' perhaps of more importance than the Striene. The find circumstances of a habitation-site with the remains of a house (dating *c.* 100 A.D.) in the peat to the east of Colijnsplaat, along the banks of the present-day river Scheldt, show that the fenland in this area was accessible and habitable.<sup>17</sup> The same is true for a Roman findspot on the southern bank of Tholen near St Maartensdijk. It is unlikely that there are still river sediments left in this area. The present, much broadened Eastern Scheldt has undoubtedly changed much of the old situation beyond recognition. The importance of the stream along the north coast of North Beveland over the centuries may be concluded from some of the medieval material. A large number of fragments of early ninth-century pottery have recently been found along the banks of the Eastern Scheldt, just to the east of

Colijnsplaat. Such sherds had previously been found only in Domburg, Westerschouwen (Old Dune coast), Aardenburg (Pleistocene sands), Oud-Duivendijke (a place in central Schouwen remarkable for its Roman and medieval finds), and, on the border between North Brabant and Zeeland, not far from the Scheldt, near Woensdrecht. This material is older than that of the so-called refuge fortresses at Middelburg, Oost-Souburg, Burgh, and Oostburg. A circumstance of special historical significance is that 'Het Fael,' an old Scheldt channel near Colijnsplaat, traditionally marked the borderline between what was called 'Zeeland be-ooster' (to the east) and 'Zeeland bewester Schelde' (to the west).<sup>18</sup> The location of the Roman sanctuary finds at Colijnsplaat may be placed on the northern 'bank' of the Fael (Zeeland east of the Scheldt). The Roman sanctuary at Domburg, which was already discovered in the seventeenth century, lay on the southern 'bank' of the Scheldt. The location of the sanctuaries on either side of the Scheldt suggests that this river was an important boundary, *i.e.* between the provinces of Germania (Inferior) and Gallia (Belgica).<sup>19</sup>

The mouth of the Scheldt, between Walcheren and Schouwen, appears to have played an important part since prehistoric times. A fairly large late Stone-Age settlement is known to have existed on the south coast of Schouwen (Brabers, Haamstede);<sup>20</sup> in the Old Dunes of Schouwen objects from the Bronze Age, which probably came from Central Europe and England, have been found.<sup>21</sup> There are numerous traces of Iron-Age settlements on either side of the mouth of the Scheldt, both in the area of the Old Dunes and outside. There is also plenty of material from Roman times (including the sanctuary at Domburg, which was most probably situated on the Old Duneland).<sup>22</sup> On the north coast of Walcheren

13 Steur/Ovaa 1960.

14 This findspot was reinvestigated in 1972; see note 36.

15 Louwe Kooijmans 1971a, 12–21; 1971b.

16 Ovaa 1971, 19.

17 Trimpe Burger 1970b, 216–8.

18 Trimpe Burger 1970b, 219; Taal 1965 (with detailed bibliographical references); collection of maps in: Fokker 1909, *e.g.* appendix J (text p. 3 et seq.); Beekman 1948, 152–60.

19 Bogaers 1971, 42–3.

20 Trimpe Burger 1960–1, 198–9, fig. 5.

21 Trimpe Burger 1960–1, 199–200; Van der Feen 1952a; Butler 1958.

22 Smallegange 1696, 82: 'When at the end of the year 1646 the winds from the North East and from the East stormed for

a long time, the Dunes of Domburg were eaten away by the waves of the churning seas: so that at last on the fifth of January 1647, at the foot of the same Dunes, various stones were discovered, of extraordinary antiquity, with images and inscriptions of various Heathen Gods...' From the detail 'at the foot of the Dunes' it could be concluded that the sanctuary must have been situated at least one metre above sea level, *i.e.* on or in the Old Dunelands. It would therefore be conceivable that the sanctuary was visible in a broken-down or overgrown state, in the early Middle Ages. Particularly after the year 1000 the site was covered by young dune formations. The tree-trunks by the sanctuary which were also observed in the seventeenth century could be the remains of medieval vegetation, which however could well be a continuation of even earlier vegetation.

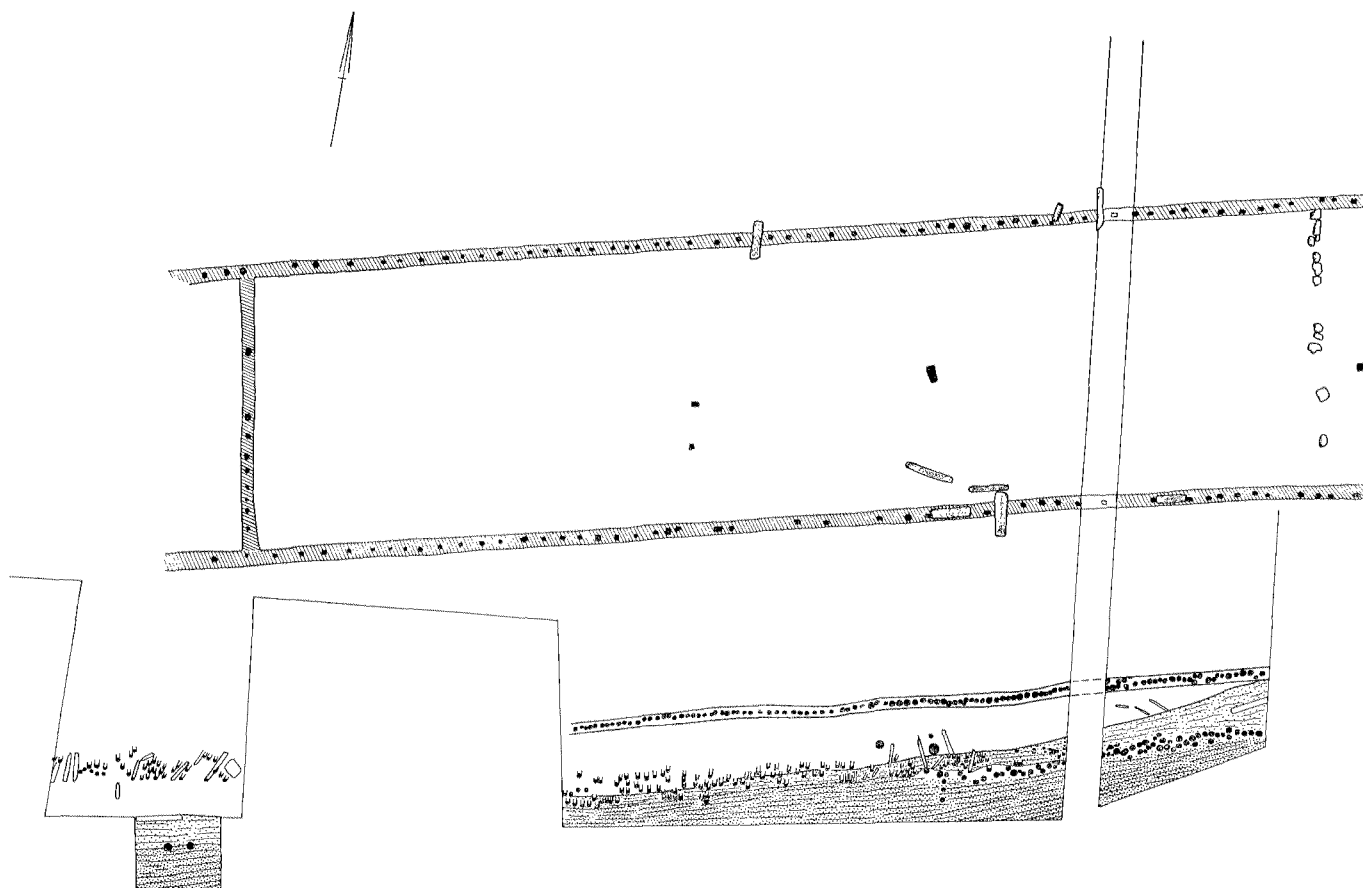


Fig. 3 Ouddorp, Goedereede, polder Oude Oostdijk; bank stabilization of heavy piles along a broad creek or canal from Roman times; excavation ROB 1958-9

six fragments of Roman roof-tiles have until now washed ashore; these fragments bear the stamp of the C(lassis) G(ermanicae) P(iae) F(idelis), which is most probably an indication that the mouth of the Scheldt was strategically important.<sup>23</sup> The importance of the Scheldt as a trade-route is particularly evident from the inscriptions on the altars found at Domburg and Colijnsplaat, which were dedicated by sailors, merchants, and ship-owners. The inscriptions and decorations refer to traders in pottery, fish-sauce, (wine) and salt. And finally, between *c.* 500 and 900, in the early Middle Ages, a rich trade settlement

developed slightly to the northeast of present-day Domburg and the old Roman sanctuary.<sup>24</sup> The early medieval settlement with its grave-fields has, just as the Roman sanctuary, disappeared into the sea due to the erosion of the coast-line.

In the delta area a number of interesting Roman finds were discovered in several places around Ouddorp on Goedereede. As early as in 1618 reports were made of Roman antiquities found by the island population at a place called 'The Old World.'<sup>25</sup> Pieter Janze Twisch wrote: 'By Goeree, a small town after Den Briel, to the north towards

23 Van der Feen 1936, vii-x; Dumon Tak 1968.

24 Van der Feen 1952b, 153-5; De Man 1899.

25 Twisch 1617-20, II; Boers 1843; Byvanck 1947, 152.

the sea, an old broken-down town was discovered this summer, which has been covered with sand during several hundred years; it has now been exposed to view by the sea; one can see foundations of large houses, yes also broad streets, so that it may be concluded that it must have been an important place of whose downfall no mention is made either in Chronicles or Histories.' Twisch goes on to say that many 'antiquities' were found at that place, including coins with heads of Roman emperors, 'from which it may be judged that this town once belonged to the Roman territory.'

'The Old World' has disappeared into the sea. Its exact location is unknown. From the rather vague descriptions that survive of the 'Old World,' it is difficult to make out whether the so-called streets and houses belonged to a Roman settlement or to an early medieval habitation (*cf.* the combination of Roman and early-medieval finds on the beach at Domburg).

In 1958/59 an intensive investigation was undertaken of the traces of habitation from Roman times in the old Oostdijk polder to the north of the town of Goedereede, not far south of the place where 'The Old World' supposedly disappeared into the sea. The remains of a fairly extensive civilian settlement situated along a canalized navigation route were unearthed (fig. 3; pl. v: 2); to judge from the nature of the finds, this must have been a trade route.<sup>26</sup> The very numerous finds of imported ceramics in this settlement seemed to indicate the presence of a *negotiator cretarius*. That Ouddorp, too, maintained contacts with England in Roman times is confirmed by the typically English pottery finds (pl. vi: 1). The settlement at Ouddorp, which covers at least three different periods (fig. 3) dates from *c.* 75 A.D. to about the middle of the third century (or to A.D. 270?). The most important finds include two military roof-tile stamps (pl. vi: 2, 3), and a military inscription (pl. vi: 4), which could be an indication of a Roman fortification in the neighbourhood. It is tempting to identify the 'Old World' and its 'streets and houses' with this fortification. The tilestamp finds are unfortunately incomplete. The most likely interpretation would seem to be:

*a* [EX GE]R INF retrograde: [Ex(ercitus) Ge]r(manici) Inf(erioris), and

*b* [CGP]F: [C(lassis) G(ermanicae) P(iae)] F(idelis). The military graffito incised along the rim of a rubbing-bowl, runs: [C]ONT CASSI: [C]ont(ubernio) (or -ii) Cassi, of the 'chamber' or 'tent' companions of Cassius; Cassius being the name of the man at the head of a contubernium (*c.* 8-10 men).<sup>27</sup>

Goedereede counts a third findspot of importance: that near Ouddorp. During deep turning of the soil by hand (soil improvement for agricultural purposes), Roman pots have been found on a bed of clay under a layer of sand that lies on the surface at that place.<sup>28</sup> The find circumstances are curious because these Roman objects were not covered by a layer of clay, as is the case with most finds in the delta area (deposit Dunkirk II), but by sand which, it seems, must have drifted from the dunes. If this assumption is correct, we have here an indication that the coast of Goedereede, as that of Walcheren and Schouwen, was permanently safeguarded also in post-Roman times by a row of dunes, except in those places where sea-arms, river estuaries, or broad creeks existed. It is remarkable that many pots were found in one piece under the sand, as in a grave-field.<sup>29</sup> The discovery of a Roman coat of mail is most exceptional.<sup>30</sup>

In the delta area, on the island of Voorne, there is one place that merits special attention due to its extraordinary geographic location. It is the village of Oostvoorne, situated on the southern bank of the mouth of the Helinium, which was so very important in Roman times. In 1752, at exceptionally low tide, heavy pieces of mortared stone and the foundations of sturdy buildings were observed, which were possibly Roman in origin.<sup>31</sup> A Roman castellum could very well have been situated at the mouth of the Helinium. During dredging operations for the construction of the Europoort, much material from the Helinium itself (Rozenburg island) was found, both from Roman times and from the early Middle Ages unfortunately almost all this has fallen into the hands of private individuals and antique dealers.

The most extensive settlement in the delta area, in so far as we can establish today, was situated in the west Zeeuws-Vlaams Aardenburg (Medieval name: Rodanborch). The traces of settlements in this place extend over an estimated area of one square kilometre. In Roman

26 Trimpe Burger 1960-1, 202.

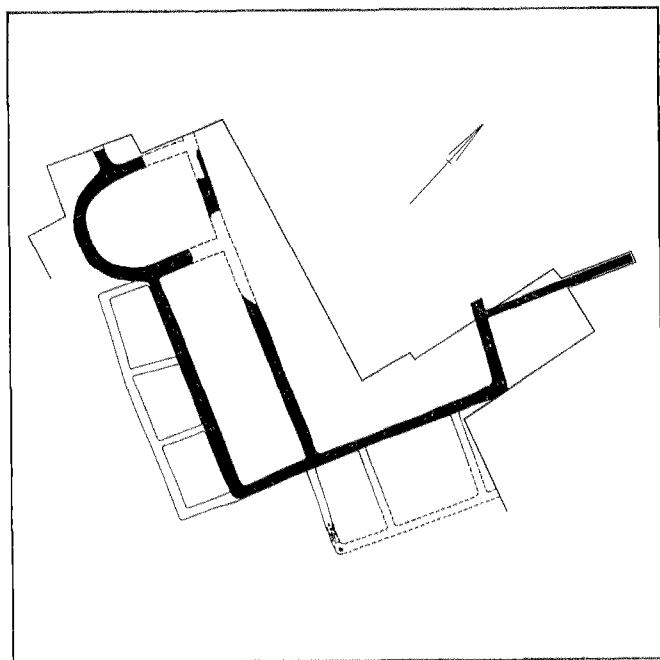
27 *Cf.* a similar military inscription found in Maurik: Bogaers/Haalebos 1972, 87.

28 Trimpe Burger 1960-1, 202.

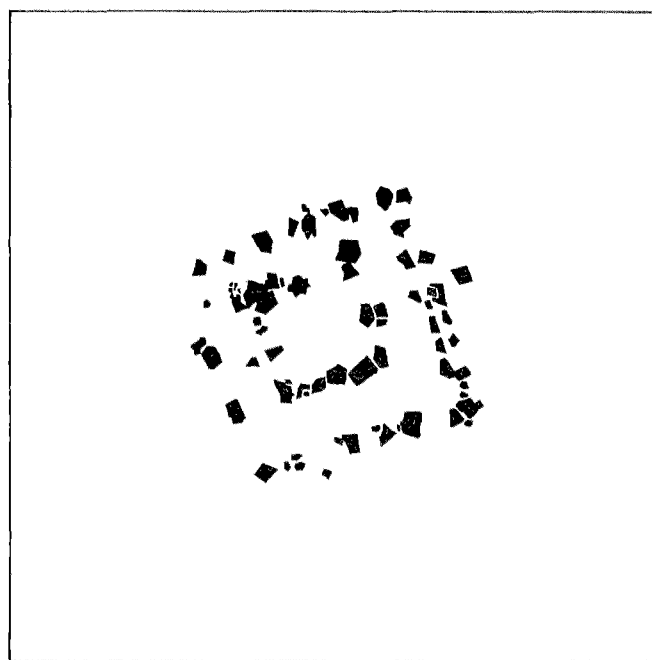
29 Byvanck 1947, 152.

30 Helpfully supplied by Dr P. Stuart, State Museum for Antiquities at Leiden (inv. nr. h 1902/3.1).

31 Hock 1971, 9.



4a



4b

times Aardenburg was still situated on a small river that presumably flowed to the sea via a rather marshy area. The Roman settlement itself was built on a ridge of Pleistocene sand. Both geographically and historically there is much affinity between Aardenburg and Oudenburg near Ostende. Evidence of one or more Roman castella has been found during excavations in Oudenburg.<sup>32</sup> It is assumed that also Aardenburg had military importance, particularly in the period between A.D. 170 and 273, when the coastal area suffered greatly under invasions from the sea. In view of the small number of finds from other periods, Aardenburg must have had little importance from *c.* 100 to 170, and from *c.* 273 to the collapse of Roman authority in the fourth century. Oudenburg, where many objects (pottery, coins) from the earlier and later Roman periods have been found, presents a different picture. Roman Aardenburg must have possessed many imposing buildings (fig. 4); the walls were built of stone and were well-founded on innumerable piles (pl. VII: 1). The building material consisted predominantly of blocks of chalk from Doornik. This grey-blue stone was also used for paving streets and squares. Rhineland tuff was used to a much lesser extent. Unfortunately many Roman re-

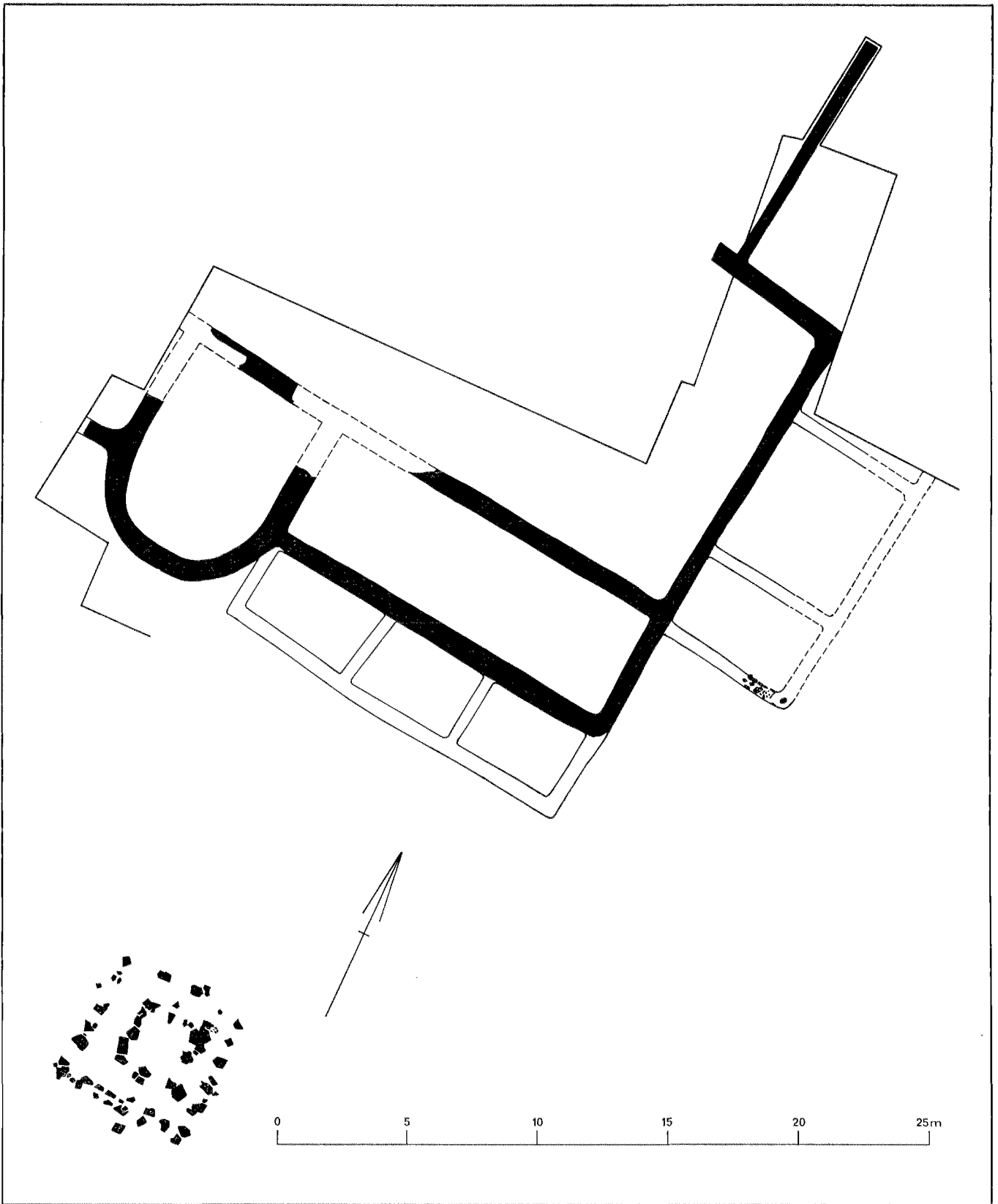
Fig. 4 Aardenburg; remains *c.* 100–200 m to the south of the St Bavo Church; a. Detail of pile foundations under a Roman building from the late second or early third century (*cf.* pl. VII: 1); excavation ROB 1961–3; b. Foundation of a small Celtic-Roman temple (5.5 × 5.5 m), building material stone from Doornik; dating late second or early third century, destroyed around 270–3 A.D.; excavation ROB 1961–3 (*cf.* pl. VII: 2); c. Relative position of the two buildings

mains were demolished in the Middle Ages. Like the former castellum at Oudenburg, Aardenburg was used as a stone-quarry in the period preceding *c.* 1250, when all sorts of building materials were in short supply and before brick was made in these areas.<sup>33</sup> The foundations of a Celtic-Roman temple (pl. VII: 2) of comparatively small dimensions (5.5 × 5.5 m.), unearthed at Aardenburg, are very interesting. The temple was destroyed by fire around A.D. 273, like many other buildings there. Under a 'fire-layer' containing dozens of broken roof-tiles, fragments of a very large (sacrificial?) bowl were found. Remains of altars have not been found – with the exception of a corner fragment – so that we do not know which divinity was worshipped in the sanctuary. However, bronze<sup>34</sup> and

32 Mertens 1958, 15 *et. seq.*

33 Aneca 1964.

34 Zadoks-Josephus Jitta/Peters/Van Es 1969, 14–5 (no. 6), 18–9 (no. 8), 36–7 (no. 15), 68–9 (no. 29), 124–5 (no. 53).



terracotta statuettes were found in Aardenburg, representing Bacchus, Mercurius, Isis-Fortuna, and Minerva. A particularly handsome ritual object is the trumpet-shaped candle-holder (pl. VIII: 1).<sup>35</sup>

Although it is believed that Aardenburg must have had one or more fortifications in Roman times, no proof of this has, strictly speaking, been found as yet. But the presence of enormous quantities of building materials (stone) obtained from elsewhere do seem to suggest an organization, money, or power. The fairly numerous stamps on Roman roof-tiles (pl. VIII: 2), *i.e.* CIIS and CIAA (Cohors secunda...?) are most remarkable, and they are unparalleled outside Aardenburg. The fragmentary tile-stamp PRIM [--- (PRIMORS?) (pl. VIII: 3) also raises some questions.<sup>36</sup> Little has been said in this short survey of the native population of the islands of Zeeland and South Holland in Roman times. The inhabitants of the coastal area lived – adjusting to the soil-conditions and often at the mercy of the sea – predominantly by farming, fishing, cattle-breeding, and hunting, and of course by trading local products such as baize, wool, hides, hams, goose-liver, fish-sauce, dried fish, and other items. There are indications to show that the coastal population produced salt on quite a large scale both from the ashes of burnt peat and from evaporated sea water.<sup>37</sup> The importance of the salt trade is shown by a number of altar-inscriptions found on Colijnsplaat, which mention this trade (*negotiator salarius*).<sup>38</sup>

Most probably the southern part of Zeeland, with Flanders, belonged to the civitas or to the department of the Menapii.<sup>39</sup> It is generally assumed that until well into the third century the capital of this civitas should be identified with the town of Kassel in Northern France (Castellum Menapiorum). In the late Roman period Doornik

35 Cf. Van de Weerd 1944, 358, ill. 74: 30; Radnóti 1969, Table 1.

36 See Bogaers 1974, 77, *afb.* 3:3.

37 In the summer of 1972 an investigation was undertaken of the Roman remains found by I. Ovaas (Foundation for Soil Survey, Wageningen) at 's Heer Abtskerke (South Beveland). The findspot proved – in so far as it was investigated – to consist almost entirely of thick, extensive layers of ash (from large quantities of burnt peat), between which a row of six small adjoining ovens was found (Ovaas 1972). The layers of ash strongly resembled the so-called 'zelas' layers from the Middle Ages. These are familiar in Zeeland in the neighbourhood of former salt works etc., places where salt was extracted on a large scale from peat and sea water. Layers of 'zelas' from Roman times have also been found in Aardenburg and Ritthem. In

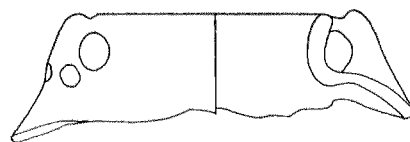


Fig. 5 Fragment of a 'Frisian' eared pot, found in Ouddorp, Goedereede, Oude Oostdijkpolder; dating based on find circumstances *c.* 75–89 A.D.; excavation ROB 1958–9

(Turnacum) became the capital. To the south of the Menapii, along the coast, lived the Morini. In the civitas of the Morini, Boulogne (Gesoracum, later Bononia) was highly important as a harbour and fleet-base (Classis Britannica!). Historical data concerning the islands of Zeeland and South Holland are both very scarce and very vague. Renewed study in recent years of all late Iron-Age and Roman finds from this area and direct surroundings (a publication by the present author is in preparation) has probably yielded some new links, although one should not be too quick to relate established 'culture areas' to the territory of a certain group of the population. An increase in trade relations with neighbouring areas tends, initially, to weaken the obtaining patterns of culture. Moreover, the frontiers were shifted because of wars, colonization and migrations. It would seem possible to use as a working hypothesis, the following remarkable data. The Helinium formed a natural barrier between two areas with fairly strong 'cultural' differences. To the north of the Helinium typically 'Frisian' pottery occurs in large quantities (*e.g.* 'Streepband' pottery)<sup>40</sup>, to the south only one rim-fragment of a 'Frisian' eared pot (fig. 5) has been found to date, namely from the earliest

Ritthem it was found to contain some slags (iron?); see Trimpe Burger 1970 a, 3–4.

38 Bogaers 1971, 41.

39 According to Bogaers (1971, 42–3) the Marsaci, (whose territory may have been part of the civitas of the Menapii), probably lived in the area just to the south of the mouth of the Scheldt. To the north of this river mouth the civitas of the Frisiavones probably extended; actually the islands of Zeeland and South Holland could, according to Bogaers, also have been the home of the Sturii, who undoubtedly had no civitas of their own and possibly belonged to that of the Frisiavones (Bogaers 1967, 103, ill. 3); Halbertsma 1965–9, 69 *et. seq.*; Koch 1950; De Laet 1961.

40 Cf. Waterbolk 1962, 42, Abb. 34.

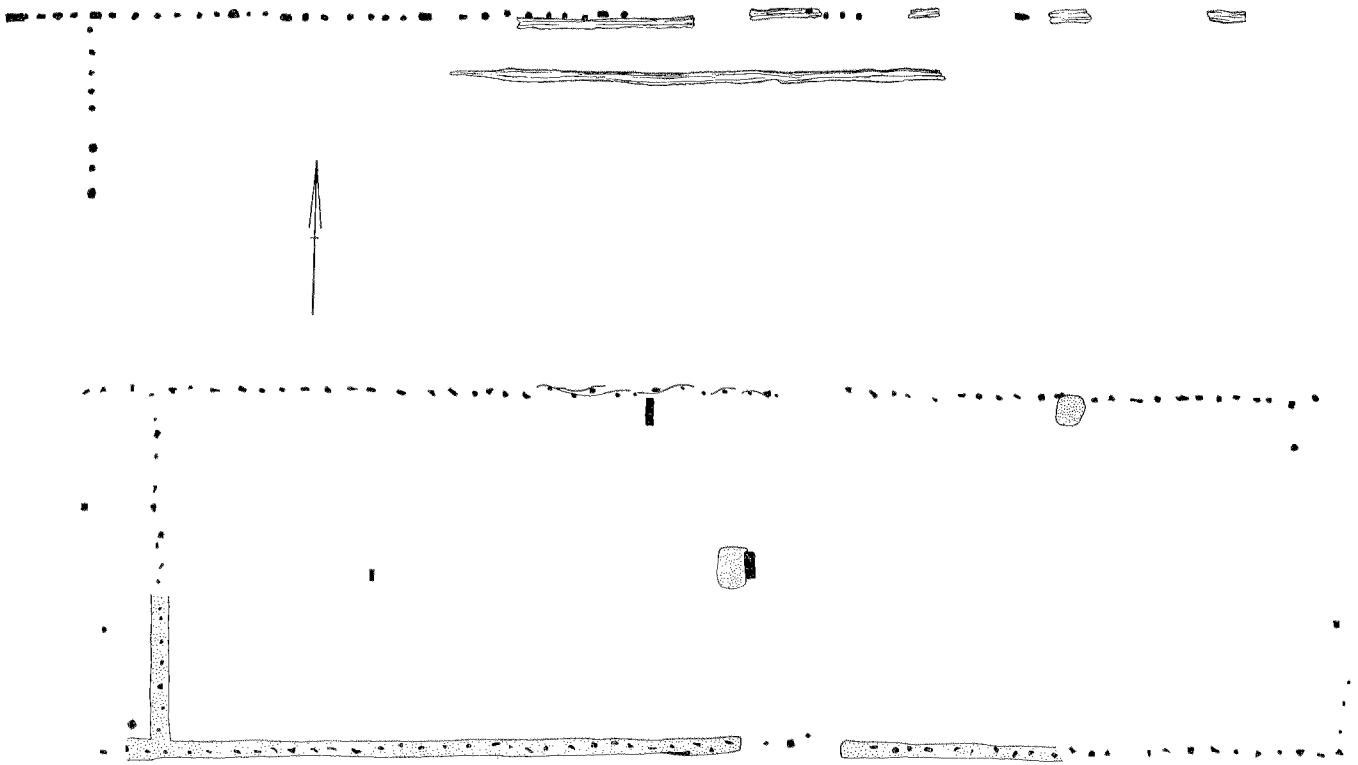


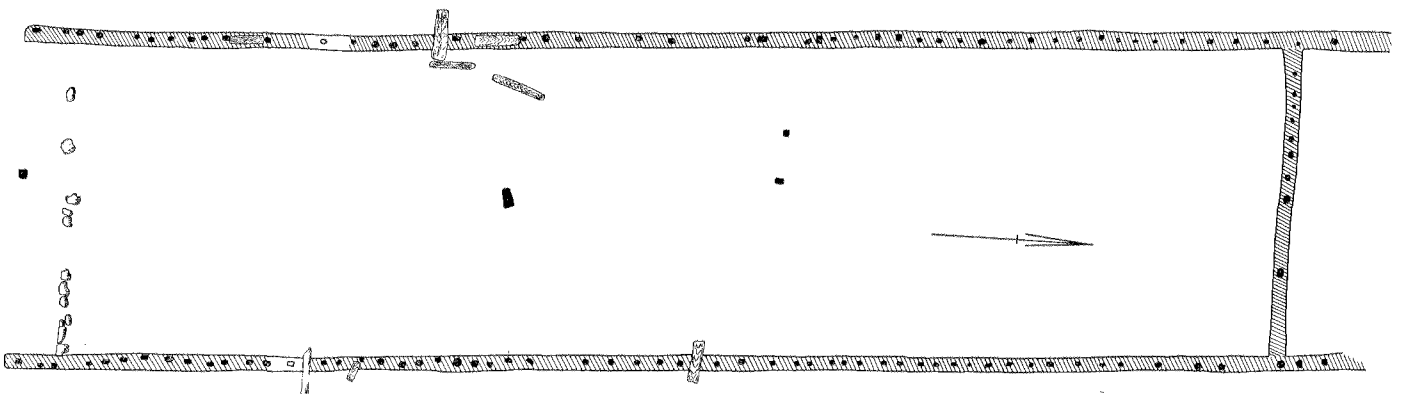
Fig. 6 Ground-plan of a house in Spijkenisse; length *c.* 23 m, breadth 7 m; one heavy deeply embedded oak pile in the centre of the building; dating probably early second century A.D.; excavation ROB and Department of Archaeological Investigations of Municipal Works, Rotterdam, with cooperation of AWN, Dept. 'Nieuwe Maas', 1966; *cf.* *NKNOB* 1966, 64

period (*c.* 75–80 A.D.) of the excavated settlement at Ouddorp on the island of Goedereede.

The Helinium also marks the border between the area with the widespread three-aisled house-type in the north and that of the two-aisled houses in southwestern Netherlands, *e.g.* at Spijkenisse (fig. 6), Ouddorp (fig. 7), Brabers (Haamstede; fig. 8), and probably Kats.<sup>41</sup> In the delta area there is evidence of predominantly southern influ-

Fig. 7 Ground-plan of house from Roman settlement in Ouddorp, Goedereede, Oude Oostdijkpolder; length *c.* 26 m, breadth 7 m; one heavy pile in the centre of the building; dating *c.* 100 A.D.; excavation ROB 1958–9

41 *Cf.* Trier 1969, Table 2; Verwers 1972, 92, Abb. 58.





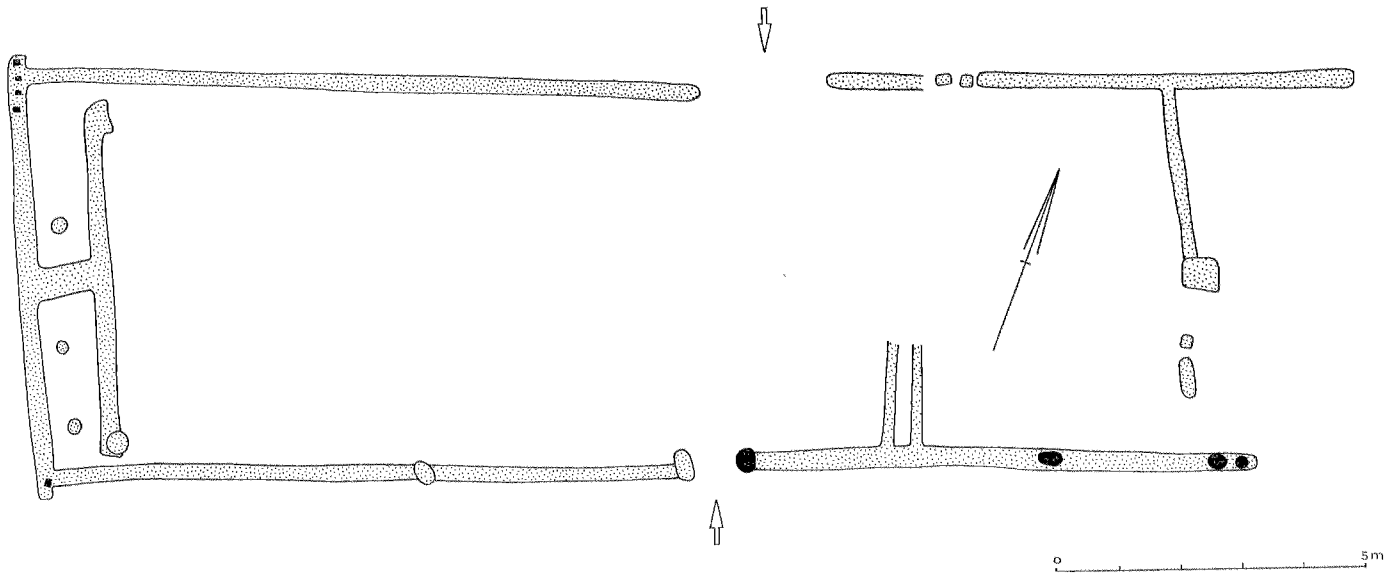


Fig. 8 Ground-plan of house from settlement at Brabers; dating probably second century; note that hardly any pile-holes occur in the wall-ditches

ences, or rather, a northern, 'Frisian' (?) influence did not extend further than the Helinium. On the basis of the occurrence of certain 'pottery associations,' the delta area in Roman times may, theoretically, be divided into three zones:

- a Belgian Flanders/Zeeuws-Vlaanderen
- b the area of the present-day islands of Zeeland (possibly excluding the eastern part of Tholen)
- c the territory of the South-Holland islands. Most of the pottery excavated in Flanders consists of native 'Flemish-Roman' ceramics (e.g. at Aardenburg some 75%); on the Zeeland islands this native pottery also occurs quite frequently (pl. viii: 4) but the percentage is somewhat smaller due to the considerable importation of Roman ware via the main waterways. It is, however, remarkable that this Flemish-Roman pottery is seldom found to the north of Schouwen; actually it is just as rare as in the coastal area to the north of the Helinium, with just a few finds at Voorburg (Arentsburg), Harnaschpolder to the west of Delft (pl. viii: 5), Schiedam, Vlaardingen, Rijswijk (South Holland), Valkenburg (South Holland), and Sliedrecht. There is much in favour of taking Zeeland and Flanders as constituting one cultural entity in Roman

times; besides that we still have the islands of South Holland as the homeland of a different people. This differentiation appears to have developed in Roman times (end first century?). In the late Iron Age, Flanders, the delta area, and part of the northern coastline probably formed one and the same 'cultural unit.' It should be noted that the finds encountered until now in Poortvliet on Tholen are to some extent different from those of the rest of Zeeland. A comparison with West-Brabant finds which are extremely rare, can therefore unfortunately not be drawn. Since major regional potteries appear to have flourished in the area provisionally ascribed to the Menapians, it is perhaps historically more justified to replace the term 'Flemish-Roman' pottery with 'Menapian' pottery. The border-line between 'Flemish-Roman' pottery and the so-called 'Belgian ware' in all its diversity is sometimes difficult to establish. It is, furthermore interesting to note that there is a distinct relationship as regards shape and decoration between the native-Roman pottery of the east coast of England, northwestern France, and that of the Flemish coast – the same picture is, incidentally, presented by the thirteenth and fourteenth-century types of pottery.

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# A Native Farmstead from the Roman Period near Kethel, Municipality of Schiedam, Province of South Holland

figs. 1-9; pls. ix-x

The present investigation was actuated by the construction of the E36, the national highway that runs from Rotterdam to the Hook of Holland; during the course of this operation numerous archaeological finds came to light near Kethel (fig. 1). Without the frequent visits to the site by enthusiastic and interested amateurs, however, these finds would have remained unexplored. In this respect

particular credit is due to Messrs L.A. Kaal and Chr. de Roo, members of *Helinium*, a working party of the *Archeologische Werkgemeenschap voor Nederland* (the society of amateurs interested in the archaeology of the Netherlands). The first indications of the existence of the farmstead described below came from a drain that was dug by a dragline. Finds of sherds and timbering in the sides of this

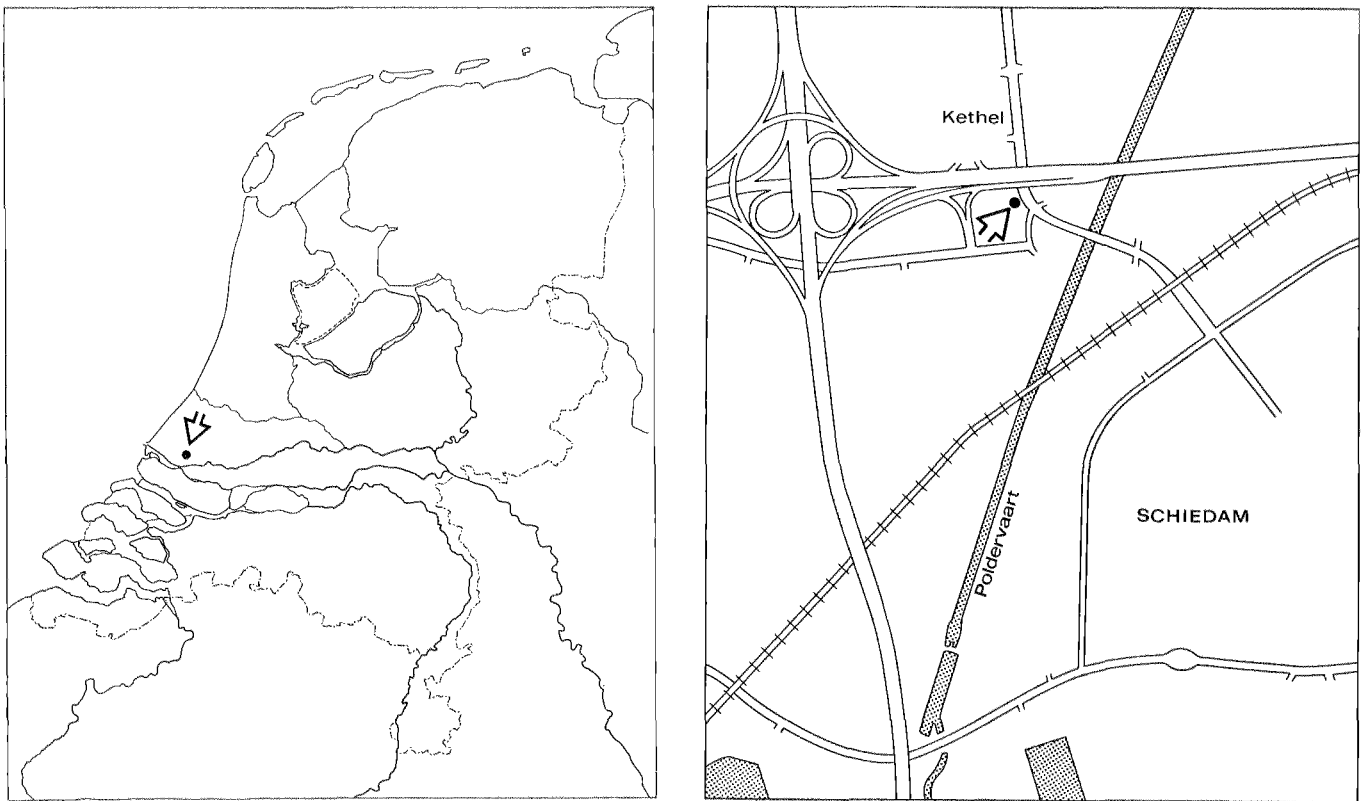


Fig. 1 Kethel-Schiedam: Situation

drain induced the members of *Helinium* to dig a few, small trial trenches to obtain further information. Again sherds were found, but also – far more intriguing – wattled walls and a hearth; the latter could only mean that the middle of a dwelling-place had been struck. The ROB was notified at once. The institute recognized the significance of the finds, but had to solve the problem of who should conduct the investigation. Eventually excavations took place from the middle of April till the end of November 1961; many people from the ROB took part, of whom R. Lutter and C. van Duijn should be specially mentioned. The supervision was carried out by Drs H. Halbertsma and myself; my responsibility was restricted to the so-called *immobilia*. I consider the description of the actual finds to be outside my competency.

The following members of *Helinium* were closely concerned in the investigation: Mr H. Apon, Mr A. Brouwer, Mrs M. de Buitelaar-Westland, Miss L. Bult, and Messrs H.E. Gennisen, L. Havelaar, S. Henderickx, P. Heijnsbroek, C. Huisman, C. Immerzeel, L.A. Kaal, Chr. de Roo, H.J. Verhagen, K. Vermeer, and C. Wind. We are greatly indebted to all these people for their exertions and interest during the ROB excavation.

The Ministry of Works and Transport (*Rijkswaterstaat*) was most cooperative and put a dragline at our disposal on several occasions to remove the heavy layer of clay covering the settlement-traces. With gratitude we acknowledge the unstinted assistance given by the municipality of Schiedam.

A total area of about 1350 m<sup>2</sup> was investigated. An initial trench of 15 × 30 m was dug; this was later extended in two stages at those points that looked most promising. The formerly inhabited surface was not uncovered entirely, however, because we were restricted in our enterprise by modern constructions that had already been completed; lack of time and manpower were other decisive factors. Nevertheless, the investigated area was large enough to warrant the impression that we have acquired insight into the development of living conditions in one farm. The coordinates of the site are 85.42 to 437.87 on sheet 37 O of the Dutch topographical map.

The object of the present publication is to report on a number of outstanding phenomena either separately or, if possible, in the way they are interrelated. Matters of detail have been omitted, but the complete documentation of the excavation is available for consultation at the ROB.

The following elements from the farming-complex will be discussed:

- 1 A farm in which the living-space and the byre can be recognized, as well as the two drastic rebuildings that they have undergone.
- 2 The fences, in the form of wattled walls, that served as boundaries.
- 3 An outhouse that was twice rebuilt.
- 4 A *horreum*.
- 5 A raised area which assumed large proportions, especially on the east side of the adjacent dwelling-site.
- 6 Traces of fire on the north side of the site.
- 7 A palisade, two to four piles wide, along a watercourse on the east side of the farmstead.

#### *Environment*

During the excavation observations were made about the environment in which the farm had functioned. Some knowledge of this aspect is essential for better understanding of the situation. Although we realize that studies of soil-samples, wood-samples, bone objects, and the environmental situation would supply much additional information. These must remain outside the scope of the present article because relevant data are not yet available. The undisturbed subsoil displays great differences in height with regard to NAP. The highest part is situated at c. 2.80 m –NAP; the lowest point measured is 5.50 m –NAP. The subsoil surface declines west–east; the settlement is bounded on the east by water, which should be regarded as a stream running through the peat-area. So the farm was established on the bank of a small river which drained the peat-area.

In the lowest parts the subsoil consists of pure peat. On the highest part occupation occurred on a 55-cm-thick layer of clay with a thin bottom layer of peat, that changes downwards into soft, brownish clay with reeds. Various transitional stages exist between the highest point and the point near the stream to the east.

Undoubtedly the present low level (below sea-level) is due to the setting of the peaty subsoil. This can be imputed to clay deposits from post-habitation days and to the draining of the polder in historic times. But even at the time of habitation people were faced with subsidence of the subsoil in the terrain immediately bordering on the stream, where a 1.20-m-thick layer of branches, twigs, rubbish etc. reveals the continuous efforts to raise the ground, a layer which is only 15 cm thick at the highest point. It was difficult to keep the farm and its immediate surroundings dry, as is shown, among other things, by the characteristic fact that hearths, belonging to the three successive farms, have been found in each case a few

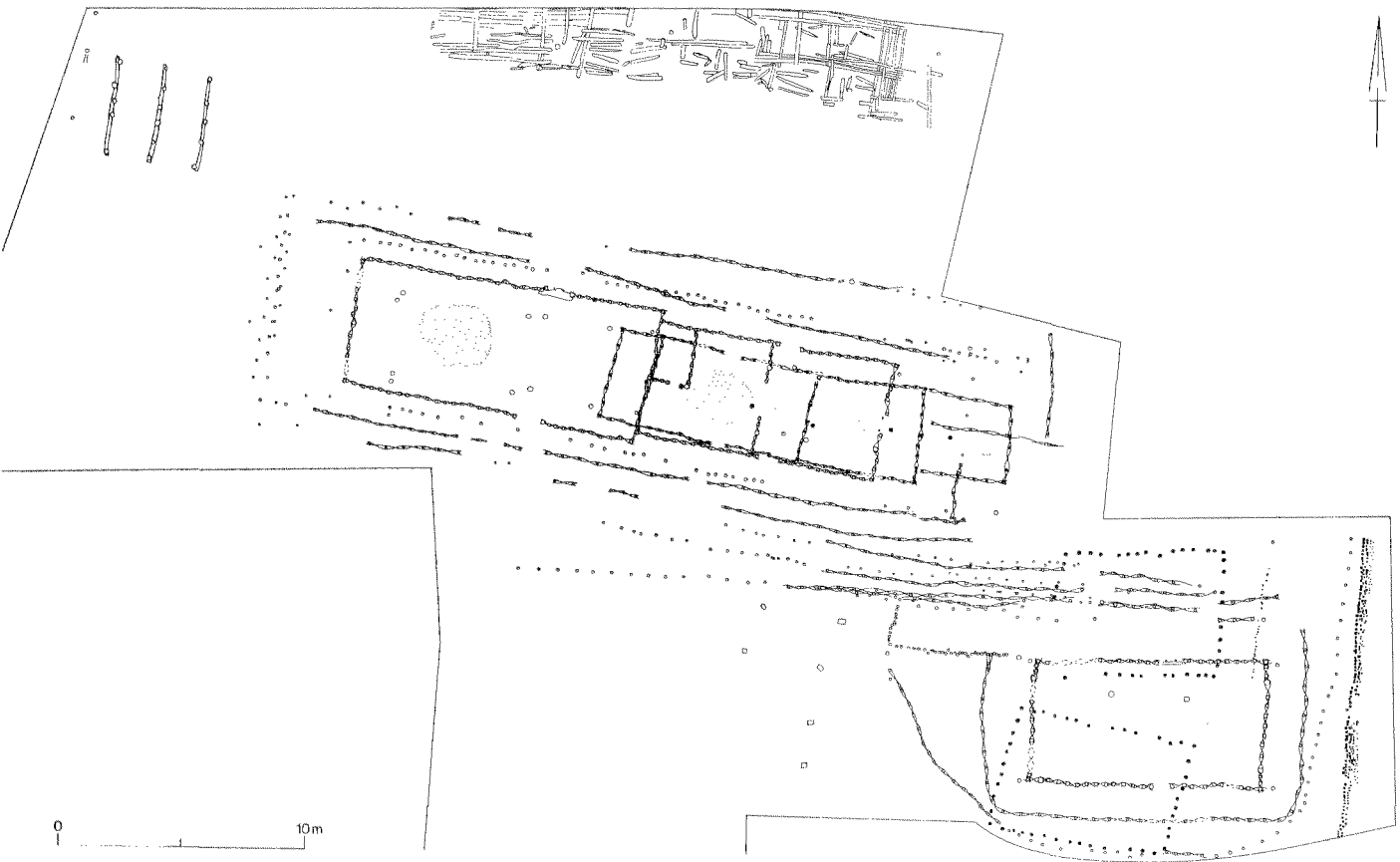


Fig. 2 Kethel-Schiedam: General plan of wood-constructions and fireplaces of the successive farms

metres further to the west, that is, further away from the water. In the farm itself and north of it, certain features indicated that the site was also raised at its highest point. Many kinds of material were used to keep the farmyard dry. Branches, manure, peat, and clay served as raising material. Old tumble-down fences were left, and served as the basis for new ones raised above them. We were very much impressed by the unremitting struggle against the water which the inhabitants fought on a piece of land that strikes us as being very marginal indeed.

#### *The history of the farm*

Prior to the description of certain elements of the farm a survey will be given of what actually took place on the site, at least in so far as was revealed by the excavation (*cf.* figs. 2 and 3; pl. IX, 1).

One of the oldest phenomena was undoubtedly a ditch: 1.70 m wide and 0.65 m deep, running N-S parallel to the watercourse, and situated *c.* 7 m west of the heavy palisade that was built some time later (pl. IX, 2). One can only guess at the function of the ditch, but in our opinion it formed the eastern boundary of the farmyard. A wattled wall slightly to the west of the ditch, may perhaps be dated to the same period, because other partition-walls of a decidedly later date, but similar to this one, were placed nearer the water.

It can be assumed that the ditch separated the first farm from the watercourse. This farm, which has been well preserved owing to subsequent raising of the terrain, will be discussed more extensively below.

In all probability people were soon troubled by the swampiness of the riparian land; on top of the peat and the

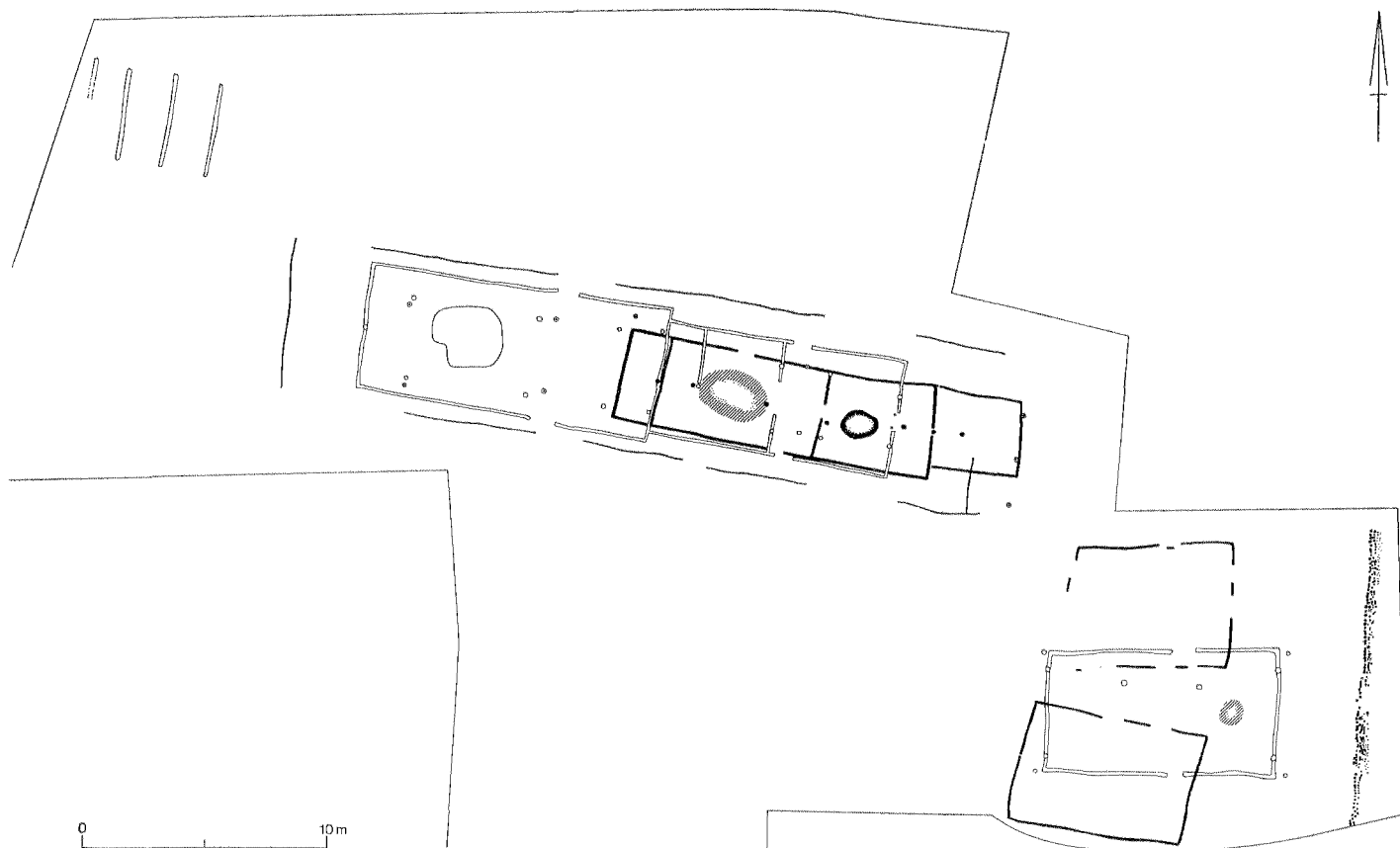


Fig. 3 Kethel-Schiedam: Simplified plan of the successive farm-houses, outhouses and horreum

filling of the ditch a timber-rich layer of 30–40 cm was laid. After this raising an E–W oriented wattle wall was set up on this new level, which we have been able to trace over a distance of 23.5 m. This partition-wall had no less than five successors, all of which served as the south boundary of the yard immediately round the farm. That they were indeed made to fence in the yard is suggested by the fact that the wattle walls leaned towards the south, an indication that pressure came from the north side due to the raising of the terrain with manure and other refuse. Such wattle walls have also been discovered on the north and the east sides of the farm, usually at a short distance from it. They probably served to prevent cattle rubbing themselves against the walls of the house or damaging them in other ways.

Only after the southern fence of the farm had been renewed two or three times, and the strip of land along the water had been raised several times, was the first outhouse built, southeast of the farm. A curious construction was used to support the ridge-pole. The paired roof-posts leaned towards each other in the form of an A in order to support the ridge-pole at the top of the A. This so-called A-construction was also used for the second farm, so that one is inclined to consider the possibility that the outhouse and the second farm were built by one and the same builder. Moreover, both structures may be dated to the middle habitation-phase on stratigraphical grounds, which strengthens this supposition.

Leading from the above-mentioned E–W oriented partition-wall south of the farm a fence was constructed round

the first outhouse, enclosing it on three sides. Another fence, in line with the north wall, was also made, turning to the north after 6 m to join the southern wattle wall around the farm. For the enclosure of this separate plot of ground a much heavier construction was chosen, namely a closed row of posts of *c.* 22.5 cm in section (pl. x, 1). On the inside the subsoil was reinforced with clay and sods, similar to the inside of the first outhouse. Unfortunately, we must confess our ignorance of the function of this enclosed space of  $2 \times 4.50$  m.

The outhouse had two successors. Their ground-plans partly overlapped that of the first, but their inter-relationship in time remains a matter of conjecture. We suppose that the northernmost one was the later in succession; this supposition is based on the fact that the southernmost of the two partly overlapped a wattle wall which enclosed a site of more or less the same size as was ascribed above to the oldest outhouse. This fence seems to be so logically connected with the one around the oldest outhouse that it indicates in our opinion that the northernmost outhouse, situated inside this fence, should be considered a first rebuilding. A second argument in favour of the southern structure being the last in the series can be deduced from the fact that all its wall-posts have been found, whereas the west wall of the northern outhouse was strikingly incomplete in this respect. The absence of these posts here and in the oldest outhouse could mean that the wood was used again elsewhere and that, by the end of the habitation, it was no longer required. Notes entered in the log-books kept by the excavators reveal, however, that a contrary conclusion was reached, for reasons unknown to me, about the sequence of the two youngest structures. Before the third and last farm was built a fire had raged on the terrain. Conclusive evidence of this was found on the north side of the farm. On a single layer of intersecting posts (directed E-W and N-S) burnt reed was observed. The fire had also damaged the wood. Dating is possible because on the one hand the remains of a wattled wall which can probably be related to the oldest farm were discovered underneath the burnt layer. On the other hand the foundation-ditch for the third farm was dug right through this burnt layer. The question is: what was actually burnt? At first the remains gave the impression of belonging to a roof, but as no walls or roof-posts emerged underneath we had to abandon this idea without, however, being able to substitute another.

The third and last farm had its living-area at the west side, contrary to its two predecessors. The hearth was raised several times, an indication that the farm had been

inhabited for a considerable time. In view of the fact that all the stumps of the roof-posts as well as the southeast corner of the building leaned to the east, the assumption seems justified that the farm was destroyed during a westerly gale. One needs little imagination to realize the catastrophic effect this must have had on the occupiers. We would prefer to consider the *horreum* found in the west part of the excavated level as belonging to the younger phenomena on the site. In that case it could have been built at the time of the second or third farm. This is corroborated by the fact that the construction strikes us as being Roman rather than native, which suggests Roman influence in the native environment. During the excavation it appeared that this influence clearly increased in the course of habitation. In contrast to the upper layer the bottom layer contained predominantly native pottery. When this growing Roman influence is taken into consideration it seems best to put the *horreum* at a not too early date in the history of the settlement. Pending the processing of the finds, attempts to date the beginning and the end of the habitation-period are bound to fail. Yet it is already clear that an important part of the activities covered the 2nd century A.D.

#### *The farm*

The farm has been rebuilt and extended twice. The excavation yielded no evidence to challenge the opinion that the farm had been continuously in operation. Its development will be chronologically discussed below.

The oldest farm fits the picture one has of a private individual starting an enterprise in a peat-area: a simple, two-aisled dwelling in which several building phases can be distinguished (figs. 4 and 5). The longitudinal axis is E-W oriented. The over-all length is 16.5 m, the width 3.75 m; the easternmost part is 3.5 m long but only 3 m wide and is clearly a later addition. At 8.5 m from the west wall is a jointer between the byre and the living-quarters. The south walls of both parts are badly connected, and there is a bend in the single row of posts inside the farm-house which is worth mentioning. The middle roof-posts are naturally heavier than the wall-posts, *viz.* 14 cm as compared with 8–10 cm in diameter.

On the west side is a separate space which is 1.5 m wide. As the west front of the house has no middle roof-post it seems obvious that a hipped roof served here as the end of the farm-house.

The adjacent space, *c.* 7 m long, was in all probability used as a byre, because no traces of a hearth were found.



Fig. 4 Kethel-Schiedam: Plan of the oldest farm. Scale 1:250

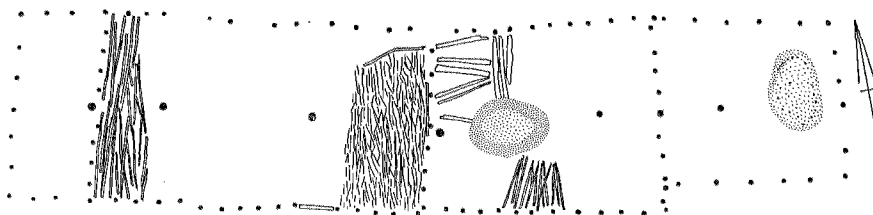
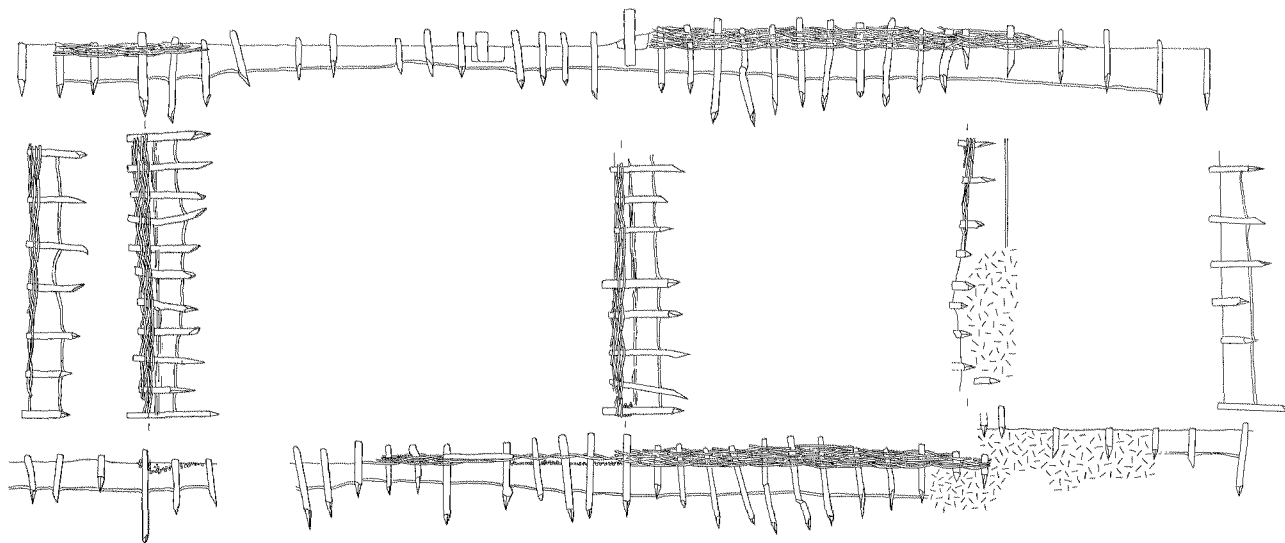


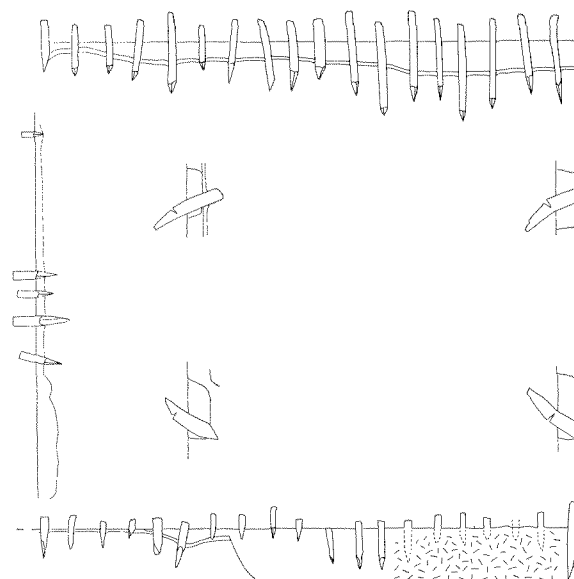
Fig. 5 Kethel-Schiedam: The construction of the walls of the oldest farm. Scale 1:150



An entrance could only be ascertained in the south wall; the threshold was still visible. No traces of any other entrance were discovered. Wooden floors had been laid in the east end as well as in the west end, while the adjoining wall-posts were rammed deeper than in the middle part. In our opinion special provisions were made for the cattle.

The dwelling-space lay east of the byre. Curiously enough there is nothing to indicate an entrance. On the whole the wall-posts of the living-area were rammed deeper into the ground than those of the byre. In the northwest corner some wooden parts of a floor were discovered, suggesting the existence of a separate compartment. This was constructed in the same way after the first rebuilding.

Apart from the two wooden floors mentioned above, a layer of clay of c. 10 cm thick was put in. In the living-area as well as in the eastern annex people must have had open fires as may be deduced from the lightly burnt clay patches found there. In the first case the clay rested on



a 5-cm-thick layer of manure, mixed with the remains of wood and charcoal, which indicates that this was apparently not the first hearth in that place.

After radical rebuilding, the second farm-house possessed considerably more grandeur than the first. It was now a three-aisled house (figs. 6 and 7). The west part, the byre, was 12 m, long and 5.25 m wide. The living-area was somewhat narrower, *viz.* 4.50 m wide, and 9.75 m long. It is not inconceivable that rebuilding started with the byre, because the new east wall of the byre practically coincided with the west wall of the first byre. If so, only the small west annex with the hipped roof would have been pulled down.

The second farm had a remarkable construction for the support of the roof. The best way to describe it would be to call it an A-construction. The paired roof-posts, typical of the three-aisled ground-plan, met at the top. At the base they were secured in holes, and consequently the lower ends have been well preserved, clearly indicating the A-construction.

As these wooden remains were so well-preserved it might seem fairly simple to calculate the point where both posts met, assuming, of course, that all posts were straight. This premise was incorrect, however, as will be apparent from the following calculations: from west to east the heights of the points of contact above habitation-level obtained in this way were 3.40, 2.90, 4.60, 3.30, 2.60, 4.40, and

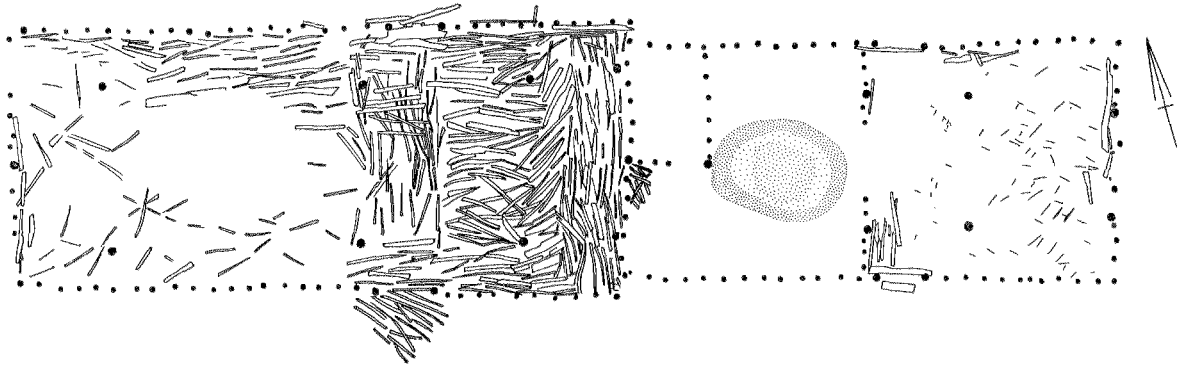


Fig. 6 Kethel-Schiedam:  
Plan of the second farm-house.  
Scale 1:250

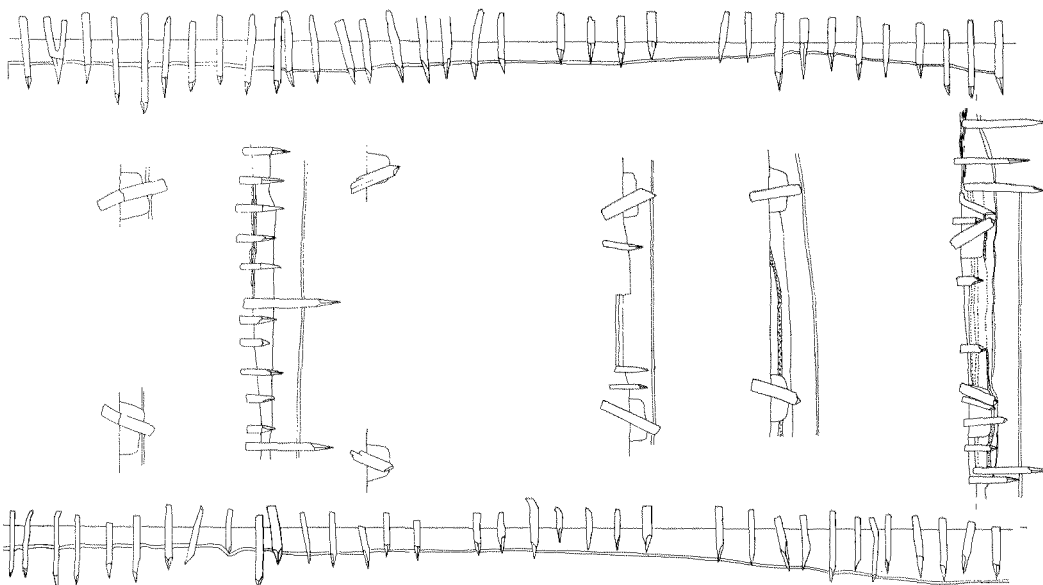


Fig. 7 Kethel-Schiedam:  
The construction of the walls  
and inner posts of the second  
farm-house. Scale 1:150

1.80 m, respectively. The extremes were 4.60 and 1.80 m, the average was 3.30 m. The latter figure seems feasible but is by no means exact.

The middle roof-posts had to carry a certain burden, as is clear from the way in which the posts were pressed into the 'solid' peat-soil. Yet it is difficult to work out how the total weight of the roof was supported. A solution to the problem can be found when the first and second pairs of roof-posts (from the west) are examined. At floor level V-shaped openings have been sawn out of the posts on the sides facing the long walls (pl. x, 2). The only satisfactory way to explain this remarkable weakening of such a fundamental part of the whole construction would be to imagine that slanting posts were inserted into the openings to buttress the rafters. That this might have been the case is demonstrated by the easternmost wall of the farmhouse where one such post was found.

Another striking feature is the relative position of the long walls and the middle roof-posts. In the byre the latter stood 50–100 cm away from the south wall and 100–80 cm from the north wall, as seen west to east. This implies that the walls were placed relatively obliquely to the roof-construction. Yet there is no doubt that the two belong together. The A-posts penetrated through the wooden floor of the byre into the layer of manure on top. The floor fitted in exactly with the posts and wattle walls, so that roof-construction, posts, floor, and walls must be seen as an entity.

Single wall-posts or rows of wall-posts were all exactly the same, but it was possible to determine a number of entrances. There had been two entrances opposite each other in the byre (pl. x, 3); something similar could be observed in the living-area. In all probability there was a fifth opening in the east wall.

The excavators were unanimous in their opinion concerning the function of both parts of the farmhouse. The quantity of manure on the wooden floor in the western part showed indubitably that it was a byre, and, moreover, a hearth in the eastern part indicated that that space had been used as living-quarters. There must have been another room of 1.5 by 2.25 m next to the hearth, separated by wattle walls. A little to the east of the hearth was a partition-wall with a wide opening of 1.40 m.

Unfortunately we are far less well-informed about the result of the second and at the same time last rebuilding than about the two preceding farm-houses. Of these two much more was preserved as the site had been raised because of continued habitation. Yet it is definitely established that there had been a third farm, larger than

its predecessors. It was again a three-aisled construction, this time, however, with the living-quarters in the west part, as was clearly indicated by a large hearth which had been renewed five times (figs. 2 and 3).

Three pairs of middle posts have been definitely discovered. Two pairs rested on the wooden floor of the second farmhouse. These four posts leaned eastward as if there had been pressure from the west. In view of the distance between the middle roof-posts it can be ascertained that this third farm-house was at least 16 m long.

The roof-construction can be linked with two E–W oriented rows of short posts, one north of it and one south, with a 6.5 m interval between them. The north row must have been put up after the great reed-fire, traces of which abounded in the northern part of the excavation. The posts of the south row leaned eastwards, just as the middle roof-posts.

Knowing that the pushed-over posts belonged to the last farm, one can distinguish at the site of the east part of the oldest farm two rows of posts standing at right angles, with the same characteristic; these posts could have formed the southeast corner. Another row of small posts should be mentioned, in line with – and possibly at one time part of – the north wall. A comparison of fig. 1 with fig. 2 will elucidate this. Further to the east are three inclined posts which were probably in some way connected with the last farmhouse.

The west wall remains a mystery. It may very well have stood on the site of the west wall of the second farm. The only other possibility is provided by a row of small posts further to the west but they could just as well have been part of an enclosure around one of the older farm-houses. This reconstruction of the third farmhouse displays the same irregularity concerning the relative positions of the walls and the inner construction, as was observed in the previous farmhouse. The roof-posts stand 1.40–2.00 m away from the south wall and 2.00 m from the north wall. We can do no more than state this phenomenon, any attempt at an interpretation would be mere conjecture. It is tempting to suggest that the period of habitation was ended by a disastrous west-to-northwest gale. But this interpretation may be influenced by the Dutch experience of the terrible storm in 1953, and, therefore, not objective.

#### *The outhouse*

After the riparian land had been raised with various materials for a considerable time, a small structure of 5 × 9.5 m was built next to the main farmhouse (fig. 8). The builders were well aware of the softness of the sub-

Fig. 8 Kethel-Schiedam: Plan of the oldest outhouse. Scale 1:250

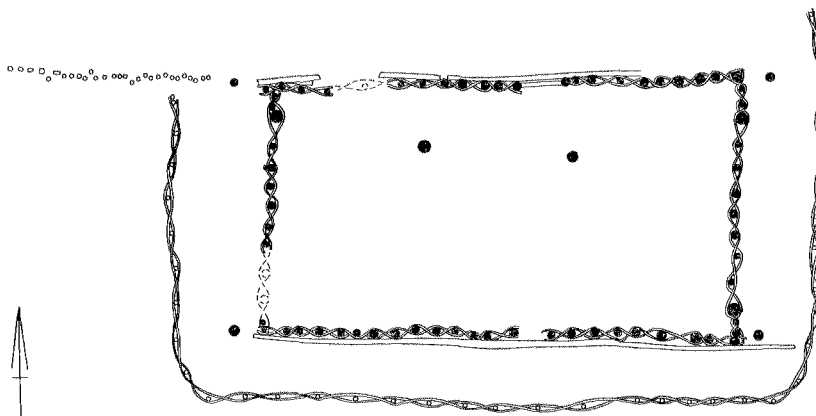
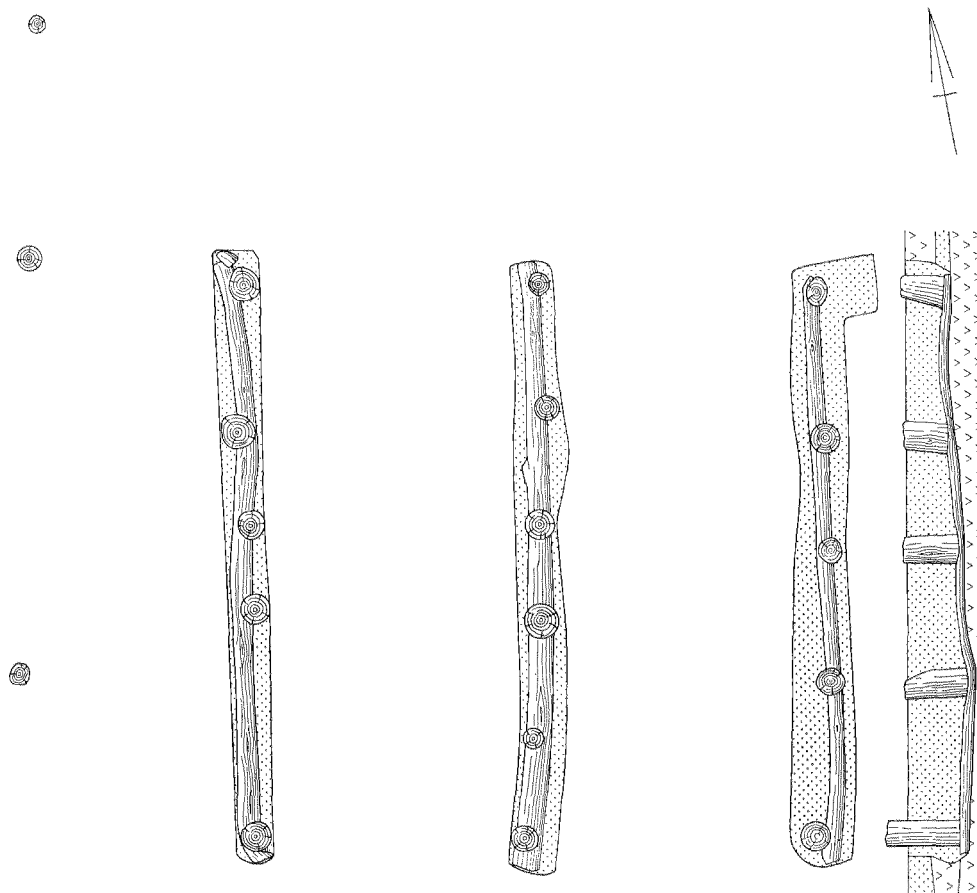


Fig. 9 Kethel-Schiedam: Plan and one section of the horreum. Scale 1:50



soil, and inside the building it was removed and replaced by sods of clay and peaty clay. On the east side this layer is much thicker than on the west, as a result of the fact that the subsoil clearly slopes down eastward, due to setting of the soil. Outside the building, on the west and northwest side, sods were also laid.

The construction of the outhouse has some interesting details. First of all the somewhat heavier roof-posts in the east and west walls leaning towards the middle axis of the structure may be mentioned. The east wall had two posts, which formed an A-construction. In the west wall only the northern leg of the A was found, while the corresponding place for its counterpart was empty, which may indicate that posts were taken away from there for use elsewhere. This A-construction, which was also found in the second farm-house, was probably meant to support the ridge-pole.

Inside the building two roof-posts placed at regular intervals were found in the northern part. Their counterparts, logically expected in the southern part, were lacking. They may have been removed in former times, like the southern leg of the A-construction in the west wall.

Four posts in each of the two long walls seem to have fulfilled an important function for the support of the roof. Notable was the fact that six of them had not been hammered into the peat-soil, but that holes had been dug to hold them. This was the case with the two western corner-posts just in front of the short wall, with two posts in line with the inner roof-post furthest west, and also with two posts which correspond less well with the eastern inner roof-post. Finally we know that the northeastern corner-post – not the one standing a little away from the east wall – was also fixed in a post-hole. No dating evidence was found for the corner-post in the southeast.

A curious construction was found outside the outhouse where beneath ground-level small posts were laid against the long walls, secured to the wall-posts with something like wedges. The short walls did not have this construction. Only one entrance could be established, *viz.* in the north wall, where there was also a threshold.

In the third eastern part a hearth was found which had been removed only once. This denotes either a comparatively short or sparing use as compared with the hearths

in the farm-houses. There are no other data to enlighten us about the function of this first outhouse. Its enclosure and the adjacent space, surrounded on two sides by a palisade, has been referred to above.

Little need be said about the two successors of this structure. Only the lower ends of the posts which formed the walls remained, but they provided no information about the rest of the construction. The building farthest north was 6.5 by 5 m and, in our opinion, older than the more southerly one, which had an area of 7.2 by 4.5 m.

#### *The horreum*

In the westernmost part of the excavation the remnants of a granary, or *horreum* were discovered (fig. 9). It was 3.80 m wide by 3.80 m long, and had the same orientation as the farm-house. Its construction consisted of three N-S oriented baulks dug into peat-soil, which supported posts. When the rows of posts were compared, they proved to be placed at rather irregular intervals, which suggests the construction of a small floor at some height above the ground.

A little to the west of the three horizontal baulks were a few more posts, which may have belonged to the *horreum*, but which could equally well be remnants of a fence. The excavation provided no direct information for the dating of the *horreum*.

#### *Conclusion*

Until the finds of the excavation in the Harg Polder in the immediate neighbourhood of Kethel have been studied in detail, there is little point in placing the above-mentioned results in a wider perspective. Besides, the publication by Bendix Trier, *Das Haus im Nordwesten der Germania Libera* (Münster 1969) is too recent to be in need of revision as yet. In a general way we refer the reader to this book.

The purpose of the present article was to disclose the most important data of the excavation; the material is now available for those who wish to use it. This excavation will live on in the author's memory as a pleasant and absorbing investigation, which greatly benefited from the cooperation between amateurs and professional archaeologists.

# Roman Finds in North Brabant

Earlier synopses of Roman finds in the province of North Brabant have been published by A.W. Byvanck (in *Excerpta Romana* III, 1947) and others. In 1950 Professor S.J. de Laet gave a lecture in Boxtel on the Campine region in the Roman and Early Merovingian periods; the paper was later published in *Brabants Heem* (1950), pp. 29–38.

In 1953 the present author compiled a map showing the spots where Roman finds had been made in Brabant; this was published with explanatory notes under the title 'Noord-Brabant in de Romeinse Tijd' (North Brabant in the Roman Period) in *Brabants Heem* (1953), pp. 125–37. In 1961 a complete issue of *Kultuurhistorische Verkenningen in de Kempen* (Historical Explorations in the Campine Region), Part II, was devoted to Brabant in the Roman period. The first article, 'Brabant in Romeinse Tijd' (Brabant in the Roman Period), pp. 9–29, was by Dr B.H. Stolte, and the second, 'Romeinse Wegen in Noord-Brabant' (Roman Roads in North Brabant), pp. 31–91, was by W.H.T. Knippenberg.

In 1958 Paul Roosens published a conspectus entitled 'Toxandria in de Romeinse en Merovingische tijden' (Toxandria in the Roman and Merovingian Periods), *Taxandria*, pp. 33–131. In 1963 a survey by J.S. Boersma entitled 'De Romeinse muntvondsten in de provincie Noord-Brabant' (Roman Coin Finds in the Province of North Brabant) appeared in the *Jaarboek voor Munt- en Penningkunde* (Numismatology Yearbook) Vol. 50. In 1964 a very full survey was published by A. van Doorselaer under the title 'Repertorium van de begraafplaatsen uit de Romeinse tijd in Noord-Gallië' (Catalogue of Roman Burial Sites in Northern Gaul). The section covering Brabant is to be found in Part II, pp. 336–341.

After this list of publications it might seem superfluous to present another conspectus. However, many finds have been made in the last few years and it is generally considered that these should now be incorporated into a

single map in order to give a clear impression of the distribution of the findspots. Wherever possible the nature of the finds has been taken into account, and traces of settlements, burial-fields, military buildings, religious buildings (temples), roads, pottery works, *etc.*, are indicated separately. There is no indication of coin finds as Boersma's survey requires little supplementation, and moreover the distribution map would then be impossible to read.

Little or nothing is known about the circumstances of finds made in earlier times, with the result that it is occasionally difficult to establish whether the finds originated from a settlement or a burial-field; uncertainty of this kind has been indicated by a question mark. In the case of finds including one or more pieces of undamaged pottery the findspot is presumed to have been the site of a burial, as undamaged pieces are rarely found on the site of a settlement.

The findspots are listed by municipality and the municipalities are listed in alphabetical order. The number following the name of the municipality corresponds to the number given to the site on the map, and on the map the numbers are grouped together as far as possible in order to facilitate location of the sites.

Further information is given as follows:

- a* the nature of the find(s).
- b* a more precise indication of the location of the site, and where necessary a brief description of its geographical situation and immediate surroundings.
- c* the description of the finds given in the works consulted. In some doubtful cases, especially those where the finds are in museums and thus readily traceable, the description was checked.
- d* the date – the same remarks apply here as to *c*.
- e* references to the relevant literature and other sources.
- f* present location of the finds. This was often the source of some difficulty, especially in the case of private collec-

tions which had been split up. In such instances the original owner is given (*e.g.* Voogd collection or Lauwers collection), as ascertaining the present location of the finds would have required too much time. Such information is in any case not directly relevant to the purpose of the distribution map.

The map itself shows the geographical borders of the province of North Brabant and all watercourses in as much detail as possible, since they determined the character of the landscape in Roman times as much as they do today. They also help with orientation. The indication of municipal boundaries would also no doubt have

facilitated orientation, but at too great a cost to clarity. The only concession has been the indication of one or two towns. The specific coordinates of the sites have been omitted to obviate the risk of plundering. Further information may be obtained from the Central Documentation Section of ROB, or from the author.

Finally, I should like to express my sincere gratitude to L. J. A. M. van den Hurk who was kind enough to process the information contained in my card system. Unfortunately, lack of time made it impossible for him to complete the work.

A ALMKERK (8)

- a Traces of habitation.
- b The Vijf Hond at Gantelwijk. On alluvial river-bank soil.
- c A small sherd of terra sigillata; a rim-sherd of coarse white pottery, light-red in break (IIA); a rim- and a body-sherd of native, greyish-brown greyish-black in break, fairly hard-fired pottery (ca. IIA).
- Identification: P. J. R. Modderman.
- d Ca. II.
- e Modderman 1953, 13.
- f State Museum of Antiquities, Leiden.

B ALMKERK (9)

- a Traces of habitation.
- b Muilwijk, on the Muilwijkse Steeg, on the elevated bank of the completely dried-up 'de Werken' watercourse, a branch of the Alm.
- c 1 P. J. R. Modderman found a black-varnished Roman sherd in 1949.
- 2 H. Voogd found 6 more Roman sherds with numerous Merovingian(?) and medieval sherds on the same site or in the immediate vicinity in 1957.
- Identification: J. E. Bogaers.
- d
- e 1 Modderman 1953, 13.
- 2 ROB archives, Almkerk dossier.
- f 1 State Museum of Antiquities, Leiden.
- 2 Voogd Collection.

C ALMKERK (10)

- a Traces of habitation.
- b On the Rijswijkse Steeg below Uitwijk. On alluvial river-bank soil.

- c 1 Five coarse rim-fragments, including one of a mortar; one body and two base-fragments of coarse-smoked grey pottery.
- Identification: P. J. R. Modderman.
- 2 H. Voogd also found terra sigillata here in 1954. See ROB archives, dossier for Alverberg, municipality of Almkerk.
- d Ca. II.
- e 1 Modderman 1953, 14.
- 2 Voogd 1961, III.
- f 1 State Museum of Antiquities, Leiden.
- 2 Voogd Collection.

D ALMKERK (10)

- a Traces of habitation.
- b 500 metres NNE of previous findspot.
- c Roman and native potsherds.
- d
- e Information from H. Voogd.
- f Voogd Collection.

A ALPHEN c.a. (222)

- a Traces of habitation.
  - b Kwaalburg.
  - c Roman potsherds including terra sigillata and fragment of a mortar. Also the handle of a bronze jug.
  - d
  - e Communicated by the finder, Mr Lauwers of Esbeek, to G. Beex.
  - f Lauwers Collection.
- N.B. The sherds and coins which, according to Byvanck (1947, 86), were found near Kwaalburg in Alphen (North Brabant) originally came from Qualburg near Cleves.

## B ALPHEN c.a. (218)

- a Traces of habitation.
- b De Bartjes; on an elevation alongside the Oude Lei.
- c Sherds of bowls, amphorae, dishes, and dolia made of white-baking clay; also red and black potsherds; terra sigillata; blue glass; fragments of roof-tiles; the bronze handle of a mirror with goat decoration in higher relief. Found in 1908 and 1910 by L. Stroobant. According to Glasbergen (1949, 56) the ground-plan of a second-century native dwelling was uncovered on this site in 1938 by J. Willems.
- d II.
- e Binck 1945, 54-5.
- f Antiquities Room, Alphen, North Brabant.

## G ALPHEN c.a. (221)

- a Traces of habitation.
- b Near Hof ter Brake.
- c A number of Roman potsherds; post-hole with some native sherds.
- d
- e Binck 1945, 59.
- f Antiquities Room, Alphen.

## D ALPHEN c.a. (219)

- a Traces of habitation (Military?)
- b On land belonging to Louis Jansen.
- c Some large post-holes, containing exclusively Roman material. Glasbergen believes that this was a watch-tower as in Veldhoven, perhaps a relay station. Also a large terra sigillata fragment with relief, manufactured in Lavoy; dating from Hadrian. Glasbergen dates the settlement as IIA.
- d IIA.
- e Glasbergen 1949, 56.
- f Antiquities Room, Alphen.

## ALPHEN c.a. (220)

- a Burial.
- b
- c Roman objects in a grave.
- d
- e Byvanck 1947, 86.

## A ANDEL c.a. (11)

- a Traces of habitation.
- b In the middle of the village of Neerandel (Kleine Polder).
- c A small number of Roman sherds. Identification: J.C.N. Renaud.
- d
- e Voogd 1955, 87 and pl. 19 no. 23.
- f Voogd Collection.

## B ANDEL c.a. (12)

- a Traces of habitation.
- b In the centre of the village of Neerandel, behind the Town Hall. The size of the site is approximately 2 ha.
- c 1 one small rim-herd and one small body-herd, varnished.
- 2 one heart-shaped rim, two rim sherds of lids, three internally thickened rim-sherds, one rim-herd of a mortar, one band-shaped handle fragment, numerous base- and body-sherds, all coarse Roman pottery. Date II.
- 3 Eight rim-sherds and some body sherds of terra nigra-like pottery, II.
- 4 Five rim-sherds, including some with strokes impressed on the outer rim and various Romano-native sherds. Identification: P.J.R. Modderman.
- d II.
- e Voogd 1955, 87 and pl. 19 no. 23.
- f Voogd Collection.

## C ANDEL c.a. (13)

- a Traces of habitation.
- b In 'De Kwel' at Opanel on the bank of a dried-up narrow stream. The size of the site is approximately 2 ha.
- c 1 five small sherds, varnished.
- 2 four heart-shaped rims; three band-shaped handles; three internally thickened rims, two jar rims, fragment of dolium, etc. All rough-surfaced. Date IIB.
- 3 six rims of material resembling terra nigra;
- 4 two rims, including one with impressed strokes;
- 5 15 body-sherds, Romano-native.
- 6 one small glass sherd (Roman?)
- Identification: P.J.R. Modderman.
- d IIB.
- e ROB Archives, Op en Neer Andel dossier.
- f Voogd Collection.

## D ANDEL c.a. (16)

- a Traces of habitation.
- b In the 'Duizend Morgen' area, on alluvial river-bank soil.
- c Six Roman potsherds, one of them 'varnished.'
- Identification: J.E. Bogaers.
- d II?
- e ROB Archives, Op en Neer Andel dossier, Municipality of Andel.
- f Voogd Collection.

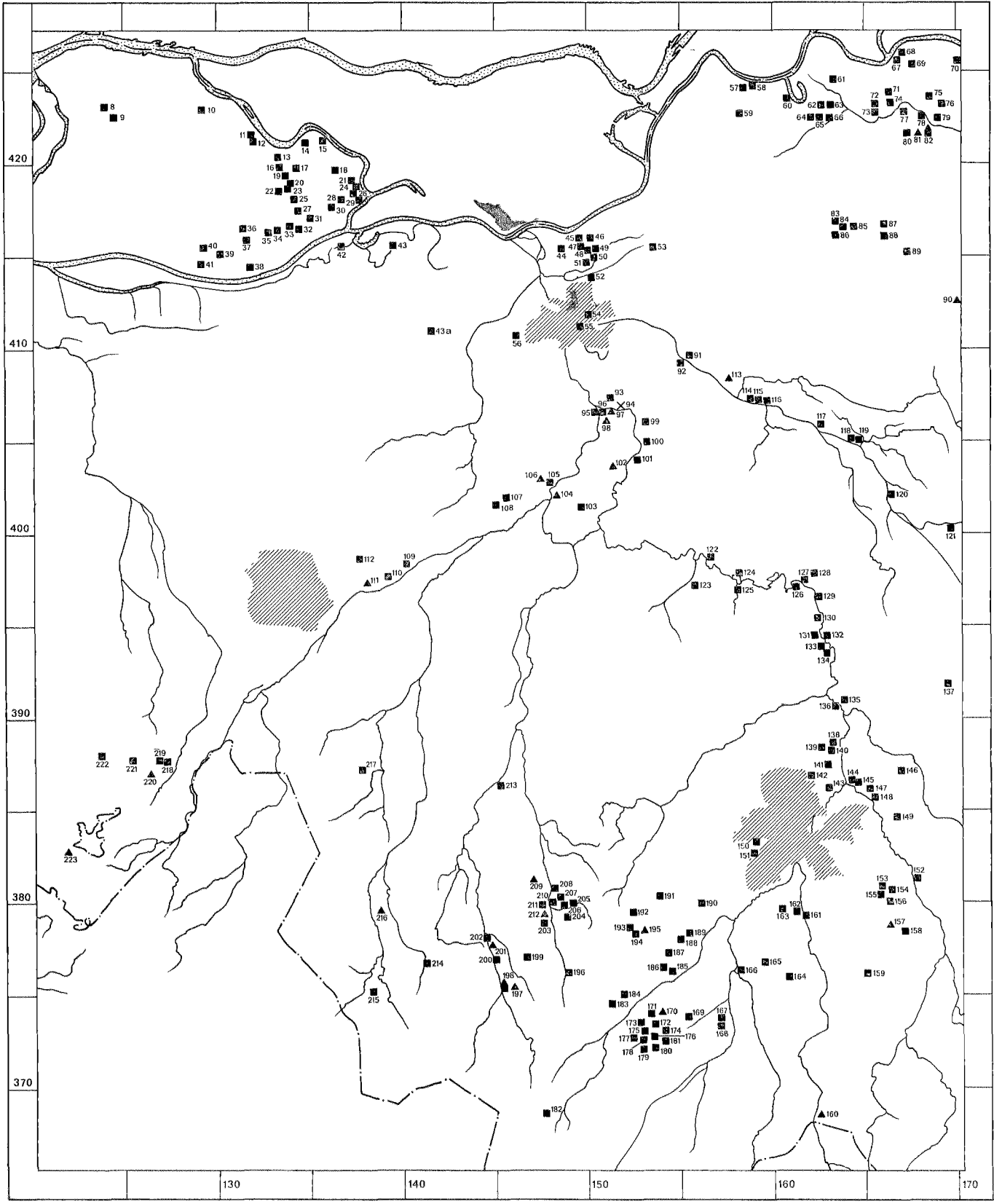
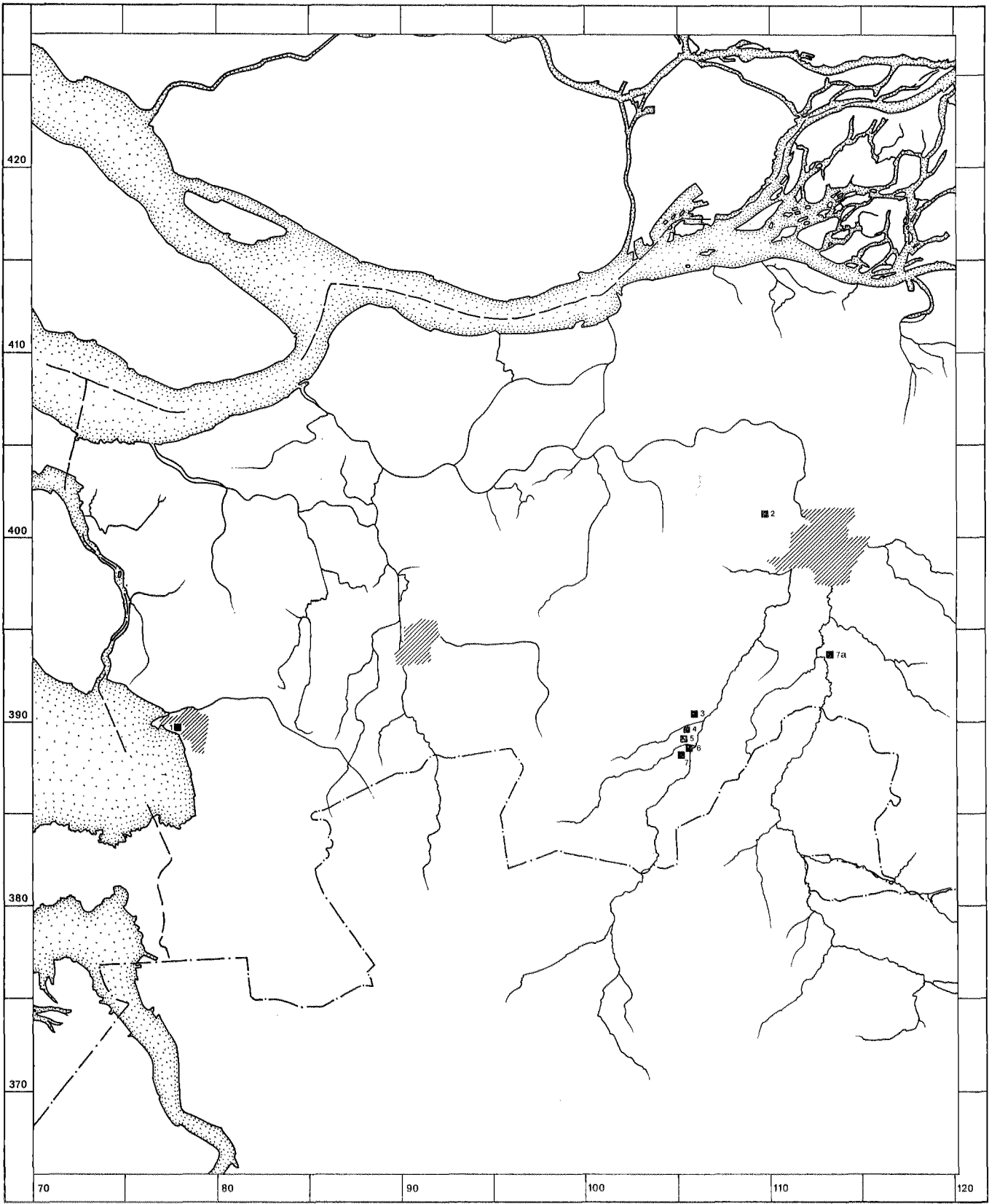
## BAARLE NASSAU (223)

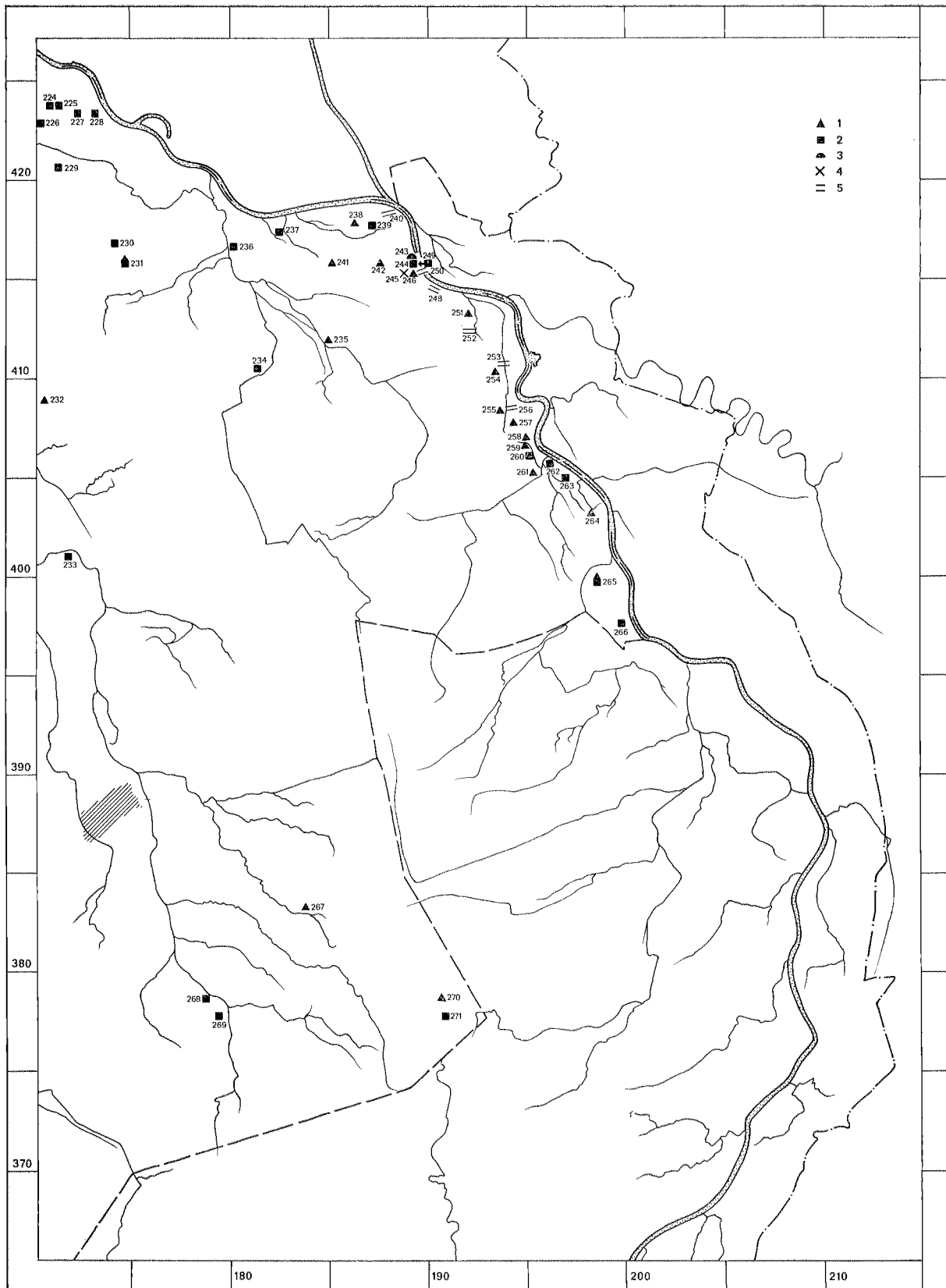
- a Burial.
- b On the Molenheide.
- c A grave containing Roman objects among a 'great number of Germanic objects'. Fibulae, bronze (base of casserole?), pottery (terra sigillata).
- d
- e Hermans 1865, 24.
- f



Roman findspots in North Brabant

1 Burial, 2 Settlement, 3 Pottery works, 4 Temple, 5 Roman road





- A BEERS (237)  
a Traces of habitation.  
b Below Gassel, found during excavation of a trench for a new provincial road.  
c 1 Roman sherds from III and IV, including a terra sigillata sherd with stamped rim-decoration; fragment of roof-tile and of tubulus (?); rim-herd of coarse pot with crescent-shaped rim; three body-fragments of coarse plates with internally thickened rim; two sherds of terra sigillata; fragments of terra nigra; pipe-clay jar neck (IIB and later).  
Identification: J.E. Bogaers.  
2 Native sherds which according to Modderman may also date from III.  
d IIB-IV.  
e ROB Archives, Beers dossier.  
f ?
- B BEERS (241)  
a Burial?  
b On the Zendonkseveld not far from the bridge near the Gasseltse wood.  
c Two Roman urns.  
d  
e Hermans 1865, 7; Byvanck 1947, 72.  
f
- C BEERS (238)  
a Burial.  
b Near 'De Romein' farm at Groot-Linden.  
c Some undamaged small late Roman jars and a terra nigra urn with cremation ashes.  
A piece of terra sigillata by Petrullus (PETRULLVS of Blickweiler and Eschweilerhof, Trajan-Antonine: Oswald 1931, 240, 413).  
d  
e Beex 1967a, 63 and 66; *Handelingen van het Provinciaal Genootschap van Kunsten en Wetenschappen in Noord-Brabant* 1931-2, 55; *NKNOB* 1967, 57.  
f State Museum of Antiquities, Leiden, and private collections.
- D BEERS (239)  
a Traces of habitation?  
b Hermans believes there may have been a Roman building on the Hitsberg below Groot-Linden.  
c  
d  
e Hermans 1865, 12.  
f
- E BEERS (now municipality of Cuyk) (240)  
a Roman road.  
b Hermans detected part of a Roman highway on farmland in the Elsterveld at Linden in 1865.  
c  
d
- e Hermans 1865, 19; Byvanck 1947, 72.  
f
- BERGEN OP ZOOM (1)  
a Traces of habitation?, burial?  
b Near the Franciscan monastery.  
c A small pointed-end amphora.  
d  
e Byvanck 1947, 87.  
f Provincial Museum, 's-Hertogenbosch.
- A BERGEYK (173)  
a Traces of habitation.  
b Between the centre of the village and the Riethoven hamlet of Walik there is an extensive system of ramparts enclosing a number of Roman settlements.  
c  
d  
e *NKNOB* 1964, 285-6.  
f
- B BERGEYK (175)  
a Traces of habitation.  
b  
c A large number of potsherds, one of which has been identified as originating from a Roman dolium.  
d  
e ROB Archives, letter from J.A.T. Dielis.  
f
- C BERGEYK (Not indicated on map)  
a  
b  
c Pottery.  
d  
e Byvanck 1947, 85.  
f
- D BERGEYK (182)  
a Traces of habitation.  
b Along the upper course of the Grote Beerze stream.  
c Potsherds.  
d  
e *NKNOB* 1970, 43.  
f H.J. Kuenen, Wolfakkerstraat 2, Meerveldhoven.
- E BERGEYK (171)  
a Traces of habitation.  
b Grote Heide.  
c Roman potsherds.  
d  
e Information from J.H.C. Biemans of Bergeyk.  
f Biemans Collection.

- F BERGEYK (172)  
 a Traces of habitation.  
 b 400 metres to the south of the previous findspot.  
 c Roman potsherds.  
 d  
 e Information from J.H.C. Biemans.  
 f Biemans Collection.
- G BERGEYK (177)  
 a Traces of habitation.  
 b 100 metres southwest of the previous findspot.  
 c Roman potsherds.  
 d  
 e Information from J.H.C. Biemans.  
 f Biemans Collection.
- H BERGEYK (178)  
 a Traces of habitation.  
 b 400 metres southeast of the previous findspot.  
 c Roman potsherds.  
 d  
 e Information from J.H.C. Biemans.  
 f Biemans Collection.
- I BERGEYK (179)  
 a Traces of habitation.  
 b 500 metres ssw of previous findspot.  
 c Roman potsherds.  
 d  
 e Information from J.H.C. Biemans.
- A BERGHEM (78)  
 a Traces of habitation.  
 b In the Broek on the Hoge Tussen Rijten on old alluvial river-bank soil.  
 c Potsherds including terra sigillata, varnished black, rough-surfaced.  
 d From 1 onward.  
 e Modderman 1950, 102; Knippenberg 1959, 49-50.  
 f State Museum of Antiquities, Leiden.
- B BERGHEM (80, 81, 82)  
 a Traces of habitation and burial.  
 b On the Lallenberg.  
 c Numerous pottery finds, traces of habitation (post-holes of dwellings, fire-places, well) and one undamaged grave (tumulus grave according to J.E. Bogaers).  
 d  
 e Beex 1955a; *NKNOB* 1956, 23; Bogaers 1970.  
 f Provincial Museum, 's-Hertogenbosch.
- C BERGHEM (77)  
 a Traces of habitation.
- b Twinkel on a markedly more elevated alluvial river-bank soil.  
 c Mainly native but also coarse Roman potsherds.  
 d 1-11.  
 e Modderman 1950, 102.  
 f State Museum of Antiquities, Leiden, and Provincial Museum, 's-Hertogenbosch.
- A BERKEL-ENSCHOT (112)  
 a Traces of habitation.  
 b Below Enschoot, 200 metres southwest of the church on an elevated site along the Bollekensloop.  
 c Some Roman and native sherds.  
 d  
 e *NKNOB* 1968, 76.  
 f Provincial Museum, 's-Hertogenbosch.
- B BERKEL-ENSCHOT (111)  
 a Burial?  
 b Below Enschoot on an elevated sand-ridge along the western side of the Lei stream on a site called the 'Kruikenakker' near the Helleputten.  
 c Remains from the Neolithic, Iron Age, Roman, and medieval periods.  
 d  
 e *NKNOB* 1966, 55; 1967, 55-6.  
 f
- A BERLICUM (91 and 92).  
 a Traces of habitation.  
 b On the right bank of the Aa below Beekveld and alongside the Hondsmeer.  
 c Roman sherds.  
 d  
 e *NKNOB* 1968, 85.  
 f Provincial Museum, 's-Hertogenbosch.
- B BERLICUM (113)  
 a Burial?  
 b Below Middelrode, east of the Modderven.  
 c Roman potsherds, including terra sigillata.  
 d  
 e ROB Archives, report of find by Mr A. van Lith, former school headmaster.  
 f
- A BLADELEN NETERSEL (202)  
 a Traces of habitation.  
 b Along the Grote Beerze, about 300 metres northwest of the Casteren water-mill, is a site containing remains of dwellings (including well).  
 c Roman sherds, including large fragments of a dolium.  
 d  
 e Beex 1965a, 58.  
 f

**B BLADELEN NETERSEL (197 and 198)**

- a Traces of habitation and burial.
- b 'Kriek Schoor,' on the right bank of the Grote Beerze near the point at which it is joined by the Dalems Stroomke.
- c Ground-plan of house: jars, coins.
- d
- e Byvanck 1947, 83; Trimpe Burger 1964 (= *NKNOB* 1964, 132-4); Knippenberg 1952a; Byvanck 1947, 83 under 'Hoogeloon, Hapert en Casteren'; Beex 1965a, 58.
- f Lauwers Collection; Provincial Museum, 's-Hertogenbosch.

**C BLADELEN NETERSEL (214)**

- a Traces of habitation?
- b In Bladel below the hamlet of Egypte during uprooting of oak trees on an old sandbank.
- c A Roman (?) terra cotta figurine; a blue bead also comes from this site.
- d
- e Knippenberg 1963b.
- f

**A BOXMEER (254)**

- a Burial.
- b Below Beugen three Roman graves were destroyed during the construction of a beet pit some 600 metres north of the centre of Beugen.
- c Sherds and cremation remains.
- d 1A?
- e ROB Archives, information E.J. Winter.
- f E.J. Winter Collection.

**B BOXMEER (255)**

- a Burial.
- b On the boundary between Boxmeer and Beugen, 1 ½ km from the Maas, during the lowering of a field on the edge of the lower-lying Maas valley.
- c Undamaged jars, three small dishes and two small bowls in terra sigillata, a coarse dish, a small earthen lamp, coins.
- d
- e Byvanck 1947, 69 (wrong date: 1860 should read 1843).
- f

**C BOXMEER (257)**

- a Burial.
- b In 1934 during excavations on the Veerweg for the construction of the Maasdijk.
- c Undamaged Roman pottery, terra sigillata, small urns, and jars.
- d
- e
- f State Museum of Antiquities, Leiden; Provincial Museum, 's-Hertogenbosch; Rutten family, Boxmeer.

**D BOXMEER (258)**

- a Burial? (tumulus?)
- b The somewhat flattened hill 200 metres north of the one situated in the Warande (Boxmeer) is possibly a Roman tumulus grave.
- e Van Beurden 1933, 5; *NKNOB* 1966, 87.

**E BOXMEER (259)**

- a Burial? (tumulus?)
- b A round artificially raised hill in the Warande, possibly a Roman tumulus grave.
- e Van Beurden 1933, 5; *NKNOB* 1966, 87.

**F BOXMEER (262)**

- a Traces of habitation.
- b Beside the road from Sambeek to the Sambeekse Veer.
- c Roman and native pottery.
- d
- e ROB Archives, information E.J. Winter, Uden.
- f Winter Collection.

**G BOXMEER (263)**

- a Traces of habitation.
- b Found during construction of sportsgrounds at Sambeek.
- c Roman potsherds and finds from the Neolithic, Iron Age, and Merovingian periods.
- d
- e Information from E.J. Winter.
- f E.J. Winter Collection.

**H BOXMEER (261)**

- a Burial?
- b Near kilometre post 16, below Sambeek.
- c Some undamaged jars and a mortar.
- d
- e *Nieuwe Venlosche Courant* dated 31.1.1933; *De Telegraaf* dated 11.3.1937.
- f Provincial Museum, 's-Hertogenbosch.

**I BOXMEER (253 and 256)**

- a Roman road.
- b The Roman road has been cut into at two points between Boxmeer and Beugen.
- e ROB Archives; information provided by E.J. Winter of Uden.

**A BOXTEL (103)**

- a Traces of habitation.
- b Near Luissel.
- c Roman and native potsherds.
- d
- e Notes by W.H.T. Knippenberg attached to the finds.
- f Beekvliet Collection (now in Provincial Museum, 's-Hertogenbosch).

## B BOXTEL (101)

- a Traces of habitation.
- b Alongside the Dommel west of Gemonde.
- c During the straightening of the Dommel in Summer 1971 numerous Roman roof-tiles and potsherds were found; also retaining walls made of stakes along the Dommel.
- d
- e Not yet published.
- f Collection of A. Verhagen, Ophoviuslaan 118, 's-Hertogenbosch.

## C BOXTEL (102)

- a Burial.
- b Heult.
- c In 1866 a number of tumuli (?) were excavated and found to contain many pieces of Roman pottery.
- d II.
- e Byvanck 1947, 81.
- f Provincial Museum, 's-Hertogenbosch.

## A CUYK (244)

- a Traces of habitation.
- b The centre of Cuyk.
- c Excavation from 1959 to 1967.
- d I-IV.
- e Bogaers 1966.
- f State Museum of Antiquities, Leiden; State Museum G. M. Kam, Nijmegen; Provincial Museum, 's-Hertogenbosch.

## B CUYK (246)

- a Burial.
- b West of Grotestraat, running from the centre in a southerly direction.
- c An extensive cemetery with a large number of finds, discovered mainly in the nineteenth century.
- d I-IV.
- e Byvanck 1947, 70-1.

## C CUYK (242)

- a Burial.
- b In the garden of farmer Jacobs near Schutrooy, to the north-west of Cuyk.
- c Excavated on 21.12.1846.
- d IV?
- e De Boone 1956.
- f Flehite Museum, Amersfoort.

## D CUYK (249)

- a Military buildings.
- b Between the Maas and St Martinus Church.
- c Castellum with moats from the 1st and 4th centuries.
- d I and IV.
- e Bogaers 1966.
- f

## E CUYK (245)

- a Temples.
- b Between the Maas and St Martinus Church.
- c Two Gallo-Roman temples consisting of a cella with a gallery and colonnade.
- d II-III.
- e Bogaers 1966.
- f

## F CUYK (250)

- a Roads.
- b Between the Maas and St Martinus Church.
- c Roman gravel road between the temple buildings.
- d Claudian period.
- e Bogaers 1966.

## G CUYK (240)

- a Roads.
- b At Katwijk-on-the-Maas.
- c Remains of Roman road discovered during the construction of a railway.
- d
- e Hermans 1865, 22.

## H CUYK (243)

- a Pottery works.
- b Between Grotestraat and Kerkstraat.
- c Two pottery kilns.
- d Claudian period.
- e Bogaers 1966.

## A DEURNE (270)

- a
- b Beside a ditch which runs from the metallised Deurne-Helenaveen road in a northwesterly direction.
- c Silver gilt helmet, 39 bronze Constantine coins, a bronze fibula, bronze spur and pricks, fragment of leather dagger sheath with a silver attachment, three leather shoes, large pieces of leather and a number of small strips of woollen material, all belonging to a member of the 6th division of the equites Stablesiani, who must have met with an accident in the Peel region.
- d
- e Byvanck 1947, 80; Braat 1973.
- f State Museum of Antiquities, Leiden.

## B DEURNE (271)

- a Traces of habitation.
- b Near the findspot of the Peel helmet there are outcrops of sand containing Roman sherds.
- c Roman sherds.
- d
- e Byvanck 1947, 79.
- f State Museum of Antiquities, Leiden.

C DEURNE (267)

- a Burial.
- b
- c Urnfield where over 100 urns were found in 1837, some containing objects of iron and bronze, presumably Roman.
- d
- e Byvanck 1947, 79.
- f

A DINTHER (117)

- a Traces of habitation.
- b In a ditch alongside a small farm road which intersects a high-lying field on the right bank of the Aa.
- c Sherds of urns, of Roman and MA pottery.
- d
- e *NKNOB* 1968, 118.
- f Provincial Museum, 's-Hertogenbosch.

B DINTHER (118)

- a Traces of habitation.
- b Beside the road from Dinther to Veghel near the boundary of the municipality in a sand-extraction pit.
- c Sherds of jars and of a dolium.
- e *NKNOB* 1968, 125.
- f Provincial Museum, 's-Hertogenbosch.

C DINTHER OR VEGHEL? (119)

- a Traces of habitation?
- b Found in 1937 during canalization work along the Aa 500 m upstream from Zwanenburg House.
- c Roman and native remains, a boat-shaped hollowed-out tree-trunk and remains of posts fixed in the ground (dwellings, a bridge or a retaining wall).
- d
- e ROB Archives, Veghel dossier.
- f State Museum of Antiquities, Leiden.

A EERSEL (186)

- a Traces of habitation?
- b In the Bussereind district below Steensel.
- c Sherds of a large Roman jar with remains of a fibula and native and Roman potsherds.
- d
- e Byvanck 1947, 84.
- f Provincial Museum, 's-Hertogenbosch.

B EERSEL (185)

- a Traces of habitation.
- b Below Steensel, on wooded land near Steenvoort (Stevvert).
- c Roman and native sherds, settlement with a tip or refuse pit nearby, on low-lying terrain.
- d
- e *NKNOB* 1967, 58.
- f H.C. Kuenen, Wolfakkerstraat 2, Meerveldhoven.

C EERSEL (183)

- a Traces of habitation.
- b On a partially excavated field in the Koppenhoek.
- c A large number of Roman potsherds including terra nigra, jars, mortars, and dolia.
- d
- e *BH* 1958, 16; Beex 1964a, 10.
- f Provincial Museum, 's-Hertogenbosch. Rythovius College, Eersel.

D EERSEL (196)

- a Traces of habitation.
- b On an elevated field east of the Kleine Beerze at Duizel.
- c Roman pottery and roof-tile fragments.
- d
- e *NKNOB* 1969, 113.
- f Provincial Museum, 's-Hertogenbosch.

E EERSEL (184)

- a Traces of habitation.
- b Molenakkers.
- c Potsherds.
- d
- e *NKNOB* 1970, 51.

A EETHEN (30)

- a Traces of habitation.
- b In Brede Steeg on the plot of ground known as 'de Hengstenkamp' directly opposite 'Dorpbos,' in the municipality of Wijk en Aalburg; on alluvial river-bank soil.
- c Roman potsherds. Identification: J.E. Bogaers.
- d II (?)
- e Voogd 1955.
- f Voogd Collection.

B EETHEN (31)

- a Traces of habitation.
- b In Rekselaar, Genderen Polder, along the Brede Steeg; on alluvial river-bank soil.
- c A number of potsherds, including some of amphorae.
- d
- e Voogd 1955.
- f Voogd Collection.

C EETHEN (25)

- a Traces of habitation.
- b The Hoge Woerd area on alluvial river-bank soil, by a stream.
- c Modderman found in 1948:  
Two small body-sherds of terra sigillata.  
A base fragment of black-varnished pottery.  
10 rim- and four body-sherds of coarse pottery.  
Heart-shaped rims thickened inside and everted, and the rim of a mortar. 3 native body-sherds.



In 1956 H. Voogd found at the same site a large number of sherds including a large fragment of an amphora handle stamped SCAACC (?).

For identification: see J.E. Bogaers, *Vondstberichten* (Reports of finds).

d Perhaps from the end of the first century to the beginning of the third (dating J.E. Bogaers).

e Byvanck 1947, 76; Modderman 1953, 16, no. 33; Voogd 1955.

f Museum of Antiquities, Leiden; Voogd Collection.

D EETHEN (27)

a Traces of habitation.

b Genderen Polder, in the 'de Geer' subdivision.

c Rim-fragment of native plate.

Romano-native sherds.

Base-sherd of terra nigra-type pot.

Fragment of rim of jar or amphora. Identification: J.E. Bogaers.

d II (?).

e Voogd 1955.

f Voogd Collection.

E EETHEN (32)

a Traces of habitation.

b On Meerstraat near Genderen, in the 'Heesbeen' Polder.

c Mostly coarse pottery including grey cooking-pots with round curved rims, two sherds of varnished pottery, mortar rim, rims of cooking-pots with lid slot, rims of plates.

Terra sigillata also found later. Identification: J.E. Bogaers.

d II.

e ROB Archives, Eethen dossier.

f Voogd Collection.

F EETHEN (33)

a Traces of habitation.

b Genderen, to the west of the Dutch Reformed Church; on alluvial river-bank soil.

c Base of terra sigillata plate, II; rim sherd of varnished plate II; base of small varnished beaker, c. II; rim sherds of amphorae, II-B-III-A; rim-sherds of Roman jar II-B; fragments of coarse lids; rim-fragments of coarse plates, II; rim-fragments of coarse Roman urn with cover slots, II-B and later; rim fragments of Roman urn with flat rim, II; fragments of Roman storage vessels; fragments of coarse Roman urns, terra nigra-type; various coarse Roman sherds; curious rim-fragment of Roman cooking-vessel, mortar II-A.

Identification: J.E. Bogaers.

d II-III-A.

e Voogd 1955.

f Voogd Collection.

G EETHEN (34)

a Traces of habitation?

b The monastery at Genderen, on elevated land beside the road; on alluvial river-bank soil.

c A body-herd of coarse pottery with two raised lines.

d

e Modderman 1953, 16, no. 31; Voogd 1955.

f State Museum of Antiquities, Leiden.

H EETHEN (23)

a Traces of habitation.

b In Nieuwe Steeg Voorste Hoofdveld; on alluvial river-bank soil.

c A large number of Roman sherds. Mostly coarse though some smooth-surfaced, and Roman roof-tile fragments. Identification: J.E. Bogaers.

d Ca. II.

e ROB Archives, Eethen dossier.

f Voogd Collection.

I EETHEN (22)

a Traces of habitation.

b In Nieuwe Steeg Voorste Hoofdveld; on alluvial river-bank soil.

c Terra sigillata sherd Dragendorff 31, East Gallic, end II-III-A; Terra sigillata sherd Dragendorff 37, East Gallic, late II; various sherds of varnished pottery, II; terra nigra-type pottery; coarse cooking-vessels with round rims and others with lid slots, II-B-III; Roman roof-tile fragments, including one with traces of burning; base of terra sigillata, Dragendorff 33 (?); fragments of dolia, some fragments of smooth pottery. Identification: J.E. Bogaers.

d II-III-A.

e ROB Archives, Eethen dossier.

f Voogd Collection.

J EETHEN (39)

a Traces of habitation.

b On a fairly high house terp on the northern side of the metalled road from Eethen to Meeuwen.

c Roman and medieval pottery sherds.

d

e *NKNOB* 1967, 92.

f State Museum of Antiquities, Leiden.

K EETHEN (37)

a Traces of habitation.

b Eethen village, on an elevation 150 metres to the north of the church.

c Two rim-sherds and four body-sherds of a bowl Dragendorff 37; one base sherd, grey in break, one rim-herd and two body-sherds of terra sigillata, c. II; one small white pottery body-herd, varnished black with impressed stroke decoration, c. II; three rim-sherds of coarse Roman pottery, one externally thickened, one everted, and one thickened and everted; body-

and base-sherds of white and grey pottery. Identification: P.J.R. Modderman.

d Ca. II.

e Modderman 1953, 16, no. 30.

f State Museum of Antiquities, Leiden.

L EETHEN (38)

a Traces of habitation?

b Drongelen village, on partially elevated land; on alluvial river-bank soil.

c One vertical rim-sherd of terra sigillata thickened towards the outside; coarse Roman pottery. Identification: P.J.R. Modderman.

d

e Modderman 1953, 16-29; Voogd 1955.

f State Museum of Antiquities, Leiden.

M EETHEN (20)

a Traces of habitation.

b In the Spie area, on sandy soil in a river clay area.

c Numerous native sherds and also coarse Roman potsherds.

Identification: P.J.R. Modderman.

d

e Modderman 1953, 15; Voogd 1955.

f State Museum of Antiquities, Leiden.

N EETHEN (40)

a Traces of habitation.

b Near Hoog-Meeuwen, on sandy soil in a river-clay area by a stream to the south of the Meeuwen-Eethen road.

c Sherds of terra sigillata, including one with decoration (II), black, orange-red, and dark-red 'varnished' body-sherds of white pottery (ca. II), rim-sherds of a jar, a cooking-vessel (flat rim), a dish (slightly thickened on the inside), a honey jar (curved inwards, slightly thickened), two handle fragments with a single groove, two base-sherds, and two body-sherds.

All finds are of coarse Roman pottery. Identification: P.J.R. Modderman.

d II.

e Modderman 1953, 15, no. 25. H. Voogd 1955, 86-91.

f State Museum of Antiquities, Leiden.

O EETHEN (41)

a Traces of habitation.

b Between Drongelen and Haagoord, in the Rooien Polder by the Drongelsedijk.

c A body-sherd of smooth, white jar pottery; flat-topped, heart-shaped rim-sherds, thickened on the inside; base-sherds and body-sherds of coarse Roman pottery; some body-sherds of apparently native pottery (II-III A).

Identification: P.J.R. Modderman.

H. Voogd later found fragments of terra sigillata and of smooth and varnished pottery on this site.

d II-III A.

e Modderman 1953, 15, no. 26. ROB Archives, Eethen dossier.

f State Museum of Antiquities, Leiden: Voogd Collection.

P EETHEN (42)

a Traces of habitation, possibly a military fort alongside the Oude Maasje, which was the main branch of the Maas in Roman times.

b Behind the Dutch Reformed Church on the bank of the Oude Maasje in Heesbeen.

c Terra sigillata, including some decorated with small circles, IV; terra sigillata, II B-III A; terra sigillata, I D-II A; coarse Roman sherds; rims of coarse plates, II B-III; coarse rims etc., II and later: also rim of terra nigra-type cooking vessel, smooth (polished) with funnel-shaped neck, fairly thin; similar body-fragments with stroke and wave decoration; fragments of Roman dolia; smooth sherds of pipe clay, fragments of varnished pottery; diverse sherds of Romano-native pottery, including sherds of clay mixed with shell-grit decorated with nail impressions; two fragments of Roman wall plaster; various fragments of Roman roof-tiles (tegulae, imbrices), tiles, and a piece of sandstone. Identification: J.E. Bogaers and P.J.R. Modderman.

d Continuous from I D.

e *Opgravingsnieuws* Dec. 1953, 2; Voogd 1955; 1968.

f Antiquities Room, Heusden. A large number of sherds are also in the possession of P. Jasperse, St Maartensdijk.

Q EETHEN (35)

a Traces of habitation.

b In a terp through which a new boundary ditch was being cut.

c Roman and late medieval potsherds.

d

e *NKNOB* 1967, 92.

Provincial Museum, 's-Hertogenbosch; Giessen Museum.

f

A EINDHOVEN (139)

a Traces of habitation.

b Between Eindhoven and Son, on a site called 'De Tempel' on the raised edge of a narrow brook valley.

c Roman, native, and medieval pottery including decorated terra sigillata, fragments of mortars, jars, and terra cotta figurines. Identification: G. Beex.

d

e *NKNOB* 1966, 54; Beex 1967b, 189.

f Provincial Museum, 's-Hertogenbosch.

B EINDHOVEN (138)

a Traces of habitation.

b On an elevated site between Dommel and the Sonse Waterloop.

c Hundreds of Roman and native potsherds (surface finds).

d

e *NKNOB* 1966, 87; Beex 1967b, 188.

f Provincial Museum, 's-Hertogenbosch.

## C EINDHOVEN (140)

- a Traces of habitation.
- b Beside Vaartbroekseweg.
- c Many Roman potsherds.
- d
- e Beex 1967b, 189.
- f Provincial Museum, 's-Hertogenbosch.

## D EINDHOVEN (141)

- a Traces of habitation.
- b On a building site in the north of Eindhoven where the Schutterslaan crosses the Kleine-Beerpad.
- c Roman and medieval potsherds.
- d
- e *NKNOB* 1966, 87; Beex 1967b, 189.
- f Provincial Museum, 's-Hertogenbosch.

## E EINDHOVEN (142)

- a Traces of habitation.
- b Approximately at the point where the Churchill-laan joins the Kennedylaan.
- c About a thousand Roman and native potsherds found by G. Fonteyn. Numerous rim-sherds of mortars, dolia, and other pottery. An extensive settlement with presumably some dwellings and outbuildings.
- d
- e *NKNOB* 1966, 87; Beex 1967b, 189.
- f Provincial Museum, 's-Hertogenbosch.

## F EINDHOVEN (143)

- a Traces of habitation.
- b In a high-lying field beside the Dommel in the vicinity of Eckart, east of Amazonelaan.
- c Roman and native pottery.
- d
- e *NKNOB* 1966, 55.
- f Provincial Museum, 's-Hertogenbosch.

## G EINDHOVEN (150)

- a Traces of habitation.
- b Native and Roman sherds on farmland at Strijp, the site where a valuable find of 44 coins (Nerva-Gordianus) was made in 1919.
- c Native and Roman sherds.
- d
- e Daniëls 1920; Byvanck 1947, 82.
- f

## H EINDHOVEN (151)

- a Traces of habitation.
- b On the Rooyakker at Strijp.
- c Roman sherds in a still older settlement.
- d
- e Bursch 1950.
- f

## A(+B) EMPEL EN MEERWIJK (45)

- a Traces of habitation.
- b On the 'Middelste Hoek' on alluvial river-bank soil. A clearly visible, partially elevated ridge, surface area 500 × 100 m. (SW-NE).
- c Two terra sigillata sherds stamped SABINVS (IIB) and POTTIM (117-161); varnished black and coarse Roman pottery; also native pottery. Identification: P.J.R. Modderman.
- d II.
- e Modderman 1950, 102.
- f State Museum of Antiquities, Leiden.

## C EMPEL EN MEERWIJK (44)

- a Traces of habitation.
- b On the Hoge Laren at Empel.
- c Roman fragments, mainly of mortars.
- d
- e Byvanck 1947, 75.
- f (partly) Provincial Museum, 's-Hertogenbosch.

## D EMPEL EN MEERWIJK (47)

- a Traces of habitation.
- b On 'De Schaapskooi' beside the Balkweg on a naturally elevated sand ridge which rises almost 2 metres above the surrounding land.
- c A large number of Roman and somewhat fewer native sherd. Together c. 2,500 pieces, surface finds. Also roof-tile fragments and other Roman refuse.
- d
- e *NKNOB* 1969, 55, 70.
- f Provincial Museum, 's-Hertogenbosch.

## E EMPEL EN MEERWIJK (48)

- a Traces of habitation.
- b During the construction of a new Rijksweg (National Highway) a cutting was excavated through the western slope of a natural hill at the point where the road crosses the Kasteelweg.
- c Roman and native potsherds: roof-tile fragments.
- d
- e *NKNOB* 1969, 113.
- f Provincial Museum, 's-Hertogenbosch.

## F EMPEL EN MEERWIJK (51)

- a Traces of habitation.
- b On 'De Donk', north of the Empelse Hut. Natural sand ridge about 1 metre higher than the surrounding polder.
- c A large number (over 5000) of Roman potsherds and some native ones.
- d
- e *NKNOB* 1969, 47, 70.
- f Provincial Museum, 's-Hertogenbosch.

## G EMPEL EN MEERWIJK (46)

- a Traces of habitation.

- b In the Koornwaard beside the Maas.  
c Roman potsherds.  
d  
e *NKNOB* 1971, 3-4.
- A ERP (233)  
a Traces of habitation.  
b In a sand excavation north of 'De Hoek'.  
c Roman and native potsherds.  
d  
e *NKNOB* 1968, 125.  
f Den Bosch Museum.
- B ERP (121)  
a Traces of habitation.  
b On a hill between the Keldonk-Erp road and the Aa.  
c Native settlement with some traces of Roman influence.  
d  
e Kam 1963; Knippenberg 1944, 91.  
f
- A ESCH (106)  
a Burial.  
b Hoogkeiteren.  
c Four tumulus graves with a rich variety of contents.  
d IIb-IIIa.  
e Van Doorselaer 1964, 338-9; Indemans 1960; Isings 1962, 69-76; Knippenberg 1961a; Ypey 1960-1; Zadoks-Josephus Jitta 1962; *Verolme-nieuws* 1961, 50-75; *NKNOB* 1961, 37, 38, 108.  
f Provincial Museum, 's-Hertogenbosch.
- B ESCH (104)  
a Burial.  
b Kollenberg.  
c Three tumulus graves with a rich variety of contents.  
d  
e Van Doorselaer 1964, 338; see also this vol. pp. 189 ff.; cf. A Esch (106).  
f Provincial Museum, 's-Hertogenbosch.
- C ESCH (105)  
a Traces of habitation.  
b In a sand excavation near Hoeve Zwanenburg.  
c A large number of roof-tiles including some with oval stamps made with the top of the finger. Also many potsherds.  
d  
e Knippenberg 1970b.  
f Provincial Museum, 's-Hertogenbosch.
- A GELDROP (153)  
a Traces of habitation.  
b Between Genoenhuis and Hoog-Geldrop, on a small plot of land where sand has been excavated.
- c A large number of Roman potsherds, including a fairly large number of terra sigillata.  
d  
e *NKNOB* 1968, 85.  
f Antiquities Room, Geldrop.
- B GELDROP (154)  
a Traces of habitation.  
b In the hamlet of 't Zand, in an elevated field.  
c Two holes left by tree-trunks, containing some Roman potsherds.  
d  
e *NKNOB* 1968, 76.  
f Antiquities Room, Geldrop.
- C GELDROP (155)  
a Traces of habitation.  
b In a sand-excavation pit west of the 'IJzeren Man', near Genoenhuis.  
c A number of Roman, native, and medieval sherds.  
d  
e *NKNOB* 1966, 87; 1969, 48.  
f A. Jansen, Bogaardeind 78, Geldrop.
- D GELDROP (156)  
a Traces of habitation?  
b Along the eastern edge of the 'IJzeren Man'.  
c Some Roman potsherds.  
d  
e *NKNOB* 1969, 47.  
f A. van Wieringen, Papenvoort 84, Geldrop; A. Jansen, Bogaardeind 78, Geldrop.
- E GELDROP (152)  
a Traces of habitation.  
b Near the Koeveringseput.  
c Sherds from various periods: Iron Age, Roman, and Merovingian.  
d  
e *NKNOB* 1969, 113-4.  
f Provincial Museum, 's-Hertogenbosch.
- GIESSEN (11)  
a Traces of habitation.  
b 400 metres southwest of the church.  
c Roman and late medieval potsherds.  
d  
e  
f Leyden Museum of Antiquities.
- NIEUW GINNEKEN (70)  
a Traces of habitation.  
b On the Bergske near Heerstaaien.

c Potsherds, mainly from the late Iron Age but also from the Roman period.

d

e Beex 1970f.

f Provincial Museum, 's-Hertogenbosch.

A GRAVE (236)

a Traces of habitation.

b In 1968 G. Beex found a large number of Roman potsherds slightly southwest of the site where traces of habitation (foundation remains, posts, and an undamaged small beaker: Déch. 72) were found in 1929 and 1931. The findspot is situated east of the Graafse Raam and south of Escharen.

c See above.

d

e Byvanck 1947, 72; *NKNOB* 1968, 94.

f Provincial Museum, 's-Hertogenbosch; State Museum of Antiquities, Leiden (small terra sigillata beaker, catalogue no. k 1929/3-1).

A HAAREN (108)

a Traces of habitation.

b Beside a new land sub-division road between Haaren and Esch. Perhaps connected with the fen bridge (77) over the Oude Lei and the Hoogkeiteren burial field at Esch.

c Numerous Roman potsherds, some of a large amphora, a dolium, jars, and dishes, from a recognizable stratum *c.* 60 cm below ground level. Identification: G. Beex.

d

e *NKNOB* 1967, 92.

f

B HAAREN (107)

a Traces of habitation.

b Beside a new land sub-division road between Haaren en Esch. Perhaps connected with the fen bridge (77) over the Oude Lei and the Hoogkeiteren burial field.

c Roman and native potsherds.

d

e *NKNOB* 1967, 92.

f

A HEESCH (83)

a Traces of habitation.

b On the Kerkweg.

c About a thousand sherds found during the construction of a new national motorway, including fragments of mortars, a dolium, jars, pots, terra sigillata, and a small amount of native pottery.

d Largely second century.

e *NKNOB* 1971, 141.

f Collection of J. Vos, Heesch.

B HEESCH (84)

a Traces of habitation.

b On the slip-road to a new national motorway.

c A large number of Roman potsherds including some of a dolium and jars. Both this and the previous site were found by J. Vos and A. Ceelen.

d Largely second century.

e *NKNOB* 1971, 141.

f J. Vos Collection.

C HEESCH (87)

a Traces of habitation.

b 150 metres west of the Heesch-Oss road, on a new national motorway.

c Mr P. de Poot of Oss found numerous Roman potsherds here, including fragments of jars, the rim of a small greyish-white bowl, and a thin-walled, black varnished beaker. Traces of poles were also found.

d Largely second century.

e *NKNOB* 1971, 141.

D HEESCH (88)

a Traces of habitation.

b Sportsfields to the south of the village.

c Roman potsherds and traces of posts, found by J. Vos and A. Ceelen.

d Largely second century.

e *NKNOB* 1970, 50-1.

f J. Vos Collection.

E HEESCH (86)

a Traces of habitation.

b Near findspots A and B.

c Numerous Roman potsherds and post-holes.

d Largely second century.

e *NKNOB* 1970, 50-1.

f J. Vos Collection.

F HEESCH (85)

a Traces of habitation.

b In the vicinity of the previous findspot.

c Roman potsherds and traces of posts, found by J. Vos and A. Ceelen.

d Largely second century.

e *NKNOB* 1970, 50-1.

f J. Vos Collection.

A HEESWIJK (114, 115 and 116)

a Traces of habitation.

b On a strip *c.* 500 m long to the south of Heeswijk Castle; found mostly during the canalization of the Aa in 1934.

- c 1 Dr W.C. Braat found Roman potsherds, native sherds, iron objects, and a fragment of a bronze vessel here in 1934. Coins were also found at the time.  
2 G. Beex found more sherds on the surface east of this point in 1966 and 1968.
- d
- e Byvanck 1947, 77; ROB Archives, dossier.
- f 1 State Museum of Antiquities, Leiden.  
2 Provincial Museum, 's-Hertogenbosch.
- A HEEZE (157)  
a Burial.  
b On a somewhat elevated sand-ridge in the vicinity of the Meelakkers.  
c Two Roman vessels filled with cremation remains.  
d  
e *NKNOB* 1966, 87.  
f Provincial Museum, 's-Hertogenbosch.
- B HEEZE (158)  
a Traces of habitation.  
b To the east of the hamlet of Kreyl, in a sand-extraction pit alongside a small railway line leading to Valkenswaard.  
c Some Roman potsherds.  
d  
e *NKNOB* 1969, 70.  
f Provincial Museum, 's-Hertogenbosch.
- c HEEZE (159)  
a Traces of habitation.  
b In a sand-excavation pit northeast of the viaduct over the Eindhoven-Weert motorway.  
c A large number of Roman and native sherds.  
d  
e *NKNOB* 1966, 87.  
f Provincial Museum, 's-Hertogenbosch.
- A 's-HERTOGENBOSCH (52)  
a Traces of habitation.  
b Below Orthen, about 500 m southeast of the Empelse Hut.  
c Native and Roman potsherds, including some terra sigillata.  
d  
e *NKNOB* 1969, 55-6.  
f Provincial Museum, 's-Hertogenbosch.
- B 's-HERTOGENBOSCH (54)  
a Traces of habitation.  
b Found on the exercise area of the Willem II barracks. The sand for this raised area was transported from site now occupied by 'De IJzeren Vrouw' swimming-baths.  
c Roman and native potsherds.  
d  
e *NKNOB* 1968, 54.  
f C.R. de Rooy, Christoffel Wüststraat 7, Hintham.
- C 's-HERTOGENBOSCH (55)  
a Traces of habitation?  
b Found about 2 metres under the street opposite 'De Moriaen' during sewerage excavations.  
c Roman storage vessel (dolium).  
d  
e *NKNOB* 1967, 56; *NKNOB* 1969, 48; Bloemers 1967.  
f Provincial Museum, 's-Hertogenbosch.
- A HOOGELOON c.a. (211)  
a Traces of habitation.  
b In 'Het Loo' field in the Koebos.  
c In addition to native potsherds also a sizeable number of fragments of Roman roof-tiles and potsherds.  
d  
e Beex 1964b, 102-5.  
f
- B HOOGELOON c.a. (212)  
a Burial.  
b On Kaboutersberg by the Kleine Beerze.  
c Undamaged pottery: amphorae and pots, terra sigillata dishes, glassware; a considerable amount of melted glass; remains of a small building: 500 wedge-shaped stones, a large piece of tuff (2 m × 60 cm × 60 cm), and roof-tile fragments.  
d  
e Beex 1949; Beex 1964b, 104-5; Byvanck 1947, 83.  
f Tilburg Natural History Museum; Lauwers Collection, Antiquities Room, Hilvarenbeek.
- C HOOGELOON c.a. (204)  
a Traces of habitation.  
b Below Hoog-Casteren, alongside a new metalled road connecting Duizel and Vessem.  
c Fragments of a dolium, of a very large mortar, and of at least four jars.  
d  
e *NKNOB* 1968, 54.  
f Provincial Museum, 's-Hertogenbosch.
- D HOOGELOON (203)  
a Traces of habitation.  
b Beside the Kerkakkers road to Hoog-Casteren, on the 'De Kouter' plot of land.  
c During a preliminary exploration of the site in 1953 P.J.R. Modderman found Roman roof-tile fragments in large quantities and sherds including terra sigillata (II). In the same year G. Beex found traces of a building and a well, a considerable quantity of Roman pottery including a small amount of terra sigillata, glassware, nails and iron objects, an undecorated bronze plate, an ivory tube, hypocaust tiles, painted plaster work, and a large quantity of roof-tile fragments.  
d  
e ROB Archives; Beex 1953a; Beex 1964b, 105.  
f

## E HOOGELOON c.a. (201)

- a Burial.
- b In 'De Maatschappij,' near the Casteren water-mill.
- c 1 Two coins of Antoninus Pius; three bronze objects (hinges?); a small copper plate; pieces of iron; a large number of vessels; reddish pottery dishes.
- 2 Immediately to the south of this findspot G. Beex found a number of Roman sherds, including a large piece of a Dragendorff 39 (?) in 1964.
- d
- e 1 Beex, 1964b, 106.
- 2 ROB Archives; dossier.
- f

## F HOOGELOON c.a. (200)

- a Traces of habitation.
- b Between Casteren and Hapert, alongside an old, now disused road in 'Den krommen Hoek,' near the Beerze.
- c On a site where 2,600 early-fifth century coins were found; ploughing has revealed Roman roof-tile fragments, tuff stones, and potsherds.
- d
- e Knippenberg 1952a; Knippenberg 1952b; Beex 1964b, 106; Zadoks-Josephus Jitta 1953. See also p. 15.
- f

## G HOOGELOON c.a. (199)

- a Traces of habitation.
  - b Close to 'de Hoogpoort' between Hoogeloon and Hapert, near an older urnfield.
  - c A large number of Roman potsherds distributed over an area of some hectares, including the point of a large amphora, terra sigillata, and roof-tile fragments. In 1951 P.J.R. Modderman found a few varnished and coarse sherds on the surface.
  - d
  - e ROB Archives, dossier Hoogeloon c.a.
- Modderman 1960-1, 550; Beex 1964b, 103, 106.
- f

## A HOOG EN LAGE MIERDE (216)

- a Burial?
- b In Lage Mierde, west of the road to Hulsel and slightly south of the Lage Mierde church.
- c A small undamaged terra sigillata bowl.
- d
- e Information from Mr Lauwers, headmaster of the school at Esbeek.
- f Lauwers Collection.

## B HOOG EN LAGE MIERDE (214)

- a Traces of habitation.
- b Below Hulsel, beside the boundary between the municipalities of Hooge en Lage Mierde and Reusel, on a 150-m-long strip parallel to the Raamsloop stream.

- c Numerous Roman potsherds.
- d
- e ROB Archives, Hulsel dossier 51 W.
- f Den Bosch Museum.

## LEENDE (160)

- a Burial?
- b In the garden of the Achelse Kluis, on Dutch territory.
- c Small bronze plate, small ivory game disc, bone pin, small glass ring, and other objects unidentifiable.
- d
- e *NKNOB* 1970, 43.
- f Achelse Kluis Collection.

## A LIESHOUT (137)

- a Traces of habitation.
- b Found during the excavation of the Wilhelmina Canal.
- c Pits for wooden butts and Roman pottery including terra sigillata.
- d
- e Byvanck 1947, 78.
- f State Museum of Antiquities, Leiden.

## A LITH (62)

- a Traces of habitation.
- b Teeffelen village, on old alluvial river-bank soil.
- c A terra sigillata sherd, coarse pottery, and native sherds.
- d
- e Modderman 1950, 104 (No. 23).
- f State Museum of Antiquities, Leiden.

## B LITH (63)

- a Traces of habitation.
- b On old alluvial river-bank soil in East Teeffelen.
- c Some native and Romano-Merovingian potsherds.
- d
- e Modderman 1950, 104 (no. 24).
- f State Museum of Antiquities, Leiden.

## C LITH (64)

- a Traces of habitation.
- b In a field southwest of Teeffelen.
- c Native and Roman potsherds.
- d
- e *NKNOB* 1969, 70.
- f Provincial Museum, 's-Hertogenbosch.

## D LITH (65)

- a Traces of habitation.
- b In a field southwest of Teeffelen.
- c Native and Roman potsherds.
- d
- e *NKNOB* 1969, 70.
- f Provincial Museum, 's-Hertogenbosch.

E LITH (66)

- a Traces of habitation.
- b On 'de Korte Voor', to the southeast of Teeffelen, on old alluvial river-bank soil.
- c Numerous sherds, 70% native, otherwise Roman, Merovingian, and Carolingian. G. Beex also collected native and Roman sherds on the same site and on a site 150 m further south.
- d
- e Modderman 1950, 104 (no. 21); *NKNOB* 1969, 70.
- f State Museum of Antiquities, Leiden; Provincial Museum, 's-Hertogenbosch.

F LITH (61)

- a Traces of habitation.
- b On 'de Klootskamp,' on old alluvial river-bank soil.
- c A large amount of native pottery and a number of coarse Roman and Merovingian sherds.
- d
- e Modderman 1950, 104 (no. 25).
- f State Museum of Antiquities, Leiden.

G LITH (60)

- a Traces of habitation.
- b Lithoyen village, around the church and school, on old alluvial river-bank soil.
- c Native potsherds and one coarse Roman sherd.
- d Ca. II.
- e Modderman 1950, 103 (no. 16).
- f State Museum of Antiquities, Leiden.

H LITH (57)

- a Traces of habitation.
- b Lith village, on long elevations round 'de Heren Eng.' In soil removed from flood ponds on adjacent land.
- c The handle of a Roman amphora stamped CAEVROTA and a few coarse Roman sherds.
- d
- e Modderman 1950, 103 (no. 13).
- f State Museum of Antiquities, Leiden.

I LITH (59)

- a Traces of habitation.
- b Between the 'Stegen,' on alluvial river-bank soil, near a stream.
- c Terra sigillata sherds, including a pouring spout with a lion's head: black-varnished white and red pottery; coarse pottery with flat, heart-shaped, thickened and other rim forms. Native sherds.
- d Ca. I-III.
- e Modderman 1950, 103 (no. 14).
- f State Museum of Antiquities, Leiden.

J LITH (58)

- a Traces of habitation.
- b On the site of the Dutch Reformed Church.
- c Fragment of terra sigillata bowl Drag. 37, of Southern Gallic provenance, from the period of Domitian, perhaps made by Mercato(r) who worked at La Graufesenque and Banassac; rim fragment of a terra sigillata basin Drag. 29, La Graufesenque, dated Flav.; rim fragment of cooking-vessel, dated IV, just possibly V; blue-grey, fairly coarse pottery, Roman?
- d
- e Ypey 1954, 91, 93.
- f

A MEGEN (68)

- a Traces of habitation.
- b Megen village, on the raised bank of the Maas, alluvial river-bank soil.
- c Some Roman and various native sherds.
- d
- e Modderman 1950, 105 (no. 31).
- f State Museum of Antiquities, Leiden.

B MEGEN (71)

- a Traces of habitation.
- b Macharen village, on a clearly perceptible elevation round the church.
- c Apart from some native sherds also a few coarse Roman sherds, plus Merovingian, Carolingian, Pingsdorf, and Kugeltopf pottery.
- d II-III.
- e Modderman 1950, 105 (no. 32).
- f State Museum of Antiquities, Leiden.

C MEGEN c.a. (73)

- a Traces of habitation.
- b In the Rotten, on old alluvial river-bank soil.
- c During soil mapping in 1948 just a few native and rough Roman potsherds were found. However, see also Megen (D).
- d
- e Modderman 1950, 105 (no. 33).
- f State Museum of Antiquities, Leiden.

D MEGEN c.a. (72)

- a Traces of habitation.
- b In the Rotten, 150 m north of the Modderman findspot (MEGEN C). On both sides of the road in the banks of the ditch.
- c A deep layer containing Roman pottery.
- d
- e Exploration: G. Beex.
- f

E MEGEN c.a. (74)

- a Traces of habitation.
- b In the Harense Broek, on a perceptible elevation. On old alluvial river-bank soil. (500 × 100 m)



c A large number of sherds were found during soil mapping in 1948. Native pottery on the south side; Roman and Merovingian to the north; terra sigillata, black- and red-varnished and coarse Roman pottery.

- d  
e Modderman 1950, 105 (no. 34).  
f State Museum of Antiquities, Leiden.

F MEGEN c.a. (79)

- a Traces of habitation.  
b In Spaande Steeg (residential area on the east side).  
c A few native and Roman potsherds.  
d C. II.  
e Modderman 1950, 106 (no. 36).  
f State Museum of Antiquities, Leiden.

G MEGEN c.a. (75)

- a Traces of habitation.  
b Haren village, on a clearly perceptible elevation.  
c Native and a few coarse Roman potsherds; Merovingian, Carolingian, Pingsdorf, and Kugeltopf sherds and stoneware.  
d C. I-III.  
e Modderman 1950, 106 (no. 37).  
f State Museum of Antiquities, Leiden.

H MEGEN (67)

- a Traces of habitation.  
b The south part of the village.  
c During the digging of a greasing pit for a garage a large number of Roman potsherds were found, including fragments of very large jars and burnt terra sigillata. The sherds displayed old breaks.  
d Largely second century.  
e *NKNOB* 1967, 92.  
f Collection of L. van Liebergen, Megen.

I MEGEN (69)

- a Burial?  
b In a newly dug ditch to the south of the village.  
c Terra sigillata plate.  
d Second century.  
e Winter 1959.

J MEGEN

- a Traces of habitation.  
b Found during the digging of a new Maas river-bed.  
c Many Roman potsherds.  
d  
e Notes by Dr J.H. Holwerda in the State Museum of Antiquities, Leiden.  
f State Museum of Antiquities, Leiden.

A ST MICHIELSGESTEL (93)

- a Traces of habitation.

b Between Haanwijk and Ruimel.

c A large number of native and Roman potsherds and a large Merovingian sherd.

- d  
e *NKNOB* 1968, 85-6.  
f Antiquities Room, St Oedenrode.

B ST MICHIELSGESTEL (96)

- a Traces of habitation.  
b Below Halder, just to the south of the old road from Vught to St Michielsgestel on high land between the Dommel and Halse Water valleys.  
c Numerous potsherds including terra sigillata dating from Flavian-III onwards, coins, wells. Possibly the site of a pottery kiln and an iron works.  
d Flavian-III.  
e *NKNOB* 1962, 174-6, 196; 1965, 53-5; 1966, 55, 93-4; 1967, 57; 1958, 65-6; 1969, 102; Knippenberg 1965a; Knippenberg 1965b; Knippenberg 1966; Knippenberg 1967.  
f Institute for the Deaf, St Michielsgestel.

C ST MICHIELSGESTEL (94)

- a Traces of habitation? small temple?  
b At Ruimel on Kapelberg.  
c On the site where the gravestone for Gaius Januarius Sextus and the altar to Hercules Magusanus are said to have been found in 1679 and where sherds, indicating habitation in the Roman period, were found in 1950. No traces of a building.  
d  
e Byvanck 1947, 80-1; Bogaers 1950a; *BROB* 1, 1950, no. 13, 28-9; Stolte 1954.  
f

D ST MICHIELSGESTEL (97)

- a Burial?  
b Roman tumulus near Halder.  
c Roman tumulus? excavated in 1806.  
d  
e *Bosche Bijdragen* 1965, 14-5.  
f

E ST MICHIELSGESTEL (98)

- a Burial.  
b 300 m southeast of the settlement near Halder and 650 m east of Halse Water (on elevated spur between the Dommel and Halse Water valleys).  
c Roman cremation. Grave goods: jar-amphora; terra sigillata plate Drag. 32; small terra sigillata bowl Drag. 33; small terra sigillata beaker; four terra nigra plates; smooth-surfaced jars; Identification: J.E. Bogaers.  
d Middle II or somewhat later.  
e *NKNOB* 1965, 55-6; Bogaers 1965, 21-2.  
f Institute for the Deaf, St Michielsgestel.

F ST MICHIELSGESTEL (100)

- a Traces of habitation.
- b On Genenberg in a largely excavated field forming part of an elevated tract of land between the Dommel to the west and a low-lying brook to the east.
- c A number of Roman potsherds, also Pingsdorf and later pottery.
- d
- e *NKNOB* 1967, 65.
- f Provincial Museum, 's-Hertogenbosch.

G ST MICHIELSGESTEL (95)

- a Traces of habitation? Bridge?
- b In the hamlet of Halder, south of the "Nieuw Herlaer" children's psychiatric hospital and immediately south of the new course of the Dommel.
- c A large number of Roman sherds, eight post-heads, eight small beams running roughly parallel, all on a 50-cm-deep peat layer. Pole with pole base. Three beads (melon-shaped, blue-green); smooth-surfaced, coarse, and varnished sherds; terra sigillata (data ca. Id/II, *BASSICO*: *FCOI*(v)s or *COIVS*?); *DOM*. This may have been the site of a bridge over the peat bog and/or over the Dommel in Roman times.

Identification: J.E. Bogaers.

- d
- e *NKNOB* 1969, 102.
- f Institute for the Deaf, St Michielsgestel.

H ST MICHIELSGESTEL (101)

- a Traces of habitation.
- b Under the former Gemonde church (on the border of Boxtel).
- c Roman refuse and potsherds, according to the report possibly later imported from Halder. In view of the many Roman finds made later along the Dommel, it now seems more likely that the site itself was inhabited in Roman times.
- d
- e Glazema 1954.
- f Provincial Museum, 's-Hertogenbosch.

A MIDDELBEERS (213)

- a Traces of habitation.
- b Found during excavation for the foundation of a bungalow in Elsakker, east of the Grote Beerze stream.
- c Roman potsherds.
- d
- e *NKNOB* 1969, 123.
- f P.M. Smulders, general medical practitioner, Middelbeers.

A MILL EN ST HUBERT (235)

- a Burial?
- b East of the Lage Raam stream and somewhat north of the southern Hapse Slood.
- c Skeleton with armour and Roman medallion from the reign of Valentinian.
- d

- e Byvanck 1947, 69.
- f Provincial Museum, 's-Hertogenbosch.

B MILL EN ST HUBERT (234)

- a Traces of habitation.
- b West of Kapel ten Hove.
- c A number of native and Roman sherds.
- d
- e Byvanck 1947, 69.
- f State Museum of Antiquities, Leiden.

A NUENEN c.a. (145)

- a Traces of habitation.
- b In a sand-excavation site near the hamlet of Boord, about 300 m east of the point where the Kleine Dommel flows into the Dommel.
- c A large number of Roman potsherds.
- d
- e *NKNOB* 1966, 88; Beex 1969, 52.
- f Provincial Museum, 's-Hertogenbosch.

B NUENEN c.a. (147)

- a Traces of habitation.
- b Approximately 400 m north of the Opwetten water-mill.
- c Roman potsherds.
- d
- e *NKNOB* 1966, 88; 167, 58; Beex 1969, 52.
- f Provincial Museum, 's-Hertogenbosch.

C NUENEN c.a. (148)

- a Traces of habitation.
- b Approximately 500 m southeast of the Opwetten water-mill, on an elevated field alongside the Kleine Dommel or Rul
- c Many Roman potsherds, also native and medieval potsherds.
- d
- e *NKNOB* 1966, 88; Beex 1969, 52.
- f Provincial Museum, 's-Hertogenbosch.

D NUENEN c.a. (149)

- Traces of habitation.
- b North of Kolse Hoeve.
- c A fairly large amount of terra sigillata; sherds of dolia, mortars, jars, and pots. Also a blue glass bracelet with yellow glass thread. The wells, of which there were a small number, could not be emptied because of the high water-level. Traces of building poles.
- d
- e *NKNOB* 1969, 56; Beex 1969, 63.
- f Provincial Museum, 's-Hertogenbosch.

NUENEN A. (146)

- a Traces of habitation.
- b Near the former Nuenen church.

- c Roman potsherds.
- d
- e *NKNOB* 1971, 5.
- f A. Jansen, Bogaardeind 78, Geldrop.

NUENEN B. (144)

- a Traces of habitation.
- b Near the hamlet of Boord.
- c Roman and native potsherds.
- d
- e *NKNOB* 1970, 70.
- f A. Jansen, Bogaardeind 78, Geldrop.

A NISTELRODE (89)

- a Traces of habitation.
- b On the Vorsel.
- c Numerous potsherds and fragments of a round millstone with diagonal grooves.
- d
- e *NKNOB* 1969, 123.
- f J. Vos, Rijksweg 117, Heesch.

A ST OEDENRODE (128)

- a Traces of habitation.
- b On Kattenrug, alongside the Everse Akkerpad.
- c A fairly large number of Roman potsherds, found during the investigation of an Iron Age settlement.
- d
- e *NKNOB* 1969, 103 and 123.
- f Provincial Museum, 's-Hertogenbosch.

B ST OEDENRODE (127)

- a Traces of habitation.
- b On an elevated field between the Everse Akkerpad and the Dommel.
- c A large amount of Roman and native pottery.
- d
- e *NKNOB* 1969, 123.
- f Provincial Museum, 's-Hertogenbosch.

C ST OEDENRODE (126)

- a Traces of habitation.
- b Along the western bank of the Dommel, between Hoeve Den Bolk and Pannehoef.
- c Traces of a settlement.
- d
- e *NKNOB* 1969, 119.
- f Damiaan College, St Oedenrode.

D ST OEDENRODE (131)

- a Traces of habitation.
- b Huisakker, below Nijnsel.
- c Native and Roman potsherds, including a small sherd of terra sigillata (1); two large fragments of a mortar; coarse rim

of a jar amphora, terra nigra; smooth-surfaced sherds, including fragments of a jar handle. Identification: P.J.R. Modderman.

- d
- e *NKNOB* 1960, 270-1; Gooren 1961.
- f Damiaan College, St Oedenrode.

E ST OEDENRODE (133)

- a Traces of habitation.
- b Between Nijnsel and Son, on the western bank of the Dommel, near Hoeve ten Hogen Oever.
- c Roman and native pottery.
- d
- e *NKNOB* 1967, 119.
- f Damiaan College, St Oedenrode.

F ST OEDENRODE (122)

- a Traces of habitation.
- b On 'De Berg', below Olland on the right bank of the Dommel.
- c Fragments of jar-necks, mortars, undecorated terra sigillata, and roof-tiles, and the head of a pottery figurine. Also a rectangular pit made of planks in which Roman potsherds were found in stratigraphically distinct layers, though they all dated from the same period (II, mainly IIB). Also an undamaged jar.
- d II, mainly IIB.
- e *NKNOB* 1966, 19; 1968, 125-6; Heesters 1968.
- f Antiquities Room, St Oedenrode.

G ST OEDENRODE (124)

- a Traces of habitation.
- b Near Bommenagel bridge.
- c A large number of Iron Age and Roman sherds (surface finds).
- d
- e ROB Archives, St Oedenrode 51 W dossier.
- f Damiaan College, St Oedenrode.

H ST OEDENRODE (125)

- a Traces of habitation.
- b Beside the Liempdsedijk.
- c Traces of Roman and, more specifically, medieval settlements. Possible Roman roof-tile fragments.
- d
- e *NKNOB* 1960, 270-1.
- f

K ST OEDENRODE (123)

- a Traces of habitation.
- b On an elevated field between the Dommel and Liempdse Road.
- c Roman potsherds including fragments of a dolium.
- d
- e *NKNOB* 1969, 123.
- f Damiaan College, St Oedenrode.

L ST OEDENRODE (129)

- a Traces of habitation.
- b On an elevated field near Spank, on the right bank of the Dommel.
- c Sherds of Roman and medieval material.
- d
- e *NKNOB* 1969, 123.
- f Damiaan College, St Oedenrode.

I ST OEDENRODE (130)

- a Traces of habitation.
- b On a sand-excavation site southeast of Nijnsel, on the western bank of the Dommel.
- c Some Roman potsherds and medieval sherds.
- d
- e *NKNOB* 1969, 103.
- f Provincial Museum, 's-Hertogenbosch.

J ST OEDENRODE (132)

- a Traces of habitation.
- b On elevated land on the right bank of the Dommel, in Vresselse Akkers.
- c Roman potsherds including some fragments of undecorated terra sigillata.
- d
- e *NKNOB* 1969, 103.
- f Provincial Museum, 's-Hertogenbosch.

A OIRSCHOT (Not indicated on map)

- a Burial?
- b In the hamlet of Notel.
- c Urns of red pottery, Roman (or Frankish or Merovingian).
- d
- e Byvanck 1947, 83.
- f State Museum of Antiquities, Leiden?

A OEFFELT (251)

- a Burial
- b Beside Heerstraat, near Cuyk boundary, found during the levelling of farmland in 1814.
- c Roman pottery, urns with cremation, glassware, copper (bronze?), and iron. This is also where a Roman road was found by E.J. Winter.
- d
- e Byvanck 1947, 69; ROB Archives, Boxmeer dossier.

B OEFFELT (252)

- a Roman road.
- b On Heerstraat.
- c Roman road, identified by E.J. Winter.
- d
- e Information from E.J. Winter.
- f

G and D OISTERWIJK (109 and 110)

- a Traces of habitation.
- b On two sites on the northern bank of Voorste Stroom.
- c Roman and native sherds.
- d
- e *NKNOB* 1968, 76.
- f Provincial Museum, 's-Hertogenbosch.

PRINSENBEEK (2)

- a Traces of habitation.
- b Beside Steenakkerstraat.
- c Roman and native pottery and hut loam. Traces of site (trench) of rectangular building measuring 6.75 by 5.75 m.
- d Second century.
- e Moelands 1958; *NKNOB* 1958, 182; 1959, 99.

A RAVENSTEIN (224)

- a Traces of habitation.
- b In boundary ditches round an elevated field known as 'de Woerden,' west of Dennenburg.
- c Roman and native potsherds. Rim-herd of small glass container.
- d
- e *NKNOB* 1968, 118.
- f Provincial Museum, 's-Hertogenbosch.

B RAVENSTEIN (227)

- a Traces of habitation.
- b In a number of exploratory trenches north and west of Deursen church.
- c Iron Age and Roman potsherds.
- d
- e *NKNOB* 1968, 94.
- f Provincial Museum, 's-Hertogenbosch.

C RAVENSTEIN (228)

- a Traces of habitation.
- b In 't Hoge Veld, on alluvial river-bank soil.
- c A few finds of coarse native and Roman pottery.
- d II-III.
- e Modderman 1950, 107, no. 46?
- f State Museum of Antiquities, Leiden.

D RAVENSTEIN (225)

- a Traces of habitation.
- b Below Deursen on a diked field known as 'het Steenwerk.'
- c Native pottery, coins (Hadrian and Pertinax) and fibulae of a fairly late design.
- d
- e Byvanck 1947, 74; *NKNOB* 1968, 94; Modderman 1950, 107, no. 44.
- f Provincial Museum, 's-Hertogenbosch.

## RIJSBERGEN (3)

- a Temple and traces of habitation.
- b On Tichelakker, east and west of the Rijksweg.
- c Stone with inscription, dedicated to 'Dea Sandraudiga,' found in 1812 during the construction of a road from Breda to Antwerp. Later, repeated investigations were made on the site but always to the west of the road. These were carried out by P. Cuypers in 1842, J.H. Holwerda in 1924, and J.E. Bogaers in 1950.

d

- e Hermans 1865, 70; Raepsaet 1818; Loots/van Lennep 1814; Janssen/Cuypers 1844; Bogaers 1950b.

- f State Museum of Antiquities, Leiden, and Provincial Museum, 's-Hertogenbosch.

## A REUSEL (215)

- a Traces of habitation.
- b Kruisstraat.
- c Fragments of a mortar, and of pottery coated with sand, ironwork, a melon bead, and traces of bronze.

d

- e *NKNOB* 1969, 48.

- f H.T. Castelijns, Kruisstraat 33a, Reusel.

## A RIETHOVEN (169)

- a Traces of habitation.
- b On 'de Voort'.
- c A small vessel of yellowish-white pottery, a bronze bracelet, and a small bronze container with lid.

d

- e Beex 1963, 133.

- f Riethoven primary school.

## B RIETHOVEN (174)

- a Traces of habitation.
- b During investigation of a neolithic burial mound to the southwest of Boschoven.
- c Some Roman potsherds including terra sigillata.

d

- e Beex 1963, 135.

f

## C RIETHOVEN (171)

- a Traces of habitation.
- b To the southwest of Walik, on the Heersmortel.
- c Hundreds of rim fragments of jars, dishes, pots, plates, mortars, and of at least five dolia: many decorated terra sigillata, principally dating from II, but some also from the end of I; a very large number of roof-tile fragments and a wooden well-casing.

d

- e *NKNOB* 1967, 65; 1968, 86.

- f Provincial Museum, 's-Hertogenbosch.

## D RIETHOVEN (170)

- a Burial.
- b Approximately 150 m northeast of the Riethoven C. find-spot.

- c Pottery with cremation remains, presumably the cemetery attached to the settlement constructed on an older urnfield.

d

- e *NKNOB* 1967, p. 65; *NKNOB* 1968, p. 86.

f

## A ROSMALEN (53)

- a Traces of habitation.
- b Somewhat north of the Bundersesteeg, in the Bunders district.

- c Some Roman potsherds and a bronze coin.

d

- e W. Knippenberg 1963a.

- f Coin: Beekvliet Collection, St Michielsgestel.

## A SCHAIJK (230)

- a Traces of habitation, or pottery works?
- b Near the brickworks to the north of the national motorway.
- c A pit containing native hand-shaped pottery, four pieces of wheel-thrown pottery, partially from the same material as the native pottery, and pieces with remarkable decoration.

d

- e Information from A. Bruijn, ROB, Amersfoort.

- f ROB, Amersfoort.

## B SCHAIJK (231)

- a Burial and settlement.

- b Gaalse Heide.

- c 1 40 of the 63 cremation graves discovered in 1957 contained one or more vessels. Seven grave pits were surrounded by a round ditch, four by a rectangular ditch; one grave containing two interments was surrounded by a rectangular pattern of post-holes (3 m × 3 m).

- 2 In 1960 excavation was undertaken by A. Bruijn.

- Find: some Roman and native pottery, three fibulae.

d

- e 1 See Van Doorselaer 1964 340.

- 2 *NKNOB* 1960, 191-2.

- f 1 M. Peters, Gaal 8, Schayk. Two small jars are in private collections in Schayk.

- 2 ROB Amersfoort.

- 3 Cremation remains in Provincial Museum, 's-Hertogenbosch.

## A SOMEREN (268)

- a Traces of habitation.

- b On an industrial site near lock II.

- c Three wooden casks, one containing a fragment of a Roman roof-tile and the base of a small Roman vessel.

d

- e Knippenberg 1965a, 89.
- f One of the casks is in the Antiquities Room of Someren Town Hall. One is still in the ground.

B SOMEREN (269)

- a Traces of habitation.
- b 1 km south-south-east of lock I, on the elevated western edge of the Aa valley.
- c A large amount of Roman pottery, including the neck of a jar with handle, fragments of a dolium and mortars. Also native ware and a wooden cask containing Pingsdorf pottery.
- d
- e Beex 1965b.
- f A. van den Bosch, Verdonckstraat 18, Someren.

A SON EN BREUGEL (134)

- a Traces of habitation.
- b East of 'De Waterhoef,' on the western bank of the Dommel.
- c Native and Roman potsherds including fragments of a dolium.
- d
- e *NKNOB* 1967, 58, 66.
- f Damiaan College, St Oedenrode.

B SON EN BREUGEL (135)

- a Traces of habitation.
- b In the 'Hooidonkse akkers,' east of the provincial road.
- c Some small Roman potsherds.
- d
- e *NKNOB* 1967, 64-5, 119-20; 1968, 44-5.
- f Provincial Museum, 's-Hertogenbosch

C SON EN BREUGEL (136)

- a Traces of habitation.
- b In the 'Hooidonkse akkers,' west of the provincial road.
- c Tree-trunk well (hollowed oak). Traces of a well were also found elsewhere on the site. Some Roman and other mainly medieval (Pingsdorf) sherds were found in the excavated soil.
- d
- e *NKNOB* 1967, 64-5, 120.
- f

A UDEN (90)

- a Burial.
- b On Slabroek Moor, near the point where the municipal boundaries of Nistelrode, Schayk, and Uden meet.
- c Hill 7 in this urnfield can be identified as Roman on the basis of the grave goods (four fibulae).
- d IA.
- e Remouchamps 1924, 69-75.
- f State Museum of Antiquities, Leiden.

B UDEN (232)

- a Burial?

- b In the hamlet of Bitswijk, east of the Uden-Nistelrode road.
- c Coarse light-grey beaker decorated with a pattern of small circles, originally probably covered with a coat of varnish; four native sherds (Urnfield period-Roman period); cremation remains.

d

- e *NKNOB* 1965, 129.

f

A VALKENSWAARD (164)

- a Traces of habitation?
- b Roman objects and a V-shaped trench were found during the construction of a sports park in 1937.
- c Roman objects and a V-shaped trench.
- d
- e Information from a 1949 questionnaire.
- f

A VEEN (15)

- a Traces of habitation.
- b In the centre of the village, to the north and south of Engpad, on alluvial river-bank soil with a light covering of soil from a flood pond.
- c Coarse, smooth, and varnished sherds were found on the northern site and were dated by J.E. Bogaers as roughly II. The southern site yielded Roman sherds, including the rim of a Drag. 33. Date II. Identification: J.E. Bogaers.
- d II.
- e Voogd 1955, 87, nos. 21<sup>3</sup> and 21<sup>1</sup>; *Opggravingsnieuws* June-August 1955.
- f H. Voogd, Rijswijk.

B VEEN (14)

- a Traces of habitation.
- b Wielstraat, on the plot called the 'Kersenboomgaard.'
- c Roman material including terra sigillata plate (late I, early II), jar-neck (middle II); rim-fragment of mortar (nb). Identification: J.E. Bogaers.
- d Id-II.
- e Voogd 1955, 87 and map pls. XVIII-XIX, no. 21<sup>2</sup>.
- f Voogd Collection.

C VEEN (16)

- a Traces of habitation.
- b Wijke Steeg, in the Hanenwaard polder, on alluvial river-bank soil.
- c Fragment of a grey-brown Roman varnished beaker together with a small number of non-characteristic Roman and native sherds. Identification: J.E. Bogaers.
- d
- e Voogd 1955, 91 and map pls. XVIII-XIX, no. 18.
- f Voogd Collection.

- D VEEN (17)  
a Traces of habitation.  
b In the Zwaans Hill polder, on alluvial river-bank soil.  
c Native and Roman sherds; terra sigillata; coarse and smooth varnished Roman roof-tiles and floor-tiles.  
d  
e Voogd 1955, 90 and map pls. XVIII-XIX, no. 33.  
f Voogd Collection.
- A VEGHEL (120)  
a Traces of habitation.  
b Near the Mast bridge.  
c Some Roman sherds found in 1958 by E.J. Winter. Roman sherds were also found near the bridge in 1937, together with the foundations of a large building.  
d  
e *Brabantsche en 's-Hertogenbosche Courant*, 11.6.1937.  
f E.J. Winter, Boxmeer (now Uden).
- A VELDHOVEN (190)  
a Traces of habitation.  
b Kerkakkerstraat.  
c Roman pottery, including base fragments of Drag. 31 stamped DRILLO-F (?). Identification: J.E. Bogaers.  
d II.  
e *NKNOB* 1959, 34; Beex 1968, 118 (no. 17: Oude Kerkstraat).  
f W. Crooymans, Schoolstraat 22, Meerveldhoven.
- B VELDHOVEN (189)  
a Military settlement?  
b Koningshof, near the hamlet of Heers.  
c Traces of posts with a V-shaped channel. Holwerda states that watch-towers once stood here.  
d  
e Byvanck 1947, 84; Beex 1968, 118.  
f
- C VELDHOVEN (188)  
a Traces of habitation and cemetery?  
b Koningshof near the hamlet of Heers.  
c 1 Roman potsherds, ironware, figurines of Diana.  
2 In 1951 two Roman jars were found on this site.  
d  
e 1 Byvanck 1947, 84; Beex 1968, 118; Bogaers 1968.  
2 ROB Archives, Veldhoven monastery dossier.  
f 1 An undamaged jar in the possession of G. Bazelmans, Veldhoven.  
2 A damaged jar, Koldewey Company, Voorburg.
- D VELDHOVEN (187)  
a Traces of habitation.  
b Near the Heibloem brickworks.  
c Second-century potsherds and four bronze coins.  
d II.
- e Byvanck 1947, 84; Beex 1968, 119.  
f
- E VELDHOVEN (191)  
a Traces of habitation.  
b Near the hamlet of Zittard.  
c Roman potsherds.  
d  
e *NKNOB* 1969, 70.  
f Provincial Museum, 's-Hertogenbosch.
- A VESSEM c.a. (209)  
a Burial?  
b Lantie (Lanserd)  
c A few jar amphorae and small bronze lamps were found by the Van Aaken family during the construction of a farm in 1930.  
d  
e ROB Archives, Vessem dossier.  
f H.J.C. Eysbouts, Someren? (Lauwers Collection, Esbeek).
- B VESSEM c.a. (192)  
a Traces of habitation.  
b Beside the Antwerpse Baan below Knegsel.  
c A large number of native and Roman potsherds.  
d II.  
e *NKNOB* 1966, 55.  
f Provincial Museum, 's-Hertogenbosch.
- C VESSEM c.a. (195)  
a Burial.  
b Beside the Knegsel-Steensel road, below Knegsel.  
c At least one Roman cremation grave, containing a small concave-sided vase, an iron attachment from a small box, cremation remains, and a bronze coin of Faustina I; during the excavation many sherds were found in the adjacent fields.  
d  
e Report of find by Mandos-v.d. Pol 1955; Beex 1957.  
f
- D VESSEM (194)  
a Traces of habitation.  
b Below Knegsel, east of the road to Steensel.  
c Numerous Roman potsherds.  
d  
e Beex 1955b.  
f
- E VESSEM c.a. (193)  
a Traces of habitation.  
b At Knegsel, close to the site of a small church which was destroyed by the French in 1688.  
c Some small Roman potsherds.  
d  
e ROB Archives, Knegsel dossier, municipality of Vessem, letter Beex 8.11.1965.  
f

- F VESSEM c.a. (210)  
a Traces of habitation.  
b At the southern end of Katerstraat.  
c Roman potsherds (surface finds).  
d  
e *NKNOB* 1970, 44.  
f H.J. Kuenen, Wolfsakkerstraat 2, Meerveldhoven.
- G VESSEM c.a. (208)  
a Traces of habitation.  
b At the northern end of Katerstraat, some 700 metres from the previous findspot.  
c Roman potsherds (surface finds).  
d  
e *NKNOB* 1970, 44.  
f H.J. Kuenen, Wolfsakkerstraat 2, Meerveldhoven.
- H VESSEM c.a. (205)  
a Traces of habitation.  
b Approximately 700 metres southeast of the previous findspot.  
c Roman potsherds (surface finds).  
d  
e *NKNOB* 1970, 44.  
f H.J. Kuenen, Wolfsakkerstraat 2, Meerveldhoven.
- I VESSEM (206)  
a Traces of habitation.  
b Beside the stream 'de Ezel.'  
c A large number of pottery fragments, found by G. Fonteyn of Duizel.  
d Mainly second century.  
e Not yet published.  
f Provincial Museum, 's-Hertogenbosch.
- A VIERLINGSBEEK (263)  
a Traces of habitation.  
b Bergkampen.  
c Roman potsherds, including a terra sigillata rim.  
d  
e ROB Archives, Vortum dossier, municipality of Vierlingsbeek.  
f Provincial Museum, 's-Hertogenbosch.
- B VIERLINGSBEEK (264)  
a Burial.  
b Groeningse bergen.  
c Two small Drag. 31 plates with illegible stamps; a coarse bowl, undamaged; native and Roman potsherds.  
d  
e ROB Archives, Vierlingsbeek dossier.  
f J. Thijssen, Staaiweg 3, Vierlingsbeek.
- C VIERLINGSBEEK (265)  
a Burial and habitation.  
b Vliegenberg below Holthees, municipality of Vierlingsbeek.  
c 1 Undamaged pottery found in 1850.  
2 At the end of October 1960 J. Thijssen of Vierlingsbeek reported the discovery of a grave. Contents: one coarse mortar with horizontal rim, ochre yellow; one smooth small vessel, ochre yellow; Belgian ware, Brunsting 5 b; a jar amphora; fragment of a thread fibula; cremation remains; sherds.  
d Date: early II.  
e Byvanck 1947, 68.  
2 ROB Archives, Holthees dossier, municipality of Vierlingsbeek 52 W.  
f 1 Provincial Museum, 's-Hertogenbosch.  
2 J. Thijssen, Vierlingsbeek.
- D VIERLINGSBEEK (266)  
a Traces of habitation.  
b Maashees, in the hamlet of Campagne.  
c Remains of foundations, consisting of pieces of unworked stone, fragments of Roman roof-tiles, coarse gravel, and mortar; a gutter, consisting of pieces of unworked stone and roof-tiles, investigated to a length of 12.5 metres; a piece of a tubulus; a piece of green, probably Roman, window glass; Roman potsherds (date II), including a fragment of Drag. 37.  
d II.  
e *NKNOB* 1962, 160-2 (= Bogaers 1962b).  
f Antiquities Room, Venray Town Hall.
- A VLIJMEN (43a)  
a Traces of habitation?  
b Beside the Heidijk.  
c A Roman sherd.  
d  
e *NKNOB* 1969, 114.  
f A. van Zon, Vlijmen.
- A VUGHT (56)  
a Traces of habitation.  
b Below Deuteren, to the south of the goods railway line.  
c A number of Roman potsherds.  
d  
e *NKNOB* 1969, 114.  
f Provincial Museum, 's-Hertogenbosch.
- A WAALRE (163)  
a Traces of habitation.  
b On a level with the point where the E3 national motorway crosses the former Eindhoven-Valkenswaard railway.  
c Many Roman potsherds.  
d  
e Communication from G. Beex.  
f Provincial Museum, 's-Hertogenbosch.



- B WAALRE (161)  
a Traces of habitation.  
b Beside the Rijksweg, not far from the bridge over the Tongelreep, on the boundary of Aalst and Eindhoven.  
c A few fragments of a mortar and two Roman coins (Germanicus and Augustus).  
d  
e Wouters 1955.  
f Kempenland Museum.
- C WAALRE (165)  
a Traces of habitation.  
b East of the Waalre-Valkenswaard road.  
c Numerous Roman potsherds.  
d  
e *NKNOB* 1969, 124.  
f Provincial Museum, 's-Hertogenbosch.
- D WAALRE (166)  
a Traces of habitation.  
b East of Elshouters, a marshy area near the confluence of the Keersop and the Dommel.  
c Numerous Roman potsherds; two wells.  
d  
e *NKNOB* 1969, 124; Beex 1970a.  
f Provincial Museum, 's-Hertogenbosch.
- E WAALRE (162)  
a Traces of habitation.  
b North of the centre of the village, along the western bank of the Tongelreep.  
c Roman potsherds, including rim of mortar.  
d  
e *NKNOB* 1970, 69.  
f H. Bierens de Haan, Hoge Duinlaan 13, Aalst-Waalre.
- A WESTERHOVEN (168)  
a Traces of habitation.  
b On an older urnfield, 500 m northeast of Braambos; the settlement extends in a northeasterly direction to the Keersop river.  
c 1 W. Knippenberg found Roman pottery in the north-eastern corner of this urnfield in 1953: four sherds of moulded pottery fired by an oxydising and reducing process (0-400); a small rim sherd of red-varnished ware; coarse sherd with flat everted rim, on which there are two grooves; a coarse body sherd thickened on the inside; end of band-shaped handle; a coarse base sherd and numerous body sherds of smooth and coarse Roman ware.  
The find point to habitation in the Roman period, A.D. 80-250.  
Identification: P.J.R. Modderman.  
2 A large number of Roman potsherds found by J. Dielis of Bergeijk in 1964.  
d
- e 1 ROB Archives, Westerhoven dossier 57w.  
2 *NKNOB* 1964, 285-6.  
f 2 J.A.T. Dielis, Bergeijk, and Beckvliet Collection.
- B WESTERHOVEN (167)  
a Traces of habitation.  
b Approximately 200 metres north of the previous findspot.  
c Many Roman potsherds.  
d  
e *NKNOB* 1970, 70.  
f J.H.C. Biemans, Lavendelplein 8, Bergeijk.
- A WIJK EN AALBURG (21)  
a Traces of habitation.  
b Alongside the Engelse Stooft, on sandy alluvial soil.  
c A terra sigillata rim sherd: many varnished sherds: coarse Roman ware. Identification: P.J.R. Modderman.  
d  
e Voogd 1953.  
f State Museum of Antiquities, Leiden.
- B WIJK EN AALBURG (18)  
a Traces of habitation.  
b The 'Lange Stuk,' near the Wijkse Steeg.  
c Romano-native sherds; none of the pieces can be identified clearly enough for dating (J.E. Bogaers).  
d  
e ROB Archives, Aalburg dossier, municipality of Wijk en Aalburg.  
f Voogd Collection.
- C WIJK EN AALBURG (19)  
a Traces of habitation.  
b 'Het Dorpsbos,' a field on the Brede Steeg: on alluvial river-bank soil.  
c Fragments of Roman pottery and a few which are possibly Merovingian. Identification: J.E. Bogaers.  
d  
e ROB Archives, Eethen dossier.  
f Voogd Collection.
- E WIJK EN AALBURG (28)  
a Traces of habitation.  
b Kraaienveld, in Polstraat.  
c Pottery fragments including decorated terra sigillata; terra nigra; varnished, native.  
d  
e ROB Archives, Aalburg dossier, municipality of Wijk en Aalburg 44/0.  
Voogd 1953, III.  
f Voogd Collection.
- F WIJK EN AALBURG (26)  
a Traces of habitation.

- b Aalburg centre, near the church.
- c A few potsherds; terra sigillata (rd-πa); fragment of mortar.
- d rd-πa.
- e Voogd 1953, 110.
- f Voogd Collection.

- G WIJK EN AALBURG (29)
  - a Traces of habitation (military?).
  - b De Spij, Mussentiend.
  - c Rim sherd of coarse Roman plate; diverse Roman sherds; rim sherd of terra sigillata plate, Drag. 31 (π); rim of coarse plate (π); some sherds of varnished ware.
  - d π.
  - e Voogd 1953, 110 and 112.
  - f Voogd Collection.

- H WIJK EN AALBURG (24)
  - a Traces of habitation.
  - b The Stenen Kamer, Kerkstraat.
  - c Some Roman sherds.
  - d
  - e Voogd 1953, 110, no. IV.
  - f Voogd Collection.

- A ZUNDERT (5)
  - a Traces of habitation.
  - b 300 m north of the hamlet of Stuivezand.

- c Roman and native potsherds.
- d
- e Letter from J. Verhagen dated 21.11.1965.
- f Verhagen Collection.

- B ZUNDERT (6)
  - a Traces of habitation.
  - b 250 m southwest of the hamlet Stuivezand.
  - c Roman potsherds, roof-tile fragments, and traces of posts.
  - d Largely second century.
  - e *NKNOB* 1966, 19.
  - f Provincial Museum, 's-Hertogenbosch.

- C ZUNDERT (7)
  - a Traces of habitation.
  - b 400 m south of the hamlet of Stuivezand.
  - c Roman and native potsherds.
  - d
  - e Information from J. Verhagen.
  - f Verhagen Collection.

- D ZUNDERT (4)
  - a Traces of habitation.
  - b 700 m north of the hamlet of Stuivezand.
  - c Roman and native potsherds.
  - d
  - e Information from J. Verhagen.  
Verhagen Collection.

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# The Tumuli from the Roman Period of Esch, Province of North Brabant, I

figs. 1-74; pls. XI-XX

## PREFACE

Early in the spring of 1950, Mr J. Ruys of Esch, a village about 10 km south of 's-Hertogenbosch (figs. 1 and 2), was digging in a field on the Kollenberg, between his house and the river Run (fig. 3). As part of the scheme to improve the condition of the soil, the ground level had to be lowered by about 1 m. During this operation, which was done entirely by hand, Mr Ruys struck upon what was later identified as Roman period pottery. Suspecting that the find was of great antiquity – one of the pieces reminded him of a jug he had seen depicted on a Station of the Cross in Handel, a near-by place of pilgrimage – Mr Ruys took home seven intact pieces and put them on a cupboard in his living-room. Here, after some time, they were noticed by the parish priest, the Reverend H.A.C. Beex, brother of the Brabant archaeologist G.A.C. Beex. The priest instructed his parishioner that, should he come across similar finds in the future, he should notify the authorities and not proceed digging himself. When, in April 1952, Mr Ruys again found pottery in the same field, the ROB was informed, and thus a tumulus from the Roman period was investigated for the first time in the Netherlands (grave II, excavation by Mr A. Bruijn). Some weeks later another grave was found in the same field (grave III, excavation by Mr (now Professor) J.E. Bogaers and Mr A. van Pernis). In the winter of 1959-60, more Roman graves were discovered at Hoogkeiteren (fig. 3), about 1 km northwest of the burial ground on the Kollenberg. Four tumuli of the same type were excavated (graves IV-VII, excavation by Professor J.E. Bogaers, Mr C. van Duijn, and Mr R. Woudstra). Apart from short reports on the Esch excavations in

general,<sup>1</sup> more detailed publications have appeared on some of the individual finds. First, Professor A.N. Zadoks-Josephus Jitta devoted an article to the amber Dionysos,<sup>2</sup> which has become, as it were, the symbol of the Esch excavations. Dr C. Isings directed her attention to the glass.<sup>3</sup> A bronze ampulla in the form of a bust of Bacchus was included in the corpus of Roman bronze figurines in the Netherlands.<sup>4</sup> In addition, Mr J. Ypey published a method of salvaging severely disintegrated glass during an excavation,<sup>5</sup> a procedure used for the first time in Esch. Finally, a piece of knitting was mentioned in Dr J.P. Wild's book on textile manufacture in the northern provinces of the Roman Empire.<sup>6</sup>

All finds – totalling more than 200 – have been restored, drawn, and photographed. They have been acquired by the Provinciaal Genootschap van Kunsten en Wetenschappen in Noord-Brabant and are now in the collection of the Noordbrabants Museum at 's-Hertogenbosch. Further investigation of the Esch finds has been made possible by a grant from the Netherlands Organization for the Advancement of Pure Research. The results of this work will appear subsequently in a series of articles, to be printed in this journal. The first article, which is based on a graduate study under the direction of Professor J.E. Bogaers of the Catholic University of Nijmegen, will deal mainly with the graves found on the Kollenberg.

## INTRODUCTION

### 1 *The region*<sup>7</sup>

Esch is a rural village in what used to be called the 'Meie-

1 See for these Van Doorselaer 1964, II, 338-9.  
2 Zadoks-Josephus Jitta 1962.  
3 Isings 1962.  
4 Zadoks-Josephus Jitta/Peters/Van Es 1969, 30.

5 Ypey 1960/1.  
6 Wild 1970, 60 and 120.  
7 Cf. Haans/Maarleveld 1965; Van Diepen 1968, 120-3.

rij van 's-Hertogenbosch' (fig. 2). This region covers roughly the eastern half of the province of North Brabant, excluding a strip of land in the northeast which runs between the Peel and the Maas. In the westernmost part of the Meierij is the municipality of Tilburg, and farthest to the east that of Deurne.

Geologically, the Meierij is in a region that is divided into horsts and hollows by an extensive northwest-southeast oriented system of faults. For the main part, it is in the Central Hollow, which is bounded on the east by the Peel horst and on the west by a wide zone of flexures adjoining the Brabant block.<sup>8</sup> The contour-map clearly shows the trough-shape of the Meierij, deriving from its geological framework. This shape is also manifest from the convergence of the many brooks and small rivers, all discharging into the Maas via the basins of the A and the Dommel, which near 's-Hertogenbosch meet to form one river, the Dieze.

At the surface this part of North Brabant consists almost entirely of coversands deposited by the wind during the Late-Glacial era. Some characteristic ridges of this sand traverse the Meierij, running approximately southwest to northeast.<sup>9</sup> These ridges have considerably influenced the course of the brooks and rivers that could only in a few places force a passage through a narrow channel. Pools and fens, in which peat deposits have formed on a large scale, occur at the south side of these ridges, where the drainage stagnated.

## 2 The village (fig. 3)

During the period of the Roman occupation, the wide and relatively shallow valleys of the brooks were evidently the best settlement sites in the Meierij.<sup>10</sup> In this respect, the situation of Esch is particularly interesting. The centre of the village, exactly encircled by the contour line of 6 m +NAP, is situated on a hillock that forms part of one of the above-mentioned ridges of coversands, namely that between Goirle and St Michielsgestel. This hillock is enclosed by low ground, on which the brooks have laid down their alluvial deposits. The Run, or Aa, today still flowing west and north of the village, deposited its silt on those sides. On the south side and east side this was done either by the Run or by the Kleine Aa, which today flows into the Run south of Esch, but in former days

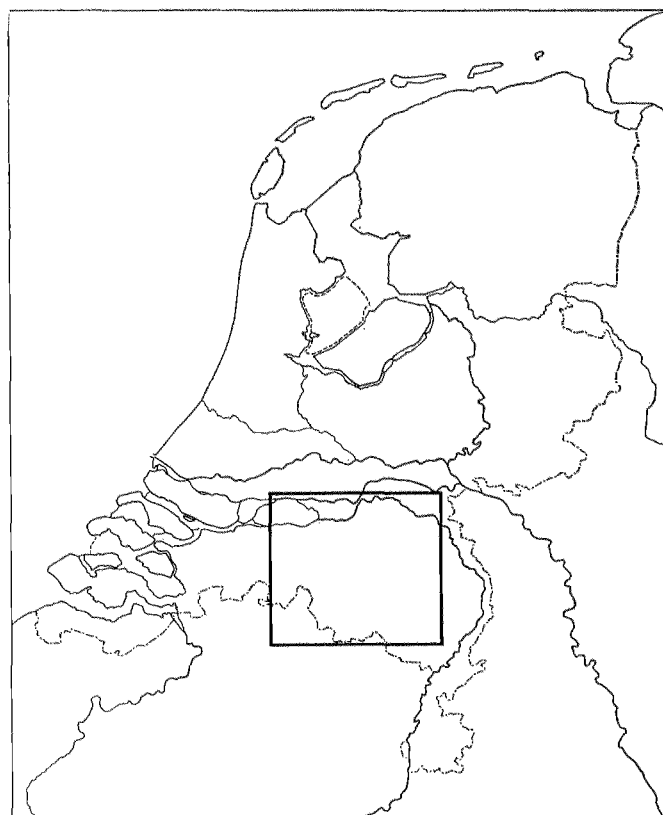


Fig. 1 The 'Meierij van 's-Hertogenbosch' and adjacent areas

presumably ran east of the hillock and flowed into the Run northeast of the present village.<sup>11</sup>

About ten years ago, the Run was canalized and the adjacent fields were re-allotted, so that the original character of the landscape has been lost completely.

## I THE EXCAVATIONS ON THE KOLLENBERG (GRAVES I, II, III)

### I THE HAMLET CALLED 'DE KOLLENBERG' (fig. 3)

Southwest of the village centre, enclosed by the old Leuningsdijk and the Run, is the hamlet De Kollenberg,

8 Pannekoek 1956, 146 and fig. 30 A.

9 Haans/Maarleveld 1965, 194.

10 See the map with the article by G. Beex in this journal.

11 Zegers 1959; Bodemkaart van Nederland, scale 1:50,000, sheet 45 west ('s-Hertogenbosch).

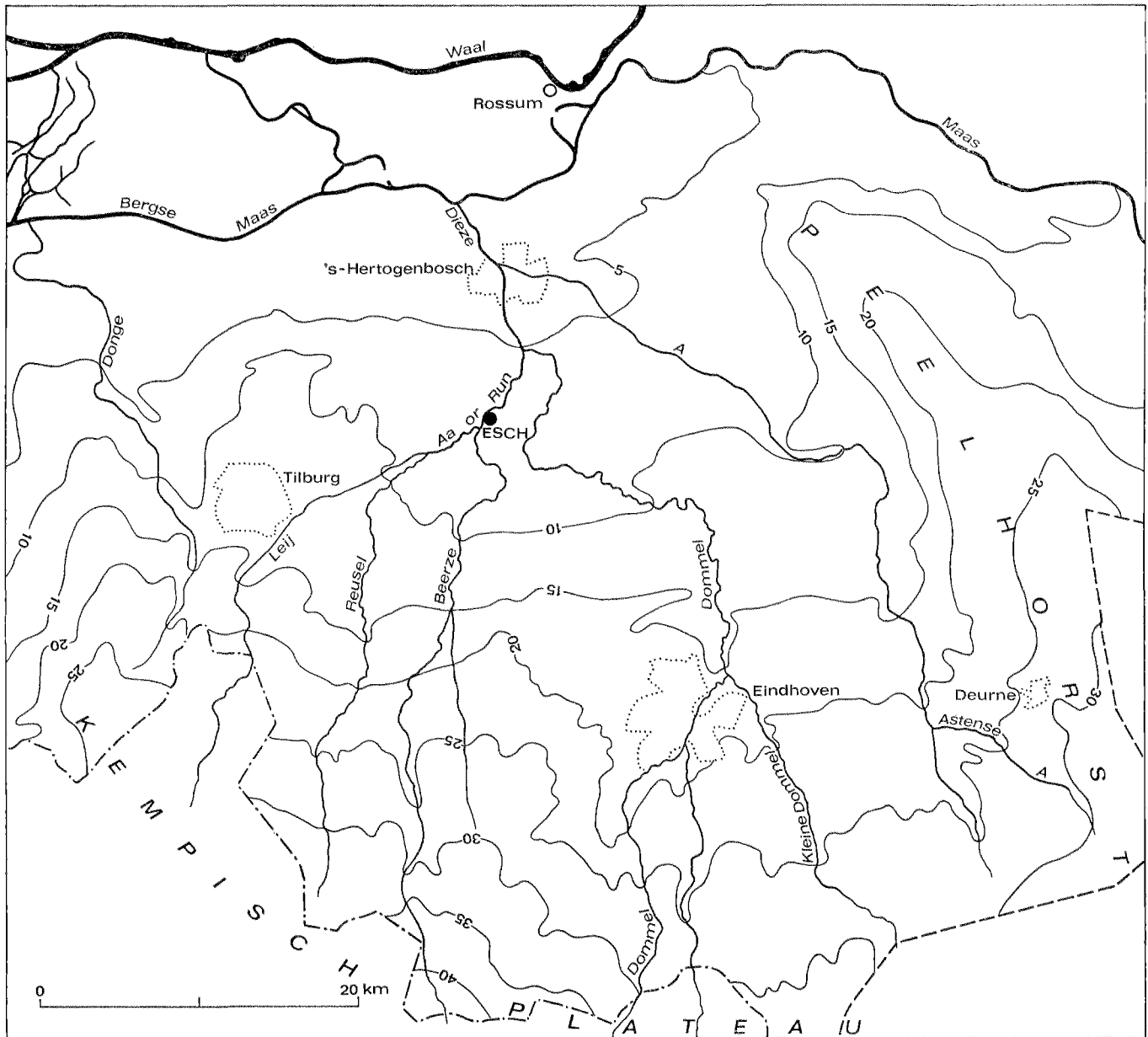


Fig. 2 The 'Meierij van 's Hertogenbosch' and adjacent areas (1:200,000)

also called 'Den Berg' (*berg* = mountain or hill), which name was changed into 'Romeinse Berg' after the 1952 excavations. Actually, the *berg* consists of the south-western part of the hillock on which the village stands. In the west and north this hillock slopes downward towards

the river; before the widening and canalization of the Run in 1963-4, the river used to flood the fields surrounding the Kollenberg in winter. This made the relatively high situation of the hamlet more conspicuous and explains the rather grand name *berg*.

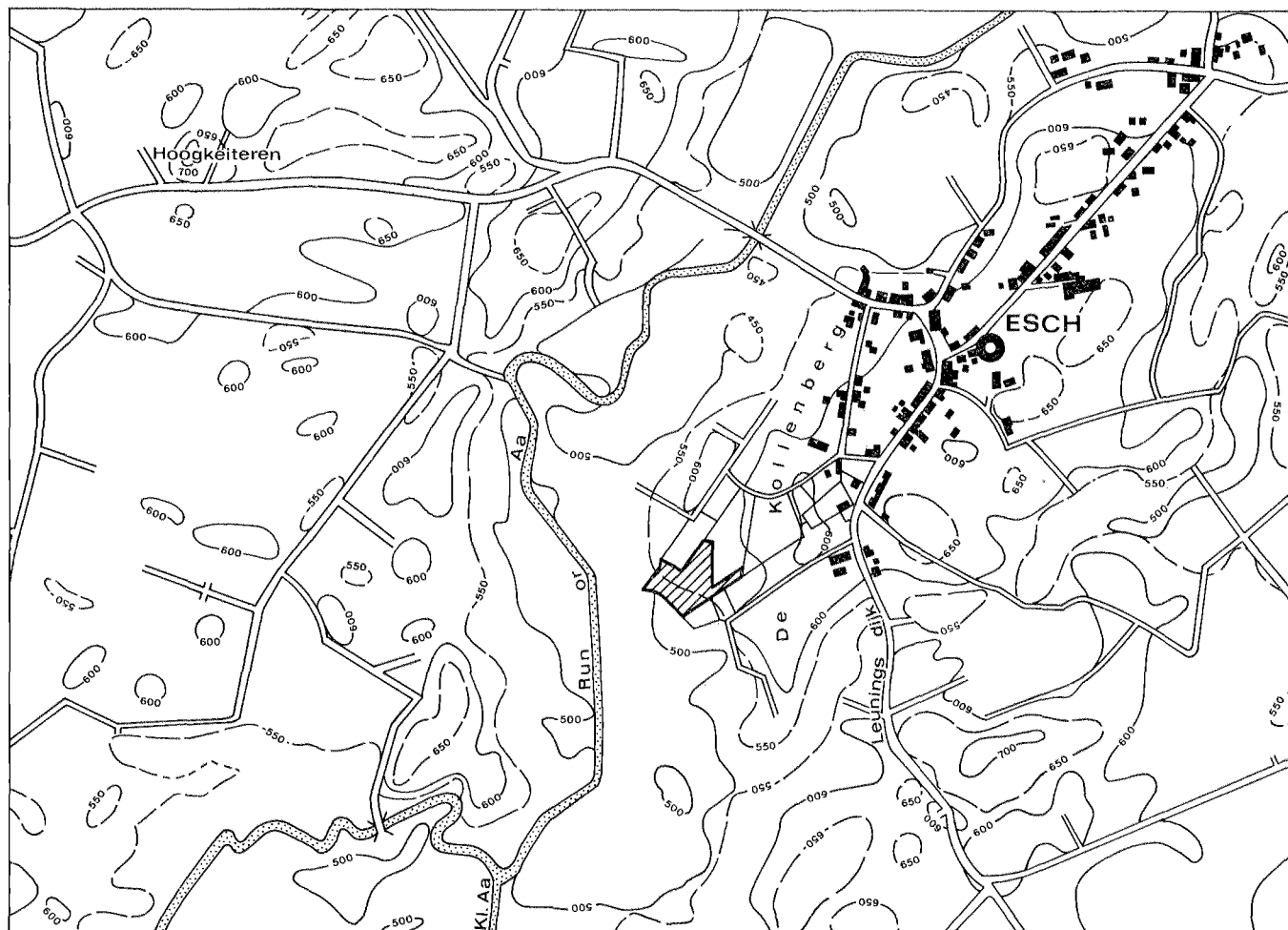


Fig. 3 Esch and environs before the re-allotment of 1963 (1:10,000). This map was kindly supplied by the *Waterschap 'Het Stroomgebied van de Dommel'*

As the word *kol* means witch, attempts have been made to connect the name 'Kollenberg' with the Roman burial ground at that place.<sup>12</sup> *Kol*, however, does not occur in this sense in Dutch before 1700,<sup>13</sup> whereas the Kollenberg is mentioned in Esch as early as 1403 and 1478.<sup>14</sup> The *kol*

in 'Kollenberg' is probably a Germanic word meaning forehead or head<sup>15</sup> and so could mean hill in field-names. The name 'Kollenberg' has to be connected with Liempde, a village about 10 km southeast of Esch, where the family-name Van den Kollenberg occurs as early as the beginning of the 14th century,<sup>16</sup> which suggests that the name then already existed as a place-name. It could have been imported in Esch by a family called Van den Aker, descendants of *Heyn die man van Lyemde* (middle of the 14th century), who gave their name to the farmhouse 'ten

12 Van den Braak 1952, 62.

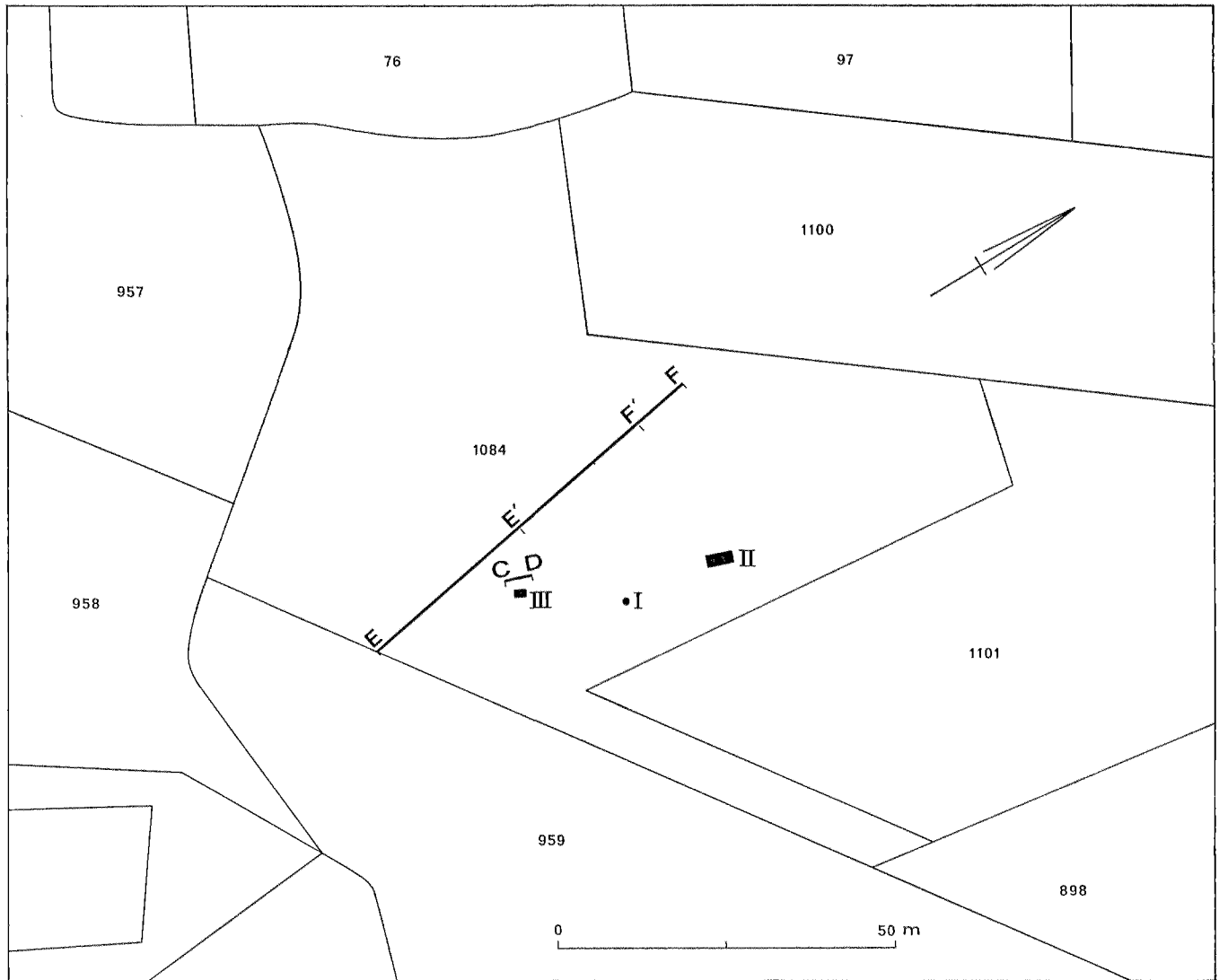
13 Franck/Van Wijk/Van Haeringen 1949, *s.v. kol*.

14 As is evident from the following deeds in the Rijksarchief at 's-Hertogenbosch: 's-Hertogenbosch R. 1183, fol. 112<sup>v</sup> and id. R. 1247, fol. 262. Information from the archives was kindly supplied by the late Mr F.W. Smulders of 's-Hertogenbosch.

15 See note 13.

16 As appears from the deeds Helmond Huisarchief 125 (A.D. 1320) fol. 5, 5<sup>v</sup>, and 7; and id. 126 (A.D. 1381) fol. 14, 15, 16, and 16<sup>v</sup>, in the collection of the Rijksarchief at 's-Hertogenbosch.





Akeren', which in the 15th century stood at Esch in the present hamlet De Kollenberg.<sup>17</sup>

## 2 THE EXCAVATION SITE<sup>18</sup> (figs. 3 and 4)

This is in the southernmost part of the Kollenberg, just outside the 6-m contour line, but clearly still on the *berg*

<sup>17</sup> Deeds 's-Hertogenbosch R. 1180 (A.D. 1396) fol. 614; id. R. 1213 (A.D. 1443) fol. 128<sup>v</sup>; id. R. 1217 (A.D. 1446) fol. 26 and 257; id. 1238 (A.D. 1465) fol. 186; id. R. 1241 (A.D. 1472) fol. 274<sup>v</sup>, in the collection of the Rijksarchief at 's-Hertogenbosch.

Fig. 4 The site (1:1000)

when seen from the low-lying land on the banks of the Run. This river flows about 150 m west of the site and is at this point also called Aa; further downstream, it is known as Essche Stroom or Halsche Water. In former times its name was Dieze or Amer.<sup>19</sup> From a historical

<sup>18</sup> Topographical map, sheet 45C 148.00/402.20, land registry section B 1084. Owned by Mr J. Ruys, Romeinse Berg 3, Esch.

<sup>19</sup> Smulders 1950, 128; 1954, 169.

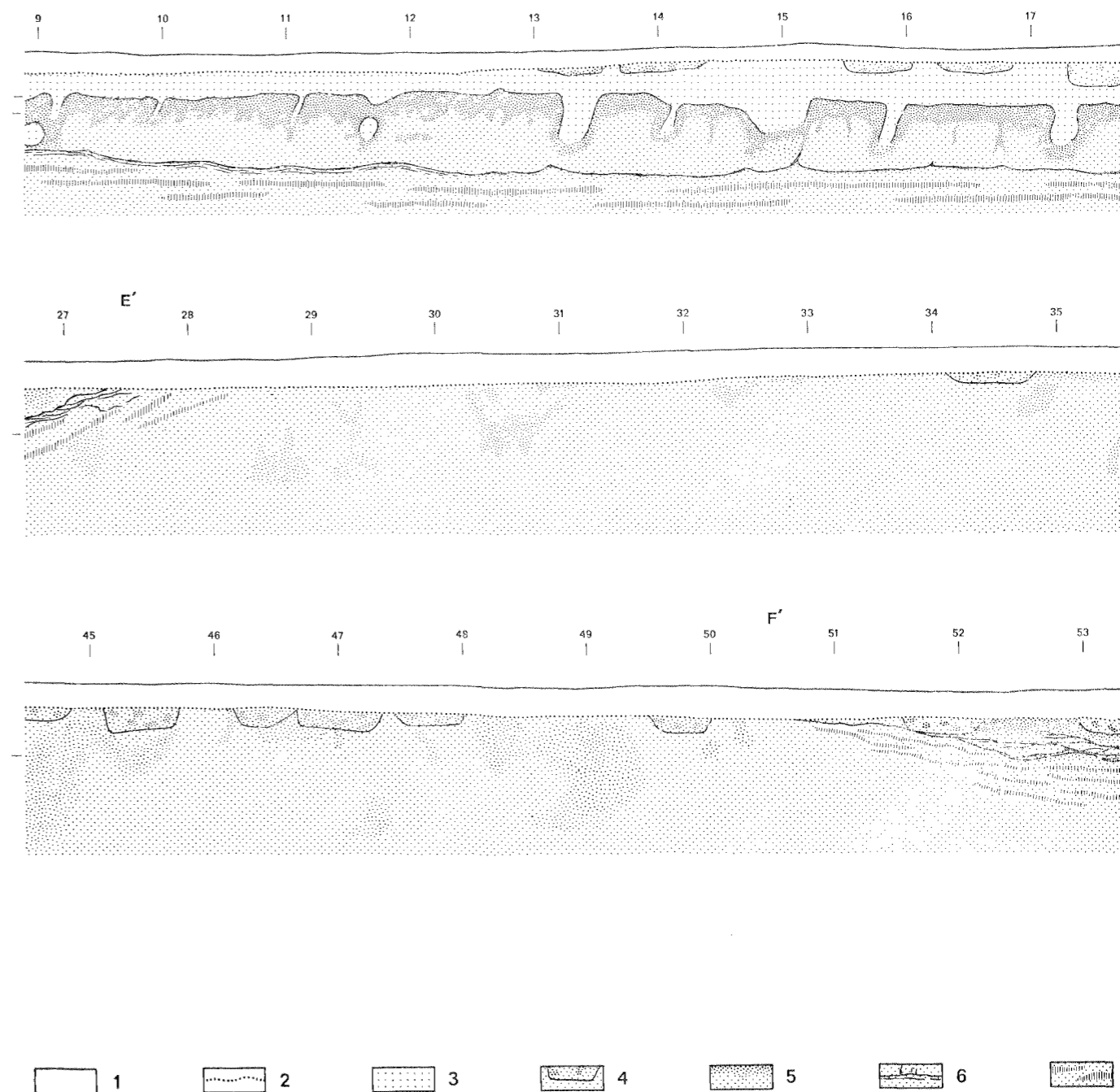
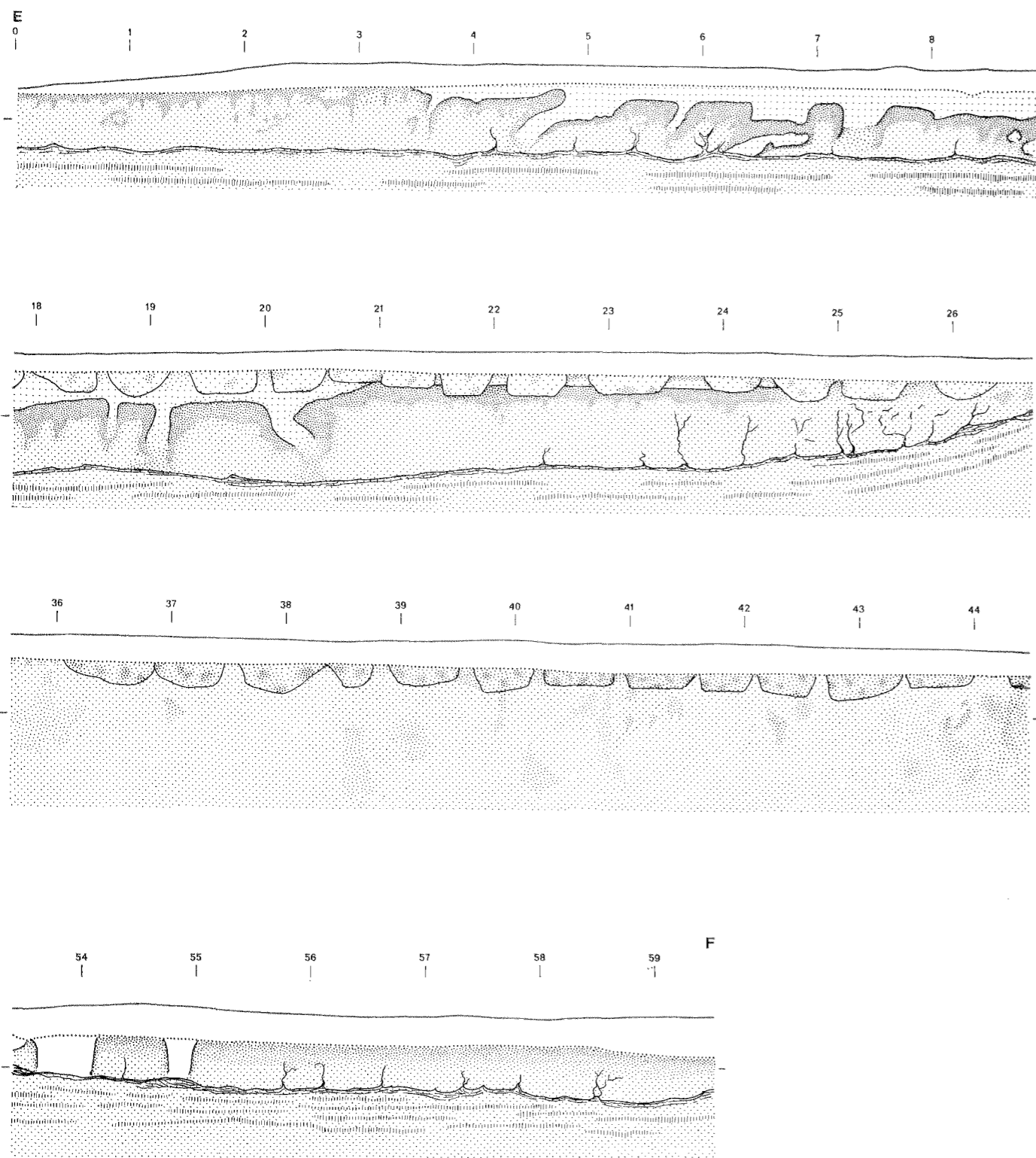


Fig. 5 Section E-F (1:50)  
 1: topsoil; 2: boundary of recent disturbance; 3: leached sand;  
 4: trench; 5: iron pan; 6: humous fibres; 7: loamy bands

point of view, it is the most important stream in the basin of the river Dommel.<sup>20</sup>

On the south and on the west the site is adjacent to low, marshy land forming part of the valley of the Run; to the northwest, the ground gradually slopes towards the river. In Roman times a small sand-ridge must have made the aspect of the site even more striking (see below). The tumuli were built southeast of this ridge, just at the edge of the hillock on which the present village is situated.

The geological features were investigated by means of three sections (fig. 4):

A–B: west–east section (north side of the excavation trench of grave III);

C–D: southwest–northeast section west of grave III;

E–F: south–north section across the whole width of the site. The genesis can be studied best from the last section, which is 60 m long (fig. 5):

A layer of drift sand was deposited against the sides (24–27 m and 51–53 m) of a sand-ridge with loamy bands. Analogous to the interpretation of profiles in the immediate vicinity during the soil survey of this area,<sup>21</sup> the sand-ridge with loamy bands may be regarded as older coversands, deposited by the wind during the Upper Pleniglacial era; on top of this are younger coversands, also an eolian deposit, but from a less cold period, the Late-Glacial era.

Pedogenesis occurred only in the younger coversands. Beneath the *c.* 35-cm-thick topsoil was a clear podzol profile, of which the 20–30-cm-thick A<sub>2</sub> horizon (leached sand, whitish-grey in colour) and the B horizon (iron pan, with frequent interruptions filled with leached sand) were still intact. From this topsoil, a great number of trenches had been dug into the underlying sediment (see below). Between the older and the younger coversands was a black layer *c.* 5 cm thick consisting of a number of humous fibres.

Borings have established that the podzol occurred only on the excavation site, but not in the low-lying surrounding plots.

Between 5 and 29 May 1952, the ROB was able to investigate the part of the field that had not yet been levelled;

at the same time, the operations for improvement of the soil were carried on. Mr A. Bruijn was supervisor of the excavations. No new graves were discovered, but some information was gained concerning the history of this field in the centuries following the construction of the tumuli.

In the first place it became clear that the ground just west of the three graves must once have been much higher than it was at the time of excavation. In section E–F (fig. 5) the layers can be seen to rise and vanish in the topsoil; *c.* 23 m further on, they appear again in the profile (figs. 4 and 5: E'–F'). At one time, the ground must have been levelled, and consequently the crest of the ridge has disappeared. This explains why no native-ware sherds from pre-Roman and Roman times were found in subsection E'–F', whereas the upper layer of the leached sand in the rest of the field yielded a fair amount of these. Native-ware sherds were also found in the soil above grave III. So, presumably, the part of the field containing the graves was not seriously disturbed by the levelling operations; only the mounds above the graves were probably levelled off. Theoretically, of course, it is possible that one or several graves built on top of the hill were cleared away completely. An interesting fact is that medieval sherds were found in subsection E'–F'.<sup>22</sup>

Another result of the investigation was the discovery of an extensive system of trenches found just below the topsoil (figs. 5 and 6); most of these were *c.* 9 m long and *c.* 25–60 cm wide, having fairly steep sides and generally a rather flat bottom. The remaining depth was 10–20 cm. The distance between the trenches was very small, often as little as 15 cm; more than once, two trenches touched (plate XI: 1). It was no longer possible to establish from which level the trenches had originally been dug, as the upper part had become mixed with the topsoil. The filling of the trenches was leached sand, in which many 17th- and 18th-century sherds were found.<sup>23</sup> In two places the trenches were interrupted by rectangular pits dug in the subsoil, with some post-holes around them. In the southern one a large quantity of charcoal was found and at the bottom a red pottery sherd with lead glaze (17th–18th century). The red colour of the sand indicated the place

20 Stolte 1961, 22. The historical aspects of the excavation will be dealt with later.

21 Haans/Maarleveld 1965, 188; Van Diepen 1968, 11; *Bodemkaart van Nederland schaal 1:50.000; toelichting bij kaartblad 45 west 's-Hertogenbosch*, 1969, 53, fig. 17 and fig. 18 A; 36, table 6.

22 *E.g.* rim of a globular jar ('Kugeltopf'): 12th–13th century; two fragments of Andenne ware: 13th century; glass and pottery fragments: 16th–19th century. Identified by Dr J.G.N. Renaud, ROB, Amersfoort.

23 *E.g.* red pottery with lead glaze and slip decoration: 17th–18th century. Identified by Dr J.G.N. Renaud.

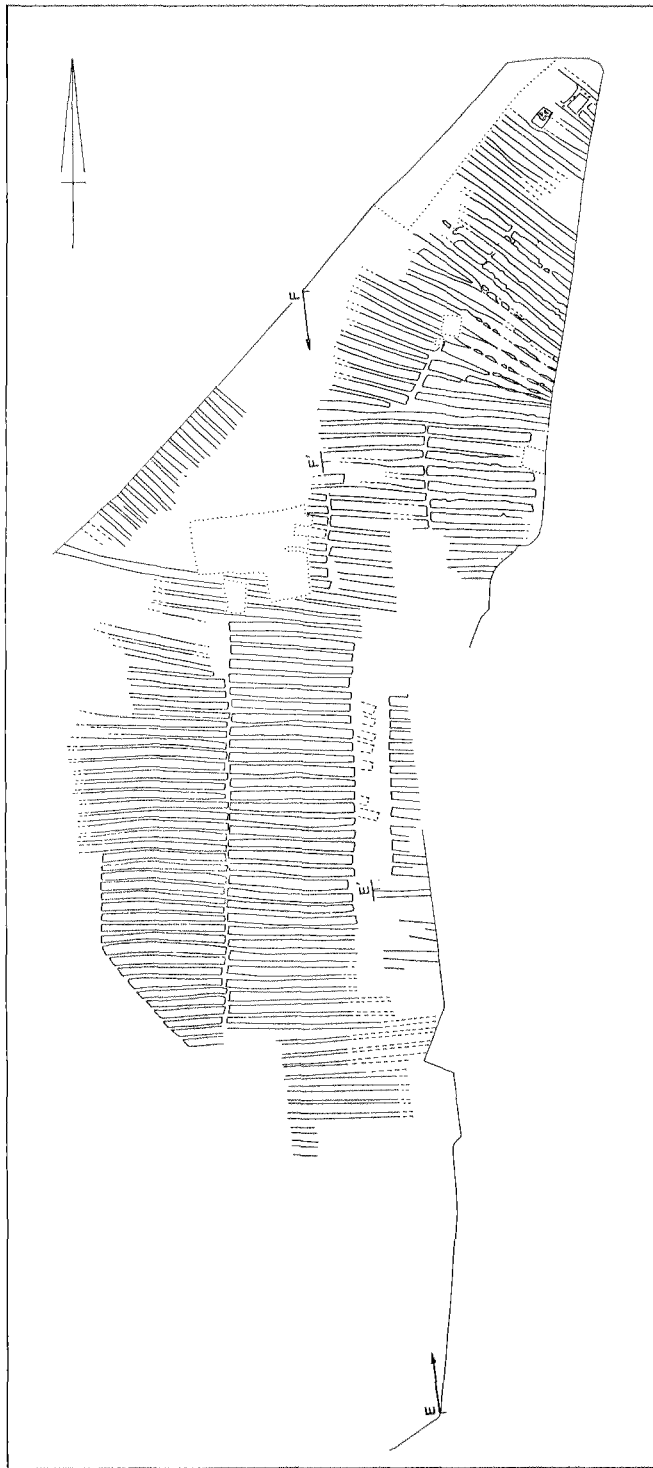


Fig. 6 Plan of the system of trenches (1:400)

of a fire. These pits, perhaps the traces of huts, probably belong to the same lay-out as the trenches.

The interpretation of the system of trenches is not simple. At first sight they seem to be reclamation trenches of the same type as are often found in the north of the Netherlands and northwestern Germany.<sup>24</sup> There they are connected with so-called *es*-layers, which have developed through the accumulation of dung mixed with sods. In Esch, however, no such *es*-layer is present. More differences can be pointed out, e.g. the distance between the trenches. Dr J.M.G. van der Poel, Curator of the Netherlands Landbouwmuseum, and Dr H.K. Roessingh, of the department of Agricultural History of the University of Agriculture, both at Wageningen, think that the trenches have something to do with the extraction of sand, in which process the site may have been dug down in successive banks. The sherds found in the trenches indicate that this would have been in the 17th–18th century. Mr F.W. Smulders later supported this theory by the following quotation from the deed Esch R. 28 (A.D. 1685–1690) fol. 95<sup>25</sup>: a homestead has *gerechtigheyt in den Collenberch. Sal hebben de helft van stroysel ende sant van den Collenberch ende de helft van het haut daerop wassende* (will be entitled to half the sand and half the timber of the Kollenberg).

The history of the excavation site can be summarized as follows: in Roman times a small ridge of sand projected above the immediate surroundings. Against the south-eastern slope (the lee side) three tumuli were constructed. The crest of the ridge<sup>26</sup> was later, probably in the Middle

24 Van Es 1967, 36–8 and the literature cited there.

25 In the collection of the Rijksarchief at 's-Hertogenbosch.  
26 It is possible that in the Middle Ages this ridge was called Buikberg. Mr F.W. Smulders inferred this from the following deeds in the Rijksarchief at 's-Hertogenbosch: 's-Hertogenbosch R. 1180 (A.D. 1396) fol. 407, 575, 614; id. R. 1183 (A.D. 1404) fol. 236<sup>v</sup>; id. R. 1188 (A.D. 1413) fol. 107<sup>v</sup>; id. R. 1192 (A.D. 1421) fol. 123<sup>v</sup>; id. R. 1207 (A.D. 1437) fol. 120<sup>v</sup>; id. R. 1208 (A.D. 1438) fol. 47; id. R. 1212 (A.D. 1442) fol. 25; id. R. 1213 (A.D. 1442) fol. 18, 128<sup>v</sup>; id. R. 1215 (A.D. 1445) fol. 180; id. R. 1216 (A.D. 1446) fol. 67, 70, id. R. 1217 (A.D. 1446) fol. 26, 257, 290, 324; id. R. 1218 (A.D. 1448) fol. 234; id. R. 1222 (A.D. 1452) fol. 337; id. R. 1224 (A.D. 1454) fol. 56<sup>v</sup>; id. R. 1227 (A.D. 1457) fol. 415; id. R. 1238 (A.D. 1469) fol. 186; id. R. 1241 (A.D. 1472) fol. 274<sup>v</sup>; id. R. 1247 (A.D. 1478) fol. 262, fol. 358<sup>v</sup>; id. R. 1252 (A.D. 1483) fol. 424; id. R. 1256 (A.D. 1487) fol. 25; id. R. 1260 (A.D. 1491) fol. 258<sup>v</sup>; id. R. 1267 (A.D. 1499) fol. 35; id. R. 1369 (A.D. 1550) fol. 50.

Ages, levelled off; in the process, the mounds above the graves were disturbed, but not the graves themselves. Connected or not connected with the levelling is an extensive system of trenches, presumably having its origin in the extraction of sand during the 17th–18th century. After this time, the ground has been used as arable land. In the period 1950–2 soil improvement was carried out on a large scale. The leached sand and the iron pan were dug off and transported to a near-by marshy terrain, after which the arable soil came to lie 1 m lower. During the operations, the graves from the Roman period were found.

### 3 THE COURSE OF THE INVESTIGATION AND THE CONSTRUCTION OF THE GRAVES

*Grave I* The seven intact pieces of pottery that Mr Ruys took home on 12 or 13 April 1950 are the only grave goods that have survived. Jug 1, 7 contained a quantity of cremation remains and had obviously served as a cinerary urn. No particulars of the construction of the grave are known. From the similarity of the pottery from grave I and graves II and III it may be assumed that grave I was also a tumulus. Near the place of the grave Mr Ruys noticed two rectangular stains containing a great deal of charcoal (measurements of both *c.* 1 m × 2 m), which may be interpreted as the remains of one or more funeral pyres.

*Grave II* On 10 April 1952 the ROB was notified of the find of another grave on the Kollenberg. This grave had been only slightly damaged by the digging. From the northeastern corner the undamaged glass bottle II, 12 and some pottery sherds and glass fragments had been brought to light.

Under Mr Bruijn's supervision the grave was excavated on 10 and 11 April, in great haste because Mr Ruys wanted to finish his work before a certain date in order to be able to apply for a subsidy. Moreover, the all-intruding ground water caused a great deal of trouble. For these reasons the course of the investigation had to be recorded mainly by photographs, and only the most essential measurements could be taken. Thus it is, for instance, no longer possible to establish the exact positions of some of the objects in the grave (see the diagram in fig. 73). If the data in the excavation report and the photographs are interpreted with due caution, the following facts may be noted concerning the lay-out and construction of grave II:

1 Traces of the digging of the grave-pit were visible just beneath the topsoil (plate XI: 2). In Roman times the ground-level seems to have been equal to or higher than the level at the time of excavation; *cf.* p. 199, grave III, 2.

2 In the north–south profile as well as in the east–west profile the filling consisted of (heather) sods (plate XI: 2); in the section the traces of the sods could be seen slanting downwards. From this, it may be inferred that the sods were used in building a burial-mound or tumulus, part of which fell into the grave after the roof of the tomb had caved in (*cf.* below, 8).

3 Not much can be said about the original measurements of the mound. Only the part that had fallen into the grave survived; presumably the tumulus was destroyed when the field was levelled; see above.

4 At the corners of the grave-pit and in the middle of the long sides, sturdy posts had been placed. The bottom of these posts was *c.* 50 cm deeper than the bottom of the grave-pit. The one in the western long side was trapeziform in cross-section (plate XII: 2; measurements of the trapezium: *c.* 20 × 50 × 34 cm).

5 The bottom of the grave-pit was *c.* 1.10 m below ground-level.

6 Against the posts, wooden walls had been erected within the pit. The planks had been fastened to the posts by iron nails *c.* 10 cm long, driven in from the inside; five of these were found (plate XII: 2).

7 The burial chamber that was thus formed measured at least 3.90 × 1.75 m. The height was *c.* 70 cm. The orientation was north-northeast–south-southwest. The term 'chamber' has been chosen because the walls must have been built on the spot; *cf.* p. 199, 9.

8 The chamber was covered by a wooden lid that must have collapsed in course of time; *cf.* 2.

9 In the southwestern corner of the grave, around the cremation remains, faint traces of a small chest (dimensions *c.* 50 × 50 cm) were observed. The bottom of the chest seemed to be on a lower level than the other objects in the grave; this would mean that, after the chest containing the ashes had been put in position, the grave was partly filled with sand before the other grave goods were placed in it.

10 The small jug II, 8 and the handled bowl II, 9 were presumably placed on the lid of the burial chamber. They came to light at the point at which an interruption was to be seen in the very dark band in the filling of the grave at the southern short side, above the level of the other grave-goods (compare plates XI: 2 and XII: 1).

11 Alderwood (*almus*)<sup>27</sup> was probably the material used for building the burial chamber.

Unfortunately, grave II, which later turned out to be the largest and most richly furnished grave of the Kollenberg, could not be inspected very well, owing to the unfavourable circumstances. Possibly some observations, particularly those concerning the construction of the walls, would have been interpreted differently if the floor of the chamber could also have been taken into consideration. In several publications<sup>28</sup> a coffin has been mentioned, placed within a 14 cm thick wooden lining. The dark rectangular band within the filling of the grave (plate XI: 2) has then been interpreted as the traces of a coffin, and the grey zone around it as a 14-cm-thick lining of the walls of the grave-pit. A satisfying explanation will be difficult to find; the investigation, however, has not been complete enough to justify the assumption of so exceptional a construction. The length of the nails (*c.* 10 cm) is also evidence against a lining 14 cm thick.

*Grave III* On Friday 25 April 1952, the work in the field having proceeded, one of Mr Ruys' neighbours struck the neck off a flagon (III, 14) with his shovel. Immediately the ROB was notified and on 28 April the excavation began, directed by Professor J.E. Bogaers.

The way in which the grave-pit and the topsoil joined could not be studied, as the soil had already been dug away completely. Drawings were made of the grave itself on three different levels. The results of the investigation can be summarized as follows (fig. 7):

1 The edges of a coffin were visible even above the highest level (A); within these were traces of heather sods that were also seen at a lower level. The rest of the grave was filled with leached sand. Obviously this was also a tumulus-grave, the lid of which had collapsed, after which part of the mound had fallen into the grave.

2 Outside the grave proper some traces of sods were visible, but not enough to establish the original dimensions of the grave-mound. They are an indication, however, that at the time when the graves were built the surface level was about equal to that at the time of excavation.

<sup>27</sup> On July 1962 Mr Ed. Frison of Antwerp examined some small fragments of wood that were found lying against the underside of the bronze ampulla II, 16. The fragments may belong to the wood of the burial chamber; but *cf.* 9.

3 Traces of nails were seen at the four corners of the coffin.

4 The grave was oriented approximately east-north-east–west-southwest.

5 The first traces of the edges of the coffin were visible 5 cm above level A (48 cm below the surface).

6 The underside of the bottom of the coffin was 82 cm below the surface; so the height of the coffin must have been at least  $82 - 43 = 39$  cm.

7 The length of the coffin was 2 m, the width 1.15 m.

8 The bottom of the coffin consisted of five planks used lengthwise, of which one protruded 10 cm to the north. They had completely decayed.

9 The bottom corners were provided with wooden reinforcements (the dimensions of these could not be established), to which the planks were fastened by nails driven in from the underside, as could clearly be seen in the southeast corner. This is an indication of the fact that the coffin was first constructed and afterwards let down into the grave-pit. For this reason the term 'coffin' has been used instead of 'burial chamber'; *cf.* p. 198, 7.

10 In the southeast corner of the grave, around the cremation remains, traces were observed of what was probably a small chest with somewhat rounded corners. It was placed immediately on the bottom of the coffin.

11 In the topsoil, the grave-pit, and the coffin several native-ware sherds were found.

12 Between the chest with the cremation and the long side of the coffin some fragments of burnt loam were found probably deriving from the pyre.

13 Several of the grave-goods must have been placed on the lid of the coffin. This applies particularly to the pieces III, 9, 19, 20, 29, and 36. These were all found on a level that was considerably higher than the bottom of the coffin (*cf.* the list following below).

List of finds from grave III with a record of the position of the individual pieces (plate XIII and the plan, fig. 74).

III, 1 (find-no. III, 27) Samian ware bowl, placed on the bottom of the coffin.

III, 2 (find-no. III, 18) colour-coated beaker, placed on the bottom of the coffin.

<sup>28</sup> Bogaers 1952; Van den Braak 1952; Van Doorselaer 1964, II, 338.

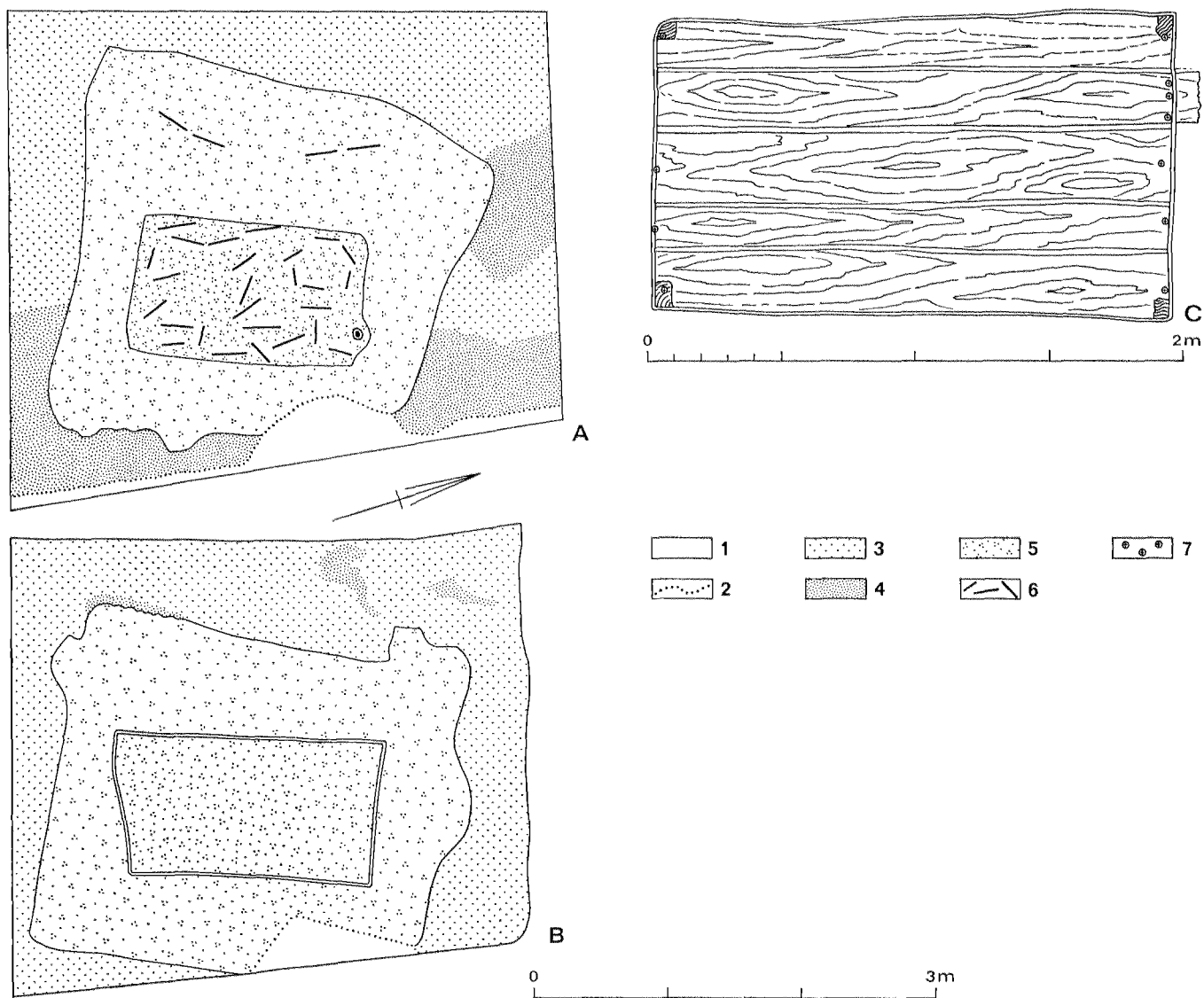


Fig. 7 Plans of grave III; A: 48 cm below surface level; B: 78 cm; C: 82 cm

1: recently disturbed; 2: boundary of recent disturbance; 3: leached sand; 4: iron pan; 5: filling of the grave pit; 6: heather sods; 7: traces of nails

III, 3 (find-no. III, 22) colour-coated dish, under the jar III, 27; a layer of sand 1 or 2 cm thick separated the bottom of the dish from the bottom of the coffin, as was also

the case with the two flagons III, 10 and 12.

III, 4 (find-no. III, 37) colour-coated dish, placed on the bottom of the coffin.

- III, 5 (find-no. III, 41) colour-coated dish, placed at an angle, or fallen that way, with the opening to the west; the lowest part was *c.* 3 cm above the bottom of the coffin.
- III, 6 (find-no. III, 38) colour-coated dish, placed on the bottom of the coffin; in it and under it red-burnt loam.
- III, 7 (find-no. III, 26) large colour-coated dish, placed on the bottom of the coffin. Remains of the wood of the coffin were found with it.
- III, 8 (find-no. III, 28) large colour-coated dish, placed on the bottom of the coffin.
- III, 9 (find-no. III, 40) flagon, lying down with the opening to the east; the lowest part was *c.* 10 cm above the bottom of the coffin.
- III, 10 (find-no. III, 20) flagon, with the opening to the south; placed on the bottom of the coffin (?).
- III, 11 (find-no. III, 36) flagon, lying down with the opening to the east; placed on the bottom of the coffin.
- III, 12 (find-no. III, 21) flagon, with the opening to the east; placed on the bottom of the coffin (?).
- III, 13 (find-no. III, 17) double-handled flagon, with the opening to the east; lying on the bottom of the coffin.
- III, 14 (find-no. III, 1) double-handled flagon, placed on the bottom of the coffin; neck damaged by the person who found the grave.
- III, 15 (find-no. III, 7) mortarium, placed with the side on the bottom of the coffin; opening to the south.
- III, 16 (find-nos. III, 14 and 16) patera with broken handle; placed on the bottom of the coffin.
- III, 17 (find-no. III, 8) jug, with the handle turned downwards; placed on the bottom of the coffin.
- III, 18 (find-no. III, 13) jug, with the opening to the south and the handle to the east; placed on the bottom of the coffin.
- III, 19 (find-no. III, 39) jug, lying with the opening to the north; lowest part *c.* 11 cm above the bottom of the coffin.
- III, 20 (find-no. III, 6) bowl; perhaps it had stood on the coffin, for it was found outside the grave on a level 4 cm higher than that of the bottom of the coffin.
- III, 21 (find-no. III, 15) cooking-pot, with the opening to the west; lying on its side on the bottom of the coffin.
- III, 22 (find-no. III, 10) large bowl, placed on the bottom of the coffin; fallen with the opening to the north.
- III, 23 (find-no. III, 23) dish, placed on the bottom of the coffin.
- III, 24 (find-no. III, 9) lid, lying on bowl III, 22.
- III, 25 (find-no. III, 12) lid, placed on the bottom of the coffin; under the lid a native-ware sherd (find-no. III, 46) was found, under the traces of the bottom planks.
- III, 26 (find-no. III, 42) lid, in the mortarium III, 15
- III, 27 (find-no. III, 19) jar, with the opening upwards; standing on the rim of the dish III, 3; the lowest part was *c.* 6 cm above the bottom of the coffin.
- III, 28 (find-no. III, 32a) glass bowl, intact; lying upside down on the glass unguentarium III, 39, which has not been conserved (type Isings 1958, 82 ?); both pieces were lying partly on the cremation chest.
- III, 29 (find-no. III, 35) glass bowl, on the flagon III, 11, the lowest part was *c.* 16 cm above the bottom of the coffin.
- III, 30 (find-no. III, 43) glass bowl (?), not conserved; lying under the glass bowl (?) III, 35.
- III, 31 (find-no. III, 34) glass bowl, partly resting on the flagon III, 11; the lowest part was *c.* 12 cm above the bottom of the coffin.
- III, 32 (find-no. III, 11) glass bowl, placed on the bottom of the coffin.
- III, 33 (find-no. III, 25) glass bowl, placed on the bottom of the coffin.
- III, 34 (find-no. III, 24) glass bowl (?), totally disintegrated; placed on the bottom of the coffin.
- III, 35 (find-no. III, 31) glass bowl (?), not conserved; lying on top of the glass bowl (?) (III, 30) that was also not conserved.
- III, 36 (find-no. III, 33) bulbous 'black' glass jar; the lowest part was *c.* 17 cm above the bottom of the coffin.
- III, 37 (find-no. III, 45) black glass bowl, shaped like a five-pointed star; placed on the bottom of the coffin; the double-handled flagon II, 14 had fallen obliquely across it, or had been placed that way.
- III, 38 (find-no. III, 30) cylindrical bottle, not conserved; placed on the bottom of the coffin.
- III, 39 (find-no. III, 32 b) glass unguentarium type Isings 1958, 82 (?), not conserved; lying under the glass bowl III, 28.
- — (find-no. III, 2) nail from the north-west corner of the coffin (in level A).
- — (find-no. III, 3) various native-ware sherds from the topsoil, the grave-pit, and the coffin.
- — (find-no. III, 4) nail, from the northeast corner of the coffin, a little lower than level A.
- — (find-no. III, 5) nail, from the southwest corner of the coffin, a little lower than level A.
- — (find-no. III, 29) cremation; traces of a small chest, which had rested immediately on the bottom of the coffin.
- — (find-no. III, 44) burnt loam, on the bottom of the coffin under bowl III, 30; *cf.* III, 6.
- — (find-no. III, 46) native-ware sherd, under the bottom of the coffin; *cf.* III, 25.



#### 4 THE CREMATION REMAINS

An investigation at the Institute of Human Biology of the State University, Utrecht (Director Professor J. Huizinga), proved that the material found in graves I and III is too fragmentary to allow conclusions to be drawn concerning sex or age of the individuals that had been cremated.<sup>29</sup>

#### 5 THE CONTENTS OF THE GRAVES<sup>30</sup>

a = size                      e = discussion and literature  
 b = fabric                    f = date  
 c = condition              g = references to other Esch tumuli  
 d = shape                    PVC = treated with polyvinyl chloride

##### Grave I

I, 1 (find-no. I, 5) Single-handled flagon: Brunsting 1937, 96 and pl. 4: type 5 (c) (fig. 8).

- a Height 187 mm; greatest diameter 124 mm.
- b White self-coloured ware ('pipe-clay') with a very smooth brownish-grey surface.
- c Broken and mended.
- d Pear-shaped body; rim slightly undercut; two-ribbed, rather angular handle; narrow base.
- e See I, 2.
- f II B - III A.
- g Cf. I, 2 and III, 9-11.

I, 2 (find-no. I, 2) Single-handled flagon: Brunsting 1937, 96 and pl. 4: type 5 (c) (fig. 9).

- a Height 183 mm; gr. diameter 121 mm.
- b Fabric similar to I, 1.
- c Broken and mended.
- d Shape largely similar to I, 1, but rim not undercut and markedly thick bottom.
- e Brunsting 1937, 96; Gose 1950, no. 383; Mertens 1955, 15, figs. 10 and 11.
- f II B-III A.
- g Cf. I, 1 and III, 9-11.

I, 3 (find-no. I, 3) Bowl with a tickening on the inner side of the rim: Brunsting 1937, 148 and pl. 7: type 9 (2) (fig. 10).

- a Height 82 mm; gr. diameter 167 mm.
- b Light-grey gritted ware with brown-grey surface, which seems to be slightly smoothed.<sup>31</sup>
- c Part of side and rim lacking; restored.
- d Groove just under the outer side of the rim.
- e Stuart 1963, 79, type 211.
- f II B and later.
- g Cf. III, 22.

I, 4 (find-no. I, 4) Beaker with bead rim: Holwerda 1923, 126 and fig. 93: type 186 (fig. 11).

- a Height 91 mm; gr. diameter 91 mm.
- b Thin ware similar to I, 3, with light grey, slightly smoothed surface.
- c Broken and mended.
- d Groove immediately below rim on the outside; flat base.
- e This type of beaker, deriving from the La Tène ware, occurs in various techniques; cf. Brunsting 1937, 124 *sqq.*, type 16, in particular 16 (c). Holwerda 1923, 126 dates: fairly early II. Related is Vanvinckenroye 1967, type 104. See also Stuart 1968, 73, no. 7; Lux/Roosens 1970, 37, grave XI, 4.
- f II and later.

I, 5 (find-no. I, 6) Bowl with flat rim: Brunsting 1937, 145 and pl. 7: type 5 (1) (fig. 12).

- a Height 90 mm; gr. diameter 155 mm.
- b Similar to I, 3.
- c Intact.
- d Flat horizontal rim on top of which two concentric grooves; mildly carinated sides with two girth grooves; flat bottom.
- e Stuart 1963, 77, type 210 B.
- f 1d-II c.
- g Cf. III, 20.

I, 6 (find-no. I, 7) Cooking-pot with a gully for the lid ('heartshaped in section'): Brunsting 1937, 94 and pl. 7: type 3 (a) (fig. 13).

- a Height 128 mm; gr. diameter 104 mm.
- b Similar to I, 3.
- c Intact.

<sup>29</sup> Cf. Huizinga 1952. Mr R.M.A. Bedaux carried out the investigation.

<sup>30</sup> Webster 1962 and Gillam 1968 have been consulted for the technical terms used in the description of the pottery.

<sup>31</sup> Cf. Brunsting 1937, 140, note 152.

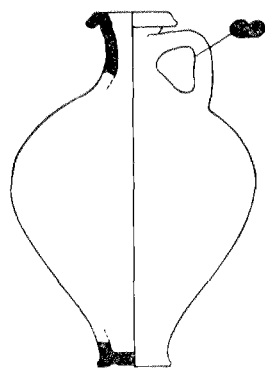


Fig. 8 1, 1 (scale 1:4)

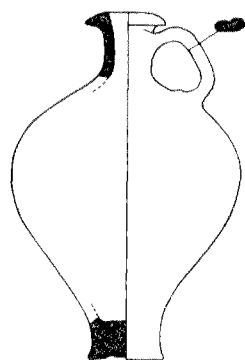


Fig. 9 1, 2 (scale 1:4)

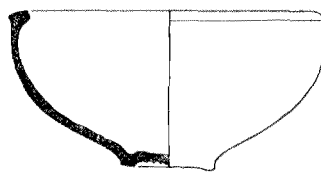


Fig. 10 1, 3 (scale 1:4)

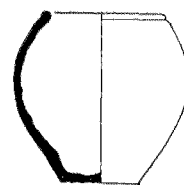


Fig. 11 1, 4 (scale 1:4)

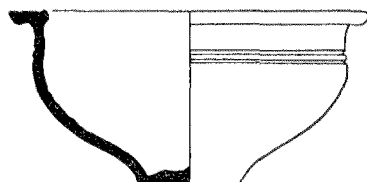


Fig. 12 1, 5 (scale 1:4)

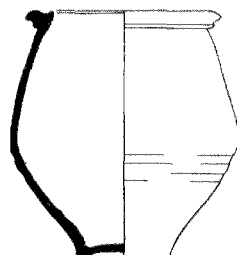


Fig. 13 1, 6 (scale 1:4)

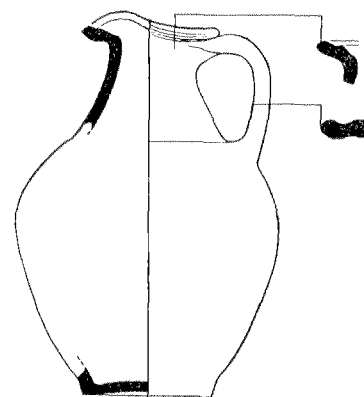


Fig. 14 1, 7 (scale 1:4)

d Shallow gully with the  $\alpha$  profile of Brunsting 1937, type 3, pl. 7.

e Stuart 1963, 74, type 203.

f II B and later.

g Cf. III, 21.

1, 7 (find-no. 1, 1) Wide-mouthed jug with pinched spout: Brunsting 1937, 151 and pl. 7: type 15 (fig. 14).

a Height 204 mm; gr. diameter 140 mm.

b Similar to 1, 3.

c Broken and mended.

d Shallow gully along inner side of the rim; two-ribbed handle, groove round the base of the neck; flat bottom.

e Brunsting 1937, 152 dates these jugs not earlier than III, possibly also from II. Some examples from Tongeren are dated II d-III A: Vanvinckenroye 1967, 58, type 119; id. 1970, 35, no. 5, and 44, no. 4 (dated II B-III A). Cf. also Gose 1950, no. 518 (= Oelmann 1914, type 97): late II - early III.

f II d-III

g Cf. III, 18.

*Grave II*

II, 1 (find-no. II, 10) Colour-coated beaker with steep sides and cornice rim: Brunsting 1937, 73 and pl. 3: type 2 (a) (fig. 15).

- a Height 140 mm; gr. diameter 141 mm.
- b White self-coloured ware with a dark-grey, partly olivaceous coating (Brunsting 1937, 74, technique b); rough-cast.
- c Broken and mended.
- d Finely profiled rim.
- e See II, 2.
- f 1d-II.

II, 2 (find-no. II, 9) Colour-coated beaker with steep sides and cornice rim: Brunsting 1937, 73 and pl. 3: type 2 (a) (fig. 16).

- a Height 155 mm; gr. diameter 133 mm.
- b Fabric similar to II, 1.
- c Broken and mended.
- d The rim is a little less finely profiled than that of I, 1.
- e See Stuart 1963, 22, type 2; id. 1968, 65.
- f 1d-II.

II, 3 (find-no. II, 8) Colour-coated beaker with steep sides and plain, rounded rim: Brunsting 1937, 75 and pl. 3: type 3 (b) (fig. 17).

- a Height 110 mm; gr. diameter 84 mm.
  - b Fabric similar to II, 1 and II, 2.
- Two zones of lightly executed rouletting.

- c Broken and mended.
- e See Stuart 1963, 23, type 3.
- f II-III.

II, 4 (find-no. II, 6) Double-handled flagon with funnel-shaped mouth: Brunsting 1937, 104 and pl. 4: type 20 (I) (fig. 18).

- a Height 261 mm; gr. diameter 142 mm.
- b Brownish-red, brick-like ware with very slight traces of white slip. Misfire, to judge from an irregular dent in the wall.
- c In many fragments, severely damaged by the ground water; restored.
- d Wide funnel-shaped mouth; flat handles joining neck and shoulder; egg-shaped belly; primitive base ring.
- e See Stuart 1963, 52, type 129 on the earlier stage in the development of these double-handled flagons. Evidently, all the double-handled flagons of Esch are of a later date, in view of the short neck, the slender form of the belly, the flat handle of II, 4, the handles of II, 5 and III, 13, and the narrow base. They belong to the Brunsting 1937 type 20,

dated II-III A and later. When the dating of Gose 1950, no. 406 (II B) is taken into consideration, it may be stated that the Esch double-handled flagons also date from later than the middle of the 2nd century, which results in a rough dating of the whole group in II B - III A. Within this group II, 4 seems to be the example to be dated earliest: it is between Stuart 1963, type 129 and Oelmann 1914, type 67. Cf. also Ettlinger 1949, 108 and table 26, 6 (a little earlier than II, 4).

- f II B.
- g Cf. II, 5 and III, 13.

II, 5 (find-no. II, 1) Double-handled flagon with funnel-shaped mouth: Brunsting 1937, 104 and pl. 4: type 20 (I) (fig. 19).

- a Height 375 mm; gr. diameter 220 mm.
- b White self-coloured ware with a smooth brownish-grey surface.
- c In many fragments; restored.
- d Two-ribbed handles joining rim and shoulder; greatest diameter in the middle of the belly; narrow base.
- e It seems that this double-handled flagon should be dated a little later than II, 4. See in addition to the literature cited with II, 4 also: Oelmann 1914, 60, type 67 a and figs. 39, 1 and 4; Holwerda 1923, 121 and fig. 90, 60 and 61; Fremersdorf 1933, 89 and plate 47, grave 37, 2; Müller/Tauchert 1959, 408 and fig. 40, 1.

- f 1d-IIIa.
- g Cf. II, 4 and III, 13.

II, 6 (find-no. II, 7) Double-handled flagon with girth grooves: Brunsting 1937, 105 and pl. 4: type 22 (fig. 20).

- a Height 321 mm; gr. diameter 310 mm.
- b Rather coarse light-grey ware with brownish-grey surface.
- c In many fragments; restored.
- d Outsplayed rim, triangular in section, with concave underside. Characteristic are the two-ribbed handles with a deep gully lengthwise. At the points of contact with the neck and the belly are deep thumb-indentations. Seven horizontal furrows have been made across the body of the vessel with a spatula, making it seem that seven cordons have been laid around it. Solid base ring with concentric groove on the underside.

e Literature in Brunsting 1937, 105. Also: Wolff 1899, 239 (dating: Domitianic-Hadrianic); Holwerda/Evelein 1911, 57 and fig. 44 g (from Voorburg-Arentsburg); Braat 1931, 23, nos. 9-11 (from Veldhoven). The type is particularly well known from Belgium: Del Marmol 1851,

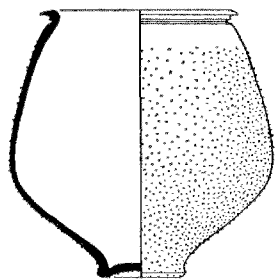


Fig. 15 II, 1 (scale 1:4)

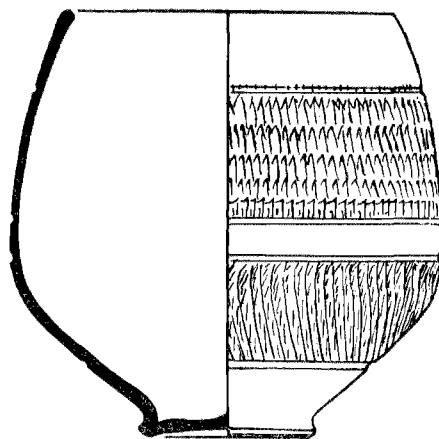


Fig. 17 II, 3 (scale 1:2)

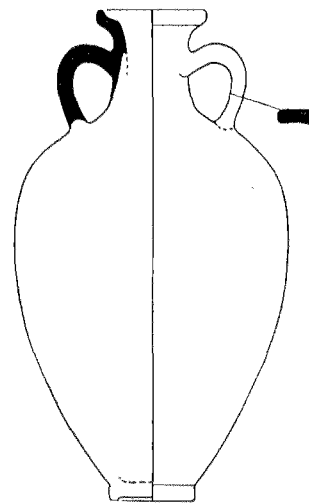


Fig. 18 II, 4 (scale 1:4)

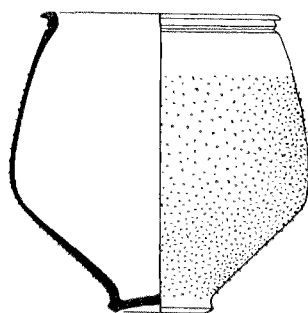


Fig. 16 II, 2 (scale 1:4)

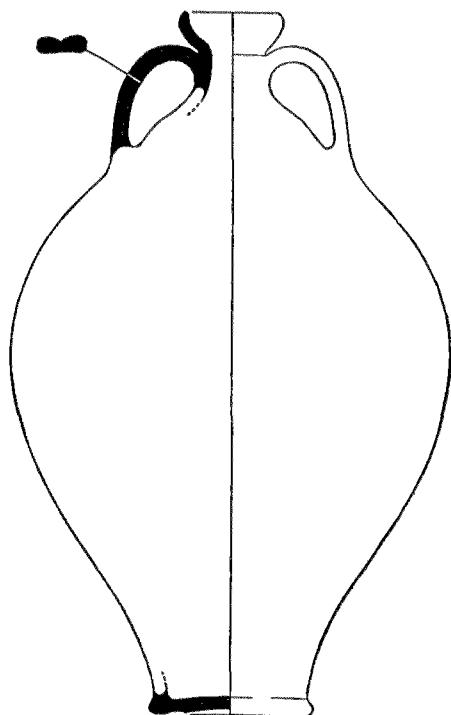


Fig. 19 II, 5 (scale 1:4)

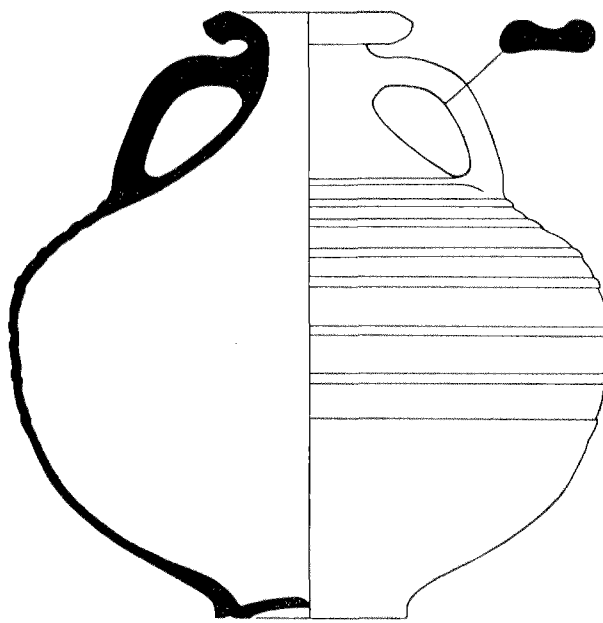


Fig. 20 II, 6 (scale 1:4)

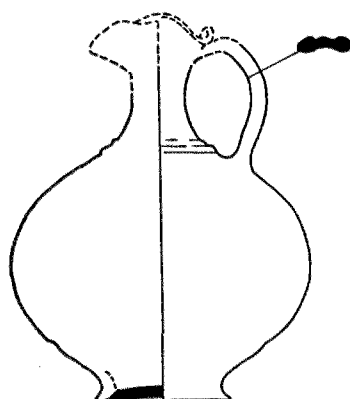


Fig. 21 II, 7 (scale 1:4)

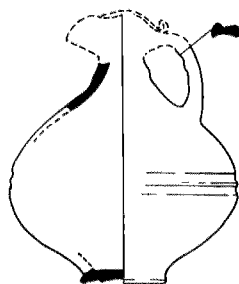


Fig. 22 II, 8 (scale 1:4)



Fig. 23 II, 9 (scale 1:4)

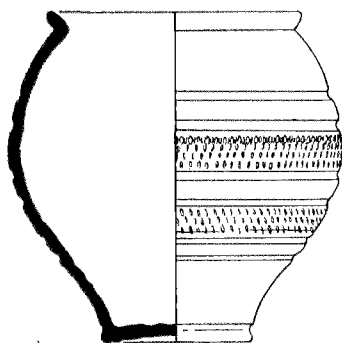


Fig. 24 II, 10 (c. scale 1:4)

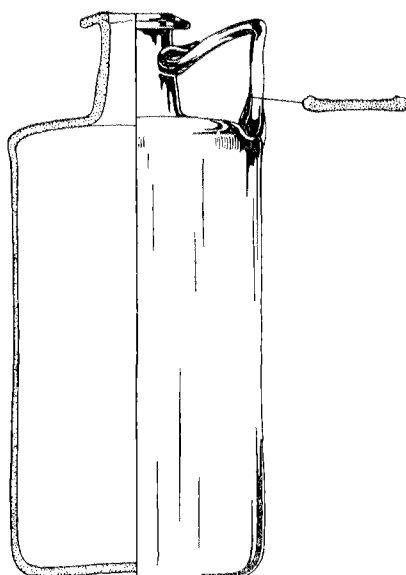


Fig. 25 II, 11 (scale 1:4)

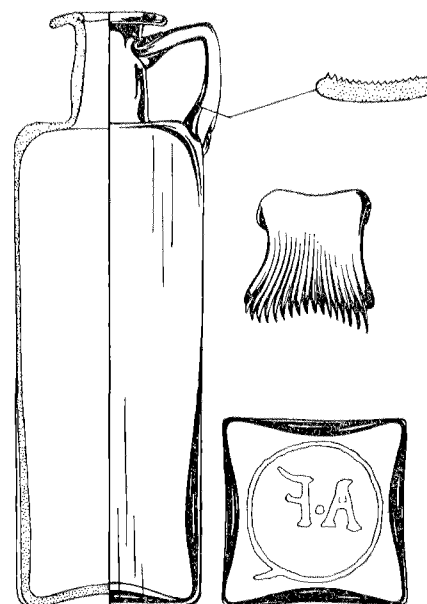


Fig. 26 II, 12 (scale 1:4)

68 and pl. II, 2 (from the southern tumulus at Champion<sup>32</sup>); De Loë 1895, 442 and pl. xxiv, 1 and 3 (from a tumulus at Tienen-Grimde<sup>33</sup>); Vanvinckenroye 1967, type 80 (dated: II); id. 1970, 44 and fig. 28, 2 (dated: II d-III A). See for the later development of this type of flagon: Gose 1950, no. 419.

f II-III A.

g Cf. III, 14.

32 Dating of the tumulus: Amand 1956: II B; Isings 1957, 105: Hadrianic-Antonine period; Van Doorselaer 1964, I, 212: II c.

33 The tumuli of Tienen/Grimde have generally been dated

II, 7 (find-no. II, 2) Bulbous jug; *vinarium*<sup>34</sup> (fig. 21).

a Height at least 202 mm; gr. diameter 164 mm.

b Light-grey self-coloured ware, slightly brick-gritted; greyish-brown smooth surface.

c Severely damaged; restored; the mouth has been wrongly reconstructed as a simple funnel-shape; cf. II, 8.

d Three-ribbed handle; two ridges where the neck joins the body; flat base.

to II B. Cf. De Loë 1895, 451: late I-early II; Poppelreuter 1906, 366: II B; Werner 1941, 29: late II; Amand 1950, 99, note 2: c. 190; Isings 1957, 96: II B; Van Doorselaer 1964, I, 33: late II.

34 Hilgers 1969, 297.

e The main criterion for the classification of this jug, the mouth, is lacking; in view of the shape of the belly it can best be considered a larger example of the same type as II, 8.

II, 8 (find-no. II, 3) Bulbous jug; *vinarium*<sup>35</sup> (fig. 22).

a Height at least 143 mm; gr. diameter 130 mm.

b Fabric similar to II, 7.

c Broken and mended. As with II, 7, the mouth of the jug is lacking.

d Two-ribbed handle; two girth grooves. The jugs II, 8 and II, 9 presumably both once had a mouth that was completely pinched, thus forming two spouts, one for filling and one for pouring; cf. III, 17.

e See II, 9.

f Mainly II.

g Cf. III, 17.

II, 9 (find-no. II, 4) Handled bowl; *patera* (fig. 23).

a Height 48 mm; length of handle 55 mm; diameter of bowl 142 mm.

b Fabric similar to II, 7 and II, 8.

c Broken and mended.

d Plain rim with slight thickening on the inner side; the handle is hollow, allowing the *patera* to stand upright even when empty; the open end of the handle is decorated with a concentric groove; base with slight kick in centre.

e *Paterae* with accompanying *vinaria* in tumulus graves are especially well known from Belgium: De Laet/Van Doorselaer/Spitaels/Thoen 1972, 25–26 (cf. also p. 55 types x and xi). See also: Schuermans 1863, 153 and pl. v, 15 and 21, from a tumulus grave at Vorsen (dated II B<sup>36</sup>); Van Doorselaer 1964, I, 109, from the tumulus grave at Hodeige (dated c. 160); Vanvinckenroye 1967, 60, type 132 (late II); Lux/Roosens 1970, 37, grave II, nos. 2 and 5 (dated II).

f Mainly II.

g Cf. III, 16.

II, 10 (find-no. II, 5) Beaker in Gallo-Belgic ware with small everted rim: Brunsting 1937, 117 and pl. 6: type 5 b (fig. 24).

35 II, 8 and 9 had been placed close together in the grave, just like III, 16 and 17; cf. plate XII: 1.

36 Cf. Amand 1950, 99: II B; Isings 1957, 98: II B; Van Doorselaer 1964, I, 148: II B.

a Height 161 mm; gr. diameter 160 mm.

b Fabric similar to II, 7–9. On the carefully polished light brown surface faint traces of an orange-brown coating are visible, especially on rim and shoulder.

c Broken and mended.

d Smoothly curved sides; the beaker is decorated with six girth grooves and two zones of lightly executed rouletting; fairly high base.

e Technique: De Laet 1947, 139, 199 (urn 23); Bogaers 1961, 38–40. Cf. Brunsting 1937, 118, beakers WW 4 and 5. Dating: Brunsting 1937, 117: Flavian–Traianic; Holwerda 1941, 42–43, nos. 473 ff: early II and possibly a little later; De Laet 1947, 295: 70–105 (but cf. the dating of these finds by Bogaers 1955<sup>37</sup>: IC—Traianic–Hadriatic); De Laet/Van Doorselaer/Spitaels/Thoen 1972, 49–50: Flavii—IIA.

f I d–II A.

II, 11 (find-no. II, 12) Cylindrical bottle: Isings 1957, 68, type 51 b (fig. 25).

a Height 300 mm; gr. diameter 132 mm.

b Bluish-green glass with some bubbles and streaks.

c Broken and mended; no weathering; many usage scratches.

d Lip folded outward, inward, and flattened, forming a slightly sloping, broad rim; short cylindrical neck; many-ribbed handle of similar glass; horizontal shoulder with a slight bulge at its junction with the body; concave plain base.

e Dating: Isings 1957, 68; id. 1971, 34, no. 111. The rim is comparable to those of the square bottles Charlesworth 1966, type 1 a/b.

f IB–IV.

II, 12 (find-no. II, 11) Square bottle: Isings 1957, 66, type 50 b (fig. 26).

a Height 311 mm; base 96 mm × 96 mm.

b Bluish-green glass with bubbles.

c Intact.

d Rim similar to II, 11; cylindrical neck with slight constriction at its junction with the body; many-ribbed han-

37 Thesis 16 accompanying the doctoral dissertation Bogaers 1955 runs as follows: The oldest pieces of the pottery found at Hofstade near Aalst (East Flandria) in 1946 may date from the third quarter of the 1st century A.D., the youngest date from the Trajanic–Hadriatic period.

dle of similar glass; horizontal shoulder; mark: Q with A.F. within (retrograde) (plate xiv: 1).

e Rim: Charlesworth 1966, type 1 a/b; mark: Isings 1971, 81, no. 160; dating: Isings 1957, 66, and id. 1971, 82: I-III. According to Charlesworth 1966, 30 these bottles were no longer in production after Hadrian.<sup>38</sup> They occur, however, three or four at a time in tumulus graves that undoubtedly cannot be dated earlier than IIB, e.g. in Penteville,<sup>39</sup> Walsbets,<sup>40</sup> Herstal,<sup>41</sup> Bois de Buis,<sup>42</sup> Val-Meer,<sup>43</sup> and Gors-Opleeuw.<sup>44</sup> The large number found in each grave is an indication that this type of bottle was produced at least during the whole of the 2nd century.

f I-III A.

g Cf. II, 13-15.

II, 13 (find-no. II, 13 b) Square bottle: Isings 1957, 66, type 50 b (fig. 27).

a Height 195 mm; bottom 72 × 72 mm.

b Bluish-green glass with many bubbles, among which occur two opaque white ones.

c Broken and mended.

d Rim similar to II, 11; many-ribbed handle of similar glass; horizontal shoulder; strongly concave base; mark: a diamond with a circle within it, surrounded by the letters CCPC (plate xiv: 2); pontil-mark.

e Rim: Charlesworth 1966, type 1 a/b; mark: Isings 1971, 28, no. 92; id. 80, no. 154; dating: see II, 12.

f I-III A.

g Cf. II, 12-15.

II, 14 (find-no. II, 13 c) Square bottle: Isings 1957, 66, type 50 b (fig. 28).

a Height 198 mm; bottom 68 × 68 mm.

b Bluish-green glass with many bubbles.

c Broken and mended; some fragments are missing.

d Shape similar to II, 13; mark similar to II, 13 but not identical (plate xiv: 3); pontil-mark.

e See II, 13.

38 Cf. also the dating of Harden 1959, 339 ('it may be that they were not made after A.D. 100'); id. 1968, 92 ('late I-II').

39 Penteville: Den Boesterd 1956, 27 (middle II); Isings 1957, 65 (late II); Van Doorselaer 1964, I, 12 (IIB).

40 Walsbets: Schuermans 1864, 346 (Antoninus Pius); De Loë 1937, 102 (Antoninus Pius); Isings 1957, 65 (late II); Van Doorselaer 1964, I, 37 (II B).

41 Herstal: De Loë 1937, 148 (early II); Amand 1950, 99 (about 160); Den Boesterd 1956, 26 (later than Hadrian); Isings 1957, 96 (II B); Van Doorselaer 1964, I, 108 (160-175).

42 Bois de Buis: Van Doorselaer 1964, I, 33 (IIB).

f I-III A.

g Cf. II, 12-15.

II, 15 (find-no. II, 13 a) Square bottle: Isings 1957, 66, type 50 b (fig. 29).

a Height 211 mm; bottom 59 × 62 mm.

b Bluish-green glass with many bubbles.

c Intact.

d Shape similar to II, 13; mark: two concentric circles surrounded by four squares (plate xiv: 4); pontil-mark.

e Rim: Charlesworth 1966, type 1 a/b; mark: Isings 1971, 28, no. 91; Fouet 1969, 279, fig. 145; dating: see II, 12.

f I-III A.

g Cf. II, 12-15.

II, 16 (find-no. II, 15) Iron horse-bit (fig. 30).

a Length snaffle c. 15 cm; outer diameter largest rings c. 82 mm; outer diameter smallest rings c. 35 mm.

c Severely corroded; the shape has been reconstructed with the help of X-ray photographs.

d Two-link snaffle with fairly large rings at the end of the links, for fastening them to the bridle. In turn, the rings pass through the loops at the ends of a slightly curved bar on which are one or two sliding rings, which perhaps served to attach a bearing-rein. The construction probably allowed both the snaffle and the bar to slide independently along the large rings. In view of the curve of the iron bar, it does not seem probable that this could have passed over the animal's nose;<sup>45</sup> indeed, in that case, the rings would have been in the way.

e A special feature of this bit is the bar passing under the horse's chin; cf. Daremberg/Saglio, s.v. frenum (G. Lafaye), fig. 3287. Very similar to the Esch bit is an example from Tienen.<sup>46</sup> A bit from Salet bei Wagen (St. Gallen) has a twisted iron bar.<sup>47</sup> Cf. also two examples from Newstead,<sup>48</sup> in which the shape of the bar shows more resemblance to a nose-piece.<sup>49</sup>

g Cf. II, 23.

43 Val-Meer: Van Doorselaer 1964, I, 148 (III).

44 Gors-Opleeuw: Lux/Roosens 1970 (middle II).

45 Cf. Trew 1951, 28, no. 23 and pl. VI, nos. 23 and 25.

46 De Loë 1895, 433 and pl. XXI, 1. For the dating of this tumulus grave see above p. 206, note 33. The example from Esch has been reconstructed independently of the bit from Tienen.

47 Laur-Belart 1946, 44 and fig. 29.

48 Curle 1911, 296 and pl. LXXI, 1 and 2.

49 Cf. Trew 1951, 28, note 45.

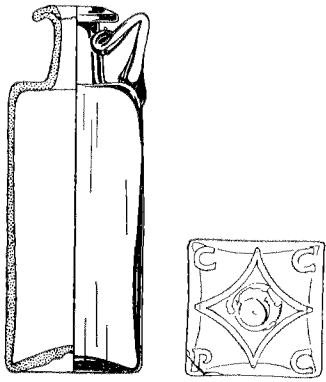


Fig. 27 II, 13 (scale 1:4)

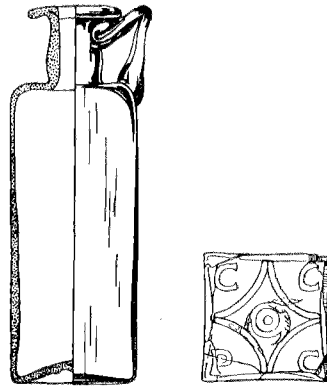


Fig. 28 II, 14 (scale 1:4)

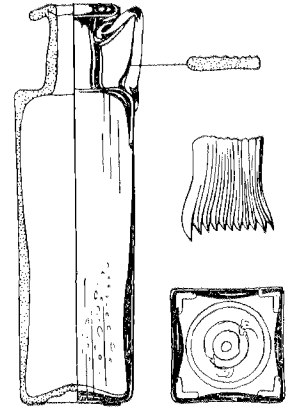


Fig. 29 II, 15 (scale 1:4)

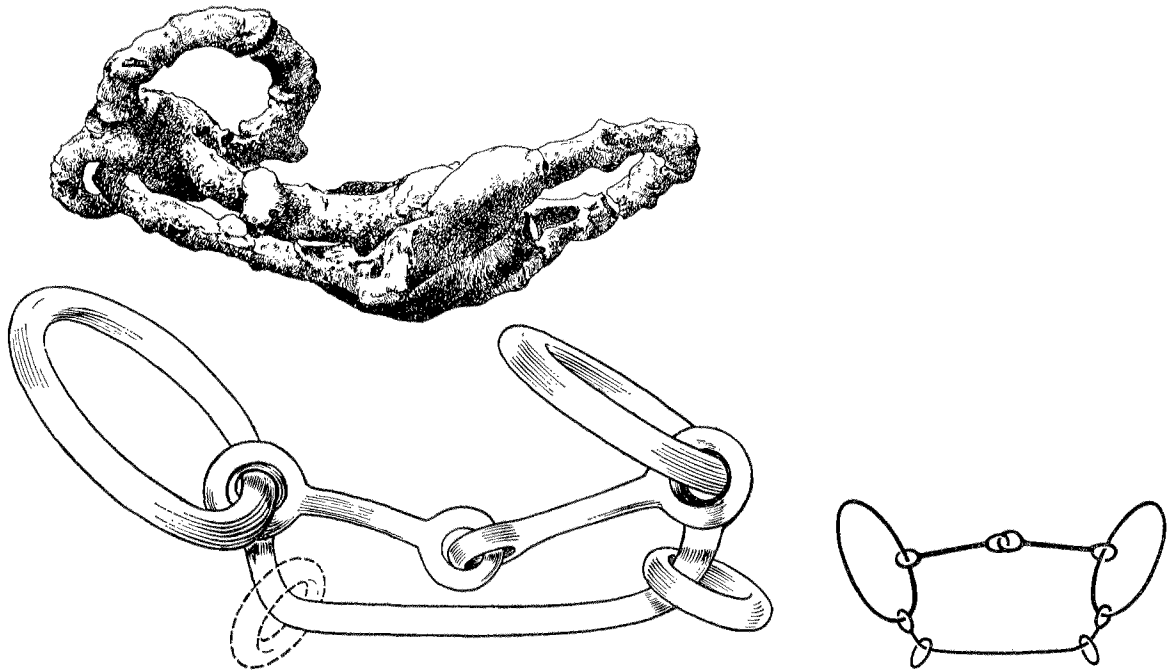


Fig. 30 II, 16 (scale 1:2)



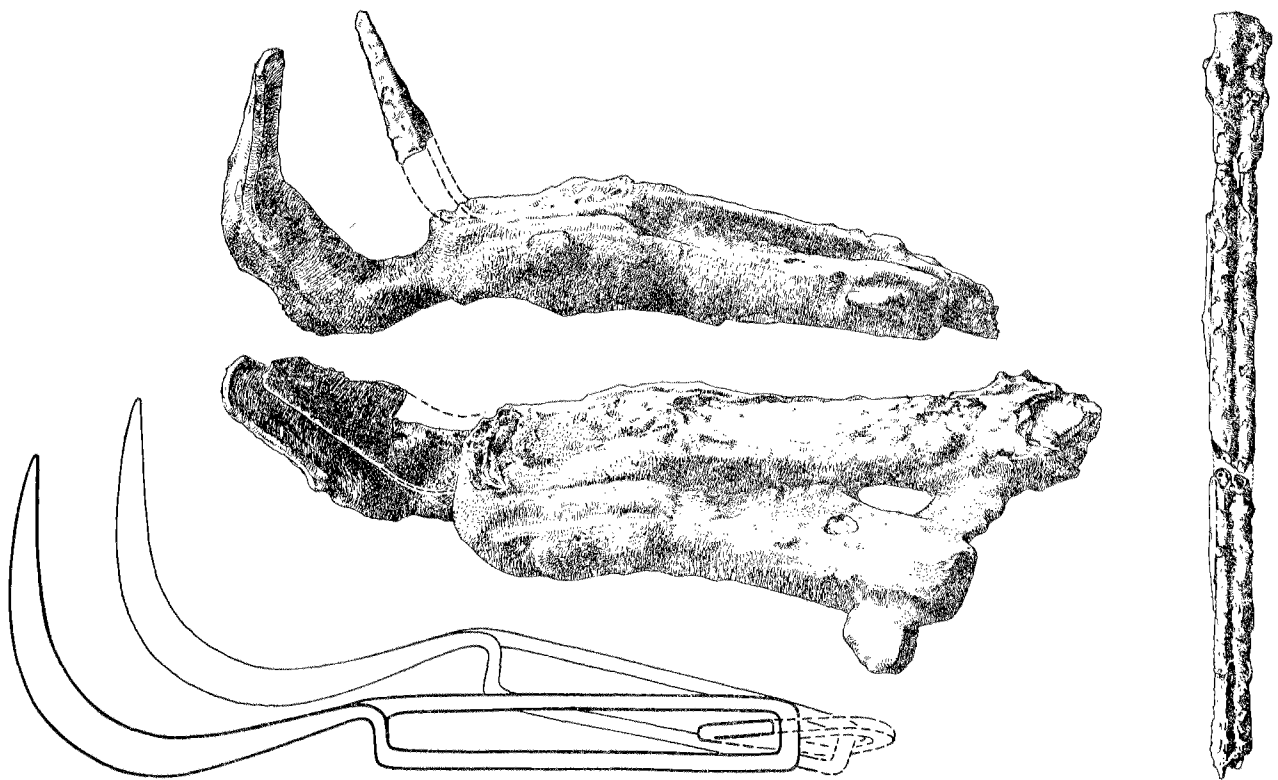


Fig. 31 II, 17 (scale 1:2)

Fig. 32 II, 18 (scale 1:2)

II, 17 (find-no. II, 27 c) A pair of iron strigils with a fragment of the carrying-handle (fig. 31).

a Handles of the scrapers: length *c.* 112 mm; width *c.* 25 mm; height *c.* 18 mm. Fragment of the carrying-handle: length 58 mm.

c Severely corroded; shape reconstructed with the help of x-ray photographs.

d The blade continues in an open-sided handle which is bent at a right angle; the horizontal bar of the arched carrying-handle shows a raised part in the middle, between the two strigils. The fastening of such handles is in the middle of the arched part and is based on the principle of tongue and groove.<sup>50</sup>

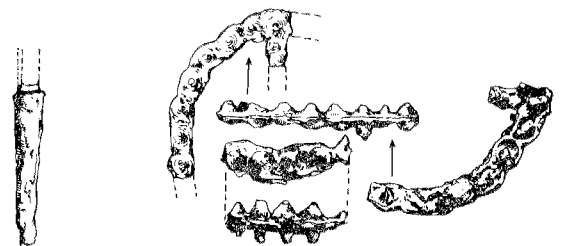


Fig. 33 II, 19 (scale 1:2)

Fig. 34 II, 20 (scale 1:2)

<sup>50</sup> For particulars of the carrying-handle *cf.* Bónis 1968, 35 and pl. 12. Only the part with the fastening has been preserved in the case of an example from the tumulus of Herstal, now in Brussels: *cf.* Renard 1900, 196.

e The use of scrapers as toilet appliances has been dealt with by Bogaers 1958/9, 200, and Bónis 1968, 38. They occur more than once in tumulus graves, *e.g.* at Herstal;<sup>51</sup> *cf.* Renard 1900, 188, with references to the tumuli of Berg<sup>52</sup> and St.-Huibrechts-Hern.<sup>53</sup> Two pairs of strigils were found in the (tumulus ?) grave of Bois-et-Borsu; *cf.* Hénaux 1907, 330.<sup>54</sup> A single one was found in the tumulus of Eben-Emael-Kanne, dated *c.* 100; *cf.* Roosens/Lux 1970, 17. *Cf.* also: Den Boesterd 1959, 120 (from a grave dated late II); De Laet/Van Doorselaer/Spitaels/Thoen 1972, 73 and 81 (grave 7, from the Flavian period).

g The scrapers should be related to the bronze ampulla II, 24; *cf.* p. 212. On the handle of one of them the impression of a piece of textile is visible in the rust (II, 33), *cf.* p. 217.

II, 18 (find-no. II, 17 b) A pair of iron rods and an iron needle in a case (plate xv and fig. 32).

a The rod fragments are 200 mm long; diameter  $\pm$  3 mm. The needle fragment is 85 mm long; diameter 1 mm.

c Five fragments, all severely corroded.

d Each rod was encased in a separate compartment of a double case, probably made of some kind of organic material, perhaps leather, that has totally merged with the rust of the rods. At the places of fracture the rods and the needle can be seen as cylindrical hollow cores within the remains of the case. This is not the original condition; owing to the process of corrosion only the outer surface of the originally solid rods has remained. The upper edge of the case is visible as a sharp ridge across the front of the rods. The upper ends of the rods, which have been slightly flattened, project about 20 mm beyond this ridge, the upper end of the needle, in which no eye can be discerned, about 7.5 mm. The rods must have been somewhat profiled, as is shown by four parallel grooves about 1 mm wide, approximately halfway the fragments; these are visible on the concave inner side of one of the rods. The needle is entirely smooth. The rods seem to taper towards the lower end. Both end in slightly rounded points.<sup>55</sup> At the back are remnants of wood, down the length of which a seam is clearly visible. These may be the

remains of the wooden back of the case, but it is more probable that the wood derives from the cremation-box on which the rods had been laid (*cf.* fig. 73).

e In view of the piece of knitting II, 30, the most attractive supposition is that the rods are two knitting-needles.<sup>56</sup> Their length (more than 200 mm) and the flattened upper ends, comparable to the knobs of modern knitting-needles, speak in favour of this. The fact that they were found in a case together with a needle fits very well with this interpretation.<sup>57</sup> The grooves, however, speak against the hypothesis, as knitting-needles should be smooth. The fact that the surface is profiled could point to *stili*, which have also been found two in one case,<sup>58</sup> but the length of the rods and the rather blunt ends seem inconsistent with this notion. As long as the 'knitting-needles' and the 'knitting' from Esch cannot be compared with any other such find of Roman date, the question whether needle-knitting was known as early as that will have to remain without a definite answer.

g *Cf.* II 30.

II, 19 (find-no. II, 17 a) Pointed iron object (fig. 33).

a Length 42 mm.

d Originally solid, tapering object, square in cross-section. It is enclosed in a cover, originally consisting of some organic material, but now completely merged with the iron rust. During the excavation it was thought that the end was fastened in a wooden handle, suggesting an awl or some similar object.

II, 20 (find-no. II, 16 a-b) Iron sole protectors (fig. 34).

d Remains of sole protection, consisting of about 70 hobnails, not heavily worn down, which originally were driven in a row through the outer sole and the middle sole of the shoe. Inside the shoe the nails were riveted and covered by an inner sole. The hobnails have now rusted together and look as if they were strips of iron on which knobs have been fixed.

e No conclusions can be drawn as regards the type of shoe.<sup>59</sup>

51 For the dating see p. 208, note 41.

52 Van Doorselaer 1964, I, 127.

53 *Id.*, 144.

54 Dating of this grave: late II; *cf.* Den Boesterd 1956, 26.

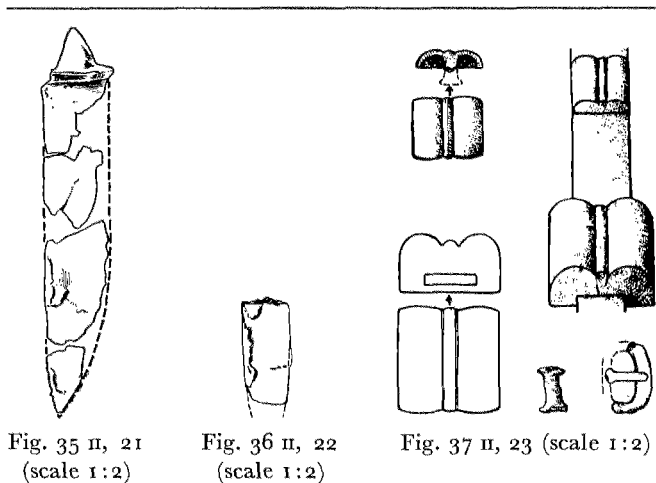
55 The least sharp of the two points has since broken off.

56 *Cf.* Bogaers 1965, 145 (remains of similar rods from a grave at Wijchen, dated end of the 1st, beginning of the 2nd century); Wild 1970, 60. Also: Leemans 1842, 251, no. 42.

57 *Cf.* British Museum Guide 1908, 161, no. 395, fig. 169.

58 Bónis 1968, 33.

59 *Cf.* Groenman-Van Waateringe 1967, 129-146, espec. 145, note 2.



II, 21 (find-no. II, 21 a) Fragment of a small iron knife (fig. 35).

a Length of blade at least 90 mm; width of blade 18 mm.  
d Four fragments; part of the tang still visible; straight back, slightly curving edge.

e Nothing further can be said about the dating of this kind of knives. Cf. Jacobi 1897, I, 437-8; id. II, pl. 37; Fremersdorf 1933, 96-8, pls. 50, 55, and 56; Salamon 1957, 371, pl. 68, nos. 27 and 31; id. pl. 71, nos. 19 and 20.

II, 22 (find-no. II, 22 b) Fragment of a small iron knife (fig. 36).

a Length 22 mm.

d Part of a blade that does not belong to II, 21; on the part that remains fragments of the sheath have survived, originally consisting of organic material but now completely merged with the iron rust.

II, 23 (find-no. II, 14 a-b-c-d) Bronze leather-mountings (fig. 37).

a 1 Rivet (find-no. II, 14 a), length 14 mm; 5 mounts (find-no. II, 14 b), 18 × 18 mm, fairly intact; 4 mounts (find-no. II, 14 c), 25 × 25 mm, very fragmentary; 1 buckle (find-no. II, 14 d), length 19 mm.

d The 5 small pieces of bronze are provided with back studs, by means of which they could be riveted to a leather surface. The 4 larger pieces are pierced by a narrow slit (the slit is 13 × 2 mm) allowing them to be slid on a leather strap.

e Presumably these bronze objects were all attached to a leather strap that, in view of its position next to the bit, was part of a horse-harness. See for a comparable piece of leather-mounting Radnóti 1957, 235, no. 69 and pl. 49, 12. For (iron) buckles Salamon 1957, 365 and pl. 68.

g Cf. II, 16.

II, 24 (find-no. II, 27) Bronze ampulla in the form of a Bacchus bust. Plate XVI.

a Height of the bust 147 mm including ring, 137 mm without ring; pedestal 32 mm; handle 47 mm.

b-d For the technique, the state of preservation, and the discussion of this piece the reader is referred to the second volume of the corpus of Roman bronze figurines in the Netherlands,<sup>60</sup> in which also an extensive series of photographs of the bust can be found.

e Anthropomorphic vessels occur in many different cultures, from the earliest times until today. Very archaic ideas are at the origin of this type of vessels.<sup>61</sup> A characteristic kind of bronze anthropomorphic vases was popular in the provinces of the Roman Empire, especially during the 2nd and 3rd centuries. These vases are distinguished by a small lid in the head and a hinged handle. They may or may not have a pedestal. In the literature they are referred to by various names, according to the opinion of the writer as regards their function.<sup>62</sup> Although it is possible that not all of the vases were used for the same purpose, it is most probable that they were meant to transport a liquid over some distance. This is suggested by the hinged handle, which apparently served to keep the vase in balance while being carried. A further remarkable fact is, that among the few examples of which the circumstances in which they were found are known, a relatively large amount were found accompanied by one or two strigils.<sup>63</sup> The size, the fastening of the lid,<sup>64</sup> and the

60 Zadoks-Josephus Jitta/Peters/Van Es 1969, 30.

61 Richter-Raab 1967, 2.

62 E.g. vase à parfums, vase à encens, brûle parfum, balsamarium, Parfümbehältnis, Salbgefäß; cf. Malaise 1970, 148, note 1.

63 Scrapers were found not only with the vase of Esch, but also with the examples from Straldza and Wärbovka: Danoff 1937; Rila and Kostolac: Bach 1936; Cologne: Hagen 1906,

404, pl. xxiii, 32 (see also pl. xxiii, 37 and pl. xxiv, 39); probably also with an example from Leskovec: Lahtov 1961. So altogether with 6 (7) examples or with 12 (14) % of the 49 pieces in the catalogue of Majewski 1963 of which the find-places are known.

64 See for instance the similarity of the ampulla from Gronsveld (Zadoks-Josephus Jitta/Peters/Van Es 1969, 140) and the one from Stein (Bogaers 1958-9, fig. 18 opposite p. 201).

handle indicate that we should regard them as *ampullae*, more in particular as *ampullae oleariae*,<sup>65</sup> jars or bottles, often made of glass,<sup>66</sup> which we know to have formed a regular combination with the strigils.<sup>67</sup>

In a study that appeared in 1963, K. Majewski catalogued a total of 116 of these *ampullae*.<sup>68</sup> To these may be added: 1 example from Turkey,<sup>69</sup> 3 from Yugoslavia,<sup>70</sup> 6 from Germany,<sup>71</sup> 2 from the Netherlands,<sup>72</sup> 2 from Belgium,<sup>73</sup> 9 from France,<sup>74</sup> 3 from England,<sup>75</sup> 6 from Spain,<sup>76</sup> 1 from Morocco,<sup>77</sup> 1 from Nubia,<sup>78</sup> 1 from Switzerland(?),<sup>79</sup> and 1 example, now lost, of unknown provenance.<sup>80</sup>

Among the group of about 150 anthropomorphic *ampullae* thus formed, about 15 examples can be distinguished, the features of which show a more or less marked resemblance to Antinous.<sup>81</sup> Of this group, the Esch ampulla is the most pronounced type, both in features and in hairstyle. They are more 'Antinous-like' than those of the example in Dumbarton Oaks,<sup>82</sup> which in all other respects is very much akin to the Esch *ampulla* (plate xvii). The strong resemblance notwithstanding, it is not Antinous who is represented by both figurines, but

Bacchus, whose iconography was strongly influenced by the portrait of Antinous.<sup>83</sup>  
f 2nd third part of II.<sup>84</sup>

II, 25 (find-no. II, 25 a) Disc brooch<sup>85</sup> (fig. 38).

a Diameter c. 36 mm.

b The following fragments have survived: parts of the base, the diameter of which was c. 36 mm; the complete

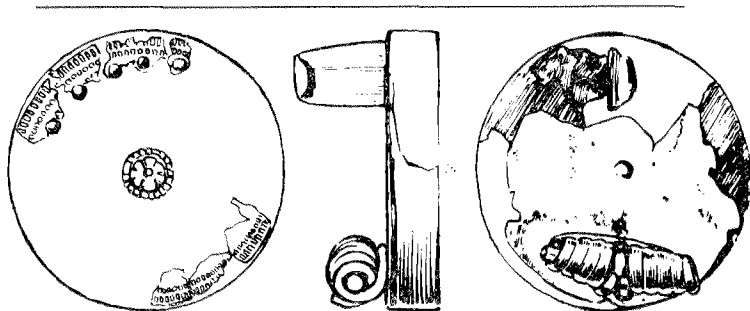


Fig. 38 II, 25 (scale 1:1)

65 Cf. Daremberg/Saglio s.v. *ampulla* (E. Saglio), especially fig. 292; Hilgers 1969, 38 (in note 203 3 glass *ampullae* with bronze handles are mentioned); also Bogaers 1958-9, 200; Bónis 1968, 42. *Contra*: Fleischer 1967, 136.

66 Isings 1958, form 61.

67 Cf. Daremberg/Saglio s.v. *strigilis* (S. Dorigny). Renard 1900, 178, Bach 1936, 168, and Bónis 1968, 42, also connect the bronze vases with the scrapers found with them, but the authors do not use the term *ampulla*.

68 Majewski 1963.

69 From Herakleia, now in Istanbul: Bach 1936.

70 From Kostolac and Sremska Mitrovica: Bach 1936; from Leskovec: Lahtov 1961.

71 1 from Cologne: Loeschcke 1911, 1, 224, no. 4286; 2 in Hannover: Lebel 1965; 2 from Mainz and 1 in Wiesbaden: Grimm 1969, 50.

72 Besides the example from Esch also 1 example from Gronsveld: Zadoks-Josephus Jitta/Peters/Van Es 1969, 140, and 1 example in Nijmegen: Zadoks-Josephus Jitta/Peters/Witteveen 1973, 6.

73 1 from Tongres and 1 from Namur: Malaise 1970.

74 1 from Lillebonne, 1 from Cimiez-Nice, 1 from Aisey-le-Duc, 1 from Pont-Verdunois, and 5 in Lyon: Malaise 1970, 143; 1 in Dijon: Jucker 1961, 166, note 1.

75 In the catalogue of the British Museum 2 examples are mentioned: Walters 1899, 152, no. 845 and 1718. Cf. also the nos. 756-70. No. 76 in the catalogue of Majewski 1963 (British Museum no. 1564), however, should be deleted. Further 1 example from Carlisle: Webster 1973.

76 García y Bellido 1949, nos. 485-9. Further 1 example from Santo-Tomé: Malaise 1970, 143.

77 From Volubilis: Malaise 1970, 143.

78 From Faras: Richter-Raab 1967, 115, no. 123.

79 Now in Dumbarton Oaks, Washington D.C.: Clairmont 1966, 13, note 5. Two more examples referred to by Clairmont are mentioned in literature that was inaccessible to the present writer.

80 Jucker 1961, 166, fig. 48; cf. also fig. 47.

81 Clairmont 1966, 13, note 5, mentions 10 Antinous-like examples. Comparable to these are the example of the British Museum: Walters 1899, 152, no. 845 (cf. also no. 846) and the example from Carlisle: Webster 1973. Further perhaps the examples from Sremska Mitrovica: Bach 1936; from Trier: Majewski 1963, no. 42, and from Cologne: Majewski 1963, no. 22 (cf. Malaise 1970, 153, note 16). Perhaps also Majewski 1963, no. 103.

82 Miss Electra Yorsz, assistant curator of the Byzantine Collection of Dumbarton Oaks (Washington D.C.), kindly supplied some particulars of this unpublished example: acquired in 1963 from a Swiss dealer; height 180 mm (including rings), 160 mm (without rings), 215 mm on pedestal (including rings).

83 Bracker 1967, 236, no. C 164; cf. also id. 238, no. C 171.

84 Bracker 1967, 236.

85 Dr H.J.H. van Buchem, Nijmegen, kindly helped identify this brooch.

10-coil spring at the underside. The pin has broken off and disappeared, the catch-plate is intact. These parts are all in silver, or possibly silver-plated bronze. In the centre of the base is the riveted lower end of a silver pin. A small cylinder had probably been attached to the base. This cylinder has not survived, but to judge from the remains of the original filling it was *c.* 7 mm high. The filling is an unknown, perhaps organic material, somewhat resembling brown earthenware. The following fragments of the upper side survived: some pieces of gold leaf with chased rows of dots, a raised rosette in gold leaf, and 16 silver nails with profiled heads, of which 8 are *c.* 3 mm long and the rest a little shorter.

c By means of PVC the brooch has been reconstructed as a flat disc brooch.

d The round base with the riveted pin in the centre, the rosette that crowned the upper end of the pin, and the silver nails that, witness the impressions in the piece of textile II, 31 (fig. 43), were mounted on the upper side of the brooch in a circle or two concentric circles, allowed the identification of this ornament as a disc brooch of the type Tienen/Stockbronnerhof, examples of which were found at Tienen, Stockbronnerhof, Saalburg, Zugmantel, and Nijmegen.<sup>86</sup> J. Werner relates these brooches to the manufacturer Saciro, who may have worked in Gallia Belgica or in Germania Inferior, perhaps in Cologne.

f Late II-III A.

II, 26 (find-no. II, 22-4) Fragments of ornaments (?).

$\alpha$  (find-no. II, 22) Piece of silver thread with the ends rolled inwards; length 28 mm (fig. 39).

$\beta$  (find-no. II, 23) 7 pieces of twisted silver thread; total length 70 mm (fig. 40).

$\gamma$  (find-no. II, 24) Pieces of an unknown, perhaps organic, brown material, similar to that of brooch II, 25 (fig. 41).

II, 27 (find-no. II, 28 a) Oval piece of gold foil with embossed portrait (Caracalla?); plate XVIII: 1.

a Greatest length 17.5 mm; greatest width 14 mm.

b An extremely thin gold foil<sup>87</sup> disc on a surface of some highly decayed matter, perhaps lead.

86 Werner 1941; id. 1943; id. 1950, 29, map 6; Böhme 1972, 42. See for the example from Nijmegen: Van Buchem 1941, 116, pl. 19, 9.

87 Presumably gilded silver.

88 Hoffmann/von Claer 1968, 222; Higgins 1961, 12.



Fig. 39 II, 26  $\alpha$  (scale 1:1)



Fig. 40 II, 26  $\beta$  (scale 1:1)



Fig. 41 II, 26  $\gamma$  (scale 1:1)

c The disc is torn and crumpled; a central fragment is missing.

d The relief was probably made by pressing a gold foil disc, covered by a piece of some plastic material, perhaps lead, in a mould.<sup>88</sup> The edge of the mould left a sharp oval impression in the disc. The portrait shows a man's head crowned with laurels, turned to the left. Faint traces of a beard are visible at the height of the cheek-bone. Very little can be discerned of the clothes.

e The laurels are evidence that the portrait represents an emperor. It strongly suggests a depiction of Caracalla (212-217), in particular because of the strong nose, the full lips, the thick neck, and the light beard<sup>89</sup>; cf. plate XVIII: 2. The portrait is not the direct impression of a coin, since in that case part of the legend would be visible. On coins, moreover, the head is almost invariably turned to the right. The artist should be imagined working with

89 RIC v, pl. 61, 1 and 2; Budde 1951, 17 and pl. 3a. Mr J.H. Evers, formerly assistant curator of the Royal Collection of Coins, Medals, and Cut Gems in 's-Gravenhage, kindly lent assistance in the study of this disc.

a mould in intaglio, manufactured after a coin, that is, with the head turned to the right. By pressing a piece of gold foil in the mould in the way described above, he obtained a design in relief with the head turned to the left. The disc probably formed part of an ornament, *e.g.* the medallion of a necklace. Such imitation coins were found throughout the Roman Empire.<sup>90</sup> Comparable to the Esch specimen are five discs bearing a portrait of Julia Mamaea (222–235) which were worked into a diadem found in Jerusalem.<sup>91</sup>

f Later than 212 (?).

II, 28 (find-no. II, 28 b) Rectangular piece of gold foil with embossed design; plate XIX: 1.

a Length 26.5 mm; greatest width 10.5 mm.

b Fabric similar to II, 27.

c The piece is torn and broken.

d Technique similar to II, 27. The design consists of two dolphins swimming towards each other, a trident lying above them, and a continuous (?) undulating line beneath them. Around the whole is an oblong, caused by the edge of the mould.

e The motif of one or two dolphins accompanied by a trident exists in numerous variations and in very different contexts.<sup>92</sup> In some cases the connection with sea-gods<sup>93</sup> or navigation<sup>94</sup> is clear, in which cases the prophylactic character of the dolphin becomes prominent.<sup>95</sup> In a more playful way the motif was used for the decoration of floors of baths,<sup>96</sup> and of objects that were used in the bath, *e.g.* scrapers.<sup>97</sup> The motif occurs also on pottery<sup>98</sup> and lamps.<sup>99</sup> Dolphins were also thought to convey the souls to the Lower World<sup>100</sup> and for that reason very often occur on grave monuments.<sup>101</sup> It is, however,

highly improbable that such a symbolical value should be ascribed to the design on the piece of Esch. This is more probably part of an ornament – perhaps the same as the one to which II, 27 belonged – that symbolized in a simple way the motions ‘water’ or ‘sea’.<sup>102</sup>

II, 29 (find-no. II, 29) Fly; plate XIX: 2.

a Length 10 mm; greatest width 6.5 mm.

b The fabric is a kind of paste resembling brown earthenware (*cf.* the brooch II, 25). Presumably this fly was also covered with gold leaf.

e What sort of insect is it? A bee, a fly, or perhaps a cicada? It is not to be expected that such an ornament is a zoological representation exact in detail. Still, the head, with two eyes and something like a suctorial mouth, strongly resembles that of a fly. On both wings oblique lines, stylized veins, have been drawn. The size of the insect, moreover, is that of a fly, not that of a bee or a cicada. When compared to depictions of flies, bees, and cicadas on cameos and coins,<sup>103</sup> this example is most akin to a fly. Bees are characterized by the position of the wings which leave more of the abdomen free than those of flies. The cicadas have longer and more triangular wings set close together, as is shown *e.g.* by the brooch in the form of a cicada in the Noordbrabants Museum at 's-Hertogenbosch (plate XIX: 3).<sup>104</sup> Like the dolphins, the fly could be an instance of a specific death-symbolism.<sup>105</sup> The present writer prefers to regard the fly as an ornament of some kind, which may have had a prophylactic significance.<sup>106</sup> The back of the object is entirely smooth. The fly may have been attached to a ring, or to a surface of textile, like the 91 small flies in the archaeological museum at Aquileia.<sup>107</sup>

90 See Rahmani 1960, 144, note 13.

91 Rahmani 1960, 143 and pl. 20 B.

92 Stebbins 1929.

93 *RIB* 1319.

94 *Id.* 258; Cumont 1942, 503.

95 Picard 1933.

96 Parlasca 1959, 40, note 4.

97 Bónis 1968, 52.

98 Oxé 1933, 53, no. 34 and pl. 10.

99 Dencauve 1969, 202, no. 974; see also Van Doorslaer 1967, 121.

100 Best 1971, 243 and the literature cited there.

101 Brusin 1934, 221, fig. 130; *RIB* 258; Mócsy 1970, 150 and

201. *Cf.* also: Toynbee 1973, 207.

102 Cumont 1942, 157.

103 Imhoof-Blumer/Keller 1889, pl. 14, 37 (fly), pl. 7, 18–22 (bee), pl. 23, 41 and 48 (bee), pl. 7, 32 and 36 (cicada), pl. 23, 38 (cicada), pl. 25, 19 (cicada); Furtwängler 1900, pl. 9, 50 (fly), pl. 10, 53 (fly), pl. 18, 7 (fly?), pl. 28, 80 (bee), pl. 29, 42 (bee), pl. 45, 58 (cicada); Marshall 1911, no. 2628 (fly), 1239 (bee); Keller 1913, 429, fig. 131 (bee); Henkel 1913, pl. 3, 50 (bee), pl. 77, 275 (fly?); Walters 1926, nos. 21, 923, 2398, 2548, 2563 (fly), 2544, 3690 (bee); Böhme 1954, 49 (6 cicadas); Coche de la Ferté 1956, pl. 14, 2 (fly), pl. 15, 4 and 5 (cicadas); Higgins 1961, 190, fig. 33 (fly).

104 Inv.-no. 478. Dimensions: total length 31 mm; cicada: 26 × 14.5 mm. Wings decorated with green enamel. From Cuijk.

105 Keller 1913, 447 ff.

106 Keller 1913, 447 ff.

107 Brusin 1972, 113.

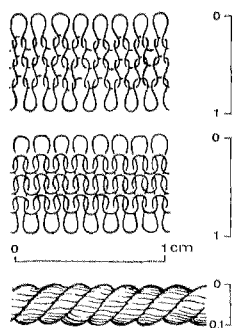


Fig. 42 n, 30

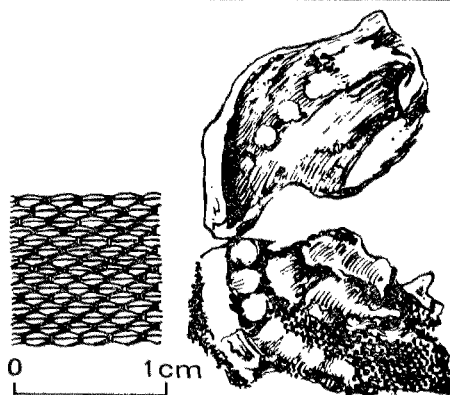


Fig. 43 n, 31 (scale 1:1)



Fig. 44 n, 34 (scale 1:1)

II, 30 (find no. II, 26 a-b) Two pieces of knitting<sup>108</sup> (plate XIX: 4 and fig. 42).

a Measurements of both pieces *c.* 2 × 2 cm.

b Woollen S-ply thread, *c.* 1 mm thick, consisting of 3, perhaps 4, Z-spun yarns.<sup>109</sup>

c Both pieces have been preserved because they absorbed the metal salts deriving from the brooch II, 25. Against the reverse of both was a hard, organic material, perhaps leather. Because of this, it was necessary to sacrifice the greater part of one of them for the sake of investigation. In spite of impregnation with PVC, the other piece is also gradually crumbling.

d Mr J. Ypey, Head of the technological laboratory of the ROB, identified both fragments as knitting. Fig. 42 A shows a diagram of the front (plain) and fig. 42 B one of the back (purl). His conclusion was later confirmed on the basis of the surviving fragment by Dr J.E. Leene, lecturer at the Delft University of Technology, head of the laboratory for textile engineering and fibre technology.<sup>110</sup>

e Although it has been established satisfactorily that both fragments are indeed pieces of knitting, it is impos-

sible to determine, on the basis of fragments of such small size, which knitting technique was used. Identical results may be arrived at both with one and with two needles,<sup>111</sup> and also by means of bobbin-work.<sup>112</sup> It is impossible to ascertain which of the three techniques was used in this case, but the pair of rods II, 18, found in the same grave, right next to the pieces of knitting, strongly suggest that these were made in the way that is now considered most usual, *viz.* with two needles. Thus the Esch fragments could form a striking contribution to the little-known history of the knitting-technique.<sup>113</sup> They would then exceed in antiquity the oldest example of needle-knitting known until now, that from Dura-Europus, dated *c.* 250 A.D.<sup>114</sup>

II, 31 (find-no. II, 25 b) Fragment of textile (fig. 43).

a Approximately 30 fragments, the two largest of which measure *c.* 30 × 20 mm and 35 × 20 mm.

b Wool; some fibres are crimson-coloured.

c Preserved by the influence of metal-salts deriving from brooch II, 25; the silver from the knobs of the brooch has

108 Cf. Wild 1970, 60 and 120.

109 See for the explanation of these terms Wild 1970, 37 and 44: fig. 18.

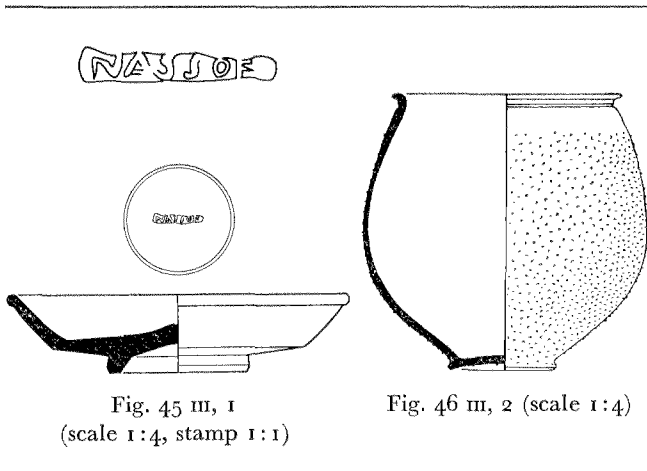
110 From Dr Leene's report, dated 9.2.1966: 'After repeated examinations, during which destructive procedures were avoided, the conclusion was reached that Mr Ypey correctly identified the textile remains as a piece of knitting. Finally, the loops characteristic of knitting could be observed clearly. Consequently, the alternative: tablet-weaving, was abandoned. It was thought to be seen that the threads used consist of four instead of three simple yarns.'

111 Cf. Burnham 1972.

112 Dr J.P. Wild (*cf.* note 108) classifies the fragments of Esch as bobbin-work. There must be a misapprehension, however, when he writes (p. 60) that we also regard them as bobbin-work. Apart from this, it is possible that this technique was already used in Roman times: *cf.* Schrickel 1950.

113 Cf. Grass 1955; Norwick 1971.

114 Bellinger 1945, 54. But see also Burnham 1972, 124.



middle-La Tène period. Cf. among others Kisa 1908, 141 ff.; Blümlein 1938, 101 ff.; Calkoen 1953; Fremersdorf 1958a, pl. 126; Biddle 1967, 244. In tumulus graves playing-counters are not unusual.<sup>116</sup> Their position close to the cremation remains may be an indication that they were counted among the more personal possessions of the deceased.<sup>117</sup>

### Grave III

III, 1 (find-no. III, 27) Terra sigillata bowl: Drag. 18/31 (plate XIX: 5 and fig. 45).

- a Diameter 183 mm; height 40 mm.
- b Hard pink ware with orange-brown slip, slightly glossy.
- c Intact.
- d Central kick with the stamp NASSO on the inside of the bowl; a circular groove 40 mm in diameter surrounds the stamp. On the underside five right-hand finger marks are visible.
- e The shape of the bowl is Lud. Tq; cf. Oswald/Pryce 1920, pl. 46, 16. Nasso worked in Lavoye (Chenet/Gaudron 1955, 158 and fig. 50, 51) and in Sinzig (Fischer 1969, 45). None of the stamps of Nasso found until now, however, is identical with the one from Esch. Sinzig seems a more probable place of origin than Lavoye<sup>118</sup> for the numerous products of Nasso in the Rhineland.
- f Mainly IIb.<sup>119</sup>

III, 2 (find-no. III, 18) Colour-coated beaker with steep sides and cornice rim: Brunsting 1937, 73 and pl. 3: type 2 (a) (fig. 46).

- a Height 142 mm; gr. diameter 140 mm.
- b White self-coloured ware with a coating varying from orange to greyish-black (Brunsting 1937, 70, technique b); rough-cast.
- c Broken and mended.
- d Rim less sharply profiled than that of II, 1 and II, 2; the sides are somewhat more rounded.<sup>120</sup>
- e See II, 2, p. 204.
- f Id-II.
- g Cf. II, 1 and II, 2.

left round purple traces on the textile, cf. II, 25, p. 214 PVC.  
d Plain-weave,<sup>115</sup> c. 10 × 15 threads per square cm; probably the 10 thin threads, strongly Z-spun, form the warp, and the 15 doubled threads, also Z-spun, the weft.

II, 32 (find-no. II, 31) Fragment of textile.

- a C. 1 square cm.
- b Vegetable fibres, probably flax.
- c Preserved by the influence of metal salts deriving from the bronze ampulla II, 24; it has since perished.
- d Plain-weave, 13 × 16 threads per square cm.

II, 33 (find-no. II, 32) Impression of a fragment of textile.

- a C. 50 × 15 mm.
- c Impression in the rust on the upper side of the handle of one of the scrapers II, 17, cf. p. 211.
- d Plain-weave, 12 × 10 threads per square cm.

II, 34 (no. find-no.) 8 Playing-counters (fig. 44).

- a Diameter c. 17 mm; c. 5 mm thick.
- b Black glass.
- c Some white examples (number unknown) have been lost.
- e Playing-counters of various fabrics and in many different colours occur north of the Alps as early as the

118 This information was kindly supplied by Mr B.R. Hartley of Leeds, who is working at a new edition of Oswald 1931.

119 Cf. Schönberger/Simon 1966, 23, no. 78.

120 Cf. Stuart 1963, 23, type 2, no. III, 229.

115 See for an explanation of this term Wild 1970, 46.

116 Apart from Esch they were also found in the tumuli of Herstal, Vorsen, Burdinne, Tienen-Grimde, Hodeige, Moperlingen, Bartlow Hills; cf. Renard 1900, 203.

117 Cf. the position of the playing counters in the tumulus of Tienen-Grimde; see De Loë 1895, 425 (plan, nos. 2 and 3) and 429.





Fig. 47 III, 3 (scale 1:4)

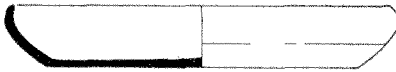


Fig. 48 III, 6 (scale 1:4)

III, 3 (find-no. III, 22) Colour-coated dish with out-splayed sides and inwardly curved rim: Brunsting 1937, 83 and pl. 3: type 17 (a) (fig. 47).

- a Gr. diameter 172 mm; height 30 mm.
- b Light-grey self-coloured ware with a coating varying in colour from light to dark-brown (Brunsting 1937, 70, technique b).
- c Broken and mended.
- d On the upperside of the base the dish has two concentric grooves.
- e See III, 8.
- f II.
- g Cf. III, 4-8.

III, 4 (find-no. III, 37) Colour-coated dish with out-splayed sides and inwardly curved rim: Brunsting 1937, 83 and pl. 3: type 17(a).

- a Gr. diameter 173 mm; height 34 mm.
- b Fabric and technique similar to III, 3; light-brown coating.
- c Intact.
- d Similar to III, 3.
- e See III, 8.
- f II.
- g Cf. III, 3-8.

III, 5 (find-no. III, 41) Colour-coated dish with out-splayed sides and inwardly curved rim: Brunsting 1937, 83 and pl. 3: type 17 (a).

- a Gr. diameter 186 mm; height 31 mm.
- b Fabric and technique similar to III, 3; reddish-brown coating.
- c Broken and mended.
- d Similar to III, 3.
- e See III, 8.
- f II.
- g Cf. III, 3-8.

III, 6 (find-no. III, 38) Colour-coated dish with out-splayed sides and inwardly curved rim: Brunsting 1937, 83 and pl. 3: type 17 (a) (fig. 48).

- a Gr. diameter 209 mm; height 34 mm.
- b Fabric and technique similar to III, 3; reddish-brown coating.
- c Intact.
- d Similar to III, 3.
- e See III, 8.
- f II.
- g Cf. III, 3-8.

III, 7 (find-no. III, 26) Colour-coated dish with out-splayed sides and inwardly curved rim: Brunsting 1937, 83 and pl. 3: type 17 (a).

- a Gr. diameter 257 mm; height 40 mm.
- b Fabric and technique similar to II, 3; dark-brown coating.
- c Broken and mended.
- d Similar to III, 3.
- e See III, 8.
- f II.
- g Cf. III, 3-8.

III, 8 (find-no. III, 28) Colour-coated dish with out-splayed sides and inwardly curved rim: Brunsting 1937, 83 and pl. 3: type 17 (a).

- a Gr. diameter 222 mm; height 36 mm.
- b Fabric and technique similar to III, 3; coating varying in colour from brown to black.
- c Broken and mended.
- d Similar to III, 3.
- e Stuart 1963, 26 f. mentions the earlier literature under type 10.
- f II.
- g Cf. III, 3-8.

III, 9 (find-no. III, 40) Single-handled flagon: Brunsting 1937, 95 and pl. 4: type (a) (fig. 49).

- a Height 292 mm; gr. diameter 188 mm.
- b White self-coloured ware with a darker surface.
- c Rim somewhat damaged.
- d The greatest diameter is in the upper part of the belly; rather angular, three-ribbed handle; the rim is slightly undercut; narrow base.
- e Stuart 1963, 44-5, type 110 A; the earlier literature is mentioned here.
- f II b.
- g Cf. I, 1-2 and III, 10-1.

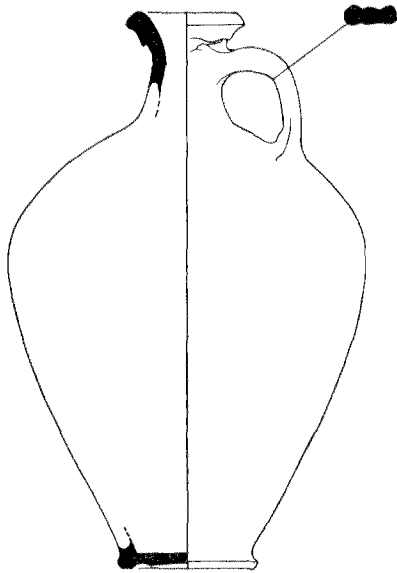


Fig. 49 III, 9 (scale 1:4)

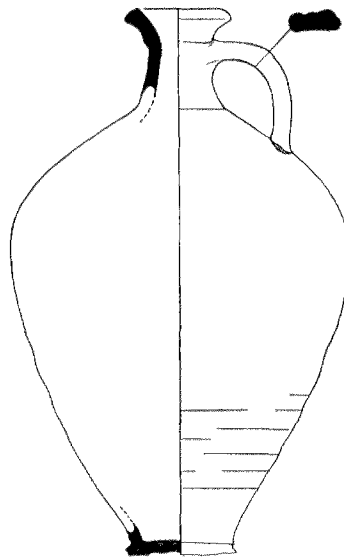


Fig. 50 III, 10 (scale 1:4)

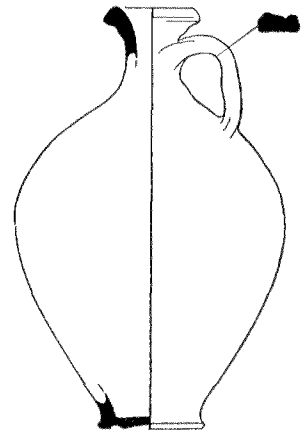


Fig. 51 III, 11 (scale 1:4)

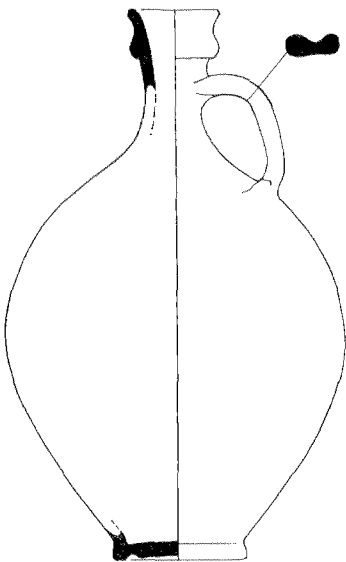


Fig. 52 III, 12 (scale 1:4)

III, 10 (find-no. III, 20) Single-handled flagon: Brunsting 1937, 95 and pl. 4: type 5 (b) (fig. 50).

a Height 288 mm; gr. diameter 175 mm.

b Fabric similar to III, 9.

c Intact.

d The greatest diameter is in the upper part of the belly; three-ribbed, curving handle; narrow base.

e See III, 11.

f Middle of II.

g Cf. I, 1-2 and III, 9 and 11.

III, 11 (find-no. III, 36) Single-handled flagon: Brunsting 1937, 95 and pl. 4: type 5 (b) (fig. 51).

a Height 220 mm; gr. diameter 144 mm.

b Fabric similar to III, 9.

c Broken and restored.

d Greatest diameter in the upper part of the belly; two-ribbed, curving handle; narrow base.

e Stuart 1963, 44-5, type 110 B. The earlier literature is mentioned here.

f Middle of II.

g Cf. II, 1-2 and III, 9-10.

III, 12 (find-no. III, 21) Single-handled flagon with pulley-shaped spout: Brunsting 1937, 98 and pl. 4: type 8 (fig. 52).

a Height 287 mm; gr. diameter 179 mm.

b Brick-gritted ware with smooth brownish-grey surface.

c Intact.

d Egg-shaped belly with greatest diameter in the middle; two-ribbed curving handle; slanting shoulder; fairly broad base.

e Brunsting 1937, 98 dates these flagons: 'not too early II'. It is possible, however, that they occur as early as II A;

cf. Modderman/Isings 1960-1, 329, no. 14 (see also 330, no. 17, and 340, no. 79) and Lux/Roosens 1970, 11, no. 4.

f II B-III A, possibly somewhat earlier.

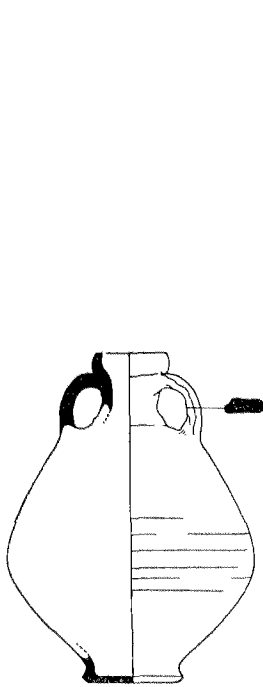


Fig. 53 III, 13 (scale 1:4)

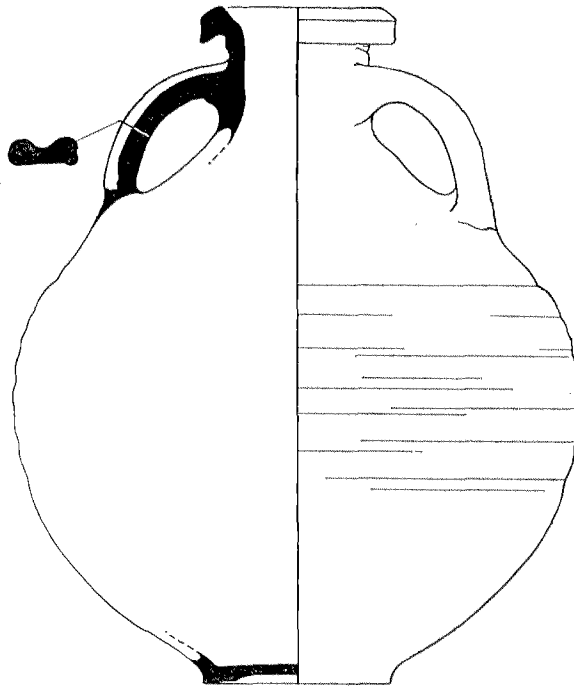


Fig. 54 III, 14 (scale 1:4)

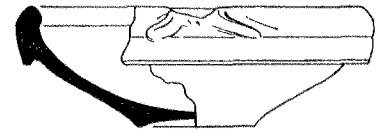


Fig. 55 III, 15 (scale 1:4)

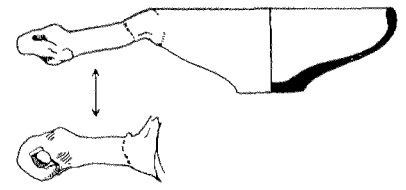


Fig. 56 III, 16 (scale 1:4)

III, 13 (find-no. III, 17) Double-handled flagon with ring-shaped mouth: Brunsting 1937, 104 and pl. 4: type 20 (2) (fig. 53).

a Height 175 mm; gr. diameter 133 mm.

b White brick-gritted ware with yellowish surface.

c Intact.

d Small flat handles joining rim and shoulder mildly carinated belly; flat base.

e See II, 4, p. 204. This flagon comes between an example from Tongres (Vanvinckenroye 1963, 77 and fig. 43, dating: middle II) and one from Nijmegen (Stuart 1963, 53 and pl. 9, 150, dating: 'not before early III').

f II d-III.

g Cf. II, 4-5.

III, 14 (find-no. III, 1) Double-handled flagon with girth grooves: Brunsting 1937, 105 and pl. 4: type 22 (fig. 54).

a Height 357 mm; gr. diameter 310 mm.

b Rather coarse light-grey ware with light-brown surface.

c Rim damaged, restored.

d Similar to II, 6, but fainter girth grooves.

e See II, 6, p. 204.

f II-III A.

g Cf. II, 6.

III, 15 (find-no. III, 7) Mortarium with vertical rim: Brunsting 1937, 110 and pl. 4: type 37 (b) (fig. 55).

a Height 62 mm; gr. diameter 184 mm.

b Rather coarse white ware with greyish-brown surface.

c Intact.

d Rim thickened on the inner side in the 'Rundstabartig' manner; plain spout consisting of two folded rims on both sides of a shallow gully; no grit visible.

e Brunsting 1937, 110 ff. dates these mortaria II-IV (Alzei). The example from Esch resembles a piece from Speicher, dated middle II; cf. Gose 1950, no. 451.

f II.

III, 16 (find-nos. III, 14 and 16) Handled bowl; *patera* (fig. 56).

a Height 42 mm; gr. diameter bowl 131 mm; length handle 68 mm.

b Light-brown self-coloured ware with rather smooth, similar surface.

c Broken and mended.

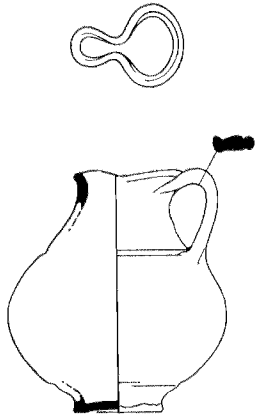


Fig. 57 III, 17 (scale 1:4)

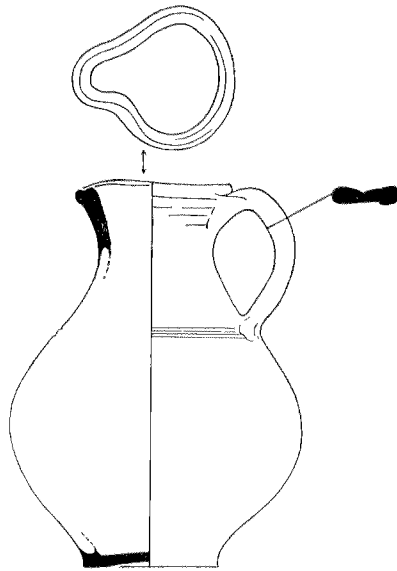


Fig. 58 III, 18 (scale 1:4)

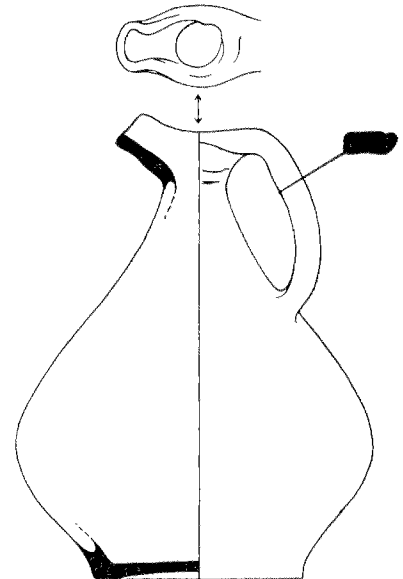


Fig. 59 III, 19 (scale 1:4)

d Plain rim with slight thickening on the inner side. Because of the weight of the solid handle, the *patera* does not stand upright on the narrow base when empty, but falls on its side. The handle has a thickened end, that forms a primitive loop by which the *patera* can be hung up.

e See II, 9, p. 207.

f Mainly II.

g Cf. II, 9.

III, 17 (find-no. III, 13) Bulbous jug; *vinarium* (fig. 57).

a Height 128 mm; gr. diameter 119.

b Strongly gritted greyish ware with yellowish surface.

c Intact.

d Shallow gully along top of rim; three-ribbed handle; wide groove on the shoulder.

e As is clear from the position in the grave, this jug forms a set together with the *patera* III, 16. See further the literature mentioned with II, 9, p. 207.

f Mainly II.

g II, 8-9.

III, 18 (find-no. III, 8) Wide-mouthed jug with pinched spout: Brunsting 1937, 151 and pl. 7: type 15 (fig. 58).

a Height 205 mm; gr. diameter 156 mm.

b Bluish-grey surface; reduced fabric.

c Intact.

d Faint gully along inner side of rim; two-ribbed handle; two grooves on the shoulder; flat base.

e See I, 7, p. 203.

f II d-III.

III, 19 (find-no. III, 39) Spouted jug: Brunsting 1937, 151 and pl. 7: type 14 (b) (fig. 59).

a Height 236 mm; gr. diameter 186 mm.

b Soft, sandy, reddish-brown ware with similar surface.

c Broken and mended.

d The flat handle continues to form the lip; on the transition handle-lip is a rudimentary thumb-rest; narrow neck and pear-shaped belly with the greatest diameter in the lower part; broad base; on the neck three faint grooves.

e In the museum at 's-Hertogenbosch is a jug of the same type, but made of harder, more brick-like ware and more sharply contoured.<sup>121</sup> Jugs of this type are an imitation of the bronze jugs, type Den Boesterd 1956, no. 257, which have been dated in the 2nd and 3rd centuries. See for similar jugs in earthenware Brunsting 1937, 151. Further: Wolff 1899, 240 f. and pl. 3, 3 (dating: Domitianic-Hadrianic); *ORL* 8 (Zugmantel), 13 and pl. 17,

<sup>121</sup> Inv.-no. 602. Found c. 1829 near Veldhoven; see Hermans 1865, 89.

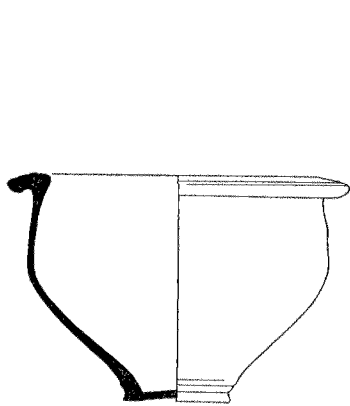


Fig. 60 III, 20 (scale 1:4)

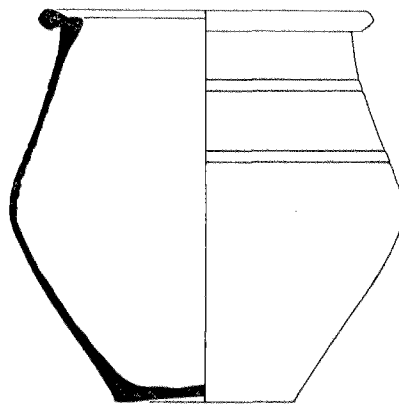


Fig. 61 III, 21 (scale 1:4)

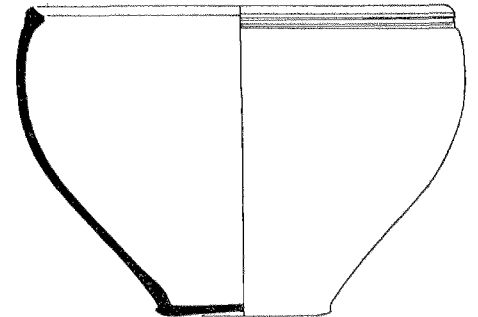


Fig. 62 III, 22 (scale 1:4)

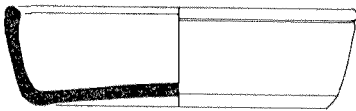


Fig. 63 III, 23 (scale 1:4)

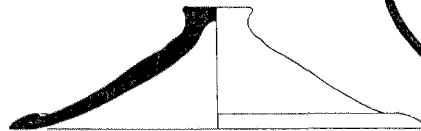


Fig. 64 III, 24 (scale 1:4)

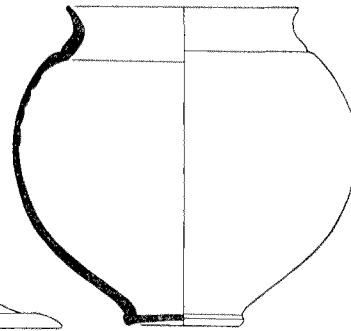


Fig. 65 III, 27 (scale 1:4)

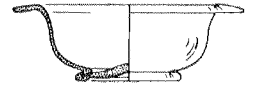


Fig. 66 III, 28 (scale 1:4)

nos. 34 and 50; 168, fig. 34, no. 2 (dating: Hadrianic); *ORL* 10 (Feldberg), 50, no. 8. A similar jug was also found in the tumulus grave of Hodeige; *cf.* Van Doorselaer 1964, 1, 109 (dating: *c.* 160).

f II-III.

III, 20 (find-no. III, 6) Bowl with flat rim: Brunsting 1937, 145 and pl. 7: type 5 (1) (fig. 60).

a Height 119 mm; gr. diameter belly 160 mm.

b Light-grey brick-gritted ware with brownish-grey surface; fire stains.

c Intact.

d Sloping rim with two very faint grooves on upper side; flat base.

e See I, 5, p. 202.

f 1d-IIc.

g *Cf.* I, 5.

III, 21 (find-no. III, 15) Cooking-pot with a gully for the lid ('heartshaped in section'): Brunsting 1937, 94 and pl. 7: type 3 (a) (fig. 61).

a Height 205 mm; gr. diameter 199 mm.

b Greyish ware with a darker surface.

c Intact.

d Shallow gully with profile  $\alpha$  of Brunsting 1937, type 3, pl. 7; rim undercut; on the upper part of the belly two sets of two grooves.

e See I, 6, p. 203.

f II B and later.

g *Cf.* I, 6.

III, 22 (find-no. III, 10) Bowl with rounded, internally thickened rim: Brunsting 1937, 148 and pl. 7: type 9 (2) (fig. 62).

- a Height 162 mm; gr. diameter (outer side rim) 228 mm; gr. diameter (belly) 230 mm.
- b Light-red ware with brick-red surface on which many black streaks.
- c Broken and mended.
- d Very large example with gully for the lid<sup>122</sup>; the outer side of the rim has two sharp grooves.
- e See I, 3, p. 202.
- f II B and later.
- g Cf. I, 3.

- III, 23 (find-no. III, 23) Dish with plain rim: Brunsting 1937, 155 and pl. 7: type 22 (b 2) (fig. 63).
- a Height 50 mm; gr. diameter 181 mm.
- b Light-grey ware with a darker surface.
- c Intact.
- d Rim slightly thickened internally; external groove.
- e Following Brunsting, Stuart dates the grooved dishes mainly in II; cf. Stuart 1963, 84, type 218. See also Gose 1950, no. 469.
- f II.

- III, 24 (find-no. III, 9) Lid with thickened rim: Brunsting 1937, 156: type 23 (fig. 64).
- a Height 65 mm; diameter 232 mm.
- b Yellowish-grey ware with bluish-grey surface.
- c Broken and mended; rim badly weathered.
- d Found on the bowl III, 22, but the diameter of the lid is greater than that of the bowl; cf. above, III, 22.
- e See III, 26.
- g Cf. III, 24-6.

- III, 25 (find-no. III, 12) Lid with thickened rim: Brunsting 1937, 156: type 23.
- a Height 42 mm; diameter 137 mm.
- b Light-red ware with grey surface.
- c Broken and mended; badly weathered.
- d Found next to the glass bowl III, 32.
- e See III, 26.
- g Cf. III, 24-6.

<sup>122</sup> Cf. Brunsting 1937, 148. The lid III, 24 was found on this bowl, but it is somewhat too large for it (diameter 232 mm).

<sup>123</sup> It is even softer than that of the brown terra nigra, described by Brunsting 1937, 113. Cf. also Holwerda 1941, 119, VI, 6.

<sup>124</sup> Cf. Brunsting 1937, 113.

<sup>125</sup> Cf. Biddle 1967, 248.

<sup>126</sup> For the technical terminology cf. Harden 1936, 6 ff.

- III, 26 (find-no. III, 42) Lid with thickened rim: Brunsting 1937, 156: type 23.

- a Height 42 mm; diameter 138 mm.
- b Greyish ware with bluish-black surface.
- c Broken and mended.
- d Was found in the mortarium III, 15, which was lying on its side.
- e Nothing can be said about the dating of these lids; cf. Stuart 1963, 85, type 219. See also Gose 1950, nos. 555-65.
- g Cf. III, 24-6.

- III, 27 (find-no. III, 19) Wide-mouthed jar in Gallo-Belgic ware: Holwerda 1941, 125, form 58 a, and pl. 12, no. 590 (fig. 65).

- a Height 168 mm; diameter 185 mm.
- b Soft, sandy light-brown ware with a darker brown polished surface<sup>123</sup>; large grey smears on one side; the lower part has a somewhat lighter colour; the process of 'fuming' apparently has not fully succeeded.
- c Intact, but with many cracks at one side.
- d Wide funnel-shaped rim; clear offset between neck and shoulder.
- e This jar seems not to have been a complete success in two respects: it is not fired hard enough and the fuming has hardly produced any result.<sup>124</sup> Possibly this is the reason why the jar was used as grave furniture.<sup>125</sup> According to Holwerda 1941, 39 (especially no. 363, pl. 9), the form appears in the middle of I, continues in II (cf. Holwerda 1941, 49, especially no. 590, pl. 12), and occurs as late as III (cf. Oelmann 1914, 56, type 57). The form is found much more often in colour-coated ware; cf. Brunsting 1937, 118, type 6. A similar jar was found in the tumulus grave of Penteville; see Courtoy 1934, 17 and pl. IV (dating: II B; see Van Doorselaer 1964, I, 12).
- f II.

- III, 28 (find-no. III, 32 a) Deep bowl with hang-over lip: Isings 1957, 58: type 42 b (fig. 66).

- a Height 40 mm; gr. diameter (including rim) 123 mm; thickness wall 1.5 mm.
- b Colourless glass with yellowish tinge; fabric good, with few bubbles.
- c Intact; no weathering.
- d Broad horizontal rim with rounded edge; tubular base ring;<sup>126</sup> central kick with pontil-mark on the underside.
- e See III, 30.
- f Mainly II.
- g Cf. III, 28-30.

III, 29 (find-no. III, 35) Deep bowl with hang-over lip: Isings 1957, 58: type 42 b.

a Height 36 mm; gr. diameter (including rim) 123 mm; thickness wall 1.5 mm.

b Colourless glass with yellowish tinge; fabric good, some bubbles, red streak in base.

c Cracked; part of rim is missing; no weathering.

d Similar to III, 28.

e See III, 30.

f Mainly II.

g Cf. III, 28–30.

III, 30 (find-no. III, 43) Deep bowl with hang-over lip: Isings 1957, 58: type 42 b (?).

a–d Completely disintegrated, probably a bowl of the same form as III, 28 and III, 29.

e These imitations of the terra sigillata form Drag. 35 occur from II and stay in use – with some modifications – until into IV (Isings 1957, 58; Harden 1958, 15). Bowls of approximately the same form as those from Esch are generally dated in II: Vanderhoeven 1961, 43–4 (from Jusleville); Dumoulin 1964, 100 and fig. 21 E (from Apt); Léva/Coene 1969, 50, gr. 42, 4 (from Courtray). Cf. also Isings 1971, 21, no. 57, and 22, nos. 63–75.

f Mainly II.

g Cf. III, 28–30.

III, 31 (find-no. III, 34) Shallow bowl with hang-over lip: Isings 1957, 58: type 42 b.

a Height 29 mm; gr. diameter (including rim) 161 mm; thickness wall 0.5 mm.

b Colourless glass with yellowish tinge; clear fabric with some bubbles and streaks.

c Broken and mended; some fragments are missing; no weathering.

d Broad, slightly sloping rim with rounded edge; S-shaped sides; tubular base ring; flat base with central kick; pontil-mark on the underside.

e See III, 35.

f Mainly II.

g Cf. III, 31–5.

III, 32 (find-no. III, 11) Shallow bowl with hang-over lip: Isings 1957, 58: type 42 b (fig. 67).

a Height 32 mm; gr. diameter (including rim) 178 mm; thickness wall 1.5 mm.

b Fabric similar to III, 31.

c Broken and mended; no weathering.

d Broad, slightly sloping rim with rounded edge; carinated sides; tubular base ring, which has been placed too high to serve its purpose: the bowl rests on the flat bottom, which is very thick in the middle; pontil-mark on the underside.

e See III, 34–35.

f Mainly II.

g Cf. III, 31–5.

III, 33 (find-no. III, 25) Shallow bowl with hang-over lip: Isings 1957, 58: type 42 b.

a Height 26–32 mm; gr. diameter (including rim) 174 mm; thickness wall 1.5 mm.

b Fabric similar to III, 31.

c Broken and mended; some fragments are lacking; no weathering.

d General shape similar to III, 31 and III, 32. Less carinated than III, 32; bottom very low with respect to the base ring; pontil-mark on the underside.

e See III, 34–35.

f Mainly II.

g Cf. III, 31–5.

III, 34 and III, 35 Shallow bowls with hang-over lip: Isings 1957, 58: type 42 b (?).

a–d Both bowls, probably of the same form as III, 31–3, had completely disintegrated.

e These bowls, an imitation of the terra sigillata form Drag. 36, date from the same period as the ones mentioned above, III, 28–30, which are imitations of Drag. 35. As with the terra sigillata bowls, the shallow form occurs much more often in II than the deep form (cf. Oswald/Pryce 1920, 193). The following examples are comparable to the bowls from Esch: *ORL* 14, 60, pl. VIII, 10 (from Pfünz); May 1930, 288, gr. 10d, pl. xc (from Colchester); Haberey 1949b, 340, fig. 8, 6 (from Flerzheim); Dumoulin 1964, 94, gr. 27c, fig. 12 D (from Apt); Lux/Roosens 1970, 27 gr. 10, 3, fig. 19 (from Gors-Opleeuw). Cf. also Isings 1971, 22, nos. 63–75.

f Mainly II.

g Cf. III, 31–5.

III, 36 (find-no. III, 33) Bulbous jar: Isings 1957, 111: type 94 (variant) (fig. 68).

a Height 76 mm; gr. diameter 97 mm; thickness wall 1.5–2 mm.

b 'Black', in fact brownish-green glass with some large bubbles.

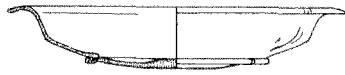


Fig. 67 m, 32 (scale 1:4)

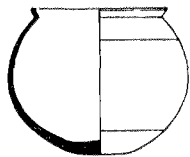


Fig. 68 m, 36 (scale 1:4)

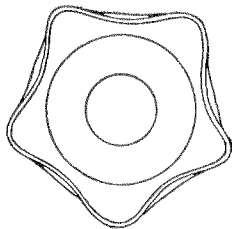


Fig. 69 m, 37 (scale 1:4)

probably manufactured in the same workshop, used to be in the former collection Vom Rath; *cf.* Kisa 1899, 134, no. 165, pl. xvii, 146, and id. 1908, 503, fig. 234.

III, 37 (find-no. III, 45) Bowl with scalloped edge: Isings 1957, 58: type 42 d (plate xx and fig. 69).

a Height *c.* 50 mm; gr. diameter 125 mm; thickness wall 2–3 mm.

b 'Black', in fact brownish-green glass; fabric good, without bubbles.

c In a great number of fragments, restored, no weathering; PVC.

d The lower third part of the wall is vertical, the upper part curves outward at an angle of about 45 degrees and has the shape of a five-pointed star, the rim has a rounded edge; true base ring of similar glass; flat bottom with pontil-mark on the underside. At a distance of 6 mm underneath the edge an opaque pale-blue glass thread and a grey-blue one are trailed on and marvered in flush with the surface; together they spiral  $3\frac{1}{2}$  times around the outside of the wall.

e See for 'black' glass in general Isings 1964. This bowl is a unique specimen. Two bowls with scalloped edge in clear glass are mentioned by Isings 1957, 58. To these can be added an example from Jerumenha (Portugal); *cf.* Alarcão 1967, 5, pl. 1, no. 2, and pl. 12, no. 2.

III, 38 (find-no. III, 30) Cylindrical bottle: Isings 1957, 67: type 51b.

a Height *c.* 257 mm; gr. diameter 100 mm; diameter rim 70 mm.

b Clear colourless glass with milky weathering.

c Completely broken into fragments; not conserved, but as far as possible measured and described.

d Lip folded outward, inward, and flattened, forming a broad rim; angular handle (width 47 mm) with faint ridges on the vertical side (thickness 8 mm). On the belly four pairs of horizontal wheel-cut grooves; the width of each band, formed by two grooves, was 2 mm; the distance between the bands was 4.7 mm.

e This bottle seems to belong to the group of cylindrical bottles that are characterized by the colourless metal and the horizontal wheel-cut lines; *cf.* Harden 1958, 14. With some reservations, this group can be dated late II–III; *cf.* Harden 1958, 15, and Charlesworth 1959, 54; see also Isings 1971, 33, no. 108; 34, no. 111, and 84, no. 198.

f Late II–III.

c Intact; usage scratches on the inside and on the outside; slight iridescence inside.

d Outplayed, polished rim; very fine wheel-cut groove on the outside, just under the lip; two wheel-cut girth grooves with a distance of 48 mm between them; the bottom is flat on the underside, and convex at the upper-side; pontil-mark.

e See for 'black' glass in general Isings 1964 (under no. 13 Miss Isings mentions two jars comparable to the Esch example, but with a base ring). A somewhat smaller, but otherwise practically identical jar in 'black' glass, most



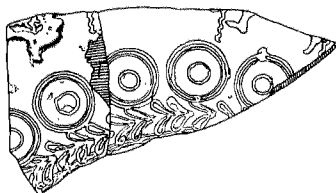


Fig. 70 Stray find (scale 1:2)

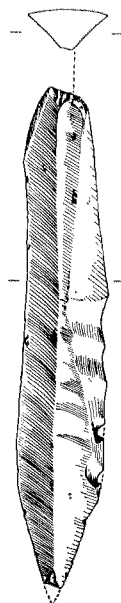


Fig. 71 Stray find (scale 1:2)

III, 39 (find-no. III, 32b) Unguentarium: Isings 1957, type 82 (?).

a Height 57 mm; gr. diameter lip 25 mm; gr. diameter belly 23 mm.

c Completely broken into fragments, measured as far as possible.

d Probably this unguentarium belonged to the type Isings 82 B 1.

e The dating of these unguentaria covers a considerable period of time; see Isings 1957, 98.

f I-IV.

## 6 STRAY FINDS

1 Terra sigillata sherd (fig. 70).

a Length 90 mm.

b Light-orange core with light brown-red surface; fairly good quality.

c Two fragments fitting one into another.

d Fragment of bowl Drag. 37.

e Probable provenance central Gaul<sup>127</sup>; cf. Stanfield/Simpson 1958, pl. 49, no. 589. Donnaucus-style (?).

f IIa (?).

2 Flint dagger (fig. 71).

a Length 133 mm; gr. width 23 mm; diameter 10 mm.

b Good, probably north French; not used.

c Broken and mended; the point is missing.

e Neolithic.<sup>128</sup>

<sup>127</sup> Identification by Mr C.A. Kalee, Institute of Archaeology, State University, Utrecht.

<sup>128</sup> Identification by Mr A.M. Wouters, Lent.

7 THE DATING OF THE GRAVES

*The dating of Grave I*

- I, 1-2: II B-III A
- I, 3: II B and later
- I, 4: II and later
- I, 5: I d-II c
- I, 6: II B and later
- I, 7: II d-III

The finds from this grave, which have only partly survived, should be dated with all proper reservation. The jug with wide mouth and pinched spout I, 7 seems to be the youngest of the seven pieces. These jugs are generally dated to III, but there are indications that they occur as early as II; *cf.* p. 203. On account of the bowl I, 5 the conclusion is reached, with due restrictions, that the date of this grave is *c.* A.D. 175.

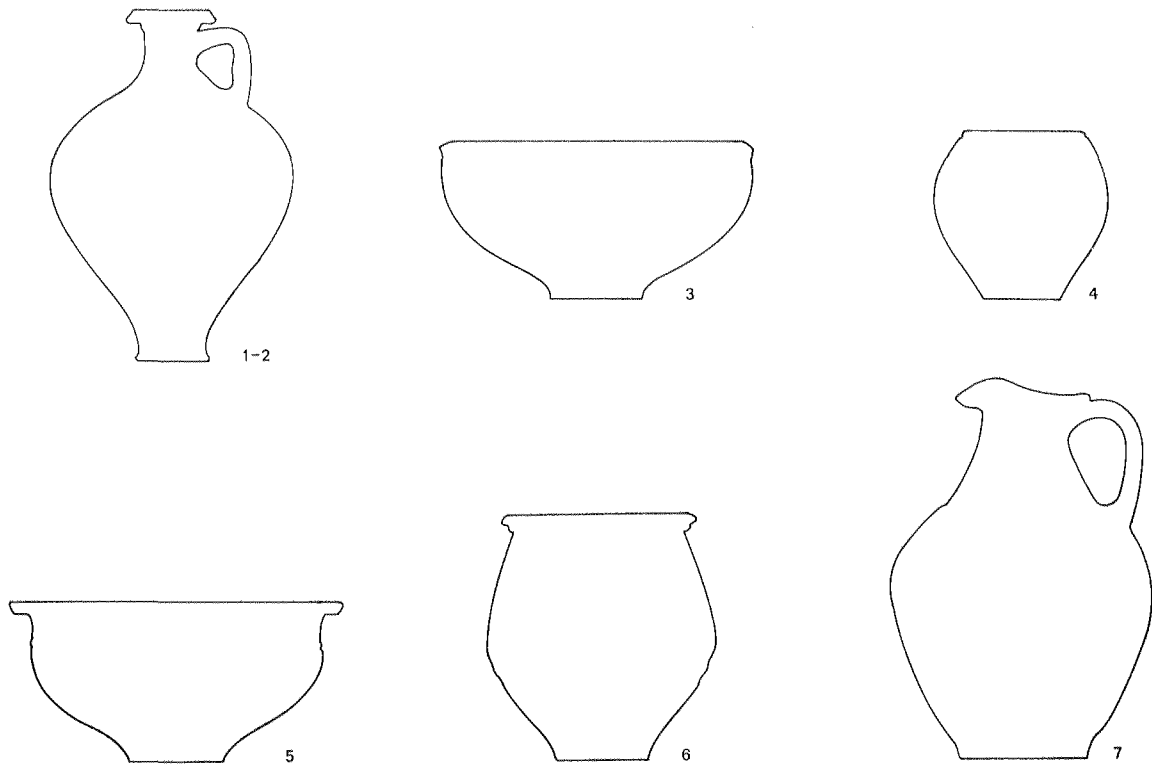


Fig. 72 The remaining grave-goods of grave I

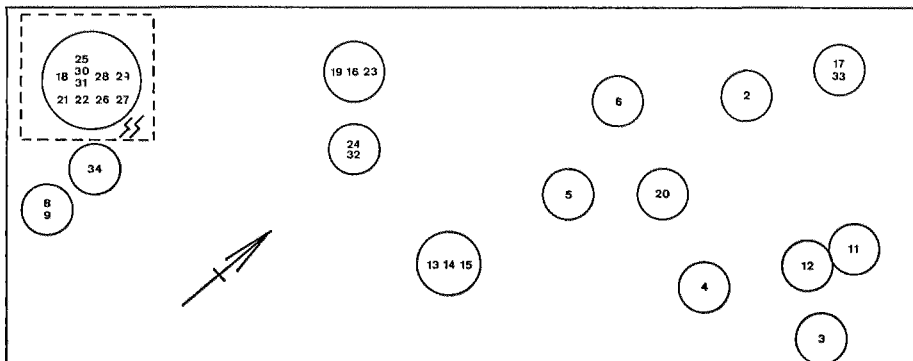
*The dating of Grave II*

- II, 1-2: Id-II
- II, 3: II-III
- II, 4: IIB
- II, 5: Id-IIIa
- II, 6: II-IIIa
- II, 8-9: mainly II
- II, 10: Id-IIa
- II, 11: IB-IV
- II, 12-5: I-IIIa
- II, 24: second third part of II
- II, 27: later than 212 (?)

The dating of grave II depends entirely on the question whether II, 27 has rightly been interpreted as a portrait of Caracalla; if this interpretation is indeed correct, it

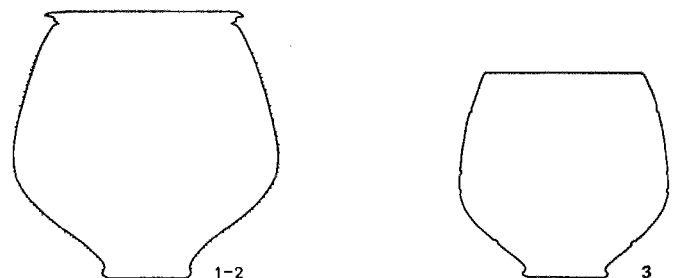
provides A.D. 212 as the *terminus post quem*. This, however, is hardly consistent with the dating of the pottery, especially that of the colour-coated beakers II, 1-2 and the beaker in Belgic ware II, 10. According to Stuart, the colour-coated beakers occur as late as the end of the 2nd century (*cf.* p. 204); the Belgic ware beaker should in this case either be regarded as an antique piece buried with the deceased, or it is to be supposed that this type of beaker continued to be used longer in a remote region such as Esch was, than in the *limes* district and in a large town like Nijmegen. A date is suggested not much later than A.D. 212.

If the interpretation of II, 27 proposed by the present writer is deemed incorrect, the date suggested by the dating of the pottery will be II b-c.



Lay-out of part of the grave-goods in grave II. Nos. 8 and 9 had presumably been placed on the lid of the burial chamber (I:30)

Fig. 73 Inventory of grave II; 1-10: pottery; 11-15: glass; 16-22: iron; 23-24: bronze; 25-29: jewellery; 30-33: textile; 34: glass; not depicted 26: fragments of ornaments, 31-33: fragments of textile

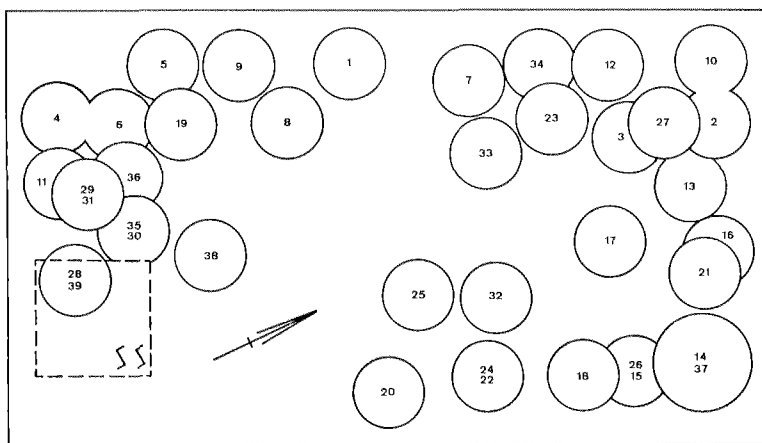


*The dating of Grave III*

- III, 1: mainly II b
- III, 2: I d-II
- III, 3-8: II
- III, 9: II b
- III, 10-1: middle of II
- III, 12: II B-III A
- III, 13: II d-III
- III, 14: II-III A
- III, 15: II
- III, 16-7: mainly II
- III, 18: II d-III
- III, 19: II-III
- III, 20: I d-II c
- III, 21: II B and later
- III, 22: II B and later
- III, 23: II
- III, 27: II
- III, 28-30: mainly II
- III, 31-5: mainly II
- III, 38: late II-III
- III, 39: I-IV

These dates show that also in grave III pieces have been found that have to be dated earlier than the middle of the 2nd century, *viz.* the terra sigillata dish III, 1 and especially the flagon III, 9, in addition to other pieces that belong in II B. The conclusion is that the grave was constructed in II B, and, in view of the jug III, 18 and the cylindrical bottle with wheel-cut grooves III, 38, rather in II d than in II c.<sup>129</sup>

129 Provisionally, the writer would like to thank the following for their help: Mr G.A.C. Beex (ROB), Mr L. Biegstraaten (ROB), Mr H.J. Bloklander (ROB), Professor J.E. Bogaers (Nijmegen), Mr L. Breyer (ROB), Mr A. Bruijn (ROB), Mr A. Dasnoy (Liege), Professor W.A. van Es (ROB), Dr J.K. Haalebos (Nijmegen), Mrs P.E. Herweyer (Amsterdam), Mr P.C. Houttuin (ROB), Dr C. Isings (Utrecht), Mr H.M.C. de Kort (ROB), Mr S.J.A. Kuppens (ROB), Miss Susan Kus (Michigan), Miss G. Loeb (ROB), Mr W.C. Mank (ROB), Professor M.E. Mariën (Brussels), Mr B. Norwick (New York), Mr J.F. van Regteren Altena (ROB), Mr L.G.W. Roosen ('s-Hertogenbosch), Mr J. Ruys (Esch), Dr P. Stuart (Leiden), Brother Celestinus Vencken (St Michielsgestel), Mr H.F. Wijnman (ROB), and Mr J. Ypey (ROB). The translation was the work of Miss C.J.G. Oosterling.



Lay-out of the grave-goods in grave III. Nos. 9, 19, 20, 29, and 36 had presumably been placed on the lid of the coffin (I:20) (*cf.* list on p. 199)

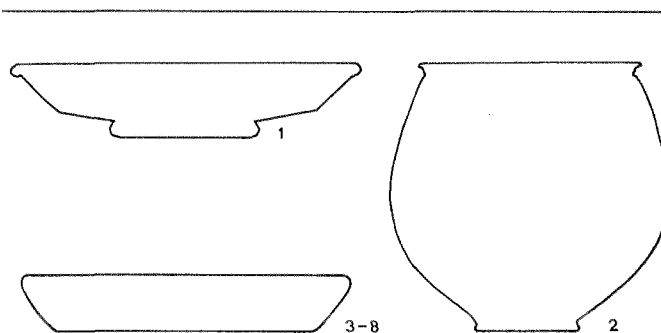
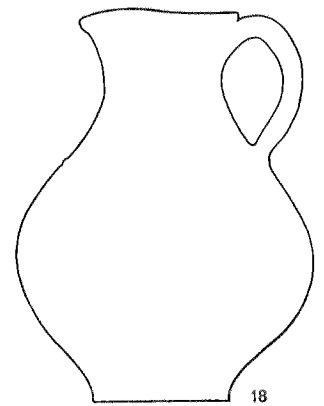
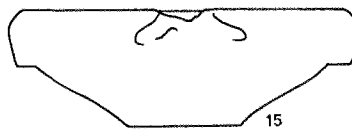
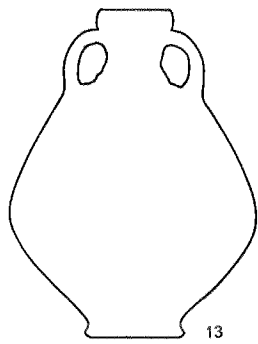
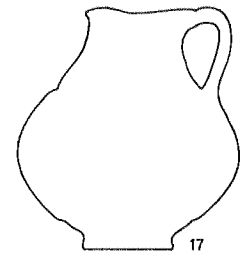
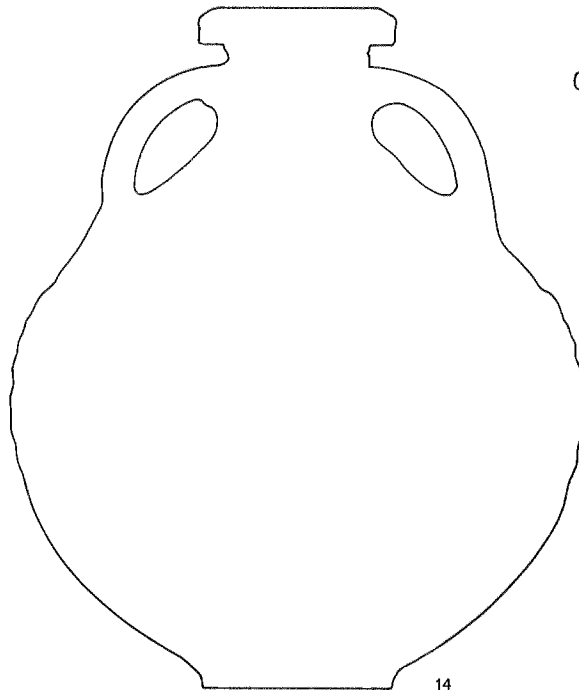
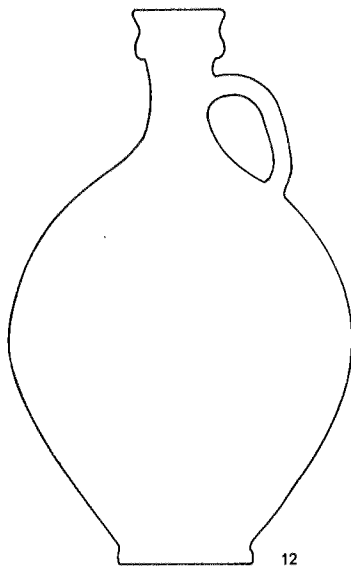
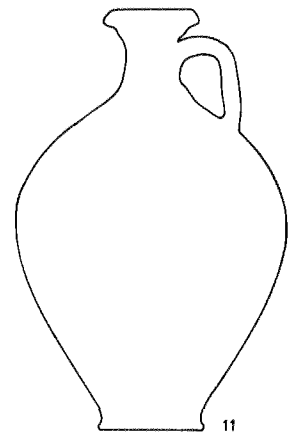
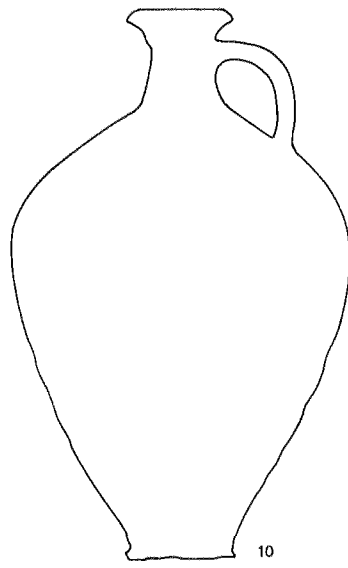
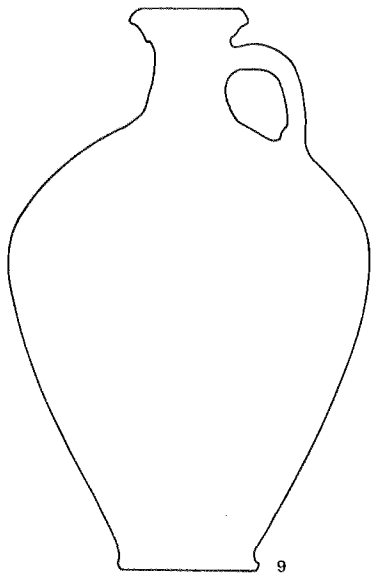
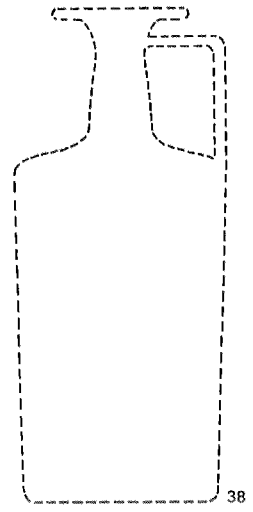
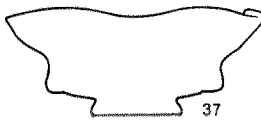
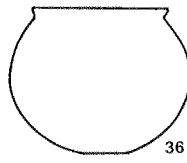
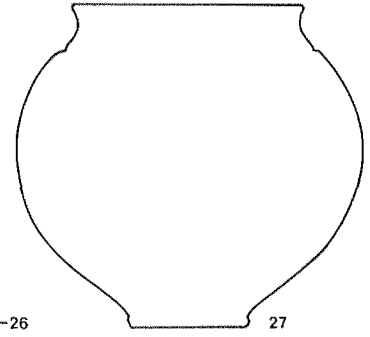
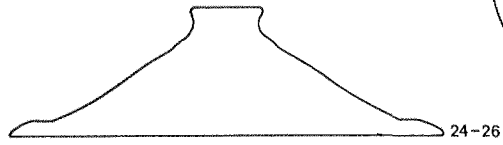
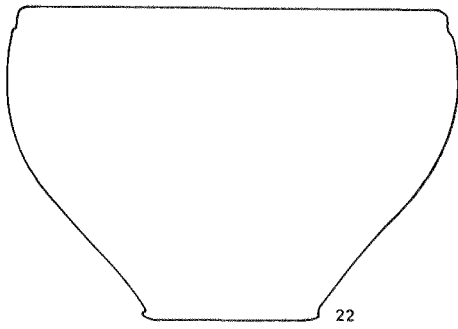
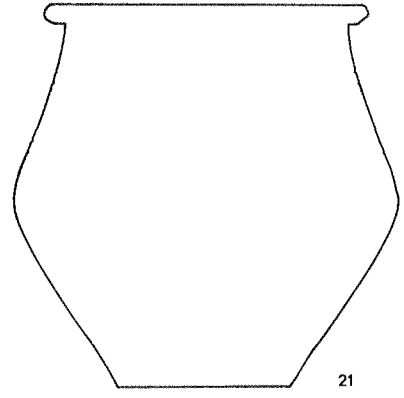
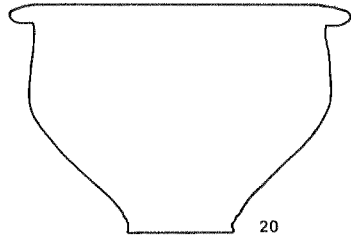
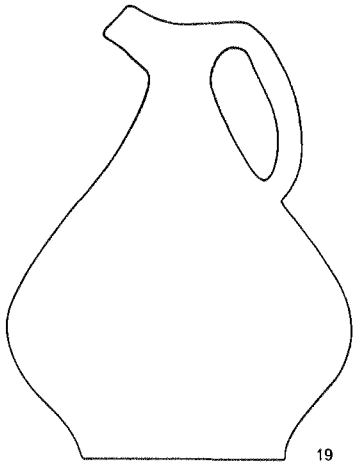
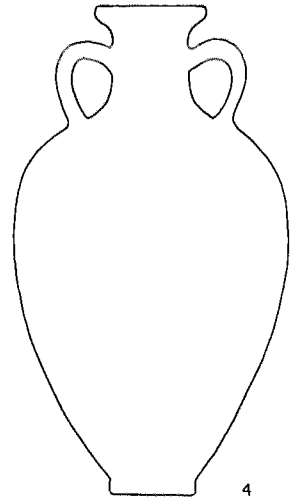


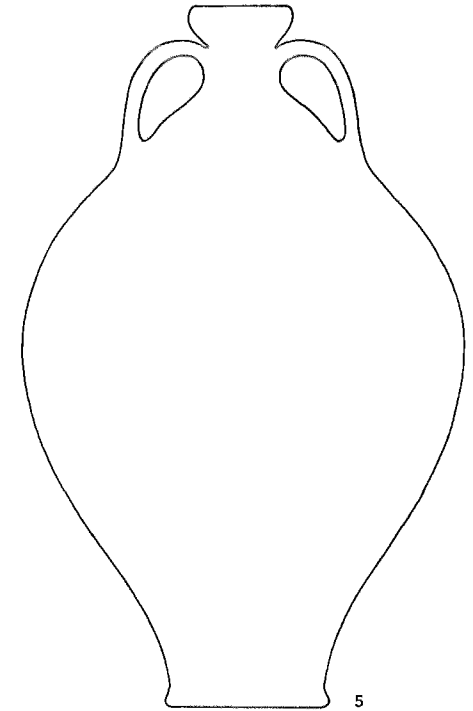
Fig. 74 Inventory of grave III; 1-27: pottery; 28-38: glass; not depicted 39: glass unguentarium



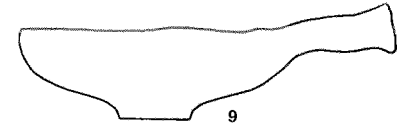




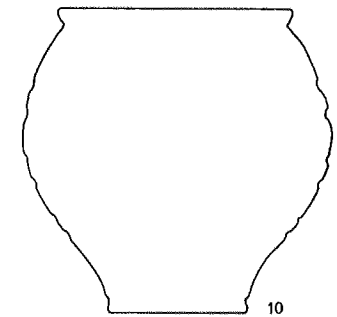
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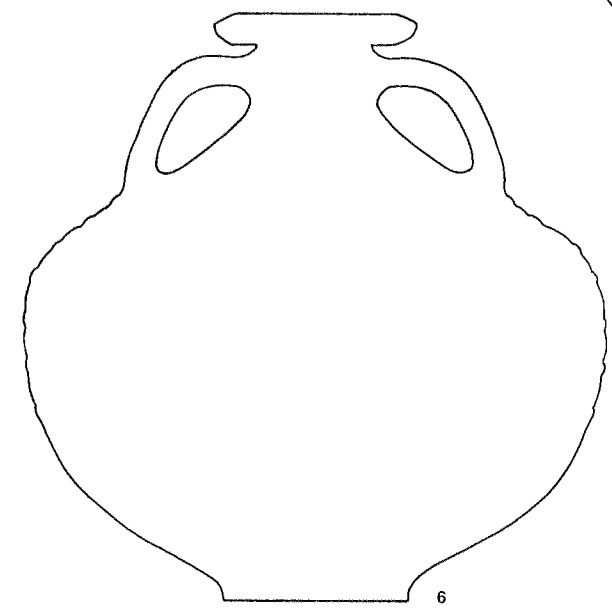
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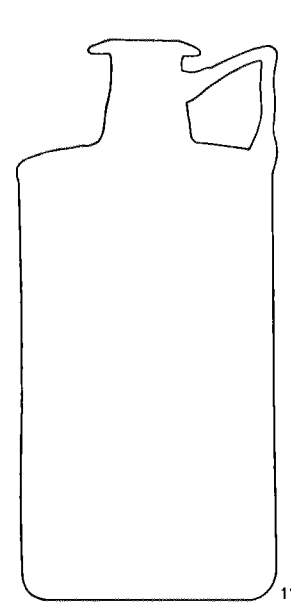
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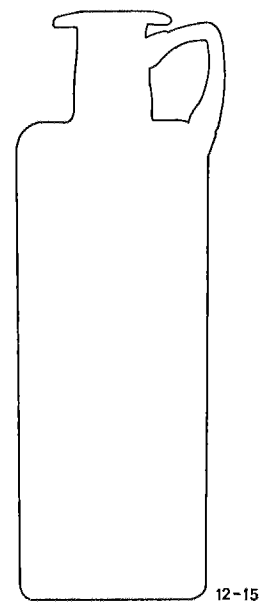
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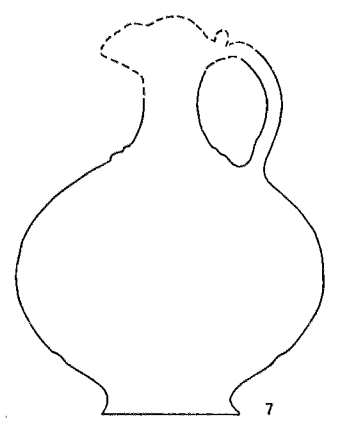
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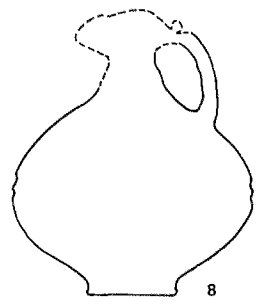
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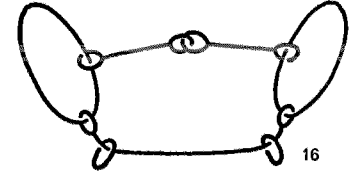
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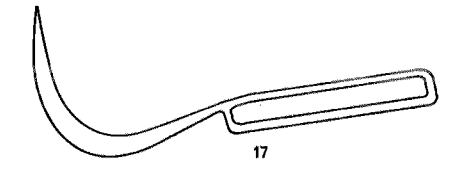
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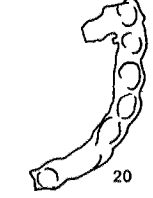
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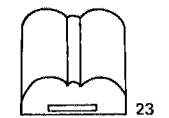
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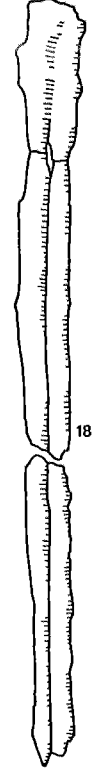
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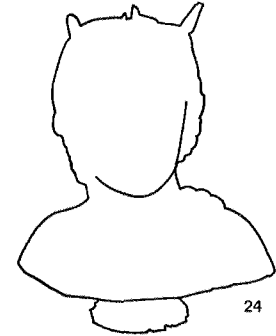
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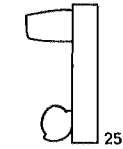
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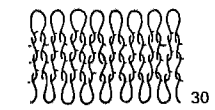
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# Twenty-Five Years ROB Research in Roman Limburg

figs. 1-13; pls. XXI-XXIV

The present article aims to review highlights in twenty-five years of archaeological research in Roman Limburg. Information on a number of cases still awaiting definitive publication is provided in the form of illustrations.

Two important routes crossed through Limburg in Roman times: the river Maas from south to north, flanked by Roman roads, and the big Roman road that ran from Boulogne on the Channel coast to Cologne. It is especially due to the latter route that the centre of Roman Limburg came to lie naturally in the south: the activities of the ROB reflect this circumstance. Two cities in this area, Maastricht and Heerlen, have played a leading part in the excavations. Yet little is known about the nature and manner of their development. Maastricht, situated at the intersection of an important road and a river, still gives the impression that it blossomed late and in the shadow, as it were, of the town of Tongeren near by. Unlike in Tongeren and Heerlen, no early first-century material has been collected in Maastricht. No indications of industrial activity have been found as yet. Trade, which leaves comparatively few tangible traces, may have been one of the motors of the economy. As time went on, however, the town became increasingly important. In the hard times of the fourth and subsequent centuries Maastricht succeeded in manifesting its own identity with growing conviction. Conversely, Heerlen, situated at the cross-roads of the same road along which Maastricht lay and the road from Xanten to Aachen, appears to have been more important in the initial stage – at least, archaeological finds dating from the early first century have been collected. There is ample evidence of industrial activity, albeit presumably of more local or regional significance, which can in part explain why Heerlen flourished in the first three centuries A.D. The impressive thermal complex bears witness to this circumstance. The city appears to have gone generally downhill after that time.

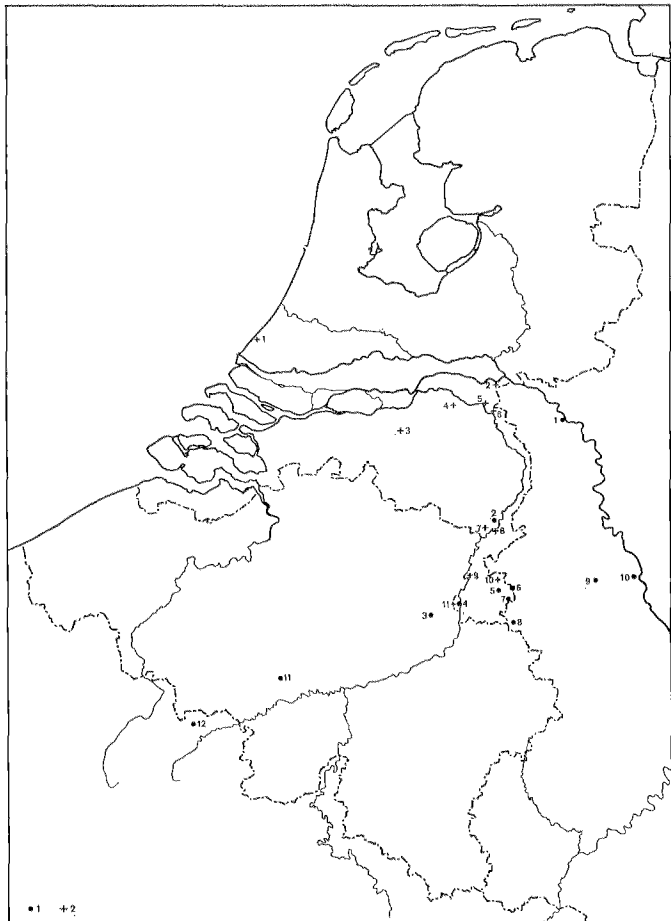


Fig. 1 Settlement sites (dots) and graves/cemeteries (crosses) mentioned in this paper. Sites: 1 Xanten; 2 Haelen; 3 Tongeren; 4 Maastricht; 5 Heerlen; 6 Rimburg; 7 Kerkrade; 8 Aachen; 9 Quadrath/Gr. Königsdorf; 10 Cologne; 11 Liberchies; 12 Bavai. Graves/cemeteries: 1 Ockenburg; 2 Esch; 3 Nijmegen; 4 Schaijk; 5 Mook en Middelaar; 6 Gennep; 7 Heel; 8 Linne; 9 Stein; 10 Brunssum; 11 Maastricht-Belfort

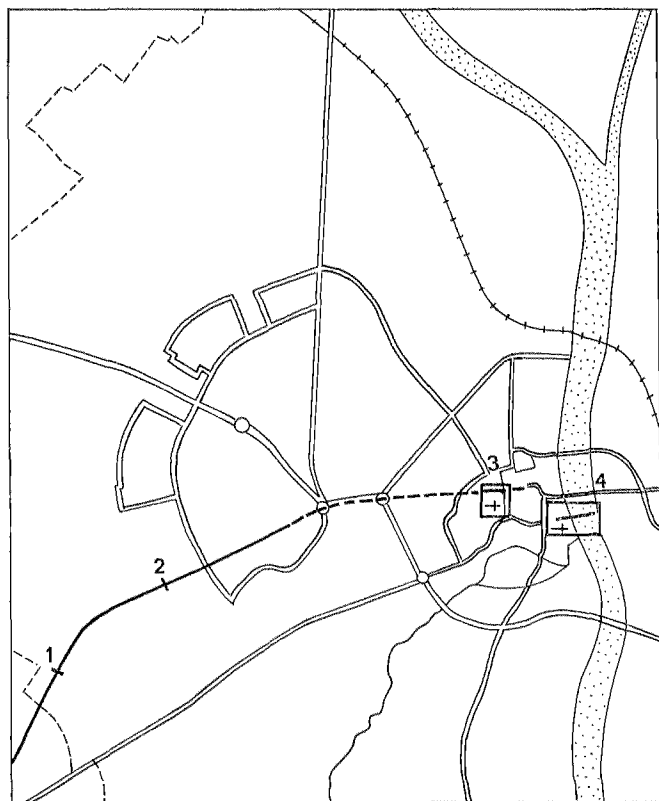


Fig. 2 Maastricht. 1 Profile 1971; 2 Profile 1964; 3 Vrijthof area; 4 Stokstraat area; heavy (broken): Roman road

Although ditches belonging to the fourth-century fortifications (of as yet undetermined size) have been found, much less is known of later times.

The road itself from Boulogne to Cologne received considerable attention during the past twenty-five years: much more in fact than the numerous villas in the area, which did not require such special concern.

Incidentally, rich grave finds were also made in the south of Limburg. More extensive research into cemeteries, however, was undertaken in the centre of the province.

- 1 Leemans 1843.
- 2 Goossens 1923.
- 3 Goossens 1926.

#### MAASTRICHT (figs. 2-9)

Archaeological investigation of traces of Roman times in Maastricht has concentrated – due to the location of finds – on settlement remains. The oldest excavation to have been conducted in Maastricht gives evidence of this. In 1840 H. Hermans, the city architect of Maastricht, and C. Leemans, director of the State Museum of Antiquities in Leiden, studied a hypocaust-heated room which they believed to have been part of a bathing establishment.<sup>1</sup> Their assumption was later proved correct. Also the investigations of the state archivist in Limburg, W. Goossens, focussed on the settlement remains. It is to his credit that the existence of a fourth-century fortification in the Stokstraat area has been convincingly established. He also argued that the bridge over the Maas must have been situated across from Eksterstraat.<sup>2</sup> The latter hypothesis, which was to have its effect on the course of later investigations, concerned the existence of a Merovingian church to the northeast of the Onze Lieve Vrouwe Church.<sup>3</sup> Only this last supposition appears unable to withstand the test of time.

It is obvious, then, that the excavations, under the supervision of J.E. Bogaers, conducted by the State Service for Archaeological Investigations from 1951 to 1965 were again aimed primarily at the settlement remains. An additional reason was the large-scale reconstruction of the Stokstraat quarter – the site also of the older excavations. The result is that we can now form a clearer and more detailed picture of the already known chief elements of the habitation site. Also the investigation of the Vrijthof in 1969 and 1970 has, as far as Roman times are concerned, yielded only settlement traces. The following survey of the excavations conducted by the ROB is regarding the thermal baths and the fourth-century tower north of Morenstraat, based on the preliminary notes in *NKNOB* contributed by J.E. Bogaers.

With the exception of the profiles of the Roman river-bank of the Maas, it has not been possible to re-examine the material. The overall view was compiled from the already known traces,<sup>4</sup> the excavation-sketches of Bogaers' research, and more or less extensive observations made after 1967. Only those traces that are definitively datable to Roman times have been included.

- 4 For older overall views see Goossens 1923 and 1926, Sprenger 1948, and Bogaers 1959 b, 152 fig. 11.

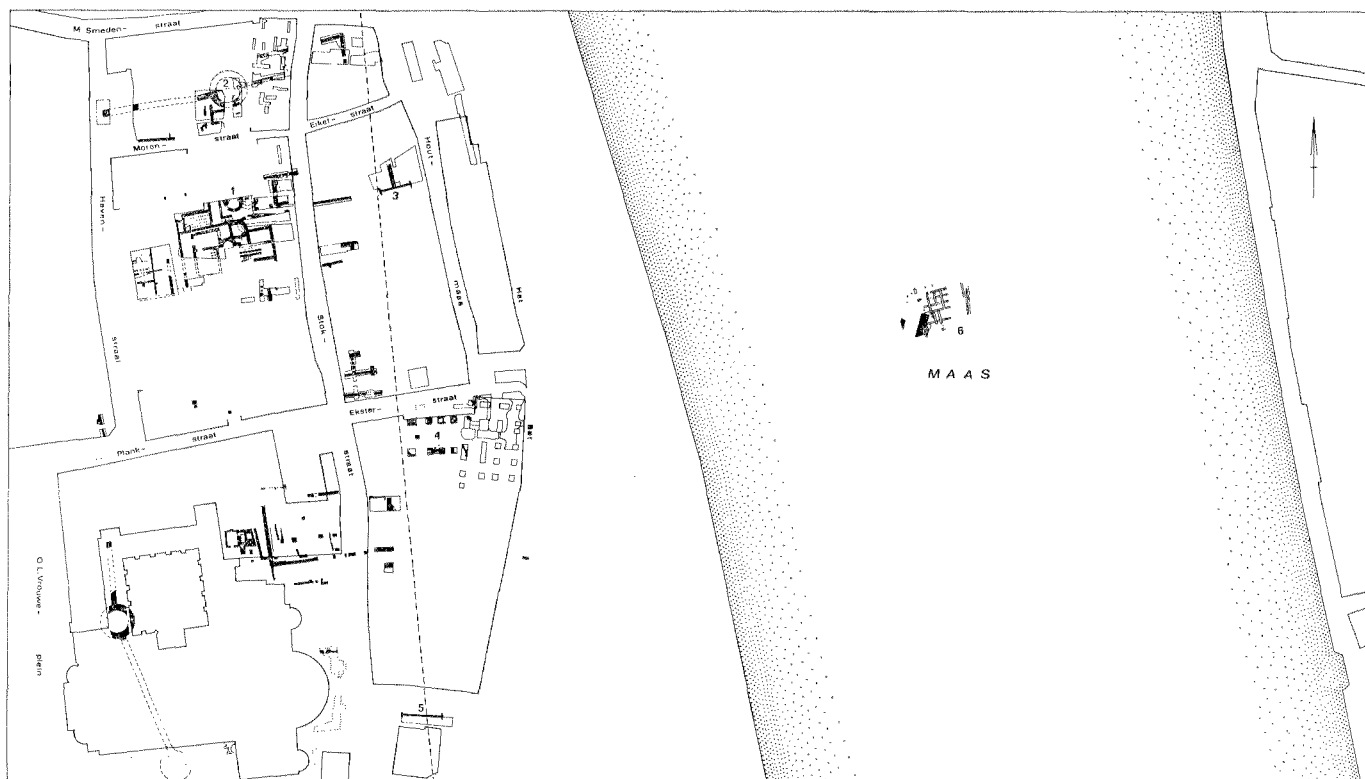


Fig. 3 Maastricht, Stokstraat area, with Roman traces of all periods, scale 1:2000. 1 Thermal baths; 2 4th-century tower 1956–1959; 3 Profile Eikelstraat–Houtmaas 1951; 4 Framework 1969; 5 Profile Het Bat 1965; 6 Roman bridge; --- Supposed western bank in the first century A.D.

*Thermal baths and surrounding area* (fig. 3; pl. XXI)

The site on which ‘the house with bathing establishment,’ investigated by H. Hermans and C. Leemans in 1840 lay, was excavated in 1963, 1964, and part of 1965. The history of the construction appeared to have been quite complicated. The oldest traces belong to a building with a west-oriented apse, which is dated after 100.<sup>5</sup> In connection with the high water-level (?) it was impossible to dig down to the base, so that it is difficult to say when habitation started. The relatively most complete picture is given by two adjoining complexes. Both were built in the second or third centuries, although not simultaneously. The two are separated by a wall at least 17 m long, which

runs from east to west. The first building to be erected was the north structure, remarkable especially for its narrow cellar with niches, windows, possibly a blocked passage, and an entrance with a flight of steps from the east. A room with hypocaust was added later on the west side of this cellar. When the hypocaust collapsed, the hole was filled with earth and rubble. The fill was found to contain an *aes III* of Valens (364–378). The adjoining cellar was presumably abandoned and filled in at the same time, witness a coin-find which may date from the third quarter of the fourth century. The bathing establishment adjoined the cellar on the south side. The furnace was situated on the east side: it opened out under the *caldarium*, of which only the northern apse could be exposed. On the west side, adjoining the *caldarium*, lay the *tepidarium*. It was possible to establish clearly that there was a connection

5 *NKNOB* 1964, 33.

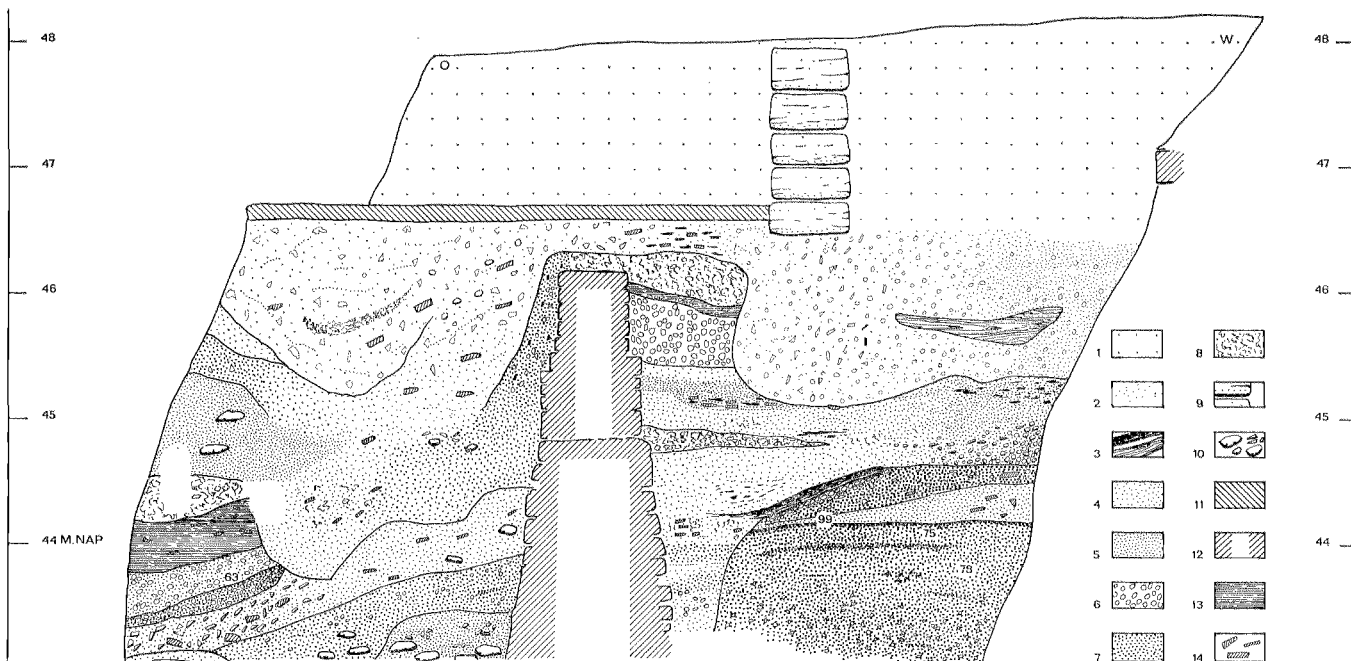


Fig. 4 Maastricht, Eikelstraat: Profile 1951, scale 1:60. 1 Recent; 2 Black soil; 3 Wood/charcoal; 4 Green clay; 5 Grey-black clay; 6 Gravel; 7 Black soil/wood/charcoal; 8 Mortar; 9 Lime-stone; 10 Flint/gravel; 11 Brick; 12 Carbonaceous lime-stone; 13 Burnt loam; 14 Tiles

between *tepidarium* and the more northerly *apodyterium-frigidarium*. In a later stage, to the north of the furnace, an east-west oriented apsidal area was erected, which was connected with the *apodyterium-frigidarium* and presumably served as a cold-water reservoir. Three antoniniani, struck after the death of Claudius II Gothicus (268-270), were found on the floor of the *apodyterium-frigidarium*, and give an indication for the minimal duration during which the thermal complex was in use. Two north-south oriented apses to the east of the cellar of the northern building represent the youngest Roman building activities to be observed. They must date from the last quarter of the fourth century and they cut through a layer of rubble covering the filled-in cellar. It is interesting to note that the youngest coins found in the course of these excavations date from the period 383/388-395.<sup>6</sup>

6 *NKNOB* 1963, 89, 159-61, 182, 210-4, 233-5; 1964, 33-4; 1965, 83 and 122. See also Boersma 1964.

*The wall of the fourth-century castellum* (fig. 3; pl. xxii)

The old excavation provided insight into the existence of the fourth-century *castellum*, and notably of its western boundary. Continued research in 1959 in a cellar on the northwest corner of Plankstraat and Havenstraat yielded a small part of the extension of the western wall, but no new tower.

The excavations towards the end of 1956 and in 1959 north of Morenstraat were, in this respect, more successful. There an entire new tower and a small section of the east-west wall were found (fig. 3: 2). Thus it became possible to establish definitively the northern boundary. Moreover in the northeast corner of Morenstraat and Havenstraat a western extension of the wall could be observed. In Bogaers' view, these ramparts may have been constructed after 355.<sup>7</sup>

7 *NKNOB* 1957, 2; 1959, 59-60 and 85-6.



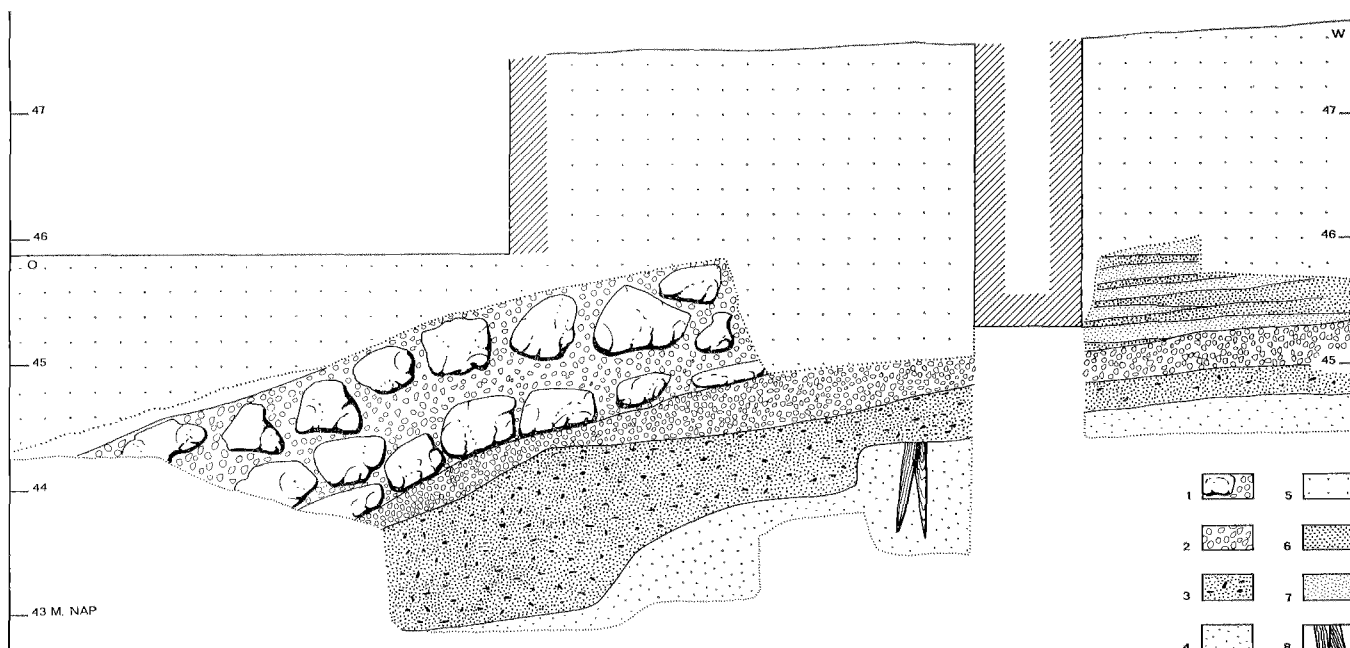


Fig. 5 Maastricht, Het Bat: Profile 1965, scale 1:60. 1 Flint/gravel; 2 Dirty gravel; 3 Black soil/much charcoal; 4 Virgin soil; 5 Recent; 6 Black soil; 7 Clean soil; 8 Wood

The western bank of the Maas (figs. 4-5; pls. xxiii, xxiv: 1) The course of the west bank of the river Maas is closely linked with the boundaries of habitation and the situation of the east wall of the fourth-century fortification. By virtue of a convenient tradition, the latter used to be localized in the site of the medieval city wall<sup>8</sup> – a tradition that has not been confirmed by ROB research. Of vital importance was the excavation in 1951 of the northwest corner of Houtmaas and Eikelstraat<sup>9</sup> (fig. 3: 3; pl. xxiii). The more than 5 m-deep dig yielded *inter alia* interesting profiles showing layers of Roman deposits sloping down from west to east. These deposits rested on a floor of grey-black soil which extended from *c.* 44.20 + NAP, *i.e.* 5.60 m below the present ground-level. Much Roman material, including leather fragments,<sup>10</sup> was found in the bottom layer. The water-level prevented deeper digging. At *c.*

43.00 + NAP several 15–20 cm-thick beams were found. A particularly important find is a remarkable north–south oriented wall which is unmistakably Roman. The wall was built in an unusually deep foundation-trench, probably because the ground was deeply turned. The bottom could still not be seen at 43.00 + NAP. The walling was finished with a jointer down to 43.60 m + NAP on the east side. The foundation-trench was clearly cut starting from the surface of the grey-black soil. The finds selected contain important indications for the dating of this material (pl. xxiv: 1).<sup>11</sup>

The finds make it clear that the wall cannot have been built before the mid-second century A.D. at the earliest; a dating likewise given by Bogaers for the corner of Stokstraat and Maastrichter Smedenstraat, which may have been erected close to or perhaps even in similar deposits as

8 Sprenger 1948.

9 BROB 2, 1951, 2–3 and 7–8.

10 Groenman-van Waateringe 1967, 45–6.

11 See appendix 1, p. 255.

the wall to the west of the Houtmaas.<sup>12</sup> In 1958 it was possible to cut a profile in Stokstraat numbers 61 and 63, situated on the side of Het Bat east of the Onze Lieve Vrouwe Church.<sup>13</sup> Here, too, additional fills were found with a strong decline to the east. It was even possible to observe the beginnings of a black layer, which became thicker towards the east and whose floor had not yet been reached at 43.00 + NAP. During the construction of new buildings in 1969 for the Regional Labour Office along the south side of Eksterstraatje, a great number of heavy square posts (25–30 cm thick) without iron plating were found (fig. 3: 4); these reached a depth from c. 43.00 + NAP to c. 40.75 + NAP. The vertical and horizontal beams form a framework in a clearly structural context. They stood in muddy black soil which was found to contain exclusively Roman pottery. This time it also proved impossible to establish the depth of this remarkable fill.<sup>14</sup> Further east on the corner with Het Bat, excavations in 1965 yielded besides remains of a medieval wall-structure at 43.38 + NAP, also three round oak posts (diameter 20 cm), at a distance of about 2 m from each other (fig. 3: 5). They stood 'in a turned layer of dark-brown peaty soil, in which fragments of tiles and a small number of third-century sherds were found'; the question whether the layer was Roman remained at the time, unresolved. Moreover, Bogaers remarked that no Roman wall structures had been found, whereby he was referring in particular to the possible eastern *castellum* wall. Indeed he suggests that this wall must have been situated further to the east.<sup>15</sup> No traces of wood were found in a 1959 dig north of Eksterstraat at a depth of 43.00 + NAP – the depth of the wooden framework. From these combined observations it may be concluded that in early Roman times the bank of the river Maas, or at any rate the terrace-border or high-tide line, must have lain 15–20 m east of Stokstraat, an assumption earlier expressed by Goossens.<sup>16</sup> In the course of the first half of the second century people evidently started filling up the lower-lying areas by levelling off higher one, and eventually founded a wall in the new deposit.

The wood to the south of Eksterstraat, which according to a C-14 count<sup>17</sup> was cut at the beginning of the century,

must therefore be seen in relation to this early stage, and possibly served as a sort of quay or jetty. It is less likely that it had anything to do with a bridge-ramp – let alone with the fourth-century bridge. For the time being the site of the east wall of the fourth-century fortification must remain a mystery: despite the various excavations along Het Bat no traces of such a construction have been found as yet.<sup>18</sup>

#### *The bridge* (fig. 3: 6)

Several blocks of stone found by chance by the Water Control and Public Works Department during operations to deepen and widen the navigation channel in the Maas marked the start of intensive attempts between 1963 and 1965 to gain better insight into the meaning of these finds. It was not long before a connection was seen between them and the dam of piles and stones Goossens mentioned as having been found in 1915 or 1916.<sup>19</sup> As dredging continued in 1963, large quantities of secondarily worked fragments of sculptures were brought to the surface.<sup>20</sup> The heavy oak piles, strengthened at the tip with iron plating, must have belonged to one of the bridge-supports. In 1964 a special investigation was undertaken, with the assistance of a team of expert divers, of an elevation in the 'dam' about 75 m east of the west bank. A wooden frame was found there at about 40.00 m + NAP: it constitutes part of the bridge construction, whatever the latter may have looked like in detail. The bridge must presumably have been constructed towards the end of the third or in the fourth centuries. In 1965 these operations came to a close with investigations to determine the situation, extent, and depth of the dam.<sup>21</sup>

#### *Other traces in the Stokstraat area*

A number of minor excavations were conducted along the east side of Stokstraat: they yielded Roman walling. It was, however, not possible to recognize a clear context or a coherent ground-plan. The continuation of a wall of the oldest building under the present Stokstraat at the north-east corner of the buildings by the bathing establishment confirms Goossens' theory, based on observations on the

12 *NKNOB* 1957, 98.

13 *NKNOB* 1958, 68 and 85.

14 Bloemers 1971, 48–9.

15 *NKNOB* 1965, 43, 56–7 and 76.

16 Goossens 1923, 51.

17 GrN-6404 (Maastricht 1): 1955 ± 50 B.P.

18 *NKNOB* 1959; 1960, 148–9; 1964, 156.

19 Goossens 1923, 55.

20 Some fragments are illustrated in Timmers 1964.

21 *NKNOB* 1963, 161–4 and 182; 1964, 102–4 and 1965, 44.

south side of Stokstraat, that this street cannot be of Roman origin as has sometimes been suggested.<sup>22</sup>

Finally, an important research was carried out in 1964 and 1966 in the cellars of Stokstraat 47 and 51 to the northeast of Onze Lieve Vrouwe Church on the east side of Stokstraat.<sup>23</sup> The more southern of the two houses, number 51, provided the opportunity of re-examining the walling that Goossens had exposed in 1924 and 1926. Goossens believed there was a link with the traces he had found in 1918 on the west side of the street, and which supposedly dated from the Merovingian period. He even went so far as to regard this building as a Christian church.<sup>24</sup> The beginnings of a semi-circular foundation, reminiscent of an apse, were found in number 47. A west-oriented wall section does not really fit in with this, and moreover is not aligned with the course of the north wall of Goossens' 'church.'

Incidentally, a fairly long additional section of the latter wall was found after the demolition of Stokstraat 44 a–c.<sup>25</sup> Bogaers saw no reason to consider the wall observed by him as other than Roman. Goossens had also remarked upon the undeniably Roman characteristics of the brickwork of the pseudo-Merovingian church. The semi-circle on the east side, which could possibly be seen as choir foundations, does not lie in the axis of the building – even after meticulous re-measurement by the Public Works Department in Maastricht of all the walls still accessible on the west side of Stokstraat. It is above all surprising that in all the years of activity in this neighbourhood, no trace of a cemetery or burial was found – and such traces must surely be expected in the environs of an early church (*cf.* Sint Servaas). Goossens' hypothesis concerning the existence of an early Christian church, then, appears untenable for the time being.

#### HEERLEN

In 1952 the ROB undertook to continue the research into the Roman *thermae* in Heerlen, commenced by Professor A.E. van Giffen in 1941.<sup>26</sup>

This step was necessitated by the alterations planned for the neighbourhood, such as the construction of a theatre to the northeast of the baths. The excavation was supervised by J.E. Bogaers. The results of this and later excava-

tions have been summarized in *Honderd Eeuwen Nederland*.<sup>27</sup> The map of the centre of Heerlen with indications of the traces of Roman habitation may still be considered largely up to date, hence its omission here. New was the insight that the first-century buildings on the 'theatre site' on the west side of Raadhuisplein were constructed of wood and loam. The pattern of streets in the centre of Roman Heerlen was far from simple. The nucleus was formed by the intersection of the east–west road from Tongeren-Maastricht to Cologne and the north–south road from Xanten to Aachen. But other roads branched off from these – one transverse road having been found to the northwest of the baths. Another east–west road, a fragment of which had already been found, was encountered during investigations of the foundation of a department store west of the town hall and north of Raadhuisplein.<sup>28</sup> Also a considerable portion was exposed of the two ditches, in which Van Giffen had already made two narrow cuttings. It became evident that these ditches should be dated to late-Roman times, but that the ditch to the south of the baths is older than that to the north. The ground underlying the baths was therefore added to the ditch-enclosed area at a later stage. The nature and extent of this ditch-bound area is, however, still unclear. Traces of two kilns were observed, but there was no find-material to speak of. After these excavations were concluded, however, several other traces of Roman potteries were found: they are discussed elsewhere in this issue.

#### VILLA RESEARCH

Research into Roman villas in the south of the Netherlands has constituted a relatively minor aspect of post-war excavation activities. Only three excavation projects were undertaken: Kerkrade-Kaalheide, Heerlen-Meezenbroek, and Haalen-Melenborg. Although the extent of these excavations was limited, the research conducted at Kaalheide in 1950 yielded interesting and surprising results.<sup>29</sup> This investigation, supervised by H. Brunsting of the State Museum of Antiquities, in Leiden, in fact represented the third and final stage in a series of excavations from the years 1936 and 1941. An aspect of particular importance is that a wooden building with a rectangular groundplan existed on the site prior to the erection of the

22 *NKNOB* 1957, 56 and 1964, 105.

23 *NKNOB* 1964, 34, 104–5, 140, and 1966, 95.

24 Goossens 1926, 36.

25 *NKNOB* 1968, 44–5.

26 Van Giffen/Glasbergen 1948.

27 Bogaers 1959 b, 148–51, and 157–9.

28 Van Hommerich 1961 and the fold-out.

29 Brunsting 1950.

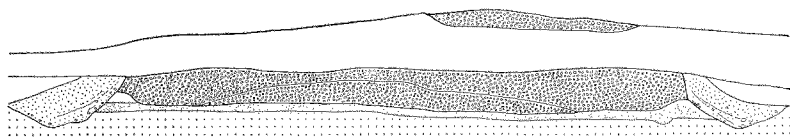


Fig. 6 Maastricht: Profile over Roman road 1964, scale 1:100

stone villa. This situation gained even more importance through the find of a terra sigillata bottom-shoulder bearing the stamp of the potter Cn. Ateius, so that a dating early in the first century A.D. must be taken into consideration. These two exceptional circumstances throw a new light on the possibly sparse traces of early Roman settlement in the countryside. The investigation of the villa remains at Heerlen-Meezenbroek, likewise carried out in 1950, does not give rise to further comment.<sup>30</sup> All the more interesting is the excavation of the Melenborg at Haalen in the years 1963–1965.<sup>31</sup> This terrain, which was subjected to large-scale denudation, was, according to J. H. Holwerda and W. Goossens, also the site of a Roman watch-tower. Extensive research there lasted from 1963 up to and including 1965. Both the circumstance that the area in which Holwerda and Goossens had observed the watch-tower had already been denuded and the poor state of conservation of the various culture levels, severely affected the final results. Only the remains of two buildings were recovered. The larger of the two (at least 14.30 × 11.50 m) contained four rooms and was equipped with a heating system; the other, without interior divisions, measured 6 by 5 m. These structural remains could not give any indication whether or not the occupation was military. Only the find of a roof-tile stamp LXGPF, of the tenth legion which was stationed at Nijmegen during the last thirty years of the first century, could give an indication as to the nature of occupation. It remains uncertain whether a link exists between this tenth legion and another roof-tile stamp with a serrated circle inscribed with an equilateral cross found on the Melenborg. Whatever the nature of occupation may have been, this research yielded little new information on rural habitation in Limburg.

OBSERVATIONS ALONG THE DUTCH SECTION OF THE ROAD BOULOGNE–BAVAI–TONGEREN–COLOGNE (figs. 6–13; pl. XXIV: 2)

The Roman road from the Channel coast at Boulogne over Bavai and Tongeren to Cologne led through Lim-

burg from Maastricht over Heerlen to Rimburch on the small river Worm (fig. 13).

This 'European' highway had a considerable impact on the history of habitation in this area. Indeed, it crops up time and again in the literature. In the course of post-war excavations it was exposed at various places along the route, usually as part of larger investigations. This occurred most frequently in Heerlen, although exclusively routes in the settlement area were involved there. The picture is complex, determined as it is by the numerous and locally very diverse changes to which a road in a settlement is subjected. The intensity of Roman and modern occupation have, moreover, had an adverse effect on research-results. Also the two road profiles at Rimburch and Maastricht, which will be dealt with later at more length, pass through a settlement, but they were less affected by these disturbing factors. Before turning our attention to these cuttings, it is well to note two profiles of the same road which were recorded outside the settlement, in the open field to the west of Maastricht. The first and better conserved was cut in 1964 during construction-work in the new built-up area Belfort (figs. 2: 2 and 6).<sup>32</sup> Two stages may be distinguished: in the older, the grey metalling is 4.85 m wide and 0.35 m thick and constructed with brown gravel (*stol*). The ditches have a minimum width of 1.20–1.50 m at the surface, and a minimum depth of 0.65–0.70 m. There are no indications for an accurate dating. In the profile that was cut in 1971 c. 900 m further west in a sewage-trench, the two stages and the northern curb-ditch were lacking (fig. 2: 1)<sup>32a</sup>. Some 3 km east of the latter site, the Roman road passes, at a distance of a good 300 m from the Roman bank of the Maas, along the north side of the present Vrijthof, the heart of modern Maastricht. In 1969 and 1970 the construction of a subterranean parking lot made it necessary to excavate that part of the Vrijthof that lay within the pedestrian routes (figs. 2: 3 and 7).<sup>33</sup> Without going into the results of the research as a whole, a number of observations pertaining to the Roman road may be discussed in some detail. In so far as these observations

<sup>30</sup> *BROB* 1950, 5, 8, 9, 10, 39, 42–3, 45.

<sup>31</sup> *NKNOB* 1963, 71–2, 232–3; 1964, 33, 63, 134–6; 1965, 56, 74–6.

<sup>32</sup> *NKNOB* 1964, 138–9.

<sup>32a</sup> Bloemers 1973, 41, *afb.* 15: 3.

<sup>33</sup> *NKNOB* 1970, 141–2.

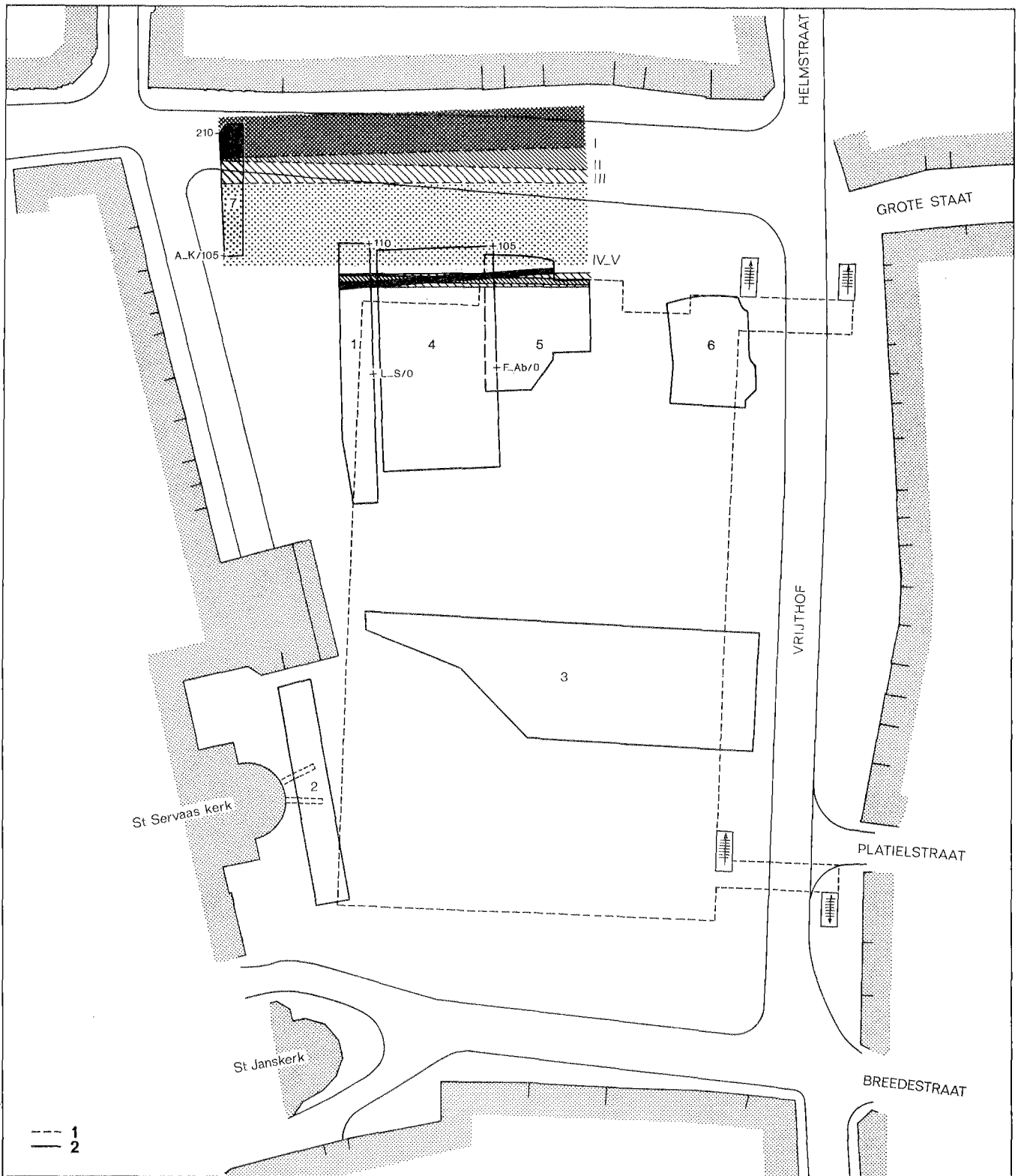
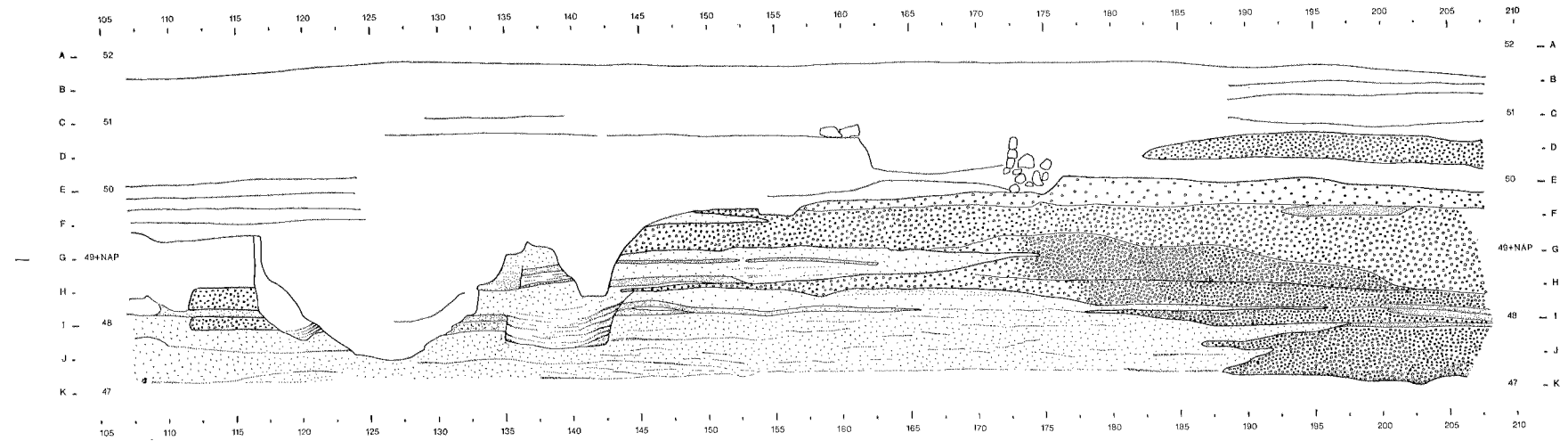


Fig. 7 Maastricht, Vrijthof area, scale 1:1000. 1 Parking; 2 Excavation; pits 1-7; i-v Roman roads

8a



8b

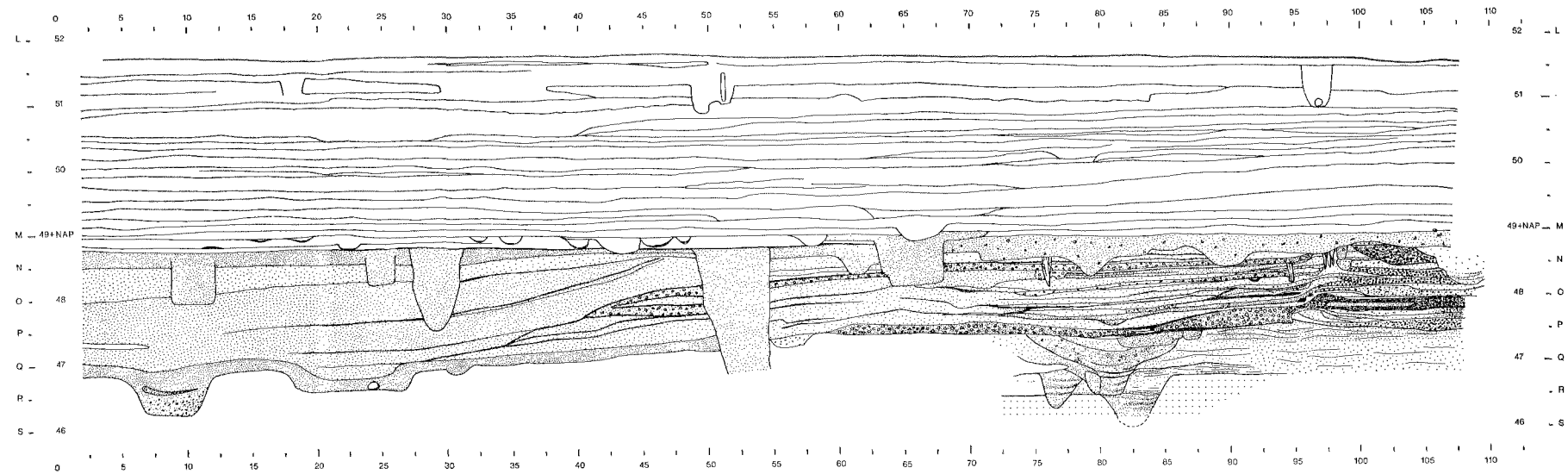
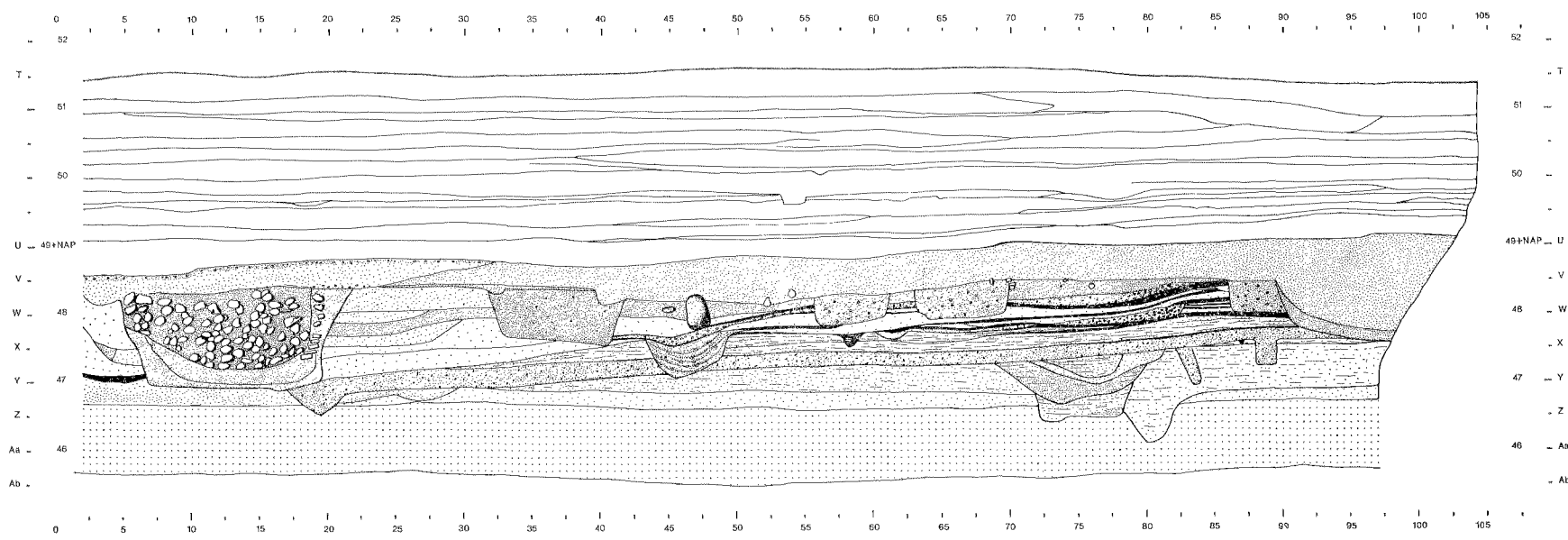
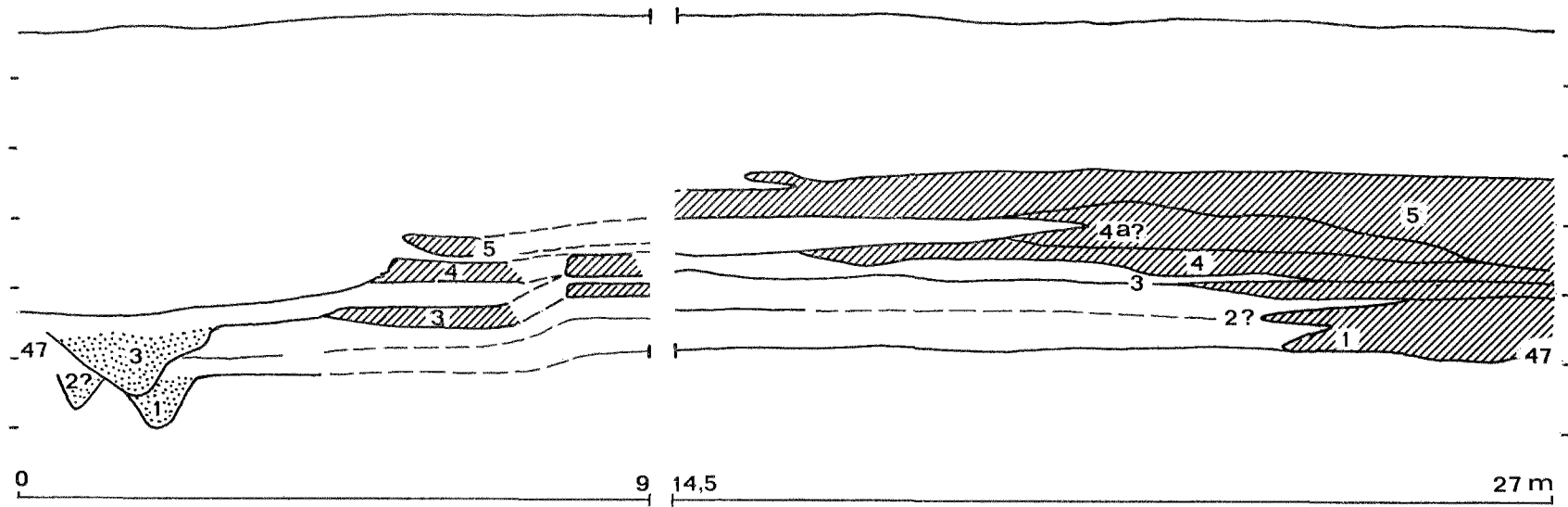


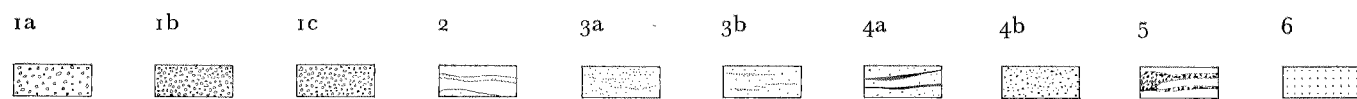
Fig. 8 Maastricht, Vrijthof: Profiles, scale 1:100. 8a = pit 7, 8b = pit 1, 8c = pit 4, 8d = schematic periodization (pits 1 and 7). 1a-c Gravel; 2 Dark layers; 3a-b Loess; 4a-b Charcoal; 5 Burnt loam; 6 Virgin soil



8c



8d



concern the deepest levels – and this is usually the case – they were made under considerable pressure due to approaching date for starting construction of the parking lot. Certain aspects therefore did not receive the attention they merited, or their value was not even fully appreciated. Nevertheless, a conclusive picture may be formed.

The eastern profiles of pit 1 and pit 4 (figs. 8b–c), *c.* 21 m apart, showed a ditch that had been cut into the oldest surface (pit 1: 80; pit 4: 85; *c.* 46.80–46.90 m + NAP; Period I).<sup>34</sup> The width of the ditch varies from 1.10–1.50 m, the depth is *c.* 0.80 m. It is even possible that 1.20–1.40 m (measured between centres) to the south of this ditch, a second ditch was cut (Period II?) in both profiles pit 1 and pit 4. In the profile of pit 1 (76; 46.50 + NAP) the ditch measures 0.60 m wide and 0.50 m deep. In profile pit 4 the small hollow (73; 46.50 + NAP) in the bottom of the youngest ditch appears to be the remainder of the same ditch, although here it is for the most part removed. Both ditches are remarkable for an extraordinary clean yellow loess filling.

In December 1969, when a sewer was laid half-way up the street along the north side of the Vrijthof, *c.* 20 m west of pit 1, a fairly complicated profile (pit 7) (fig. 8a) was recorded, but there was no time for further study. This profile displayed a stratum of soil about 5 m thick, reaching from ground-level (47.10/20 m + NAP) up to the current street-level (52.00 m + NAP). Roughly aligned with the ditches in pits 1 and 4, a 4-m-long section of a gravel-slope – the oldest find in the area – was found on the base in the northern extreme of the profile, at 188–210; 47.10/20 m + NAP. The top of this slope was situated at 47.85 m + NAP, partially covered by a 5-cm-thick layer of grey dirt, possibly the road surface. The south side of the gravel-slope was adjoined by a 0.90-m-thick (47.20/30–48.10/20 m + NAP) bed of clean loess. Half-way down this stratum (186–190; 47.60/70 m + NAP) a layer of gravel about 10 cm thick fanned out from the bed of gravel – giving rise to the assumption that the loess fill and the bed of gravel were probably not deposited simultaneously. This distinction between Period I and Period II? was not observed in the bed of gravel itself. It is not inconceivable that this circumstance is related to the second ditch which was clearly observable in pit 1 and which may also have existed in pit 4. Further south, the bed of loess likewise overlay the aforementioned ditches Period I and II? where it reached from 46.80 to 47.50 m + NAP.

<sup>34</sup> Profile 1 was drawn in July/August 1969, profile 4 in December 1969/January 1970.

Even further south it thinned out and eventually fanned out, and flush with the base in pit 4 at 32; 46.90 + NAP. This bed of loess indicates that the deepest gravel-stratum under Vrijthof-Noord and the ditches in pits 1 and 4 belong together in a stratigraphical context, and may consequently be contemporaneous. The distance from the south side of the gravel of Period I and Period II? respectively to the extension of the centre of the ditch Period I in pit 1 measures *c.* 21 m, and to that of Period II? *c.* 22.20 m. The bed of gravel and partly of the loess in the northern end of pit 7 are covered by a *c.* 20-cm-thick layer of gravel (178; 47.90–48.20 m + NAP; Period III), which extends 1.50–2 m further south than the preceding layers. In both profiles 1 and 4 the first two ditches are overlaid by a ditch-like cutting starting in the surface of the loess deposit (Period III). In profile pit 1 (175–185; 47.30 + NAP) the cross-section is hemispherical with dirty filling and at the bottom U-shaped with clean loess filling; in profile pit 4 (69–81; 47.30 + NAP) the entire cutting has a U-shaped broad cross-section with at the top a dirty loess filling and at the bottom a clean loess filling. The bed of gravel in pit 7 was covered by later gravel and loess deposits; the ditches in profiles pit 1 and pit 4 were likewise covered by later deposits of alternately charred layers and clean loess. Here again the gravel deposits and ditch are stratigraphically equivalent, and consequently may be contemporaneous. The distance from the centre of the ditches Period III to the end of the gravel Period III measures *c.* 19.50 m.

Profile pit 1 shows that the dirty horizontals with charred material and burnt loam in the fill overlying the ditches of Period III (47.40/50–48.70/80 m + NAP) runs into 5–15-cm-thick levels of gravel to the north (94–106). These levels are in turn separated by thin levels of clean loess, some of which become narrower and then disappear at the northern end of the profile. The same fill was encountered in Profile pit 4, but the accompanying layers of gravel were disturbed by early medieval digging. The relation between profiles pit 1 and pit 7 is much more problematical. Until the time when pit 7 was recorded (December 1969) the levels of gravel in pit 1 were always considered as belonging to the curb of the Roman road. The southern end of profile pit 7, however, does not present an entirely corresponding picture. Although there is a bed of gravel at 111; 47.95–48.60 m + NAP, here only two strata can be distinguished, separated by a layer of loam about 10 cm thick. Further north in the profile these two layers of gravel are no longer clearly distinguishable. However, there is a *c.* 10-cm-thick band of gravel, starting at 143; 48.60 m + NAP which is nearly 40 cm thick from 175;



48.25–62 m + NAP onwards. The total breadth is at least 13 m. Here the impression is created that the gravel road was diverted to the south or improved with a heavier paving in the northern part – the surface of the extra deposit being at 175–185; 49.00/10 m + NAP. Whether this layer of gravel represents a later improvement from this period (Period IVa?) or whether the layer together with the adjoining bed of loess constitutes part of the bank for subsequent road-paving is unclear. Both layers of gravel (Periods IV and IVa?) are stratigraphically equivalent to the uppermost gravel-layer in the south end of this profile (1115; 48.50 + NAP): all are covered by one (and the same?) bed of loess. This loess is overlaid from 143 onwards by a layer of gravel covering all previous fills to the north quite flatly so that the top lies at 49.70/90 m + NAP (Period V). The width of this road-surface must have far exceeded 13 m, in view of the thickness of the deposit at the north end of profile pit 7. Here too the southern extension dating from Period IV was retained, but in addition at least part of the original oldest route (Periods I–III) must have remained in use. It is very difficult to trace Periods IV and V in pit 7 back to profile pit 1. Many small black bands and gravel levels may be distinguished there, and possibly three larger units. Within the bed of gravel these may be the levels that reach from 47.50–48.10 m + NAP, 48.20/40 m + NAP, respectively. In the loess deposit further south the charred layers at 90; 47.60/80 m + NAP, 48.20/40 m + NAP and 48.40/60 m + NAP could be considered as such units. In profile pit 4 such zones may be distinguished over a distance of 5 m (63–85, from 47.45/60 m + NAP, 47.90/48.10 m + NAP, and 48.20/40 m + NAP). Perhaps the bottom gravel zone as a whole may be related to Period III and the bottom charred layer with a later covering of the accompanying ditch. The other two zones could then correspond with Periods IV and V. The level of Period IV does not necessarily contradict this. Period V, however, is considerably higher up in pit 7. Possibly the top of Period V in pits 1 and 4 was disturbed during the early and late Middle Ages. The roads Periods IV and V no longer have verge-zones. In conclusion it should be noted that habitation in the strict sense, *i.e.* the wooden houses and the cellar of limestone blocks, only starts fairly high up in the heightening. In pit 4 the first wooden houses were observed when proceeding from level 6 to level 7 (from 48.20 to 48.00 m + NAP). The top of the limestone walls reached to 48.50 m + NAP. In all cases the corre-

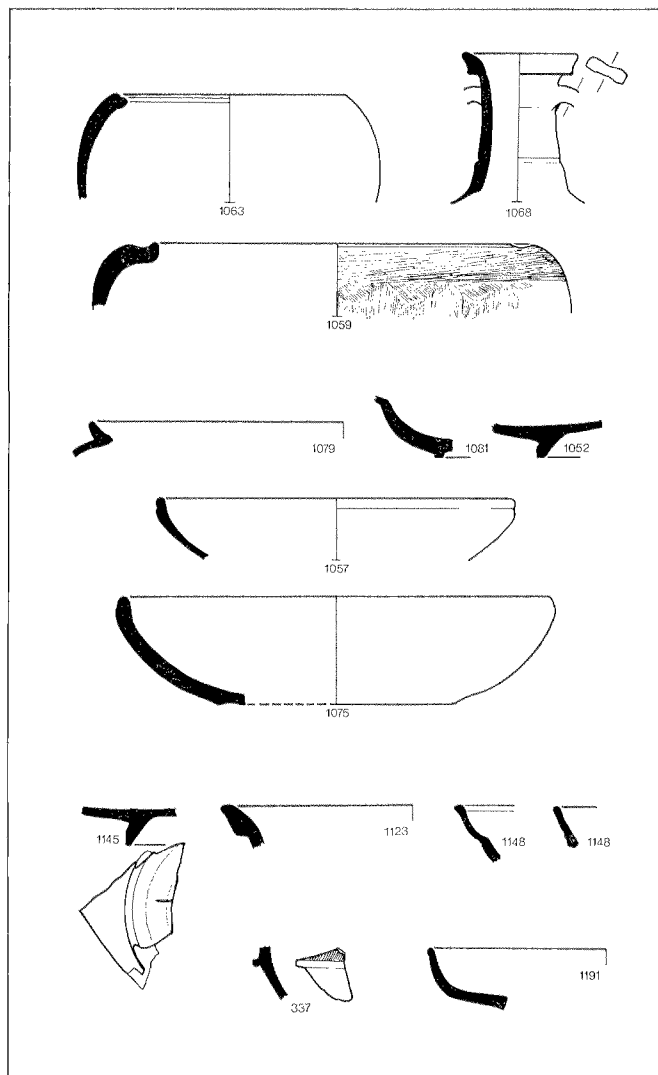


Fig. 9 Maastricht, Vrijthof area: Selected finds (see App. II)

sponding level of habitation must have lain even higher. Even though we are unable to give an exact dating for the above material and in particular for the roads and ditches of Periods I–III, the time-span can be established fairly accurately. Neither the ditches nor the actual road-beds from Period III yielded even a single find that could provide a closer dating. That the ditches are Roman is suggested by a small number of smooth-walled Roman wall-

dating of the terra sigillata, even though the piece was undecorated.

35 See appendix II, p. 256. I am very grateful to Mr C.G.M. Morren, Apeldoorn, for his willingness to give his opinion on the

sherds found in the upper fill of the ditch Period III (nos. 381 and 382). Not a single pre-Roman find was collected during the entire excavation.

The finds are of importance for the dating of the material discussed above.<sup>35</sup> The conclusion that may be drawn from the sherd material and the find circumstances is that the roads with ditches Periods I–III were constructed in pre-Flavian times, and probably as early as the first half of the first century A.D. The most characteristic features of these roads are a hard core of at least 4–6 m wide, and a 19.00–22.20 m wide, unmetalled zone to the south of that, bounded by a ditch. In a later stage, presumably toward the end of the first century, the metalled area was extended to cover the previously unmetalled zone at the south side, while the ditches were filled in. Small buildings were eventually erected on top of this heightening, and over the former ditches.

A more or less happy coincidence necessitated the excavation – in the spring of 1970, directly following the Vrijthof research – of the Roman settlement at Rimburg, where the same Roman road crosses the river Worm and leaves the Netherlands (fig. 10).<sup>36</sup> From this research, we must now examine one aspect that has a bearing on the observations made in Maastricht and elsewhere.

During this dig in the tracé of a large sewer, it was possible to obtain, in an angle of about 60 degrees, a 8-m-wide and 300-m-long cross-section of the Roman road and buildings on either side (fig. 11 and pl. xxiv: 2). At the time when the road was constructed a *c.* 10-cm-thick layer of coarser gravelly material was laid on the original bed over a breadth of 7.00–7.75 m (measured at right angles). It is difficult to say whether this layer served only to strengthen the base of the road or that it also functioned for a while as a road-surface. The somewhat dirty ground directly under and in the gravel can be either the remains of an old layer or an old road-surface. Overlying this coarse layer was a bed of gravel at most 35 cm thick, the uppermost 4 cm being a dirty grey and the rest yellow. The breadth varies from 9 to 12 m. This layer was surmounted by another bed of gravel, 36 cm thick, of which only the bottom 10 cm is brownish yellow, and the rest dirty grey. The breadth is *c.* 10.75–11.20 m. There are no ditches close to the road belonging to any of these levels. The only ditches to be observed running more or less parallel to the road are situated at a greater distance from it, and are overcut by all other traces. At the north side there is a ditch at a distance of *c.* 6.75 (measured at right angles)

36 *NKNOB* 1971, 115–6 and 128.

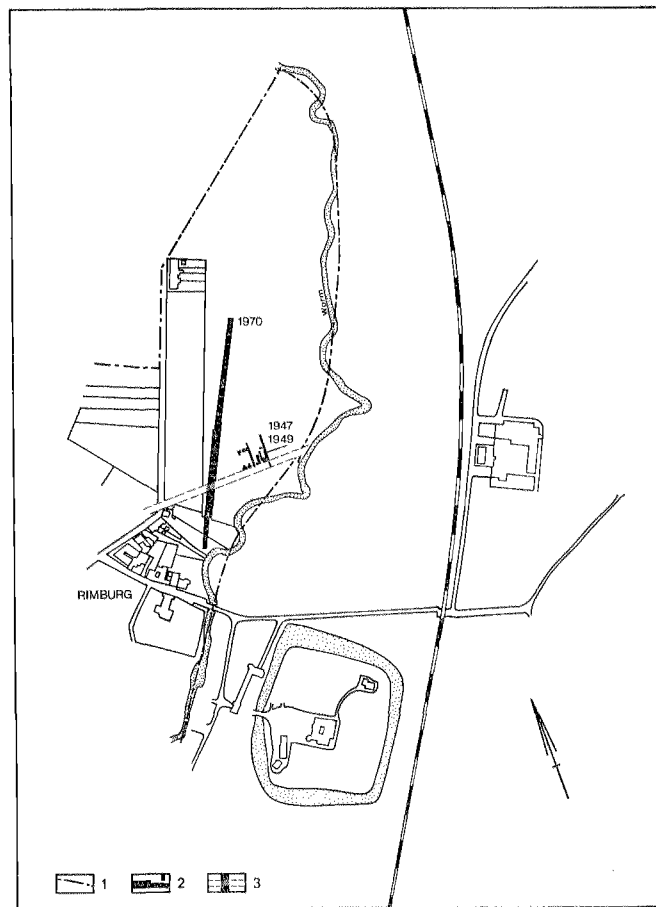


Fig. 10 Rimburg, scale 1:10,000. 1 German-Dutch border (partly new bed of the river Worm); 2 Excavated area; 3 Roman road

from the edge of the bottom (coarse) layer of gravel (14); it is 1.10 wide and 0.30 m deep. 6.25 m further north, *i.e.* 13 m from the road, a second ditch (0.60 m wide, depth 0.50 m) was found (18); it runs in a slightly different direction and is not quite parallel to the road. The southern ditch is also 13 m away from the road (1). The width is 0.50 m, the depth 0.32 m. All the fairly shallow ditches have an overall dirty filling. They are dug from the oldest level. The zone between the ditches and the core of the road is not metalled. It is difficult to establish which road-surface belongs to which ditch: the bottom coarse layer of gravel or the bed overlying it.

Two finds may help to gain insight into the age of these ditches. First of all an extremely important sherd from a pit which, like the ditches, is overcut by all traces (C–D/

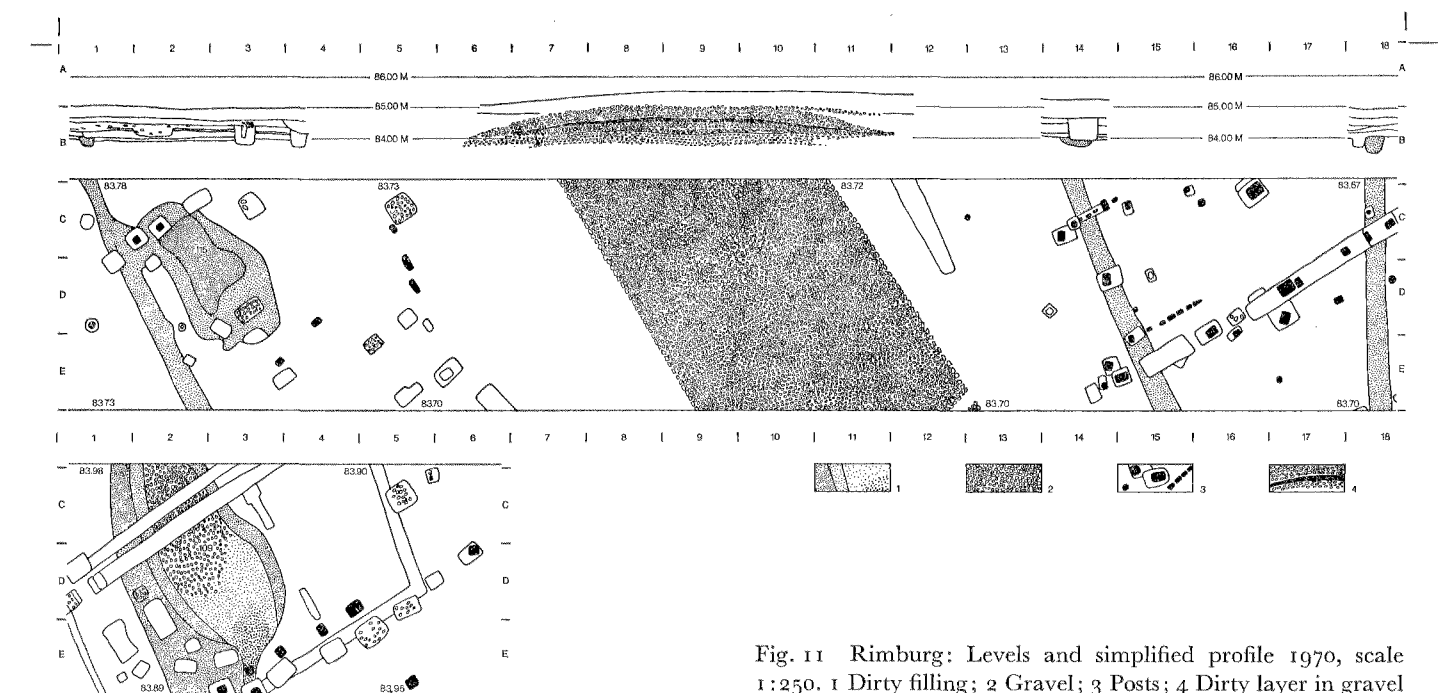


Fig. 11 Rimburg: Levels and simplified profile 1970, scale 1:250. 1 Dirty filling; 2 Gravel; 3 Posts; 4 Dirty layer in gravel

2-3; 83.73-8 + NAP). The pit lay close to the inside of the southern ditch, and, with its pale grey fill, even seems to run into the ditch-filling. Stratigraphically they are equivalent, and they may well be contemporaneous. In this pit a fairly complete terra sigillata plate with the stamp CN.ATE was found (fig. 12: 115).<sup>37</sup> Enough of the rim has survived to enable us to determine that the plate is of the type Haltern 1 b with the classical rim profile.<sup>38</sup> The production of Ateius, who must have also made this plate, lasted in the province from c. 5-20 A.D., according to current opinion.<sup>39</sup> However, these dates should not be used as a direct indication of the date of our ditches. Particularly terra sigillata and certainly this early type remained in use for a long time, possibly even longer in a civil context than in a military one. Of course the road originally served a military function, but the later settlement was distinctly civil in nature. The pit in which this plate was found is covered by a layer of gravel which

is in turn overcut by the oldest houses there (C-D/2-3; 83.89-98 + NAP). This layer of gravel was found to contain a dupondius of Trajan, datable to the years 104-11.<sup>40</sup> Moreover a neck-fragment of a smooth-walled jug from the first half of the second century A.D. was found at the point where the gravel meets the ground containing this layer and covering the pit (fig. 12: 109).<sup>41</sup> This pit and ditch, and thus most probably also the other ditches, must date from the first century A.D. A dating as early as the first half or the middle of this century should not be excluded. We have thus seen that the road both in Maastricht and in Rimburg, in roughly the same period, shows the same picture: a hard core flanked by wide, unmetalled strips (9.00-22.20 m and 6.75-13.00 m, respectively), hemmed in by more or less wide and deep ditches. This situation is not unique. Similar observations were made in Liberchies in Belgium (fig. 13: 2),<sup>42</sup> where ditches were found on either side of a 6-m-wide metalled road, at a

37 Oxé/Comfort 1968, 58 no. 236b.

38 Loeschcke 1909, 139 *Abb.* 1 and Ettlinger 1967, 84 *Abb.* 6-7.

39 Oxé 1943, 62 and Ettlinger 1962, 35; Ettlinger/Simonett 1952, 122-3.

40 Determination by J.P.A. van der Vin, Royal Coin Cabinet, The Hague. I am grateful to him for his cooperation.

41 Stuart 1963, pl. 6: 102 type 110 B (middle II).

42 Claes 1969 and Brulet 1969.

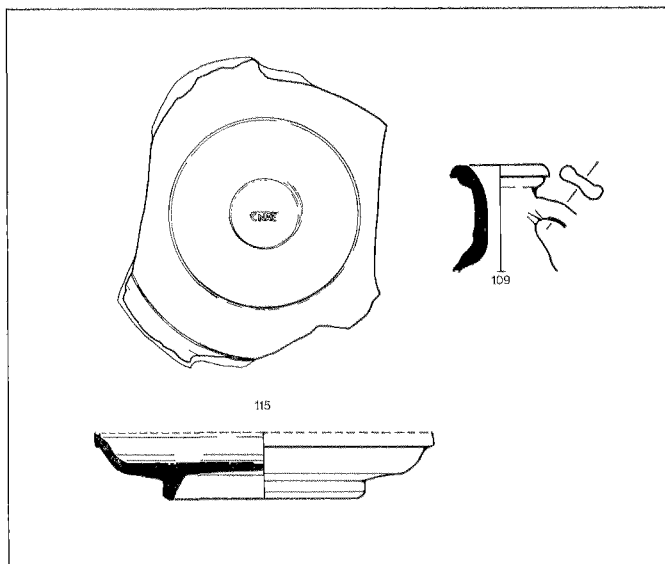


Fig. 12 Rimburch: Finds

distance of 13 and 16 m, respectively. This structure continued for hundreds of metres, also outside the Roman settlements. The distance between the ditches varies from 55 to a good 37 m. The ditches are 2–2.50 m wide and *c.* 1.00 m deep. A particularly interesting aspect is that the ditches yielded many finds, dating from the times of Augustus to Caligula. In addition, some Flavian and second-century material came to light in a section of the ditch outside the settlement. It is thought that the road and ditches may date from the time of Augustus. Only in the second half of the second century were the ditches completely filled in. These dates may be compared with those established for Maastricht and Rimburch. In Germany, between Grosskönigsdorf and Quadrath (Kreis Bergheim) along the same roadtracé, two ditches 24.80 m apart were found running parallel to the Roman road (fig. 13: 7).<sup>43</sup> The road there clearly consisted, in various periods, of a hard core of 5–7 m flanked by beds of sand laid down in various stages. Two profiles may be distinguished in the ditches. The youngest belongs to Period VI of the road-metalling. Of the oldest it is not quite clear whether it accords with the road of Period I. There are

no further indications for a more accurate dating of the roads and ditches. Along other Roman roads, too, similar broad sections have been unearthed: in Belgium near Florenville along the Reims–Trier road (25 m wide, cleaned strip),<sup>44</sup> in the north of France near Tartigny along the Amiens–Senlis road (ditches at a distance of 20 m from the road-side),<sup>45</sup> and in England along Stane Street, Ackling Dyke, Port Way (distance between ditches 84 to 86 feet = 25.50–26 m) and along the road from Colchester to Great Chesterford (13 and 16 m distance respectively between ditches and road-side, and a total width of *c.* 42 m).<sup>46</sup> On the function of such wide borders next to the hard core of the road several plausible explanations have been put forward. Piepers speaks of a sandy track which could be used in the dry seasons by draught-animals and horsemen.<sup>47</sup> Claes shares this view, but ascribes to the ditches also a defensive function during the period of road-construction.<sup>48</sup> From these explanations it is only a small step to military use: for large-scale transportation of troops, whereby foot-soldiers or cavalry could travel on the unmetalled part and wagons and the rest of the army vehicles could use the metalled. The fact that such wide roads were in use early in the first century points in the same direction. For this was the heyday of military operations, both in connection with Rome's expansionist policy and with the still relatively unstable situation within the sphere of influence.

#### THE CEMETERIES (*cf.* fig. 1)

Our knowledge of Roman cemeteries in the Netherlands is based on a large number of chance finds, by which the details of the burial practices were determined under very unfavourable circumstances or not at all, a few chance finds which were followed by normal, more or less extensive rescue excavations, and an even smaller number of normally and quite extensively excavated cemeteries. Particularly since most of the show-cases in museums, chambers of antiquities, and private collections to the

Fig. 13 Roman road Bavai–Cologne. 1 Bavai; 2 Liberchies; 3 Tongeren; 4 Maastricht; 5 Heerlen; 6 Rimburch; 7 Quadrath/Gross Königsdorf; 8 Cologne

43 Piepers 1968.

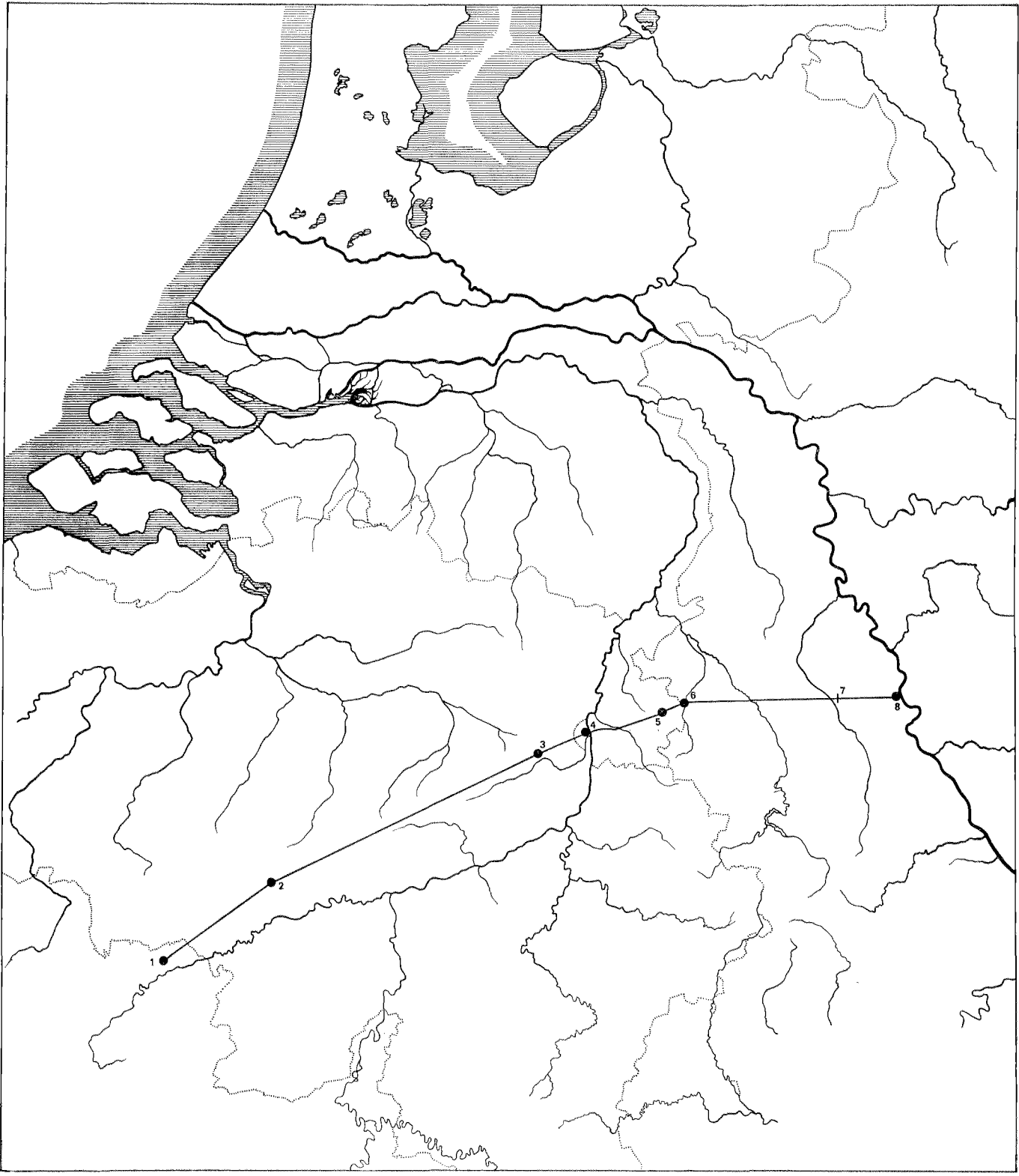
44 Mertens 1956, 109.

45 Agache 1968.

46 Margary 1955–7, I, 16 and II, 230–1; Powell 1963, 27.

47 Piepers 1968, 321.

48 Claes 1969, 150.



south of the Limes in this country are filled to overflowing with objects from grave finds, it is paradoxical to note that we have, in fact, relatively little information on this aspect of Roman culture in this country. The largest cemetery in this country, at Hees near Nijmegen, which became so well-known thanks to its publication by H. Brunsting, is a prime example of treasure-hunting. The cemetery, which was likewise found at Nijmegen in the grounds of the Canisius College, does give a coherent picture of the find-spots, but here, too, every clear indication of the burial procedure is lacking.<sup>49</sup> At the small Ockenburgh cemetery, the burials were extremely simple.<sup>50</sup> An interesting post-war find belonging to the category of chance-finds without follow-up research is the sarcophagus unearthed in 1966 during the construction of an industrial complex at Brunssum. Here machines destroyed a sandstone cremation cist of *c.* 1.20–1.50 × 0.70–0.80 m and unknown height. Two days after the find, when the first archaeologists appeared on the field, the cist had already been removed to the rubble heap and the contents, in so far as they had been recovered, were in the hands of the finders. Unlike at Maastricht-Belfort, for instance, it was impossible to gain an impression of the structure of the graves. The same applies to the way in which the grave-goods had been placed in the cist. In the midst of the usual pottery and glass there was a remarkable plain glass flask decorated with yellow snake-thread. But the greatest surprise was provided by an iron rod at least 40.4 cm long, decorated with alternately oval and circular pieces of amber, a so-called distaff, and twelve slightly curved bronze discs, which form six pairs of cymbals belonging to a musical instrument. Bogaers mentions parallels for both finds and dates the grave to roughly the middle of the third century.<sup>51</sup>

In 1958 a niched cist was unearthed in Stein: this find was recorded at length by Bogaers. Two cremation cists had been found in 1924 at the same spot.<sup>52</sup>

Another chance find, this time followed by research, was the double sarcophagus which was found in 1964 in the Belfort area of Maastricht.<sup>53</sup> Three graves were found within a rectangular stone enclosure of *c.* 9.60 × 6.65 m with an opening, 3.18 m wide, on the south side. Literally

impressive were the seven 15-cm-thick sheets of blue Namur stone which together made up bottom, lids, and sides of the double grave. Only one of the chambers contained grave-goods, of which the two most notable pieces were an iron folding chair and an amber knife-handle in the shape of a panther. Oddly enough under the cist another grave (grave 3) was found; it had been disturbed before or perhaps by the installation of the sarcophagus. In the midst of the few remaining grave-goods a small vase deserves special mention. Grave 2 had the richest contents: at least sixty objects, which, however, taken as a whole, give an impression of some coarseness. This entire complex was situated less than 60 m to the south of the Roman road from Maastricht to Tongeren.

The enormous lack of sufficiently researched cemeteries before the Second World War has been compensated somewhat by post-war activities in this field, although nearly all still await publication. The cemetery of Schayk in North Brabant, which, although outside Limburg, is particularly interesting due to the concurrence of Roman and native pottery, has been published in detail.<sup>54</sup>

The exceptionally rich graves unearthed at Esch in North Brabant in 1959 and 1960 demonstrate that rich burial constructions do occur occasionally, but they provide no insight into the average cemetery.<sup>55</sup>

The published cemeteries of Mook, Middelaar, and Gennepe have not yielded new information on the burial practices and the layout of these cemeteries.<sup>56</sup>

In 1961 Bogaers investigated a small, very simple cemetery at Linne.<sup>57</sup> Three sides of the cemetery could be determined. The grave structure of the *c.* 25 graves was very simple, as were the finds. Three different burial procedures occurred: graves with cremation only, graves with cremation and part-secondarily burnt fragments of grave-goods, and graves with cremation and undamaged grave-goods. This largely unremarkable cemetery may be considered as representative of a category of simple burial grounds, such as those frequently found in this region, and which easily escape notice due to their unassuming appearance. The much larger cemetery at Heel examined by Bogaers in 1964 represents another, richer, group.<sup>58</sup> During excavations over an area of 45 × 15 m,

49 Vermeulen 1932.

50 Holwerda 1938.

51 *NKNOB* 1966, 102–4.

52 Bogaers 1959.

53 *NKNOB* 1964, 63–6, 105–10 and 138.

54 Modderman/Isings 1960–1.

55 See list of excavations in *BROB* 22, 1972, 155, and the paper by L.J.A.M. van den Hurk in this volume.

56 Bogaers/Morren 1954.

57 *NKNOB* 1961, 223, 242–3; 1962, 6.

58 *NKNOB* 1964, 136–7, 155 and 224; 1966, 95; 1968, 118–9.

43 graves were unearthed. In 1964 and 1967 an additional eleven graves were found by chance during construction work. Of the first 43 graves, 42 were cremation graves. One was found to contain a skeleton, a coin of Commodus, and a fragment of a terra sigillata mortar. There were two types of graves: oval pits, usually running north-south, and more or less circular pits. The south end of the oval usually displayed a dark area with cremation, charcoal and burnt sherds, while the actual grave-goods lay in fairly clean earth at the north end. Most of the round pits had a fairly black fill. The graves yielded numerous finds, which allow for a dating to the second and third centuries. When this list is compared with the distribution maps of Roman cemeteries in the Netherlands as compiled by Van Doorselaer, it becomes very clear how little we know about so much.<sup>59</sup>

The above is additional proof of the necessity of increasing research into burial grounds in particular of the first until the third centuries, despite all the attention required for settlement research. Otherwise we may find ourselves in a position that it is too late to collect sufficient dependable material for competent and satisfactory research in the field of *e.g.* burial customs and population distribution. Such a position would be all the more lamentable in view of the numerous early-medieval cemetery excavations which would provide very interesting comparisons. The

59 Van Doorselaer 1964.

#### APPENDIX I (pl. XXIV: I)

Finds from the western bank of the Maas at Maastricht

*From the black soil in which the wall is founded*

No. 75

Drag. 27: BUR[DO: Oswald 1931, 49; Winkelmann 1901, 47 no. 18 and *Taf.* VIII a no. 22.

Dating: Trajan-Hadrian.

No. 78

Drag. 37, *Ovolo*: Holwerda 1923, fig. 81: 35-36, and De Schaetzen/Vanderhoeven 1953-4, pl. XLVIII; 1: *horizontal band below and at bottom of entire decor*: Holwerda 1923, *afb.* 81: 35-36, and De Schaetzen/Vanderhoeven 1953-4, pl. XLVII: 7-8 and XLVIII: 1-2: *7-pointed small rosette*: De Schaetzen/Vanderhoeven

two unpublished cemeteries, with *inter alia* burials from late-Roman times at Maastricht and Nijmegen, may furnish us with a long-awaited link.<sup>60</sup>

#### ACKNOWLEDGEMENTS

This article is largely a compilation of the work done by others. My thanks are due in the first place to Professor J.E. Bogaers, Nijmegen, for his generous permission to use the results of the excavation in the Stokstraat area at Maastricht. Only with his help the map of the Roman traces in this region (fig. 3) could be accomplished. The supervision of the excavations was carried out by Messrs S. Bokma, C. van Duijn, K. Greving, A. van Pernis, and H. ter Schegget. Mr M.C. de Kort provided the map of the Stokstraat area (fig. 3), Mr J.G. Lampe the drawings of the excavation at Rimburg (figs. 10-12), the profiles of the Stokstraat area (fig. 2:4), the drawings of all the finds, and, in cooperation with Mr H. Bloklander, the map of the Vrijthof area (fig. 7). All the other maps are made by Mr W.A. van der Sluijs. The photographs of the finds are made by Mr R. Verschoor, and all the other photographs by Mr L. Biegstraaten. I want to express my gratitude to Mrs I. Rike-Mulder, Amsterdam, for the translation, and to Mrs M.M.W.J. Broekhoven-van der Lans, who typed the final version of the text.

60 Nijmegen: Brunsting 1952; Maastricht, Pandhof/Sint Servaaskerk: see list of excavations in *BROB* 22, 1972, 159-60.

1953-4, pl. XLVIII: 2; no parallels for remaining motifs. Argonnes. For a discussion of these ornaments De Schaetzen/Vanderhoeven 1953-4, 232-3.

No. 99

Wall fragment Drag. 37; *double leaf*: Ricken 1934, 154-6 and *Taf.* VII: 15-16 and *Taf.* XI: 6 and 9 (*Ovolo K*: in the first group mostly combined to form borders); *garlands*: probably two superimposed stamps; no parallels. La Madeleine.

No. 99

Wall fragment Drag. 37; *hare to right*: Stanfield/Simpson 1958, pl. 122: 28 (*Albucius*) and 124 (*Servus 1*); *hare to left*: Stanfield/Simpson 1958, pl. 124 (*Servus 1*); *double leaf with torsade bud*: Stanfield/Simpson 1958, 138 fig. 11 (*Vibius* or *Geleneus*); *small triple leaf*: Stanfield/Simpson 1958, pl. 87: 25 and fig. 23: 6 (*Attianus*). Lezoux.

*From fill to the east of the wall, hence after its erection*

No. 63

Drag. 27; Stamp BIGA. FEC; Schönberger 1970, 26 *Abb.* 2: 11 and Hartley 1970, 29 no. 10; c. 120–135.

APPENDIX II (fig. 9 and pl. xxiv: 1)

Finds from Roman levels at Vrijthof, Maastricht

*Pit 1, profile*

from bottom gravel-bed

No. 337

Wall fragments of t.s., Drag. 24/25; brownish-red, matt shiny, possible effects of burning; pre-Flavian?

*Pit 4, level 11 (47.20 m + NAP)*

from middle of grey layer covering ditch of Period III

No. 1190

Wall fragment of t.s. Drag. 27; brownish-red, matt shiny; pre-Flavian?

No. 1191

Wall fragment of t.s., Drag. 18; brownish-red, fairly shiny.

*as above;*

from pit dug from level 9 at the highest

No. 1210 (pl. xxiv: 1).

Wall fragment of decorated terra sigillata Drag. 29; below frieze: Mary 1967, 87–8 and *Taf.* 1;

Mary 1967, 65 and *Taf.* 4–8; Claudius–Nero.

*Pit 4, level 10 (47.10 m + NAP)*

at transition between previous layer and overlying bed of clean loess

No. 1123

Rim of amphora of smooth-walled ware; with lip of jug Stuart 1963, types 108 and 109(B); end I–beginning II.

No. 1145

Base fragment of t.s.; Drag. 15/17 or 18; brownish-red, very shiny in places; pre-Flavian.

No. 63

Wall fragment; *plant with stem*: Knorr/Sprater 1927, *Taf.* 42: 4 (Töpfer mit dem Vaseneierstab), 12: 4 (mould), 43: 5, 44: 5 and 9, 45: 1 and 81: 16 (Töpfer mit dem Hornmotiv); *tree*: Knorr/Sprater 1927, *Taf.* 12: 4 (mould), 44: 9 and 45: 3 (?) (Töpfer mit dem Hornmotiv) Blickweiler: *nb.*

No. 1148

Rim fragment of t.s. Drag. 15/17; orange-red, shiny; early-Nero. Rim fragment of t.s. Drag. 27; brownish-red, matt shiny; early Flavian?

*Pit 4, level 9 (47.60 m + NAP)*

from clean loess overlying previous layer and under layer with burnt loam

No. 1052

Base sherd of t.s. Drag. 18; brownish-red, very shiny; pre-Flavian.

No. 1057

Wall fragment of t.n. plate; Vanvinckenroye 1967, type 46; end I–beginning II.

No. 1075

as 1057; Vanvinckenroye 1967, type 45; mid I–end I/beginning II.

No. 1079

Rim sherd of burnished ware; Brunsting 1937, pl. 6 type 1: 1; IB.

No. 1081

Wall fragment of t.s. Drag. 27; matt shiny, brownish-red; Flavian.

*as above;*

but from pits covered by the layer of burnt loam.

No. 1059

Rimsherd of cork-urn with comb ornament and chalk tempering; Loeschcke 1909, type 91.

No. 1068

Neck of amphora of smooth-walled ware.

No. 1063

Rimsherd of cork-urn with chalk tempering; Loeschcke 1909, type 91. T.s. bowl fragment of decorated t.s.; Central-Gaulish.



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# Roman Pottery Finds in Heerlen, Province of Limburg

figs. 1-7; pls. xxv-xxvi

Heerlen is the only place in the Netherlands where one is apt to lose count when trying to assess the number of pottery kilns that have been discovered.<sup>1</sup> Nevertheless few publications have appeared on this topic. A fairly detailed account has been given of some kilns,<sup>2</sup> but most of them have been disposed of in a brief report in the *Maasgouw*.<sup>3</sup> In the majority of cases the excavated pottery has been discussed inadequately and depicted sketchily, or not at all,<sup>4</sup> so that it is extremely difficult to form a picture of the Heerlen products. A complete survey of them falls beyond the scope of this article and would moreover be hampered by the fact that we do not know, in the case of earlier finds, to what extent the sherds from the kilns have been kept separate from those found in the neighbourhood.

## ROMAN KILN IN SCHINKELSTRAAT (J.K.H.) (pls. xxv-xxvi)

By a fortunate chance a kiln examined by the ROB in 1962 yielded a large number of mostly colour-coated ware specimens.<sup>5</sup> Since ceramics of this kind were obviously not manufactured in the recently discovered industrial site of Lucius,<sup>6</sup> the find enriched the relevant material published by Gielen to a significant extent. This survey can be

extended still further by a description of the debris from a pottery find discovered at about the same time underneath St Joseph's Hospital.<sup>7</sup>

The more or less circular kiln in Schinkelstraat belongs to the commonest type of the Roman period, the upright kiln,<sup>8</sup> in which the fire is directly underneath the actual kiln. The entire construction is sunk 1.50 m deep in the surrounding loess soil. A flue for the supply of fuel has not been established, in contrast to the stokehole or workspace, which could not have been roofed in, as there were no post-holes.<sup>9</sup> The furnace was covered by a permanent floor with twenty-two round vent-holes, resting on a tongue-like column projecting from the rear wall. The vent-holes were made partly through the kiln wall and the support so as to limit the heat-absorbing action as much as possible.<sup>10</sup> The connection between the tongue and the oven floor was effected by a kind of 'swallow-tail' construction, in which wedge-shaped projections on the underside of the floor locked into notches along the support. The function of this is not at all clear. The excavators<sup>11</sup> thought it was a method of connection, possibly intended to counteract the difference in shrinkage between the support and the oven-floor. In this case one wonders why such a complicated structure was chosen, since the floor could simply have been placed on top of

1 For a list of kilns found up to 1963, see Van Hommerich 1963, 157; for a sketch-map, see Van Hommerich 1961, 14, and Van Es 1972, fig. 83.

2 Goossens/Evelein 1909, 71; Martin 1915, 32; Van Giffen 1948, 223; Gielen 1971a, 84; Gielen 1971b, 140; Byvanck 1943, II, 333.

3 Byvanck 1947, 32.

4 The kilns published by Gielen (note 2) offer a happy exception. Pottery found in Heerlen but occasionally made elsewhere: Peters 1929.

5 Heerlen land registry Section D: division between 4435 and 4436 and 40 cm east of 6896. Bogaers 1962, 178; Bruijn 1965-6, 174.

6 Gielen 1971a, 84.

7 Bogaers 1961, 38; Van Hommerich 1963, 157; see also p. 264.

8 For a survey of the various Roman types, Corden 1957, 10.

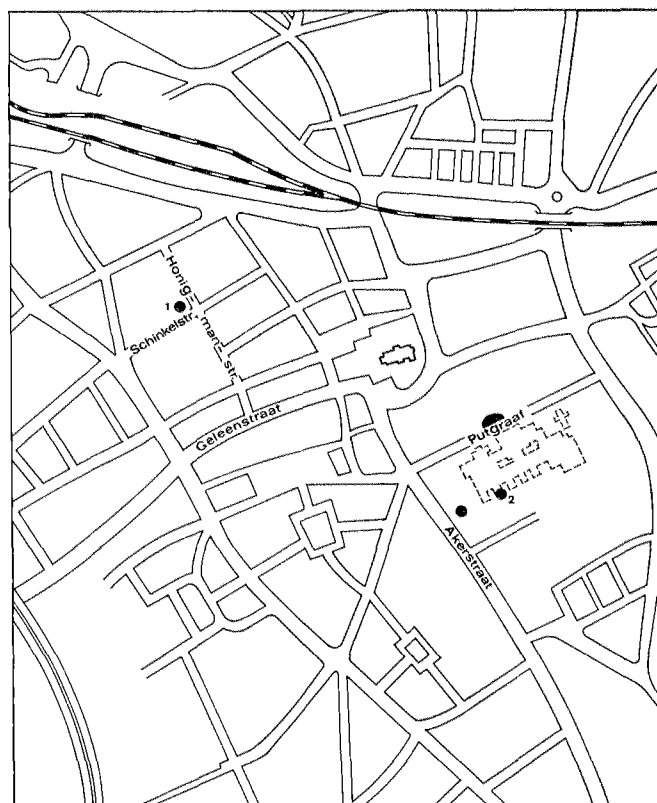
9 Piepers 1971, fig. 2 and 6; Thomas 1894, 17.

10 Bruijn 1965-6, 174.

11 Diary J.E. Bogaers.



Fig. 1 scale 1:12,500



the support. This may be an instance of experimentation by the potter.

The floor showed signs of repair. After one or two firings the potter had been obliged to raise the 16 cm-thick kiln floor by 6 cm. In the clay used for this construction small pieces of pottery were found, in contrast to the clay mixed with straw with which the kiln had been built.

The kiln wall was still intact up to a height of 1.30 m above the floor of the furnace. Nothing remains of the upper part of the firing chamber, estimated to have been 1.70 m high, so that it is impossible to determine whether the kiln was equipped with a chimney or whether the hot air could have escaped through slits in the upper part of the dome.

The vessels and pottery fragments found on the floor of the firing chamber are preserved in the depot of the ROB together with a number of sherds recovered from the working-space, furnace and in the vicinity of the kiln. From the notes made during the investigation one may

deduce that the pot-types represented by not more than one or two sherds were not part of this last kiln batch. Except for a charred rim-fragment of a terra sigillata bowl Drag. 37, probably of Middle or Eastern Gallic origin, the finds consisted exclusively of colour-coated and smooth-walled white earthenware.

#### *A Colour-Coated Ware*

The 'colour-coated' pottery is executed according to the Stuart a and b techniques<sup>12</sup>; it is of white paste with dirty surface (varying between Munsell Color Charts 5 YR 3/4, 4/4-8, 5/6-8, and 6/8) regarded as typical of Heerlen products, or of blue-grey. In most cases the latter has a rather blotchy appearance, but a greyish tone preponderates. Many pieces are so soft that the 'coating' has worn off completely or partially, in which case the sherd is particularly powdery. This feature is so marked in the

<sup>12</sup> Stuart 1963, 20.

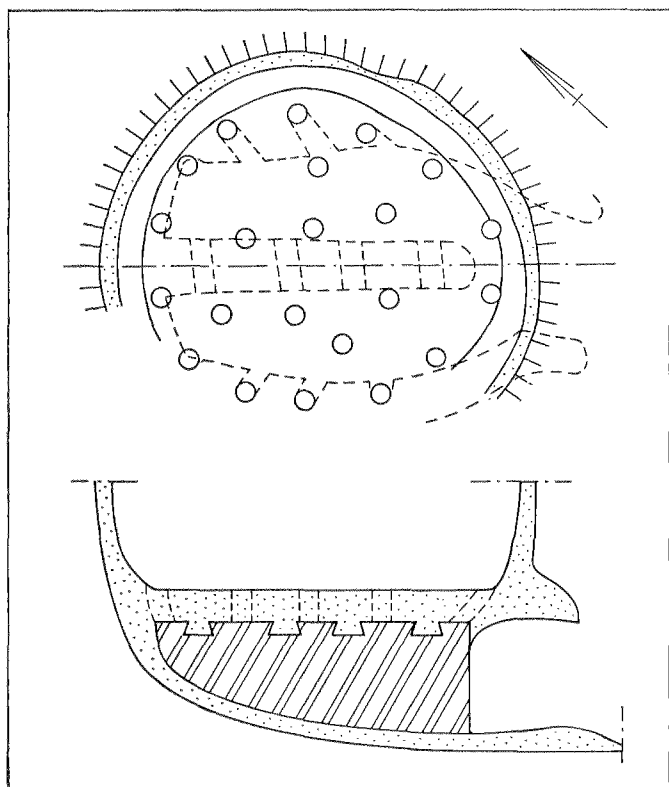


Fig. 2 Heerlen: Kiln in Schinkelstraat; ground-plan and reconstructed cross-section

'cognac glasses' (A 4) that they were at first wrongly regarded as specimens of smooth-walled white pottery. The other smooth-walled white products of this kiln, the jars with a conical lip (B 1), may also have been colour-coated. In the case of some rejects the outer layer has dark-red patches. Even the paste of these overheated pots is often reddish.

The following types may be distinguished:

1 Large bulbous beakers with a heavy head rim. This shape, represented by close on a hundred rim-fragments as well as some complete pots, is not mentioned in the current literature. It looks like a variant of the Hofheim 26 beaker,<sup>14</sup> but the rim is thicker and clumsier than is normal in that type. Two rim shapes, occurring in more or less equal numbers, are to be differentiated: one has an everted rim in the form of a rounded moulding, the other

has one or more grooves on the outside. The latter reminds one strongly of certain forms of the Hofheim 26 beaker, which is, however, more finely executed. The pots have invariably exceptional fine particles of dried clay ('sand') dusted over the surface. The height varies from 16 to 23 cm.

2 The Hofheim 26 beaker is represented in its pure form by, among others, a rim/wall fragment decorated with a scale pattern, found in the furnace underneath the floor and hence not part of the last kiln batch. Furthermore some small fragments of this jar with barbotine decoration were found baked into the clay of the floor.

3 Bowls with a flat, outward projecting rim, comparable to the Stuart 210 A and B types. As a rule the bowls of this type, usually made of coarse pottery, are larger than the colour-coated specimens found here (approximately 7 cm high). This shape is extremely rare in colour-coated ware. Stuart mentions a coarse bowl with orange-coloured slip. The Hees bowl, plate 3:25c,<sup>15</sup> is similar in appearance, but differs slightly since there are no grooves on the upper side of the rim. From the Heerlen kiln some 20 bowls have been preserved. In four fragments the grooves along the upper side of the rim are missing, just as in the bowl from Nijmegen.

4 Beakers of a hitherto unknown type, best described as 'cognac glasses without foot'. As regards shape they most resemble the Stuart 3 beakers with smooth walls and unprofiled rims, which came into vogue especially after the middle of the second century. They differ from these, however, in the rounder shape of the wall and in the base, which is so narrow that most of the beakers are unable or hardly able to stand. They vary in height from 8 to 13 cm. Twenty-five base fragments have been preserved as well as some more or less complete specimens, two or three of which were badly fired. A single specimen exhibits – mostly on the foot, but also on the less well-cleaned parts of the wall – slight traces of dirty orange slip.

According to the foot, the beakers may be divided into four separate types:

- a Seven beakers have a circular foot, cut off on the underside.
- b Fourteen beakers have a base which is flat underneath and trimmed on two opposite sides.
- c The foot of three beakers is trimmed along four sides.
- d The foot of one beaker is modelled further so that the underside is roundish and tapered off into a point about

13 Van Hommerich 1963, 158.

14 Ritterling 1912.

15 Brunsting 1937.

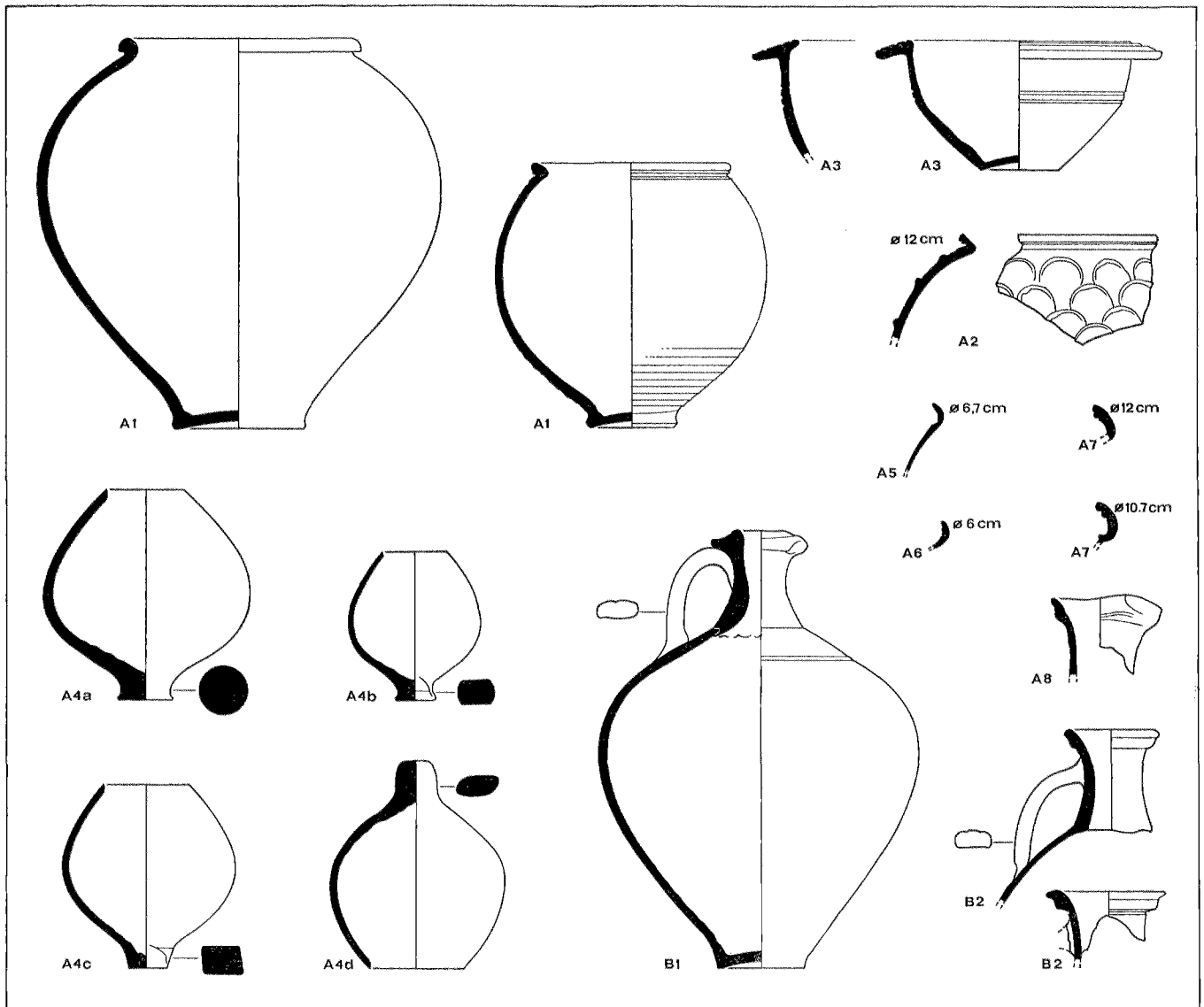


Fig. 3 Heerlen: Pottery manufactured in the Schinkelstraat kiln (A 1, 3-4, and B1), and stray finds

2.5 cm long. It is evident, especially from this specimen, that the potter did not intend these small beakers to stand. Comparable material for this eccentric form is extremely rare. The only parallel in the Netherlands, to our knowledge, comes from the Waal near Nijmegen. It has been kept for more than forty years in the Gemeentemuseum<sup>16</sup>

16 Inventory no. C iv, 234.

(Municipal Museum); since it was regarded as medieval, it was not transferred together with the other Roman objects from this collection to the Rijksmuseum Kam. It differs from the Heerlen beakers in its small size (height 6.3 cm, mouth diam. 3.4 cm) as well as its fabric. The surface is orange-red; the core, scoured bare at its greatest body circumference by having been rolled back and forth in the river, is light-grey. The point underneath the base

has not been trimmed but pinched out and modelled slightly.

It is precisely this sort of point which reminds one most of the type of pottery usually described as 'candelabrium' or 'balsamarium,' although there are no indications of the actual use to which it was put.<sup>17</sup> However, there are distinct differences in the shape of the rim, with its outward curve, and the slenderer body. Other examples of this type of small pot are the well-known beakers bought in 1860 from the Houben collection, together with a *Lichthäuschen* from Xanten, by the Rijksmuseum van Oudheden (State Archaeological Museum) in Leiden. It is a striking fact that at least one of these beakers has a simple, smooth rim like the Heerlen 'cognac glasses'.<sup>18</sup> The function of the Zanten pieces is not clear either. The connection suggested does not seem to exist in reality. The whole looks like a haphazard accumulation of waste from a pottery.<sup>19</sup> A recently published specimen from Novaesium of a somewhat slimmer model, 12.7 cm high,<sup>20</sup> gives a clear indication of the possible function of the Heerlen beakers. The original fabric of this pot is scarcely recognizable. The colour is light-grey, the surface not too rough; it may have been smooth at the start. It is impossible to determine whether it was formerly covered with slip. After being fired, the entire beaker was covered with an approximately 1 mm thick layer of clay which had been roughened by the addition of sand. The coating reminds one strongly of a crucible, although the typical glazed patches are missing. Usually such a utensil was simply kneaded from a lump of clay, but occasionally fine colour-coated beakers were used as a starting-point for building up a crucible.<sup>21</sup> Here, however, it is a question of ordinary beaker shapes (Stuart type 1 B and 2), so that the remarkable point on the beaker from Novaesium cannot necessarily be regarded as typical of a crucible. One can imagine though, that such a projection would make it easy to seize hold of the pot with a pair of tongs. On the other hand, the Heerlen beaker fits snugly into the palm of the hand if the point is gripped between the index and middle finger and the fingers are curved around the lower wall. Thus its possible use as a drinking beaker should not be excluded.

5 A misfire of a small beaker with a funnel-shaped

mouth to be compared to Stuart type 4. This beaker came into vogue only in the first quarter of the second century. Since this fragment is quite isolated, it seems unlikely that it belonged to this kiln batch.

6 Small rim-fragment of a beaker with vertical rim, similar to that of the rough-walled beaker Stuart 204.

7 Two rim-fragments of pots with sharply angular shoulder and funnel-shaped mouth; two groove-lines on the outside.

One has been coated in a brownish tint on the outside, the other was probably charred, which accounts for its terra nigra-like aspect. At least one of the rims was found in the oven floor partly in its older half. So they must date before the last kiln batch.

8 A lip-fragment and a neck-fragment of jugs with a tall neck and pinched-in spout. Similar jugs have not been found among the material from the *castra* published in Nijmegen. Their nearest counterpart is a piece from a Heerlen kiln which was destroyed at the beginning of the present century.<sup>22</sup>

#### B Smooth-Walled White Ware

The smooth-walled white pottery is, to all appearances, made of the same clay as the colour-coated ware. As a rule it is fairly soft and has such a floury surface that a fine white powder rubs off when it is touched. It is not clear whether all the pieces described here as smooth-walled white ware actually fall under this category. The following types may be distinguished.

1 Jars with a conical lip, reminiscent of the type Stuart 113 (= Hofheim 55, Gose 373-375).<sup>23</sup> There is a small difference in the shape of the lip, which does not taper outwards, but is thickened with an extra ridge along the upper side. The feet of the Heerlen jars are moreover somewhat slimmer than that of the example depicted by Stuart. The neck has been put on separately. In a number of specimens the point where it joins the shoulder is clearly visible. The height of the three jars which can be reconstructed varies from 21 to 26 cm. Since the diameter of the remaining nine jar-necks (4-7 cm) shows a larger variation in the case of the complete jars (5-6 cm), this height can only be regarded as approximate. Four rims are furnished with a pinched-in spout, directly opposite the

17 Stuart 1963, type 151 (B); Schoppa 1961, type 71.

18 Brunsting 1963, pl. 5, extreme left.

19 Brunsting 1963, 19.

20 Filtzinger 1972, 29, no. 84.

21 Haalebos 1972, 42.

22 Brunsting 1937, pl. 13, 14; Martin 1915, 49; Mayer 1929, 49, fig. 3, Greene 1972, 22, 40.

23 Gose 1950.

bipartite handle. A single example seems to show scanty traces of an orange coating.

2 Four jar-necks must be considered as belonging to the Stuart type 109 or 110 A. Except in the case of one rim-fragment the upper lip is hardly dominant as yet. As far as can be discerned the handles are composed of three parts. At least two fragments do not come from the kiln but from the stokehole.

3 A number of wall-fragments which fit together must have been part of a large, bulbous pot, to judge by their dimensions. The wall has rouletted decoration. These fragments were found in the vicinity of the kiln before the start of the investigation.

Comparable pieces from a refuse pit at the St Joseph's Hospital in Heerlen remind one of 'Belgian' examples, although the smooth-walled white paste is quite different from them.<sup>24</sup>

4 Rim-fragments of a dolium, made of the same powdery earthenware as the jars (B 1), but tempered with fine gravel and brick grit just as in the case of three found before the investigation was launched.

#### *Conclusion and dating*

The contents of the kiln consisted mainly of four types of pottery. Chief among these is the 'colour-coated' ware: large bulbous beakers (A 1), bowls (A 3) and beakers with tall foot (A 4), all represented by rejects. If the jars, which at first sight could be reckoned among the smooth-walled ware, had also been coated – as seems very likely – the kiln contained only one kind of ceramic. It is remarkable that the kiln contents diverge from the rich store of forms found along the *limes* of the Netherlands and that, where familiar forms are found, these are executed according to a different technique from that which is usually associated with them.

The main types in the last kiln batch offer little evidence for the purpose of dating as there is a lack of reliable material for comparison. In the provisional report of the find it is assumed that the objects on the oven floor were manufactured between A.D. 70 and 100. The accompanying finds (especially B 2 and A 5) also allow of a possible dating as late as the first part of the second century.<sup>25</sup>

<sup>24</sup> See p. 269.

<sup>25</sup> The author wishes to thank J.E. Bogaers for making his notes taken during the investigation available and for his permission to publish this kiln, A. Bruijn for making his field drawings available, and E.J. Ponten for producing the publication drawings.

#### PIT WITH POTTERS' SPOIL-HEAPS UNDERNEATH ST JOSEPH'S HOSPITAL (J.H.F.B.)

Two pits were discovered in 1961 in the course of reconstruction work in a cellar on the south side of St Joseph's Hospital at Heerlen.<sup>26</sup>

Since the two pits together were shaped like a keyhole, it was initially thought that a kiln had been unearthed, several of which had been found in the area. This proved not to be the case, although the younger of the two pits was found to contain a very considerable amount of waste products from a potter's kiln. The pit measured *c.* 2.40 m in diameter; it was still *c.* 75 cm deep, *i.e.*, *c.* 3.05 m below the present ground-level. The pottery, of which some 800 rim-sherds have been recovered, provides us with an opportunity of compiling a modest type-series, and of establishing the frequency of those types. That we are dealing with fragments of products made on the spot is shown by various faulty vessels and the remains of slaggy and vitrified oven walls, likewise found in the pit.

At the time when the hospital was built early in this century, a kiln with contents had already been found.<sup>27</sup> Several additional finds have been unearthed since 1961, both in the hospital grounds and in the vicinity.<sup>28</sup>

#### TYPE DESCRIPTION

*Technique A* (see p. 260)

1 Cooking-pots (fig. 4: 1–4)

Cooking-pots occur in great numbers in the usual forms. Most are marked with several grooves where shoulder meets neck. Although without further significance certain variations can be distinguished in the rim-development: rolled (*a*) (fig. 4: 1) (31), arched (*b*) (fig. 4: 2) and flattened (*c*) (fig. 4: 4). The arched rim is sometimes marked with one or more grooves on the exterior (*d*) (fig. 4: 3). The height varies between 16 and 26 cm; the diameter of

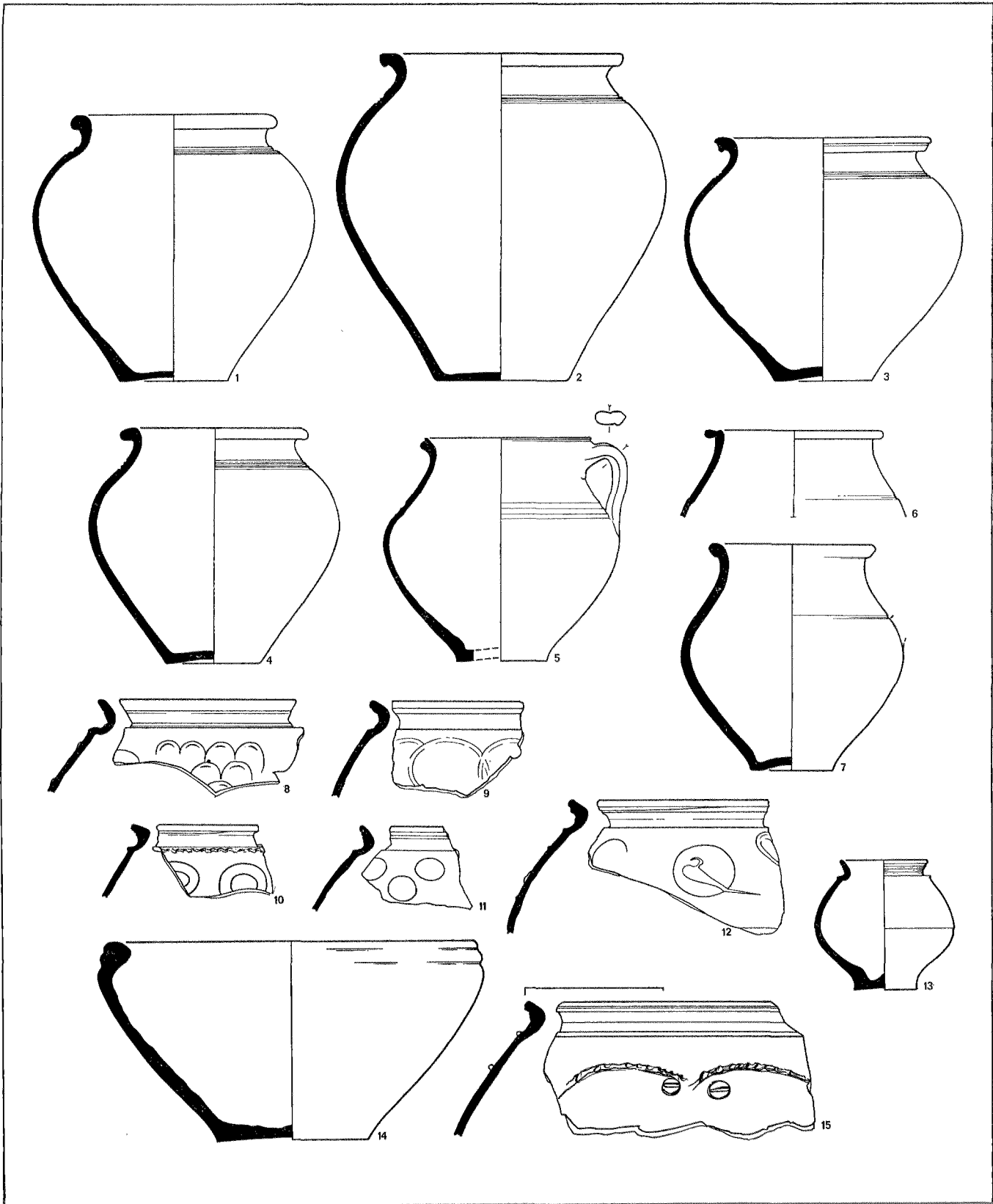
Fig. 4 Heerlen, St Joseph's Hospital 1–4: Type A1; 5–7: Type A2; 8–13, 15: Type A3; 14: Type A4

<sup>26</sup> *NKNOB* 1961, 38–9.

<sup>27</sup> Goossens/Evelein 1909.

<sup>28</sup> Van Hommerich 1963; Gielen 1970, 1971a and 1971b; Bogaers 1971.





the mouth between 11 and 19 cm. A small number of fault-products occur. The type is difficult to date accurately.<sup>29</sup>

#### 2 Handled pots (fig. 4: 5-7)

Fragments of approximately thirteen handled pots were found. They display the normal features of the high curved neck section, which is set off from the shoulder by one or more grooves. The rim-profiles are rather varied. A flat and slightly deepened rim, an oblique grooved rim and a simple rolled rim occur side by side. The handles occur in pairs, in so far as can be established.

The type is dated in the period of *c.* 40-120.<sup>30</sup>

#### 3 Pots with rim curved up and inwards (fig. 4: 8-13, 15)

These pots have a distinctive rim-profile which is set off from the shoulder by a sharp angle. The interior is in most cases marked with one or more grooves. The diameter of the mouth varies between 11 and 22 cm; small vessels, no more than 6-9.5 cm high, occur in small numbers. Many of these pots are decorated either with a barbotine technique, or with a pinched relief. Ring (*a*) and scale (*b*) ornaments are the most common. Grooves, ribs, and raised dots are less frequent. A face or part of a face is represented three times (*c*). At least 53 fragments have been collected.

The pots resemble Brunsting 1937, 145 and Pl. 7 type 4b2, for which parallels are mentioned dating from the last quarter of the first century to the third century. The rims from Niederbieber, however, are much clumsier than those from Heerlen.<sup>31</sup> The occurrence of the scale ornament, which was abandoned not long after the year 100, may, however, give an important indication for a more precise dating.<sup>32</sup>

#### 4 Bowls with rim thickened on the inside (fig. 4: 14)

A very homogeneous group is formed by bowls with rims unmistakably thickened towards the inside. A few grooves mark the exterior. The diameter varies from 22 to 25 cm; the height of the complete vessels is 14 to 15 cm. Fragments of some 22 bowls have been found. Although the model is not far removed from the bowls that are generally indicated by the above description, there are several differences. The angle between belly and shoulder/rim is placed very high up. The rim is strongly thickened on the inside.

The wall runs in a virtually convex line to the base, whereas in other types the wall is usually more concave towards the base. Occurring sporadically in the first century, the bowl Brunsting 1937, 148 and Pl. 7 type 9 becomes more common early in the second century. The resemblance to the patina 29 from Neuss is much stronger.<sup>33</sup> The shape corresponds well with the Heerlen bowls. In Neuss this type occurs in the second quarter of the first century A.D.: 430 specimens have been registered there, *i.e.*, it must have been relatively uncommon in Neuss.<sup>34</sup> Of the parallels mentioned, that from Colchester is the most satisfactory, although there are still some differences in detail (Periods III-IV; 43-61 A.D.). Vessels of the same type with slight variations in the detail of the rim-profiles were also produced in Neuss itself.<sup>35</sup>

#### 5 Cooking-pots and bowls with horizontal rim (fig. 5: 4-7)

The rim is flat and horizontal or slightly oblique. The rim is marked with grooves; in one case the top is decorated with a wavy line. Grooves also mark the shoulder. The rim could belong to a cooking-pot or a bowl (resp. Stuart 1963, 73 type 202 and 77 type 210).

Since only a few small fragments were found, and no complete vessels, the same observations by Stuart apply to this type.<sup>36</sup> When only small rim-fragments are available, it is usually difficult to assign them to either of the two forms, cooking-pot or bowl. In view of the straightness of the wall and the slight inversion of the rim, fig. 5: 4 and 6 may belong to cooking-pots, but examples other than these do not exist. Fig. 5: 5 is most probably the rim of a bowl: there are six distinct examples of this. The bowls are characteristic of the period from *c.* 70 till the third quarter of the second century, but they may occur even earlier.<sup>37</sup> The cooking-pots embrace the period from the beginning to the end of the second century, while the possibility exists that production had already started towards the end of the first century.<sup>38</sup>

#### 6 Plates with horizontal rim (fig. 5: 3)

These plates have a horizontal, everted rim, which is thickened towards the inside. At the top the rim is often profiled with one or more grooves: such markings are also often to be seen on the bottom, where rim meets wall.

29 Brunsting 1937, 141 and pl. 7: 1.

30 Brunsting 1937, 149-50, and pl. 7: 12a, and Stuart 1963, 80 type 213A.

31 Oelmann 1914, 72 type 90.

32 Brunsting 1937, 73 and 145.

33 Filtzinger 1972, 17 and *Taf.* 28: 2.

34 Filtzinger 1972, 30.

35 Filtzinger 1972, 81 and 87 and *Taf.* 88: 9-11 and *Taf.* 89 (Ofen 5 and 6).

36 Stuart 1963, 74.

37 Stuart 1963, 78-9.

38 Filtzinger 1972, 17.

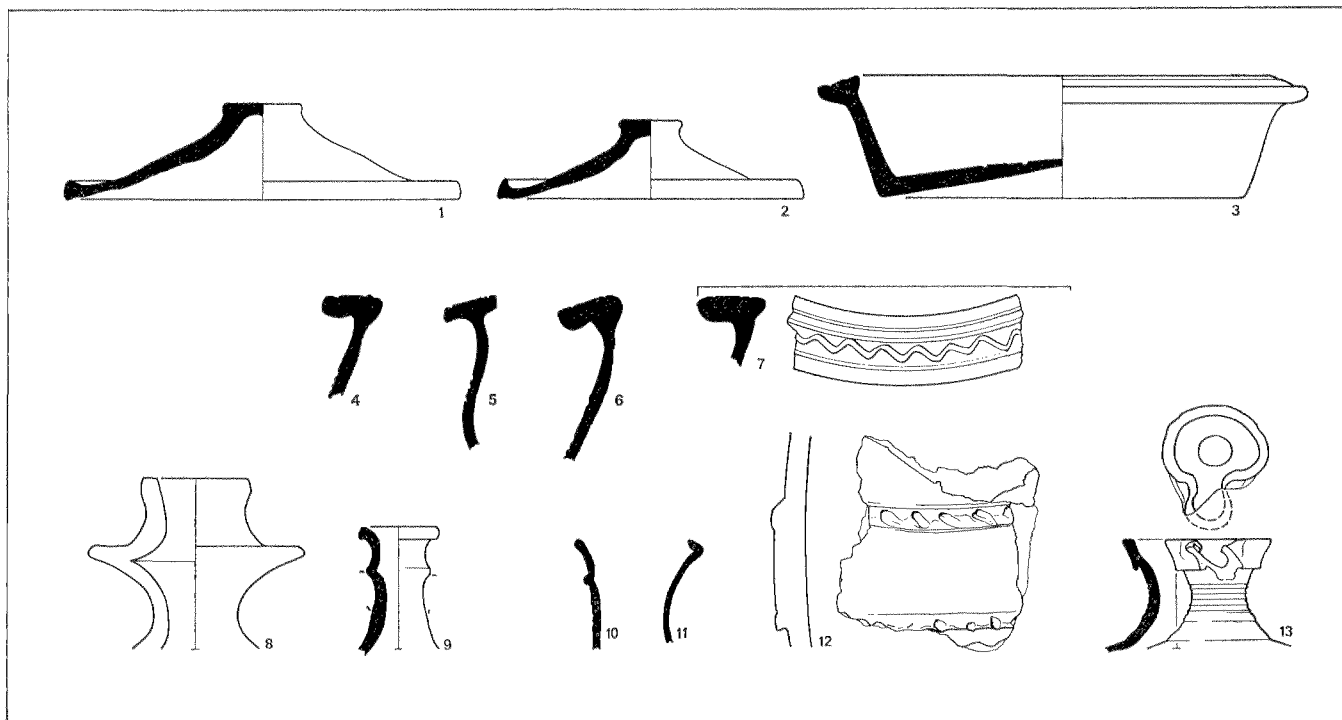


Fig. 5 Heerlen, St Joseph's Hospital 1-2: Type A7; 3: Type A6; 4-7: Type A5; 8-9: Miscellaneous B; 10-12: Miscellaneous A

The wall slants outward, the bottom is strongly curved. The diameter varies between 20 and 26 cm, the height between 4 and 6 cm. Before this plate can be assigned to a particular type, it is as well to refer to Stuart's notes on the close affinity between the plates Stuart 1963, 82 type 215, and 83 type 216.<sup>39</sup> The dates he gives for these types are *c.* 40-120 and *c.* 40 to a little after 100, respectively. Vanvinckenroye notes a number of finds from complexes that must still be dated to the first half or even the middle of the second century.<sup>40</sup> Although the plates were therefore possibly in use a little longer, it seems justified to assume that actual production ceased in the first quarter of the second century. Approximately twelve fragments occur in this findspot.

#### 7 Lids (fig. 5: 1-2)

The lids have a standing rim and a more or less carefully finished knob. The diameter varies between 16 and 23 cm. Sixteen fragments were found.

<sup>39</sup> Stuart 1963, 82.

<sup>40</sup> Vanvinckenroye 1967, 61 type 140.

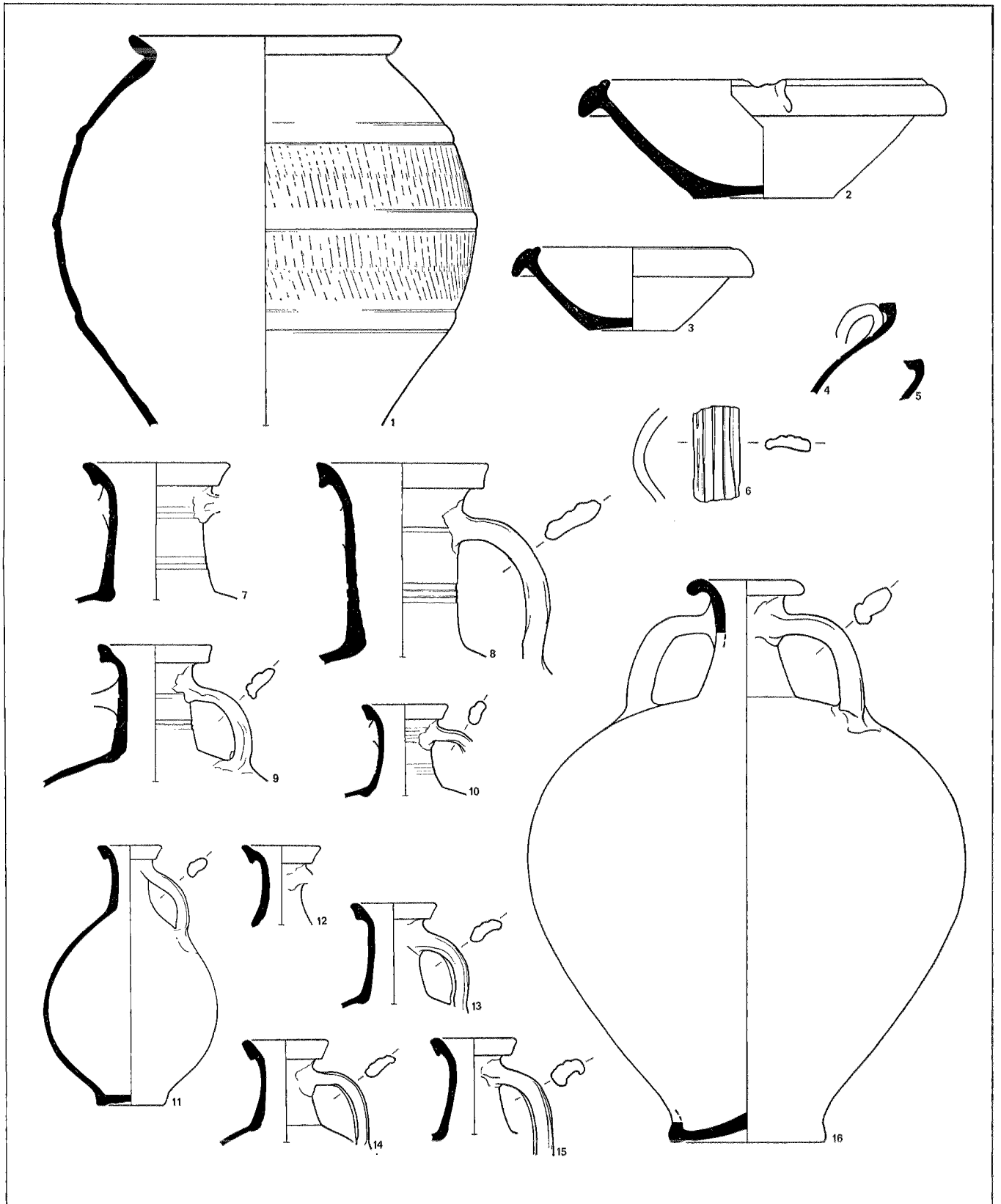
#### Miscellaneous

A brown-varnished wall-fragment of a small beaker Brunsting 1937, 72 and Pl. 3 type 1a occurs only once. The dating there and in Stuart<sup>41</sup> is *c.* 40 and not long after 100 and 110, respectively (fig. 5: 11)

A curious rim of dark-grey varnished ware of a steep-walled beaker (?) (diameter 15 cm) comes closest to the beakers Stuart 1963, 51 type 128, which are made of white pipe-clay (fig. 5: 10). In principle, the quality of the Heerlen fragment is very similar to the Nijmegen fragments unearthed among finds from before and after 70.

A neck of an orange-varnished jug with a pinched lip has a sharply profiled and undercut rim; the neck itself is decorated with grooves (fig. 5: 13). Apart from the rim-profile, the jug belongs to the form Brunsting 1937, 150 and Pl. 7 type 13a; the rim-profile itself may be very similar to Ritterling 1912, 319, *Abb.* 81: 4 (*Typus* 86), although it is impossible to be sure. In view of the rim, a

<sup>41</sup> Stuart 1963, 20-2.



dating to the last quarter of the first century, as indicated by Brunsting, is likely.<sup>42</sup>

Finally a wall-fragment of a dolium deserves mention (fig. 5: 12) The wall is decorated by a raised band, 6.5 cm wide, bordered with finger-tip impressions.

*Technique B* (see p. 263)

1 Large globular pots (fig. 6: 1)

The diameter of the mouth varies mostly between about 15 and 20 cm; a few smaller pots have a section of 11–14 cm. Little can be said with any certainty about the height. The illustrated example, which has one of the largest openings, stands at least 28–32 cm high. The rim is drawn up and outwards. The shoulder and belly are marked with broad ribs, between which there is a stripe ornament applied with a small wheel-instrument. The rims of about 51 pots have been collected, *i.e.* 8.1% of the total. Although no such pot was found in the spoil-heap, these pots evidently also occurred in terra nigra, as is shown by a pot from the kiln published by Goossens in 1909.<sup>43</sup>

The model is familiar from Belgian ware, although the latter generally has a different colour: orange-red, light-brown, or terra nigra. It may be compared to Brunsting 1937, 117 and Pl. 6 type 5b, Holwerda 1941, 27 and Pl. III: 109, and Vanvinckenroye 1967, 28 and Pl. 6: 35b. Brunsting and Holwerda are apparently referring to the same items (inv. no. IX 0 4 and 5), from the Hees cemetery at Nijmegen (cemetery ww). The quality, which is unusual for Nijmegen, did not escape Brunsting's attention; Holwerda even believed that he was dealing with a product from one of the Heerlen potteries, which were situated close to the findspot of our pots. Brunsting moreover mentions similar pieces from the cemeteries O, E, and S; possibly he is referring *inter alia* to the pots illustrated in Holwerda 1941, Pl. I:39 and 43, Pl. II:53 and 55 (o), Pl. III:120 and 125 (5) which, however, are of a different colour.<sup>44</sup> Holwerda discriminates clearly between them and the former two. Vanvinckenroye mentions the concurrence at Tongeren of sherds of this model with sherds from the second half or the end of the first century.

2 Small jugs (fig. 6: 11–15)

This type comprises necks of jugs ranging in height from 4 to 5.5 cm, which clearly sets them apart from the jugs discussed below. The height of the neck is usually the same as the diameter of the rim. The one complete vessel has an almost symmetrical curved belly; the total height is 18.7 cm. Of the 39 necks, each representing one jug, seven have a three-part (*a*), six a four-part (*b*), and one a five-part handle. The group is remarkably homogeneous. The type is related to the jugs Stuart 1963, 42 type 108, as far as the neck only is concerned. Even the somewhat different Heerlen jug accords with this, because of its resemblance to Stuart 1963, Pl. 5:87. The shape of the belly of the complete jug, however, fits better with the definition of the type Stuart 1963 type 106, in which case the greatest diameter should be at or under the middle of the belly. This has few implications for the chronology. According to Stuart, both types should be dated to the last quarter of the first century and the beginning of the second century; only type 108 may run a little longer.

3 Large jugs (fig. 6: 6–10)

The height of the neck of this group of jugs varies between 6 and 7.5 cm, the diameter of the rim between 5.5 and 7 cm. These measurements, larger than those of the previous group, suggest that the jugs themselves were also larger, but there are no complete examples or complete profiles to prove this hypothesis. Of the 29 jug-necks 12 have a four-part (*b*) and 2 a triple handle (*a*). The lip is not or only slightly everted, and in comparison with the diameter is not high. The neck is clearly set off against the shoulder. In view of all these characteristics, the jugs bear the closest resemblance to Stuart 1963, 40 type 107, although the illustration Stuart 1963, Pl. 6:94 (type 109B) is also very similar. Fragment no. 187 is particularly similar to Stuart 1963, Pl. 5:83 (type 107). The dating for this type is the same as for the former.

4 Amphorae with everted rim (fig. 6: 16)

The distinctive feature of this amphora is the broad, founded, and everted lip, which is accompanied by a curved neck. The handles are apparently always double. Two complete specimens are 40.5 cm and 35.7 cm high. Twenty-one necks or rim-fragments of this type have been found. The lip has too few characteristic features to provide further chronological indications for this complex.

< Fig. 6 Heerlen, St Joseph's Hospital; 1: Type B1; 2–3: Type B8; 4–5: Type B7; 6–10: Type B3; 11–15: Type B2; 16: Type B4

42 Brunsting 1937, 150.

43 Goossens/Evelein 1909, 75 and *af*. xxxiic.

44 Brunsting 1937, 118.

5 Amphorae with ring-shaped lip

Of this type, which corresponds with Stuart 1963, 52 type 129, only three examples have been found. The handles are double.

6 Amphorae with pointed lip

The rim section of these amphorae is very similar to that of the jugs described under 2 and 3. The rim is fairly pointed and sometimes undercut. The exterior is usually either slanted inwards or vertical and arched. The neck is cylindrical, slightly conical or curved, and is fairly thin-walled. Decoration consists of two grooved zones, one of which marks the base of the handle. Three-part handles (a) are slightly more frequent than four-part handles (b). There is a total of nine specimens.

In Hofheim this amphora occurs with both lip-variants; the same is true of the Colchester finds.<sup>45</sup> Although in the latter case the handles are somewhat more angular and the number of grooved zones round the neck can vary, the resemblance is striking. It is all the more surprising, then, that the Colchester type is mostly dated to the first half of the first century; its occurrence in periods IV–VI indicates that these amphorae were still current for some time after, *i.e.*, until at least *c.* 65. Yet this is remarkably early for our complex.

7 Honey jars (fig. 6: 4–5)

The honey jars are of the usual shape. The shoulder is usually marked with two grooves. The handle is always double and fairly small. The rim is not profiled. These features can, in general, be taken as an indication of a dating to the Flavian period.<sup>46</sup>

Fragments of about 54 vessels have been found, one sherd being from a fault-product.

8 Mortars (fig. 6: 2–3)

Small (diameter 13–15 cm) and large bowls (diameter 21–24 cm) can be distinguished, both having identical rim-profiles. The quality of the smaller is finer than that of the larger, which are almost coarse-walled. The lip is, as far as could be established, always formed by an applied ridge. The shape therefore accords with Stuart 1963, 66 type 149 B. Fragments of eighteen mortars were found: twelve large and six small. One is a distinctly faulty product.

*Miscellaneous*

A slender neck of a small amphora, somewhat similar to Vanvinckenroye 1967, 43 and Pl. 12:70, which, however,

45 Ritterling 1912, 288 type 58, and Hawkes/Hull 1947, 246 Form 161.

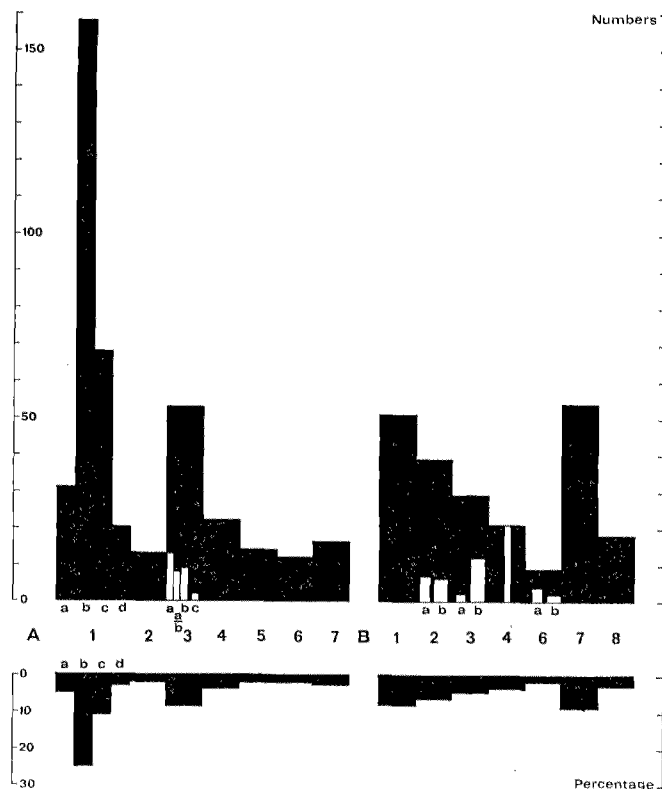


Fig. 7 Heerlen, St Joseph's Hospital: Frequency and proportion

has a different lip (fig. 5: 9). Also Stuart 1963, 54 type 130 and Pl. 10:162 and 163 show some affinity, although they are larger. It has proved impossible to date them more precisely than to the period between the first and the third centuries.

A large neck of coarse ware, rosier in shade than usual, has even more pronounced disc-flanges widening the neck. (fig. 5: 8). Finally, there is a pointed base of an amphora. Particularly notable is the fact that there are so many three- and four-part handles, which are typical of the jugs and amphorae (with the exception of type B 4 and 5, which have double handles). There is even one example of a five-part handle.

46 Brunsting 1937, 108.

*Composition and dating*

In the assessment of the composition of the total and the numbers of each individual type, the rim-fragments of one and the same vessel were counted as one item, in so far as this was possible. The best results were obtained with the jugs. For the cooking-pots, which are the most widely represented, the attempt was the least successful. The total number of approximately 622 items made up of more than 800 rim-fragments is therefore presumably a high estimate. The totals for every type should indeed be considered as an indication of frequency and proportion rather than as an absolute datum (fig. 7).

The main component of the production of smooth-walled ware consists of jugs (types 2 and 3). The shapes accord with the types which are common elsewhere. Only the definition of the handles varies: often it is made up of four parts instead of three. The amphorae are fairly frequent. The elegant type 6 has been found earlier in Heerlen.<sup>47</sup> There, too, the number of four-part handles is remarkable. Honey jars and large globular pots (type B1) occur in considerable numbers; the latter have also been found in the oven examined by Goossens and Evelein.<sup>48</sup> Mortars, however, are relatively weakly represented. In the varnished ware the ordinary cooking-pots are by far the most numerous. But also the pots of type 3 represent a sizable portion of production. All other vessels occur in more or less the same numbers. The dating of the complex as a whole is determined mainly by the jugs, due to their shape and number. Their unmistakable affinity with Stuart 1963, type 106–108 dates the fill to the final quarter of the first century, or perhaps even the beginning

of the second century. But the relative infrequency of the amphora type B6 (typologically closely related to these jugs), and the bowl A4 (closely related to the patina 29 which occurs so early in Neuss) could, however, indicate a date early rather than late in this time-span (*c.* 80 A.D.?). The relatively high percentage (8,1 %) of pots B1 appears to point in the same direction. The large number of pots of type A1, the fairly high percentage (25 %) within the type of the scale-ornamented pots of type A3, and possibly also the small number of cooking-pots with horizontal rim of type A5, may add weight to such a dating. If we compare this complex with a kiln dating from the mid-second century in the same area, we are struck at once by the great disparity in shapes. There the jugs and amphorae are modelled in a very different way; the cooking-pot with heart-shaped lid-ridge has appeared on the scene, as has the rough-walled bowl with rim thickened towards the inside, although very different from our bowl type A4. Also the mortar has a different profile. The cooking-pot with flattened rim has hardly altered, but the rim-profile of the successor to our type A3 has undergone a change: it has less definition.<sup>49</sup> Slowly but surely the overall picture of the Heerlen pottery industry – so often mentioned, yet to date noticeably lacking in detail – is becoming clear. It is obvious that investigation of other complexes would yield a considerable amount of information. In this respect the St Joseph's Hospital complex in particular appears to provide an opportunity of compiling a type-sequence running from the end of the first century to the end of the second, or perhaps into the third century.

47 Martin 1915, 48 below right.

48 Goossens/Evelein 1909, *afb.* xxxii c and f.

49 Gielen 1971a.

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# Roman-period Settlement on the 'Free-Germanic' Sandy Soil of Drenthe, Overijssel, and Gelderland

figs. 1-6; pls. xxvii-xxviii

## INTRODUCTION

In comparison with the terp-district along the northern coast, relatively very little is known about the Roman-period occupation of the higher-lying territory in the northeastern part of the Netherlands. During the last few years, however, much new information has come to light, and a coherent picture is gradually emerging. In this respect the province of Drenthe compares favourably with Overijssel and Gelderland. This is due to the work done by the Biological-Archaeological Institute, University of Groningen, which started the excavation of Roman-period settlements in Drenthe well before the Second World War. From 1958 to 1961 the institute carried out a large-scale excavation (*c.* 3.5 ha) in the Free-Germanic settlement of Wijster near Beilen in the province of Drenthe. Useful data were collected not only concerning the single elements – particularly the building types – which made up the settlement but also regarding the shape and lay-out of the settlement as a whole in its successive phases. Moreover, the Wijster excavation provided some insight into the occupation history of the region and period concerned and into the contacts between this part of *Germania Libera* and the Roman empire, especially during the third and fourth centuries.<sup>1</sup>

At the same time (1960) a comparable site was investigated on the northern bank of river Vecht near Dalfsen in the province of Overijssel. It was a joint operation by BAI (Biologisch-Archaeologisch Instituut, University of Groningen) and ROB (Rijksdienst voor het Oudheidkundig Bodemonderzoek – State Service for Archaeological Investigations in the Netherlands). So far, this relatively

small excavation (*c.* 0.5 ha) has remained the only one of its kind in Overijssel, but several other Roman-period sites have since been discovered in the Vecht area as well

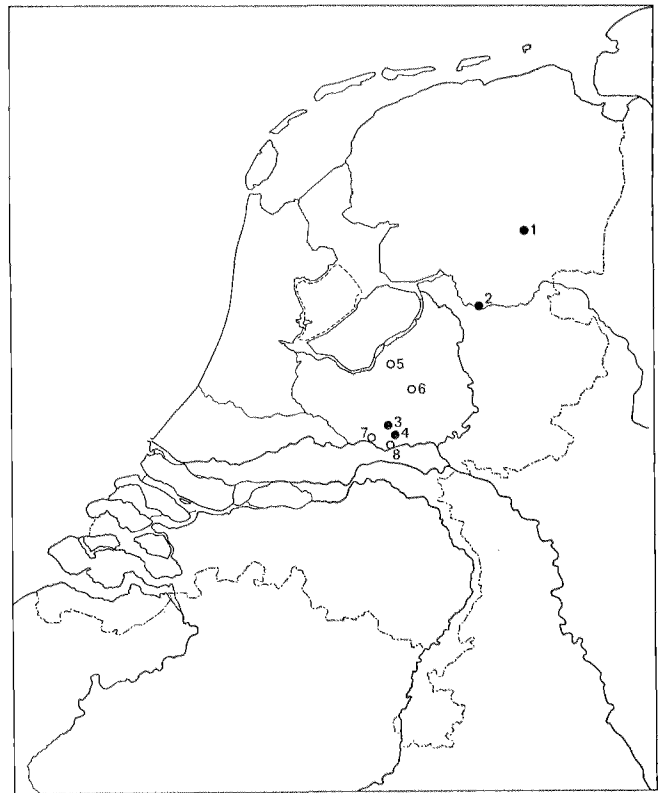


Fig. 1 1 Wijster, 2 Dalfsen, 3 Ede, 4 Bennekom, 5 Ermelo, 6 Kootwijk, 7 Rhenen, 8 Wageningen

<sup>1</sup> Van Es 1967 (with literature on earlier Roman-period excavations in Drenthe).

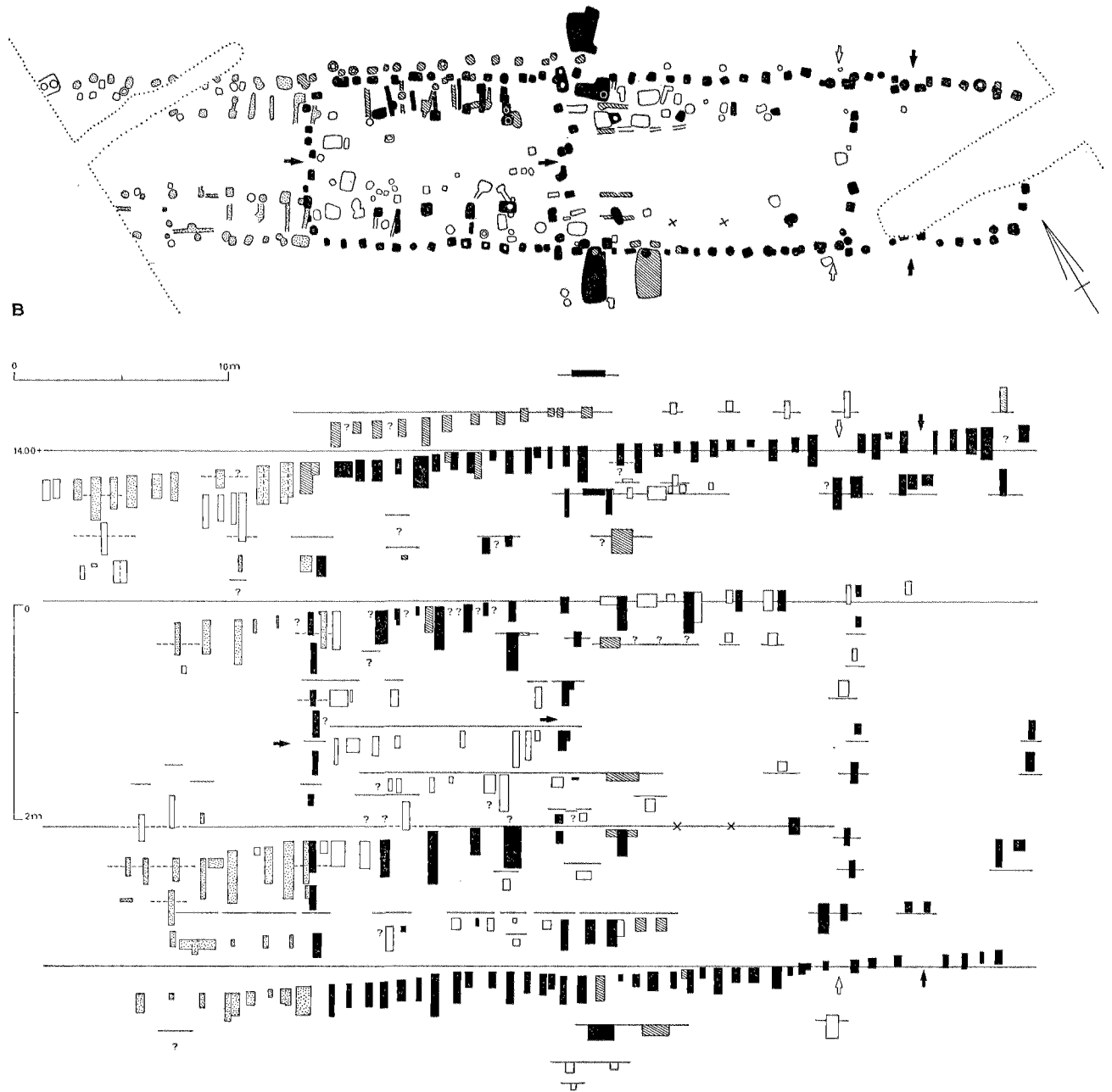
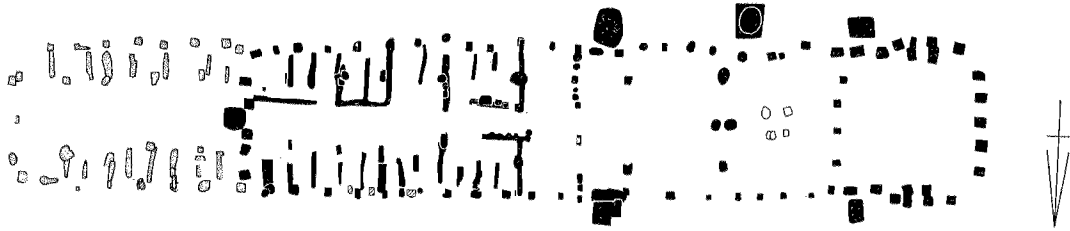


Fig. 2 Principal buildings. A: Wijster, plan<sup>v</sup> of house xxxviii.  
B: Ede, houseplan and sections. Horizontal scale 1:300. For legend cf. fig. 3



A

as elsewhere in the province.<sup>2</sup> The intention is to continue research in the near future.<sup>3</sup>

Gelderland suddenly reached the archaeological headlines, when in the spring of 1968 a Roman-period settlement was discovered in the course of the preparatory works for the Veldhuizen extension-scheme in the municipality of Ede. The large excavations (c. 5.5 ha) which followed this discovery were still in progress at the moment of writing (November 1971).<sup>4</sup> It will probably be possible to record the plan of this settlement almost completely. At the end of 1969 another similar settlement was found, again in a development project, at Bennekom near Ede. Part of the area (c. 1.6 ha) could be excavated.<sup>5</sup> Several other sites are known in Gelderland but have not been excavated: among others, Manen near Ede, Wageningen, Rhenen, Kootwijk, Ermelo.<sup>6</sup>

#### MAIN ELEMENTS

The eastern Dutch settlement of the Roman period consisted of the following main elements: principal buildings,

several types of outhouses, wells, different kinds of pits and fences.

##### a Principal buildings

Most principal buildings were long farm-houses of three-aisled hall type (*Dreischiffiges Hallenhaus*), combining dwelling and byre under one roof. The length varies from c. 15 to over 30 (occasionally 40) m; the houses are between 5 and 8 m wide.

The majority of the principal buildings at Wijster belonged to a special variety of the three-aisled house type (Wijster type AII), which apparently did not occur in the coastal area.<sup>7</sup> Its most conspicuous feature is the difference in roof construction between dwelling-quarters and byre. The latter presented the classical three-aisled disposition of the main constructional elements: rather closely spaced pairs of vertical roof-posts stood in two rows at a distance of at least 1 m inside the long walls. The central aisle was used as a gangway, the two side aisles were reserved for the cattle. Outside the byre, however, the interior roof-posts were absent or rare. Instead of roof-posts double-

2 There exist as yet only preliminary reports on the Dalfsen excavation: Van Es 1960; Van Beek/Van Es 1964.

Reports on other sites in Overijssel: Van Beek 1961; Van Es/Verlinde (in preparation); Verlinde 1971.

3 In the meantime (1972/3) a Roman period settlement has been excavated in the eastern part of Overijssel near Denekamp: Verlinde 1973.

4 Preliminary report on the first campaign (1968): Van Es 1969.

5 Preliminary report: Van Es 1972.

6 *Manen*: this site was discovered in the course of road-building in 1971; it was destroyed without excavation, but finds from this settlement have been recovered by local amateurs.

Two earlier – Iron Age/early (?) Roman period – settlement sites near Ede: Hulst 1970a; 1970b.

*Wageningen*: Van Es 1964b, 256–63, 295, 300, 305–7.

*Rhenen*: Van Es 1968. *Kootwijk*: Van Es 1965–6. *Ermelo*: Van Sprang 1962–3; 1963.

7 Bruijn/Van Es 1967, fig. 7.

posts were sometimes found in the long walls – particularly in the actual living-part – placed in pairs opposite one another. They may be considered as constructional substitutes of the roof-posts and are held to represent the cruck-construction.<sup>7a</sup> Secondary characteristics of the Wijster *AII* houses are narrow cattle stalls in the byre and rectangular pits in front of the entrances. The buildings were divided into two or three functionally different parts (bi- or tripartition) by sets of opposite entrances in the long walls. One outer end formed the byre, the other end housed the living-quarters. Many houses of this type – especially the longer ones – possessed an intermediate part between dwelling and byre; this part may be rather long and stands out as a separate element. The interior roof-posts which often occurred in this part were mostly more widely spaced than those of the byre. The function of the intermediate part is not wholly identified: storage-room or workshop? Many of the house-plans excavated at Dalfsen, Ede, and Bennekom are clearly related to the Wijster type just described. To corroborate and illustrate this point we show one of the long farm-houses from Ede and compare it with Wijster house xxxviii (fig. 2). The Ede house has undergone alteration and rebuilding, which hampers the interpretation and reconstruction of the original plan. The building was 7.50–8 m wide and originally 34 m long; it became over 45 m long by an extension of the byre at the western end (the western end-wall could not be excavated). The western end-wall had an entrance in the middle, indicated by two relatively deep and slightly recessing post-holes which lie about 1 m apart. There were also two sets of opposite entrances in the long walls: one pair lay somewhat off-centre at the division between byre and middle part; the second pair opened into the living-quarters at the eastern end; a third pair seemed to lie at the eastern end of the middle part – it was so near the second pair that they may not have been in simultaneous use. Rectangular pits were situated in front of the central entrances. The southern central entrance seems to have been blocked secondarily; it was replaced by a new door at a short distance to the east. Living-quarters, middle part, and byre were separated by partition walls. The byre was originally 12 m long. It had narrow stalls (traces of rebuilding) and pairs of closely spaced interior roof-posts. The roof-posts stood *c.* 1.5 m inside the walls; the distance (span) between the two rows of roof-posts approximated 4–4.5 m;

<sup>7a</sup> Bendix Trier (1969, 131–3) has shown that the occurrence of the real cruck-construction during the Roman period may be

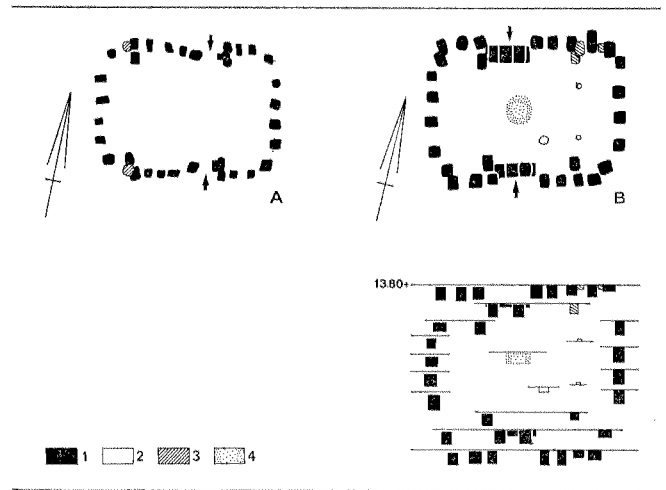


Fig. 3 Principal buildings. A: Wijster xxvii. B: Bennekom. Scale 1:300. 1 certain, 2 uncertain, 3 repair, 4 extension

the interval between the pairs of roof-posts was 2–2.5 m. The stalls did not completely fill the side-aisles; they left a free space at the western end and behind the partition wall between middle part and byre. The middle part was 13 m long. The disposition and number of the roof-posts in the middle part cannot be established with full certainty. There was one pair at the western end. Roof-posts were also included in the partition wall between middle part and living-quarters. There seem to have been three rather closely spaced pairs in the middle. Apparently, the byre encroached upon the middle part after a rebuilding: a series of ‘transverse’ stalls, parallel to the building’s long axis, was constructed immediately to the east of the original partition wall. The living-quarters possessed no roof-posts at all. It showed one pair of double wall-posts at its extreme eastern end. Another pair of double-posts showed up just behind the entrances in the front part of the byre. It had been incorporated into the partition wall.

Another example of close similarity of house-plans between Wijster and, in this case, Bennekom is shown by fig. 3. The illustration compares Wijster house xxvii, a representative of the relatively rare type *BIIA*, with a practically identical specimen from Bennekom. The similarity is, indeed, astonishing and concerns not only the character-

doubted. This, however, does not prevent the Wijster buildings from being a special variety of the three-aisled house type.

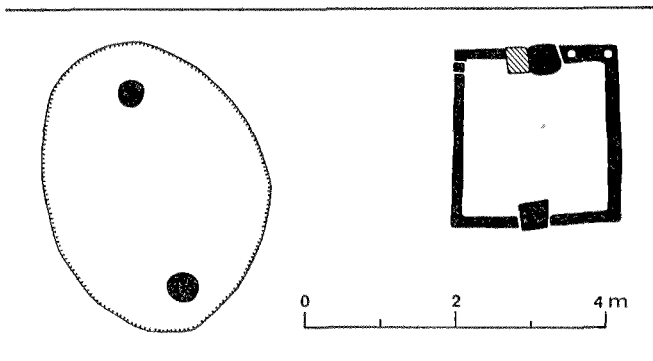


Fig. 4 Sunken huts: Bennekom. Scale 1:100

istic features of the plans but also their dimensions. Both buildings are divided by a set of opposite entrances into a longer and a shorter part. Both have two pairs of double-posts – and no interior roof-posts: one pair is found next to the entrances at the side of the short part, the other at the other end of the longer section. Both houses measure  $c. 5 \times 7$  m. These identical features ineluctably create the impression that the two houses were designed and built by the same craftsmen, and yet Wijster and Bennekom are more than 100 km apart. The same type also occurred at Ede.

The function of this type of building presents a problem. At Wijster, there was some, although not absolutely decisive evidence that these short houses were main buildings. They were interpreted as dwelling-houses in the strict sense: the longer section was interpreted as living-quarters; the short part could have been a bedroom or possibly a workshop. This interpretation need not be abandoned completely, but the new evidence from Ede and Bennekom has opened up other possibilities. The position of the Bennekom house in the context of the settlement strongly suggests that it was not a principal building but that it was subordinate to a large farm-house. In that case it may not have been a dwelling but an outhouse, such as *e.g.* a stable or a workshop, or it may have had yet another function.

8 The excavation at Dalfsen was rather small; there may have been huts outside the excavated area. At Ede the level of excavation usually lay relatively low beneath the original ground level. If the huts were shallow, the level of excavation may have

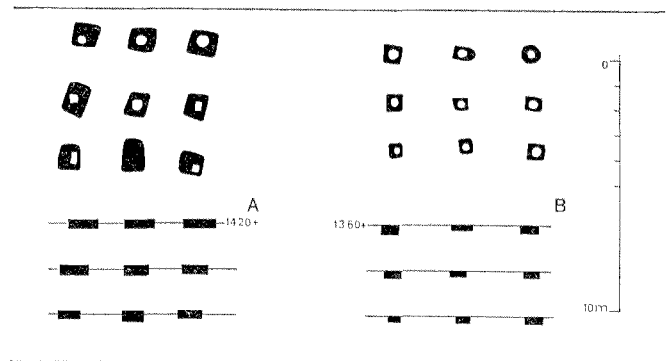


Fig. 5 Granaries. A: Ede. B: Bennekom. Scale 1:300

#### b Outhouses

Several types of outhouses occurred in the settlements of this group. The most conspicuous type is the so-called *Grubenhäuser*: small rectangular huts of mostly  $c. 2 \times 3$  m, sunk about 0.5 m into the soil. These sunken huts had walls of wattle-and-daub or planks, which were often placed in a narrow rectangular foundation-trench following the contours of the pit. They occurred in two varieties: two-post huts with a post in the middle of the short sides to carry the ridge-pole, and six-post huts with four additional posts in the corners, which held the walls. Both varieties were found in Wijster and Bennekom (fig. 4). In Dalfsen and Ede sunken huts have not been established with certainty. This need not mean that the *Grubenhäuser* did not occur in these settlements.<sup>8</sup> Ground-plans of granaries consisting of 9 or 12 large post-holes arranged in a rectangle have been found at Wijster, Ede, and Bennekom (fig. 5).

All settlements abounded in simple and small structures represented by square or rectangular configurations of 4 or 6 posts. These were not granaries in the strict sense but may have served different functions, such as tool-sheds, haystacks, *etc.*

#### c Wells

A common feature of the eastern Dutch settlements, apart

passed below the bottom of the pits, in which case configurations of 2 or 6 posts would be the only traces left by the huts. Such simple configurations are obviously hard to recognize.

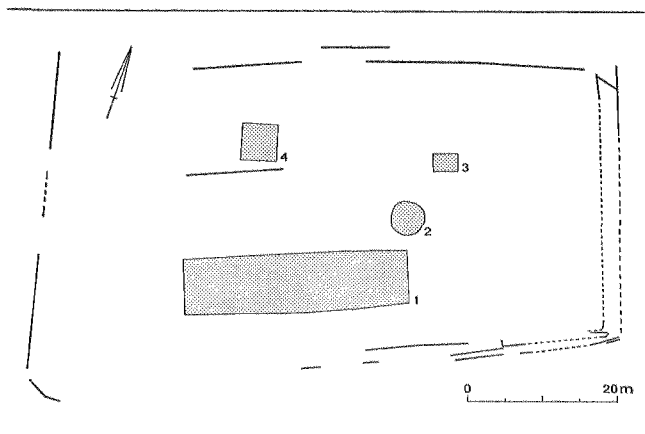


Fig. 6 Bennekom: settlement unit (simplified). Scale 1:1000  
1 farm-house, 2 well, 3 sunken hut, 4 granary

from Dalfsen,<sup>9</sup> is the occurrence of large numbers of wooden wells. It should be noted, however, that the specific type found in Wijster<sup>10</sup> did not occur at Ede or Bennekom. Many divergent constructions were in use at these latter sites: hollowed-out tree-trunks, thick branches or sapplings placed in a circle or a square, wicker cylinders, casements of planks (pls. xxvii–xxviii).

#### d Pits

The occurrence of numerous pits constitutes another common element, but also in this respect the conformity is a general one. Really convincing cross-relations are rare as far as the pits are concerned. Animal graves, for instance, are known only from Wijster. Wijster pit-type A ('oven pits') is paralleled only at Bennekom.<sup>11</sup> Storage-pits of Wijster type C<sup>12</sup> were probably present at Ede and Bennekom.

#### e Fences

Long and narrow foundation-trenches for fences of wattle or planks are among the most characteristic elements of the settlements under discussion. The fences surrounded large rectangular yards, which accommodated one – occasionally more than one – farm-house and its dependencies (outhouses, pits, well). Such a farmyard probably

represented an individual economic unit operated by a single family.

#### f Settlement-pattern

The settlement as a whole may be characterized as a conglomerate of farm-yards. Certainly in Wijster, Ede and Bennekom, and probably also in Dalfsen, the farmyard formed the basic element of the settlement-pattern. Differences in the size of the settlements and in the topography of the sites allow for the rather great variation in the way in which these units were combined and grouped together. During its later phases (periods IIIa–c), the settlement of Wijster had become a relatively large village with rather regular lay-out: the individual farmyards had fused into compound strips or blocks with rectilinear streets running in between. The settlement had been arranged on two axes which cut at right angles: all principal buildings were roughly orientated, the streets ran N–S or W–E. A similar 'checkered' pattern is also probable for Bennekom, at least for (one of) the later occupation periods on this site. The settlement of Ede formed at the end of its career a broad, curved strip – again made up of individual farmyards – along the western edge of a large circular depression in the terrain.

#### DATE

At Wijster the occupation started around the middle of the 2<sup>nd</sup> century. During the earliest phase (period I) there were only a few separate farmyards. The evolution to a large settlement (periods II and III) – to a village consisting of several dozens of farming-units – took place in the 3<sup>rd</sup> and 4<sup>th</sup> centuries. At some time in the first half of the 5<sup>th</sup> century the village was abandoned.

Such precise data will not be available for Dalfsen, Ede, and Bennekom as long as the results of these excavations have not been analysed in detail. It seems, however, that these settlements belonged to roughly the same period. A perfunctory study of the finds suggests a beginning in the 2<sup>nd</sup> or possibly the 1<sup>st</sup> century, while the end probably came soon after 400 A.D. The period of occupation must certainly have been protracted, because the settlement traces show much overlapping. One may expect that the

9 Though it is not absolutely certain that the settlement of Dalfsen had no wells (*cf.* note 8. A well was found at the nearby site of Lenthe; Verlinde 1971), the absence of this commodity here would not be hard to explain; the inhabitants may have drawn their water from the river.

10 Van Es 1967, fig. 48–51.

11 Bennekom provided two such 'oven pits' – one of them surrounded by post-holes – arranged at right angles in a similar way as found at Wijster; *e.g.* Van Es 1967, fig. 52: 1.

12 Van Es 1967, fig. 55. particularly nos. 1–7.

size and lay-out of these settlements has also been subject to alterations in the course of this long lapse of time, as it was the case at Wijster.<sup>13</sup>

The finds consist mainly of pottery, the major part of which is local, hand-made ware. The local pottery from Dalfsen, Ede, and Bennekom shows great similarity. The same hand-made pottery types are known from Kootwijk Ermelo, and Rhenen. There is close relationship between these eastern Dutch types and the contemporaneous pottery from middle and western Germany, particularly from Westfalen.<sup>14</sup> The pottery complex from Wijster may also show some related features, but on the whole it is much more akin to the material found in the pottery province which stretched out along the northern Dutch and German coasts. Characteristic of these find-complexes is, however, the relatively high percentage of imported Roman pottery. Several classes of Roman material are represented: terra sigillata, terra nigra, smooth and rough ware, varnished pottery, *etc.* The impression is that the Roman pottery from these sites dates especially from the 3<sup>rd</sup> and 4<sup>th</sup> centuries. A limited number of other Roman imports, such as a few glass sherds and metal objects, completes the picture. The metal objects comprise coins, pins, brooches, and – most strikingly – bronze statuettes of Roman gods. The latter were found at each of the three sites of Dalfsen, Bennekom, and Ede. Dalfsen provided a beautiful Mercurius.<sup>15</sup> Bennekom produced a statuette of a goddess, probably Fortuna. At Ede two gods appeared – one of them a Minerva in full panoply, the other presumably a Genius.

#### SUMMARY

The settlements of Wijster, Dalfsen, Ede, and Bennekom are clearly connected by many traits; in some cases these relations are remarkably specific (*e.g.* the occurrence of very similar or even identical house-plans at Wijster, Ede, and Bennekom). Within this general framework, however, one observes all kind of differences as far as the individual features are concerned (*e.g.* in the construction of the wells, in the discrepancies of the pottery types, in the absence of sunken huts at Ede, *etc.*). These differences are too great to reduce the settlements to the same denominator. Whereas Ede and Bennekom, and probably also Dalfsen,

might be attributed to one archaeological culture in the usual sense of the term, Wijster stands somewhat apart. More research will be needed to work out more clearly the similarities and disparities between the Roman-period settlements of the eastern Dutch sandy soils. It is to be hoped that a more detailed analysis of the available data along with the collection of fresh material will enable us to distinguish and delimit the archaeological cultures of the said area and period.

Continued research in this field will not fail to be highly rewarding in other respects also, as these settlements are the archaeological reflection of most interesting historical events. They belong to the middle- and late-Roman period, when drastic changes took place in Free Germany, which preceded the revolutionary events of what is called the Migration period. There is reason to believe that some of the Germanic elements who entered the territory of the north-western Roman provinces in the course of the 3<sup>rd</sup> and 4<sup>th</sup> centuries came from our region. It is interesting to observe that the occupation of the eastern Dutch sites did not stop during this period, though it is quite possible that the evolution of these settlements has not been without breaks or interruptions. At Wijster, it could be established without any doubt that the plan of this settlement had been subject to radical alterations. It will always remain difficult to interpret such phenomena in historical terms, but one of the aims of future research must be to state this problem more clearly and make at least an attempt to ask the growing body of evidence for the answer to historical questions. Whether the tenacious continuity of place in the occupation of our sites also implies an ethnical and cultural continuity is a matter which for the moment we must leave aside. Then, there are the strong connections between this part of Free Germany and the northern sections of the Empire, which are indicated by the relatively numerous provincial-Roman imports. The nature of these contacts constitute another object for further study. The definite end of the occupation, which the existing evidence gives as taking place at all our sites not long after 400 A.D., may reflect the crucial events which accompanied the collapse of the Roman empire in Gaul and the Rhineland. We are confronted with one of the major archaeological and historical problems: the transition from the Roman period to the Early Middle Ages.

13 The excavations at Dalfsen and Bennekom will probably prove to be too small to give full information on this point.

14 Von Uslar 1938; 1970.

15 Van Es 1964a.

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# Early Medieval Settlements

figs. 1-5

The study of early medieval settlements in the Netherlands had a late start. In recent years, however, the ROB has undertaken large-scale excavations of medieval settlements in three different places: Dorestad near Wijk bij Duurstede, Den Burg on the island of Texel, and the fortress of Oost-Souburg (the latter was inhabited mainly in the late Middle Ages).

In addition there have been smaller excavations: in Rijnsburg under the abbey, in Cuyk, Grubbenvorst, and Sleen. The results of the excavation at Sleen have been published.<sup>1</sup> Some provisional comments on the findings at Rijnsburg, Cuyk, and Grubbenvorst follow below. The Oost-Souburg excavation will be discussed separately in this volume (p. 00), while preliminary publications on Dorestad and Den Burg on Texel have already appeared or will appear shortly.<sup>2</sup>

## *Rijnsburg*

In 1961 the ROB conducted one campaign of the investigations, on the site of the Rijnsburg abbey (fig. 2). The main concern of the ROB excavation was not the abbey itself<sup>3</sup> but the traces of early medieval habitation that were discovered under the abbey. The investigation of these settlement remains was taken over by the BAI and IPP in 1963, and concluded by the IPP in 1966.<sup>4</sup>

The finds, mostly sherds, comprise two groups of early medieval pottery. The first is so-called Merovingian,

wheel-thrown pottery, especially rough-walled ware. Similar material also occurs in the early medieval cemeteries in the Netherlands, notably along the Rhine. The second group consists of Carolingian wheel-thrown ware. Since the finds have not yet been studied in detail, it is for the time being impossible to establish an accurate and exact date. The Merovingian ware may be dated to some time in the seventh and eighth centuries. The Carolingian ware represents the next step: it dates from the eighth to the tenth century. But this does not mean to say that the site was inhabited continuously during the entire early medieval period – from the seventh to the tenth century. Rather, the settlement traces appear to indicate two separate periods of habitation. The younger, late-medieval finds need not concern us here. It should be mentioned, however, that the excavation has yielded a considerable amount of Roman pottery. It is not clear yet whether this Roman material is related to habitation in Roman times or whether it was transported to the site at a much later date.

Two separate systems may be observed in the early medieval settlement traces. The stratigraphically younger system consists primarily of groups and rows of large, more or less circular or rounded-rectangular pits. The rows of pits run in a roughly northeast to southwest direction. A house-plan (incomplete) of a large wooden house corresponds with this orientation, and therefore probably dates from the same period as the pits. Some of

1 Bruijn/Van Es 1967.

2 Literature on *Dorestad*: Van Es 1969; Van Es 1973; Eckstein/Van Es 1972; Van Es/Verwers 1973; *NKNOB* 1968, 44; 1972, 30-1; *Jaarverslag ROB* 1968, 12-3; 1969, 13; 1970, 14-5; 1971, 24-6; on *Texel*: *NKNOB* 1972, 43-6; *Jaarverslag ROB* 1971, 14-8; Woltering 1973. A preliminary report will appear in the next issue of the *BROB*.

3 The investigations of the abbey at Rijnsburg were conducted for the most part by the IPP. H.H. van Regteren Altena, of that institute, will publish the results in the near future.

4 *NKNOB* 1961, 57-8, 73, 92-3, 107, 125-7; 1967, 12-4.



Fig. 1  
1 Rijnsburg: 2 Cuyk: 3 Grubbenvorst

the pits contained wooden wells of varying construction: barrels made of staves, a hollowed-out tree-trunk, square planking, and wickerwork. It is not unlikely that these settlement traces correspond with the Carolingian pottery. If so, they date from the ninth to tenth centuries. The size of this settlement-system is not known, but it probably extended beyond the excavation area. The nature of the habitation, too, is uncertain. There are some indications that the pits and wells served for iron working. This settlement may have had a predominantly or partially industrial function.

The most striking features of the older system are the traces of enclosures and embankment works, as well as three house-plans of rectangular wooden houses with a north-south axis. The period of habitation is in all proba-

4a One of the three Merovingian houses lies at a short distance to the south of the area excavated by the ROB. It has the same orientation as the other two buildings and may be compared to

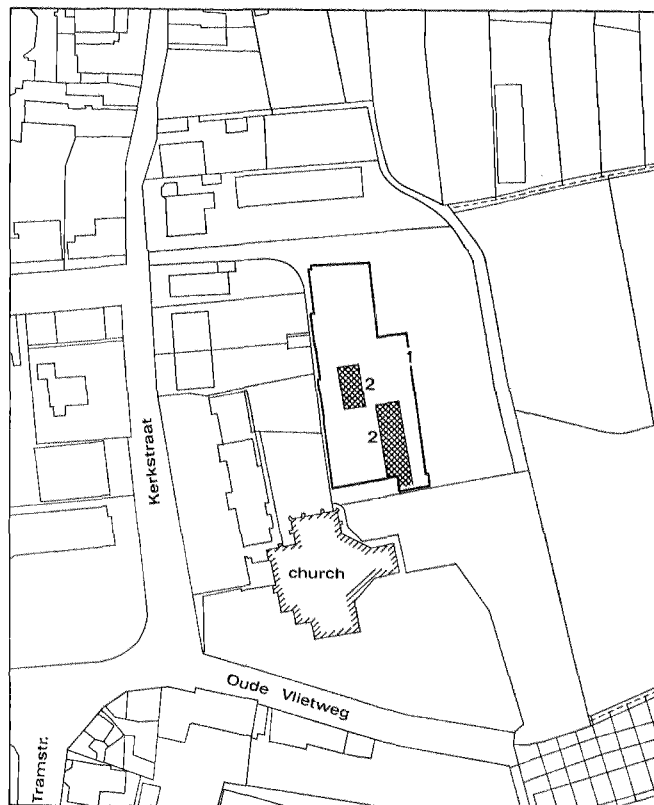


Fig. 2 Rijnsburg: situation. Scale 1:2000 1 boundary of excavated area, 2 house sites

bility dated by the Merovingian ware, and thus belongs to the seventh/eighth centuries. It does not, however, represent the first activity on the site, for a thin layer of arable soil with traces of ploughing was found under the settlement traces. The age of these plough-traces is unknown.

The Merovingian settlement is built on sand, for it is situated on sandy sediments deposited by the Rhine, which are intersected at that place by a broad tide-gully once connected with the mouth of the Old Rhine. The gully was cut into during excavation. It probably marked the eastern and northern boundaries of the Merovingian settlement. The size of the settlement is unknown but it must have extended beyond the west and southern limits of the excavated area.<sup>4a</sup> It was possible, however, to establish that the settlement area was cut through by a small tributary of

the shorter one. This third house was excavated by the IFF; it will not be published here.

the main gully. This tributary, which ran roughly from north to south, became partly filled up with peat during the period of habitation. In two places the remains of a small dam or bridge were found, which led straight across the gully and which belonged to the Merovingian settlement system. The banks of both the tributary and the main gully were reinforced with planking and small wooden posts. The strip of land between the two gullies was rather narrow (width *c.* 50 m) and sloped from east to west. The two house-plans were found in the eastern part, close to the edge of the main gully (fig. 3). They are remarkable for their north-south orientation, which may be explained by the shortage of space. Fig. 2 shows the position of the two buildings in relation to one another; their situation suggests that they date from the same period.

The house-plans consist of post-holes and they are fairly complete. In a few places only have some post-holes been erased by later settlement traces, particularly by Carolingian pits.

The house-plan of the smaller building measures  $5 \times 11$  m. The long and short walls are marked by double post-holes, at an average distance of 0.75 m apart. Each double post-hole had contained two vertical posts or beams. These supported the edge of the roof, and presumably held the actual wall between them. It would seem that the double wall-posts indicate that the wall itself was made of planking. The long walls are accompanied on the outside at a distance of about one metre by a row of long post-holes whose longitudinal axis runs perpendicular to the wall. These 'outer posts' were placed 2 to 2.50 m apart. Not only were the posts in the two outside rows placed opposite each other in pairs, they were also aligned with every third double wall-post – not counting the corner-posts. There do not appear to have been outside posts at the corners. Because of later disturbances, however, we cannot be absolutely sure on this point for three of the four corners. But the northeast corner is undisturbed on all sides, and no traces of an outside post were found. Only the northwest corner was found to have extra reinforcement in the shape of a third post-hole, which, however, lies right against the wall: possibly a secondary reinforcement or repair. We see the outer posts as props to help support the roof. They may well have slanted inwards, but in this respect our data cannot give complete assurance. Two entrances are clearly recognizable: they are situated in the long walls facing each other, slightly

north of the centre between the first and second pair of outer posts. The western entrance is *c.* 1.25 m wide, the eastern *c.* 1.75 m. Long post-holes with their axis incorporated in the walls mark the position of the door-posts. The short walls were, it seems, closed. The interior was for the most part bare of construction-elements. Three post-holes were found only on the south side. In view of their position they must presumably have been part of the house-plan: they are in line with the fourth pair of outer posts and may have belonged either to an interior wall, or they may have served a structural (roof-supporting) function. The post-holes of this building are all more or less equal in depth: at any rate the differences are always slight.

The smaller of the two buildings is remarkable for the regularity of its plan. It could have been a dwelling, even though no traces have been found of a fire-place. It was undoubtedly a sturdily built construction probably encased with planks, and with slanting outside roof-supports. This last element in particular – the roof-props placed outside the wall – accords well with the picture we have of the early-medieval building tradition in northwestern Europe.<sup>5</sup> There is a very striking resemblance between this house-plan and that of Haldern which also dates from the Merovingian period,<sup>6</sup> and with an early-medieval plan from Den Burg on Texel.

The other Rijnsburg building was somewhat more spacious (*c.*  $5.75 \times 18.50$  m), but its house-plan is less regular. Most of the wall post-holes are single, which could be an indication that the actual wall was made of wattle. Only the short south wall is marked in part by a small ditch: this gable could have been closed with planking. In this instance double posts were not used for the actual wall-construction. Yet there were some double posts in the long walls. Their disposition is strongly reminiscent of those of the outer props of the smaller house: they do not occur at the corners; they are placed at more or less regular intervals of *c.* 2.50 m; the double posts of one wall face those of the other. Indeed, they must have served the same function and may be considered as important constructional elements to support the roof, the more so because the interior in this case also lacked posts to which such a function could be attributed. On the other hand there is some difference between the double posts of the large house and the outer posts of the small one. If the two elements did have the same function, they probably did not have the same shape. The outer post of every double

5 Bruijn/Van Es 1967.

6 Hinz 1963.

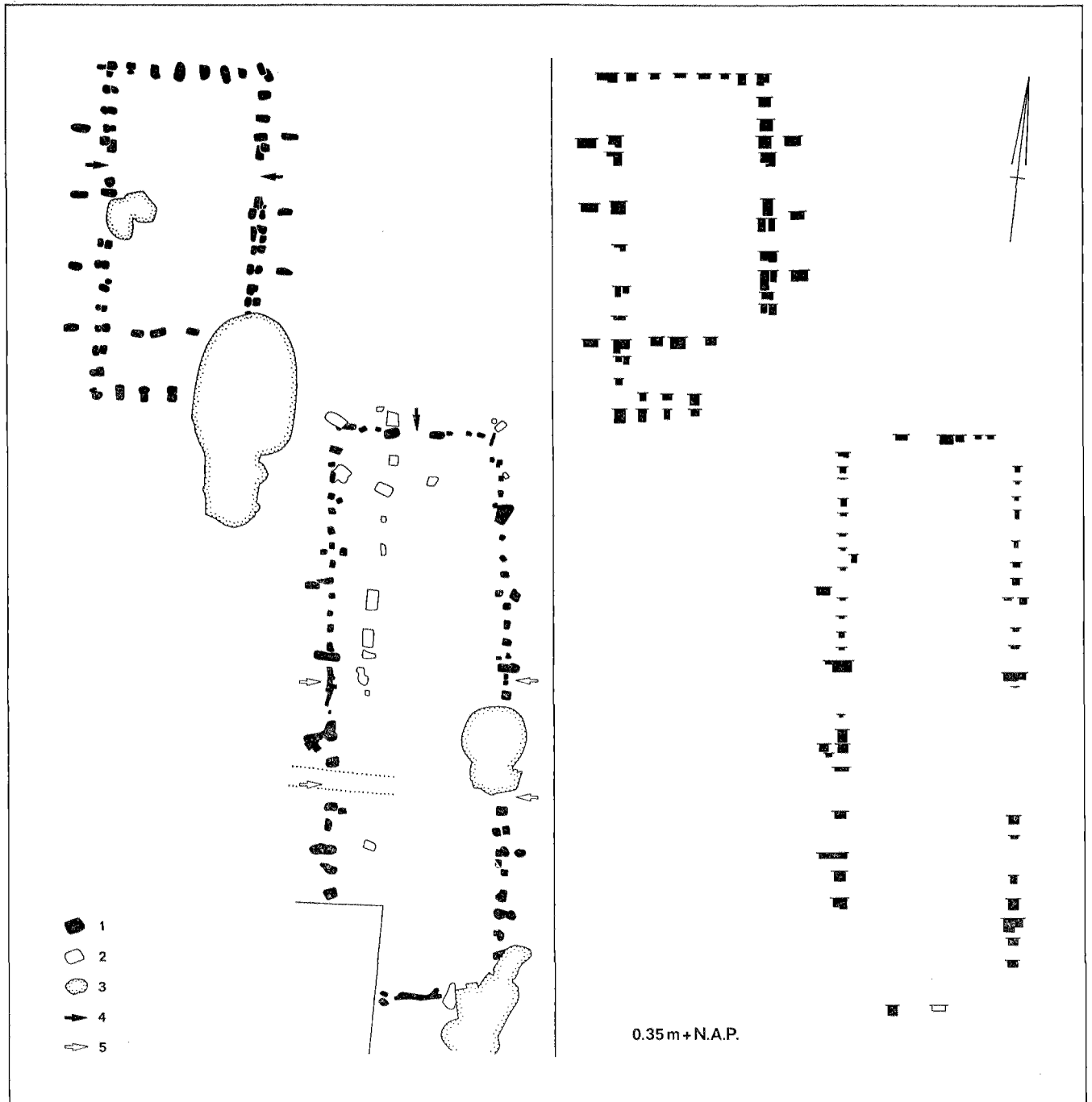


Fig. 3 Rijnsburg: house-plans. Scale 1:200  
1 certain, 2 uncertain, 3 later pits, 4 entrance certain, 5 entrance uncertain

post directly adjoined the outside of the wall, while the inner post was usually situated slightly on the inside of the wall. This arrangement may be compared with that of the 'cruck' elements in the late-Roman houses of the sandy areas in the northeastern Netherlands (*cf. e.g.* Wijster, Ede, and Bennekom, p. 276). The simultaneous occurrence of the two above-mentioned variants in Rijnsburg supports the theory that there is an affinity between the cruck elements and the construction with slanting outer props. The exact position of the entrances in the long walls of the larger building is impossible to establish (the possible positions are indicated by the arrows in fig. 3). In the middle of the short north wall, two big long post-holes, 1.50 m apart, indicate an entrance. The presence of a door in this place suggests that the northern part of this building must have been a byre. The southern part must then have been the living area. This assumption accords with the fact that the post-holes in the southern half are bigger than those in the northern half. The south wall of the building, too, appears to have been constructed more carefully than the other walls: the ditch with double wall-posts could indicate that the wall consisted of planking. The total picture of the Merovingian settlement of Rijnsburg cannot be discussed at more length at present. Moreover, the character of this settlement is not yet completely certain, but it was probably predominantly agrarian.

#### *Cuyk and Grubbenvorst*

The early medieval settlement traces at Cuyk and Grubbenvorst came to light 'by accident' during excavations aimed primarily at other periods. In Cuyk the excavations originally concerned mainly the Roman period, but in the course of investigations it appeared that prehistory, the Merovingian period, and the Middle Ages had also left their traces on the site.<sup>7</sup> The excavation in Grubbenvorst yielded information on the Bronze and Iron Ages and the Roman and Merovingian periods.<sup>8</sup> In both places the research of the early medieval settlements has remained very fragmentary. A total picture could not be formed: the material does not permit definitive conclusions concerning the type of settlement. Nevertheless, the excavations of Cuyk and Grubbenvorst were of special importance for our purposes, for it was there that the first unmistakably Merovingian settlement traces were found in the southern part of the Netherlands. It is well known that the occupation of the centuries following the Roman

7 Bogaers 1966; Bogaers 1967.

8 *NKNOB* 1970, 139-40.

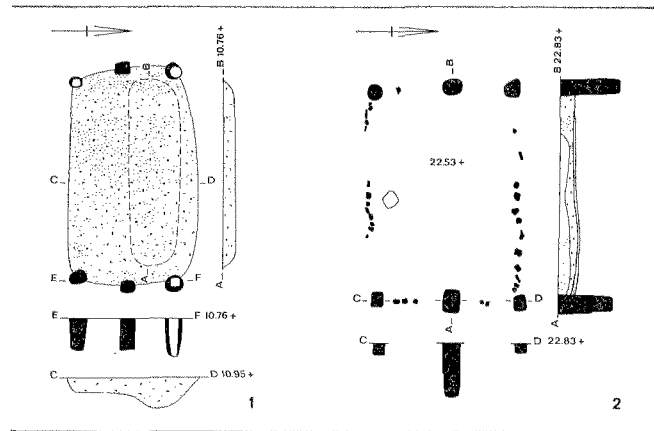


Fig. 4 Sunken huts: 1 Cuyk, 2 Grubbenvorst. Scale 1:100

period have obstinately hidden themselves from archaeological prying. This does not apply to the southern Netherlands alone – it is just as true, for instance, of the adjacent territory in Belgium. The archaeological picture of the fifth to the eighth centuries in these areas used to be determined almost exclusively by grave finds. Not for nothing is this period called the age of the Reihengräber cemeteries. Although this one-sidedness – so harmful for research – is not removed at one blow by the finds of Cuyk and Grubbenvorst, there is more hope for the future. Another favourable sign in this respect is the sixth–seventh century settlement of Brebières, recently investigated by Demolon near Douai, just over the French–Belgian border.<sup>9</sup>

As in Brebières, the sunken huts constitute the most striking settlement feature to be discovered in Cuyk and Grubbenvorst. In Cuyk one such sunken hut was found – a most interesting specimen (fig. 4:1). It is a hut of the six-post type, *i.e.* a rectangular pit (*c.* 1.75 by 2.90 m; the depth is unknown, but probably more than 0.2 m) with three post-holes along the two short sides. Traces of the wall construction have not been found. What makes this hut so particularly interesting is that its northern half (the longitudinal axis of the hut runs roughly west–east) is about 20 cm deeper than the rest. Such long pits are often found in the floors of sunken huts, and are explained as 'part' of a loom erected inside the hut. The pit served to accommodate the loom-weights which were attached to

9 Demolon 1972.

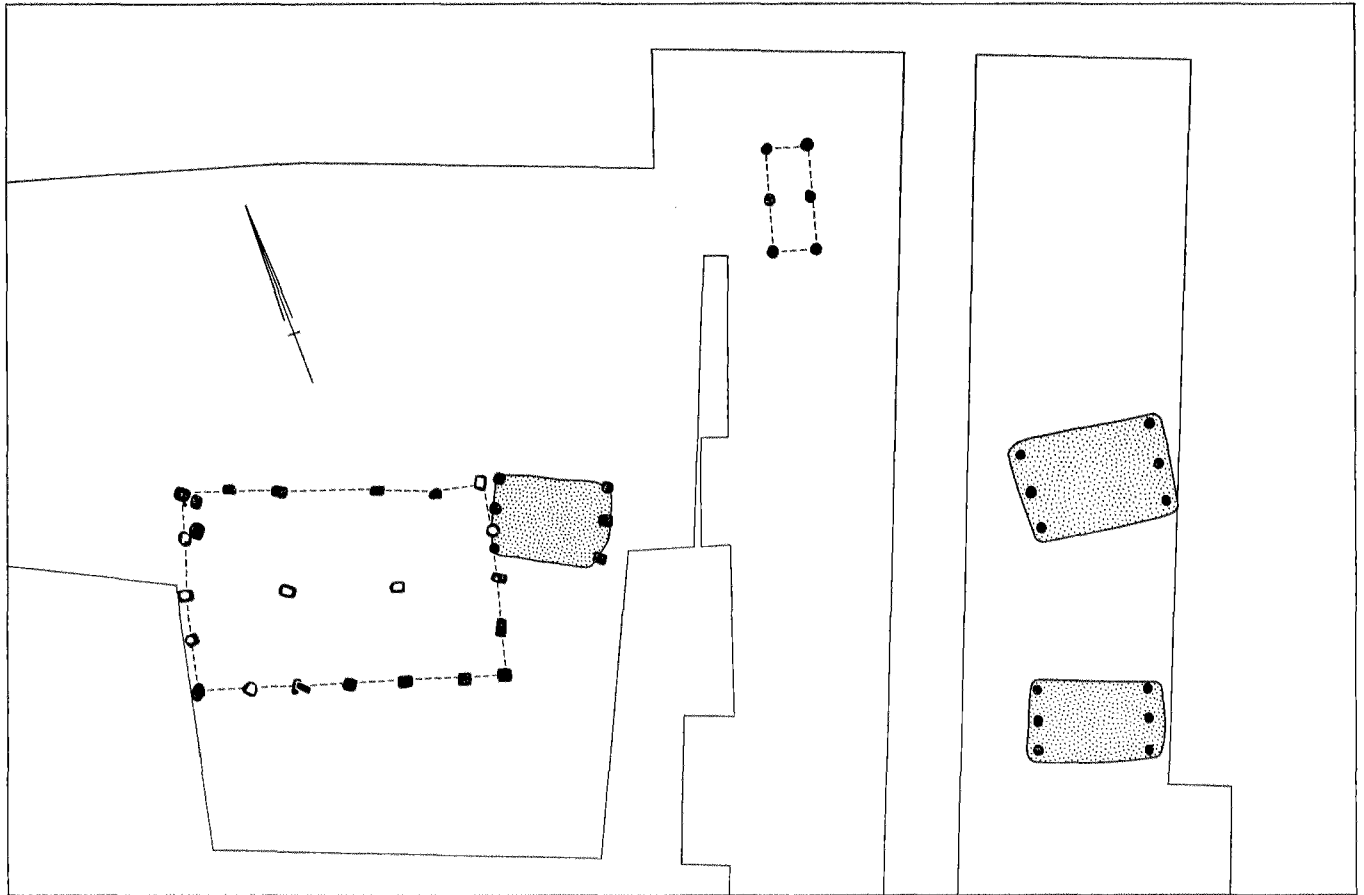


Fig. 5 Grubbenvorst: house-plan, sunken huts, granary. Scale 1:200

the ends of the warp threads. In this way the warp could be used to better effect – from the horizontal beam to the floor of the hut – so that the woven material did not have to be removed and rolled up so frequently. And indeed, fragments of two loom-weights were found on the floor of the pit. Traces of the actual loom, such as the post-holes for the two vertical supports, were not found, however. Perhaps the loom in this case consisted merely of a horizontal beam suspended high in the hut.<sup>10</sup> The depression in the floor also gives a clear indication of the function of the hut: it was an outbuilding (a weaving hut) and not a dwelling. We cannot visualize the dwelling to which it belonged. Was it also a sunken hut, or was it something

else? That question must remain unanswered, because the sunken hut at Cuyk was not found in a clear context. It is merely an isolated settlement fragment.

The situation is somewhat different at Grubbenvorst, where in total five sunken huts have been discovered (only one of which was excavated by the ROB). This one too (fig. 4:2) is a hut of the six-post type (c. 2.10 × 3.10 m; the depth of the pit below the original ground-level was probably between 0.4 and 0.5 m). The orientation of the hut is approximately east-west. The walls apparently consisted of vertical posts or planks placed close together. A shallow post-hole (?) was found in the middle of the north side. The floor of the pit was flat. No traces of a fire-place were found. Clear indications of the function of the hut – whether dwelling or outbuilding – are lacking.

<sup>10</sup> Bogaers 1966, 71; Van Es 1967, 77–83.

About 10 m to the east of the hut here described were two more, likewise six-post, huts next to each other.<sup>11</sup> It is difficult to say whether these two constructions were contemporaneous, but there can be little difference in date between these two and also the third hut.

The latter is situated on the east side of a house-plan consisting of post-holes – the pit of the hut appears to cut across one of the wall post-holes (fig. 5). It is a remarkably regular house-plan of a rectangular, two-aisled building (c. 5 m by 8.30 m) with the entrance probably situated in the middle of the long north side. Although the two extra posts at the north-west corner could suggest the presence of an entrance, the position does not seem very suitable for a door; also the extra post-holes are relatively shallow. The main difficulty is that it is impossible to establish a solid date for this building. In the immediate vicinity traces of an Iron Age settlement have been found, with house-plans of large, three-aisled buildings. These are so different from the two-aisled building that it seems unlikely that it also dates from the Iron Age, but we cannot be sure on this point. There is also the possibility that the

building dates from Roman times, for Roman graves have been found in the area. And finally: it could also be early medieval. In that case it was probably not standing at the same time as the sunken hut excavated by the ROB – the two buildings are too close together. But it may well have been contemporaneous with the two sunken huts that were discovered 10 m further east. Also the small six-post construction – a granary? – that lay somewhat to one side between the house and the sunken huts, may have belonged to the same complex. In the northern part of the Netherlands such settlement units, consisting of a wooden main building with outhouses such as granaries and one or more sunken huts, occur as early as the Roman period and are also present during the early Middle Ages. It is by no means inconceivable that similar complexes existed in the Merovingian period in the southern part of the country also. Unfortunately the Grubbenvorst excavations cannot confirm this point.

A provisional examination of the finds dates the sunken huts of Cuyk and Grubbenvorst to the sixth and seventh centuries.

11 In 1968 the *NJBG* found two more sunken huts some distance away. In the course of investigations carried out in 1940 by Dr F.C. Bursch, sunken huts were also found.

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# Das fränkische Gräberfeld zu Rhenen, Prov. Utrecht

Abb. 1-17

## EINLEITUNG

Das Gräberfeld wurde Anfang 1951 bei Sandgewinnungsarbeiten entdeckt.<sup>1</sup> Vom 15. Januar 1951 bis Ende Juni desselben Jahres fand eine Grabung durch den ROB statt.<sup>2</sup> Das Grabungsgelände<sup>3</sup> liegt westlich von Rhenen am Südhang einer eiszeitlichen Endmoräne nördlich des Rheines (Abb. 1). Der Boden besteht aus Sand mit Kies. Das Grundstück war als Acker benutzt worden.

Die Entdeckung des Gräberfeldes hat sofort grosses Aufsehen erregt. Das Interesse an den Funden ist auch seitdem immer rege geblieben. Sie wurden in mehreren Ausstellungen gezeigt und ein Teil des Materials ist auch in Veröffentlichungen abgebildet.<sup>4a</sup> Bereits in 1955 wurde versucht in einem Bildband zur Ausstellung aus Anlass des 1850-jährigen Bestehens der Stadt Nijmegen<sup>4</sup> einen Eindruck von der Variationsbreite des Materials zu geben. Im Laufe der folgenden Jahre wurden immer wieder Gegenstände aus Rhenen abgebildet oder als Vergleichsmaterial herangezogen, jedoch selten in grösseren Zusammenhang. Dieses war auch beim Stand der langsam fortschreitenden Präparierung kaum möglich. Die Gürtelgarnituren der frühesten Gräbergruppe wurden in 1969 ausführlich behandelt.<sup>5</sup> Einige Detailveröffentlichungen sind in Vorbereitung und beim Erscheinen dieses Aufsatzes wohl in Druck oder schon erschienen.

Obwohl die Bearbeitung des Materials jetzt weit fortgeschritten ist, wird die Gesamtveröffentlichung von

Rhenen voraussichtlich wohl noch einige Jahre auf sich warten lassen. Darum habe ich nicht gezögert, der Bitte meines Direktors, Prof. Dr. W.A. van Es, Folge zu leisten, einen Aufsatz über Rhenen für die Festnummer des ROB zu schreiben. Ich will versuchen die Ergebnisse der Grabung kurz zusammenzufassen um in dieser Weise einen Eindruck zu vermitteln von der Entwicklung des Gräberfeldes und seiner Periodisierung. Es braucht wohl keine weitere Darlegungen, dass meine Ausführungen teilweise nur vorläufig sein können.

## GRABFORMEN

Es ist ein glücklicher Umstand, dass die Grenzen des Gräberfelds innerhalb des für die Untersuchung zur Verfügung stehenden Geländes lagen. Nur auf der Südseite wäre eine kleine Fortsetzung gegen die Strasse hin denkbar. Man gewinnt jedoch den Eindruck, dass auch dort die Grenze erreicht ist. Wo der Bagger das Gräberfeld am Südrande angeschnitten hat, liegen die Gräber verhältnismässig weit auseinander. Es werden dort kaum ein Dutzend Gräber zerstört sein. Ein Versuch zur Periodisierung des Gräberfeldes ist aus diesem Grunde durchaus gerechtfertigt.

Das Gräberfeld zählt etwa 1100 Gräber, von denen ungefähr 820 Bestattungen Beigaben enthalten. Zirka 300 Nummern sind Brandgräber. Im Gräberfeld finden sich

1 Der Fund von zahlreichen Topfscherben, wie auch von einigen Eisgegenständen wurde sehr schnell gemeldet vom Unternehmer Herrn J. de Kroon und vom örtlichen Altertumskundlichen, dem Gemeindecinnehmer Herrn W. Zanen. Die Grabung wurde ermöglicht durch die Mitwirkung des Rijks-waterstaats und des Rijksdienst voor de Uitvoering van Werken.  
2 *BROB* 1-II, 1950-1951, Nr. 1/1951 (Februar), 3-4 und Nr. 3/1951 (Juni), 13-14.

3 Grundbuchamtlich eingetragen unter: Rhenen, Gem. Rhenen, Sektion H, Nr. 1624.

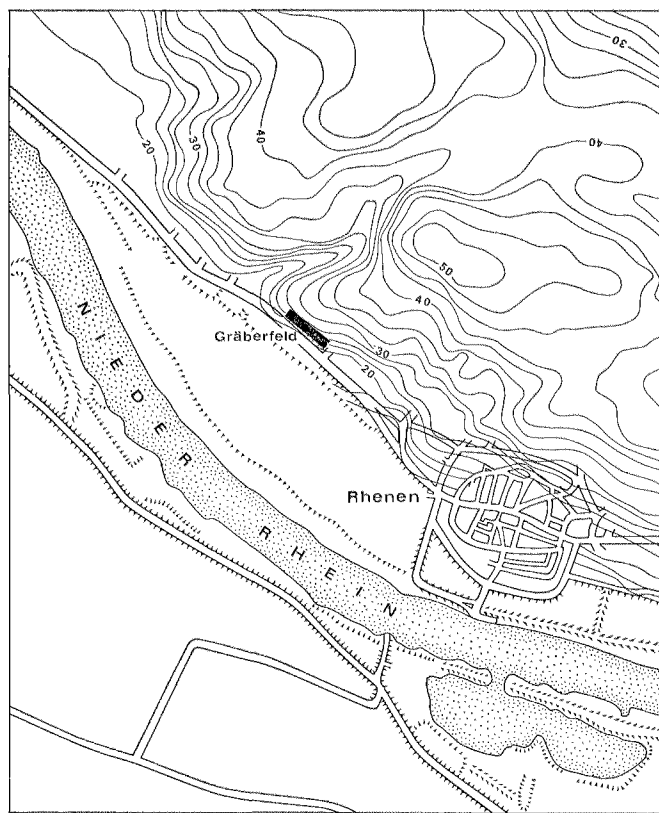
4 Ypey 1955, Taf. 3-43; Glazema/Ypey 1956, Taf. 3-43.

4a Glazema 1953, Taf. 1-II; Roes 1953, Taf. II, 2, v und vi; Roes 1955; De Boone/Ypey 1959, 202-7; Abb. 6-11, 14, 20, 22, 23, 29-32; Isings 1959, Abb. 1-10, 12. Ypey 1964.

5 Ypey 1969, Taf. IX-XVIII.



Abb. 1 Lage des fränkischen Gräberfeldes bei Rhenen, Prov. Utrecht



14 Pferdegräber. Davon enthielt nur Grab 484 (Abb. 15; Koörd. 93.-/22.-) Beigaben: Langschwert, Trense, Messer, rautenförmiges Bronzebeschlag. Zusammenhänge zwischen Pferdegräbern und Körpergräbern konnten nicht festgestellt werden.

Obschon viele Pfostenlöcher beobachtet wurden, liessen sich diese nur in Einzelfällen zu Grundrissen ergänzen. In zwei Fällen konnte eine Verbindung zu einem Grab vermutet werden. Grab 407 (50.-/23.-) mit einem Buckeltopffragment lag innerhalb eines Pfostenvierecks. Nach dem Ausmass ist es jedoch fraglich, ob man hier wohl mit einem Grab rechnen kann. Die Brandgräber 243 (47.-/12.5) und 245 (48.-/13.-) liegen innerhalb von zwei Reihen von je 3 Pfostenlöchern. Eine Gruppe von 8 Pfostenlöchern in der Gegend von 35.-/45.- am Nordrande des Gräberfeldes könnte von einem Gebäude stammen. Ein Zusammenhang mit dem Gräberfeld wurde nicht festgestellt.

In vier Fällen wurde Brandgräber mit früheisenzeitlichen

Töpfen angetroffen (Gr. 614:148.-/22.-; Gr. 654:119.-/30.-; Gr. 760:96.-/33.5; Gr. 761:91.5/34.-). Zwei davon fanden sich in der Nähe von Resten von Kreisgräben. Die Kreisgräben können meist nicht mit fränkischen Gräbern in Verbindung gebracht werden. Nur dreimal lag ein Grab im Zentrum eines Kreisgrabens; einmal waren es sogar zwei sich schneidende Gräber. Es liess sich nicht feststellen, ob die Kreisgräben und die darin liegenden Gräber gleichzeitig sind. Da sich diese Kreisgräben jedoch in der Nähe der sicher vorgeschichtlichen Kreisgrabenreste befinden, wäre es denkbar, dass fränkische Gräber innerhalb noch sichtbarer prähistorischen Grabenlagen angelegt wurden. Gräben im Ostteil des Gräberfeldes, die einen Teil eines Rechteckes mit einer östlichen Erweiterung bilden, scheinen dem Gräberfeld zeitlich voraus zu gehen und werden auf der Westseite von vielen Gräbern geschnitten. Auffallend ist die Lage eines beigabenlosen Kindergrabes (139.-/37.-) nördlich einer Unterbrechung in den Gräben.

Abb. 2 Der 'erste Fund' aus Rhenen, der Anlass zur Grabung wurde. Handgeformter, rauhwandiger, stark plastischer Topf von rötlich braungrauer Farbe. Erhaltene Höhe noch  $\pm 18.5$ ; gr. Dm.:  $\pm 25.-$  cm. Westgermanische Keramik aus der Zeit um 200

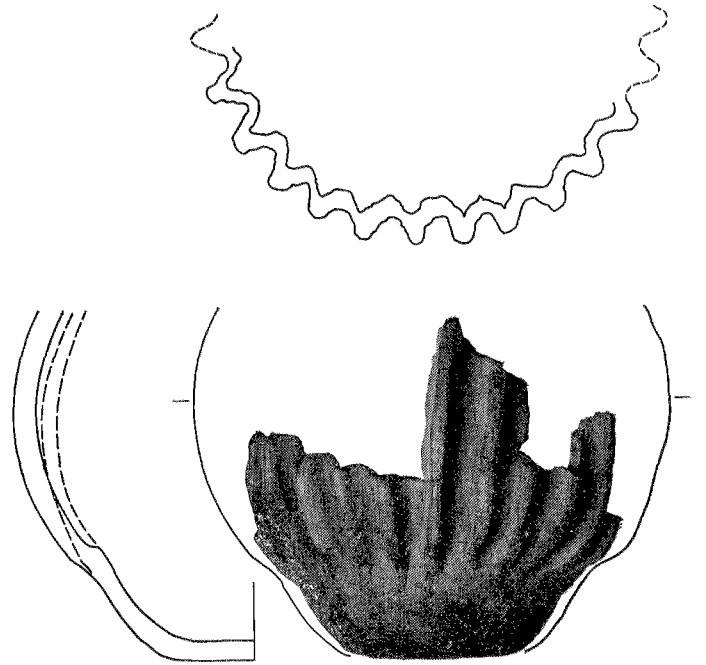
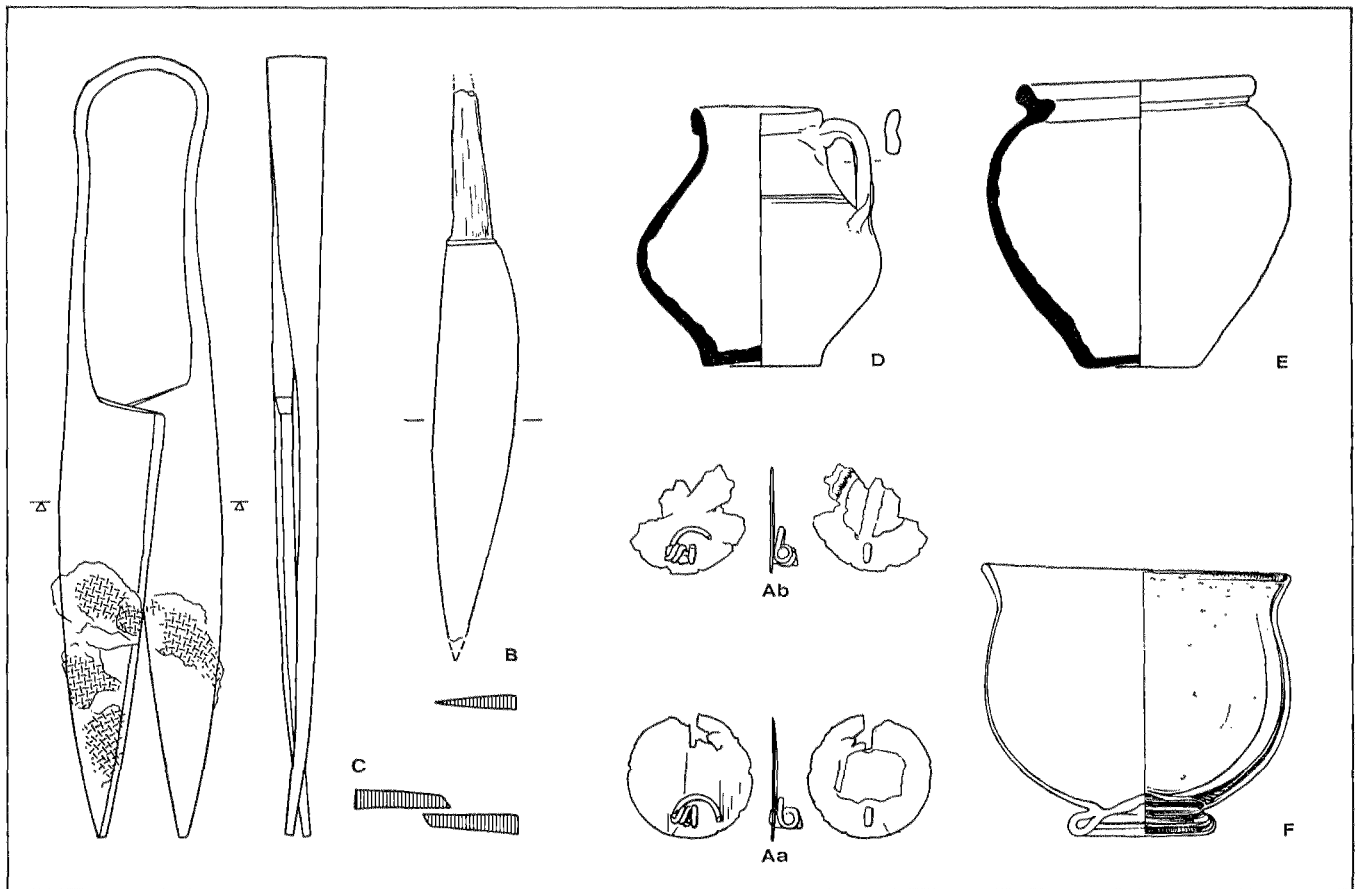


Abb. 3 Frauengrab 832. Periode A. Aus dem zweiten Viertel/Mitte des 5. Jahrhunderts. A. Rückplatten bronzener komponierten Scheibensfibeln; B. Messer, Eisen; C. Schere, Eis.; D. Henkelkrug; E. Kochtopf; F. Glasbecher



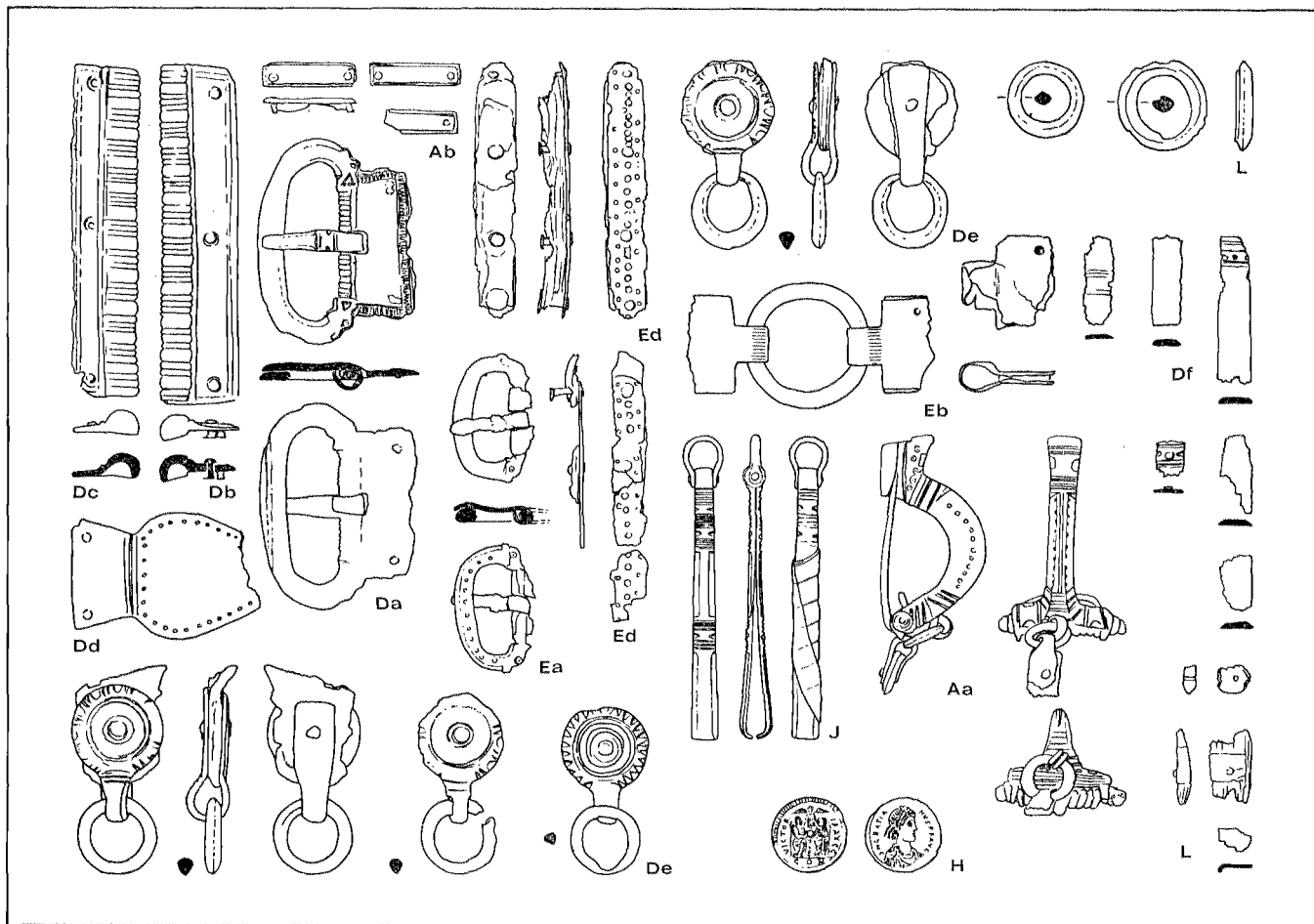


Abb. 4 Männergrab 842. Periode A. Erste Hälfte des 5. Jhts.  
 A. Stützarmfibel, Br.; B. Zwei Pfeilspitzen, Eis.; C. Dolch, Eis.;  
 D. Gürtelgarnitur, Br.; E. Schwertgarnitur(?), Br.; F/G. Zwei  
 Messer, Eis.; H. Solidus von Gratianus, geprägt zwischen  
 9-8-378 und 19-1-379; I. Drei Geräte, Eis.; J. Pinzette, Br.; K.  
 Knochenkamm; L. Bronze, Eisen, usw.; M. Holzeimer mit  
 Eisenbeschlägen; N. Glasschale; O. Kochtopf

Grabraub wurde nirgends festgestellt. Sehr zahlreich sind aber die Überschneidungen der Körpergräber untereinander. Überschneidung oder Zerstörung von Brandgräbern durch Körpergräber konnte nur in Einzelfällen nachgewiesen werden. Das Vorkommen von Leichenbrand in der Grubenfüllung von Körpergräbern beschränkte sich wohl auf den oberen Teil. In einigen Fällen fanden sich sogar mittelalterliche Scherben. Es

ist durch Nachsinken der Grubenfüllung wohl Sand mit Resten der vom Pflug angeschnittenen oder zerstörten Brandgräber in die Grubenbegrenzung geraten, wie auch die dabei gefundenen Scherben von jüngeren Leichenbrandurnen bezeugen.

#### DIE BRANDGRÄBER

Bei der Grabung zeigte sich, dass die obere Schicht des Friedhofs von Brandgräbern gebildet wurde. Fast ohne Ausnahme war der Leichenbrand in Urnen geborgen, die in einer Tiefe von  $\pm 50-70$  cm standen. Die Körpergräber lagen im Allgemeinen tiefer. Die Pflugfurche variierte von  $\pm 40-50$  cm. Es ist daher leicht verständlich, dass die meisten Gefäße der Brandgräber vom Pflug beschädigt waren. Viele Urnen waren völlig zerstört. Manchmal fehlte der ganze Rand und

Oberteil. Eine grosse Zahl der Gefässe konnte jedoch ergänzt werden mit Hilfe der zerstreuten Scherben. Wie sich aus dem Grabungsplan feststellen liess, wurden einzelne Scherben oder auch grössere Wandfragmente mehr als 30 m weit verschleppt.

Insgesamt wurden ungefähr 300 Brandgräber mit Gefässen (Urnengräber) gezählt. Beigaben wie Pfeilspitzen, Bronzebeschläge oder Perlen waren nur selten vorhanden und meistens deutlich vom Brand verformt (Abb. 12). In vielen Fällen überlagern die Brandgräber die Körpergräber und lassen sich dadurch als jünger erkennen. Frühe Brandgräber kommen aber auch vor. So konnte in einem Fall mit Sicherheit ein Brandgrab bereits in die Zeit um 400 an Hand der verbrannten aber deutlich erkennbaren Reste eines Kammes mit dreieckigem Griffteil datiert werden. (Grabnr. 767; Koord.: 75.70/32.-). Dieses Grab lag innerhalb eines Kreisgrabens. Hier wie auch bei einigen anderen, in der Nähe gelegenen Brandgräbern war kein Topf als Leichenbrandbehälter mitgegeben worden. Bei letzteren fehlt überhaupt jede Beigabe. Es wäre jedoch möglich, dass diese 'Brandgrubengräber' dieselbe Zeit gehören.

Auch an einigen anderen Stellen wurde Leichenbrand ohne Beigaben oder Gefässresten angetroffen. In einzelnen Fällen wurden Überschneidungen solcher Brandgräber durch Körpergräber festgestellt. Auch dabei könnte es sich um Brandgräber aus der Zeit um 400 handeln. Andererseits sind 'Brandgrubengräber' auch in

späterer Zeit vertreten. In einigen Fällen lagen nämlich beigabenlose Brandgräber über Körpergräber aus der Zeit um 600.

In einer Reihe von Brandgräbern mit Urnen kommen Gefässe vor, die m.E. aus der zweiten Hälfte des 5. bis Anfang des 6. Jahrhunderts stammen, wie auch ein Dutzend aus dem 6. Jahrhundert. Die überwiegende Zahl ist jedoch dem 7. und der ersten Hälfte des 8. Jahrhunderts zuzurechnen (Abb. 14, A und B).

Auffallend war das Vorkommen von Töpfen mit einer 'Deckelrinne' im Sinne von Gose 546 und 547<sup>6</sup> bzw. von Pirling Type 105/106<sup>7</sup>. Die meisten Randprofile lassen sich m.E. mühelos unter den Varianten der Krefelder Typen unterbringen, müssen jedoch aus der Zeit um 700 stammen, wie sich auch in manchen Fällen durch die Datierung der darunterliegenden Körpergräber feststellen liess. Diese Einordnung bestätigt in der Regel auch die Art des Tones.

Sehr stark vertreten sind eiförmige Kochtöpfe von Tischlers Gruppe 1 (besonders die Nr. 4 und 6) und II<sup>8</sup> aus dem Ende des 7. und erster Hälfte des 8. Jahrhunderts.

#### DIE KÖRPERGRÄBER<sup>9</sup>

Diese lagen im Allgemeinen in einer Tiefe von  $\pm 120-150$  cm unter der heutigen Oberfläche. Aber auch Tiefen von kaum 60 cm wurden beobachtet.

Skeletten wurden fast nie Spuren gefunden. Am Häufigsten fand man Reste der Schädel oder nur die Zahnglasur. Im Sandboden des Rhenener Gräberfeldes hat sich das Eisen fast immer äusserst schlecht erhalten. Organisches Material wie Kämmen, Holzschalen, Textilien, usw. ist nur fragmentarisch und dann lediglich in Berührung mit Bronze oder Eisen erhalten geblieben.

So ist zu erklären, dass die Dokumentation des Gräberfeldes lückenhaft geblieben ist. Selbstverständlich wird der Aussagewert von einem Teil des Materials von dieser Lage stark beeinträchtigt.

Die Bearbeitung des Materials ist noch nicht ganz abgeschlossen. Eine allmählich abnehmende Anzahl von meist eisernen Gegenständen soll noch im Labor präpariert werden. Es sind darunter mehrere Waffen in ausserordentlich schlechter Erhaltungszustand. Die hier vertretenen Ansichten über die Periodisierung des Gräberfeldes könnten nach Beendigung der Präparierungen und der Röntgenuntersuchungen noch einige, wahrscheinlich aber nur geringe Korrekturen erfahren. Ein grosser Teil der eisernen Gegenstände wurde bereits geröntgt.

6 Gose 1950, Taf. 55.

7 Pirling 1966, 1. Teil, 85, Abb. 10; 87, Abb. 11; Typentafel 9.

8 Tischler 1952.

9 Die Analyse der Körpergräber bereitete grössere Schwierigkeiten als die Brandgräber. Die Ursache liegt zum Teil in verschiedenen Unvollkommenheiten der Grabung. Der ROB stand damals ganz im Anfang. Er war noch klein und einer komplizierten Grabung wie diese eigentlich kaum gewachsen. Der Dienst hatte noch kein eigenes Labor. Ein Teil der Funde, wie z.B. die meisten Fibeln, wurden im Labor des Rijksmuseum van Oudheden in Leiden präpariert. Eine kleine Anzahl, darunter die Eimer mit Bronzebeschlägen, wurde im Labor des Musée Lorrain in Nancy (Frankreich) behandelt, wofür wir Herrn A. France-Lanord zu danken haben. Anlässlich der Rhenener Grabung entstand im Jahre 1955 aus der Notwendigkeit, selber über eine Präparierungsmöglichkeit verfügen zu können, ein eigenes Labor. Überdies waren die Grabumstände sehr ungünstig wegen des oft schlechten Wetters. Die Grabung müsste der Arbeitsweise der Firma Kroon angepasst werden. Eine besondere Schwierigkeit bereitete der sandige Boden. Von den

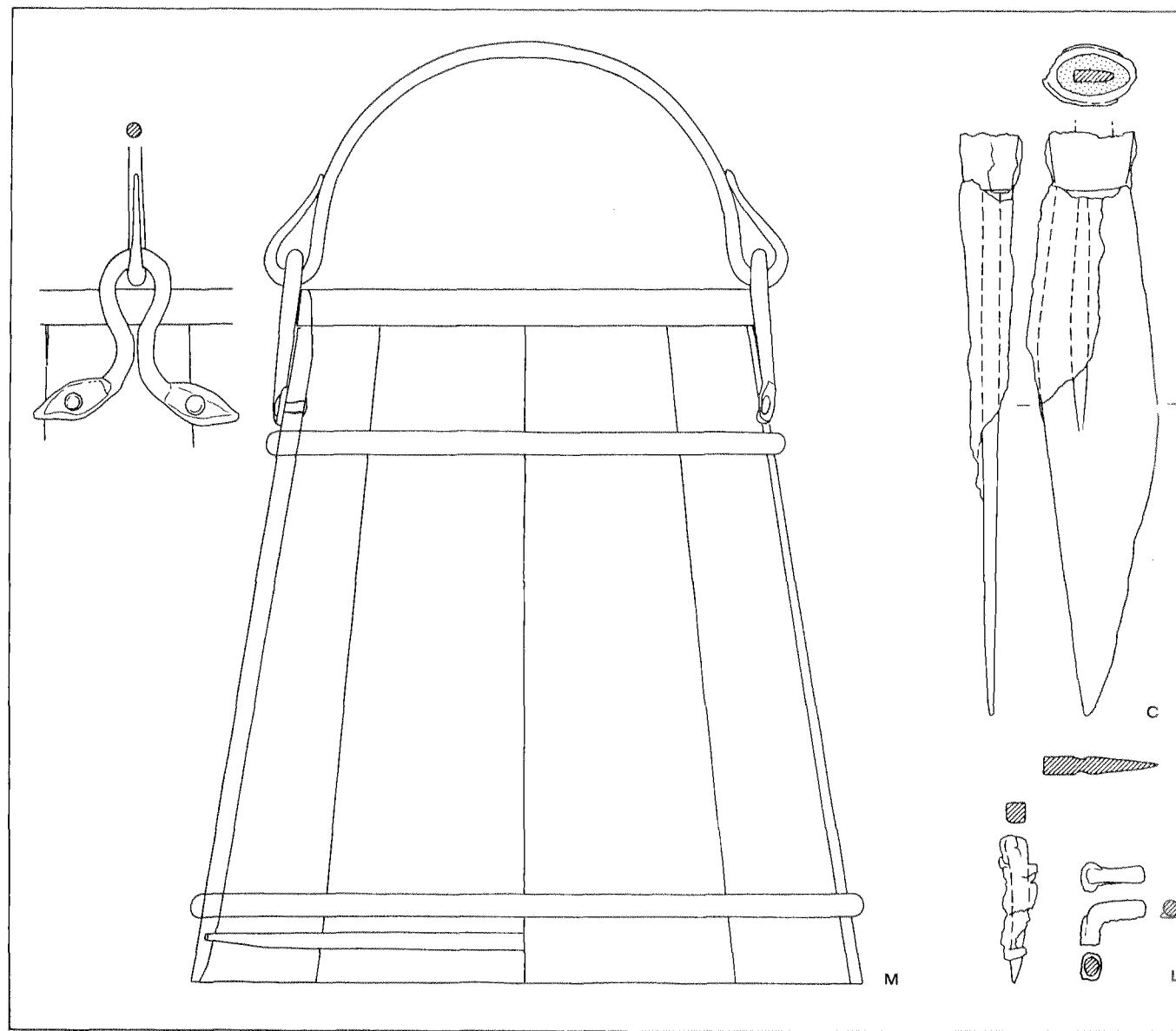


Abb. 4b

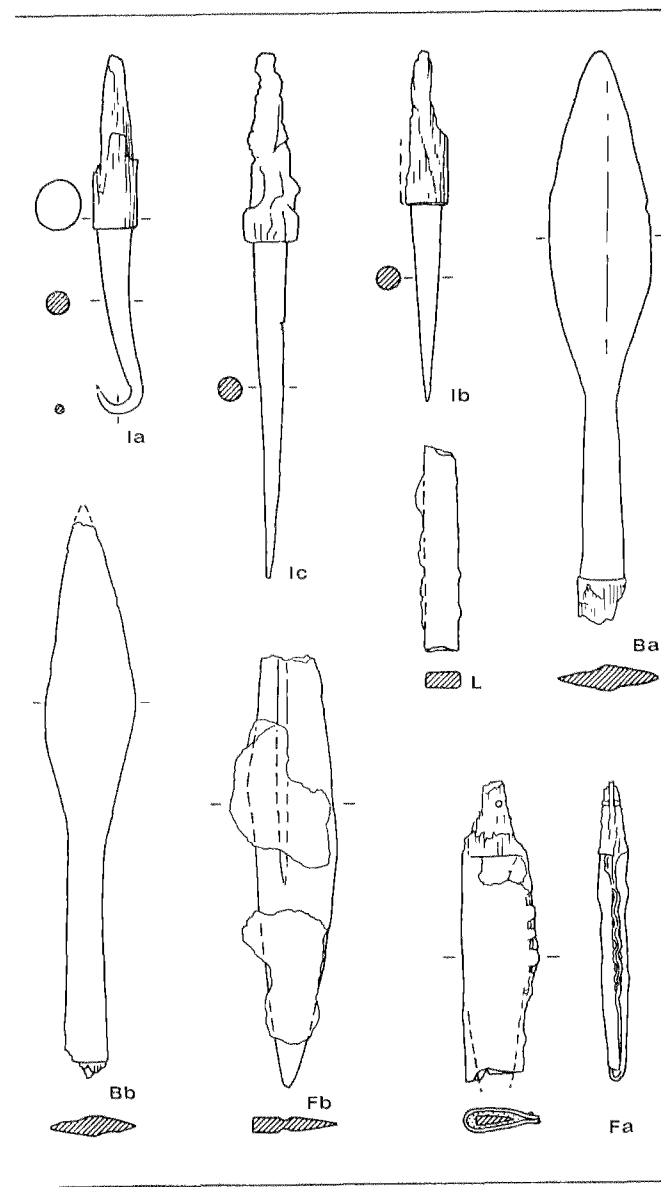


Abb. 4c

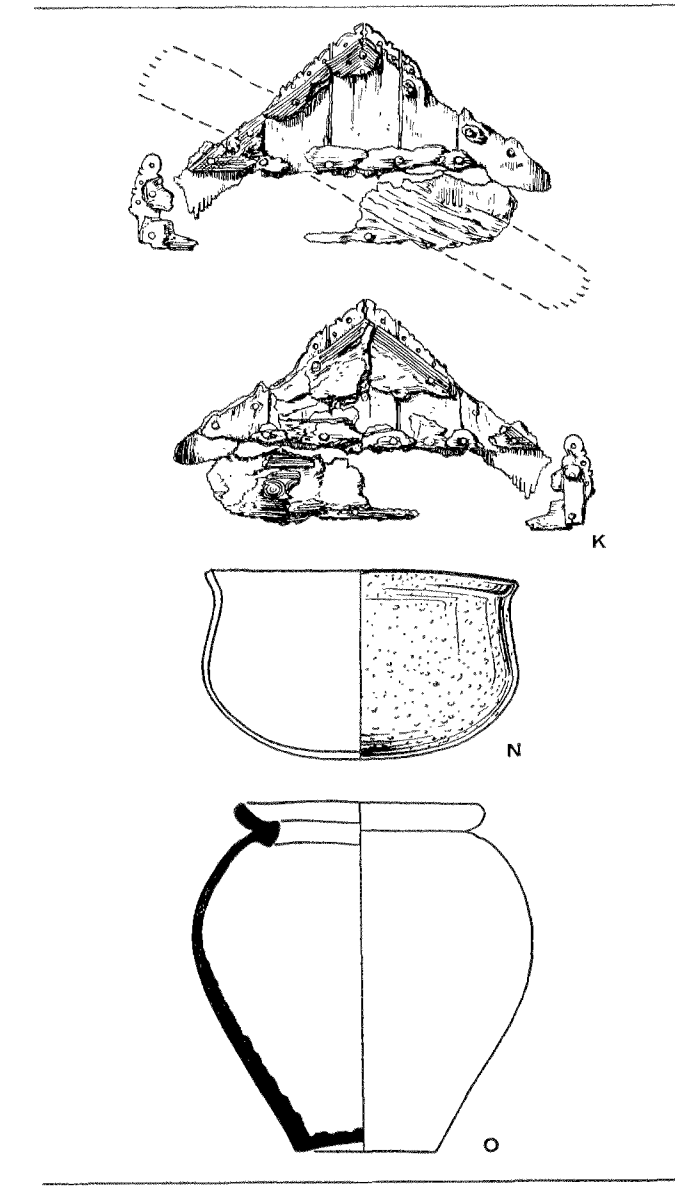
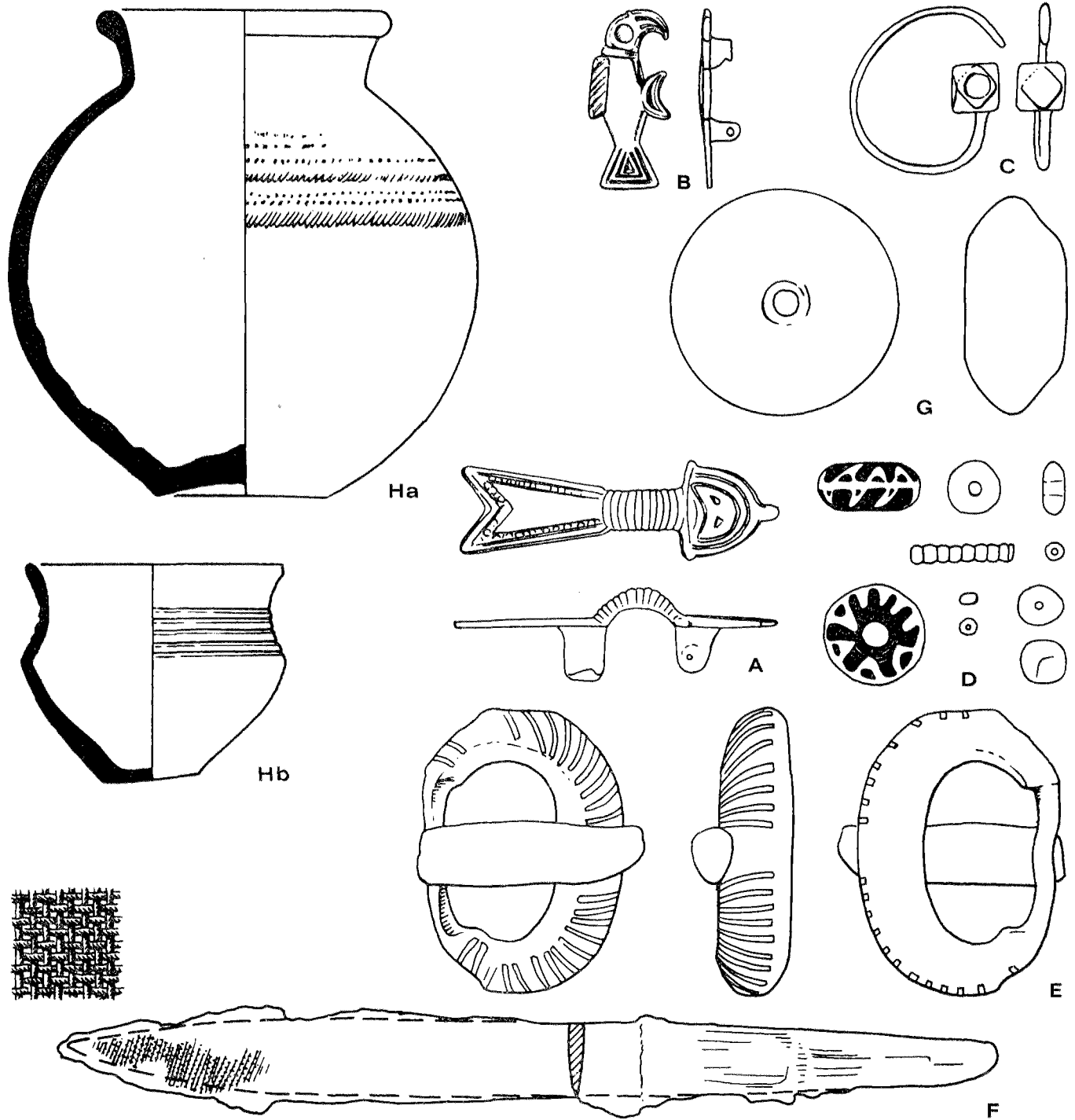


Abb. 4d



Im Westen setzt das Gräberfeld mit einem abgesondert gelegenen Teil ein. Er besteht aus 31 Gräbern bzw. aus 34, wenn man 3 kleinere beigabenlose Gruben im Nordwesten mitzählen darf. 29 Gräber enthalten Beigaben. Die Männergräber sind gekennzeichnet durch Waffen, Gürtelgarnituren, usw.; Frauengräber durch komponierte Scheibenfibeln, Schalenfibeln, usw. Von diesen Gräbern ist ein einziges Männergrab eventuell noch vor  $\pm 375$  datierbar. Die anderen sind bestimmt später. Einige müssen der Mitte oder sogar noch der zweiten Hälfte des 5. Jahrhunderts zugerechnet werden. In meinem Aufsatz über die Gürtelgarnituren habe ich mich darüber geäußert.<sup>5</sup> Im Allgemeinen sind die Gräber zwischen  $\pm 375$  und  $\pm 450$  zu datieren. Zur gleichen zeitlichen Horizont gehört sicher noch ein Frauengrab, das viel weiter östlich liegt (Grab 365; 54.5/23.5). Auch ein noch weiter östlich gelegenes Grab (Gr. 312 B; 62.5/12.-), leider von zwei Gräbern überschritten, ist wohl in die erste Hälfte bis der Mitte des fünften Jahrhunderts zu datieren. Wie schon bemerkt wurde, kommen auch Brandgräber dieser ersten Periode vor; diese treten ebenfalls ausserhalb des westlichen Bereichs auf.

Die Reihenanzahl dieses ersten Friedhofteiles ist wie im ganzen Gräberfeld nicht sehr regelmässig vor sich gegangen. Die meisten Gräber dieser Gruppe liegen mehr oder weniger Nord-Süd oder Süd-Nord, mit dem Schädel im Norden bzw. im Süden. Die W.-O. oder O.-W. gelegenen Gräber unterscheiden sich in Nichts von den anderen.

In der zweiten Hälfte des 5. Jahrhunderts hat sich das Gräberfeld nicht regelmässig nach Osten ausgebreitet; an mehreren Stellen wurden gleichzeitig Gräberreihen angelegt. Obwohl die Situation nicht überall in gleichem Masse deutlich ist, sind m.E. doch 6 Gräbergruppen zu unterscheiden, die wohl ebensoviele Gemeinschaften oder Sippen mit eignen Friedhöfen vertreten. In jeder

dieser Gruppen lässt sich mehr oder weniger deutlich ein Belegungsvorgang von Westen nach Osten beobachten. Die Friedhöfe II und V zeigen wohl die stärkste Unregelmässigkeit. Friedhof VII fängt mit einer Reihe Kindergräber an. Die letzte Phase von III überschneidet wohl die früheste Phase von IV. Die Lage der Nord-Süd-Gräber bei den S.-W.-Ecken von II und IV lässt vermuten, dass diese die ersten Beisetzungen genannter Friedhöfe vertreten. Die zwei meist östlichen Gruppen VI und VII zeigen die wenigsten frühen Gräber und sind verhältnismässig arm in ihren Beigaben. In den Friedhöfen II und V liegen die reichsten Bestattungen. Der Zusammenhang zwischen Körper- und Brandgräbern in den Gruppen ist schwierig zu bestimmen. Auffallend ist die Konzentration der Brandgräber in Friedhof III.

Der nördliche Gräberfeldteil im Bereich der Kreisgräben unterscheidet sich wesentlich von dem übrigen Gräberfeld. Der Anteil an beigabenlosen Gräbern ist hier besonders hoch, Brandgräber treten nur vereinzelt auf. Die meisten Pferdegräber liegen hier. Es fällt weiter auf, dass einige Bestattungen in überdurchschnittlich grossen Grabgruben vorgenommen wurden. Auch die drei Holzleichen mit Bronzebeschlägen im Rhenener Gräberfeld standen in diesem Raum in den Gräbern 758 (68.-/31.-), 763 (75.-/31.-)<sup>10</sup> (Abb. 9) und 775 (92.5/32.-).<sup>11</sup> Die grossen Männergräber 516 (90.-/25.5)<sup>12</sup> (Abb. 10) und 520 (105.-/25.-) mit silbertauschierten Beschlägen,<sup>13</sup> wie auch Grab 529 (99.5/27.5) enthielten Pferdegeschirr. Eine Verbindung zu einem der Pferdegräber konnte jedoch nicht festgestellt werden. Die Frauengräber in diesem Gebiet waren nicht überdurchschnittlich reich ausgestattet. Dagegen bekommt man den Eindruck, dass hier wohl Männer beerdigt wurden, die eine besondere Stellung in der fränkischen Gemeinschaft eingenommen haben.

Es wurde versucht, in den verschiedenen Gräbergruppen auffallend reich ausgestattete Gräber auszusondern, um zu klären, ob diese einen besonderen Platz im Gräberfeld einnahmen oder in einem besonderen Verhältnis zu umliegenden, gleichzeitigen Gräbern standen. Ich habe derartige Erscheinungen jedoch nicht feststellen können. Einige Frauengräber waren sehr reich ausgestattet. Es steht dabei an erster Stelle Grab 413 (56.5/23.5)<sup>14</sup> aus der Zeit um 600, dann Grab 78 (99.-/5.-)<sup>15</sup> aus dem

◁ Abb. 5 Frauengrab 99. Periode B. Anfang des 6. Jhts.  
A. Bügelfibel, Br.; B. Vogelfibel (Paar), silbervergoldet; C. Ohrring (Paar), Silb.; D. Perlen, Bernstein und Glas; E. Schnalle, Eis. silbertauschiert; F. Messer, Eis.; G. Glasperle; H. Topf, terra-nigra-artig; Hb. Topf, glattwandig braungrau

<sup>10</sup> Ypey 1955, Taf. 28–29.

<sup>11</sup> Ypey 1955, Taf. 27.

<sup>12</sup> Ypey 1955, Taf. 24, Mitte rechts.

<sup>13</sup> Ypey 1955, Taf. 19 (mit Ausnahme der Schnalle).

<sup>14</sup> Ypey 1955, Taf. 4, 5, 24 (Bügelfibel) und 33; Ypey 1964.

<sup>15</sup> Ypey 1955, Taf. 8, Links unten.



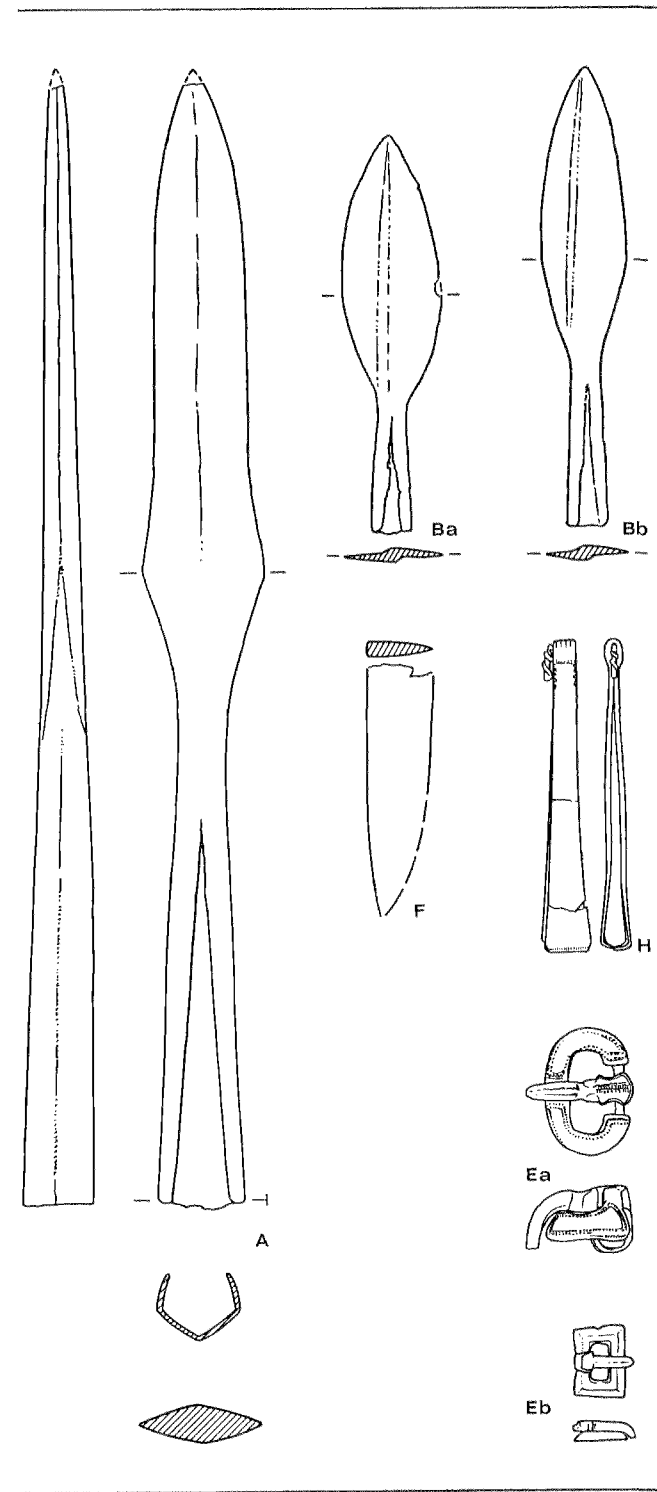
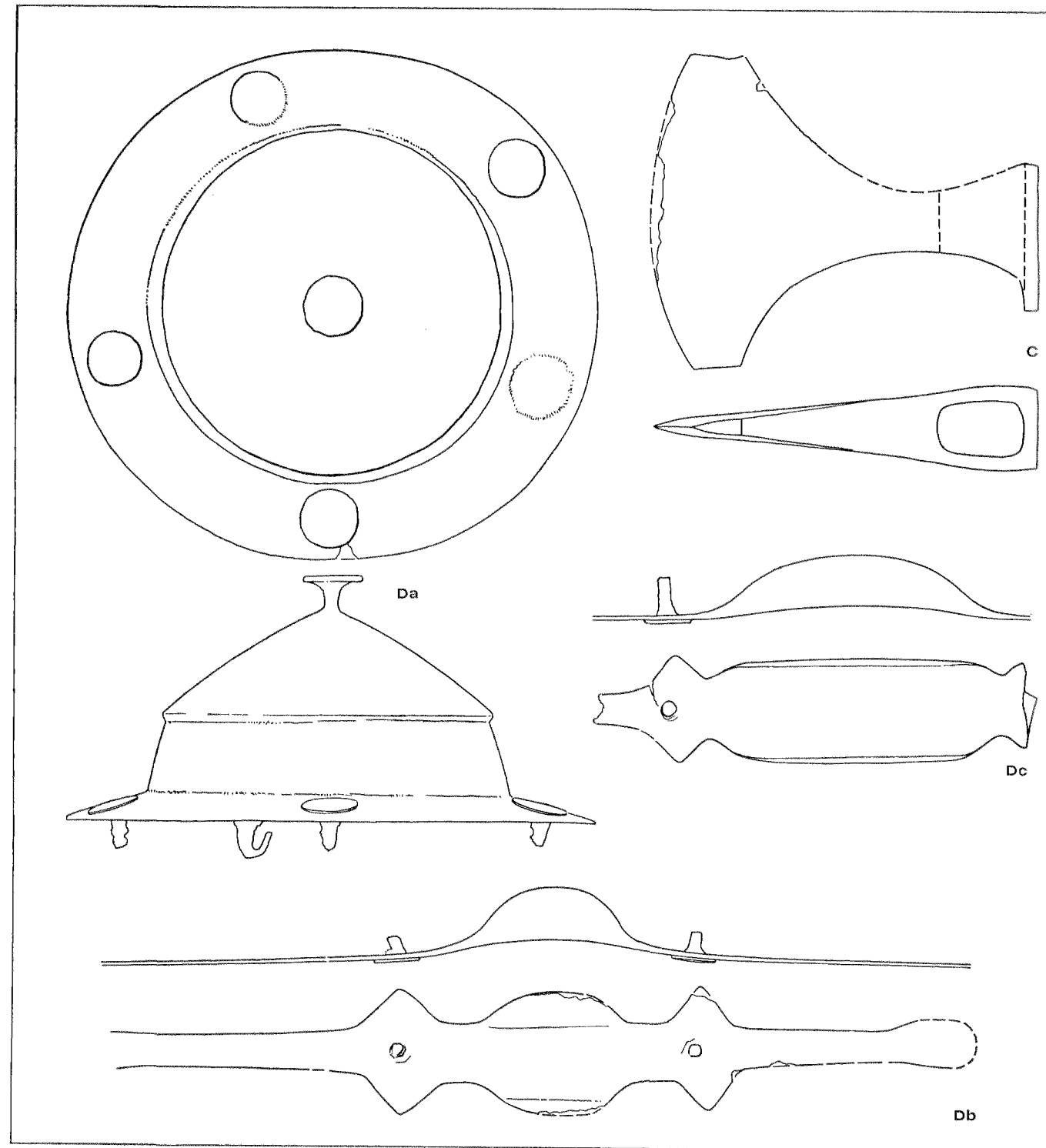
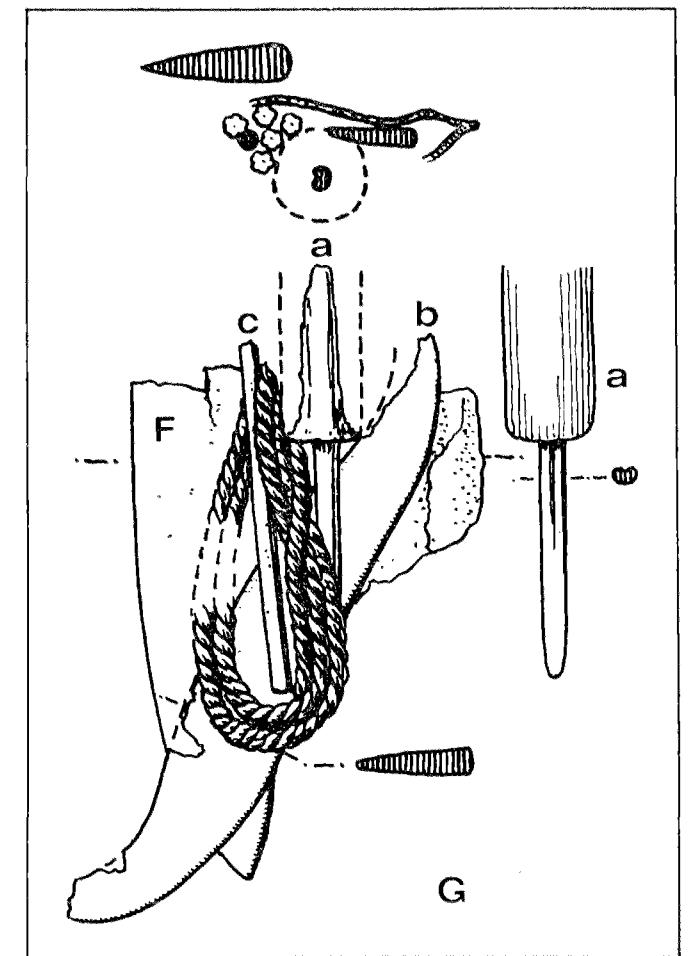


Abb. 6 Männergrab 445. Periode B. Anfang des 6. Jhts.  
 A. Lanzen Spitze, Eis.; B. Zwei Pfeilspitzen, Eis.; C. Beil, Eis.;  
 D. Schildbuckel, Eis. mit zwei Schildfesseln; E. Zwei Schnallen,  
 a. Br., b Weissmetall; F. Messer, Eis.; G. Geräte, Eis.; H.  
 Pinzette, Br.



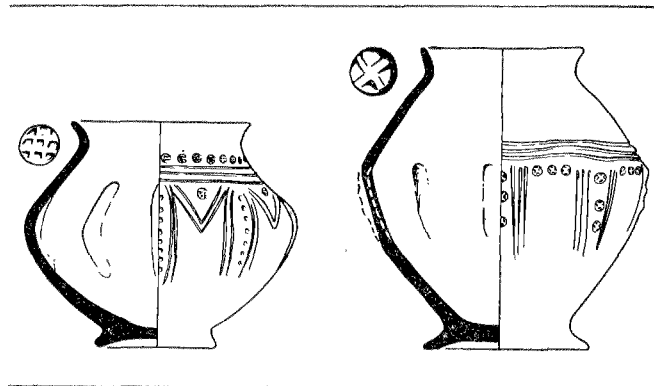


Abb. 7 Angelsächsische Buckeltöpfe. Periode B. Ende des 5. / Anfang des 6. Jhts.

Handgeformt, glattwandig, dunkel bräunlich grau. Links: aus Körpergrab 14; rechts: aus Brandgrab 59

Anfang des 6. Jahrhunderts und Grab 152 (III.5/2.-)<sup>16</sup> (Abb. 8) aus der zweiten Hälfte des 6. Jahrhunderts sowie eine Reihe anderer Bestattungen, deren Abstufung nach Beigabenreichtum sich schwer festlegen lässt. Diese reicheren Frauengräber finden sich hauptsächlich in den Friedhofteilen II und V.

In 28 Gräbern wurden 51 Bügelfibeln,<sup>17</sup> davon 40 in gleichen Paaren gefunden. In 3 Gräbern sind ungleiche Paare mitgegeben worden, wie z.B. in Grab 152. Es gibt also 31 Typen. Rosettenfibeln,<sup>18</sup> fast immer mit Almandineinlagen, kommen mit 25 Exemplaren (6 gleichen und 2 ungleichen Paaren) in 17 Gräbern vor; 22 Vogelfibeln<sup>19</sup> gehören in 14 Gräbern zur Tracht der Verstorbenen; daneben sind noch mehrere andere Typen wie S-, Pferd- und Reiterfibeln belegt. Die Bügelfibeln wie die Broschen (Rosettenfibeln, Vogelfibeln, usw.) wurden fast ausnahmslos in der Brustgegend gefunden.

Die Perlen wurden fast immer in der Hals- und Brustgegend verzeichnet. Man braucht dabei jedoch nicht immer an Halsketten zu denken. In Grab 433 konnte mit Sicherheit festgestellt werden, dass eine mindestens vierreihige Schnur die beiden Broschen auf der Brust verband.

In 12 Frauengräbern wurden grosse Glasperlen gefunden.

<sup>16</sup> Ypey 1955, Taf. 9, Links unten und Mitte, 2te von unten; Taf. 18, Mitte, 2te von oben.

<sup>17</sup> Ypey 1955, Taf. 8 und 9.

Da, wo die Lage angegeben war, wurden diese fast immer zwischen den Oberschenkeln angetroffen.

In 34 Gräbern beiderlei Geschlechts waren Glasgefässe beigegeben.

Die Männergräber werden an erster Stelle gekennzeichnet durch die Beigabe von Waffen. Die Bewaffnung ist sehr unterschiedlich, wie Abb. 17 zeigt. Die Waffen sind auf einem Plan kartiert worden (Abb. 16). Dabei zeigen die Gräbergruppen III, VI und VII die wenigsten Beispiele schwerer Bewaffnung. Es sind insgesamt 148 Waffengräber gezählt worden. Eine nicht allzugrosse Anzahl Waffen fehlt oder kann wegen des Fehlens der Nummer keinem Grab zugewiesen werden.

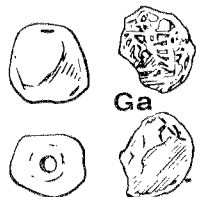
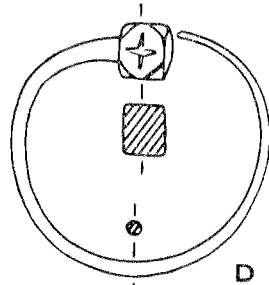
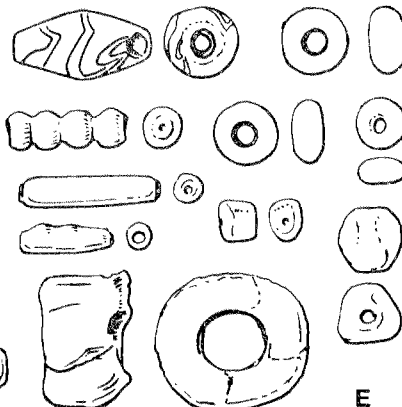
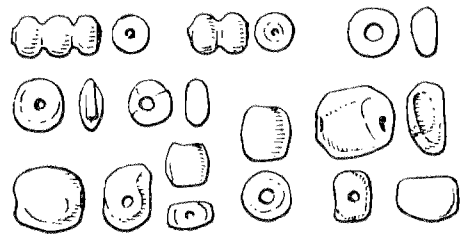
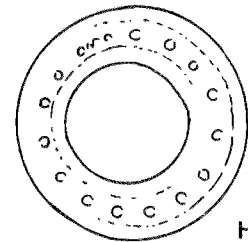
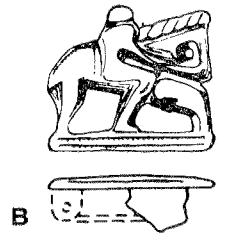
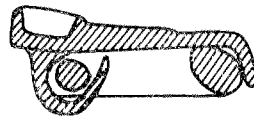
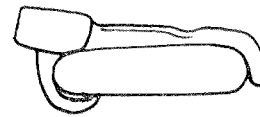
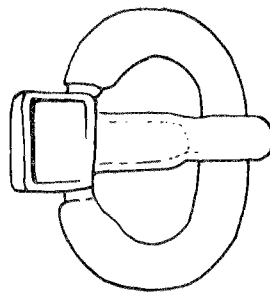
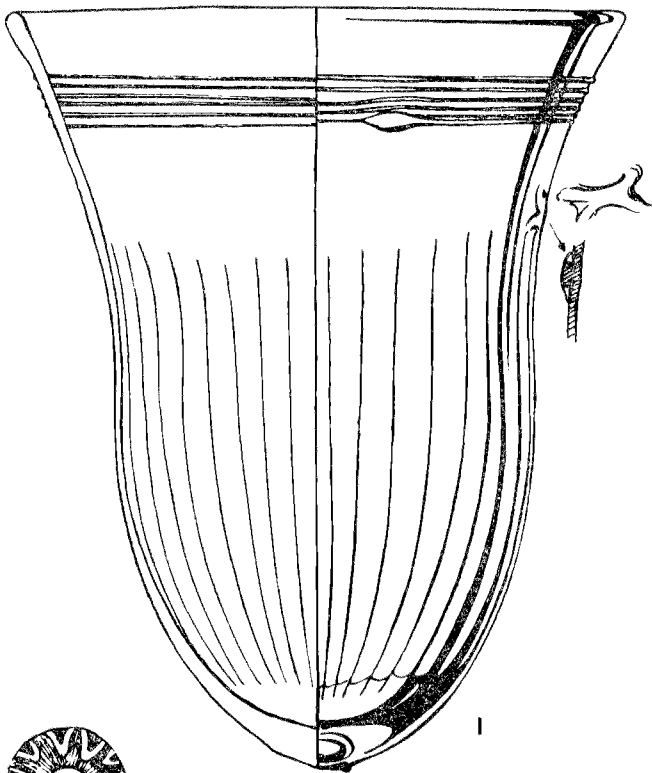
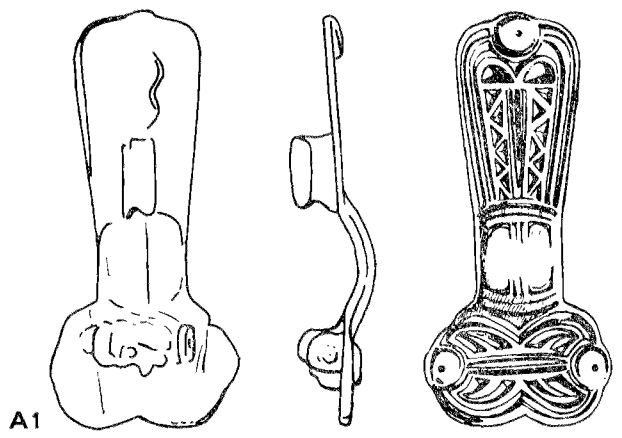
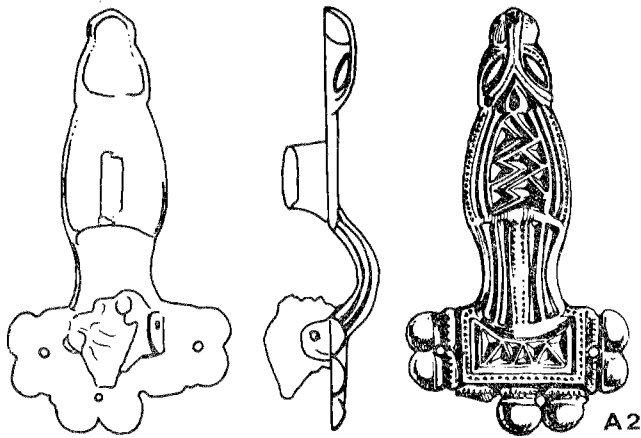
13 Gräber haben zweischneidige Langschwerter. An Waffen finden sich weiter 33 Saxe, 29 Beile – meist Franziskanen – und 36 Schildbuckel. In 42 Gräbern sind 1 bis 3, in ungefähr gleichen Zahlen, in 2 Fällen sogar vier Pfeile beigegeben. Dreimal ist ein Ango angetroffen worden. Am Häufigsten sind die Lanzen mit 83 Exemplaren vertreten. Augenblicklich sind noch nicht alle Waffen präpariert, sodass Abweichungen von dieser Statistik noch möglich sind.

In einer Tabelle (Abb. 17) sind die Waffenkombinationen aufgezeichnet. In 4 Gräbern ist das Langschwert die einzige Waffe, in 14 Gräbern der Sax. 23 Mal sind nur Pfeilspitzen mitgegeben worden. Der dazu gehörige Bogen konnte, wenn überhaupt beigegeben, wegen der schlechten Erhaltungsbedingungen in den sandigen Boden nicht festgestellt werden. In 37 Fällen ist die Lanze die einzige Waffenbeigabe, 9 Männer haben nur ein Schild mitbekommen. Weiterhin gibt es noch eine grosse Anzahl Waffenkombinationen, deren Vorkommen schwankt von ein bis neun Mal. In Gräbern mit einem Langschwert sind Pfeilspitzen Ausnahme. Sax und Schild kommen nur einmal zusammen vor. In einem Grab mit Spatha wurde eine Kalkperle als Schwertanhänger angetroffen. In diesem Grab (Nr. 503, 103.-/20.5) sind die

Abb. 8 Frauengrab 152. Periode C. Zweite Hälfte des 6. Jhts. ▷  
A. Zwei Bügelfibeln, silbervergoldet; B. Reiterfibel (Paar), silbervergoldet; C. Fragment Scheibenfibel(?), Br.: D. Ohrring (Paar), silb.; E. Perlen, Bernstein und Glas; F. Schnalle, Br.; G. Zwei Silbermünzen, a. Ende 3. / Anfang 4. Jht, b. Ende 4. Jht. oder später; H. Ring, Br.; I. Glasbecher

<sup>18</sup> Ypey 1955, Taf. 11.

<sup>19</sup> Ypey 1955, Taf. 10.



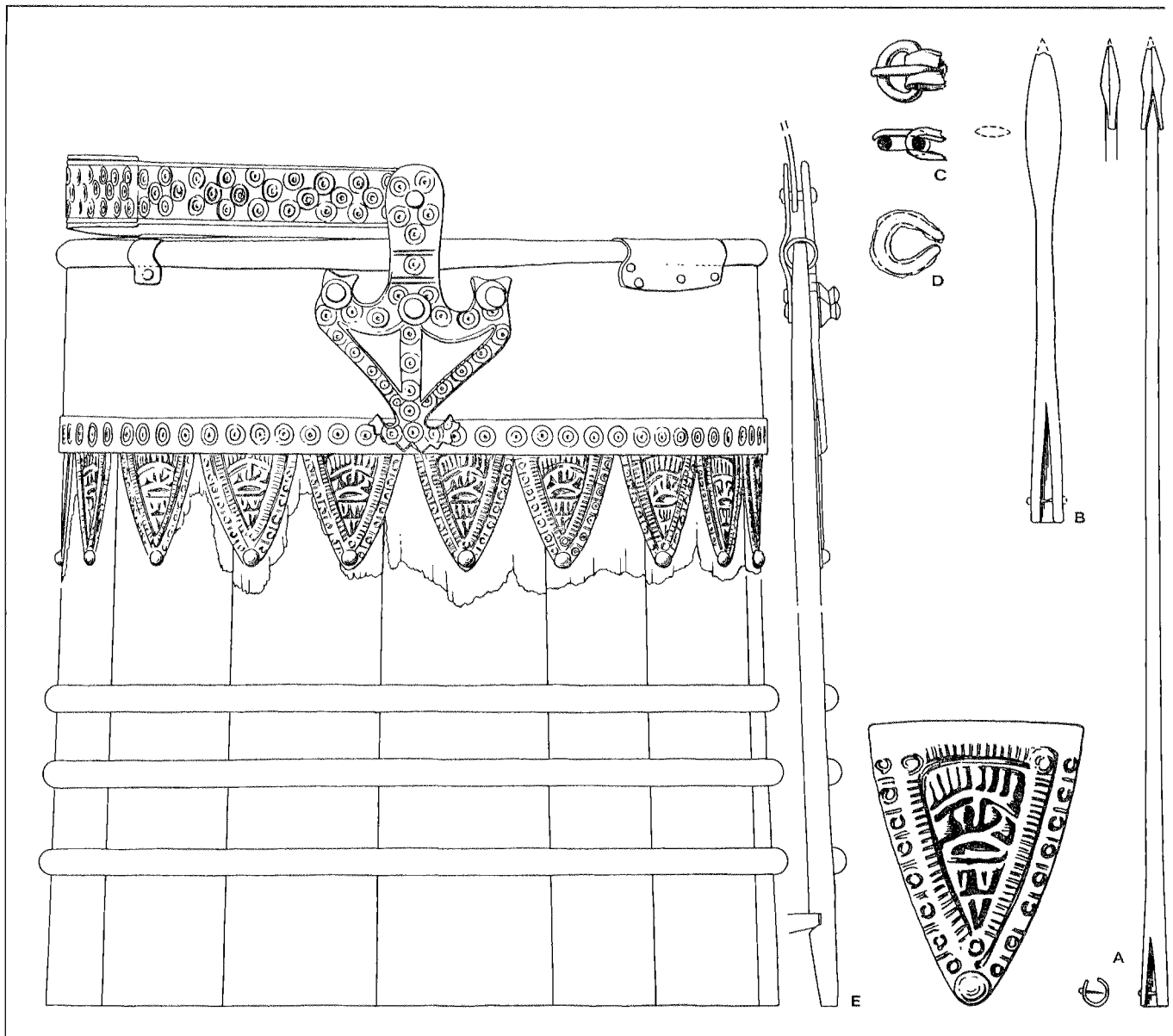
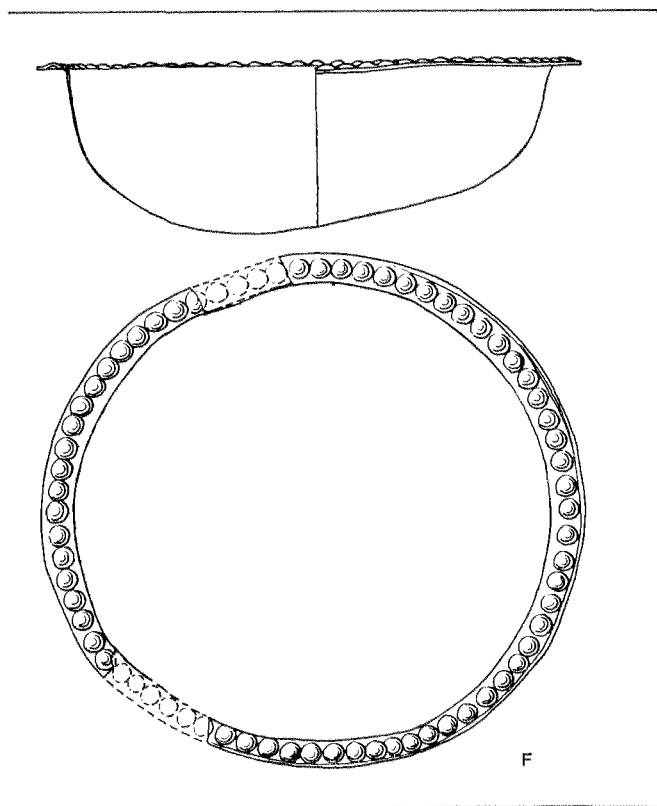


Abb. 9 Männergrab 763. Periode C. Zweite Hälfte des 6. Jhts.  
 A. Ango, Eis.; B. Lanzen spitze, Eis.; C. Schnalle, Eis.; D. Ring,  
 Eis.; E. Holzeimer mit Bronzebeschlägen; F. Perlrandsbecken,  
 Br.

begleitenden Waffen eine Lanze und ein Ango. Das nebenliegende Grab (Nr. 501) enthält neben einer Lanze ebenfalls einen Ango. In Grab 484 (93.-/22.-) ist das Schwert nicht einem Mann, sondern einem Pferd mitgegeben worden.

Zur Lage der Waffen – soweit aufgezeichnet und feststellbar – kann gesagt werden, dass diese nicht einheitlich ist. Das Schwert liegt dreimal rechts des rechten Oberschenkels, zweimal zwischen den Beinen und einmal



links vom linken Oberschenkel. Der Sax kommt doppelt so oft links wie rechts vor. Franziska und Beil werden fast in gleichem Masse zur Linken und zur Rechten des Toten beobachtet, von der Höhe des Oberarmes bis zum Knie und einige Male auch ausserhalb des Sarges. Der Platz des Schildes scheint in den meisten Fällen links des Oberkörpers gewesen zu sein, sowohl inner- als ausserhalb des Sarges. Die Lanzenspitze findet man fast ausnahmslos am Kopfende, wo sie öfter rechts als links niedergelegt ist. Einmal liegt die Lanzenspitze zwischen den Schienbeinen und zweimal am Fussende rechts. Wie Franziska und Schild findet sich auch die Lanze gelegentlich ausserhalb des Sarges.

Eine feste Regel in der Ordnung der Beigaben scheint es also nicht gegeben zu haben.

In den Frauengräbern liegen Fingerringe wie auch Armreifen abwechselnd links oder rechts. Töpfe und Gläser stehen im Allgemeinen am Fussende. In ein oder zwei Gräbern könnte das Glas auch am Kopfende gestanden haben. In mindestens 18 Gräbern sind die Töpfe am Kopfende niedergestellt.

Das Material ist m.E. nicht zureichend für den Versuch, chronologische Unterschied in der Bestattungsweise festzustellen. Es fehlen dazu leider zuviele Einzelheiten. Es wurden mehrere Versuche unternommen Zusammenhänge in Bestattungsarten, in den Lagen der reicherer Gräber, in der Verbreitung von bestimmten Gefässtypen und anderen vergleichbaren Beigabenarten zu finden; sie führten bislang jedoch zu keinem Ergebnis. Diese Versuche hier vorzulegen, würde ohne den Gräberkatalog zu weit führen.

#### DIE PERIODISIERUNG

In Abb. 15 ist ein Versuch zu einer Periodisierung des Gräberfeldes unternommen worden. Die Möglichkeit zur genauen Datierung der einzelnen Gräber ist selbstverständlich sehr verschieden. Gräber mit mehreren, verhältnismässig gut datierbaren Beigaben wechseln ab mit solchen, die nur einen grob datierbaren Gegenstand enthalten. Die Möglichkeiten sind weiter eingeschränkt durch die grosse Zahl beigabenloser Gräber und solcher mit nicht zu datierenden Beigaben. Durch die sehr zahlreichen ein- und mehrfachen Überschneidungen konnte in vielen Fällen noch eine relative Chronologie aufgestellt werden. Für die Einstufung eines Grabes sollen jedoch die Grenzen nach unten und oben zeitlich nicht zu weit auseinander liegen. Wenn ein Grab ohne datierbare Beigaben über einem anderen aus der Zeit um 500 liegt und darüber ein Brandgrab aus der Zeit um 700 angetroffen wurde, ist der Zeitraum zu gross, um für die erwünschte Periodisierung brauchbar zu sein.

Im Allgemeinen gibt es nur wenige Gräber, die exakt datiert werden können. Die Dauer der Stufen wurde darum mit 75 Jahren angenommen. Versuche mit kürzeren regelmässigen Zeitstufen scheiterten weil es noch zuviele Gegenstände gibt, deren Datierungsgrenzen ein Jahrhundert überschreiten. Auch mit Zeitstufen von 75 Jahren kommen noch viele Übergangsfälle vor, die im Plan (Abb. 15) halb ausgefüllt angegeben sind. Die Stufeneinteilung unserer Periodisierung stimmt schliesslich fast ganz mit deren Böhners überein.<sup>20</sup>

#### HISTORISCHER KONTEXT

Die Lage des Rhenener Gräberfeldes am nördlichen Rheinufer findet wohl ihre Erklärung darin, dass die

<sup>20</sup> Böhner 1958, I. Teil, 17.

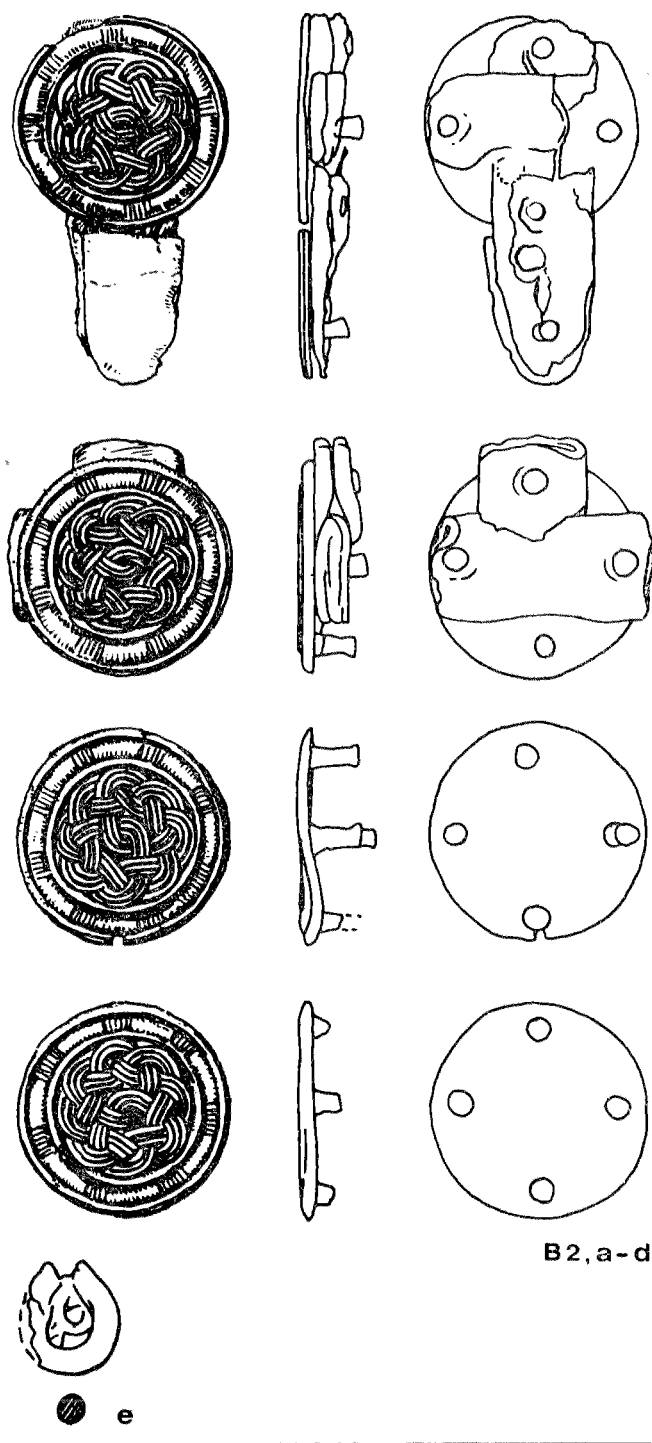
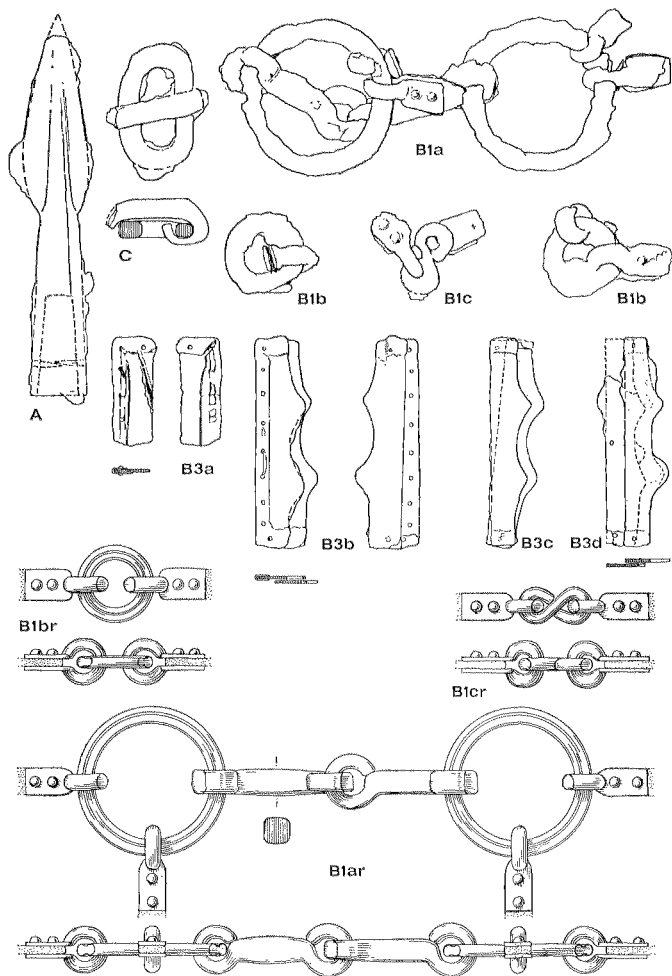


Abb. 10 Männergrab 516. Periode C. Ende des 6. Jhts.  
 A. Lanzenspitze, Eis.; B. Pferdegeschirr, Eis. (B2 Br. vergoldet),  
 B1ar-B1cr:Rekonstruktion; C. Schnalle, Eis.

zugehörige Siedlung am Flussübergang am Ostende des Utrechter Hügelrückens lag. Sie grenzte an die Geldersche Niederung, auf deren anderen Seite Wageningen,<sup>21</sup> ebenfalls an einem Flussübergang, am Südwestende des Veluwe lag. Von der zum Gräberfeld gehörigen Siedlung wurde bis jetzt keine Spur gefunden. Sie mag wohl unter dem nahen heutigen Rhenen gelegen haben.<sup>22</sup> Rhenen

21 Holwerda 1928: Van Es 1964: Ypey 1959, 113.  
 22 Ypey 1959, 115. Leider ist nicht angegeben wo und wonach geschaut wurde.

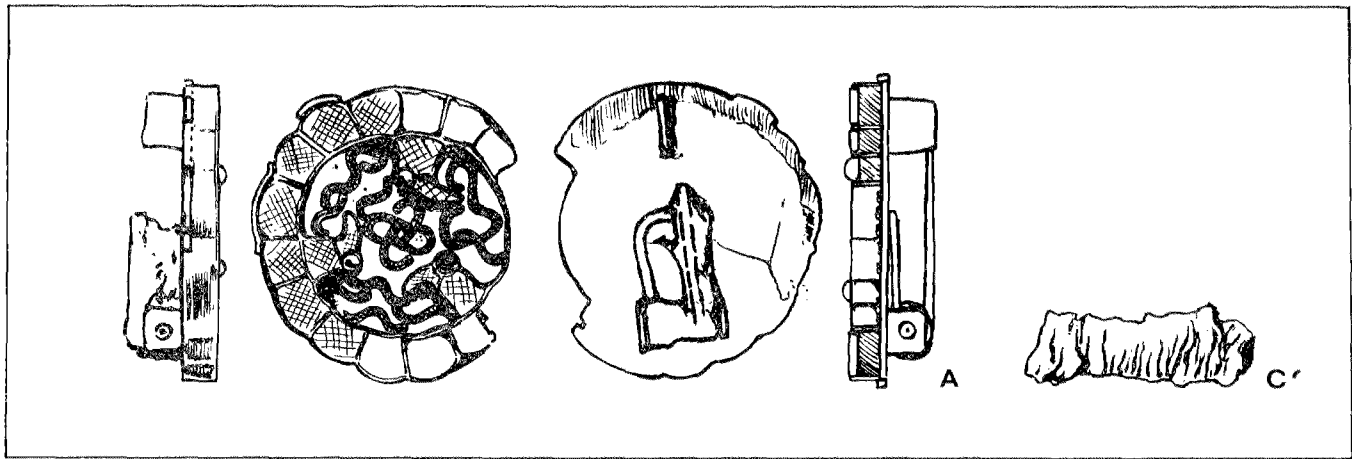


Abb. 11 Frauengrab 400. Periode D. Erste Hälfte des 7. Jhts. A. Scheibenfibel, silb. vergoldet mit Almandinen, Vogelaugen aus weissem Glass; (B. Bernsteinperlen, fehlen); C. Verbranntes Bronzeblech

wie Wageningen lagen vermutlich an alten Verbindungswegen zwischen dem römischen Imperium und dem freien Germanien.

Auf der anderen Seite der Strasse, an der das Gräberfeld liegt, wurde 1967 eine Siedlungsstelle entdeckt, die in das 2. bis 4. Jahrhundert gehört.<sup>23</sup> Sie ist also älter als das Gräberfeld. Weitere Funde von Gräberfelder aus römischer und fränkischer Zeit in und bei Rhenen<sup>24</sup> geben Hinweise auf die Bedeutung Rhenens.

Die Art und die Zusammensetzung der Grabinventare in der ersten Gräbergruppe deutet zweifellos auf rege Kontakte mit den spätrömischen niederrheinisch-gallischen Kulturzentren hin. Die hier Bestatteten waren m.E. weder Laeti noch Foederati, schon weil ein eventueller spätrömischer Limes nicht mehr am Rhein, sondern eher am südlichen Ufer des Waals<sup>25</sup> gelegen haben wird. Die meisten frühen Rhenener Gräber sind in die erste Hälfte des 5. Jahrhunderts zu datieren. Obschon Iulian militärische Massnahmen getroffen hatte, die wohl zur Sicherung der Schifffahrtstrasse für das britannische Getreide gedient haben, wird doch bald nach 355 die Bataverinsel,

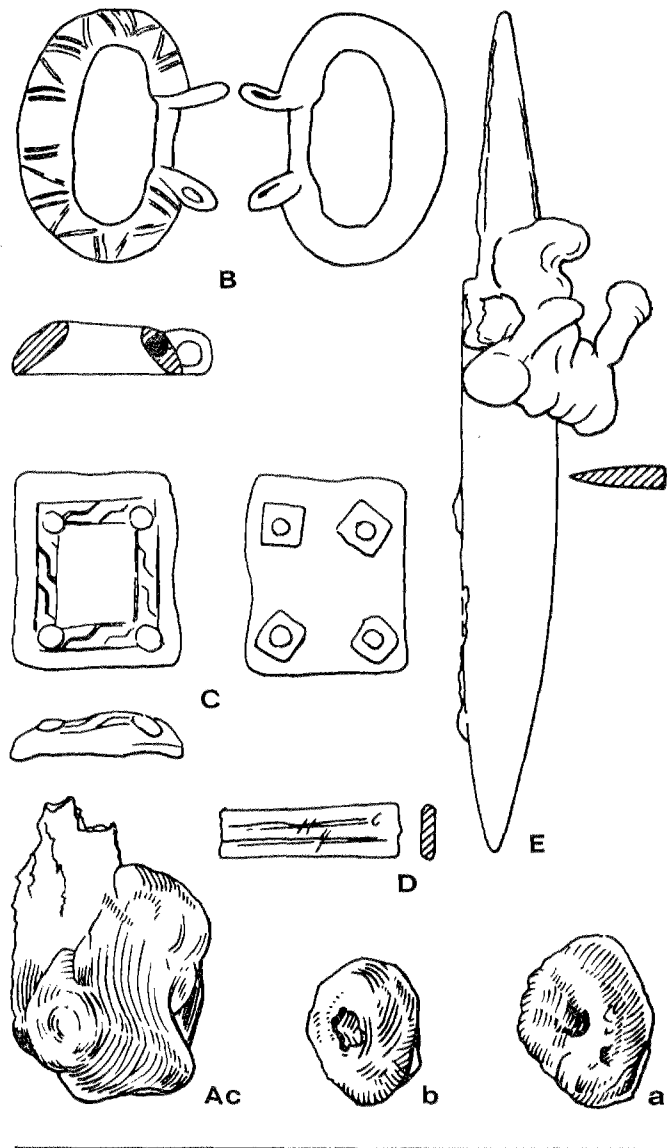


Abb. 12 Brandgrab 465, Frauengrab. Periode D. 7. Jht. A. Geschmolzene Glasperlen; B. Schnallenbügel, Br.; C. Beschlag, Br.; Bronzestreifen, Fragment; E. Messer, Eis., mit geschmolzener Bronze; (F. Topf, fehlt)

23 Van Es 1968.

24 Ypey 1959, 110-1.

25 Bogaers 1967, 107 ff; Bogaers 1968, 157.

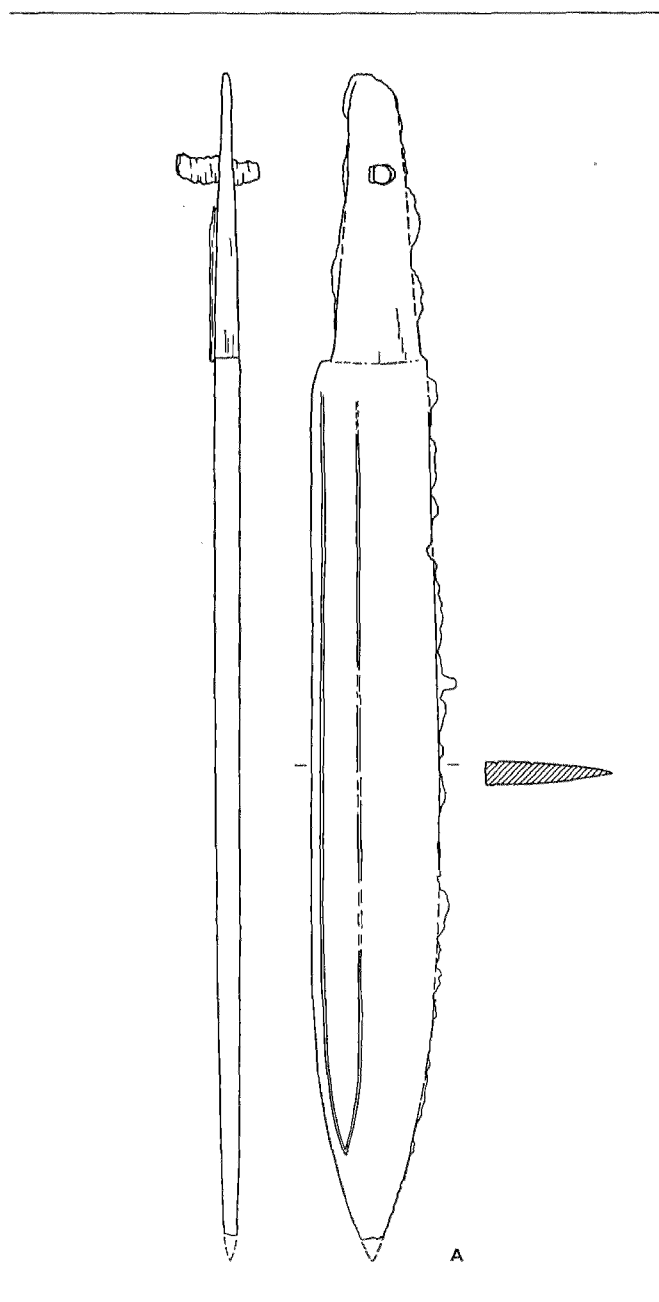
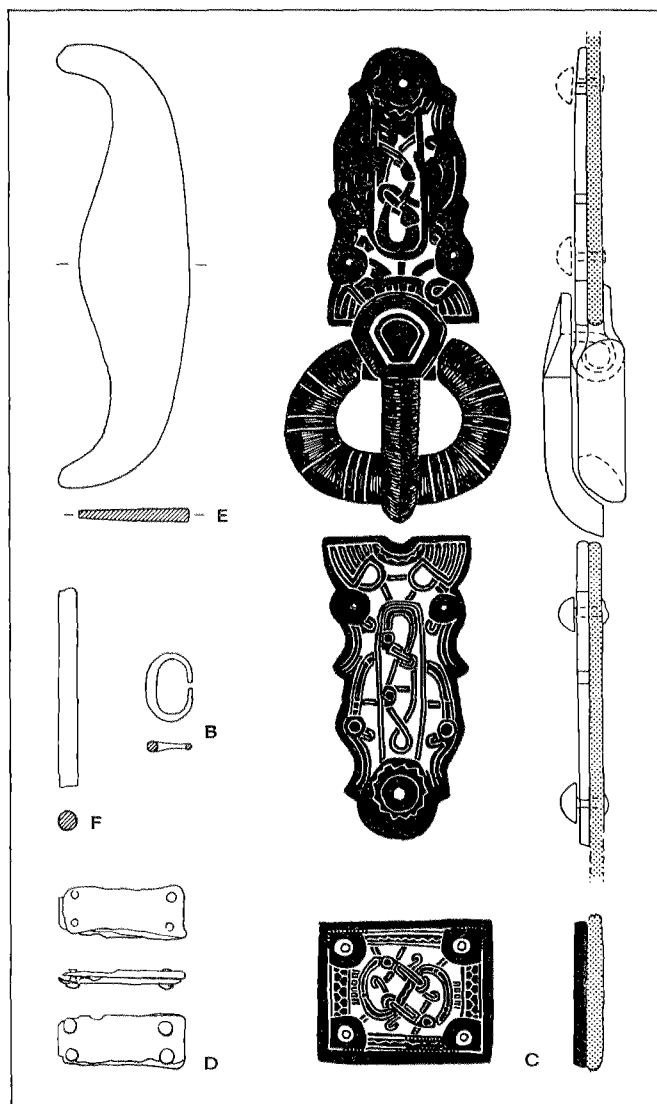
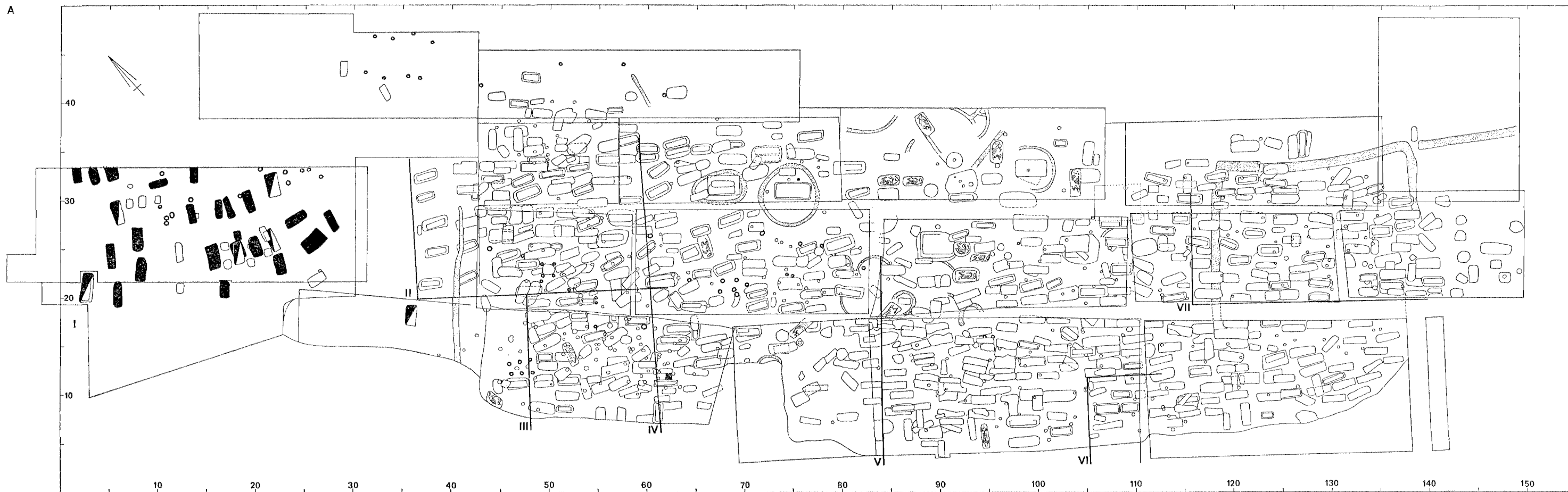


Abb. 13 Männergrab 814. Periode D. 7. Jht.  
A. Sax, Eis.; B. Schnallenbügel, Br.; C. Gürtelgarnitur, Eis.,  
silber- und messingtauschiert; D. Bronzebeschlag auf Leder;  
E. Feuerstahl, Eis.; F. Bronzestab





welche damals u.a. von den salischen Franken besetzt war, als Teil des römischen Reiches offiziell aufgegeben worden sein.<sup>26</sup> Es ist sogar fraglich ob zu dieser Zeit der Rhein noch als römische Wasserstrasse diente. Vielleicht ist in den zeitgenössischen Quellen die Waal gemeint, wo von dem Rhein die Rede ist.<sup>27</sup>

Haben die Begründer des Rhenener Gräberfeldes noch in römischem Dienst gestanden? Die Gürtelgarnituren sind bestimmt bei den nordgallisch-fränkischen Truppen in der römischen Armee entstanden.<sup>28</sup> Als im Laufe des

4. Jahrhunderts die Zahl der Franken im römischen Heer immer stärker zunahm – auch bis in den höchsten Rängen wuchs auch ihr Selbstbewusstsein. Dies mag wohl dazu beigetragen haben, dass sie sich auch in ihrer Ausstattung als solche kenntlich machen wollten, z.B. durch eine eigene Art von Gürteln. Obwohl sich in Rom gegen das Ende des 4. Jahrhunderts ein starker Antigermanismus entwickelte,<sup>29</sup> konnte man diese Germanen im Westen nicht entbehren, wobei sich ihr Selbstbewusstsein nur noch steigerte. Nach dem Zusammenbruch des römischen

<sup>26</sup> Bogaers 1967, 111; Bogaers 1968, 157.

<sup>27</sup> Bogaers 1968, 157, besonders Anm. 75.

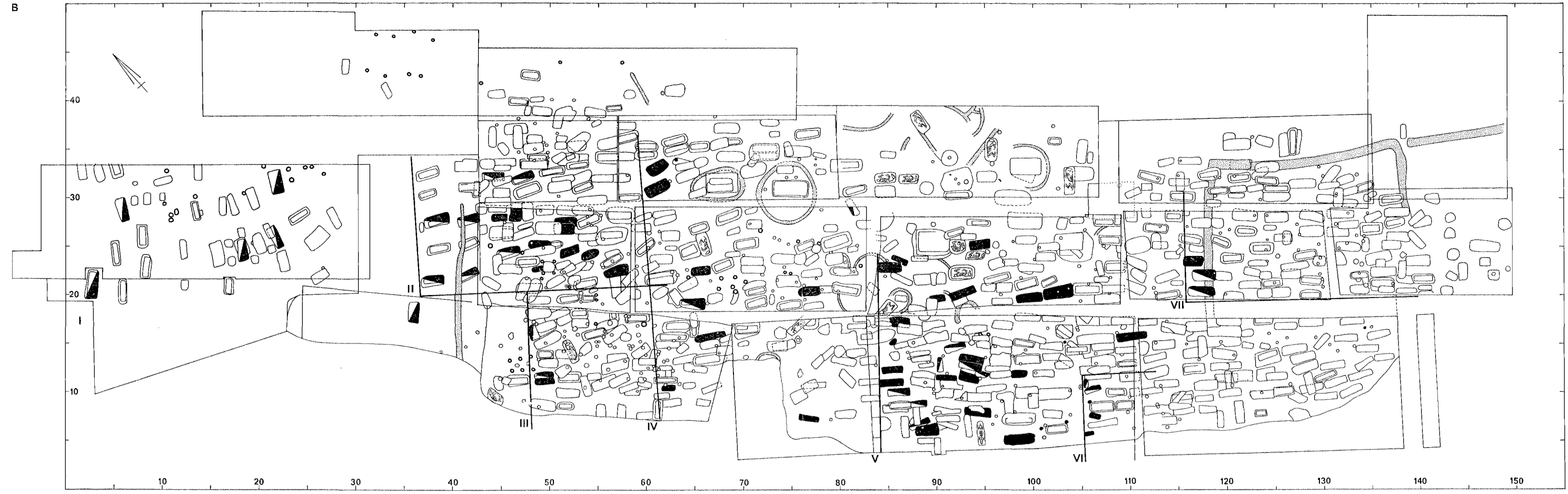
<sup>28</sup> Ypey 1969, 116.

<sup>29</sup> Waas 1965, 48 ff.

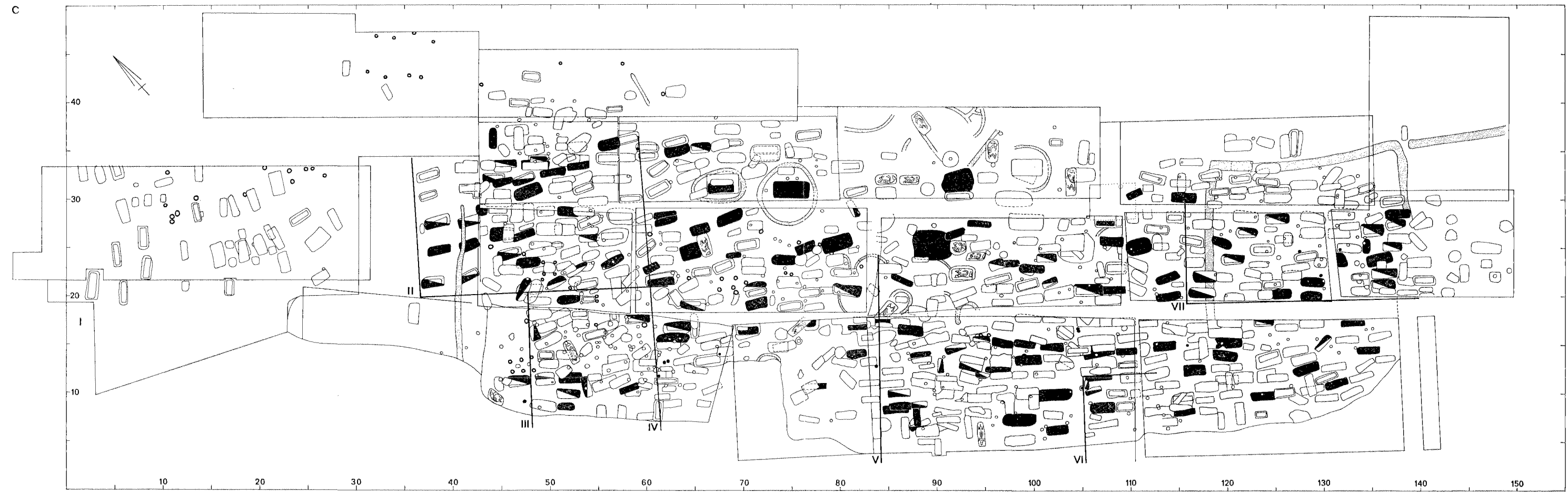
Abb. 15 Das fränkische Gräberfeld bei Rhenen. Plan mit Periodisierung und Unterteilung in einzelnen Friedhöfen. Bei den halbausgefüllten Gräbern gehören die rechts oben oder unten ausgefüllten zum Übergang zur vorigen Periode, die links oben oder unten ausgefüllten zum Übergang zur nächsten Periode.

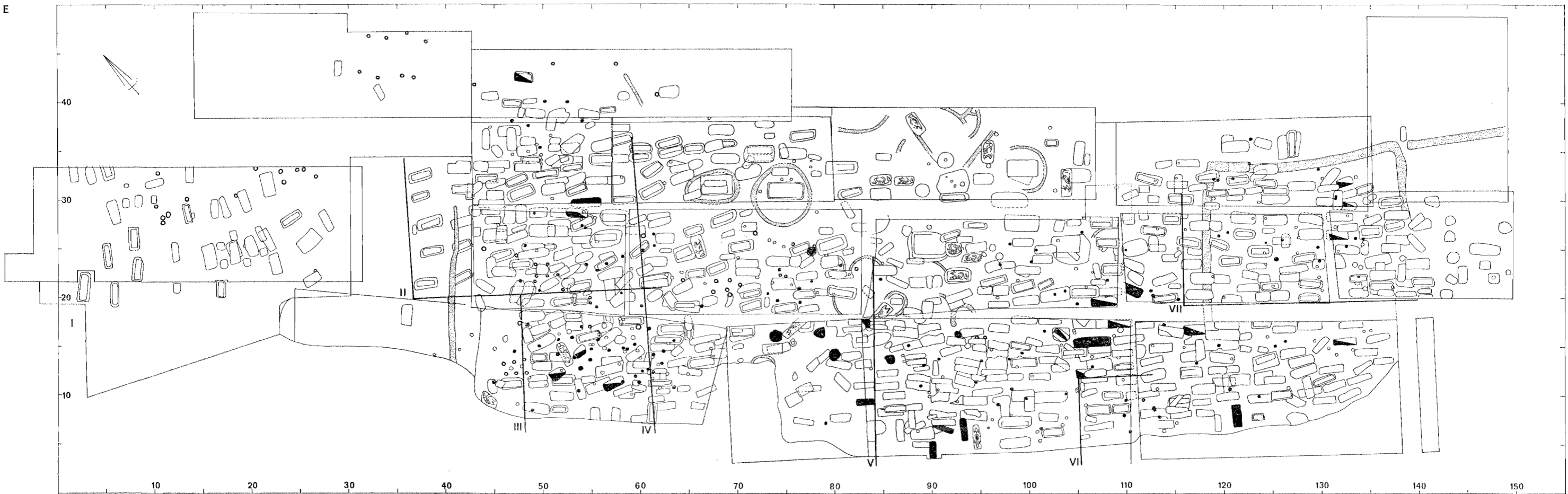
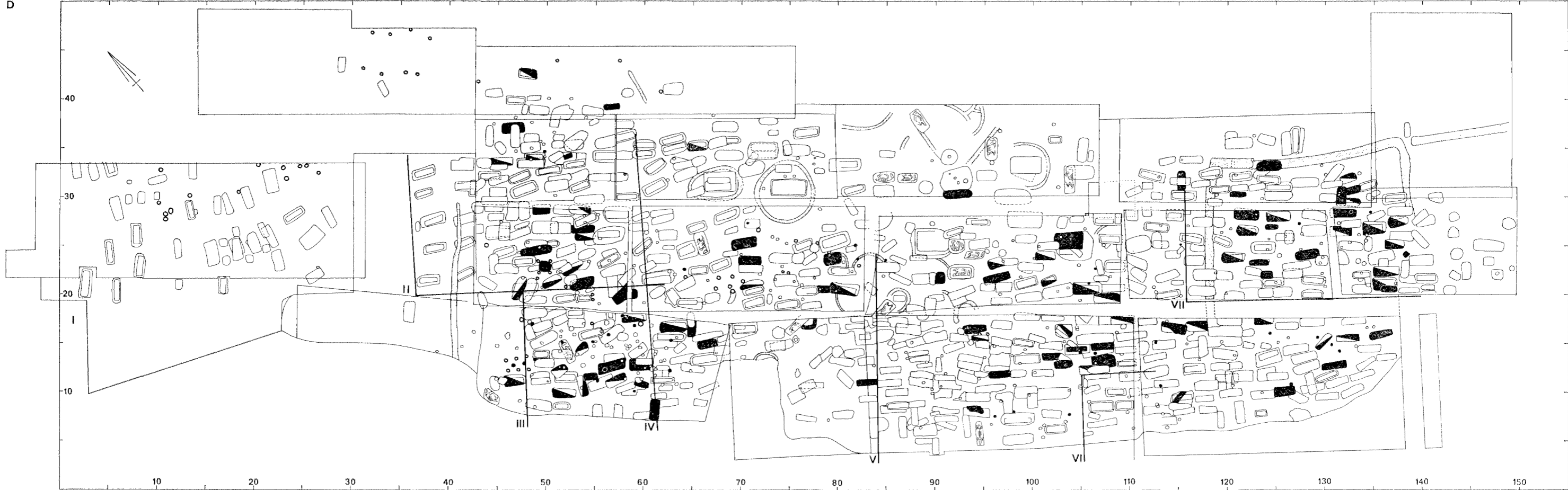
M. 1:250. A 375–450, B 450–525, C 525–600, D 600–675, E 675–750

B



C





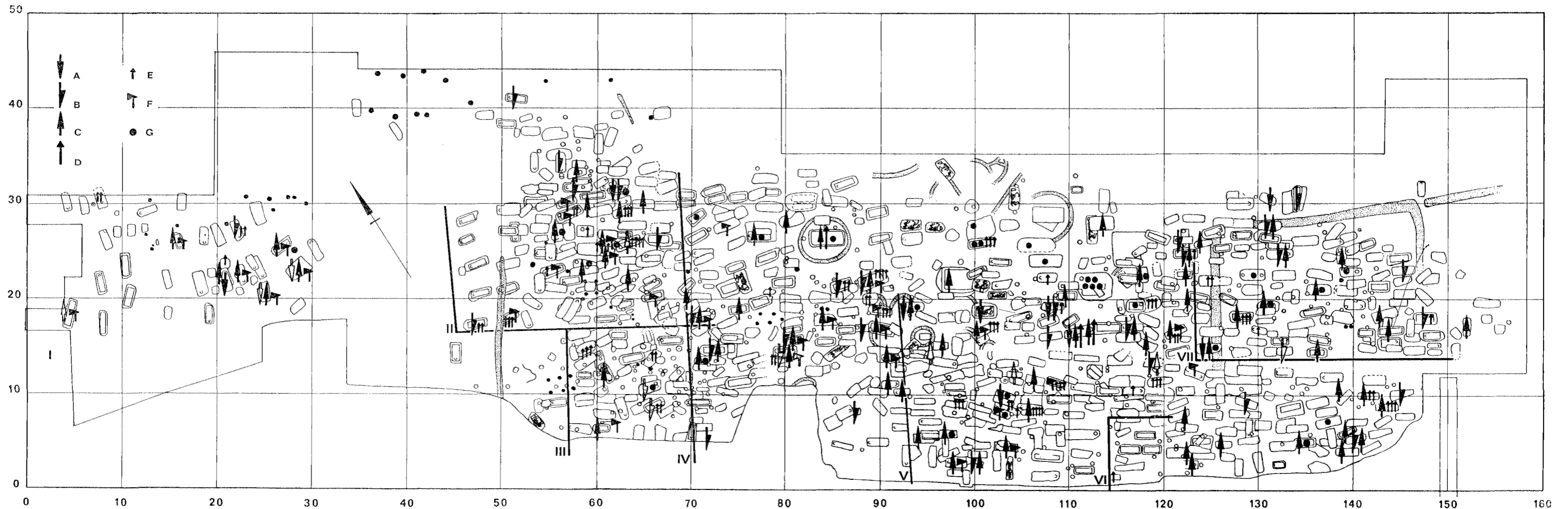


Abb. 16 Das fränkische Gräberfeld bei Rhenen mit den Waffengräbern. Die offenen Signaturen vertreten fehlende Waffen. M. 1:250.  
A Langschwerter, B Saxen, C Lanzenspitzen, D Angos, E Pfeilspitzen, F Franziskanen, Beile, G Schildbuckel

Reiches haben dann die Franken ihre Gürtelgarniturenmode wohl noch weiter gepflegt, bis sie um die Mitte des 5. Jahrhunderts abkam. Es wäre denkbar, dass einige der in Rhenen gegen Ende des 4. Jahrhunderts bestattete Männer noch in der römischen Armee gedient haben. Haben sie sich am Rückzug der Römer von der Rheingrenze beteiligt und diesen aktiv gefördert? Die Antwort wird wohl im Nebel bleiben. Jedenfalls haben sie sich gegen Ende des 4. Jahrhunderts ausserhalb des römischen Imperiums niedergelassen.

Die Bevölkerungszuwachs in den nächsten Jahrhunderten lässt sich wegen den vielen beigabenlosen und nicht datierbaren Gräbern kaum beurteilen. Nach den datierbaren Gräbern zu urteilen, hat die Bevölkerung besonders in Laufe des 6. Jahrhunderts stark zugenommen.

Um die Mitte des 8. Jahrhunderts hat man aufgehört, die Toten auf diesem Gräberfeld zu bestatten. Dann wird wohl der christliche Friedhof diese Aufgabe übernommen haben. Es wäre denkbar, dass einige beigabenlose Gräber am Ostende des Gräberfeldes die letzten heidnischen Bestattungen in einer Zeit repräsentieren, als die Mehrzahl der Bevölkerung schon zum Christentum übergetreten war. Oder aber sie vertreten Christen, die noch auf dem Gräberfeld beigesetzt wurden, aber die Beigabensitte aufgegeben hatten. Jedenfalls scheinen sie die Endphase in der Belegung des Gräberfeldes von Rhenen zu bilden.

Abb. 14 Töpfe aus Brandgräbern. Periode E. Erste Hälfte des 8. Jhts.

A. Brandgrab 102: H.: ± 39.-cm, rauhwandig, rötlich orange;  
 B. Brandgrab 497: H.: ± 25.-, rauhwandig, ockerfarbig

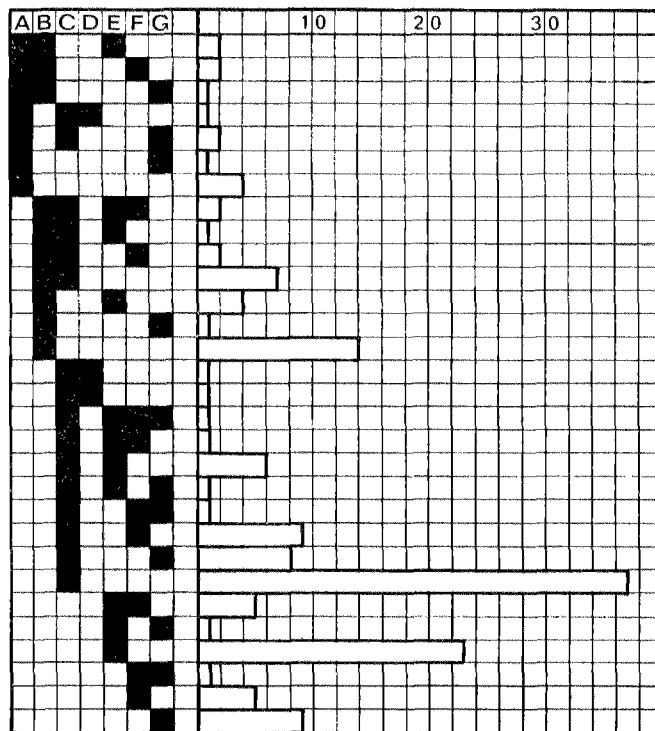
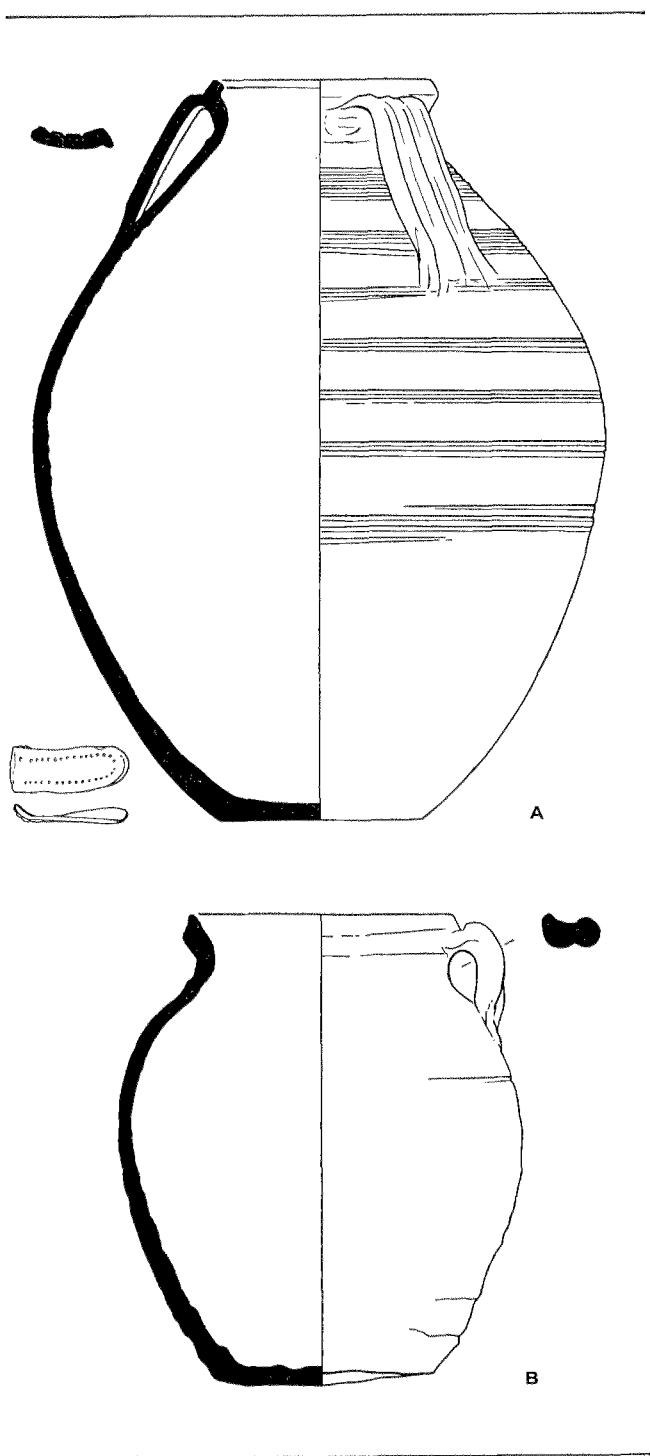


Abb. 17 Statistik der Waffenkombinationen.  
 A Langschwerter, B Saxen, C Lanzen spitzen, D Angos, E Pfeilspitzen, F Franziskan, Beile, G Schildbuckel

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# A Merovingian Cemetery in Veldhoven, Province of North Brabant

with a contribution by J. Ypey

figs. 1–29

## INTRODUCTION

As early as the beginning of this century it was thought that there was a Merovingian cemetery situated in the municipality of Veldhoven (North Brabant) along the Oeienbosch dike between Heers – about one kilometre SSE of Veldhoven – and Kneysel. The notes among the personal effects of C. Rijken, then headmaster of the Public Elementary School at Veldhoven, were found to include a situation sketch with a cross indicating the spot where he had found Frankish pottery and iron.<sup>1</sup> This, then, had to be the site of a ‘Frankish’ cemetery.

The findspot lay south of the Oeienbosch dike on the western ridge of a sand bank sloping westward to the small river De Gender about 125 m away. This bank continued at the same height in a northern, eastern, and southern direction. No altitude measurements were taken before excavations started, but the height of the terrain must have been about 22.50 m + NAP.<sup>2</sup> The area was overgrown with rough pine trees at least fifty years old. The thickness of the occupation level is not exactly known, but may be estimated at c. 40 cm.

In the summer of 1970 work started near Veldhoven on the long-planned construction of a motorway between Eindhoven and the Belgian border, which was to tie up with the E 3 from Copenhagen to Lisbon. The assump-

tion that the cemetery mentioned by Rijken was situated in this road-trace was confirmed towards the end of September 1970, during preparatory digging. A grave was exposed in a trench dug to the south of the Oeienbosch dike to accommodate a natural gas pipe-line. Moreover in November of the same year grave pits were observed in trenches to the north of the aforementioned dike and to the east of a lane called Den Bogerd.

An investigation was undertaken at the end of 1970/early 1971 when the Water Control and Public Works Department announced that the actual construction of the E3 motorway was to start in May 1971 in the neighbourhood of the Oeienbosch dike.

Excavation, supervised by G.A.C. Beex and with the assistance of three workmen and the author, started on 7 December 1970. A fortnight later Beex’s task was considerably relieved by the arrival of M.J.A. de Haan, field technician.<sup>3</sup> Employment regulations necessitated a pause between Christmas and the New Year; after a subsequent period of frost, work was resumed on 18 January 1971 and concluded on 28 January.

The Water Control and Public Works Department contributed to the excavation by removing c. 40 cm from the top layer, exposing a subsoil of clean sand.<sup>4</sup> Digging was

1 Beex 1968, 120. The list of acquisitions at the 's-Hertogenbosch museum includes several finds thought to come from this findspot. Whether these finds are those collected by Rijken is not known; cf. *NKNOB* 1971, 54–5.

2 Map sheet 51 D of the Topographical Service, Delft, coord. 154.925 × 378. 560 Veldhoven Cadastre, Section C, lot 123.

3 Graves I, II, IV, V, XXVII were drawn by Beex. De Haan drew the remaining graves. In the course of further analysis the graves were given new numbers. In parentheses the old number as it occurs on the field-sketches and in the work reports:

grave I (I), II (VI), III (VII), IV (VIII), V (IX), VI (X), VII (XI), VIII

(XXX), IX (XIII), X (XIV), XI (XV), XII (XXXIII), XIII (XXXI), XIV (XXXII), XV (XVII), XVI (XVIII), XVII (XIX), XVIII (XXIX), XIX (XXII), XX (XXI), XXI (XXIII), XXII (XXIV), XXIII (XXVI), XXIV (XXV), XXV (XXVII), XXVI (XXVIII), XXVII (XII).

The description of this cemetery was submitted as evidence of student research prior to graduation.

4 Due to inadequate supervision from our side during operations, too much soil in general was removed, particularly in the eastern part of the cemetery. We are referring to graves VIII, XII, XIV, XVIII, XXIV, XXVI, and the northeastern part of graves XV and XVI.

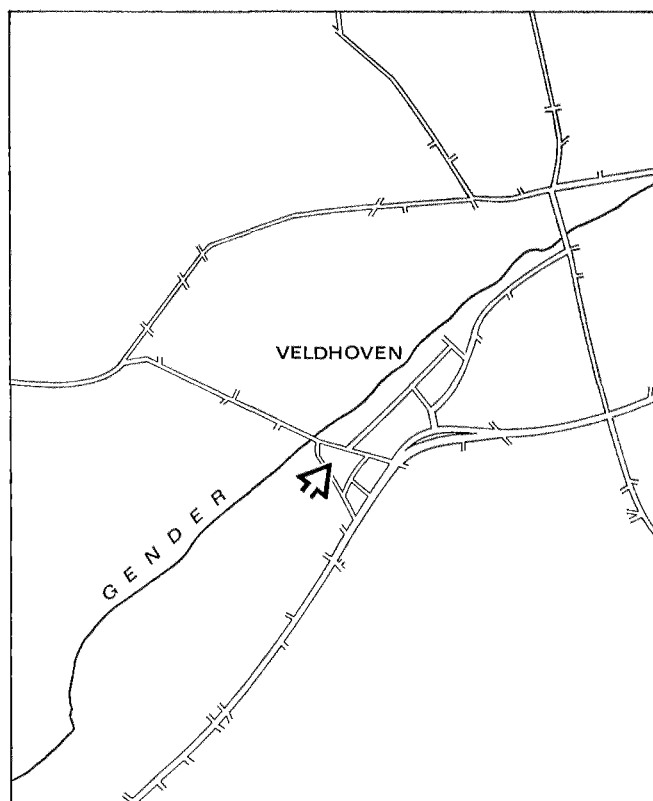


Fig. 1 Veldhoven: situation of the cemetery

severely hampered by rubble on the south side of the Oeienbosch dike; according to the local inhabitants the rubble was the remains of the foundations for a German anti-aircraft installation built in 1944.

#### EXTENT OF THE CEMETERY (fig. 2)

It was possible to establish definitively the boundary of the cemetery to the south only.

The most westerly grave found to date was that encountered in a construction trench at the end of September; it was excavated during the following weekend with the assistance of several amateurs. It is not yet known whether the cemetery extended further in that direction, since that

part of the terrain is not in danger of being destroyed and therefore did not require investigation at this stage.

It was not possible to re-examine the grave pits observed in November to the north of the Oeienbosch dike and east of Den Bogerd during a preliminary survey of the terrain, because the construction of the motorway was already well underway by then.<sup>5</sup> No graves were found in trial trenches made at the time of the excavation west of Den Bogerd and north of the Oeienbosch dike. In the same area various strips had already been disturbed during cable-laying operations.

It is possible that the cemetery continued toward the east, but the Water Control and Public Works Department had removed too much soil in the east for the construction

5 Unfortunately no binding agreements were reached with the Water Control and Public Works Dept., and due to the lack of timely consultation. Thus, for instance, when excavations

were to start, a big heap of sand was found in this area, so that research beneath it was not feasible.



of an overpass for us to be sure. It is not known whether graves were found at the time when the Oeienbosch dike was built. A number of graves are, however, overcut by this road.

In conclusion it may be stated that the cemetery certainly did not continue to the south, and probably not to the northwest either. Possibly it extended further towards the west, northeast, and east.

#### GRAVE FORMS

A total of twenty-seven graves – twenty-six inhumation graves and one cremation grave – were examined.

The cremation grave (xxvii) consisted of a round pit in which the cremation remains rested on the bottom. There must definitely have been additional cremation graves. The finds from recently disturbed soil near the Oeienbosch dike and those from grave ix include human cremation remains. Apparently a cremation grave was disturbed when this grave was dug.

Of the twenty-six inhumation graves two pits (xiv and xxiii) contained tree-trunks hollowed out by fire, which served as coffins.<sup>6</sup> One grave (xi) showed no traces of a coffin. The other graves contained coffins. In some the floor appeared to consist of planks *c.* 20 cm wide. Nothing is known of the way in which the walls were connected; iron nails do not occur. In the graves xxii, xxv, and xxvi, the long and/or short sides of the coffin protruded. This feature was also observed by Glasbergen in two large, wide, rectangular coffins.<sup>7</sup> In Veldhoven the coffin (or chamber?) made of separate planks occurred also in a different shape (narrow rectangular). At the bottom of grave xxii the protruding, long sides of the coffin were joined together in the northeast by a cross-beam. The purpose of this cross-beam is not clear. Many coffins stood on two or four cross-beams. In North Brabant and the north of Belgium this appears to have been usual.<sup>8</sup> The same custom has been observed in the south of Eng-

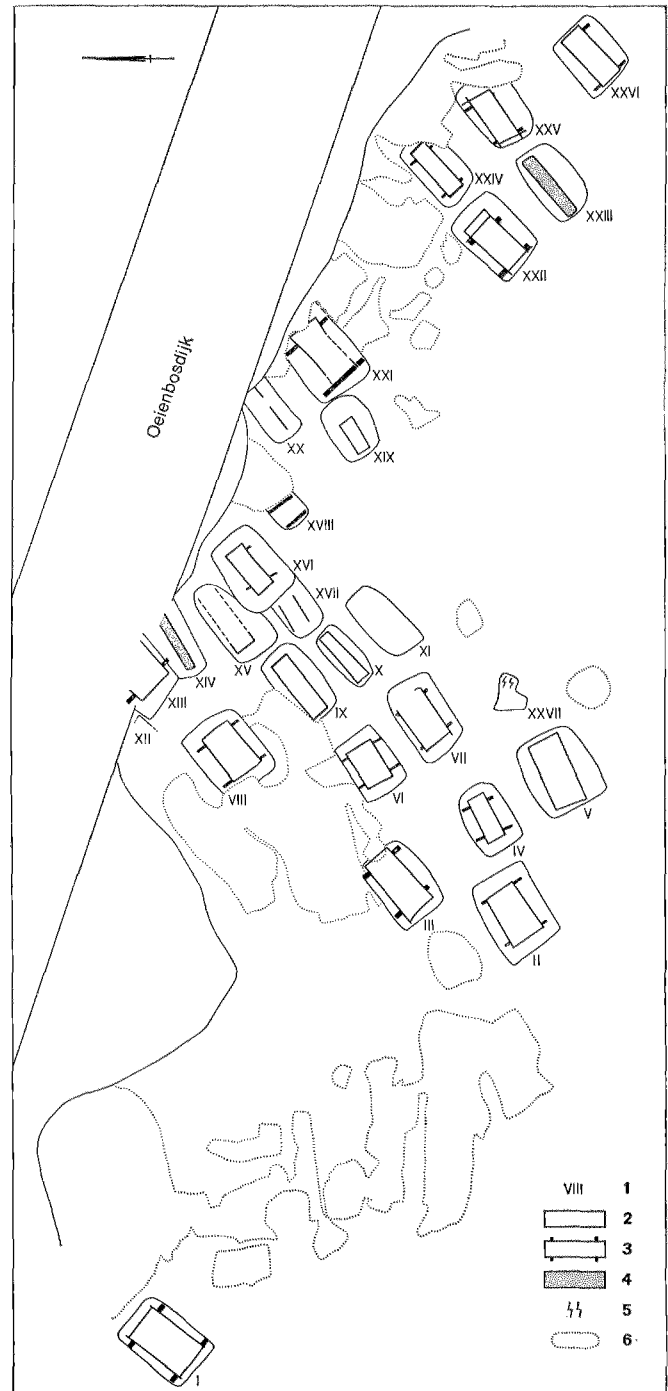


Fig. 2 Veldhoven: plan of the cemetery: 1 grave number, 2 coffin, 3 coffin on cross-beams, 4 tree-trunk coffin, 5 cremation grave, 6 recent disturbance (scale 1 : 250)

6 In Bergeijk one or two tree coffins were also found: Ypey 1959, 101. This manner of burial appears to have been very rare in those times in this area.

7 Glasbergen 1955, 35. Such coffins have been found in Germany, too; Salin 1952, 98.

8 De Boe 1970, 104: grave xxvii on four cross-beams; Glasbergen 1955, 34-5; Roes 1955, 6; Roosens/Vanderhoeven 1952, grave x, fig. 4; De Schaetzen/Vanderhoeven 1954, grave viii; Ypey 1959, 101; and others.

land.<sup>9</sup> The extent of the area in which this custom prevailed still awaits investigation.

The length of three coffins (iv, vi, and xix) varied between 1.22 and 1.44 m. Two of these graves (iv and vi), which were probably children's graves, were found to contain weapons. Grave xviii may also have been a child's grave.<sup>10</sup> In so far as length and/or width could be established, the remaining graves fall into three types:<sup>11</sup>

a flattened wedge-shaped coffins, varying between 1.80–2.35 m long and 1.00–1.23 m wide. The widest part of the coffins, all of which rested on cross-beams, lay in the southwest. Graves ii, iii, and viii belong to this type;

b narrow rectangular coffins, whose length and width measured 1.64–2.30 m and *c.* 0.43–0.85 m, respectively. Graves ix, x, xv, xvi, xvii, xxiv, xxv, and xxvi, all of whose coffins, except those of graves x, xv, and xvii, rested on cross-beams, belong to this type;

c large, wide, rectangular coffins, measuring between *c.* 1.80–2.30 m long and 1.04–1.30 m wide. The coffins were placed on cross-beams. Graves i, v, vii, xiii, xxi, and xxii belong to this type.

Regarding the depth of the graves in relation to the NAP, four groups could be distinguished:

1 graves ii, iii, v, and xiii, floors average 21.32 m +NAP;

2 graves iv, vi, xxi–xxiii, and xxv–xxvi, floors average 21.50 m +NAP;

3 graves vii–ix, xi, xiv–xvi, xix, xx and xiv, floors average 21.73 m +NAP

4 graves i, x, xii, and xvii–xviii, floors average 21.94 m +NAP.

The absolute depth of the graves can be approximated only, because exact measurements were not taken before the occupation layer was removed. Assuming that the height of the terrain was *c.* 22.50 m +NAP, the depth of the graves varies from 50 to 125 cm.

The highest coffins were those in graves ii (80 cm), iii (57 cm) and vi (45 cm). A small number of coffins were *c.* 40 cm high. It was impossible, however, to establish the height of

the majority of the coffins since in most cases the coffin was already bared after removal of the first excavation layer and measured less than 40 cm high.

All graves had a SW–NE or NE–SW orientation, except grave i which ran SSW–NNE or NNE–SSW. It was possible to establish the orientation of fourteen of the twenty-six graves on the basis of the grave-goods and the (scant) skeletal remains. Graves iv, vi, x, xiv, and xvii were found to contain, in the sw, two molars, two beads, some skull fragments, seven beads and a lance-head, respectively. Graves vii, xvi, xx, and xxv yielded, in the same position, one bead each. The three flattened-wedge coffins (graves ii, iii, and viii) were widest in the sw. Grave xi was found to contain one bead in the NE. The widest part of the so-called tree-coffin from grave xxiii also lay in the NE. Twelve of the fourteen graves therefore had a SW–NE orientation; the remainder a NE–SW orientation. We can thus assume that it was the custom in Veldhoven to lay the head of the deceased toward the sw, and that a NE–SW orientation was exceptional.

#### GRAVE FINDS

##### *Pottery*

Of the fourteen pots nine could be largely reconstructed in profile. The same is true of the two bowls. All are wheel-thrown, with the possible exception of the small pot from grave vi, *b*.

The following types are represented among the reduced ware:<sup>12</sup>

Böhner type B1a	grave xii, <i>a</i>	(525–600) <sup>13</sup>
Böhner type B1b	grave iv, <i>a</i>	
	grave vi, <i>a</i>	(end vi/espec. vii)
	grave xvi, <i>a</i> <sup>14</sup>	
Böhner type B3b	grave v, <i>a</i>	
	grave xv, <i>a</i>	(end vi/espec. vii)
Böhner type B5b	grave x, <i>a</i>	(end vi/espec. vii)

13 La Baume 1967, graves 77 and 163.

Van Bostraeten 1964, 54 incorrectly states that the pot from grave i of the Broekeneind cemetery near Hoogeloon belongs to Böhner's type B 1a. The diameter of the mouth is, after all, smaller than the height which causes this pot to be counted among type B 1b. Thus this type cannot be said to continue into the seventh century.

14 Beex 1969, 121–2.

9 Addyman/Hill 1969, 88.

10 Similar short graves in Grobbendonk were found to contain bones of adults; Janssens 1964, 92.

11 Glasbergen made the same subdivision for the cemetery at Broekeneind, while De Boe arrives at four coffin types, although there are really three (types c–e) with one exception. Such a deviant coffin form is represented by the very narrow coffin of grave x. Glasbergen 1955, 34–5; De Boe 1970, 104.

12 Böhner 1958, 38–45.

The oxydized ware comprises the following types:

Böhner type C4	grave vi, <i>b</i>	(vii) <sup>15</sup>
Böhner type D17a	grave xiv, <i>c</i>	(vii) <sup>16</sup>

The rough-walled ware falls into the following types:

Böhner type D17a	grave x, <i>b</i>	(vii) <sup>17</sup>
Böhner type Dg	stray find, <i>a</i>	(525–600) <sup>18</sup>

#### Glass

The beaker (grave xv, *d*) belongs to Böhner type B (525–early vii).<sup>19</sup>

#### Metal objects

##### Weapons

The sax (grave vi, *c*) was difficult to measure due to severe corrosion. Its width (4.5 cm) indicates that it should be classified as a *Breitsax*. However, this specimen is rather short (length of blade: 23 cm). Such short *Breitsaxen* have been found elsewhere, too. They date from the seventh century.<sup>20</sup>

The spear-head (grave xvii, *a*) belongs to Böhner type A4 (525–500).<sup>21</sup> According to Van Bostraeten such spear-heads were also in use in the early seventh century in this country.<sup>22</sup>

The axe (grave xvii, *b*) is classified as Böhner type B of the *Bartäxte* (525–600).<sup>23</sup>

The arrow-heads (grave vi, *d* and grave viii, *b* and *c*, and grave iv, *b*?) correspond with Böhner type B (525–700).<sup>24</sup> A pair of arrow-heads was found in Grobbendonk, as in grave viii.<sup>25</sup>

##### Knives

The three knives (grave iv, *c*, grave xxiii, *a*, and grave xxiv, *a*) belong to Böhner type A (450–700).<sup>26</sup>

##### Disc brooch

Bronze disc brooches among which the simple brooch from grave iii, *a* may be counted, date from the seventh century, according to Böhner.<sup>27</sup>

##### Buckles

The bronze disc brooches among which the simple brooch buckles:

Böhner type A1–grave xv, <i>b</i>	(450–600) <sup>28</sup>
Böhner type A4b–grave xii, <i>c</i>	(525–700) <sup>29</sup>
Böhner type D1–grave xxi, <i>a</i>	(450–700) <sup>30</sup>
Böhner type D2–grave iv, <i>e</i>	(525–700) <sup>31</sup>
Böhner type D2–grave vi, <i>f</i>	

The two iron buckles – graves iii, *b* and x, *c* – bear vague traces of damascening. It is generally assumed that such buckles were in use in the seventh century.<sup>32</sup> An exact date cannot be given because of the simple rivets.<sup>33</sup> The iron buckle from grave iv, *f* is dated between 525–700 and the iron specimen from grave viii, *g* in the seventh century.<sup>34</sup> The shape of the buckle from grave xvi, *c* could not be established.

##### Rings

The iron ring from grave xiv, *e* is not datable. It is possible that this ring from a woman's grave was part of a snaffle, although such snaffles seldom occur in women's graves. Several rings like these have been found in this area, and the graves they belonged to were, like this one, not demonstrably horses' graves.<sup>35</sup>

##### Belt-fittings

Graves iv, vi, and x contained four belt-fittings. The specimen from grave x was the simplest, with an iron buckle, a long bronze strap-end, and four bronze mounts.<sup>36</sup> It is not certain whether the central perforation in the

15 Böhner 1958, 48.

16 Böhner 1958, 57; pl. 6:10.

17 Böhner 1958, 58; pl. 6:13.

18 Böhner 1958, 54; pl. 5:5.

19 Böhner 1958, 229–30; Fremersdorf 1955, grave 9, fig. 119:8

20 Neuffer-Müller/Ament 1973, grave 487, pl. 34:11; Gollub 1970, 75–6.

21 Böhner 1958, 148–50, pl. 28:8.

22 Van Bostraeten 1964, 24–6.

23 Böhner 1958, 171–2; cf. La Baume 1967, grave 161.

24 Böhner 1958, 163; pl. 29:9.

25 Janssens 1964, 94, particularly graves 44, 46, and 51.

26 Böhner 1958, 214.

27 Böhner 1958, 110; pl. 18:6.

28 Böhner 1958, 179; pl. 35:3.

29 Böhner 1958, 181; pl. 35:11. In view of the position in the corner of the grave, these may have served as shoe-buckles.

30 Böhner 1958, 191.

31 Böhner 1958, 191; cf. Van Bostraeten 1964, 37–8, no. 38.

32 Böhner 1958, 199–200; Moosbrugger-Leu 1971, 157.

33 Moosbrugger-Leu 1967, 110–2.

34 Böhner 1958, 105; cf. Van Doorselaer 1958, grave iv, fig. 4:5.

35 Van Bostraeten 1964, 76; Müller-Wille 1970–1, 146, fig. 58.

36 Moosbrugger-Leu 1971, figs. 63–5.

mounts – for which no corresponding perforations were found in the leather – should be considered as *Riemenöse*. Grave iv contained elaborate belt-fittings, comprising a buckle, one long and two short strap-ends, and three belt mounts, all of bronze. The iron buckle from this grave could belong to a second belt. Belts in pairs have been found in graves with spathas and saxes; neither occurs in this graves.<sup>37</sup> Ypey reports that grave vi almost certainly contained two belt-fittings. With the aid of the studies of Moosbrugger-Leu, Vogt and others<sup>38</sup> he arrived at the following reconstruction. One of the belts had a bronze buckle and a long bronze strap-end (vi, *e* and *r*) at each end, there was a bronze mount in the middle of the part worn on the back (vi, *k*), two bronze belt-mounts with small straps and bronze strap-ends hanging from them were attached at each end. The sixth bronze strap-end and the sixth bronze mount (vi, *n* and *l*)<sup>39</sup> with the bronze buckle (vi, *f*) made up a second belt. It is not clear whether the iron buckle vi, *g* belonged to this second belt. Indications as to how the sax was fastened to one of the belts are totally lacking.

According to Hinz these belt-fittings are relatively rare in the Rhineland.<sup>40</sup> And in North Brabant, too, they are not common. An exact date for the Veldhoven belt-fittings is impossible to establish, but it is generally assumed that they occurred in the seventh century.

#### Strap-ends

Graves viii and xxi yielded one short and one long bronze strap-end. All strap-ends, including those of the belts, had two rivets or rivet-holes in the base. An exception to this was the specimen from grave viii with one rivet.

#### Belt-mounts

In addition to those of the belt-fittings, two bronze belt-mounts were found in graves i and viii. Like the strap-ends, these mounts can be dated only on the basis of any other accessory grave goods.

#### Beads

Graves vi, vii, x, xi, xiv, xvi, xx, xxv, and xxvii, yielded a total of forty-four beads, two made of amber and the

rest of glass. Grave x was found to contain a string of twenty-seven beads, and grave xiv a string of seven beads. Three beads were found in grave vi, two in (cremation) grave xxvii, and one in the remaining graves.

The beads are of little use for dating purposes. A few general rules were drawn up by Böhner, based on objects found in association with beads.<sup>41</sup> Thus transparent monochrome beads, mostly blue-green, occur only in the early seventh century. Eight of ten such beads belong to the string of grave x, and the two others to the string of grave xiv.

Of the twenty-four opaque, plain monochrome beads fourteen are yellow; they are segmented or spiral-shaped – a typical seventh-century characteristic. Ten of these fourteen beads came from grave x, the other four from grave xiv.

Eight beads, *i.e.* 18.2%, are opaque and decorated. It is generally assumed that the distribution of decorated beads diminished in late Merovingian times.<sup>42</sup> The shapes of the beads belong to a type that is common in this period. In conclusion it may be said that the string of beads from grave x can be dated to the early seventh century in view of the percentage of translucent blue-green beads. The five-sided bead from this grave x, *f*, 9 (450–600) supports the early date. The string from grave xiv and all other beads date from the whole of the seventh century.

#### Wooden vessels

The iron reparation fragment indicates the presence of a wooden bucket in grave vi, *t*. The wood has totally disintegrated – even wood traces are missing.

#### DATING OF THE CEMETERY

Owing to the limited number of grave-goods, it is possible to give a rather rough date of a few graves only.

grave xii	vib	pot
grave xvii	vib	spear-head, axe
grave xv	vib/viia	buckle, glass beaker
grave x	viia?	string of beads
grave xiii	viia?	cut by grave xiv
remaining graves	vii	

37 Vogt 1960, 78 ff., fig. 44.

38 Moosbrugger-Leu 1960, pl. 93; 1971, fig. 66; Vogt 1960.

39 This mount has a slightly deviant form; Hinz 1969, grave 173, pls. 27:4 and 32:8. Ypey kindly pointed out another parallel to me: Åberg 1923, 123, fig. 247.

40 Hinz 1969, 33–4.

41 Böhner 1958, 71–2.

42 De Boe 1970, 70; percentages in Borsbeek, Lutlommel, and Grobbendonk are 8.7%, 11.6% and 16.6%, respectively.

## STRUCTURE OF THE CEMETERY

The grave-goods in several graves enabled the sex of the occupants to be established. The bodies in graves iv, vi, viii, and xvii are assumed to have been male, in view of the following finds: an arrow-head, a sax with an arrow-head (and three beads), two arrow-heads and a spear-head with an axe, respectively. The bronze disc-fibula and the strings of twenty-seven and seven beads indicate women's graves (graves iii, x, and xiv). Possibly the graves with one bead (vii, xi, xvi, xx, xxv, and xxvii) may also be regarded as women's graves.<sup>43</sup> The graves with small coffins were probably for children (graves iv, vi, xviii?, and xix).<sup>8</sup> The scant skeletal remains were examined, but the quality was too poor to indicate either age or sex of the body.<sup>44</sup>

In general it may be stated that the grave-goods in this cemetery were very simple. Undoubtedly, this is partly due to the material circumstances of the people buried there, but probably the overall picture is distorted by grave robbing (see below). Graves x and xiv (women's graves; strings of beads), iv and vi (boys' graves; weapons and belt fittings) and viii and xvii (men's graves; weapons) may be considered rich in comparison with the other graves in the cemetery. The weapons that were laid in the men's graves may reflect the occupant's position in life; perhaps they were free or semi-free farmers.<sup>45</sup>

Grave robbing was common in Merovingian times.<sup>46</sup> Criteria for the occurrence of robbery in this site were the presence of:

- 1 fragments of pots;
- 2 finds from the top of the pit/coffin-fill;
- 3 disturbance of the coffin.

In Veldhoven graves iii, v, vii, viii, xi, xiii, and xiv had been robbed; possibly also graves ii and xx.

A disturbance was observed in the top of the only cross-section that was made in a grave (vii). This later digging was not perceptible on the horizontal plane since discolorations were vague. It is therefore possible that such disturbances escaped notice in other graves, which were excavated in horizontal levels exclusively. Grave vii must have been plundered soon after it was dug. Whether and

how these graves were marked at the time is an open question.

Graves x, xii, xiii, xv, and xvii appear to form a related group. They are laid out close together, in roughly two NW-SE oriented rows, and may be dated to the end of the sixth and beginning of the seventh century.

Graves x, xv, and xvii are particularly similar. They have more or less the same depth (like grave xii, about which nothing else is known), and a narrow coffin not resting on cross-beams. Moreover the three graves are relatively rich. The sex of the occupant of the first is unknown. The two others belonged to a husband and wife. It may be assumed, on the grounds of the weapons accompanying him, that the man was a free or semi-free farmer.<sup>45</sup> This man and woman, who possibly settled in the area of their own accord, were the first to be buried there. Grave xiii is included in this group only because it is overcut by grave xiv, even though its form – a wide coffin on cross-beams<sup>46</sup> – sets it apart from the other early graves.

There are two, possibly three more concentrations of graves to be observed, likewise in NW-SE oriented rows:

- 1 graves ii-ix, xi, xiv, xvi, and xvii (?);
- 2 graves xix-xxvi;
- 3 grave i, which may mark the beginning of an extension of the cemetery toward the NW.

It appears that the graves were occupied by various generations of one or two *familiae* – parents with children (and servants). At least two generations of one *familia* occupied the earliest graves and one of the above-mentioned concentrations. Whether the rows of graves in the various groups were extended in any particular direction is not known.

## CONCLUDING REMARKS

The data obtained from the investigation of this cemetery are few and moreover incomplete, since only part of it was excavated. The aim of this publication should, then, be understood as the setting forth of 'factual material which, when published may be of some use in further research.'<sup>47</sup>

In the twenty years since Glasbergen wrote those words, there has been little research on Merovingian cemeteries,

43 Graves with one bead are not necessarily women's graves. Hinz 1969, 43-4, graves 130 and 166; Fremersdorf 1955, 75-6.

44 The cremation remains were determined by A.S. Knip and K. Markiet at the Institute for Anthropobiology in Utrecht.

45 Böhner 1958, 269 ff; Ganshof 1954, 17. N.B. The historical source material dates from later times.

46 Van Doorselaer 1972, 2-7; Böhner 1958, 281.

47 Glasbergen 1955, 41.

especially in North Brabant. The Veldhoven cemetery is very similar to the cemeteries of Broekeneind,<sup>48</sup> Gastenren,<sup>49</sup> Meerveldhoven,<sup>50</sup> and that of Grobbendonk,<sup>51</sup> as regards the size, the shape of the graves and coffins, and the simplicity of the grave-goods. In the last respect, however, it differs from the larger cemeteries of Bergeijk,<sup>52</sup> Borsbeek,<sup>53</sup> Lutlommel,<sup>54</sup> and possibly that of Alphen.<sup>55</sup> In North Brabant we know of only seven, for the most partially excavated (small?) cemeteries. Further information consists of individual grave-finds, but it is not known whether the adjacent graves constituted part of a cemetery or were separate individual graves. Most of the material from this period comes from the area of the River Dommel and its tributaries.<sup>56</sup> It is plain that further research is urgently called for. We will, therefore, not discuss problems of a general nature: these can be solved in a wider context only.

The exact extent of the cemetery in Veldhoven, of which possibly two thirds have been investigated, is not known; but it was at any rate small. The graves are dated to the second half of the sixth and especially to the seventh centuries. The cemetery was in use for about 125 years or 150 at the utmost. If it is assumed that there were roughly forty graves, about eight graves (one fifth) may belong to an early phase, dating to the end of the sixth and the early seventh centuries. The remaining graves – about thirty-two – belong to the rest of the seventh century. One generation may be understood as spanning twenty-five or thirty years. This means that there were three or four generations in Veldhoven and that one generation may have

consisted of eight to eleven people, belonging to one big or two small *familiae*. It is not known whether this community constituted part of the domanial system that prevailed in those times, or consisted of free or semi-free farmers (with their family and servants) who possessed some land of their own.<sup>58</sup> They must have lived in the neighbourhood in one or two farmsteads, but we do not know exactly where. The reason for their settling in this area was probably the presence of water. The fact the cemetery fell into disuse may be linked with the Christianization of this area towards the end of the seventh and the beginning of the eighth centuries.

The concurrence of inhumation and cremation graves is quite remarkable. This duality occurs in North Brabant as early as in the sixth century.<sup>59</sup> Although it is generally assumed<sup>60</sup> that the custom of cremation had already in that century been brought to the south from the north (where the burial rites of that time are not known),<sup>61</sup> there is no substantial evidence to support such an assumption.

Another striking feature in this cemetery is the consistent SW-NE orientation of the graves, which may be seen as an indication of the religious uniformity of the population buried here. It is doubtful that this religious uniformity is challenged by the concurrence of inhumation and cremation. This combination of burial rites has been interpreted as 'an externalization of ethnic influences.'<sup>62</sup> But even in our time both rites are observed without religious or ethnic distinctions.

48 Glasbergen 1955.

49 Beex 1954, 57–65.

50 Ypey 1959, 108.

51 Janssens 1964.

52 Ypey 1959, 101.

53 De Boe 1970.

54 Van Bostraeten 1965.

55 Roes 1955.

56 Roosens 1949, 138 and 147; 1959–60, maps between 64 and 65; 1967, fig. 5; Ypey 1959; information from G.A.C. Beex.

57 Ganshof 1954, 4.

58 Ganshof 1954, 17; Zöllner 1970, 213.

59 Glasbergen 1955, grave II.

60 Van Bostraeten 1972, 69–70 suggests that cremation graves become more frequent toward the north, until cremation necropolises occur exclusively in Friesland. The author intimates that this is apparent after a cursory reading of Ypey 1959 – a somewhat exaggerated view, since of the findspots mentioned of Merovingian cemeteries and stray graves in Friesland, only two are cremation necropolises, one combines cremation and inhumation, one concerns inhumation graves only, and the three stray finds indicate individual graves. De Boe 1970, 113; Janssens 1964, 95; Rosssens 1968, 17.

61 Van Es 1968, 20.

62 De Boe 1970, 113; Roosens 1968, 11.

GRAVE INVENTORY

(measurements in centimetres; plans of the graves are drawn scale 1:50)

*Grave I* (fig. 3)

orientation: SSW–NNE or NNE–SSW

sex: unknown

grave pit: rounded rectangular, steep-walled, 270 × 180

depth: 19 = 22.04 m + NAP<sup>63</sup>

coffin: rectangular, c. 220 × c. 130; on two cross-beams, l. 180, 15 × 14<sup>64</sup>; long sides projected c. 10 cm beyond short sides

grave finds:

a wall-fragment of globular shoulder of grey rough-walled pot, wheel-thrown, fairly hard baked, slightly tempered clay – no. 1 (9 cm above the floor)

b square belt-mount, bronze, fragmentary, with double row of grooves, four partially conserved rivets – no. 2 (on floor) (fig. 26: 1)

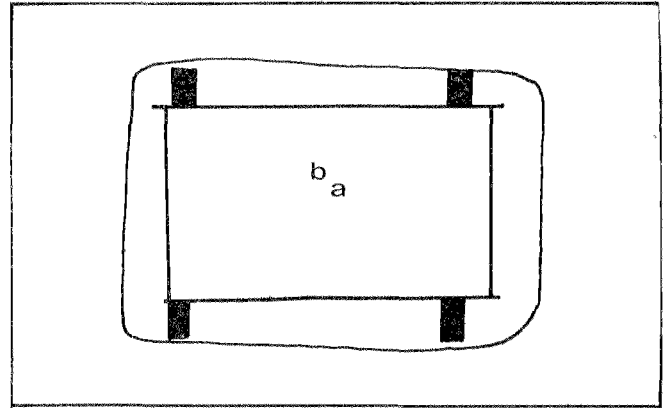


Fig. 3 Veldhoven: grave I

*Grave II* (fig. 4)

orientation: SW–NE

sex: unknown

grave pit: rectangular, steep-walled, 265 × 190

depth: 80 = 21.33 m + NAP

coffin: flattened wedge-shaped, c. 200 × 123/100; on two cross-beams, l. c. 170, 13 × ?; long sides in NE projected c. 10 cm beyond the short, at c. 40 cm above the floor of the grave

plundered?

grave finds:

a narrow, rectangular, iron fragment, probably of a knife – no. 3 (c. 65 cm above floor) (fig. 26: 2)

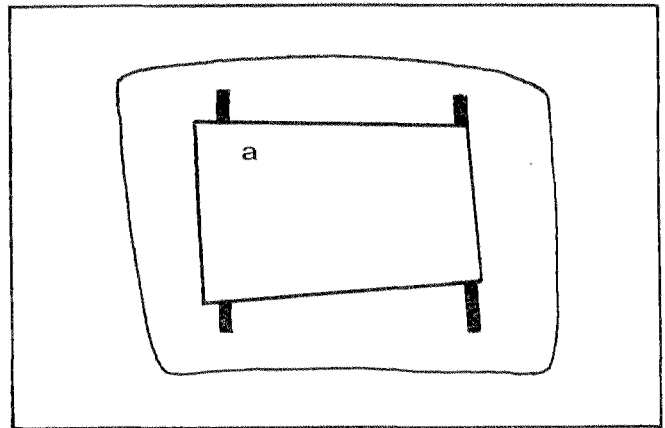


Fig. 4 Veldhoven: grave II

*Grave III* (fig. 5)

orientation: SW–NE

sex: female

grave pit: rectangular, steep-walled, 260 × 194

depth: 56 = 21.38 m + NAP

coffin: flattened wedge-shaped, c. 235 × 112/100, on two cross-beams, l. 152 and 164, 15 × 15

plundered

grave finds:

a disc brooch, bronze, undecorated; on reverse severely decayed attachment strip for the pin, on which a rivet is visible – no. 24 (from top of coffin-fill) (fig. 26: 3)

b buckle, iron damascened loop, plate largely decayed – no. 25 (c. 35 cm above floor) (fig. 26: 4)

c oxydized iron fragment with perforation for rivet, probably

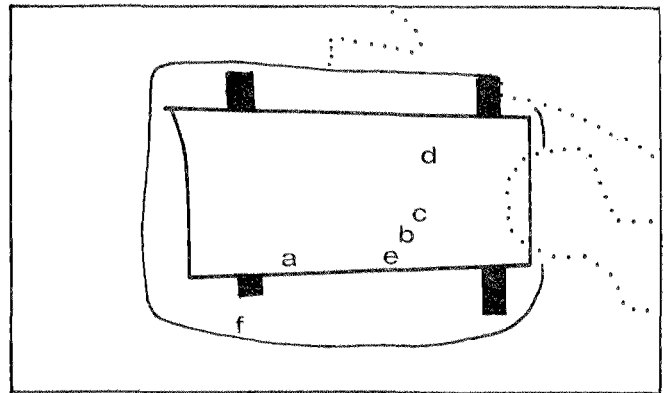


Fig. 5 Veldhoven: grave III

63 The depth of the pits is measured from the highest excavation level.

64 In cases where the length, width, and thickness of the cross-beams are mentioned, the measurements of the cross-beam in the sw part of the grave are given first.

belonging to the buckle *b* – no. 26 (*c.* 6 cm above the floor)  
*d* small folded plate, iron, fragment of belt-mount? – no. 28 (on floor)  
*e* four strongly oxydized iron fragments, probably of a small knife – no. 23 (from top of coffin-fill)  
*f* wall-fragment of (Bronze Age?) pottery – no. 27 (from bottom of coffin-fill)

*Grave IV* (fig. 6)

orientation: SW–NE

sex: child

grave pit: rectangular, steep-walled, 230 × 155

depth: 56 = 21.57 m + NAP

coffin: rectangular, 144 × 65; on two cross-beams, l. 145 and 115, 10 × ?; tooth and molar in sw of coffin

grave finds:

*a* complete dark-grey/black, lightly polished, biconical pot, wheel-thrown, red-brown in section, particularly evident in the severely damaged base; on shoulder four horizontal rows with rolled stamp ornament, each row consisting of three tiers of small rectangles – no. 9 (on floor) (fig. 26: 5).

The central part of this grave, in which a considerable amount of metal remains was found, was removed to the laboratory before their exact position could be established. In the course of further investigations finds *b-l* came to light. The position of the finds was minutely recorded, with the exception of *e, h, l*, which are listed as 'stray.'

*b* severely oxydized rod, iron, probably arrow-head – no. 10:7

*c* decayed knife, iron with part of wooden handle (l. 18.6, w. 2.5–3), lightly curved on both sides, traces of textile on surface – no. 10:1 (fig. 26: 7)

*d* severely oxydized iron fragment, probably of a knife (l. 9.1, w. 1.4) – no. 10:10

*e* triangular plate of buckle, bronze, serrated base, rounded end, with traces of leather and textile (see appendix p. 329) – no. 10:11a (fig. 26: 6)

*f* severely oxydized buckle, iron with fixed rectangular plate and oval loop, on reverse traces of textile (see appendix), leather and wood – no. 10:4 (fig. 26: 8)

*g* belt-mount, bronze, straight base, rounded end, textile traces on surface (see appendix) – no. 10:6 (fig. 26: 14)

*h* two belt-mounts, bronze, straight base, rounded, finished with flat, round button – no. 10:11b (fig. 26: 11)

*i, j, k,* three narrow strap-ends, bronze, straight base with two rivets, rounded end, with leather and textile traces (see appendix); *k* with part of thin leather strap on reverse – nos. 10:2, 3, and 8 (fig. 26: 10, 12, 9)

*l* small unworked flintstone – no. 10:11c

*Grave V* (fig. 7)

orientation: SW–NE or NE–SW

sex: unknown

grave pit: rounded rectangular, steep-walled, 270 × 230

depth: 90 = 21.23 m + NAP

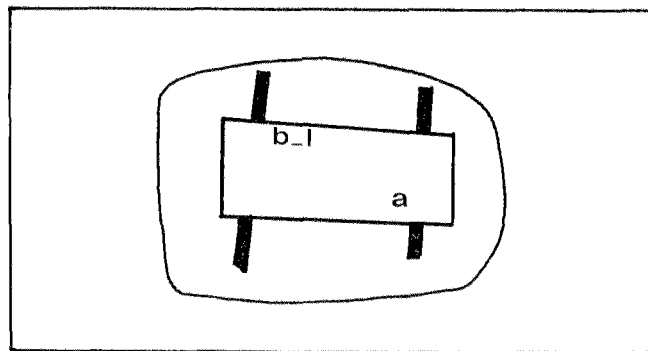


Fig. 6 Veldhoven: grave IV

coffin: broad rectangular 230 × 106, on two cross-beams, l. *c.* 180, *c.* 10 × ? long sides projected beyond the short sides, and the short sides beyond the long sides.

plundered

grave finds:

*a* three rim, four wall and one base-herd of black, lightly polished biconical pot; wheel-thrown; grey in section, brittle; weak carination on belly; on shoulder six horizontal, irregularly placed rows of rolled stamp ornaments, closed at the neck by a relief band. The stamp ornament, extending over 13 1/2 cm, consists of horizontal, diagonally crossed, slanting, horizontal and vertical crossed, and again diagonally crossed lines – no. 5 (30 cm above the floor) (fig. 27: 1)

*b* 12 severely oxydized iron fragments – no. 6 (30 cm above the floor)

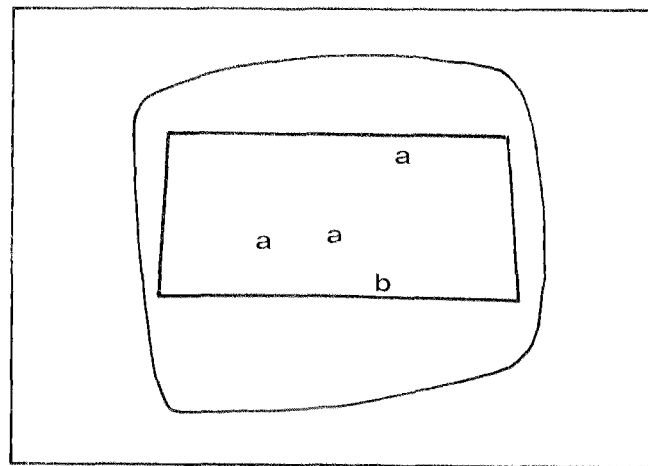


Fig. 7 Veldhoven: grave V



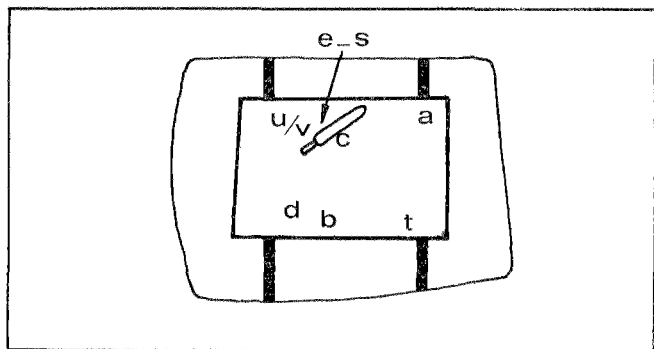


Fig. 8 Veldhoven: grave VI

*Grave VI* (fig. 8)

orientation: SW-NE

sex: child

grave pit: rounded rectangular, steep-walled, 210 × 160

depth: 49 = 21.55 m + NAP

coffin: wide rectangular 140 × 90 on two cross-beams, l. 162, 6/8 × 10

Part of this grave was removed to the laboratory before its exact position was recorded. In the course of further examination finds *c* and *e-s* came to light. The position of the finds was accurately recorded, with the exception of *f* which is listed as 'stray.'

grave finds:

*a* complete dark-grey, polished biconical pot, wheel-thrown; grey in section; fairly sharp transition from belly to shoulder; on upper shoulder an irregular, *c.* 3 mm-wide moulded band, above which a shallow groove; slanting, everted rim, slightly oval mouth – no. 42 (just above floor) (fig. 27: 2)

*b* complete, red/brown, globular pot; wheel-thrown; tempered with gravel grit. Rough thick turning-ring where shoulder and cylindrical neck meet – no. 43 (just above floor) (fig. 27: 3)

*c* sax, iron with part of grip-straps, around which wood traces, on blade fragments of the decorated scabbard; on the side of scabbard bronze rivets and rivet-heads, which for the most part were not conserved; on the bottom of the sax textile traces – no. 47:1 (fig. 27: 4)

*d* small arrow-head, iron, with closed socket and slender oval blade, traces of wood in the socket – no. 44 (fig. 27: 8)

*e* buckle, bronze, with fixed triangular plate and oval loop – no. 47:17 (fig. 27: 13)

*f* buckle, bronze, open-worked triangular plate and oval loop with iron tongue, with leather fragments – no. 47:18 (fig. 27: 15)

*g* triangular plate of buckle, iron, with three rivets, textile-remains on surface – no. 47:13 (fig. 27: 14)

*h-m* six belt-mounts, bronze, on the reverse of four fragments of two leather straps; base mainly straight, end rounded with flat

circular boss, one specimen with worked base – nos. 47: 4, 9, 10, 12, 13, and 16 (fig. 27: 11, 12, 9, 10)

*n-s* six strap-ends, bronze, of different lengths (3.9–7.2), five specimens with split base, in which traces of leather, attached with two rivets; traces of textile on top and bottom (see appendix); one specimen attached by means of strap with short, broad bronze mount-plate with straight base and rounded end with flat circular boss – nos. 47: 7, 8, 10, 11, 14, and 15 (fig. 27: 22, 21, 19, 20, 18, 17)

*t* iron repairation fragment of wooden bucket, bent rim with three pairs of iron rivets – no. 45 (fig. 27: 16, drawn upside down)

*u* dark-green, opaque glass, barrel-shaped, decorated with yellow, red, and light-green glass dots – no. 46 (fig. 27: 6)

*v* yellow/brown, opaque glass bead, biconical, in the middle some irregular lines – no. 46 (fig. 27: 5)

*w* dark-brown, opaque glass bead, cylindrical, with zigzag line of white glass, two irregular lines of yellow glass along side – no. 78 (stray from fill) (fig. 27:7)

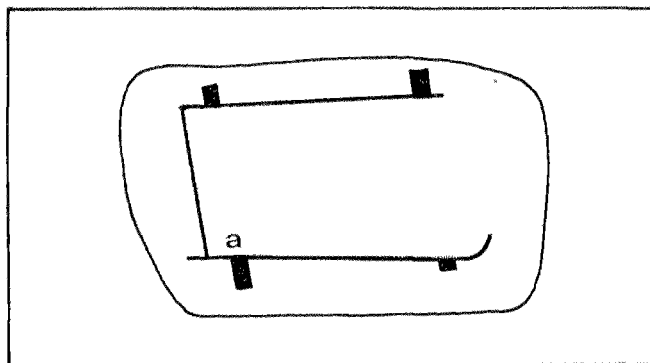


Fig. 9 Veldhoven: grave VII

*Grave VII* (fig. 9)

orientation: SW-NE

sex: female

grave pit: rounded, steep-walled, *c.* 275 × 164

depth: 42 = 21.62 m + NAP

coffin: broad rectangular, *c.* 180/190–104, on two cross-beams, l. 140, 10 × 8 and 14 × 11

grave find:

*a* half opaque, ring-shaped, blue glass bead – no. 30 (on cross-beam) (fig. 28: 1)

*Grave VIII* (fig. 10)

orientation: SW-NE

sex: male

grave pit: rectangular, steep-walled, 264 × 205

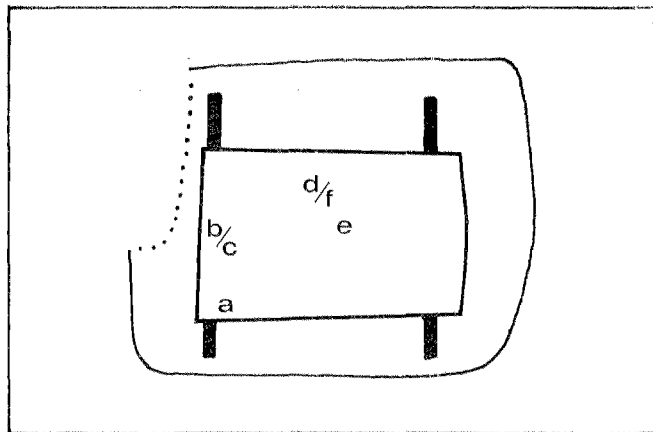


Fig. 10 Veldhoven: grave VIII

depth: 14 = 21.74 m + NAP

coffin: flattened wedge shaped, 180 × 118/108; on two cross-beams, l. 172, 8 × 6/8

plundered?

grave finds:

*a* base-fragment of grey rough-walled pot, wheel-thrown, hard baked, tempered with gravel grit – no. 76 (on floor)

*b* bent iron arrow-head with solid tip and closed socket, in which wood remains – no. 77 (fig. 28:6)

*c* round iron split socket, in which corroded wood traces, possibly of a second arrow-head; at the wide end a perforation for a peg to attach wooden shaft to socket – no. 77 (on floor) (fig. 28: 5)

*d* belt-mount, bronze, with leather traces – no. 68 (on floor) (fig. 28: 3)

*e* strap-end, bronze, straight base with flat bronze rivet rounded end – no. 67 (on floor) (fig. 28: 4)

*f* rivet boss, bronze, decorated with horizontal and vertical grooves, some crossed, surrounded by pearl-bead ornament, on reverse remains of square rivet – no. 68 (on floor) (fig. 28: 2)

*Grave IX* (fig. 11)

orientation: SW-NE or NE-SW

sex: unknown

grave pit: rectangular, steep-walled, 230 × c. 150

depth: 31 = 21.77 m + NAP

coffin: narrow, rectangular, 230 × 64 on two cross-beams, l. 64, 6 × 8 and 5 × 6

plundered?

grave finds:

*a* five unidentifiable iron fragments – nos. 48, 49, and 52 (from 15 cm above the floor and lower)

*b* two unidentifiable iron fragments – no. 50 (15 cm above floor from grave-fill)

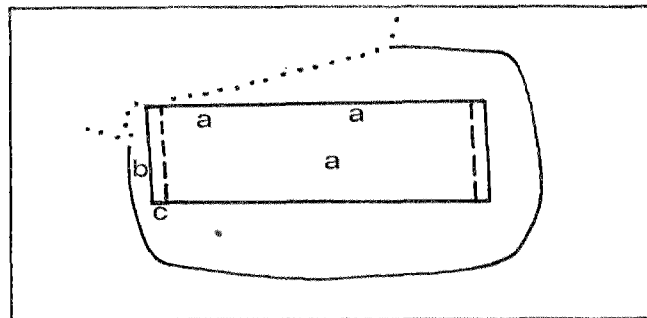


Fig. 11 Veldhoven: grave IX

*c* human cremation remains (15 cm above floor from grave-fill) – no. 51

*Grave X* (fig. 12)

orientation: SW-NE

sex: female

grave pit: elongated, rounded rectangular, steep-walled, 222 × 102

depth: 23 = 21.88 m + NAP

coffin: long, narrow, 200 × 43; in sw part remains of skull and some teeth and molars

grave finds:

*a* complete, grey, polished pot, wheel-thrown, fine clay, arched transition from belly to shoulder, on the belly traces of vertical polishing, on the shoulder irregular spiralling grooves, closed at the top by a likewise spiralling thickening, crudely polished, conical neck – no. 32 (on floor) (fig. 28: 19)

*b* complete, orange-brown, on exterior vaguely polished, fairly rough-walled bowl, wheel-thrown, tempered with gravel and pottery grit, with foot, at neck spiral-shaped thickened turning-ring – no. 33 (on floor) (fig. 28: 20)

*c* triangular plate of buckle, iron, severely damaged, with traces of damascening, three rivets, rounded end – no. 39 (just above floor) (fig. 28: 13)

*d* four rectangular, slightly convex belt mounts, bronze, flattened rims, flat rivets at the corners, in the centre two perforations

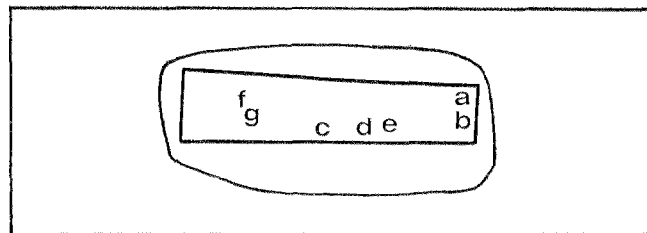


Fig. 12 Veldhoven: grave X

of different size, no corresponding perforations in the leather and textile remains found in association with them (see appendix) – nos. 35–38 (on floor) (fig. 28: 15–18)

*e* strap-end, bronze, straight base with two flat rivets, rounded end, partly decorated with row of scratched grooves – no. 34 (on floor) (fig. 28: 14)

*f* 26 beads, 25 glass and one amber: 1, 3 dark-blue, transparent, consisting of two and three ring-shaped segments, respectively; 2, 6, 13, 14, pale-blue, transparent, spirally turned; 15 pale-blue, transparent, made up of two cylindrical segments; 9 pale-blue, opaque, five-sided; 7 yellow, transparent, ring-shaped; 25, 26, yellow, opaque, made up of 2 and 5 segments, respectively; 20–24 yellow, opaque, spirally turned; 4, 5, yellow, opaque, made up of two cylindrical segments; 19 yellow, opaque, shiny, cylindrical; 10 dark red, opaque, made up of two cylindrical segments; 11, 12 dark red, opaque, cylindrical; 16 dark red, opaque, cylindrical; 17, 18 red-brown, opaque, ring-shaped, on which lines of yellow glass paste; 8 amber, almond-shaped (near the skull fragments) (fig. 28: 11)

*g* barrel-shaped amber bead – no. 31 (on floor) (fig. 28: 12)

Finds *e*, *d*, *c* lay in a NE–SW oriented row, in the centre of the coffin; they belong to a belt, in association with which also textile remains were found (no. 40). The description of these finds starts from the NE.

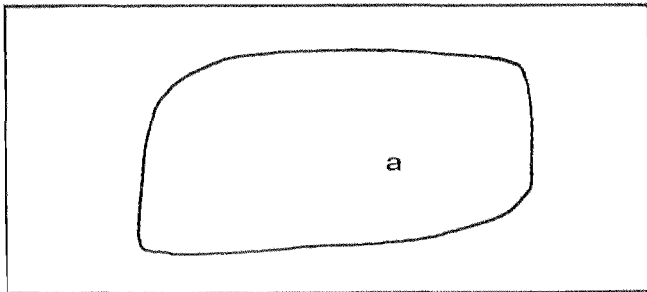


Fig. 13 Veldhoven: grave XI

*Grave XI* (fig. 13)

orientation NE–SW

sex: unknown

grave pit: rounded rectangular, steep-walled, 250 × c. 120

depth: 39 = 21.64 m + NAP

coffin: no traces of coffin

grave finds:

*a* dark-red, opaque glass bead, cylindrical – no. 29 (on floor) (fig. 28: 7)

*Grave XII* (fig. 14)

orientation: SW–NE or NE–SW

sex: unknown



Fig. 14 Veldhoven: grave XII

grave pit: one corner only was cut through, the rest was disturbed by road construction work

depth: c. 3 = 21.87 m + NAP

coffin: unknown

grave finds:

*a* wall and base-shoulder of patchy, black/grey, polished biconical pot, wheel-thrown, grey in section, fine sandy ware; at the base of shoulder three horizontal shallow grooves, and above them a row of stamped impressions at varying heights; one complete stamp: double row of six vertically placed rectangles; shoulder enclosed at the top by relief band – no. 64 (on floor) (fig. 28: 10)

*b* oval buckle, bronze, the base of the tongue is folded round the loop – no. 64 (on floor) (fig. 28: 9)

*c* rectangular buckle, bronze, flattened sides, tongue-base folded round one of the long sides – no. 64 (on floor) (fig. 28: 8)

*Grave XIII* (fig. 15)

orientation: SW–NO or NE–SW

sex: unknown

grave pit: rectangular, steep-walled, minimally 190 × 190

depth: 52 = 21.35 m + NAP

coffin: broad rectangular, minimally 106 × 130, on at least one cross-beam, l. 196, 10 × 10

plundered; cut through by grave XIV

grave finds:

*a* one wall- and two rim-sherds of grey, vaguely polished pot, wheel-thrown, soft baked, of fine clay considerably aerated, at transition of shoulder and neck a relief band, slanting everted

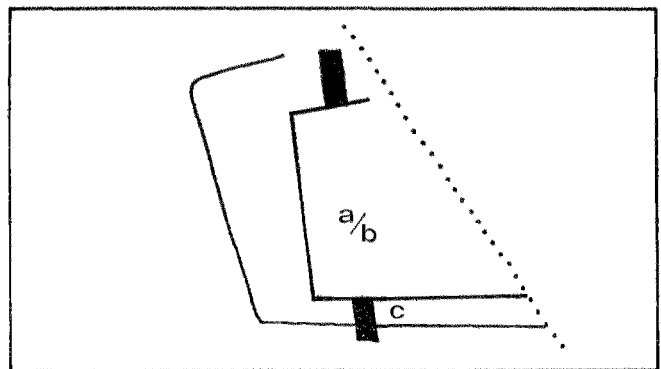


Fig. 15 Veldhoven: grave XIII

rim, one rim-shoulder fits the rim from grave XIV – no. 69 (from top of grave-fill) (cf. fig. 28: 24)

*b* wall fragment of grey ware, wheel-thrown, hard baked, tempered with gravel grit – no. 69 (from top of grave-fill)

*c* strongly oxidized iron fragment – no. 79 (bottom of fill)

*Grave XIV* (fig. 16)

orientation: SW–NE

sex: female

grave pit: rounded rectangular, steep-walled, minimally 240 × 120

depth: IO = 21.77 m + NAP

coffin: hollowed-out tree-trunk 200 × 36

plundered

grave finds:

*a* rim-shoulder and six wall-shoulders of grey, vaguely polished pot, wheel-thrown, soft baked, fine ware, considerably aerated, relief band between shoulder and neck, slanting everted rim, the rim-shoulder fits one of the rims from grave XIII – nos. 65, 70, and 74 (from top to bottom of coffin-fill) (fig. 28: 24)

*b* wall-fragment of black polished pot, wheel-thrown, fine clay, grey in section – no. 66 (just above floor)

*c* rim/wall-fragment of orange-brown, polished dish, wheel-thrown, fine clay, sharp shoulder indentation, slanting everted rim with thickening on exterior – no. 71 (on floor) (fig. 28: 25)

*d* two flat iron fragments, of knife? one with rusted-on scrap of decorated leather – no. 66 (just above floor) (fig. 28: 22)

*e* slightly oval ring, diameter 4.3, iron, with flat iron staff rusted onto it; part of a snaffle? – no. 66 (just above floor)

*f* plate and lump of iron, – no. 73 (on floor) (fig. 28: 21)

*g* two severely oxidized iron fragments, largely unrecognizable; textile remains on both top and bottom (see appendix) – no. 75 (on floor).

*h* seven glass beads: 1 blue-green, transparent, ring-shaped; 2 blue-green, transparent, ring-shaped segmented; 3 brown, opaque, slightly pear-shaped, with spiralling wide white thread of glass; 4-6 yellow, opaque, slightly ring-shaped, segmented; 7 yellow, opaque, ring-shaped – no. 72 (on floor) (fig. 28: 23)

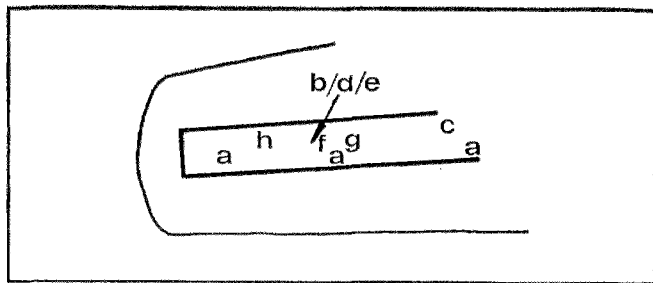


Fig. 16 Veldhoven: grave XIV

*Grave XV* (fig. 17)

orientation: SW–NE or NE–SW

sex: unknown

grave pit: rounded rectangular, c. 295 × 110/160

depth: SW: 33 = 21.79 m + NAP, NE: IO = 21.80 m + NAP

coffin: long, narrow, c. 230 × c. 64

grave finds:

*a* complete, black, lightly polished biconical pot, wheel-thrown, coarse sandy clay, brown/grey in section, sharp carination, on shoulder spiral-shaped rolled stamp decoration (7–8 rows), stamp consisting of a triangle, three grooves parallel with the long side, a reversed triangle and another three grooves parallel with the long sides, above which a fairly angular band, slanting everted rim – no. 15 (c. 10 cm above floor) (in this pot the glass beaker *d* was placed) (fig. 29: 2)

*b* oval buckle, bronze, undecorated, with two scraps of leather, the iron tongue turns on the notched loop – no. 14 (c. 10 cm above floor) (fig. 29: 3)

*c* disintegrated oxidized iron fragment, probably of a rivet – no. 20

*d* complete bell-beaker of yellow-brown glass with countless bubbles, wall with vertical ribs – no. 15 (placed in pot *a*) (fig. 29: 1)

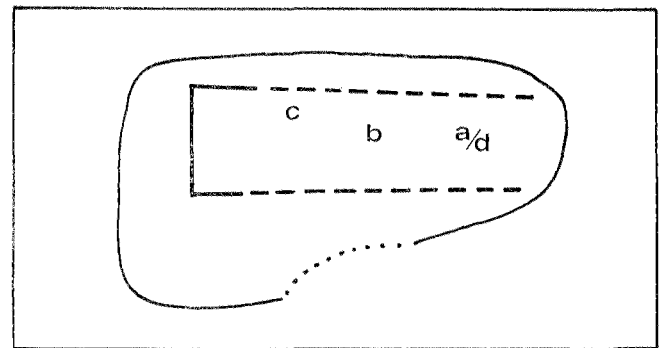


Fig. 17 Veldhoven: grave XV

*Grave XVI* (fig. 18)

orientation: SW–NE

sex: female

grave pit: large, rectangular, 270 × c. 196

depth: SW: 33 = 21.77 m + NAP, NE: 9 = 21.79 m + NAP

coffin: narrow rectangular, 164 × 70, on two cross-beams, l. 122 and 84, 8 × ?

grave finds:

*a* complete, grey-brown, polished, biconical pot, wheel-thrown, sandy clay, brown in section, fairly round transition from carination to squat shoulder, on shoulder spiral band with coarse wheel stamp decoration, stamp consisting of a series of

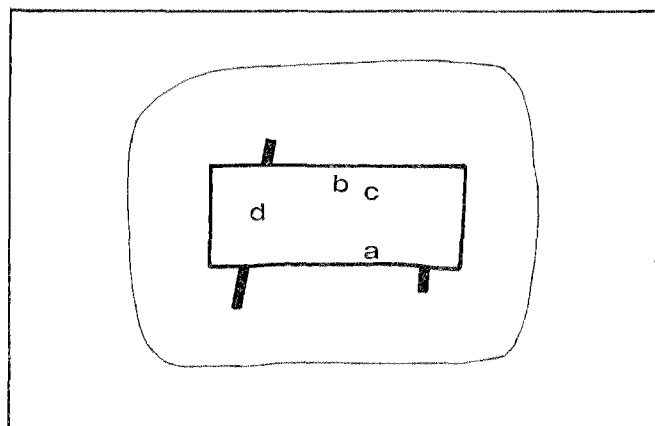


Fig. 18 Veldhoven: grave XVI

three superimposed rectangles, beneath the virtually cylindrical neck and irregular groove – no. 18 (just above floor) (fig. 29: 6)  
*b* rim-fragment of (Bronze Age?) pottery – no. 19 (on floor) (fig. 29: 4)  
*c* strap-end, iron, oxydized, with textile remains (see appendix) – no. 21 (on floor)  
*d* light-green, opaque glass bead, ring-shaped – no. 22 (on floor) (fig. 29: 5)

*Grave XVII* (fig. 19)

orientation: SW-NE

sex: male

grave pit: rounded rectangular, minimally 130/140 × c. 130

depth: 20 = 21.90 m + NAP

coffin: narrow rectangular (?), minimally 100 × 60; overcut by grave XVI

grave finds:

*a* spear-head, iron, with split socket, containing wood traces, fairly slender blade with lozenge-shaped section, oval – no. 17 (on floor parallel to coffin) (fig. 29: 7)

*b* axe, iron, with oval shaft-hole in which wood traces, blade

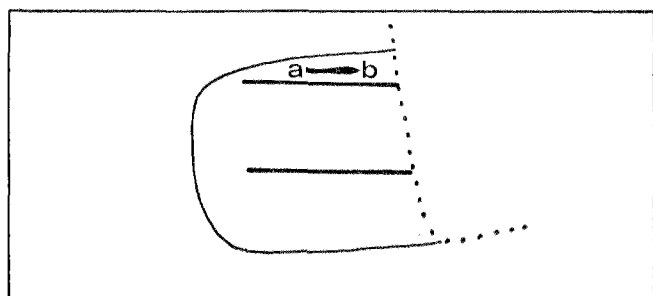


Fig. 19 Veldhoven: grave XVII

widens particularly at the bottom, both ends of the blade are broken – no. 16 (on floor) (fig. 29: 8)

*Grave XVIII*

orientation: SW-NE or NE-SW

sex: unknown

grave pit: minimally 100 × 110

depth: c. 3 = 22.81 m + NAP

coffin: ? on two cross-beams, l. 104 and 96, 12 × 6 and 10 × 2, 60 cm apart

*Grave XIX* (fig. 20)

orientation: SW-NE or NE-SW

sex: unknown

grave pit: rounded rectangular, wide, 215 × 143

depth: 23 = 21.72 m + NAP

coffin: small rectangular, 122 × 44

grave find:

*a* strongly oxydized buckle, iron, oval with textile traces (see appendix) – no. 55 (on floor) (fig. 29: 9)

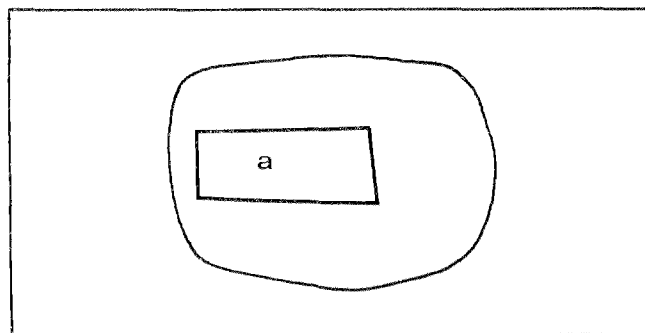


Fig. 20 Veldhoven: grave XIX

*Grave XX* (fig. 21)

orientation: SW-NE

sex: female

grave pit: rectangular, minimally 205 × 108

depth: 5 = 21.77 m + NAP

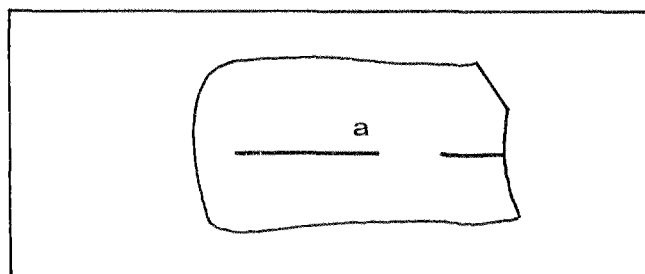


Fig. 21 Veldhoven: grave XX

coffin: minimally  $180 \times 50$ ? only the long, south side of the coffin, in two parts, was found  
plundered?

grave find:

*a* dark-blue, opaque glass bead, biconical – no. 59 (on floor)  
(fig. 29: 10)

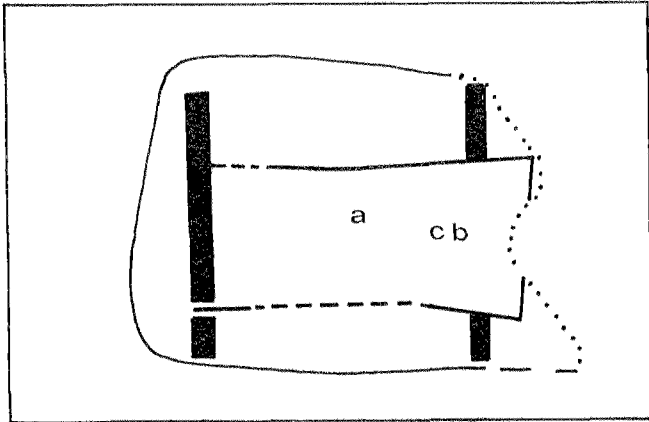


Fig. 22 Veldhoven: grave XXI

*Grave XXI* (fig. 22)

orientation: SW-NE or NE-SW

sex: unknown

grave pit: broad rounded rectangular, steep-walled, c.  $280 \times 208$

depth:  $37 = 21.53$  m + NAP

coffin: broad rectangular,  $220 \times 112$ ; on two cross-beams, l. 182 and 176,  $12 \times 13$

grave finds:

*a* buckle, bronze, undecorated, with oval loop and fixed, slightly triangular plate, the iron tongue folded through a perforation in the plate, two eyelets on the reverse – no. 58 (on floor) (fig. 29: 15)

*b* strap-end, in very poor condition, bronze, undecorated, probably straight base with two rivets, rounded end – no. 57 (on floor) (fig. 29: 16)

*c* oxydized iron fragment with long, straight flattened sides, of knife? l. 3.2, width 1.7, thickness 0.7 – no. 56 (just above floor)

*Grave XXII*

orientation: SW-NE or NE-SW

sex: unknown

grave pit: rectangular, steep-walled,  $262 \times 190$

depth:  $27 = 21.45$  m + NAP

coffin: broad rectangular,  $170 \times 104$ , on two cross-beams, l. 70 and 66,  $16 \times 8$ , and  $18 \times 2$ , the four walls cross at the corners, the long projecting sides in the NE are connected on the bottom by a beam running parallel to the short side.

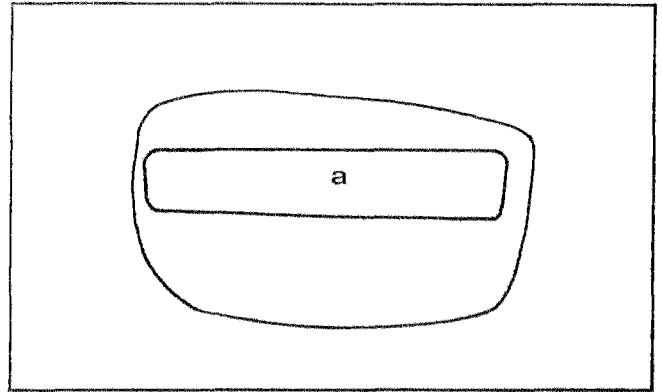


Fig. 23 Veldhoven: grave XXIII

*Grave XXIII* (fig. 23)

orientation: NE-SW

sex: unknown

grave pit: oval, steep-walled,  $268 \times 152$

depth:  $28 = 21.42$  m + NAP

coffin: hollowed-out tree-trunk,  $246 \times 48-40$

grave finds:

*a* knife fragment, iron, thin with full back and virtually straight cutting-edges – no. 62 (on floor) (fig. 29: 11)

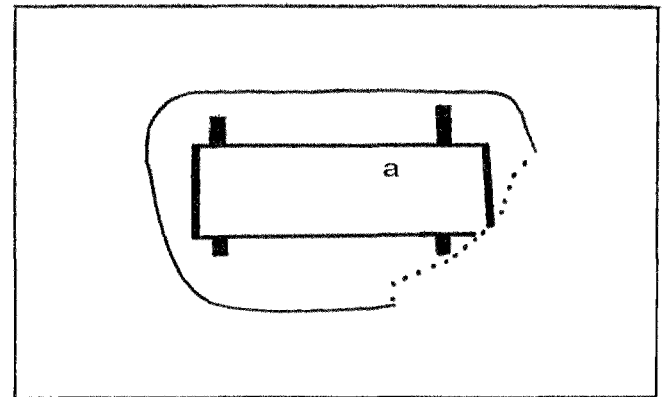


Fig. 24 Veldhoven: grave XXIV

*Grave XXIV* (fig. 24)

orientation: SW-NE or NE-SW

sex: unknown

grave pit: rounded rectangular,  $254 \times 142$

depth: NE:  $13 = 21.69$  m + NAP, SW:  $4 = 21.68$  m + NAP

coffin: narrow rectangular,  $189 \times 62$ , on  $2 \times 2$  cross-beams, sw:

l. 98 and 54, 10 × 5 and 7 × 4, NE: l. 104 and 36, 10 × 8 and 4 × c. 6

grave find:

*a* strongly oxydized knife, iron, curved back and straight cutting-edge, notched grip – no. 61 (just above floor) (fig. 29: 12)

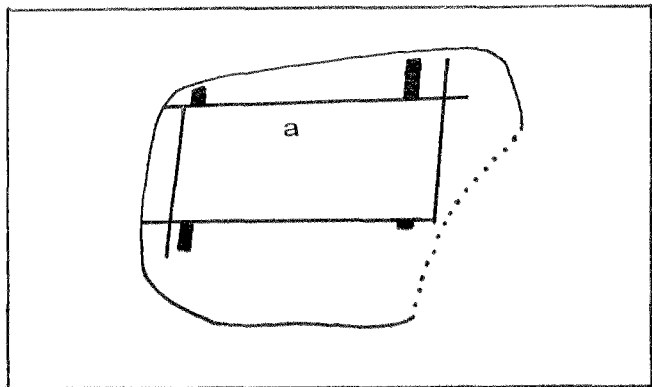


Fig. 25 Veldhoven: grave xxv

*Grave XXV* (fig. 25)

orientation: SW–NE

sex: female

grave pit: rounded rectangular, steep-walled, 244 × 176

depth: 24 = 21.47 m + NAP

coffin: narrow rectangular, 176 × 84, on two cross-beams, l. 120, 14 × 7/5; the sides protrude at some corners, not perceptible at all levels

grave find:

*a* opaque blue glass bead, slightly biconical with spiral-shaped red-brown glass thread – no. 63 (on floor) (fig. 29: 14)

*Grave XXVI*

orientation: SW–NE OR NE–SW

sex: unknown

grave pit: rounded rectangular, c. 230 × c. 135

depth: 18 = 21.53 m + NAP

coffin: narrow rectangular, 200 × c. 85 on two cross-beams, l. 145 and 110, c. 10 × c. 10, long sides possibly project beyond short

*Grave XXVII*

sex: female

grave pit: round, diam. 53

depth: 33 = 21.94 m + NAP; with human cremation remains of at least two individuals<sup>65</sup>

grave finds:

*a* bead of green, opaque glass, distorted by fire – no. 8 (fig. 29: 13)

*b* bead of blue, virtually opaque glass, decorated with oval red-brown dot, distorted by fire – no. 8.

*Stray finds*

From recently worked earth near the Oeienbosch dike:

*a* rim/wall sherd of grey-brown, rough-walled pot, wheel-thrown, tempered with gravel grit, hard baked, virtually conical, wide everted rim – no. 53. (fig. 29: 18)

*b* wall-herd of prehistoric ware – no. 54

*c* strip of bronze, with convex rivet and part of the rivet-perforation, between which two slanting grooves – no. 54

*d* human cremation remains – nos. 11, 12, 53

*e* four flints, one worked – nos. 13 and 60 (fig. 29: 17)

APPENDIX

Determination of the textile remains, by J. Ypey

*Grave IV*

*e* diamond twill, c. 13 Z- × c. 13 Z-spun threads to the cm; wool; diamond twill, c. 11 Z- × c. 10 S-spun threads to the cm; wool;

*f* diamond twill, 13 or 14 Z- × c. 13 Z-spun threads to the cm. Although the term diamond twill has been used with respect to the above fragments, none of the fragments exhibited a complete core of a diamond shape. This is partly due to the poor condition of some fabric remains and to the size of the fragments. There may well have been instances of herring-bone twill. The same applies to the fragments of 2/2 plain twill, since changes of direction may have occurred outside the fragment.

*g* plain weave?, Z- and S-spun, obscure.

*i* Three layers of fabric, probably of the same material: 2/2 plain twill (possibly part of diamond twill), c. 14 Z- × c. 11 S-spun threads to the cm.

*Grave VI*

*o* Diamond twill, c. 16 Z- × 15 S-spun threads to the cm; wool.

*r* 2/2 plain twill, c. 10 Z- × 8 S-spun threads to the cm; wool, probably the same material as *s*; due to the difference in tension in the weave, there may be slight variations in the number of warp and weft threads.

*s* 2/2 plain twill, c. 8 Z- × 8 S-spun threads to the cm; wool, probably the same material as *r*.

One stray fragment: as *o*.

Three stray fragments: as *r* and *s*.

*Grave X*

*d* 1) plain weave, c. 10 × 9 Z-spun threads to the cm;

2) plain weave, c. 14 × 9 Z-spun threads to the cm; wool

Stray: plain weave, 9/10 × 13 Z-spun threads to the cm; wool, – no. 40.

65 See note 44.

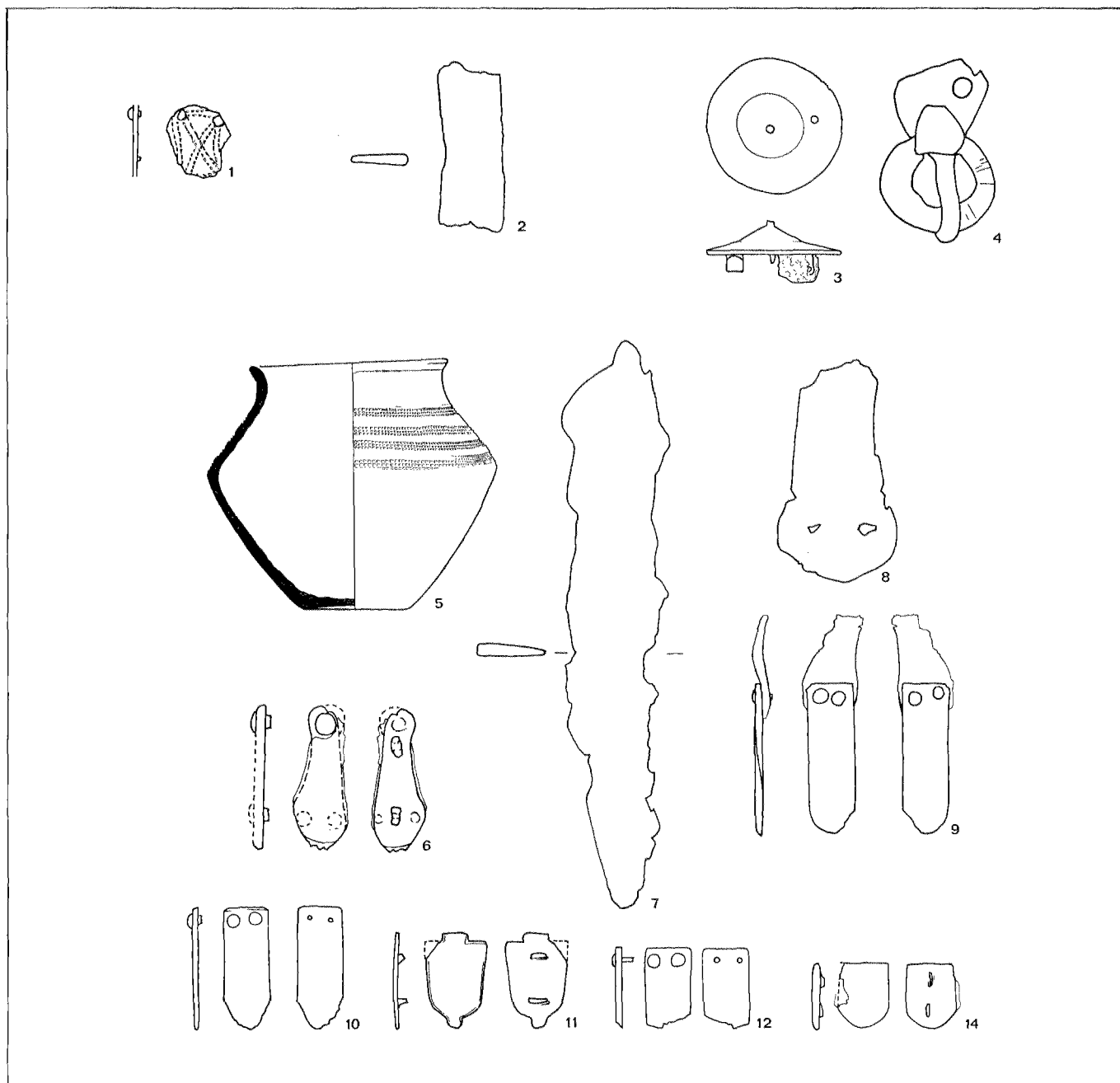
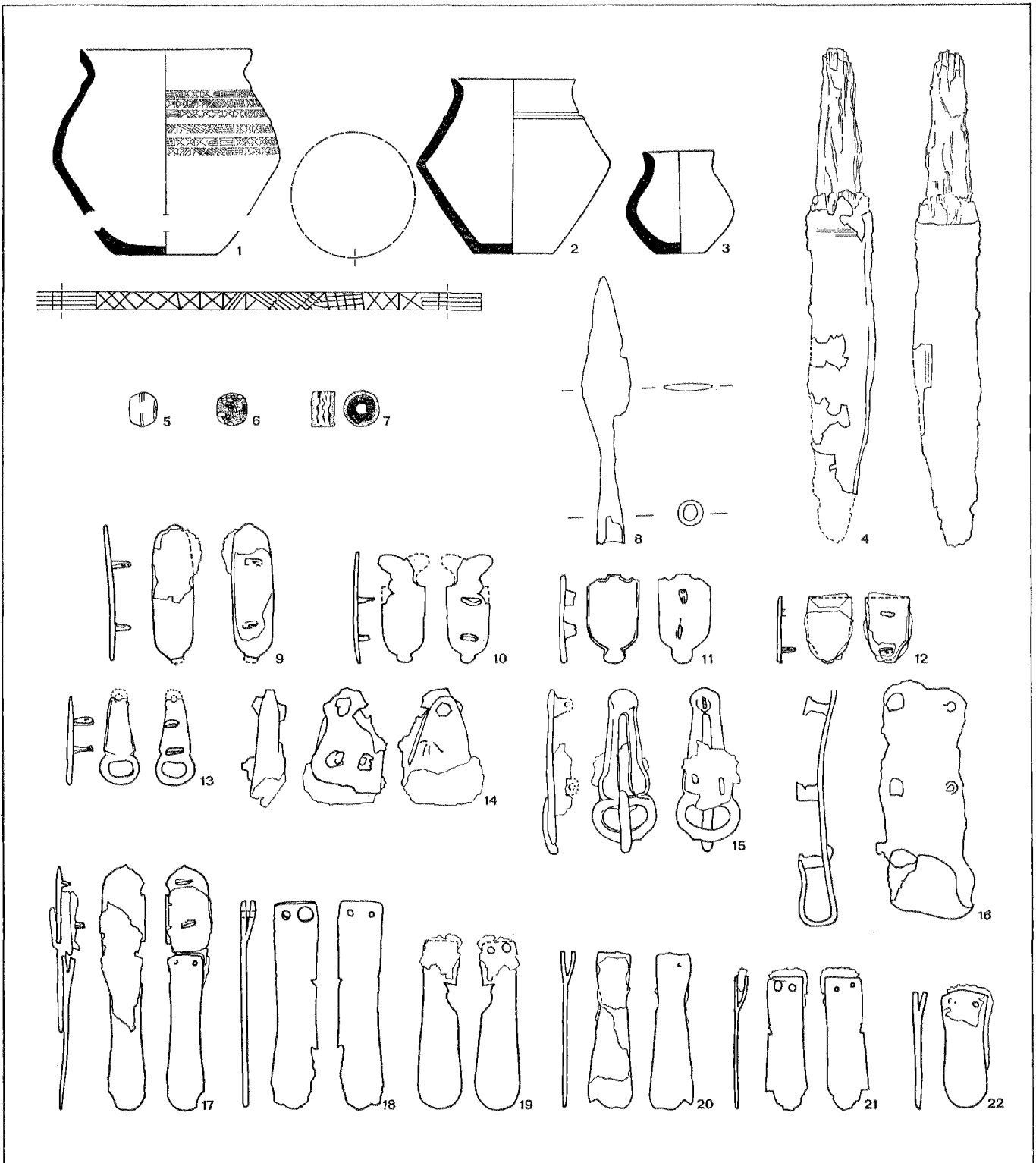


Fig. 26 Veldhoven. No. 1: grave I – no. 2: grave II – nos. 3-4: grave III – nos. 5-13: grave IV (no. 5 scale 1:4; nos. 1-4, 6-14 scale 1:2)

Fig. 27 Veldhoven. No. 1: grave V – nos. 2-22: grave VI (nos. 1-4 scale 1:4; nos. 5-22 scale 1:2)





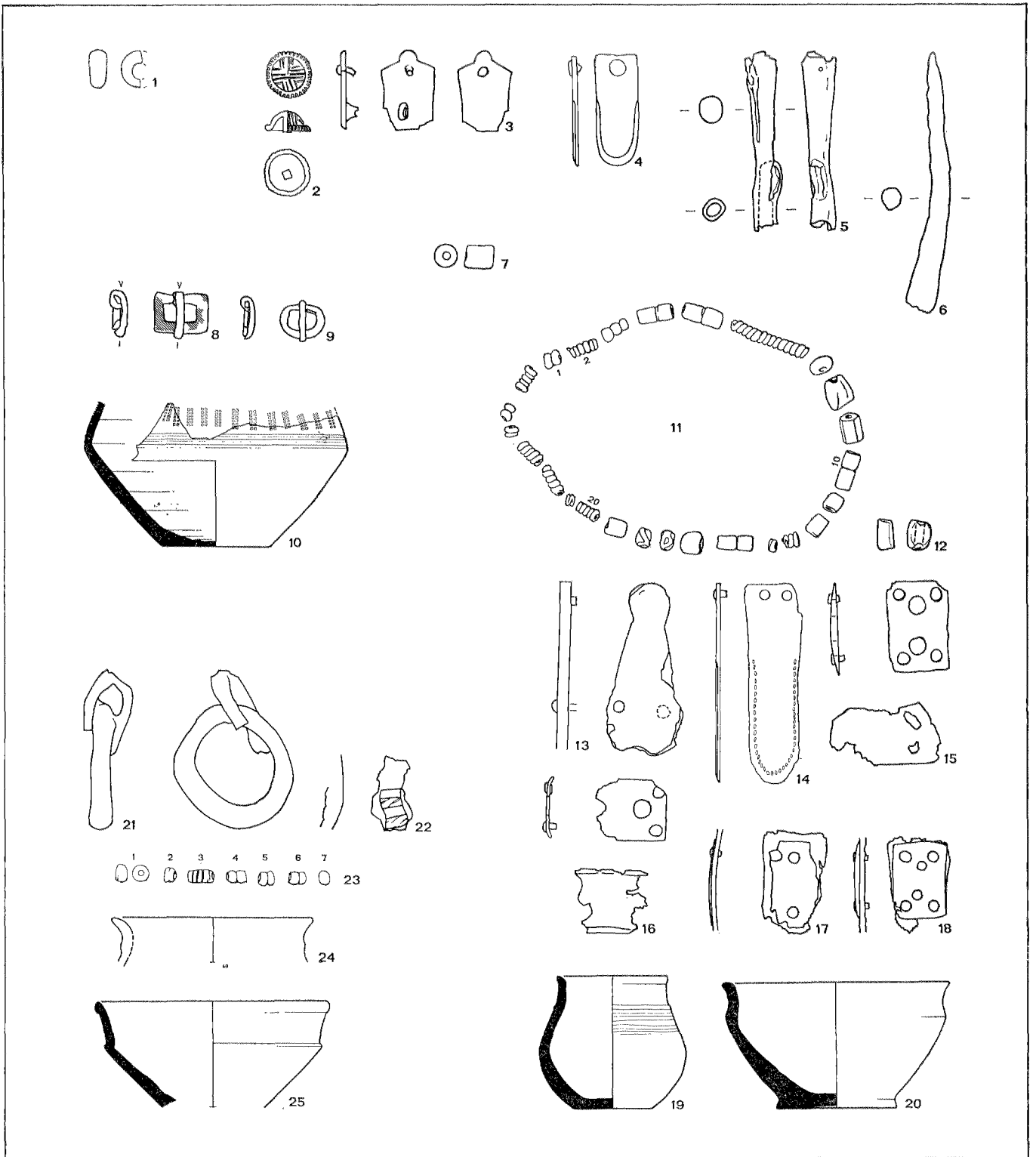


Fig. 28 Veldhoven. No. 1: grave VII – nos. 2–6: grave VIII – no. 7: grave XI – nos. 8–10: grave XII – nos. 11–20: grave X – nos.

21–25: grave XIV (nos. 10, 19–20, 24–25 scale 1:4; nos. 1–9, 11–18, 21–23 Scale 1:2)

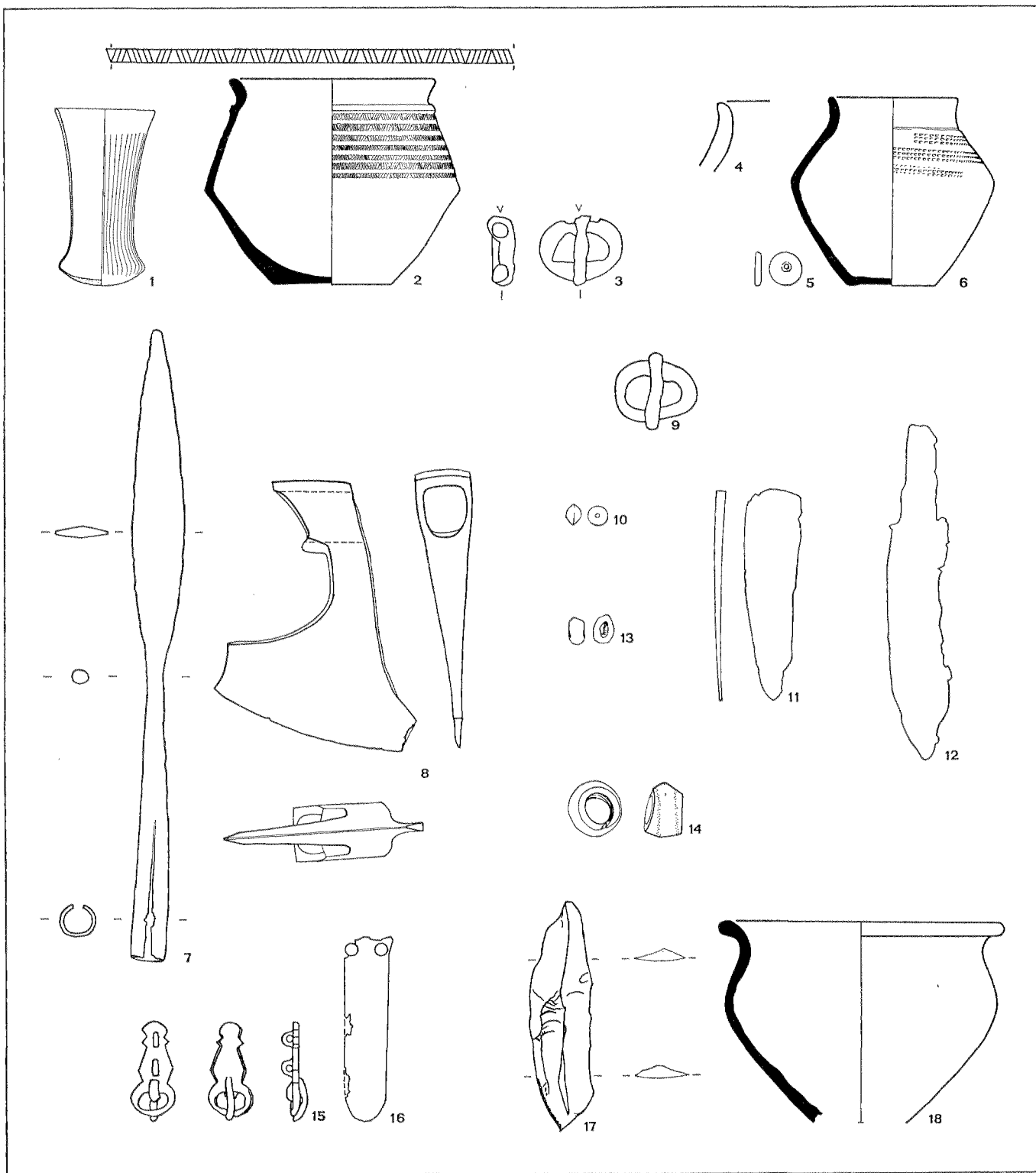


Fig. 29 Veldhoven. Nos. 1-3: grave xv - nos. 4-6: grave xvi - nos. 7-8: grave xvii - no. 9: grave xix - no. 10: grave xx - no. 11: grave xxiii - no. 12: grave xxiv - no. 13: grave xxvii - no.

14: grave xxv - nos. 15-16: grave xxi - nos. 17-18: stray finds (nos. 1-2, 6-8, 18 scale 1:4; nos. 3-5, 9-13, 15-17 scale 1:2; no. 14 scale 1:1)

*Grave XIV*

g 1) plain weave, c. 9/10 × 9 Z-spun threads to the cm; irregularly spun and woven:

2) severely damaged; possibly as 1);

3) plain weave, c. 6 × 8 Z-spun threads to the cm; thickness of the threads varies greatly, hence irregular fabric.

*Grave XVI*

c Plain weave, c. 11 × 11 Z-spun threads to the cm; tightly woven, probably linen.

*Grave XIX*

a 2/2 plain twill, c. 15 Z- × 15 S-spun threads to the cm

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ACKNOWLEDGMENTS

I wish to express my thanks to Mr G.A.C. Beex for his kind permission to publish this cemetery. I am grateful to Professor W.A. van Es for his valuable comments and advice.

Many thanks are due to Mr A.S. Knip (Institute for Anthropology, Utrecht) for the determination of the bones, and to Mr J. Ypey for the determination of the textile fragments; to Mr M.J.A. de Haan and G. Bergman (Eindhoven) for the cooperation in the field; to Mrs C.P.J. ter Burg, Mr A.J.M. van Campfort, A. Flonk, O. Goubitz, H.F. Wijnman, for the conservation and restauration of the finds; to H.J. Bloklander, H.M.C. de Kort, J.G. Lampe, H.S. Simon, W.A. van der Sluijs for the drawings; to Ina Rike, Amsterdam, for translating the text.

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# Terp Research; with Particular Reference to a Medieval Terp at Den Helder, Province of North Holland

figs. 1-4

o Dutch terp = dwelling mound

In times past Dutch archaeologists have played a leading part in terp research. The systematic, scientific approach of the terp problem was initiated in the Netherlands.<sup>1</sup> The first relatively large-scale excavations took place in the terp area of Groningen and Friesland, particularly in the village-mound of Ezinge.<sup>2</sup>

During the last twenty-five years, however, the centre of activities in this field has shifted towards northwestern Germany, where for the first time a terp has been excavated completely. The complete and multi-disciplinary excavation of Feddersen Wierde near Bremerhaven by the Niedersächsische Landesinstitut für Marschen- und Wurtenforschung will always remain a landmark in the evolution of archaeological research in general and of terp research in particular. Earlier research had contributed only partial and often very small excavations. It concentrated on general problems, such as the date of the terp culture, the origin and growth of the dwelling-mounds, their relation to the natural environment, and the features of their material culture (particularly house types and pottery). In this way a general picture of terp culture had been accomplished. The Feddersen Wierde excavation marks the beginning of a new period, because it provides by its completeness full and detailed information on the occupation history of the site and on the development of the settlement pattern – information which could be used to illuminate questions of a social and economic order.

This is not to say that from now on partial investigation has become outdated. Both small and large excavations will be necessary, not only to get a more all-round and

clearer picture of terp culture but also to reconstruct the occupation history of the terp area as a whole and of its constituent regions.

The contribution of the ROB to terp research consists of a number of mostly small excavations in the provinces Groningen (particularly Humsterland), and Friesland (particularly Oostergo, Westergo, and Barradeel), the northern part of the provinces of North Holland, and Zeeland.

The results of the investigations in the refuge hills of Zeeland are summarized in BROB 8, 1957-8. Most of the more important excavations in Friesland and Groningen have already been published completely or in part.<sup>3</sup> The investigation of Barradeel in the northwestern part of Friesland deserves special mention. It consisted of a series of observations in several of the terps of this region and had the character of a regional archaeological survey undertaken in combination with a multi-disciplinary study of the area. It is interesting not only for its results but also from a methodical point of view, regional surveys being among the most urgent needs of archaeology. The excavation at Oldehove in Groningen provides a second example of a terp in the northern Dutch coastal area which is not in fact a real terp but a substructure for a church. The other – and earlier – example of a church mound is the elevation at Dokkum, upon which the memorial church to St Boniface was built.<sup>4</sup> The excavations at Sneek-Stadsfenne have not yet been published in full. The preliminary reports, however, already show that the observations made at this site contain useful information regarding the occupation history during protohistoric

1 Waterbolk 1970.

2 Van Giffen 1936.

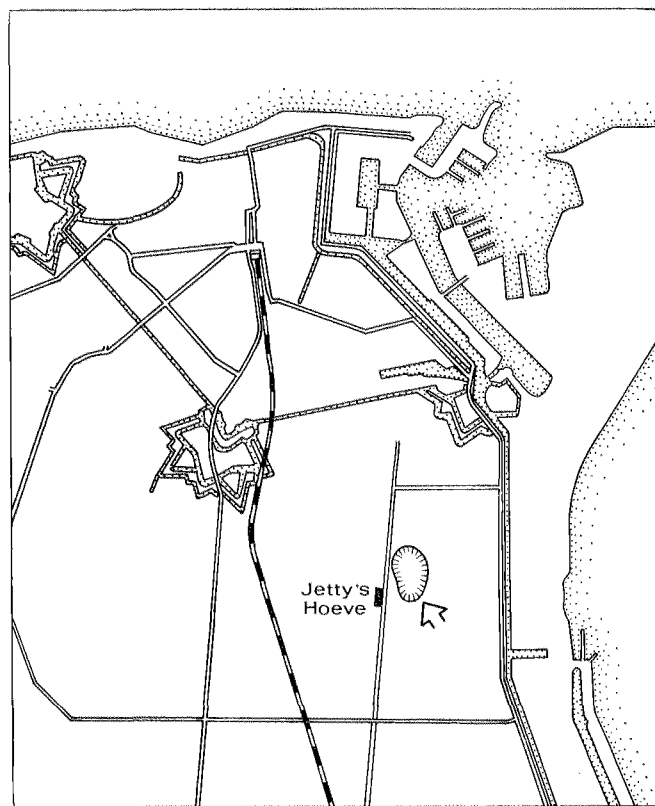
3 *Barradeel*: Halbertsma 1955. *Baarderadeel*: Halbertsma 1957. *Bornego*: Halbertsma 1962-3a. *Dokkum*: Halbertsma 1960-1.

*Oldehove*: Halbertsma 1962-3b. *Sneek-Stadsfenne*: Elzinga 1964; Elzinga/Halbertsma 1964; Halbertsma 1964. *Klein Gietens*: Modderman 1952.

4 Cf. for a contrast: Van Es/Miedema 1970-1.



Fig. 1 Den Helder: site of the terp Het Torp. Terp sketched in after Westenberg 1961, fig. 15; shape of terp is uncertain



times of this marginal area at the southeastern fringe of the Frisian terp district.

Small excavations in the terps of Warmenhuizen, Aven-dorp, and Schagen in North Holland suggested that terp formation in this area took place at a relatively late date: these terps did not start their evolution before the 10th century. If there had been previous – Roman period – inhabitation on the same site, as in the cases of Aven-dorp and Schagen, this had only been occupation at surface level and continuity between the earlier and later occupation could not be established.

The largest terp-excavation carried out so far by the ROB concerned the impressive dwelling-mound named Het Torp (also 't Dorp, Behouden Dorp, Vliedberg), which until recently was to be found to the southeast of Den Helder (North Holland) (fig. 1). The excavation took place from 22 March–26 May 1965, 6 September–

23 December 1965, and 1 March–8 April 1966. It had been preceded by a trial-excavation by the Institute of Pre- and Protohistory (IPP) of the University of Amsterdam. Here follows some more detailed information on this excavation about which only preliminary notes have appeared so far.<sup>5</sup>

Only a small part of the terp could be excavated (fig. 2). It lay in a Den Helder development scheme (De Schooten) and was condemned to disappear. The available time was used to dig a series of long and narrow trenches, *c.* 4 m wide and 200 m long, along the main axis of the monument (trenches 1–3). Other trial-trenches (4–16) were cut in the northern part of the terp. At the southern end a larger area was investigated (trenches 17, 22–24;

5 Halbertsma 1965; Van Es/Halbertsma 1965 and 1966.



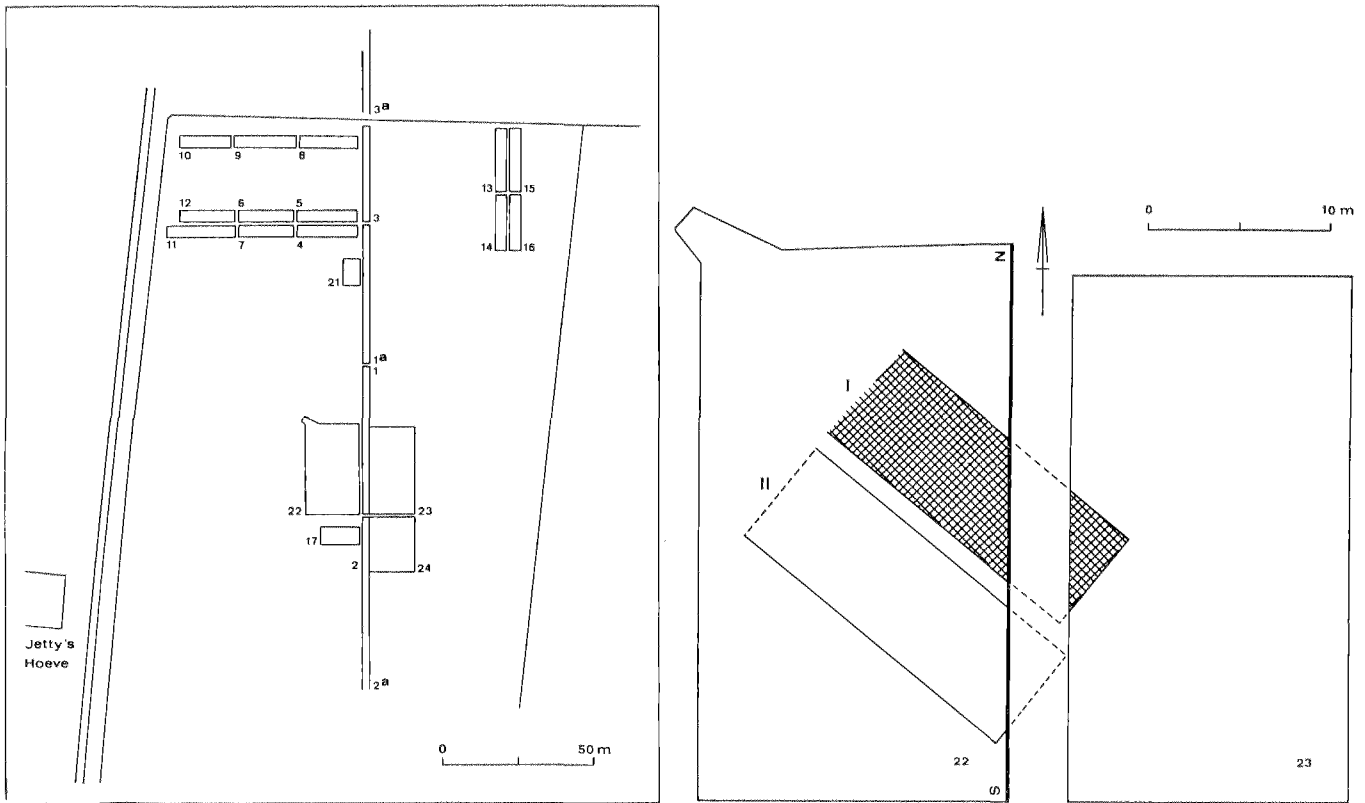


Fig. 2 Den Helder: excavation trenches. Trenches 22 and 23 with house sites I and II. For section N-S: cf. fig. 3

the excavation of 17 and 24 could not be completed; consequently, they did not provide any useful information).

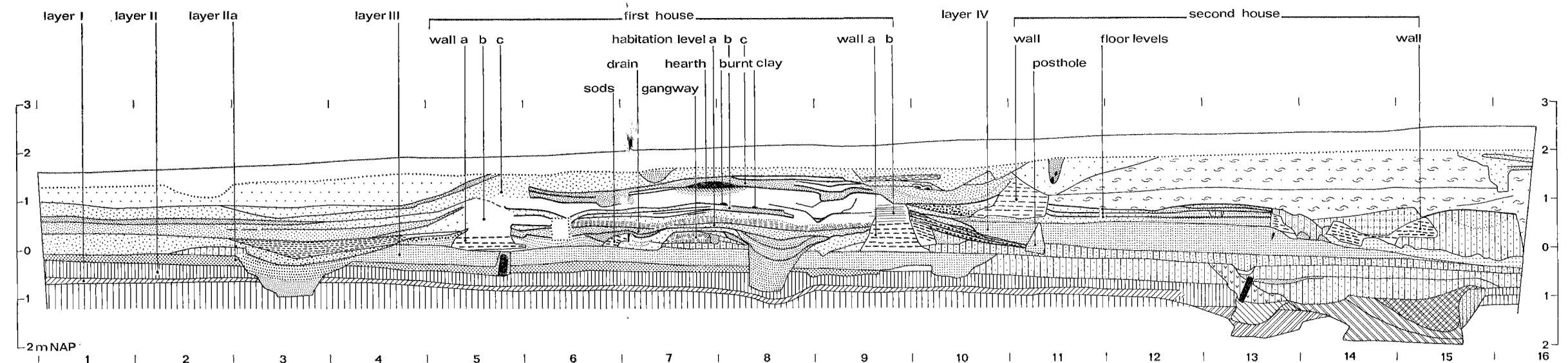
Because of the incompleteness of the excavation, many questions remain unanswered. The exact shape and extent of the terp are not known. Roads and ditches had already encroached upon the northern and western edges of the mound; its eastern edge has not been ascertained. Only the southern edge was found: in trench 2a the actual terp layers sloped gently down until well below NAP-level. Against this side dune sand had accumulated, part

of which, according to local information, had been dug away around 1954. Het Torp seems to have been a roughly oval elevation; its main axis was directed north-south and it was about 375 m long and 250 m wide.<sup>6</sup> Its highest point lay at the southern end, at the site of trenches 17, 22-24, where it reached a height of approximately 2.50 m + NAP. More to the north, at the site of trenches 4-16, a church of tuff-stone had been standing until at least the 16th century.<sup>7</sup> Thereafter, the church fell into ruins, though its cemetery remained in use until the beginning of the 19th century; the foundations of the church were

6 It had been sketched in by Westenberg on the topographical map scale 1:50,000: Westenberg 1961, fig. 15, east of Jetty's Hoeve.

7 This church occurs on a map of 1573 by Sgrooten reproduced by Westenberg (1961, kaartfoto 1).

Fig. 3 Den Helder: east section of trench 22. Scale 1:100



dug away around 1775.<sup>8</sup> Accordingly no remains of this building were found *in situ*; only stray finds of boulders and fragments of tuff betrayed the former presence of the church. A Roman hypocaust tile found in this area indicated that part of the building material had come from a Roman site.<sup>9</sup>

The most detailed information was collected in trenches 22 and 23. It bears particularly on two aspects: the growth of the terp and the shape of the dwelling. The excavation was too limited to provide complete insight into the evolution of the terp as a whole or the pattern of the settlement. Nor has the relation between the genesis of the surrounding landscape and the growth of the dwelling-mound been studied in a satisfactory manner. The available evidence allows us only to form some general ideas which we will now proceed to summarize under the two headings indicated above.

#### THE GROWTH OF THE TERP

The best information on the growth of the terp is to be found in the sections. The eastern wall of trench 22 presented the most interesting section. It is illustrated in fig. 3.

The top of the lowest layer which showed signs of human influence (layer I) was situated 0.60–0.80 m below NAP. It rested upon a natural bluish clay, was approximately 0.20 m thick, and consisted itself of bluish clay mixed with blackish lumps of humic material. Layer I seems to have been dug through: the blackish lumps are possibly fragments of a vegetation horizon dug into the subsoil. It may represent a plot of arable; the ditch in compartment 13 seems to belong to it. The layer contained sherds which might be of Carolingian date. As long as the pottery from this excavation has not been studied in detail, however, this dating remains uncertain.

The arable (?) layer was covered by 0.20–0.40 m-thick natural sediment consisting of bluish-grey clay showing horizontal 'silt-horizons' (layer II). In compartments 9–13 the top of layer II appeared as a thin, humic vegetation horizon (old land-surface). In compartments 1–9 the upper part of this layer consisted of mixed humic and

clayish material: probably trampled old land-surface (IIa). In compartments 3–12 the section showed an approximately 0.40 m-thick artificial elevation lying on top of layer II/IIa (layer III). Its right part (compartments 11–12) was made of 'clean' bluish clay; its left part of 'dirty' greyish material mixed with lumps of blue clay. This elevation is to be considered as a substructure for the house which was present in compartments 5–9. The elevation had a rectangular form; its main axis was directed north-west/south-east. The northeastern edge of the platform was set off by the ditch which appeared in compartment 3 of the section. The two earliest ditches of the three successive ditches appearing in compartments 14–15 marked the southwestern edge. The post in compartment 13 standing at the southern end of the platform seems to be an isolated phenomenon: no other posts were found in a similar position. There was also a ditch at the narrow southeastern side of the platform, but apparently not along the northwestern edge. The length of the platform was approximately 25 m, its width at the base, inside the ditches, c. 12 m.

A house had been built on the top of this low, rectangular

platform, roughly at NAP level. Banks of clay-sods with steep inner and sloping outer sides formed the walls (compartments 5 and 9/10). They had a width of slightly more than 1 m at the base and a height of 0.80–1 m. The sods were neatly arranged in rows perpendicular to the long axis of the house. The section showed three successive pairs of banks, constructed one on the top of the other, corresponding to three main construction phases of the house. The uppermost set of banks did not stand out clearly (the southern bank has been destroyed by secondary digging). The banks had projected above the surface long enough to allow refuse layers, containing much burnt material, to accumulate against their sloping outer sides. In the course of time, however, they became gradually covered up by the growth of the surrounding terp-layers.

The width of the house inside the banks was approximately 5.5 m (it should be said that the section does not cut the house at right angles). A row of heavy posts had been erected along the inner edge of the banks, or rather the posts had been placed just inside the foot of the bank. One of these posts is visible below the bank in

8 Van Dam den Bouwmeester 1847, 53–4.

9 Halbertsma 1965, 66.

compartment 5. Only the lower part of the post was caught in the section: as this slanted backwards, the upper part of the post stuck forward out of the section.

The interior of the house presented three superimposed, main habitation levels (a-c). Each of them consisted of a succession of thin, black lines (the individual floor-levels) separated by thin layers of more or less clean clay. The main levels themselves were divided by thicker layers of clean, yellow clay. The three main habitation levels corresponded to the three construction phases of the wall-banks. It is clear that the remaining hollow of the preceding house was filled in before the next construction phase commenced. The section happened to cut the two uppermost habitation levels at the fire-place: the patch of burnt-red clay in the middle. The conclusion must be that during the later periods of the house the living-quarters were situated in this area. On either side of the hearth, at a short distance inside the wall-bank, were shallow depressions for which we have no satisfactory explanation: holes for roof-posts?

The lowest habitation level (a) had quite a different aspect. It showed a low elevation of sods, slightly over 1 m broad, in the middle: probably a kind of raised gangway along the main axis of the building. This gangway was flanked on the left by a narrow trench or drain, the northern edge of which was confined by a narrow bank of sods. The inside of the drain seems to have been strengthened by stakes or wattle: the small stake in compartment 7. The distance between drain and wall-bank was about 1.90 m. The space between wall and drain was filled with mixed material. On the other side of the gangway was a steep-sided, rectangular pit, about 1 m deep: probably a cellar (there were more similar pits in the eastern part of the house behind the section). An explanation which fits the facts is that this is a cross-section covering the byre part of the house: central gangway with a row of cellars on one side and cattle-boxes plus drain on the other. It could be seen in the excavation levels of trenches 22 and 23 that the byre part of the house remained at the eastern end throughout the period in which the building was used. The fact that the byre part of the first phase was on the spot where the dwelling-quarters were situated in the later phases tends to show that the building was either extended in an easterly direction or shifted to the east in the second phase.

At some time in the course of the evolution described above the platform was extended to the south with a layer of brownish clay mixed with blue lumps (layer iv). This was done to create a space for the construction of a

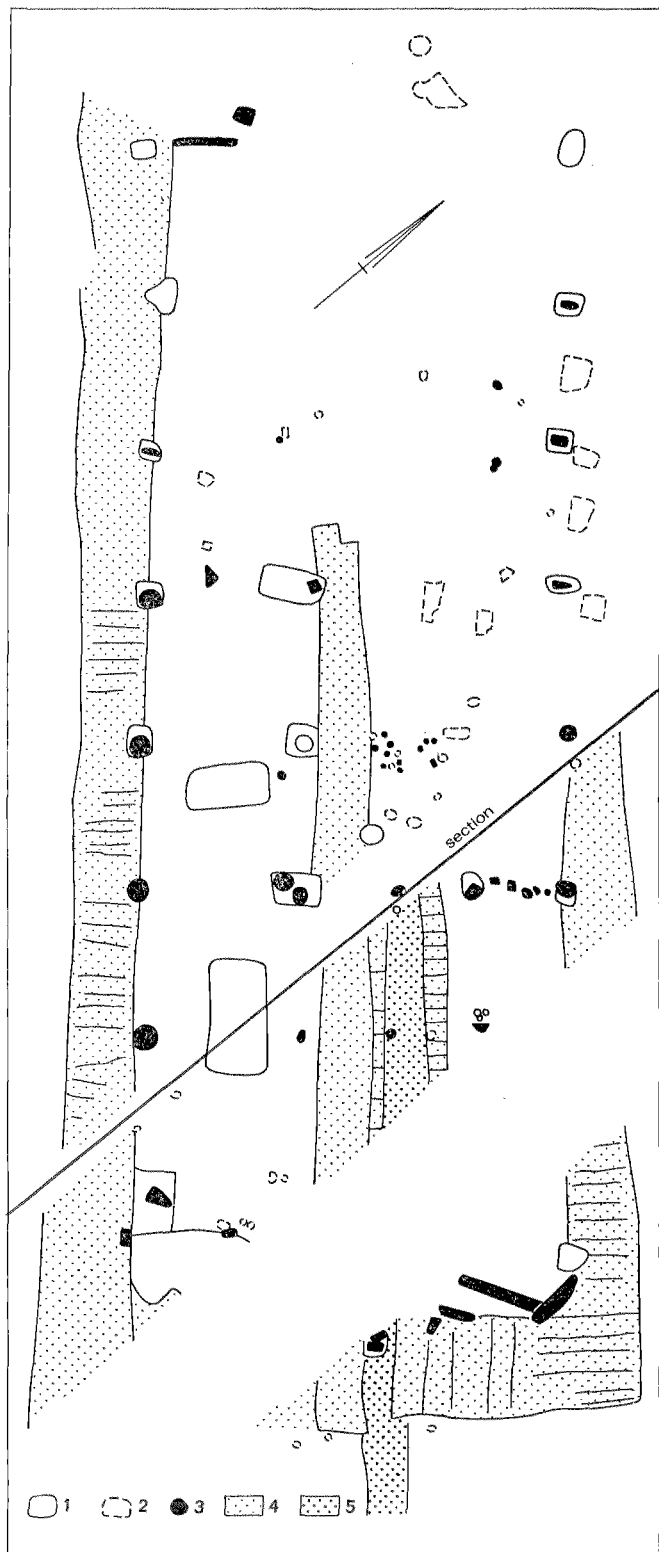
second building. The top of the additional platform lay at *c.* 0.50 m + NAP. It is apparent from stratigraphical evidence that the extension of the platform and the construction of the second house took place when the first building had completed its first phase. The south-eastern end of this second house was just caught in the section. The northeastern wall-bank of sods with part of the post-hole of a wall-post beneath it appeared in compartment 10/11. A series of dark lines indicating floor-levels started from this bank (compartments 11-13). The interpretation of the three accumulations of sods which were visible in compartments 13-15 is not yet completely certain. The southernmost one (compartment 15) probably belonged to the southeastern corner of the wall-bank of the house. The two in compartments 13-14 may represent some kind of gangway or drain construction such as was encountered in the first phase of the other house. In contrast to the first house, the second dwelling had been occupied for one period only. A reading of the section reveals that the platform and the houses which were built upon it acted as a core of crystallization in the process of terp formation.

The house-site occurring in this section was not unique. There were others close by where the evolution went along the same lines. Accumulation of material took place more rapidly at the house-sites than in the intermediate areas, particularly as a result of the lavish use which was made of clay-sods as building materials.

Part of an intermediate area was present at the northern end of our section (compartments 1-5). Also this area was gradually raised by a succession of clay layers, some of them containing much humic material, but its growth lagged one step behind that of the house-site. When the first house started upon its third phase, the surface of the intermediate area lay 0.5 m below the house-floor and probably more than 1 m below the top of the wall-bank. Eventually, however, the growth of the intermediate area more or less caught up with the evolution of the house-site. The remaining depression was filled up almost completely with brownish-grey, strongly polluted clay; it seems that this filling occurred in one operation.

#### THE HOUSE-TYPE

Fig. 4 illustrates the plan of the first house (section: compartments 5-10) in its first phase. Unfortunately, the plan is incomplete: part had disappeared in the trial-trench dug at the start of the excavation; by mistake, the area immediately to the west of the section had been excavated



in one operation to 0.05 m +NAP level. Consequently, many details have been lost.

The interior of the house was approximately 15 m long and 5.20–5.40 m wide. A bank of sods, 1–1.20 m wide, was found along the southern and eastern sides of the building, as well as along the eastern half of the northern side. In all probability it also continued along the western half of the northern side, where traces have been obliterated. No bank was found at the western end: it could not be established whether this had ever existed or had been destroyed by later digging. There was a well near the western end of the house.

A row of stout posts of oak(?)-wood followed the inner side of the two long walls. The posts had been placed in pairs, those of one row having an opposite number in the other. The interval between the pairs was slightly under 2 m. The lower parts of many of these posts had been preserved. Most of them consisted of half a tree-trunk, some of a complete trunk; the bark was still present. Traces of a wall-screen, for instance made of wattle, which could have served as a revetment of the wall-banks, have not been found between these posts.

The posts along the walls constituted the main constructional elements. They must have carried the greater part of the weight of the roof. There were no interior posts in the western part of the building, which is to be considered as the living-quarters. In the byre, two rows of interior posts occurred. They were in pairs and stood in line with the corresponding wall-posts. They are smaller than the wall-posts and therefore seem to have been of minor importance, though they possibly went up to the roof and helped to support its weight. Those of the northern row also had the function to hold the partition-walls, which divided the northern side-aisle into a series of four (?) cattle-stalls. Each stall could hold two animals. The interior posts of the southern row may have been used in the construction of the central gangway.

The division between living-quarters and byre probably lay at the fourth (or fifth?) pair of wall-posts from the west. A few extra posts in the interior standing on a line with the fourth pair of wall-posts could come from a par-

Fig. 4 Den Helder: plan of first house, habitation level a, in east-section of trench 22. Scale 1: 100.

1. pit or post-hole; 2. uncertain post-hole; 3. post; 4. sods; 5. drain

tition wall between the third and fourth 'bay'. No information is available about the lay-out of the living-quarters. The site of the fire-place has not been established. The lay-out of the byre is clear: cattle stalls in the northern side-aisle; drainage-trench behind the stalls, which continued through and outside the southeastern end-wall of the building; raised central gangway of clay (-sods); two cellar(?) -pits in the southern side-aisle; and perhaps another stall in the southeastern corner. In the western part of the byre the drainage trench and the raised gangway have not been recovered, because in the area in front of the section the excavation had started at too deep a level (roughly at NAP level). The gangway probably ended at the third 'bay' from the west. The shape of the drainage-trench and gangway has only been established in the narrow strip between section and trial-trench.

Entrances in the long walls have not been found. Apparently, the building had only one entrance: at the end of the gangway in the middle of the eastern short side. The northernmost door-post of this entrance is visible in the plan.

The building may be described as a variation of the three-aisled house type. The main constructional elements were placed against the long walls. Nevertheless, the lay-out of the byre was still in the tradition of the three-aisled building type. The interior was divided into living-quarters and byre.

10 Van Giffen 1935-40.

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#### SUMMARY

The information concerning the growth of the terp constitutes the major point of interest of this excavation. Habitation may have started at surface level, possibly already in the Carolingian period. The excavation, however, was too small to provide completely reliable evidence in this respect. The lowest layer showing human influence was not a habitation layer in the strict sense. Probably, it consisted of arable soil. The extremely low position - at 0.60-0.80 m below NAP level - is probably due to secondary sinking. The terp developed from a number of individual house-sites, which had been raised and extended in course of time, until at the end they had fused. One such house-site could be studied in plan and section in the excavated area. The evolution of Het Torp corresponds to the general pattern of terp formation with its three main phases: habitation at surface level (?), raised individual house-sites, terp. Much the same development has been followed by the earliest known terps in the northern Dutch coastal zone. It is interesting to see that Het Torp, together with Leens in the province of Groningen,<sup>10</sup> document this pattern of evolution for the end of the period in which terps were built. The terp near Den Helder acquired its ultimate shape roughly between the 11th and 14th centuries, and even if its evolution started a few centuries earlier, it is mainly a late-medieval growth.

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# The Environment of 'Het Torp' in its Early Phases

## I INTRODUCTION

During the excavations of the dwelling mound 'Het Torp', southeast of Den Helder (52°58' N, 4°45' E), in the north-western part of the Netherlands, samples were taken for the study of macrofossil plant remains. The investigation for seeds, fruits, and other plant remains should primarily provide information on the vegetation in the vicinity of the site at the time of the deposition of the cultural layers.

The following samples were examined:

- 488, trench 22, humic fill ('manure') of ditch;
  - 865 trench 22, east section, middle part, from outside house;
  - 866, trench 22, east section, floor layer in house of sample 865;
  - 867, trench 22, east section, northern part, ditch belonging to house of sample 865;
  - 919, trench 22, south section, humic fill of ditch;
  - 920, trench 22, level 13, humic fill ('manure') of ditch.
- These samples originate from the early phases of habitation of 'Het Torp' and they can be dated to the 10th–12th centuries A.D. A report on the archaeological results is published by Van Es.<sup>1</sup>

## 2 METHODS

Prior to the botanical analysis, the soil samples were soaked in a c. 5% nitric acid solution for a few weeks. As a result, the fairly compact material became loose. Thereupon, the samples were washed through three sieves, with meshes of 2.0, 0.5, and 0.2 mm, respectively, placed one on top of the other, so that three fractions were obtained. Seeds, fruits, and other plant remains were picked out and identified under a binocular stereo-micro-

scope (magnifications: 6 to 50×). When only a part of a fraction was examined – which was always the case for the fine fraction – the numbers of seeds and fruits found in a subsample of a fraction were converted to obtain the total numbers for that fraction. The results of each of the three fractions of one sample were added together.

The results of the analyses of the samples from Het Torp expressed in total numbers as well as in percentages are shown in Table 1. No numbers are given for the leaves of *Erica tetralix* and *Calluna vulgaris*, and these leaves are not included in the sum on which the percentages are based. The identification criteria of the plant remains will not be discussed here. This will take place in a more comprehensive paper on the botanical examination of coastal settlement sites in the Netherlands. Only plant taxa, the identification of which may be considered to be reliable, are shown in Tables 1 and 2. This does not imply that each individual identification is always certain. The delimitation of *Puccinellia distans* and *P. maritima* fruits is somewhat arbitrary, but typical fruits of both species were found in larger numbers. Poorly preserved seeds of *Spergularia salina* and *Sp. marginata* cannot always be distinguished from each other, but characteristic seeds of both species occur abundantly.

In reconstructing the vegetation in earlier times from plant remains found in settlement layers, one must take into account that only a part of the plant species which were present in the vicinity of the site concerned is represented in the samples investigated. The chances that the various types of seed arrived in the settlement are very unequal. Moreover, the seed production differs considerably among the various plant species, so that one should be cautious in drawing conclusions on the share of plant species in former vegetations on the ground of the relative frequencies of seeds and fruits. Therefore, the very large numbers of seeds of *Juncus gerardii* encountered in the

1 Van Es 1973.



TABLE 1 Plant remains from Het Torp. For each sample the numbers as well as the percentages of fruits and seeds are shown

Sample number	488	865	866	867	919	920
<i>Agrostemma githago</i>	—	—	—	—	1 0.01	—
<i>Agrostis spec.</i>	956 4.4	63 5.3	130 2.7	85 0.6	191 1.3	142 3.1
<i>Armeria maritima</i>	27 0.1	—	29 0.6	3 0.02	44 0.3	14 0.3
<i>Aster tripolium</i>	3 0.01	—	1 0.02	—	10 0.06	—
<i>Atriplex hastata/patula</i>	188 0.9	622 51.9	70 1.5	80 0.6	72 0.5	52 1.1
<i>Betula spec.</i>	—	—	—	—	—	2 0.04
<i>Brassica campestris</i>	—	1 0.1	—	—	—	—
<i>Bromus mollis/secalinus</i>	—	—	—	½ 0.01	1 0.01	—
<i>Calluna vulgaris</i>	—	—	—	—	—	×
<i>Capsella bursa-pastoris</i>	3 0.01	—	—	—	—	—
<i>Carex acuta-type</i>	6 0.02	—	3 0.06	—	—	9 0.2
<i>Carex rostrata/vesicaria</i>	6 0.02	—	—	—	12 0.08	3 0.06
<i>Carex serotina</i>	—	1 0.1	—	—	—	—
<i>Carex spec.</i>	8 0.03	—	1 0.02	—	—	—
<i>Centaurium spec.</i>	—	—	—	—	14 0.09	—
<i>Cerastium holosteoides</i>	—	—	—	—	—	2 0.04
<i>Chenopodium album</i>	14 0.06	—	4 0.08	1 0.01	15 0.1	3 0.06
<i>Chenopodium rubrum/glaucum</i>	4 0.01	—	—	—	—	—
<i>Cladium mariscus</i>	—	—	3 0.06	—	3 0.02	—
<i>Comarum palustre</i>	—	—	1 0.02	—	—	—
<i>Eleocharis palustris</i>	3 0.01	—	1 0.02	—	—	—
<i>Erica tetralix</i>	—	—	×	—	—	×
<i>Festuca rubra</i>	29 0.1	2 0.2	17 0.4	½ 0.01	27 0.2	36 0.8
<i>Galeopsis tetrahit/speciosa</i>	1 0.01	—	—	—	—	—
<i>Glaux maritima</i>	8 0.03	—	3 0.06	2 0.01	15 0.1	2 0.04
Gramineae indet.	17 0.07	—	—	—	—	—
<i>Hordeum spec. (subfossil)</i>	4 0.01	1 0.1	2½ 0.05	—	2 0.01	1 0.02
<i>Hordeum vulgare (carbonized)</i>	—	—	—	1 0.01	3 0.02	—
<i>Juncus articulatus</i>	103 0.5	—	—	—	—	—
<i>Juncus bufonius</i>	—	—	11 0.2	—	—	80 1.7
<i>Juncus gerardii</i>	18,278 84.6	336 28.0	3,596 74.9	13,784 96.6	9,761 68.1	3,396 73.2
<i>Juncus subnodulosus</i>	—	4 0.3	—	—	—	—
<i>Lapsana communis</i>	1 0.01	—	—	—	6 0.04	—
<i>Leontodon autumnalis</i>	—	—	—	—	1 0.01	2 0.04
<i>Limonium vulgare</i>	6 0.02	1 0.1	4 0.08	—	129 0.9	143 3.1
<i>Lychnis flos-cuculi</i>	2 0.01	—	2 0.04	—	—	—
<i>Lycopus europaeus</i>	—	—	2 0.04	—	—	—
<i>Menyanthes trifoliata</i>	2 0.01	—	2½ 0.05	—	—	2 0.04
<i>Oenanthe lachenalii</i>	3 0.01	—	—	—	—	—
<i>Parapholis strigosa</i>	6 0.02	—	—	—	—	—
<i>Phragmites communis</i>	—	1 0.1	—	—	—	2 0.04
<i>Plantago major</i>	—	—	1 0.02	—	12 0.08	—
<i>Plantago maritima</i>	147 0.7	—	182 3.8	17 0.1	522 3.6	195 4.2
<i>Poa pratensis/trivialis</i>	30 0.1	3 0.3	4 0.08	—	15 0.1	—
<i>Polygonum aviculare</i>	—	8 0.7	2 0.04	—	9 0.06	2 0.04
<i>Polygonum convolvulus</i>	—	—	—	—	3 0.02	—
<i>Polygonum lapathifolium</i>	6 0.02	—	½ 0.01	38 0.3	6 0.04	2 0.04
<i>Polygonum persicaria</i>	—	—	—	9 0.06	—	—
<i>Prunella vulgaris</i>	3 0.01	—	—	—	3 0.02	—

TABLE I

Sample number	488	865	866	867	919	920
<i>Puccinellia distans</i>	48 0.2	—	3 0.06	2 0.01	104 0.7	16 0.3
<i>Puccinellia maritima</i>	114 0.5	—	18 0.4	2 0.01	115 0.8	40 0.9
<i>Ranunculus spec.</i>	—	—	—	—	—	2 0.04
<i>Ranunculus flammula</i>	3 0.01	—	—	—	—	—
<i>Raphanus raphanistrum</i>	—	—	—	2 0.01	—	—
<i>Rosa pimpinellifolia</i>	1 0.01	—	2 0.04	1 0.01	5 0.03	—
<i>Rumex acetosella</i>	—	—	—	—	3 0.02	—
<i>Sagina spec.</i>	—	—	30 0.6	—	45 0.3	2 0.04
<i>Salicornia europaea</i>	80 0.4	—	120 2.5	30 0.2	339 2.4	36 0.8
<i>Scirpus maritimus</i>	3 0.01	3 0.3	—	—	2 0.01	2 0.04
<i>Scirpus planifolius</i>	—	—	—	—	—	2 0.04
<i>Scirpus tabernaemontani</i>	—	—	—	1 0.01	5 0.03	2 0.04
<i>Senecio cf. vulgaris</i>	3 0.01	—	4 0.08	—	—	—
<i>Sinapis arvensis</i>	—	—	—	—	6 0.04	9 0.2
<i>Sonchus oleraceus</i>	—	49 4.1	4 0.08	1 0.01	—	2 0.04
<i>Spergula arvensis</i>	14 0.06	—	—	—	—	2 0.04
<i>Spergularia marginata</i>	615 2.8	1 0.1	174 3.6	8 0.05	1,100 7.7	190 4.1
<i>Spergularia salina</i>	461 2.1	4 0.3	242 5.0	97 0.7	1,166 8.1	63 1.4
<i>Stellaria media</i>	1 0.01	5 0.4	4 0.08	—	3 0.02	9 0.2
<i>Suaeda maritima</i>	99 0.5	25 2.1	16 0.3	3 0.02	69 0.5	10 0.2
<i>Thlaspi arvense</i>	—	—	—	—	3 0.02	—
<i>Triglochin maritima</i>	288 1.3	—	81 1.7	85 0.6	474 3.3	158 3.4
<i>Urtica urens</i>	17 0.07	69 5.8	32 0.7	19 0.1	6 0.04	4 0.08
<i>Vicia sativa ssp. obovata</i>	—	—	—	—	1 0.01	—
Total numbers	21,611	1,199	4,802 ½	14,276	14,323	4,639

samples from Het Torp must be ascribed to the prolific seed production of this rush species. It is self-evident that this species played a prominent role in the vegetation near the site.

The reconstruction of the vegetation in the vicinity of Het Torp is based upon the phytosociological affinity of the plant species which are represented in the samples examined. For this reconstruction the publications of Beefink,<sup>2</sup> Gillner,<sup>3</sup> and Westhoff and den Held<sup>4</sup> were consulted, while the results obtained by Körber-Grohne<sup>5</sup> for the Feddersen Wierde, in the north of Germany, were also taken into consideration.

Table 2 indicates which vegetation types are established

for the vicinity of Het Torp in its early phases. For this reconstruction the results of the analyses of the various samples are taken together.

### 3 DISCUSSION OF THE RESULTS

The results of the macrofossil analyses point to the presence of two main types of environment in the area of Het Torp. The site itself was probably situated in a brackish environment under the direct influence of the sea, whereas the dune area at some distance from the site contained freshwater vegetations. The left side of Table 2 shows the vegetations from the saline environments. The palaeo-

2 Beefink 1965.

3 Gillner 1960.

4 Westhoff/Den Held 1969.

5 Körber-Grohne 1967.

TABLE 2 Reconstruction of vegetation types in the vicinity of Het Torp

	saline environments				freshwater environments			fields and ruderal places	cultivated plants
	Puccinellietum maritimae	Juncetum gerardii	Puccinellietum distantis	Scirpetum maritimi	marsh vegetations	moist habitats	dry habitats		
<i>Puccinellia maritima</i>	+	•	•	•	•	•	•	•	•
<i>Suaeda maritima</i>	+	•	+	•	•	•	•	•	•
<i>Limonium vulgare</i>	+	+	•	•	•	•	•	•	•
<i>Parapholis strigosa</i>	+	+	•	•	•	•	•	•	•
<i>Spergularia marginata</i>	+	+	•	•	•	•	•	•	•
<i>Salicornia europaea</i>	+	+	•	•	•	•	•	•	•
<i>Aster tripolium</i>	+	+	+	•	•	•	•	•	•
<i>Plantago maritima</i>	+	+	•	•	•	•	•	•	•
<i>Triglochin maritima</i>	+	+	•	•	•	•	•	•	•
<i>Juncus gerardii</i>	+	+	+	•	•	•	•	•	•
<i>Armeria maritima</i>	•	+	•	•	•	•	•	•	•
<i>Glaux maritima</i>	•	+	•	•	•	•	•	•	•
<i>Centaureum spec.</i>	•	+	•	•	•	•	•	•	•
<i>Sagina spec.</i>	•	+	•	•	•	+	•	•	•
<i>Festuca rubra</i>	•	+	•	•	•	+	+	•	•
<i>Agrostis spec.</i>	•	+	+	•	•	+	+	•	•
<i>Poa pratensis/trivialis</i>	•	+	•	•	•	+	•	•	•
<i>Leontodon autumnalis</i>	•	+	•	•	•	+	•	•	•
<i>Hordeum spec.</i>	•	+	•	•	•	•	•	+	•
<i>Eleocharis palustris</i>	•	+	•	•	+	•	•	•	•
<i>Oenanthe lachenalii</i>	•	+	•	•	•	•	•	•	•
<i>Juncus articulatus</i>	•	+	•	•	•	+	•	•	•
<i>Carex serotina</i>	•	+	•	•	•	+	•	•	•
<i>Puccinellia distans</i>	•	•	+	•	•	•	•	•	•
<i>Spergularia salina</i>	•	•	+	•	•	•	•	•	•
<i>Juncus bufonius</i>	•	•	+	•	•	•	•	+	•
<i>Polygonum aviculare</i>	•	•	+	•	•	•	•	+	•
<i>Plantago major</i>	•	•	+	•	•	•	•	+	•
<i>Atriplex hastata/patula</i>	•	•	+	•	•	•	•	+	•
<i>Scirpus maritimus</i>	•	•	•	+	•	•	•	•	•
<i>Scirpus tabernaemontani</i>	•	•	•	+	•	•	•	•	•
<i>Phragmites communis</i>	•	•	•	+	+	•	•	•	•
<i>Carex rostrata/vesicaria</i>	•	•	•	•	+	•	•	•	•
<i>Cladium mariscus</i>	•	•	•	•	+	•	•	•	•
<i>Comarum palustre</i>	•	•	•	•	+	•	•	•	•
<i>Juncus subnodulosus</i>	•	•	•	•	+	•	•	•	•
<i>Lycopus europaeus</i>	•	•	•	•	+	•	•	•	•
<i>Menyanthes trifoliata</i>	•	•	•	•	+	•	•	•	•
<i>Bromus mollis/secalinus</i>	•	•	•	•	•	+	•	+	•
<i>Carex acuta-type</i>	•	•	•	•	+	•	•	•	•
<i>Cerastium holosteoides</i>	•	•	•	•	•	+	•	•	•
<i>Erica tetralix</i>	•	•	•	•	•	+	•	•	•
<i>Lychnis flos-cuculi</i>	•	•	•	•	•	+	•	•	•

TABLE 2

	saline environments				freshwater environments			fields and ruderal places	cultivated plants
	<i>Puccinellietum maritimae</i>	<i>Juncetum gerardii</i>	<i>Puccinellietum distantis</i>	<i>Scirpetum maritimi</i>	marsh vegetations	moist habitats	dry habitats		
<i>Prunella vulgaris</i>	•	•	•	•	•	+	•	•	•
<i>Ranunculus flammula</i>	•	•	•	•	•	+	•	•	•
<i>Scirpus planifolius</i>	•	•	•	•	•	+	•	•	•
<i>Betula spec.</i>	•	•	•	•	•	+	+	•	•
<i>Calluna vulgaris</i>	•	•	•	•	•	•	+	•	•
<i>Rosa pimpinellifolia</i>	•	•	•	•	•	•	+	•	•
<i>Agrostemma githago</i>	•	•	•	•	•	•	•	+	•
<i>Brassica campestris</i>	•	•	•	•	•	•	•	+	•
<i>Capsella bursa-pastoris</i>	•	•	•	•	•	•	•	+	•
<i>Chenopodium album</i>	•	•	•	•	•	•	•	+	•
<i>Chenopodium rubrum/glaucum</i>	•	•	•	•	•	•	•	+	•
<i>Galeopsis tetrahit/speciosa</i>	•	•	•	•	•	•	•	+	•
<i>Lapsana communis</i>	•	•	•	•	•	•	•	+	•
<i>Polygonum convolvulus</i>	•	•	•	•	•	•	•	+	•
<i>Polygonum lapathifolium</i>	•	•	•	•	•	•	•	+	•
<i>Polygonum persicaria</i>	•	•	•	•	•	•	•	+	•
<i>Senecio cf. vulgaris</i>	•	•	•	•	•	•	•	+	•
<i>Sinapis arvensis</i>	•	•	•	•	•	•	•	+	•
<i>Sonchus oleraceus</i>	•	•	•	•	•	•	•	+	•
<i>Stellaria media</i>	•	•	•	•	•	•	•	+	•
<i>Thlaspi arvense</i>	•	•	•	•	•	•	•	+	•
<i>Urtica urens</i>	•	•	•	•	•	•	•	+	•
<i>Raphanus raphanistrum</i>	•	•	•	•	•	•	•	+	•
<i>Rumex acetosella</i>	•	•	•	•	•	•	•	+	•
<i>Spergula arvensis</i>	•	•	•	•	•	•	•	+	•
<i>Hordeum vulgare</i>	•	•	•	•	•	•	•	•	+
<i>Vicia sativa ssp. obovata</i>	•	•	•	•	•	•	•	•	+

botanical data allow a reconstruction of the halophytic vegetations at the level of the plant association, the basic unit of Braun-Blanquet's phytosociological system. It is likely that of the plants represented in Het Torp a few more species occurred in the halophytic vegetations than have been indicated in Table 2, but this has no implications for the reconstruction of the vegetation types in the vicinity of the site.

For the other dwelling mounds in the coastal region of the Netherlands which have so far been studied for plant

remains by the present author, it could be established that the inhabitants of the terps lived on the highest part of the kwelder, in the area of the *Juncetum gerardii*. Also in the case of Het Torp it is likely that the habitation took place in the *Juncetum gerardii*. This is the area which is occasionally inundated by the sea, at extremely high floods. Characteristic of the *Juncetum gerardii* are *Juncus gerardii*, *Glaux maritima*, and *Armeria maritima*. In contrast to the other coastal sites mentioned above, the palaeobotanical data also suggest that *Puccinellietum maritimae*

vegetations were found at a very short distance from Het Torp. The *Puccinellietum maritimae* occurs on the middle-high kwelder, which is flooded quite regularly. Species which are represented in Het Torp and which are characteristic of the *Puccinellietum maritimae* include *Puccinellia maritima*, *Limonium vulgare*, *Spergularia marginata*, and *Parapholis strigosa*. Apparently, Het Torp was situated nearer the coast-line than the prehistoric and early-historic dwelling mounds in the provinces of Friesland and Groningen.

It should be mentioned that the fairly large numbers of *Salicornia* seeds could indicate that the *Salicornietum strictae*, the vegetation of the zone within the daily reach of the tides, was also found at not too great a distance from the site. *Suaeda maritima* is not only found in the *Puccinellietum maritimae*, but it is also characteristic of the vegetation on flood marks along the coast.

Vegetations of the *Scirpetum maritimi* with *Scirpus maritimus*, *Scirpus tabernaemontani*, and *Phragmites communis* would have been present along watercourses.

Thus, the palaeobotanical results suggest that halophytic vegetations of the middle-high and high kwelder occurred in the vicinity of the site. For some terps, including Paddepoel near Groningen,<sup>6</sup> it has been assumed that in those places on the high kwelder where fresh water could accumulate, diluting the salt concentration, *Eleocharis palustris* and *Oenanthe lachenalii*, in addition to typical *Juncetum gerardii* species, were common.<sup>7</sup> In the samples from Het Torp, the fruits of *Eleocharis palustris* and *Oenanthe lachenalii* are rare. Consequently, depressions with only slightly brackish soil conditions were not a common feature on the high kwelder near Het Torp.

It is also unlikely that the halophytic vegetations were more or less intensively grazed by the domestic animals. At least the seeds of *Potentilla anserina*, a reliable indicator for grazing of salt marsh vegetations,<sup>8</sup> were not encountered in the samples examined, while only a few fruits were found of *Leontodon autumnalis*, whose presence in coastal habitation sites also points to grazing. Consequently, one must assume that grazing took place mainly in the dune area.

In places in the area of the *Puccinellietum maritimae* and the *Juncetum gerardii* which were frequented by man and animal or where sods had been cut, vegetations of the *Puccinellietum distantis* with *Puccinellia distans*, *Spergularia*

*salina*, *Polygonum aviculare*, and other species are to be expected.

It was not possible to reconstruct as detailed vegetations from fresh water environments as the halophytic vegetations. The plant species concerned are arranged into three groups, viz. vegetations which were found in and along shallow lakes in dune valleys, those from moist sites and those from dry habitats in the dunes. On the bottom of the dune valleys with permanent water, vegetations of the *Phragmitetea* and the *Caricetalia nigrae* were probably present; of these *Cladium mariscus*, *Phragmites communis*, *Comarum palustre*, *Juncus subnodulosus*, *Menyanthes trifoliata*, and others are represented in Het Torp. From the vegetations of a moist freshwater environment, *Lychnis flos-cuculi*, *Prunella vulgaris*, *Juncus articulatus*, *Ranunculus flammula*, *Cerastium holosteoides*, and other species are represented in the samples. The majority of the species of moist habitats listed in Table 2 occurs in vegetations of the *Molinio-Arrhenatheretea*. The occurrence of fruit stones of *Rosa* in the samples examined must probably be ascribed to the collecting of rose-hips by the inhabitants of the site.

It cannot be excluded that the leaves of *Erica tetralix* and *Calluna vulgaris* are of secondary origin. Peat deposits in the coastal area were eroded by the sea and the constituents of the peat were subsequently redeposited. On the other hand, the plants concerned fit well in the vegetations which were established on account of other species.

A fairly large number of plants represented in Het Torp is directly related to the activity of man. These are plants from fields and from ruderal sites. No attempt has been made to group these species into vegetation types. Various halophytic species, such as *Suaeda maritima*, *Spergularia salina*, and *Spergularia marginata*, occur also as weeds in fields in a brackish environment.

Places rich in nitrates were probably present particularly in and around the settlement. It is striking that in sample 865 from just outside the house wall, a place where refuse is usually dumped, the seeds of *Atriplex* are dominant.

Of the crop plants, hulled barley, *Hordeum vulgare*, is present with small numbers of fruits. No concentrations of charred grains were observed during the investigation of the site. *Vicia sativa* ssp. *obovata* (common vetch) which is represented by one charred seed is at present grown as fodder for animals. However, the seeds of this vetch

6 Van Zeist 1968 (1970).

7 Körber-Grohne 1967.

8 Gillner 1960; Körber-Grohne 1967.

species are also reported to have been used for human consumption.<sup>9</sup>

One may assume that fields were situated on the highest parts of the kwelder. Various crop plants can be grown in a somewhat brackish environment. On the other hand, *Spergula arvensis*, *Rumex acetosella*, and *Raphanus raphanistrum* suggest that fields also had been laid out in the sandy area.

9 H. Gams in Hegi 1924, 1549-51.

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#### POSTSCRIPT

After the manuscript had been submitted the moss remains have been identified. These are published by Van Zeist.<sup>10</sup> It should be mentioned that the numbers of seeds and fruits shown in Table 1 differ from those in Van Zeist<sup>10</sup>. This is due to another way of calculating the total numbers applied in the latter publication.

10 Van Zeist 1974, table 7.

Körber-Grohne, U., 1967: *Geobotanische Untersuchungen auf der Feddersen-Wierde*, Wiesbaden.

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# Oost-Souburg, Province of Zeeland: A Preliminary Report on the Excavation of the Site of an Ancient Fortress (1969-1971)

figs. 1-9; pls. xxix-xxxiv

In the centre of Oost-Souburg (figs. 1 and 2) there is a vacant site situated a short distance southwest of the parish church. Remains of a fortress dating from the end of the ninth century or from the tenth century have been found here. Especially from the air, the site is conspicuous because of its characteristic round shape (pl. xxix: 1). A remarkable feature of the site is that it was practically not built upon in later times, unlike centres of human habitation that have sprung from other settlements, such as the towns of Middelburg and Oostburg in the Dutch province of Zeeland and various towns in Flanders and the adjoining French territory.<sup>1</sup>

Because of the imminent threat of building operations on the site at Oost-Souburg, the Rijksdienst voor het Oudheidkundig Bodemonderzoek (ROB: State Service for Archaeological Investigations in the Netherlands) embarked upon extensive excavations on 17 March 1969 (fig. 3 and pl. xxx: 1). Under an old development project of the former municipality of Oost-Souburg (which now forms part of the municipality of Flushing), the site was intended for a shopping centre. Since then the plans have been changed. When the ROB had been carrying out excavations on the site for about two and a half years, during which period two fifths of the settlement had been investigated and mapped, the municipality decided on second thoughts that there was no longer any need for a shopping centre, since large supermarkets were being built in Flushing (East), practically bordering on Oost-Souburg.

1 W.C. Braat of the National Museum of Antiquities, Leyden, carried out the first experimental excavations at Souburg (Braat 1941). The excavations were discontinued owing to the Second World War and for other reasons. Mr Braat also investigated settlements at Middelburg (Island of Walcheren) and Burgh (Island of Schouwen) (Braat 1942 and 1954). See also: Huizinga 1935; Van Werveke 1965. — The meaning of 'Souburg' is

The ultimate use to which the archaeologically important site is to be put was not yet known at the time this paper was written. It is to be hoped that under the new development plan the site will have a better future in store for it; appropriate restoration of the original settlement deserves serious consideration. Whatever the outcome, the two-and-a half years of painstaking excavations have yielded important results.

The most surprising feature was the great similarity the main structure of the Oost-Souburg camp showed to sites from about the same period in Denmark (Trelleborg, Fyrkat, Aggersborg, Nonnebakken<sup>2</sup>); on further investigation this might well apply to other Zeeland and Flemish settlements.

The excavations carried out at Oost-Souburg since 1969 show the structure and plan of the original camp to be astonishingly well preserved, though the upper part of the old circular rampart (*cf.* pl. xxix: 2, reconstruction of Trelleborg) must have been demolished over the centuries, which would explain why the surrounding moat is no longer recognizable as such in the field. The base of the rampart, the slope of which had been made of firm sods from the mud flats, and the decayed remains of stakes (pl. xxx: 2) standing close together, which must have been part of a palisade or facing on the outside, are clearly visible in the strata and excavation profiles studied. The settlement was built on a high-lying mud-flat (the top being 1.50 m above Amsterdam Ordnance Datum-

'Southburg' ('Zuidburg' in modern Standard Dutch); the oldest attested form is 'Sutburch', dating from 1162 and 1198 (*Bullarium Traiectense*, II, 32, 295; Fruin 1901, R. 6, 144).

2 Nørlund 1948; 1968; Schultz 1949; La Cour/Stiesdal 1963, 243-86; L'Orange 1951; Olsen 1959; 1962; 1975; Roesdahl 1973.



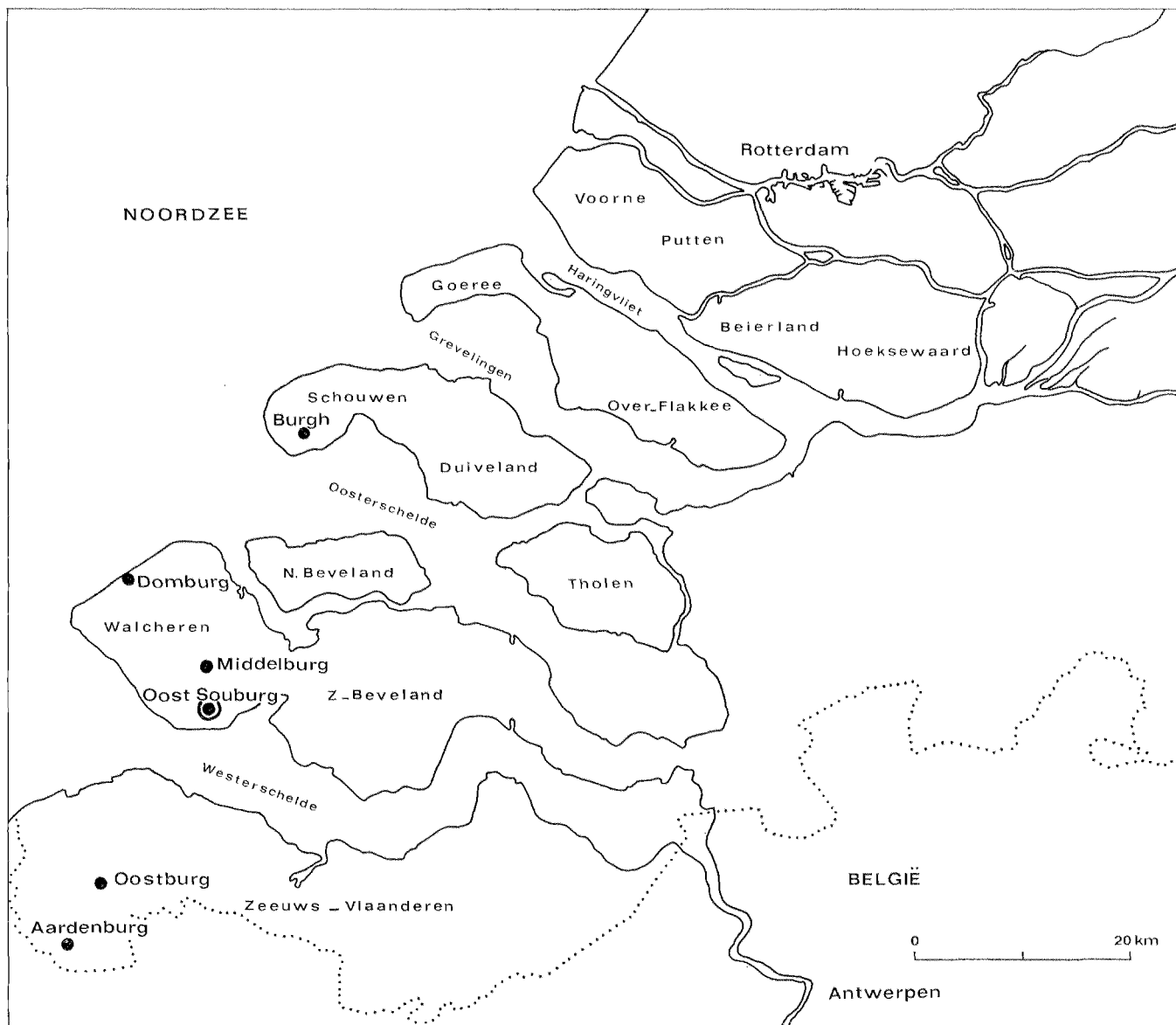


Fig. 1 Map of southwestern Netherlands showing the sites of the fortresses of Burgh, Domburg, Middelburg, Oost-Souburg, Oostburg, and Aardenburg. With the exception of Aardenburg, which has a more or less square ancient city-core, all the fortress sites have a distinctly circular shape. The original shape of Domburg is impossible to establish, due to natural causes

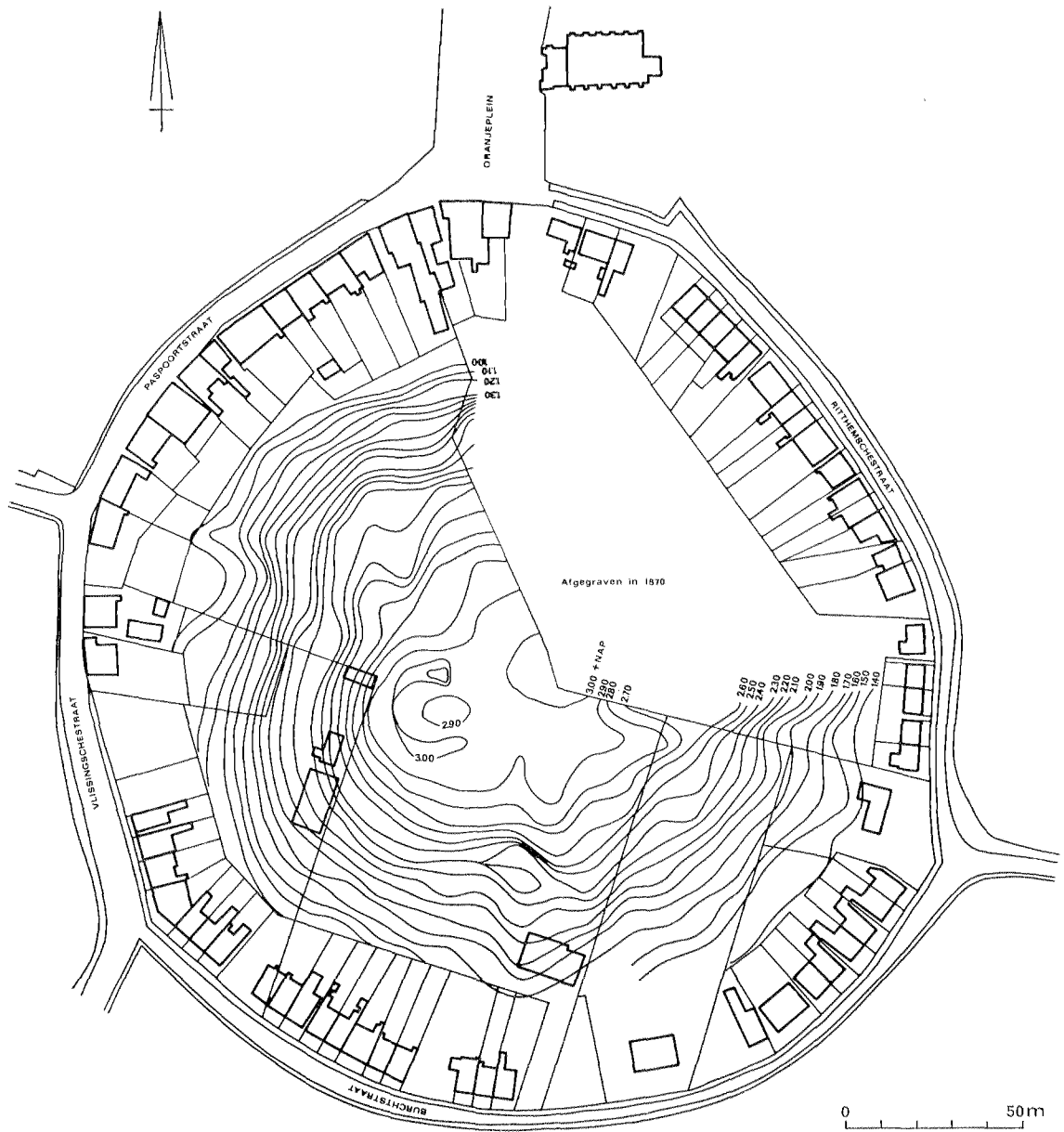


Fig. 2 Map with altitude lines of the site of the Oost-Souburg fortress

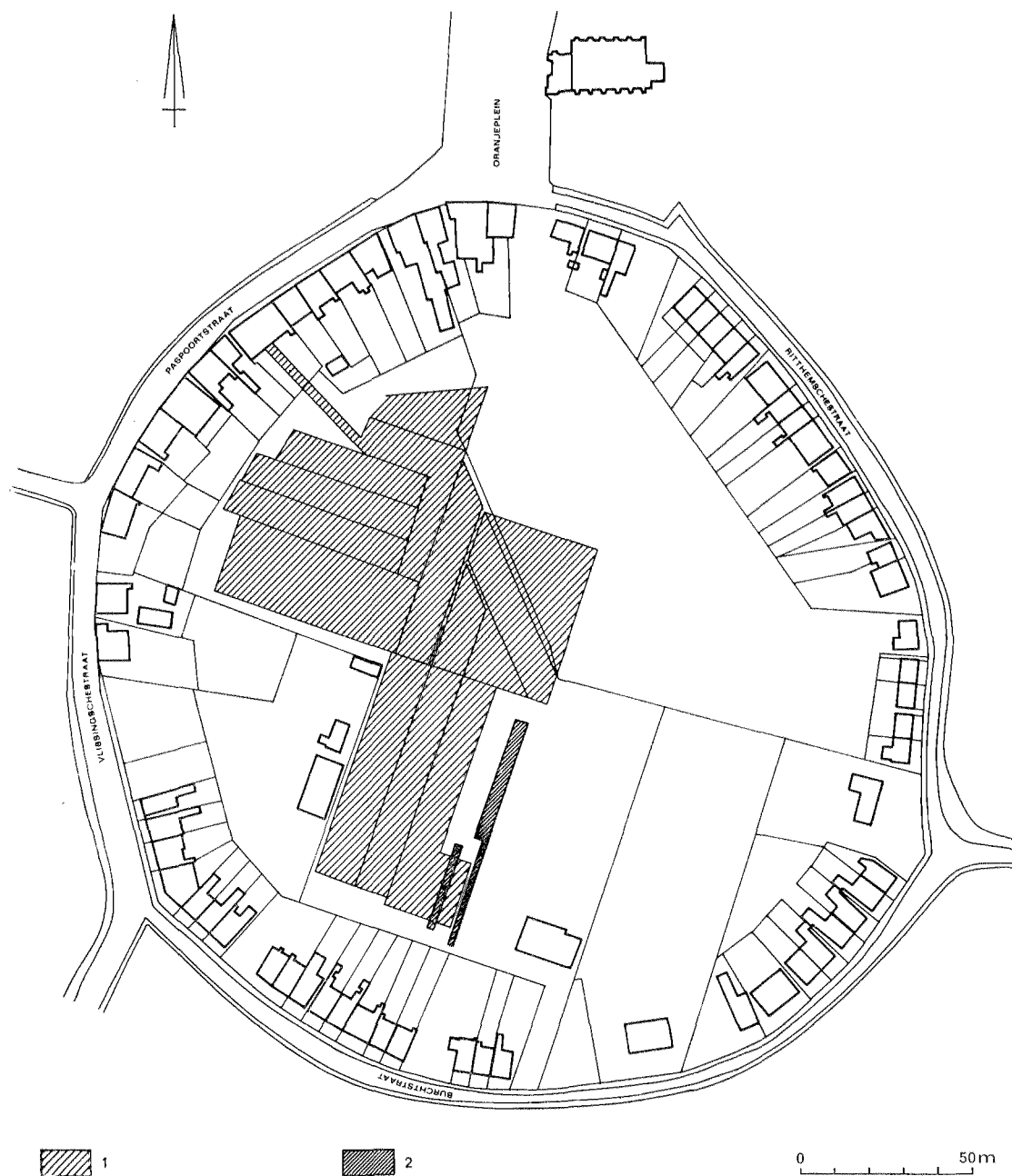


Fig. 3 Survey of the excavated part of the Oost-Souburg fortress; 1: research by the ROB, 1969-1972; 2: research by Dr W.C. Braat, 1939



Fig. 4 Schematic plan of the Oost-Souburg fortress with moat, rampart, cross-roads, and the oldest house-sites; 1: raised layer; 2: view of the rampart; 3: section of the rampart; 4: stakes; 5: old surface

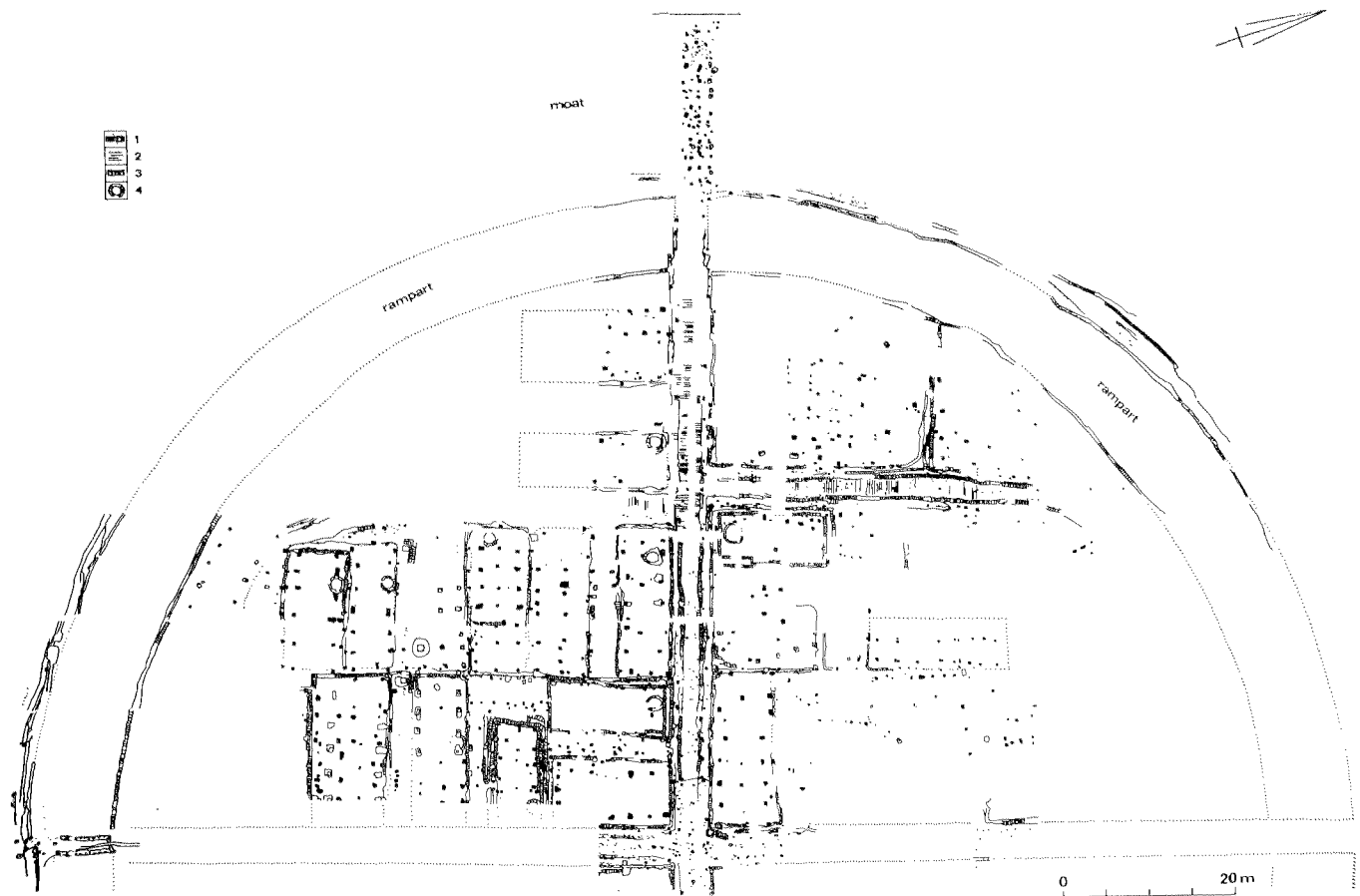


Fig. 5 Detail of part of the fortress; a distinct feature of the ground-plans of the houses are the rows of clay sods along the walls; 1: post-hole; 2: wooden boards; 3: clay sods; 4: fire-place

NAP; Dunkirk II deposit), one of the highest existing at that time on the island of Walcheren.<sup>3</sup> Before its construction, the mud-flat must have been under cultivation for some years as witness a series of furrows made by ploughs on the old surface. Unfortunately, no finds that could be dated to that time were made on the cultivated land, so that a *terminus post quem* could not be established for the founding of the settlement.

The positioning and design of the settlement was proba-

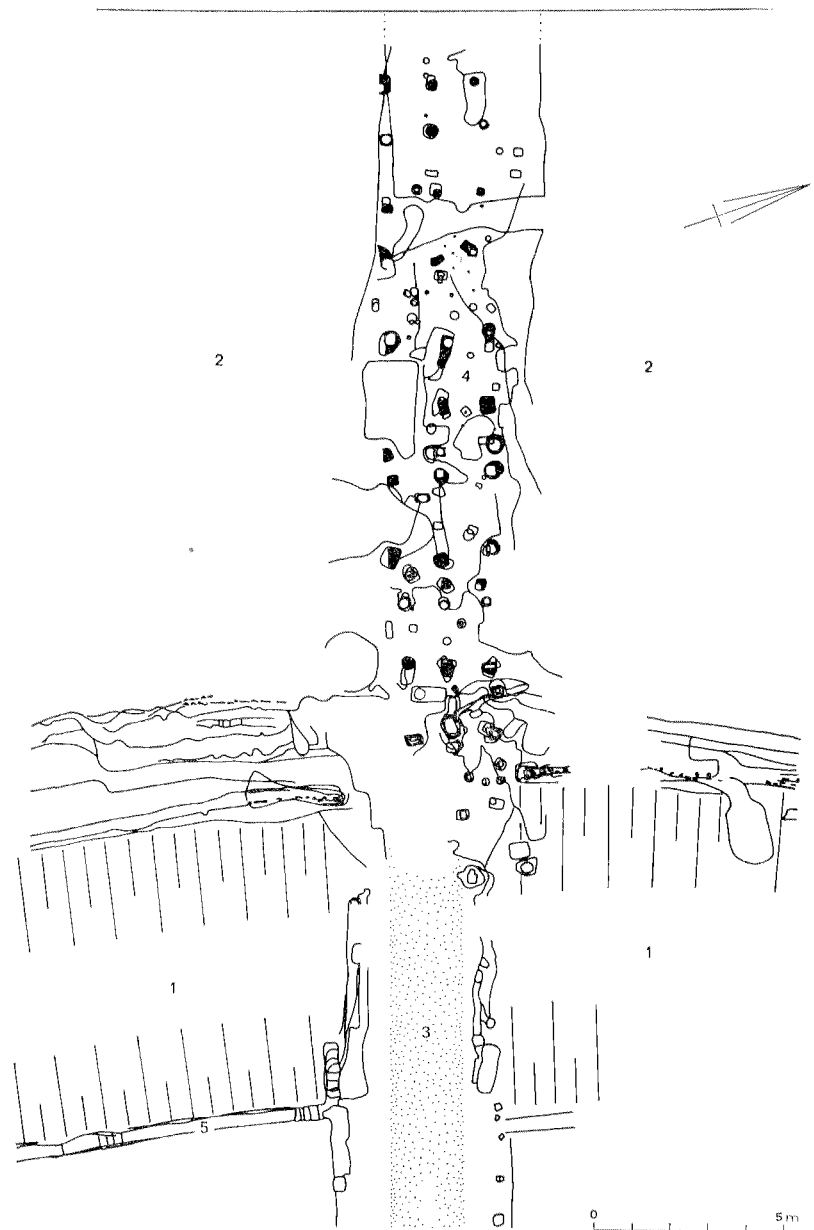
bly the work of expert surveyors, whose services the Romans often enlisted also for the construction of their fortifications. The diameter of the Oost-Souburg camp – outside measurements – is 150 m. Just as in the forts uncovered by excavations in other countries,<sup>4</sup> the inner area of the Oost-Souburg settlement shows a cruciform system of roads, dividing the area into four equal sections (figs. 4 and 5). The two roads running at right angles cut through the rampart in four places, at what might be

<sup>3</sup> According to W.C. Braat the old ground-level under the Middelburg fortress is 1.65 m above Amsterdam Ordnance Datum (NAP) (Baat 1942, 17, as against p. 18: 1.15 m above NAP). Under the Abbey at Middelburg we put the ground-level

in Carolingian times at 1.23 m above NAP (Trimpe Burger 1964, 107).

<sup>4</sup> See note 2.

Fig. 6 Rows of bridge-posts in the moat, the extension of the western 'entrance gate' in the rampart; 1: rampart; 2: moat; 3: road; 4: 'bridge'; 5: clay sods



termed the 'entrance gates.' Two of these entrances were examined in 1969-1971. A bridge across the moat, which was about 16 m wide, must have linked the approaches and the extension of each road; rows of heavy piles driven deep into the moat, which must have supported the piers of the bridge, have been found (fig. 6). The present network of streets in the centre of Oost-Souburg, which clearly dates from early times, would

seem to be partly linked with the old roads in the settlement running at right angles already referred to,<sup>5</sup> even if we disregard the circular road.

5 It would be an excellent idea if under a new development project the location of the rampart (8 m wide) and of the cruciform system of roads, with the adjoining main sections, were incorporated in the plan.

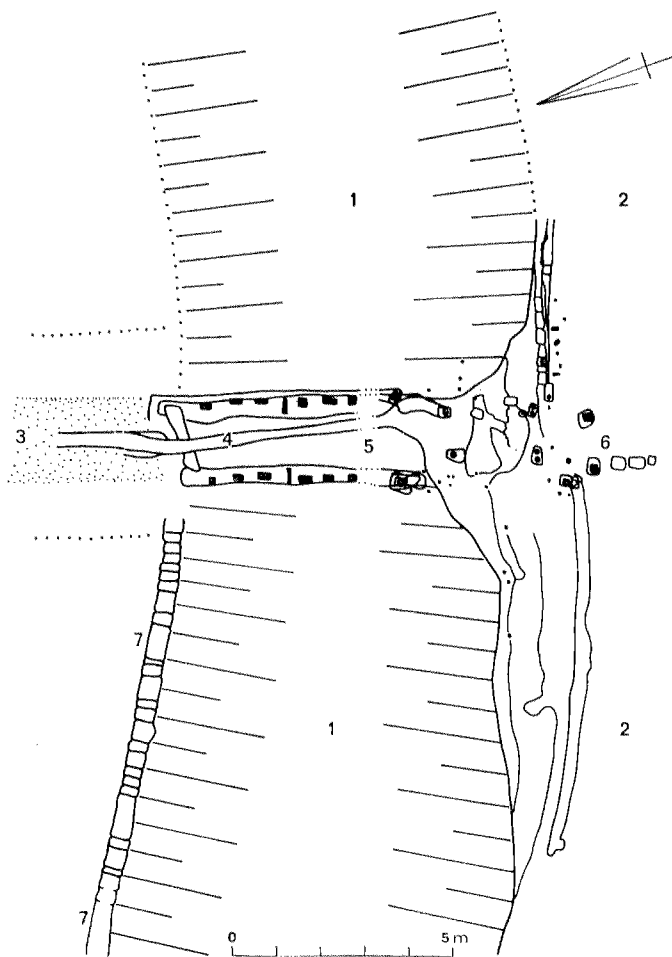


Fig. 7 Detail of the south 'gate' (cf. fig. 5); under the surface of the passage lie the remains of a wooden culvert which was connected to the sewage/drainage systems of the site; 1: rampart; 2: moat; 3: road; 4: wooden culvert; 5: entrance gate; 6: bridge(?); 7: peat sods

The inner area of the settlement was artificially raised (fig. 4). After the first occupation phase, the site must have been raised periodically several times, more particularly at the end of the tenth century or in the eleventh. This was probably done by way of defence against increasing flood hazards, but it must also have improved the site's drainage. It should be borne in mind that the

settlement was constructed in an area without dikes, which was liable to be inundated at spring tides and high tides caused by gales. The rampart and entrance gates may well have been constructed in such a manner that they also constituted defences against the water (fig. 7).<sup>6</sup>

Since cultivated land was found under the oldest raised layer, we must assume the settlement to have been constructed during or shortly after what is termed a regression phase. This would square with observations made on the beach at Domburg, where old cultivated land can sometimes be seen on mud-flats originally situated within the row of dunes. On the basis of pottery finds, the cultivated land can be dated from the ninth century or from the beginning of the tenth century.<sup>7</sup>

An important feature in connection with the drainage of the site, when first constructed and occupied, is the structure of the cruciform system of roads and a number of 'secondary' roads linking up with them, which subdivide the quadrants (pls. xxxii-xxxiii). The 'building sites' on either side of the roads had been raised about half a metre, the slopes being strengthened expertly with sods cut to measure.<sup>8</sup> The 'roads' were used as covered sewers, as they sometimes are down to the present day. On the upper edge of the slopes heavy wooden boards had been placed across the sewer, the boards being kept in place by stakes driven vertically into the ground. These wooden 'roads'<sup>9</sup> with a perfectly functioning drainage system underneath constituted the settlement's main network of communications. The sewers, which as they approached the moat had been dug more deeply into the firm earth, must have debouched eventually into the moat via a wooden culvert running underneath the

6 The width of the entrance gate was 2 m. There were stakes along the two walls (see fig. 7) which may have had various uses, such as to contain the banks (combined with the horizontal timber put in lengthwise), to support a superstructure, or to serve as points of support for closing off an aperture. It is surprising that two opposing post-pits should, in their lengths, be positioned vertically to the walls (shown in the photograph as two horizontal sticks).

7 See Trimpe Burger 1960-1, 203, and fig. 8.

8 In fig. 5 in particular the rows of sods can be seen very clearly. Cutting sods to measure and keeping them in good repair requires a great deal of experience. From this we may infer that the workers in question were local people from the clayey soil.

9 The remains of horizontal, transverse boards can best be seen in pl. xxxiii: 2, showing one of the secondary roads flanked by a strong row of sods. We are not sure whether there was a 'sewer' underneath; if so, it must have been silted up fairly soon.

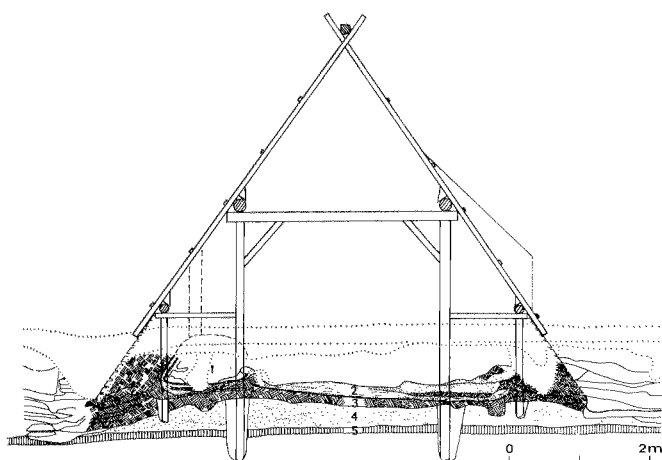


Fig. 8 Schematic section (reconstruction) of a house; 1: fire-place; 2: layer of ashes; 3: clay floor (sods); 4: raised sand and clay; 5: old surface

foundations of the entrance gates. In one instance we were able to demonstrate the presence of such a culvert.<sup>10</sup> Remains of rectangular dwellings of various dimensions were found near and oriented towards the main roads. Just as during the excavations carried out in 1961<sup>11</sup> under the Abbey at Middelburg (the ancient nucleus of that town) it was found that, for the construction of walls and flooring, sods had been freely used, combined with the timber and wattle structures (see fig. 8 and pl. xxxi: 2). The sods were arranged like bricks with hardly any space (joints) between them. The precise location of the dwellings (see fig. 4) during the first stage of construction has still to be established on the basis of the complicated drawings made of the excavation site. It is very difficult to reconstruct the oldest plan because the site must have been densely populated, in the eleventh and twelfth centuries in particular, so that ancient differences in level were filled up or even levelled down. The later dwellings obscure the oldest situation. At any rate we can be sure that at Oost-Souburg there never was a regular grouping of houses and workshops as was found at Trelleborg, Fyrkat, Nonnebakken (all three  $4 \times 4$  houses) and

<sup>10</sup> In the second entrance gate investigated, the 'protective' layer had become so thin over the years that the present building trench had obliterated practically all traces.

<sup>11</sup> Trimpe Burger 1964, 107-8, figs. 14, 15, and 16.

Aggersborg ( $4 \times 3 \times 4$  dwellings). Our first impression is that few people actually dwelt there before the year 1000. Various explanations can be given for this. The site may not have been originally intended for permanent occupation or people may not have been able to use it much in that way. Nor should we dismiss the possibility that the camp was not constructed for purposes of refuge from, or defence against, possible invaders or marauding bands at all – the camps in Zeeland and Flanders are sometimes linked with the Viking raids at the end of the ninth century – since such fortifications may well have served as base camps, labour camps, or as winter quarters of a military or semi-military nature.<sup>12</sup> At any rate the oldest period, that during which the colossal task of constructing and occupying the settlement was achieved, is characterized by a virtual absence of finds, with the exception of scraps left over from meals, such as animal bones, and shells from edible shellfish. The absence of pottery, for instance, gives rise to problems of dating. What we consider to be the earliest sherds, found so far, are from the thick-walled amphorae of primitive design with embossed ornamental bands (pl. xxxiv: 1), which probably date from the tenth century (possibly even from the late tenth century). Badorf pottery and other early earthenware, found on the beach at Domburg and elsewhere, are completely absent.

We have not, however, been able to establish anywhere in Oost-Souburg that the thick-walled amphorae definitely belong to the oldest structures. On the contrary, we received the impression that this type of pottery, which may date from the tenth century, should be linked with activities during the initial stages of the second phase of raising and occupying the camp. Nevertheless, our excavations did yield some finds from early times, namely a number of ornaments dating from the ninth century (fig. 9 and pl. xxxiv: 2). Like coins, such object will, however, remain in a well-preserved state for considerable periods. There will, therefore, always be some uncertainty as to the exact dating of the settlement, the more so since the number of ornaments found (five in all, of which several were from the moat) was small.

Various researchers have tried to establish a link between the round camps found in Flanders and Zeeland and a

<sup>12</sup> In my opinion there is a certain disproportion between the sizes and numbers of the settlements and the size of the local population, who must have lived sparsely distributed over the island of Walcheren, perhaps with the exception of the important trading station near Domburg.



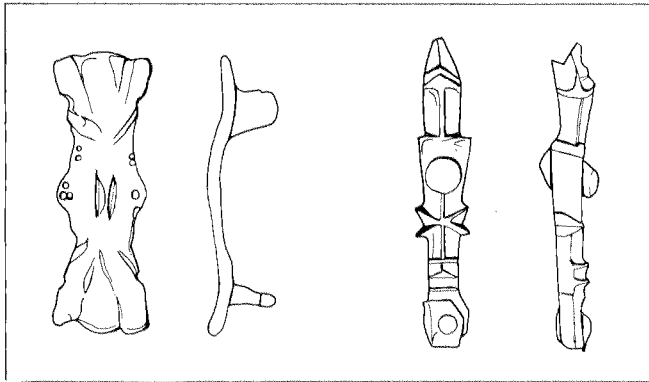


Fig. 9 To the left: equal-armed brooch, eighth to ninth century (?); to the right: bronze chest-facing, ninth century (?)

passage in the *Miracula Sancti Bertini Sithiensis* relating to the town now called Sint Omaars in Dutch or Flemish and Saint-Omer in French (Sithiu being the old name of the town situated in what is now northwestern France).<sup>13</sup> In the passage there is a reference to *castella recens facta*, to recently raised fortifications (*i.e.* before 891) against Viking raids. If we assume that the embossed amphorae referred to above are not decisive as regards dating the oldest structures but may well relate to the second phase of occupation, dates somewhere between 880–890 would not be entirely unacceptable on historical grounds. If we assume later dates for the erection of the Zeeland forts, it will be difficult to link them with the Viking raids.<sup>14</sup> For the Danish camps, such as Trelleborg and Fyrkat, rather late dates were assumed, *viz.* the tenth century or the beginning of the eleventh century. In Denmark, too,

13 *Miracula S. Bertini*, ed. O. Holder-Egger, 507–22. See also Huizinga 1935; Braat 1941; 1942; 1954; Van Werveke 1965; Van der Feen 1952.

14 C. Hoek feels that there must be links between the fortresses in the Zeeland and Flemish coastal areas and those in Denmark. He writes: 'The similarity is so great that the thesis that Danes, who either as Carolingian mercenaries or as marauding bands,

the oldest structures have not yielded many finds, which could also seem to apply to various settlements in England from the same period.

It will be clear that in our investigation of the Zeeland fortifications we are confronted by a tangled web of data, in both the historical and archaeological spheres and in the field of soils science. It would be too hazardous for us to make sweeping conclusions in the present, provisional communication without our first having subjected the actual material available to careful analysis. Possibly, we are prematurely attaching too much value to the similarity in form between the Danish and Zeeland settlements. Perhaps the builders started in both countries from a generally known and accepted prototype of fortress.<sup>15</sup>

#### ACKNOWLEDGEMENT

To close this short, provisional report of the excavations in the Oost-Souburg citadel I wish to express my gratitude to all who helped bring this technically difficult research to a reasonably satisfactory end. My thanks are due in the first place to Mr R.E. Lutter for supervising the technical fieldwork with so much insight and interest, and for working out the field sketches at a later stage into a surprisingly comprehensive whole. Mr B. Oele (correspondent ROB at Kappelle) cooperated on almost the entire excavation campaign and was of great assistance in making the field sketches. The ROB field technicians K. Greving, H. Ter Schegget, and M. Wassen assisted for shorter periods. Thanks are due, too, to the photographers L. Breijer and S.J.A. Kuppens for the many excellent photographs provided. The digging operations were carried out chiefly by the staff and machinery of Leenhouts Aannemingsbedrijf of Sluis.

got to know this type of fortress in the North Sea coastal areas and then introduced it in their own country deserves serious consideration' (Hoek 1972, 203–5).

15 Cf. also: *De Vikingen in de Lage Landen getoetst aan de Danelaw, Working Paper I* (Project Medieval Archaeology, course 1969–1970, University of Amsterdam, Institute for Pre- and Proto-history), spec. p. 72.

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# Digging in Dutch Towns: Twenty-Five Years of Research by the ROB in Medieval Town Centres

figs. 1–19

## I INTRODUCTION

What is a town? At what point does a medieval settlement become a town? The question has often been asked, and it has been answered in many ways, especially since the last century. After all the lengthy discussions we are convinced that a single, all-encompassing answer cannot be given. Historians and linguists, jurists and economists, geographers and sociologists have all had their say. We can consider the findings of archaeological research as being among the more ‘youthful’ solutions, but even in this field the many-headed monster seems to be invincible. The all-embracing synthetic theorizing that gave an exact definition of the concept ‘town’ has long since made way for a more subtle approach. The impressive theory that defines the origin of medieval towns in terms of the increase of trade (Henri Pirenne) dominated the scene for several decades, but nowadays trade is regarded as merely one factor of many. The classification of the different contributing factors has led to the compilation of typologies of towns, but in recent years the relative value of adopting certain criteria has been pointed out.<sup>1</sup> What is it that determines a settlement to be a town? The number of inhabitants (*critère statistique*)? The historical development (*critère historique*)? The acquisition of municipal rights, autonomy (*critère juridique*)? Medieval terminology (*critère de la terminologie*)? Or is it, after all, economic forces (*critère économique*)? None of these factors by itself can explain the whole: they all play a part, often intermittently – a part that also varies with place and time.

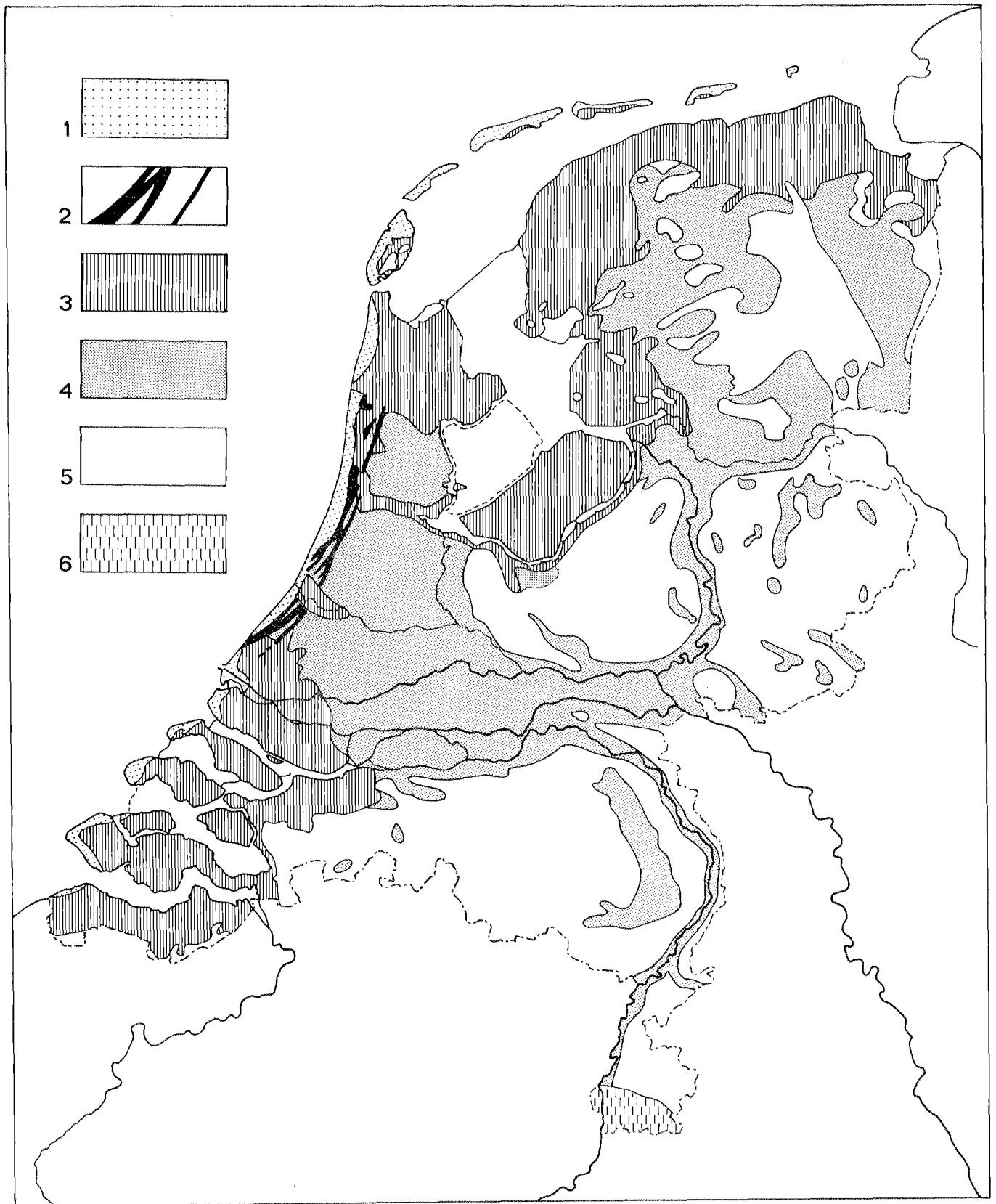
One of the most modern approaches to the problem uses two concepts derived from sociology: structure and function. Very simply this amounts, in the first case, to regarding each town as a separate phenomenon in its own right (geographic situation, growth, its charter, its law, *etc.*), whilst in the second case the town is considered in terms

of its interaction with its surroundings (economically as a market place, administratively as a centre of government, *etc.*). It is obvious that this method of research cannot solve all the problems, but it does open new possibilities of gaining a better view of the essence of the medieval town. It has been argued that the three points of departure – definition, typology, and structure/function – should henceforth be combined in the historical research of medieval towns.<sup>2</sup> It would seem that this combined method is also well suited to the archaeological investigation of town centres. For in archaeological research the different aspects play a part, they crop up intermittently and can be subjected to material examination. As far as the origins of a town are concerned it is possible to trace the exact location, to determine the exact age, and to explain the geographical position; furthermore, subsequent expansions and contractions of the oldest town centre can be traced. Institutional elements such as churches, town-halls, dwellings, walls, moats, and so on must also be examined. The relation of the town with its surroundings may, for example, be reflected in portable finds which indicate the practising of crafts, the position of the town as a central market place and in its trade relations with other countries.

In archaeology medieval town-centre research occupies a special place, one with its own possibilities and limitations. These will be examined a little more closely. The most important limitation is the uncertainties of the space available for research. They vary – in a modern town – from a trench dug for a sewer system to a complete district within the framework of redevelopment. Neither the town as a whole nor all important historical objects are ever available. Thus by its very nature medieval town-centre research is inevitably incomplete, and the systematic planning constantly suffers from the unsystematic avail-

1 Joris 1965; repeated in Joris 1969.

2 Schledermann 1970.



ability of the areas to be examined. Yet it is possible, however, to obtain a certain picture from this instability. Next to the search for material sources the use of written sources is one of the characteristics of town-centre research. The latter may provide an identification of the phenomena which are known through archaeological methods, in some cases, the dating will be absolute – a much-felt want in pre- and protohistory. For the direct testimony of our predecessors is always the best guide for the critical dating problems. Mostly however, even in medieval archaeology, the current archaeological methods have to be employed. In these cases the stratigraphy of the finds, mainly pottery, is generally used. Besides there is a dating element in inorganic building materials: stone of different types, and bricks of time-tied sizes.

The scientific methods of absolute dating vary in usefulness: palynology, in general, is unsuitable and the radiocarbon is not precise enough to answer detailed questions. But good possibilities for absolute dating are offered by dendrochronology.<sup>3</sup> A possibility of clarifying the pattern of the town's contacts with the outside world is provided by important articles present among the finds, in this case mostly pottery. Gradually a reasonable knowledge of this last category has been obtained. The occurrence of certain imports shows the existence of some sort of contact, indications of trade relations are supplied only by distinct quantities of material. To establish this it is necessary for the finds to be of a sufficient quantity, *i.e.* a large and complete collection. It is obvious that in this way the interaction between archaeological finds and written sources can strengthen the image of the town as commercial centre.

In theory, one could choose every medieval town for archaeological research. Ideally, the whole stratigraphical range of archaeological evidence, ranging from the present moment back to the origin of human activity in that area, should be examined. In view of the possibilities and the limitations, but also in view of the inadequacy of ex-

plaining in general the phenomenon 'town' by archaeological means, it is the writer's opinion that in practice a selection will always have to be made among the group of medieval towns, in the town centre chosen, and between the archaeological layers at the site. The town-centre archaeologist, like the town historian will have to concentrate his research *à l'intérieur d'unités organiques soigneusement délimitées pour une période déterminée.*<sup>4</sup>

## 2 MEDIEVAL TOWNS IN THE NETHERLANDS

Can the Netherlands be considered as such a clearly defined area? We venture to doubt it, in spite of the limited size of this country. Perhaps it is better to consider the country as it is today as an agglomerate of several old regions whose borders shifted a number of times during the Middle Ages.

Several Dutch towns have a Roman history. Yet, in most cases there are few connections between their Roman past and later developments. Perhaps the only exception is Maastricht in the extreme south of the country where the kind of town life dating from Roman times seems to have continued – though on a much smaller scale – during the Migration Period and Frankish times. In this town, too, Roman Christianity established a bishop's see, which, having been moved from Tongeren in the fourth century, was moved again in the eighth, this time to Liège. We do not know of any other centres of Roman Christianity in this country, because larger urban agglomerations, in which the early Church preferred to establish itself, simply did not exist. The medieval towns where Roman traces have been found – Nijmegen, Cuyk, Utrecht, Aardenburg – are of military origin. Towns which had enjoyed a civilian habitation in Roman times did not automatically survive into the Middle Ages. Many settlements were abandoned for good, others were reoccupied but lacked continuity with previous developments.

The period of the early Middle Ages, the seventh to tenth centuries, went through a somewhat similar development. Large trade emporia emerge, such as Dorestad near (the late-medieval) Wijk bij Duurstede, and an *anonymum* near Domburg on the island of Walcheren, but they disappear towards the end of that period. Circular forts were built

< Fig. 1 The Netherlands: geological map in outline. 1. Younger Dunes; 2. Coastal Barriers; 3. Holocene Clay; 4. Holocene Peat; 5. Pleistocene Sands; 6. Cretaceous Sediments

3 This method has only been recently applied in Dutch town-centre research. As most of the excavations mentioned in this paper were executed some time ago, remarks will be limited to an indication of the method used.

4 Joris 1965, 100.

along the coast, as refuge for the population: Den Burg on Texel, Burg on Schouwen, Middelburg and Souburg on Walcheren, Oostburg in Zeeuws-Vlaanderen. But these, too, were abandoned, and only one, Middelburg, developed into a medieval town after the foundation of an abbey there in the twelfth century. The origins of towns such as Groningen, Deventer, Utrecht, and some others certainly go back to the early Middle Ages, but even in these cases the early beginnings had sometimes but little to do with later developments. Indeed, this study of Dutch medieval towns is focused on the urban centres that have existed since the year 1000.

In the first centuries after the year 1000 the distribution of towns in this country was quite simple. Utrecht in the centre, with its bishop's see, was the 'capital.' In the Middle Ages the diocese of Utrecht comprised a large part of what is now the Netherlands, notably the centre (north of the River Maas), the west (including Zeeland up to the mouth of the Scheldt) and the north (except the extreme northeast, which was ruled by the Bishop of Munster) (fig. 2). The Bishop of Utrecht, as an official of the German Imperial Church, also became the secular representative of the German king. In keeping with the centralist state policy he was to hold the delta regions of the main rivers, in order to counterbalance the centrifugal forces of principalities developing towards independency. To this end the secular powers of the bishop were extended to cover large parts of the diocese in the course of the eleventh century. The most important towns in the newly formed episcopal state of Utrecht were, besides Utrecht itself: Staveren and Groningen in the north, Deventer in the centre, and Tiel in the south; no urban centres had developed in the west at the time of the rule from Utrecht. South of the Maas, where the diocese of Liège began, a similar development took place. A bishopric with secular authority was also established in Liège in the course of the eleventh century, although it was much more loosely structured than in Utrecht. The focus of this region lay on the area halfway up the river Maas, with Maastricht, Huy, and Dinant as the main urban centres.

Although the centralistic policy met with initial success, it collapsed completely soon after the year 1100. As a consequence of the subsequent decentralization of governmental power, the principalities expanded considerably throughout the twelfth and thirteenth centuries, leading to an increasing degree of autonomy. In terms of present-day geographical conditions they were: the County of Holland-Zeeland, large parts of the County of Gelre and the Duchy of Brabant, and a small part of the County of

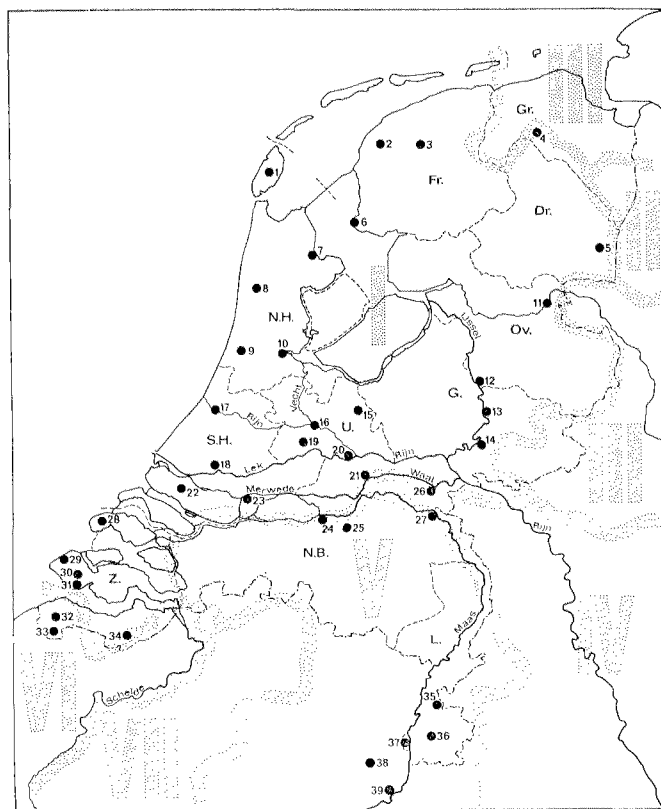


Fig. 2 The Netherlands. Medieval bishoprics: i Utrecht; ii Osnabrück; iii Münster; iv Köln; v Liège; vi Doornik/Tournai; vii Kamerijk/Cambrai.

Modern provinces: Dr(ente), Fr(iesland), G(elderland), Gr(oningen), L(imborg), N(orth) B(rabant), N(orth) H(olland), Ov(erijssel), S(outh) H(olland), U(trecht), Z(eeland).

Places mentioned in the text: 1. Den Burg; 2. Franeker; 3. Leeuwarden; 4. Groningen; 5. Emmen; 6. Staveren; 7. Medemblik; 8. Alkmaar; 9. Haarlem; 10. Amsterdam; 11. Hardenberg; 12. Deventer; 13. Zutfen; 14. Doesburg; 15. Amersfoort; 16. Utrecht; 17. Leiden; 18. Rotterdam; 19. IJsselstein; 20. Wijk bij Duurstede; 21. Tiel; 22. Geervliet; 23. Dordrecht; 24. Heusden; 25. 's-Hertogenbos; 26. Nijmegen; 27. Cuyck; 28. Burg; 29. Domburg; 30. Middelburg; 31. Souburg; 32. Oostburg; 33. Aardenburg; 34. Axel; 35. Sittard; 36. Valkenburg; 37. Maastricht; 38. Tongeren; 39. Liège

5 The original mouth of the Old Rhine via Leiden near Katwijk was probably filled during the 12th century. The outlet of the Rhine via de Waal-Merwede and especially the Lek shifted more to the south.

Flanders; the Frisian regions in the north managed to obtain a certain degree of 'independence,' which in Dutch historiography is often described as 'anarchy.' Lastly, in the southernmost province of Limburg, a conglomerate of very diverse counties and seigneuries emerged.

One of the effects of the tendency towards decentralization was that the number of towns increased to such an extent that the lords may be said to have followed a straightforward urbanization policy. Thus the town of Zutphen on the IJssel was patronized by the counts of that name during the twelfth century as a counterpart of the episcopal town of Deventer. In these years the counts of Holland stimulated the growth of the town of Dordrecht, situated in a strategic position where the lower reaches of the Maas and Rhine came close together.<sup>5</sup> Utrecht's trade interests in the river area were now partly taken over by Dordrecht, and the importance of Tiel gradually diminished in favour of Cologne, which had grown considerably in the twelfth century. On the island of Walcheren in Zeeland, Middelburg developed (entirely under Flemish influence) around the Premonstratensian abbey, which had been founded in the old circular fort in the twelfth century. Across the mouth of the Scheldt, in the northern part of Flanders, the count encouraged the growth of the town of Aardenburg. Lastly, the Duke of Brabant tried to gain command over the lower reaches of the Maas by founding 's-Hertogenbos (Bois-le-Duc) on the northern ridge of the Brabant sands: this town became the northern capital of the duchy.

In the thirteenth century the tendency toward urbanization became incomparably stronger, giving rise to a very complex distribution of towns. A list of names is not very relevant in this context: the reader is referred to the comprehensive survey given by Fockema Andreae.<sup>6</sup> It is, however, interesting to note some main features of the development as a whole. The towns patronized by the rulers in their respective principalities sometimes evolved from existing settlements, in which case a village was promoted to the status of town, but new foundations of the characteristic 'new town' type were regularly made. Numerous seignories which were initially still independent were located in the border areas between the counties. Their overlords soon followed the example of their powerful neighbours, especially towards the end of the thirteenth century. It seemed as if every seignory insisted on having

its own town. Generally speaking, these were the typical 'new towns' – this is recognizable even today in their often rigid layout. In the first half of the fourteenth century the policy of urbanization was rounded off. A pattern of towns had now emerged which in fact has continued largely unchanged until today,<sup>7</sup> except for two major post-medieval developments: the construction of a number of fortified towns in the late sixteenth and seventeenth centuries, and the growth of the large industrial centres since the end of the nineteenth century.

The development of medieval towns was undoubtedly also influenced by the interaction between man and the surrounding countryside. Around the year 1000 the possibilities of occupation in this type of country (fig. 1) was still comparable to the situation in late pre-historic times, in the Roman period, and in the early Middle Ages, *i.e.* the relatively high grounds in the north, south, and east of the country were reasonably fit for habitation. Life in those regions depended more on fertility and the accessibility of the soil than on its firmness. The latter condition, however, was a decisive factor in the centre and the west, where the rivers Rhine, Maas, and Scheldt together constituted one vast delta area, where habitation was possible only in areas with firm subsoil, notably the fossilized riverbeds, embankments of existing rivers, clay deposits in the estuary region, and the sandy belts of the Old Dunes along the coast. The large tracts of fenland in between were virtually impassable. The considerable population growth led to large-scale land reclamation. Towards 1300 reclamation in the western Netherlands came to a close with the colonization of the Holland-Utrecht fens. Although the cultivation of the western Netherlands was initially agricultural by nature, later – particularly in the thirteenth century – the population increased considerably by settling in new towns. So while the west of the Netherlands had a late start in urban development, this lag had been fully recovered after just more than a century. Mention should be made of a second factor in the development of towns in the west of the Netherlands as a result of geographical changes: the severe floods of the Dunkirk 117 transgression phase from the second half of the twelfth century onwards. One consequence was that the altered course of some waterways rendered the location of old communities unfavourable as regards transport, so that new centres were established on more favourable sites.

6 Fockema Andreae 1948, 30 ff.

7 It is perhaps unnecessary to point out that shifts of emphasis have obviously occurred within the group as a whole.



It is the combination of these specific political and geographical factors, in combination with socio-economic factors into which we cannot go further now, that determined the development of medieval towns in the Netherlands.

### 3 RESEARCH INTO TOWN CENTRES: POINTS OF DEPARTURE

Archaeological research into Dutch towns has been carried out anything but systematically. The chief investigations in the major urban settlements have recently been summarized by Van Regteren Altena (1970). This summary begins with the agglomerations dating from the Carolingian period, but, as stated, we wish to distinguish between these and the later medieval towns. Of the latter group Staveren, Amsterdam, and Dordrecht were studied: the main theme of the investigations there being the development of town planning, notably the extension of part of the town into a river.

This aspect, which is so important in the development of Dutch towns, was amply illustrated by the detailed studies. Besides the few major excavations, a large number of small-scale investigations have been conducted in Dutch towns.<sup>8</sup> These were in general incidental and to a high degree dependent on non-scientific factors, so that a summary of systematic research into town centres would seem, at this point, to be premature.<sup>9</sup>

Despite the inevitable heterogeneity of town excavations, it is possible to draw up a general outline. For this purpose we shall divide the objectives of archaeological research into the following three groups.

- a) the motives underlying the development of a town: the town as residence of authority; as a market place or centre of trade; as a deliberate foundation (new town); the town in connection with a castle; the fortified town;
- b) the alterations in the town's layout;
- c) the different elements of the medieval town: chapel or church, monastery, castle, 'administration' buildings, dwellings, workshops, streets, port, wall, gate, canal, and moats.

These themes will often overlap, but each excavation can contribute substantial information on one or more of these aspects. This implies that the combination of the

three points of departure, so highly valued in modern town centre research, *viz.* definition, typology, structure/function, will come about almost of its own accord.

Naturally, the research into town centres conducted by the ROB also presents a kaleidoscopic picture. Between the large-scale investigations at Deventer in 1951-52 and those in Dordrecht in 1968-71, excavations have been carried out in 35 towns. Although the object of this study is to give an outline of this town-centre research, and notably to do so according to the above-mentioned themes, there are not sufficient examples to illustrate all aspects equally well. In so far as good examples are not available, we hope that this study may also be of service as a programme for future town-centre research. For the time being we shall attempt to answer the question: what is the outcome of twenty-five years of digging in Dutch medieval towns by the ROB? We hope thus to make a contribution to systematic town-centre research.

The answer is divided into three parts, according to our distinction of the motives underlying the town's development, the alterations of the town's layout, and the elements of the medieval town. Each part contains a survey of the principal investigations by the ROB in this specific field and each survey is followed by an elaborate example of one particular site.

### 4 MOTIVES

Probably one of the oldest *raison d'être* for a town was its function as the residence of government authority: this has been so throughout the ages. The decentralization of government power during the Middle Ages had far-reaching consequences in the Netherlands. Since society was at first mainly agrarian, with few ancient traditions, the number of residences of authority was small. After 1000 the number of such centres increased rapidly, giving rise to the dualistic developments of the later Middle Ages: the intensification of central governmental power was accompanied by a proliferation of seignories, thereby greatly increasing the number of residences, both large and small. Indeed, the picture presented by the distribution of towns at this time is complex. The archaeological research conducted in Dutch towns by the ROB has dealt with several aspects of this problem.

historical sources are threatened with destruction by building activities and redevelopment schemes. A survey like *The Erosion of History* (Heighway (ed.) 1972) published in Great Britain is needed for the Netherlands also.

<sup>8</sup> Reference is made, for instance, to the bibliography in De Weerd 1965, 162-168.

<sup>9</sup> At present, however, systematic town-centre research is a pressing matter, because many medieval town centres as

There was a royal residence in Nijmegen (Province of Gelderland): Valkhof Castle, situated high up and overlooking the river Waal. It was in use as such from the eleventh to the thirteenth centuries: in 1796–97, most of the complex of buildings was torn down, except for an octagonal chapel and the choir of a semicircular closed chapel, both Romanesque style.<sup>10</sup> There was a second royal residence in the episcopal town of Utrecht: Lofen Palace, situated northeast of the Dom (Cathedral). The cellars of the palace still exist as the foundations of the present buildings.<sup>11</sup>

Utrecht was in the first place, however, the home-town of the bishop. The episcopal residence was situated south of the royal palace, and southeast of the Dom. Only a small part of this residence has been excavated and studied – long before the ROB came into existence.<sup>12</sup> The bishops of Utrecht had a second residence in Deventer. When in 1046 they were granted the secular authority over a large part of the northern Netherlands, Deventer became their northern capital. The bishop's residence that was built as a consequence of this political move has been thoroughly investigated by the ROB: in connection with the specific theme of residences in medieval towns this archaeological research will be discussed at some length below.<sup>13</sup>

The sites of the residences in the principalities that sprang up alongside the bishopric of Utrecht have in many cases not been traced, let alone examined archaeologically. One example, however, has been thoroughly excavated: the residence of the Count of Zutphen.<sup>14</sup> At some time in the historical twilight of the eleventh century the county of Zutphen came into existence, with a small settlement that subsequently developed into the town of Zutphen (Province of Gelderland). The residence in this town became known in later years as the 'Gravenhof.' Towards the end of the thirteenth century the county of Zutphen was joined to the county of Gelre by inheritance, and in 1338 both became part of the Duchy of Gelre.

The Gravenhof was situated southwest of the Walburgis church on what is today a large square. Excavation<sup>15</sup> has shown that the residence of the counts of Zutphen was built in two stages. The first was a timber hall (28 × 8 m)

with close-set vertical timbers in the long walls, suggesting that the walls may have consisted of planks fitted into grooves in the posts. A short row of posts on the northwest could indicate an outer staircase with a gallery leading to an upper floor where, as usual, the most important room, the Hall, was located. Unfortunately, the finds were too scanty to allow the buildings to be dated; but on historical grounds it may be assumed that this hall, as the residence of the first count of Zutphen, dates from *c.* 1100. The timber hall was eventually destroyed by fire and replaced by a tufa building. The only finds relating to this second stage were the robber trenches of the walls. The new hall was a slightly larger than the first (31 × 10 m) and had an almost square construction protruding from the middle of the northern wall: this has been interpreted as a porch with steps leading to the hall on the upper floor. The ground floor has been divided into four sections. Obviously we know nothing of the superstructure, but most probably there was a large hall extending over the whole area of the building – or at any rate over its total length. This second building cannot be dated by archaeological finds, but again, historical sources suggest a date in the first half of the twelfth century.

The residence in Middelburg on the island of Walcheren was of a completely different nature. The centre of the town is marked by a late ninth-century circular fort in which a Premonstratensian abbey was founded in the early twelfth century. The abbot of Middelburg gradually succeeded in gaining seignorial authority over the entire island and as such the abbey could be considered a seignorial residence. A small-scale investigation has been carried out by the ROB in one of the wings where, in the mid-fourteenth century, a two-aisled brick hall with cellar was added to the abbey buildings.<sup>16</sup> The present residence of the provincial Governor of Zeeland is situated on the site of this medieval building, while the offices of the Provincial Government are also housed in the abbey: even today the abbey of Middelburg may be considered a seat of government authority.

The residences in many medieval towns were castles. Mention has already been made of the royal residence on the Valkhof in Nijmegen. Another twelfth-century exam-

10 Unfortunately, excavations executed during the beginning of this century have never been published. See also Weve 1925.

11 No archaeological research has been executed here; for a description of the existing remains see Haslinghuis 1956, 78–84.

12 Labouchère 1927.

13 See pp. 377ff.

14 This excavation was executed in 1946 by the Rijksbureau voor de Monumentenzorg (Department for the Preservation of Monuments), just before the ROB was established; in some respects this may be seen as a pre-natal ROB excavation.

15 Renaud 1950; Doornink-Hoogenraad 1950.

16 Trimpe Burger 1964.

ple is Valkenburg Castle (Province of Limburg), while perhaps also the twelfth-century Burcht in Leiden can be considered as such. In the thirteenth and fourteenth centuries the number of residential castles increased along with the number of seignories and many became the centre of a small (sometimes newly-founded) town. Many of the towns dependent on a castle did not grow from their original size; some even, after an all too ambitious start, eventually shrank to the size of mere villages.<sup>17</sup> In most cases the castle has disappeared – even in the towns that did thrive.<sup>18</sup> Archaeological research has been concentrated mainly on the abandoned castle sites, but the historical development of the town itself has never been incorporated into the analysis.<sup>19</sup>

The studies undertaken by the ROB were also focused on the castle in such towns. The current research at the castle of Valkenburg is yielding interesting data on the oldest history of the fortress which can be traced to the twelfth century.<sup>20</sup> Situated on a hill the castle overlooks the valley of the Geul and the small town at its foot. The archaeological investigations in Valkenburg, however, do not include the town. The situation is much the same in the research being conducted in Leiden. In the centre of the town, on the tip of an island between two arms of the Rhine, there is a high motte with a shell keep at the top, the Burcht. The as yet incomplete research has revealed that the tufa curtain dates from the twelfth century, but also that there may be an even older motte with a wooden palisade dating from the eleventh century within the mound.<sup>21</sup> The development of the Burcht is tightly bound up with the development of the county of Holland. Obviously it is no less closely related to the growth of the town at its foot; archaeological investigations could throw more light on this matter. It should be realized, however, that such investigations are very time-consuming due to the minimal and infrequent accessibility of the excavation sites.

The situation in Heusden (Province of North Brabant) is typical of a seignory, but here too the castle has alone been examined in detail. Probably Heusden originated in

Oud-Heusden, c. 700 m to the south on the border of the firm soil of Brabant. There is a road leading from this village over old deposits of the river Maas to the mainstream further north; at the end of the road by the river a castle with a settlement was founded in the late twelfth century, or should one say a settlement with a castle? Today the town is situated on a slight elevation, the site of the castle (which has disappeared) was lower down on the western side, and completely surrounded by water. The origins go back to before 1200, when the overlords of Heusden left Oud-Heusden to establish a new seignory on the bank of the main river.<sup>22</sup> Excavations in the castle<sup>23</sup> have shown that the earliest period of construction proved to correlate satisfactorily with historical data. The oldest construction consisted of a central tower, octagonal on the outside, and a virtually square hall built in the bank, which surrounded the first castle: the lower part of the buildings was covered with earth, like a part of a motte around the buildings. The earth from the moat was used to raise the level of the inner bailey by more than two metres, so that the lower part of the buildings was covered up with earth (*eingemottet*). Around the year 1330 the castle was thoroughly rebuilt, at which time the hall and the tower, which were of stone, were incorporated into a new curtain of brick. This curtain was circular on the eastern side, but on the western side it was straight in the places where lodgings were built. An extensive outer stronghold was built on the north. This large-scale reconstruction must have had some connection with the extinction of the Heusden family line in 1330. The ensuing complicated feudal struggle for the seigneurial rights was at first won by the Duchy of Brabant, but in 1357 it was forced to give up Heusden to the county of Holland. This change of ownership must have accounted for the last-but-one major reconstruction, namely the erection of a sturdy octagonal tower on the east, outside the curtain wall, and the repair of the wall facing the tower. The last major reconstruction to be carried out (still under the rule of Holland) dates from the first half of the fifteenth century: additional living quarters and a new tower (with cellars) were built on the north

17 Fockema Andreae 1948, 117–119.

18 A broad survey of still existing castles in Van Reyen 1965; in this study the emphasis is completely on the castle itself, the relation with the town being ignored.

19 An exception may be the many years' research in Groningen (Van Giffen-Praamstra 1962; Van Giffen-Praamstra 1966); the research on the castle sites however, has not been published.

20 Renaud 1973.

21 Renaud 1952; Renaud 1971.

22 Rentenaar 1963, 1–11 for the history of the Lords of Heusden.

23 Renaud 1949.

and northwest corner of the main edifice. Compared to the detailed history of the castle our knowledge of the historical development of the town of Heusden is rather scant: where exactly did the settlement originate? How old is it and where was the earliest centre located? To what extent can the town and castle be said to have influenced one another? All these questions could be answered by archaeological research,<sup>24</sup> while also more light could be shed on the exceptional position of Heusden in the eastern part of the dike surrounding the Grote or Zuidhollandse Waard. The latter area constituted, from the beginning of the thirteenth century until its destruction from 1421 onwards, Holland's most extensive and ambitious medieval reclamation.<sup>25</sup>

A second *raison d'être* of medieval towns – for which there is also archaeological evidence – was trade. Trade played a part in nearly all towns, although the importance of the commercial town varied between that of a district marketplace to that of a large port with transshipment facilities, depending both on the location and on the political constellation of the surroundings. Utrecht and Deventer, both dating from Carolingian times, may be counted among the oldest medieval trade centres in the Netherlands. Tiel and Staveren, dating from around the year 1000, represent a middle generation. The younger generation, from the twelfth century onwards, is characterized by Dordrecht, while Amsterdam and Rotterdam for instance, which date from the end of the thirteenth century, may be considered as belonging to the very youngest generation. Archaeological research, including a number of ROB investigations, has been conducted in all above-mentioned towns and cities. For the purpose of studying the phenomenon of trade from an archaeological point of view, the knowledge of the provenance of the finds alone is not enough. The place of origin does indicate commercial links, but to acquire an overall view of the trade relations it is necessary first to establish the relations between the various quantities of objects.

The only trade item that is suitable for such research up till now is household pottery – providing that it is collected in sufficient quantity. Obviously only large-scale excavations can yield sufficient material. As far as this is con-

cerned the research carried out in Tiel (Province of Gelderland)<sup>26</sup> was too limited in scope. Such imports as are mentioned come from the Rhineland and Maas valley regions, which is usual for river towns in the Netherlands. This specific aspect was also excluded from the extensive research into the Nieuwe Markt in Deventer (Province of Overijssel). This is not surprising in a sense, since the knowledge of chronology and provenance of medieval pottery was limited at the time when the investigations were carried out. Indeed, the extensive material found in Deventer has been published as the compilation of a general series of medieval pottery rather than in direct relation to the actual excavations.<sup>27</sup> However, the published reports do show that the imports consisted mainly of products from the Rhineland; this is not surprising in view of the direct link with that region over the river IJssel. The same can be said of the imports both during the Carolingian period and throughout the Middle Ages. Conversely, the sparsely glazed pottery from the Maas valley, typical for the eleventh to fourteenth centuries, rarely occurs in Deventer; this substantiates the historical theory that trade along the river Maas concentrated on the western Netherlands. In Staveren (Province of Friesland) the town extensions to the old centre built in the twelfth and thirteenth centuries have been investigated.<sup>28</sup> Ceramic material was found in considerable quantity, but it has not been thoroughly studied as yet. The preliminary report mentions many Rhineland imports such as the twelfth-century painted pottery in the Pingsdorf style, and from the thirteenth century onwards, stoneware in the style of Siegburg. Imports from the Maas valley (Andenne and Brunssum-Schinveld) also occur frequently. The position of Staveren on the trade route from the Rhine, along the Maas and Vecht, to the North Sea, may serve to explain the considerable number of imports from the Maas valley. Pottery finds from a number of wells demonstrate links with some ports on the west coast of the Continent. In addition to pottery from Flanders or northwest France,<sup>29</sup> one jug came from Saintonge, the famous potters' centre in southwest France.<sup>30</sup> A general view of pottery imports in the subsequent centuries has been provided by excavations in the centre of Dordrecht.<sup>31</sup> This town

24 More so as the total medieval records were destroyed during a fire in the town-hall in 1572 (Van Oudenhoven 1743, 9).

25 Fockema Andreae 1950.

26 Glazema 1950.

27 Dorgelo 1956, 58 ff.

28 Halbertsma 1964; see also following pp. 391–403.

29 In the style of the late 13th-century pottery found at Aardenburg (Trimpe Burger 1962–63, 507–511).

30 Dunning 1968, 45 and fig. 22.

31 Sarfatij 1972, 664 ff.

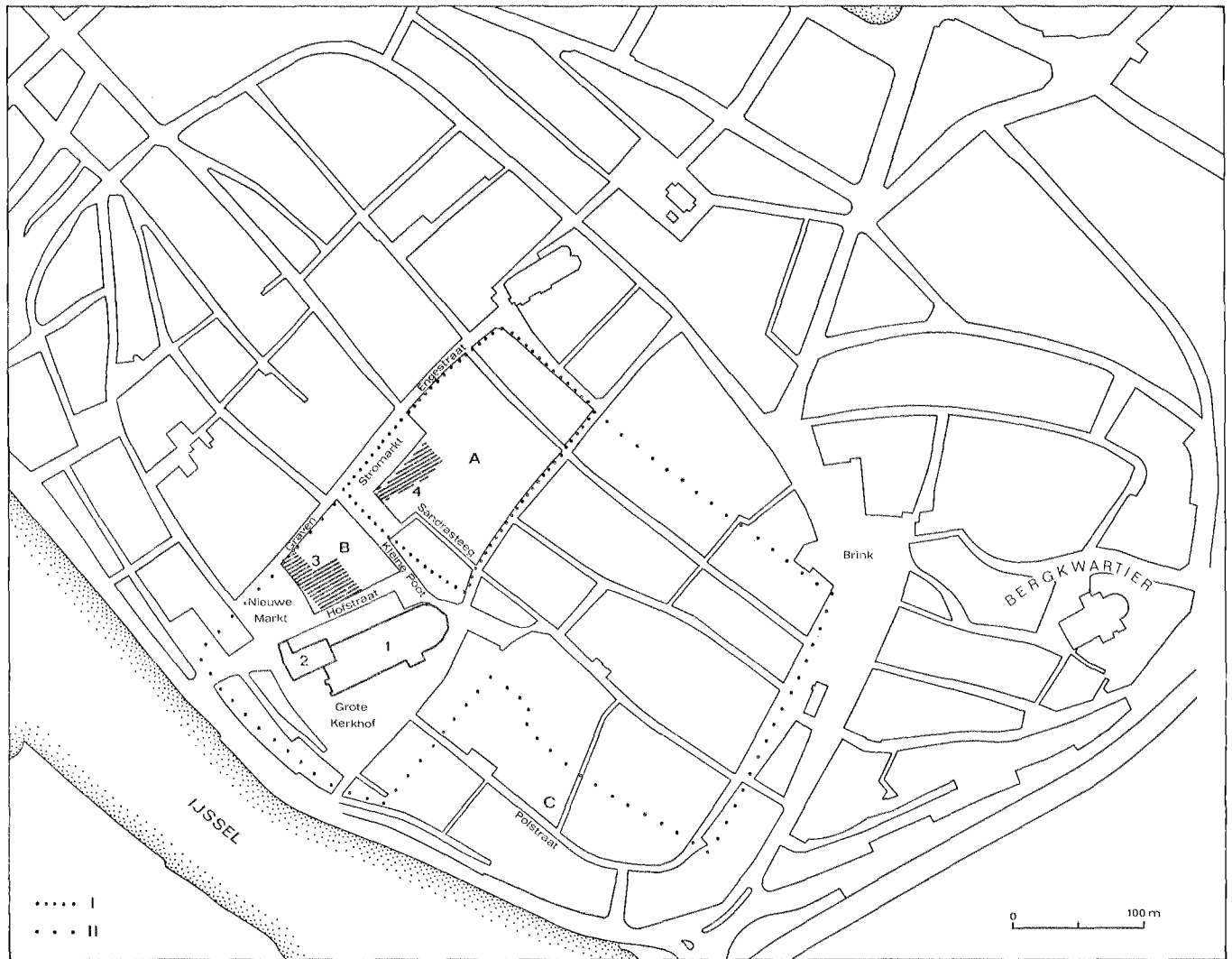


Fig. 3 Deventer: Town Centre. A. Royal Domain; B. Bischofshof; C. Portus. 1. Lebuinuskerk; 2. Mariakerk; 3. Excavation 1951-52; 4. Excavation 1967. I Boundary of the Royal Domain; II First Town Wall (I and II after Koch 1957)

was the main centre of commerce in the western Netherlands during the fourteenth and fifteenth centuries. That trade played a major role in the life of this city is evidenced by the fact that imports exceeded local ware in the ratio of three to two, while local ware normally exceeds imports by far.<sup>32</sup> Dordrecht lies just west of the confluence of the Waal (the continuation of the Rhine) and the Maas rivers, and during the Middle Ages it was the main meeting-

point of river and sea traffic. Trade with the Rhineland was of prime importance there, as is demonstrated by the large quantities of stoneware from that region found in Dordrecht. This merchandise probably came in bulk from the Cologne region directly to the market in Dor-

32 Cf. Baart 1972, 15.

drecht, which served as the distribution centre for the western Netherlands. Faulty specimens among the finds suggest that 'second choice' goods remained on the local market of Dordrecht. Finds from the Upper Rhine – notably ceramic goods from the Palatinate, also point to commercial ties with that region. A second group of ceramic finds consists of products from the Maas valley centres such as Andenne and Brunssum-Schinveld but also Elmpt; the finds in this group are considerably fewer, which may in part be explained by the deterioration of the Maas valley export industry towards the end of the fourteenth century. Besides these two main groups of finds there is a small third group of very diverse provenance: a number of imports, generally labelled 'Aardenburg ware' (from Flanders?), a few of Brabant origin (Mechelen?), and a few rare imports of majolica from the south of Europe, among others from the well-known centre of Manises, on the east coast of Spain.

The phenomenon of the 'new town,' the completely new foundation which is particularly characteristic of the second half of the Middle Ages, should certainly be considered among the various origins of the medieval town. There are many instances of this well-known European development in the Netherlands. The main feature is usually the rigid layout of the town plan, dominated by right angles. A second characteristic is that the set-up was often too ambitious, so that development stagnated and the population dwindled or even left the area. Although there are many examples of this in the Netherlands,<sup>33</sup> the phenomenon of the new town has never been the specific object of archaeological research. And, as we have seen, in those cases where there was a connection between the castle and the newly founded town, only the site of the castle was examined. The dating of the oldest core of the town, the lay-out and extent of the first constructions, the consistency in types of housing, *etcetera*, could constitute important themes of archaeological research.

Lastly, mention should be made of the function of the medieval town as a stronghold, because this aspect of urban development can also be subjected to archaeological research. Although earthworks, enclosing walls, fortified gates, and the like have always been essential to a town, in the later Middle Ages (since the fourteenth century) these defence structures became an increasingly dominant and monumental feature. The development of such de-

fence structures was on the one hand related to the refinement of the techniques of warfare and siege (cannon!) and on the other with the emancipation of urban autonomy. However, the archaeological investigation of this aspect of medieval towns has also been neglected. The ROB has investigated parts of town walls, it has excavated towers and gates,<sup>34</sup> but in most cases this was not done within the framework of a systematic research into the historical development of the town as a whole.

DEVENTER (PROVINCE OF OVERIJSSSEL) AS A  
MEDIÆVAL RESIDENCE: THE ELEVENTH-CENTURY  
BISHOP'S PALACE AND COLLEGIATE CHURCH; A  
SUNKEN HUT DATED TO C. A.D. 1100

*Introduction*

The town of Deventer stands on the right bank of the river IJssel at a point where the eastern sandy soils run down to the river. The very well-preserved medieval centre consists of three parts (fig. 3): (1) the area north of Engestraat is a new town, an addition to the old middle part; (2) the central part, between Engestraat and the Brink, is dominated by an unusual double-church, the Grote Kerk or Lebuinuskerk and, connected to it, the Mariakerk; (3) east of the Brink is the Bergkwartier, which can also be considered a later addition to the middle part. The latter will be discussed in more detail below. For a long time the Lebuinuskerk has been considered the nucleus from which Deventer developed. Modern historical and archaeological research has, however, changed this point of view in several aspects.

Historians maintain<sup>35</sup> that Deventer owes its origin to its function as a Frankish base against the Saxons both *in militaribus* when the Saxon territory was conquered by Charlemagne and *in religiosis* for the Christianization of the heathen country by Lebuinus and his successor Liudger. Deventer's origin may therefore be dated to the second half of the eighth century. There is tenth-century evidence of an *urbs*, a demesne of the German king. According to Koch (1957, 168–171) this was situated in a rectangle northeast of the church. The site of the Lebuinuskerk and the area around it is not included; later, however, this appears to be property of the bishop of Utrecht, but whether it dates back to the first church in

33 Fockema Andreae 1948, 33 ff.

34 See also p. 407.

35 Early history drawn from Koch 1957 and Koch's preface to Ter Kuile 1964, 3–6.

Deventer built by Lebuinus is still an unsolved question.<sup>36</sup> During the second half of the eighth century there must have been not only the *urbs* but also a *portus*, a commercial area, whose location should be looked for along the river. With these facts in mind, the conclusion is that Deventer was an important royal seat during the ninth and tenth centuries. It became the second most important town in the bishopric of Utrecht and even functioned as refuge and residence for the bishops of Utrecht during the Norman invasion in about A.D. 900. Due to the changes within the German Church during the tenth century, the bishop as its representative acquired considerable secular power in the following century. Deventer again became the second town after Utrecht. In respect to this, control over the county of Salland was transferred to the bishop in 1046, and it is quite possible that on this occasion the former royal *urbs* passed into his hands as well. The count of Salland's see was now assumed by the dean of the probably simultaneously instituted chapter, related to the newly built Lebuinuskkerk. Near this new church, and attached to it, a *palatium* was built on episcopal territory. At the same time, or slightly later, this area was entirely enclosed by a wall, thus creating a monumental episcopal terrain – the Bisschopshof – opposite the former royal domain. Due to revived trade contacts the third centre, the *portus*, developed into a flourishing commercial area during this period. Around A.D. 1100 the former royal domain, the episcopal terrain, and the commercial quarter were enclosed by walls for the first time. The medieval town of Deventer, as initially formulated, had been formed.

A relatively large number of archaeological investigations have been undertaken in Deventer by the ROB. Part of the *portus* in Polstraat was examined in 1948,<sup>37</sup> followed by an excavation (1951–52) at the Nieuwe Markt where parts of the *palatium* and the Bisschopshof were discovered. During 1961–62 excavations took place inside the Lebuinuskkerk; these revealed the original plan of this church; at the same time a short survey was made of the choir in the Mariakerk. In 1967 it was possible to investigate part

of the Stromarkt, which was inside the old royal domain. The excavations on the Nieuwe Markt and in both churches, in particular, solved questions concerning Deventer in its capacity as episcopal residence. Although some of these investigations have been published to some extent, the present study will attempt to highlight the specific theme of the town as residence by means of a new analysis. The Stromarkt excavation offered the possibility of comparing aspects of the episcopal residence proper with phenomena outside it, in what is, in fact, the oldest area of the town.

#### *Nieuwe Markt – 1951–52*

The excavation took place in the southwest corner of the middle part of Deventer's medieval inner town. The streetplan is very regular, and in the main is adapted to the course of the river IJssel. Only the Nieuwe Markt area, the two churches, and the Grote Kerkhof are exceptional in shape and orientation. These deviations were largely explained by the excavation northeast of the Lebuinuskkerk, on the former Bisschopshof.

#### *Soil-marks*

The lowest level, at 3 m below ground-level, *i.e.* 5.10 m + NAP, showed a closely packed pattern of soil-marks in undisturbed sand. Post-holes, wall-trenches, and rubbish pits could be recognized, but no complete plans of buildings could be discerned.<sup>38</sup> Imported and local Carolingian pottery was recovered.<sup>39</sup> These marks represent the first medieval occupation there, and probably belonged to the first Frankish settlement and missionary post in the second half of the eighth century. Neither soil-marks nor finds, however, indicate the presence of one or more churches. Two important factors are evident: a number of soil-marks are intersected by all later features, all of which show a southwest–northeast orientation, similar to what is left of the plan of the middle part of the town. This was probably the original orientation of the lay-out of the entire central area, and also indicates the orientation of the oldest settlement.

36 During the excavations inside the church nothing older than the eleventh century was found (Ter Kuile 1964, 44).

37 By A.E. van Giffen (not published). N.B.: officially, this was one of the first excavations carried out by the new ROB; in fact, it was executed by the BAI, and since then is considered as such.

38 The analysis is based on the study of part only of the field plans (the rest could not be traced), an unsigned report (probably written by P. Glazema), and Dorgelo 1956. Unfortunately, the reports are incomplete and the finds could not be examined; Dorgelo's publication (1956) also proved to be inadequate in this respect.

39 Dorgelo 1956, 60–72.

*Stone constructions: Building A*

The initial occurrence of stone building presents a similar situation: some rubble in foundation-trenches belong to one elongated, rectangular (?) building (fig. 4: A). Only part of the northern wall and adjoining structures could be examined. The remains consisted mainly of a trench of a robbed tufa wall (1.10 m wide) with a foundation consisting of erratics (inferred wall width 0.95 m). The west end of the wall tails off in later disturbances; the east end and the anticipated return wall could not be investigated. A rectangular structure had stood against the eastern part; the excavators identified this addition as a turret (Aa). Evidence of inner construction consisted of a slightly curved trench of a tufa wall with a heavy erratic foundation; this could have been the sub-structure of a large hearth (Ab). It is not easy to explain this. It may have been the remains of the first stone residence of the bishops of Utrecht, for which Dorgelo (1956, 42) suggests the period of the bishops' exile during the ninth and tenth centuries. No definite dating evidence is present, however. It was established that the wall-trench intersected several Carolingian soil-marks and may therefore be later, but earlier than the construction of the eleventh-century *palatium* (Building B). The wall-trench of the *palatium* in turn intersected one of the trenches of Building A. The axis of Building A also corresponded with the main orientation of earlier soil-marks, although not with the axis of the eleventh-century Lebuinuskerk which is more precisely east-west. Building A probably belonged to an older church which, with other buildings, must have been situated in the near vicinity. Building A itself hardly resembles a church, and no burial remains were found there. No remains of a church earlier than the eleventh-century basilica, however, were discovered inside the present Lebuinuskerk. Any previous church must have lain between Building A and the present Lebuinuskerk, that is, mainly under the Hofstraat.

*Stone construction: Building B*

This consisted of a large rectangular structure (fig. 4: B), the south enclosure of which could not be examined. The walls were completely removed, as in Building A; only one piece of the standing construction and some remains of foundations were found in the wall-trenches. The external width of Building B was 14.50 m; the length could

not be determined. The construction material consisted of blocks of tufa of different sizes:  $32/40 \times 8.5 \times 13/15$  cm; on the west side these were laid directly in sand, but the east wall had a foundation of granite and lumps of tufa. The wall construction consisted of a filling of lumps of tufa embedded in white mortar, ironstone, pieces of other stone, and fragments of red Bremer sandstone between two layers of tufa; here the total width of the wall was 1.20 m. The depth of the foundation (4.00–4.15 m + NAP) could be determined, but there were no remains of any passages, floor-levels,<sup>40</sup> or inner constructions. The width of the building suggests that it comprised two aisles. Building B may have been the episcopal *palatium*, which was present in Deventer since c. A.D. 1050. This building, as mentioned before, cut through both the earlier soil-marks and the wall-trench of Building A and must, therefore, be dated later. The change in orientation is remarkable: the axis of the building has a new southeast-northwest orientation at right angles both to the present Lebuinuskerk, and the eleventh-century basilica within it. A sherd of *Reliefband*-amphora, now unfortunately lost, was found in the mortar core of the wall.<sup>41</sup> Later types of this ware occur well into the eleventh century and so may be a *terminus post quem* for the wall.

*Stone structure: enclosure wall and Building C*

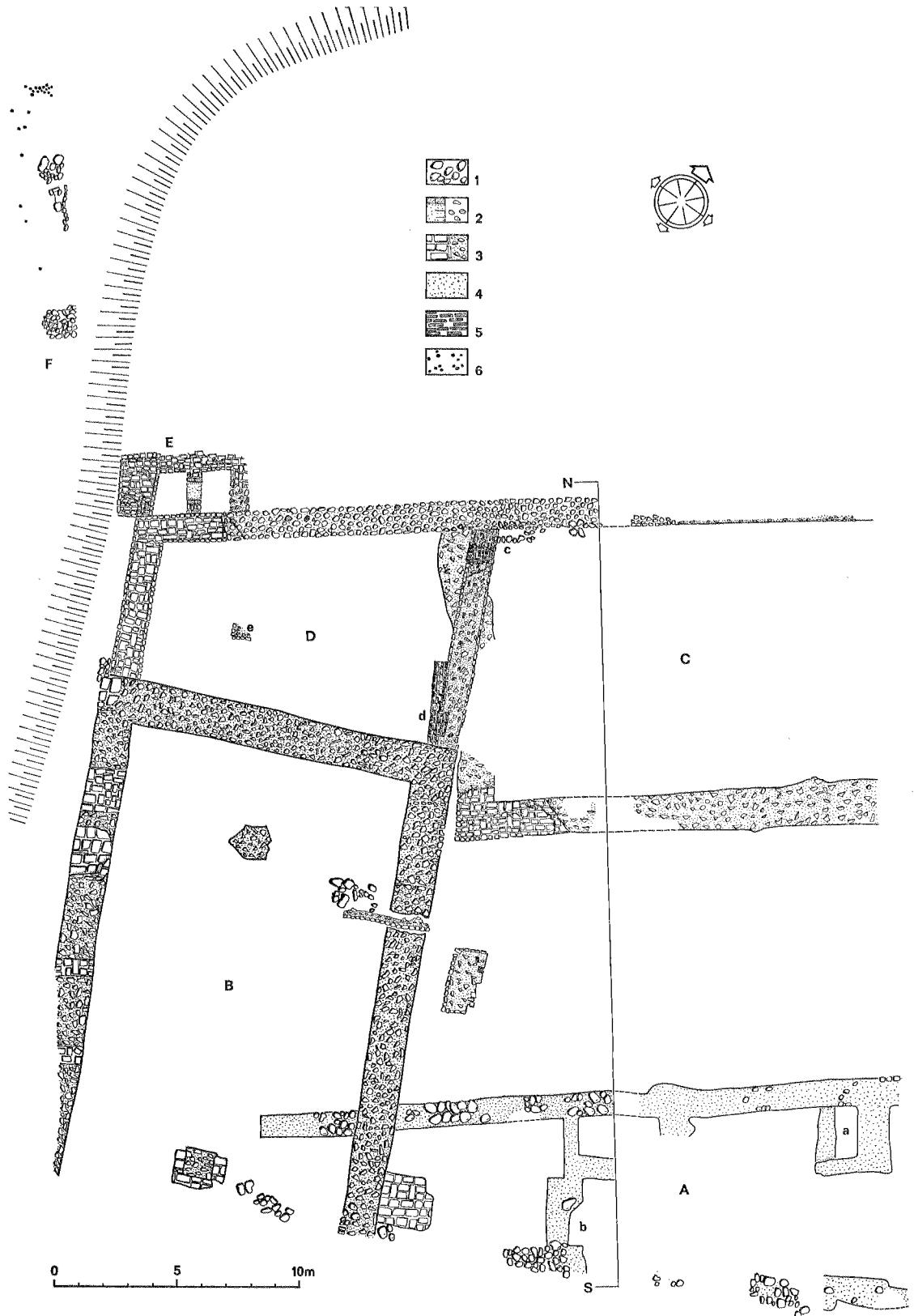
The whole area to the north and east was enclosed by a wall, which abutted the west wall of Building B to form a continuous line. At a point 7 m to the north, the wall turned east at an obtuse angle. This wall was not as deeply founded (4.60 m + NAP) as the west wall of Building B and differed in construction, that is, a strong foundation of erratics, covered with tufa. The enclosure in fact consisted of two parts: the west wall, which ended just before the corner, and the north wall against which it abutted. The duality also became clear from the different sizes of tufa used. Yet, in view of the similar foundation and construction, the enclosure must have been built during one period, albeit in several stages. Evidence of floors was not found here either, except in one place at 5.60 m + NAP where the wall had a smooth surface. The dating of the wall is based on very weak evidence: one potsherd of Pingsdorf ware, dated c. 1100, was found in the foundation of the north wall.<sup>42</sup> This wall was erected certainly after the construction of Building B, but presum-

40 Dorgelo (1956, 48), on the grounds of a preserved wall fragment, concluded the floor-level to be higher than 5.00 m + NAP.

41 Dorgelo 1956, 44 and 71 (fig. 25).

42 By Dorgelo (1956, 48); unfortunately, there was no illustration of this potsherd either.





ably not long afterwards. Its eastern orientation is well-known, not only because of the examinations carried out on the Stromarkt and the Kleine Poot, and the discovery of the connection to the north choir chapel of the romanesque Lebuinuskkerk,<sup>43</sup> but also because of a late sixteenth-century survey of the Bisschopshof terrain (figs. 7 and 8). From this an area of *c.* 0.65 ha can be estimated for the Bisschopshof, that is, the area between the Nieuwe Markt and the Stromarkt/Kleine Poot, and between Graven and the Lebuinuskkerk. Building C (fig. 4), built against the northern enclosure wall, was situated in this estimated area. The excavation yielded no information about the phases of construction of this building, whether it was constructed before, at the same time as, or after the erection of the wall. Although the building shows the original southwest–northeast orientation, there is good reason to choose for the latter. The robber trench of the building – and thus the wall also – was wider than the trench of the enclosure wall, while some difference in foundation depths was also apparent. As earlier construction should have left a wide trench, and simultaneous building is not likely because of differences in construction, it may be deduced that C was built after the enclosure wall. It was also evident that the outside of the southwest corner of Building C slanted slightly inwards; this can only be explained as a means of avoiding the northeast corner of Building B. Building C was probably constructed against the north wall after Building B and the enclosure wall, most likely in the course of the twelfth century.

*Stone structure: Addition D*

The west wall of C appears to have been pulled down to allow for the extension of the east wall of Building B. A trapezoid building, Addition D (fig. 4), was thus constructed in the northwest corner of the Bisschopshof, and consisted of three existing walls (the north wall of B, and the west-north enclosure) and the new wall. This new east wall was composed of three or four layers of re-used stones, topped by a regular wall of tufa (width 1.10 m). The flat ends of the wall showed clearly that it was placed between existing walls. The wall's filling was character-

ized by the presence of fragments of brick. The lower part of this wall was preserved for its whole length; it appeared that it had originally contained an aperture which was later blocked with big bricks (Da). On the excavator's drawings it seems that these bricks were 30 × 14 × 7 cm, so that it may well have been blocked during the thirteenth century. An inserted window in the south part of the wall (Db) suggests that the ground floor was used as a cellar. A floor-level at 5.80 m + NAP, compared to the eleventh-century church floor of *c.* 7.00 m + NAP also suggests a construction mainly below ground-level. The remains of a possible base for a vaulting arch of tufa (Dc) are the only vague indications of a vault which must have been present in this space. Addition D was built later than C and certainly should not be dated before the twelfth century; D was also built before extension E, dating from the thirteenth century (see below). The dating of Addition D to around A.D. 1200 seems justified when the first appearance of brick for wall-filling and the blocking of the aperture with big thirteenth-century bricks are taken into consideration.

*Stone structure: Extension E*

Extension E (fig. 4) is the last phase of tufa building in the Bisschopshof. It was situated at the outside of the north-west corner of D, and probably was a two-roomed privy. Not only had it an exceptionally high foundation (at 5.50 m + NAP), but also a peculiar building-construction: a T-shaped wall seems to have abutted the north enclosure wall, the west side terminated in a block of solid masonry – a buttress, in the excavator's opinion – while the east side was closed by a very light wall. A passage was found in the stroke of the T with a threshold of blocks of ironstone and sandstone. Although the height of the threshold is not given, it probably was several decimetres higher than the foundation of the privy. In view of the function of Extension E it seems improbable that the adjacent space in D, with a floor at approximately the same height as the threshold in E, simultaneously served as cellar; the proximity of the privy may have led to the north part of D falling out of use, after which the aperture was bricked in. In the privy right up against the foundation, a jug of South Limburg ware was found, originating from transitional II-transitional III (Bruijn's dating system);<sup>44</sup> the jug is attributed to *c.* 1250, and gives a good indication for the date of the construction of Extension E.

◁ Fig. 4 Deventer: Nieuwe Markt, the Bishop's Palace. 1. Erratics; 2. Iron-stone; 3. Tufa; 4. Mortar; 5. Brick; 6. Wood

43 Dorgelo 1956, 47; Ter Kuile 1964, 39 and fig. 13.

44 Dorgelo 1956, pl. XIII, 2; Bruijn 1959, 158 ff. and 1962–63, 400).

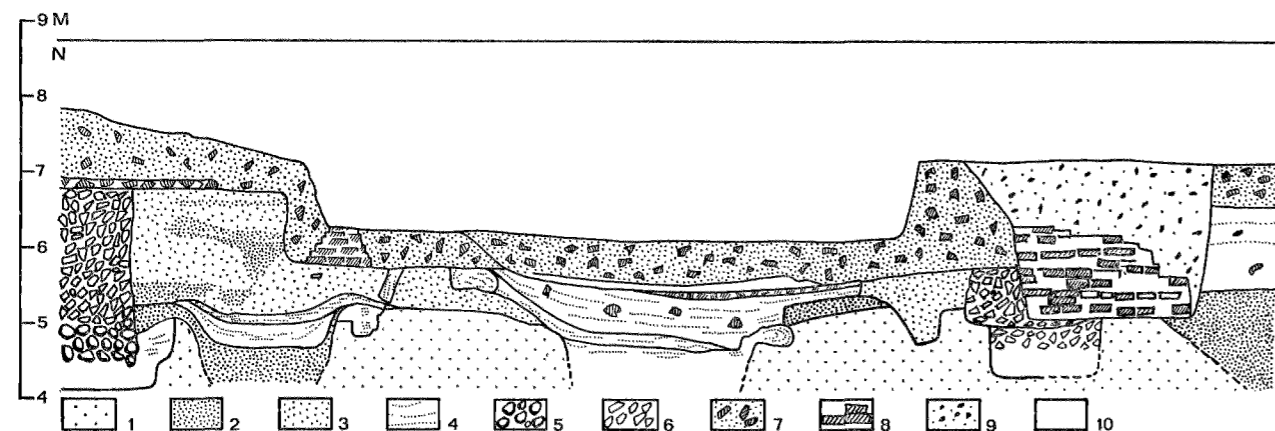
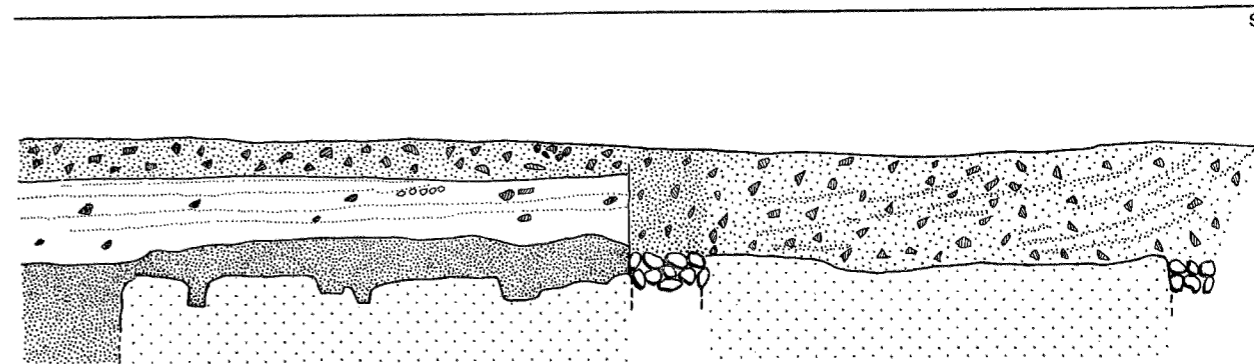


Fig. 5 Deventer: Nieuwe Markt, Section N-S. 1. Sand; 2. Occupation Layer; 3. Disturbed Ground; 4. Alternating Rubble Layers; 5. Stone; 6. Tufa Debris; 7. Brick Debris; 8. Brick Wall; 9. Mortar; 10. Recent Layers



### The Moat

The heavy buttress of extension E had subsided considerably on the west side, as it was standing on an unstable subsoil. This was the filling of a moat (fig. 4: F) which surrounded the episcopal residence at least on the north and west sides. To the north the moat was about 15 m away from the enclosure and was estimated to have been 14 m wide. The orientation of the wall must have been determined by the moat. The moat turned at the corner of E, and went south just outside the west enclosure and the west front of B. The last two seem to have been built on the water's edge and the enclosure cut through a part of the moat's filling (Dorgelo 1956, fig. 11, 3); thus the silting of the moat may have started at the beginning of the twelfth century. Much is still obscure concerning this moat. Its further course to the east and south is unknown, as is its dating. The question also arises whether it was a ditch or a natural stream. But perhaps both were true: the north part dug as an artificial boundary, the west part a former bank of the river IJssel. The moat may be the original boundary of the Carolingian occupation, although there is no evidence from the excavation to support this. There is, however, a remarkable consistency and similarity between the main orientation of this occupation and the north part of the moat. It seems as if this part – Graven in the present topography – was also a factor in the general planning of the middle part of Deventer's oldest centre. Pingsdorf ware and globular cooking-pots were found in the oldest filling of the moat and early

stoneware in upper layers, although not the vitrified stoneware made after A.D. 1350. In view also of the building in by the construction of the privy in c. 1250, it would appear that the silting-up process begun in the twelfth century had completely filled the moat by about 1350. This could be attributed to the great fire of 1334 which led to various reconstructions of the Bisschopshof, in which the moat was no longer of any importance.<sup>45</sup> Consequently, the survey of the old episcopal land carried out at the end of the sixteenth century shows no traces of the moat.

### Lebuinuskerk – 1961–62

The connection between the episcopal *palatium* and the collegiate church of St Lebuinus is obvious. Excavations carried out in this church, combined with the many romanesque remains still to be seen in the present church, made possible a complete reconstruction (in main outline) of the former romanesque church. As the investigations in the Lebuinuskerk have been published in detail by Ter Kuile,<sup>46</sup> only a short summary is given here.

The romanesque church, constructed with tufa, was a large, three-aisled basilica with a crypt, two transepts, and a so-called *Westbau*. Internally, the three apses in the choir were semi-circular; externally, they were semi-octagonal. The east part of the church showed great simi-

larity to the Pieterskerk in Utrecht. This church is one of the group of so-called Bernulphus churches,<sup>47</sup> named after Bishop Bernulphus of Utrecht (1027–1054). The Deventer basilica also belongs to this group and the construction, or at least its commencement, must have been undertaken in the second quarter of the eleventh century. The reconstruction of the nave and the aisles had to be based on comparative information because of the lack of archaeological evidence caused by the many burials. The nave must have had nine bays, with arches resting on columns.<sup>48</sup> Both transepts had square ends, and were almost identical in shape and measurement. The west transept was unusual because of the turret-shaped additions to the corners on the west and the east sides. The lower part of the additions on the east must have been chapels accessible from the transept, the ones on the west merely stair turrets. The tripartite *Westbau* was situated between the latter, built against the west side of the transept. On the ground-floor the west choir was formed by the rectangular central part, which opened into the western crossing with a large arch, and ended above in a heavy central tower. The squares on both sides of the western choir contained the entrances to the ground-floor; above they formed smaller flanking-towers. This *Westbau* with a raised central part is characteristic of the

Maas region. The Maasland *Westbau* combined with a towered transept was recognized by Ter Kuile only in the eleventh-century cathedral of Verdun.<sup>49</sup> In his opinion, both churches are typical examples of the severe grandeur of Salic architecture.

The *palatium* and the eleventh-century Lebuinuskerk resemble each other most closely in their foundations. Most of the soil under the church seems to have been disturbed to a great depth; the upper surface of the undisturbed sand lay at 5.45 m + NAP or lower – which means 1.50 below the oldest ground-level. In general, the foundations of the walls were much more solid and wider than at the Bisschopshof, a result of the size of the church. The foundations in the west part of the church were about 4.50 to 5.00 m + NAP deep, which is approximately 0.50 m higher than in Building B, the *palatium* itself, but corresponds with the enclosure and Building C. The composition of the walls is also significant. The church foundations contained erratics, iron-stone, and tufa. The abundance of iron-stone is remarkable; this material was also found in the Bisschopshof, but not in such quantities. In both places the lowest layers appeared to have been laid without mortar, and the superstructure was executed in skin-wall technique – the latter a usual technique when tufa is used. The height of the foundation in the church itself

<sup>45</sup> Dorgelo 1956, 52–54.

<sup>46</sup> Halbertsma 1961, 1962; Ter Kuile 1964, 39–43.

<sup>47</sup> Ter Kuile 1959: the collegiate churches of St Jan and St Pieter, and the abbey church of St Paulus in Utrecht, the collegiate churches in Deventer and Emmerich.

<sup>48</sup> Ter Kuile 1964, 45.

<sup>49</sup> Ter Kuile 1966.

was 1.80–2.00 m, on top of which the superstructure was built; this height corresponds well with the oldest floor-levels, situated roughly between 7.05 and 7.15 m + NAP. A comparison of the foundation levels in both the Lebuinuskerk and the Bisschopshof suggest that there was little difference between the two floor-levels although that of the church may have been somewhat lower than the Bisschopshof. There is some reason to set this level at about 6.50 m + NAP. Levels found in the Bisschopshof under later disturbances presumably belonged to cellars. This holds good for Addition D in particular.

#### *Mariakerk – 1961*

As will be discussed later, the connection between the *palatium* and the Lebuinuskerk is only hypothetical because investigation was restricted. It was possible, however, to carry out a small examination northwest of the church, inside the Mariakerk.<sup>50</sup> This church came into existence as a parish church after separation from the Lebuinuskerk, which was originally dedicated to St Mary and St Lebuinus. The Mariakerk, however, always kept the status of chapel. It is not exactly known when this separation took place; the first textual evidence about the existence of the church is an indirect communication of 1334. It appeared from excavations that the Mariakerk was originally a Gothic basilica with a very short, square-ended choir of the same width as the nave (fig. 8). There were two reasons for the shortness of the choir: (1) a large choir in the parish church was not really necessary, both because the adjacent collegiate church had a long presbytery and the parish church needed the largest possible space to house the parishioners; (2) while the terrain to the east was limited by the *palatium* and its connection with the Lebuinuskerk. The connection itself could not be included in the investigation – unfortunately, as was mentioned before.

50 Halbertsma 1961, 205; Ter Kuile 1964, 56–61.

51 Much more information is available concerning the layout of the royal palaces also to be found in the episcopal towns of the German Empire and other royal seats, either through excavation (Paderborn, see note 55) or from the well-known extant buildings. The palaces of the secular princes were also built in this manner; a Dutch example is the Gravenhof in Zutphen known from excavations (see p. 373). As a distinguished town-house the type of building still exists; Temminck Groll (1963, 20 ff.) called it first-floor hall, an early type of town-

#### *Episcopal Palaces*

Before the complex of the Deventer palace as a whole is discussed, some general remarks should be made concerning the residences of the Bishops of the German Imperial Church, even though very little relevant information exists.<sup>51</sup> The location of the Deventer palace northwest of the church, although dictated by local circumstances, seems nevertheless also to conform to a certain tradition. The episcopal residences of Minden, Würzburg, Bamberg, Worms, and Liège were also situated northwest of the cathedrals; the position was definitely not statutory, as other locations could also be cited, but, in my opinion, some sort of tradition should not be excluded.<sup>52</sup> The situation in the episcopal town of Utrecht is complicated; there the bishops' residence, known since the beginning of the eleventh century, lay somewhat southwest of the romanesque Dom but due west of the Salvatorkerk.<sup>53</sup> Both churches are said to have formed a double cathedral in Utrecht and the latter may have been the *Thron- und Erscheinungskirche* of the bishop.<sup>54</sup> Illustrations of the Utrecht episcopal residence merely show a medieval building; it later underwent considerable alteration.

In general, very little information is available concerning the outward appearance of romanesque *palatia*, even those of other episcopal towns. There is an illustration, however, of the palace of the archbishops of Cologne, to which Utrecht belonged, which provides good evidence. The long, rectangular shape of the building and the duality in construction are characteristic. A room with small windows, in all probability vaulted, can be seen on the ground-floor; on the upper floor is a kind of recessed balcony behind which the large hall was probably situated. In front of the palace was a square bounded by buildings.<sup>54a</sup> A comparable construction characterizes the episcopal palace at Paderborn. According to a twelfth-century source there were two floors and an attic, and also

house that became extinct in about 1300. In general it can be considered as a type of building rooted in antiquity, with a distribution throughout the whole Christian and Islamic world (Swoboda 1969, 312 ff.).

52 Herzog 1964 *passim*; Classen 1963.

53 Haslinghuis 1956, fig. 1 (p. 12) and p. 84.

54 Peeters 1964, 107.

54a Pictures of the episcopal palace of Utrecht in Struick (1968, 101 and 282); for the palace of the archbishops of Cologne see Swoboda (1969, Tafel xviii b).

two chapels. Recent excavations revealed the foundations of the building.<sup>55</sup> The palace was situated southwest of the Cathedral (Dom); it was a long, narrow rectangular building (c. 60 × 13.2 m) with an east–west axis. The palace was built by Bishop Meinwerc (1009–1036) who both entirely renovated the royal palace and added a *domus episcopalis* to it.

Only the main outlines are known about the structure of episcopal palaces. Apart from the *palatium* itself, there were one or more chapels, and trade establishments, stables, and barns. In front of the *palatium* was a square which had various functions, although these cannot always be defined clearly; the square, however, had never been used as a cemetery.<sup>56</sup>

#### *The episcopal palatium of Deventer*

After a discussion of the different excavations and a brief examination of the general features of episcopal palaces, an attempt will be made to arrive at the chronological development of the Bisschopshof in Deventer by combining excavation results with some historical data.

The remains from the site of the Bisschopshof are no earlier than the Carolingian period. Chronologically, they are connected to the missionary activity of Lebuinus and Liudger, but no recognizable traces have been found of churches founded by them. The orientation of the earliest remains is southwest–northeast, and is similar to that of the general topography of Deventer's oldest centre. The area was encircled by water on the north and west side. The bishops of Utrecht resided at Deventer around A.D. 900. For this there is no archaeological evidence other than, possibly, Building A.

The situation does not become comprehensible until after the revival of the bishopric of Utrecht, for which there is monumental evidence from the eleventh century. In Deventer this was expressed by the building of a large basilica and a palace by Bishop Bernulphus (1027–1054). A completely new concept is followed: both the site and the orientation of the palace also departed from previous practice. It should, however, be pointed out that these

changes in site and orientation are not unusual in church rebuilding during the eleventh century. The axis of the romanesque basilica lies more precisely east–west than before, even though a deviation to northeast–southwest can be detected, possibly because of the water on the west side (a moat or an old bank of the IJssel?).

To this new orientation the episcopal *palatium* (Building B)<sup>57</sup> was built at right angles, *i.e.* along the same line of the west transept of the new basilica. The dimensions are large, and, although no details are known about the structure, an impression of the palace can be formed from analogous buildings. In this case it probably had two floors and an attic with two aisles on the ground-floor, an almost completely featureless front on the west side, and a more open front with windows and possibly a recessed balcony on the east side. Many details are still unknown, such as the total length, the number or location of the entrances, and so on. A group of buildings was created, which, when seen from the river, must have been very impressive: the imposing west side of the large collegiate church and the wide front of the *palatium* to the north, both constructed in tufa.

Building C, although somewhat later as stated above, was also a part of the first complex of buildings. The function of C is completely obscure; a domestic office seems the most likely. Nothing is known about a separate chapel at the Deventer Bisschopshof. Nor is any definite information available concerning the square usually situated in front of the palace. The area bounded by the enclosure, the church, and the *palatium* could have been this square, because in 1266 the bishop referred to it as *atrium*.<sup>58</sup>

From textual sources dated 1233, the Bisschopshof must have been in ruins at the beginning of the thirteenth century, a situation which stimulated Bishop Diederik van Ahr (1198–1212) to restore it.<sup>59</sup> This ties in with the demolition of Building C around 1200 and the construction of Addition D, which was built at this time. It also appeared that the robber trench of the south wall of building C was covered by a demolition layer of tufa, found in several places (although sometimes sparsely); on the evidence of the finds, the layer should be dated to the thir-

55 Winkelmann 1972, 213 ff., esp. 215–216.

56 Herzog, 1964, 234–236.

57 Names: 1233 *de censu domus episcopalis* (this refers to events from c. 1207) (OBU, 863); 1223 *de hominibus castri . . . Daventre* (OBU, 710); 1310 *in palacio* (OBO, 584); 1326 *in domo episcopali*, but also *in aula . . . Daventriensi* (OBO, 822, 794, and 818 respectively).

58 *atrium ante domum nostram* (OBU, 1693).

59 1233, 24 July, Bishop Wilbrand (1227–1233) confirms among other things an obituary by Bishop Theodericus *de censu domus episcopalis . . . cum ipse domum episcopalem, qui ruinosa fuerat, propriis reedificaverit expensis* (OBU, 863).

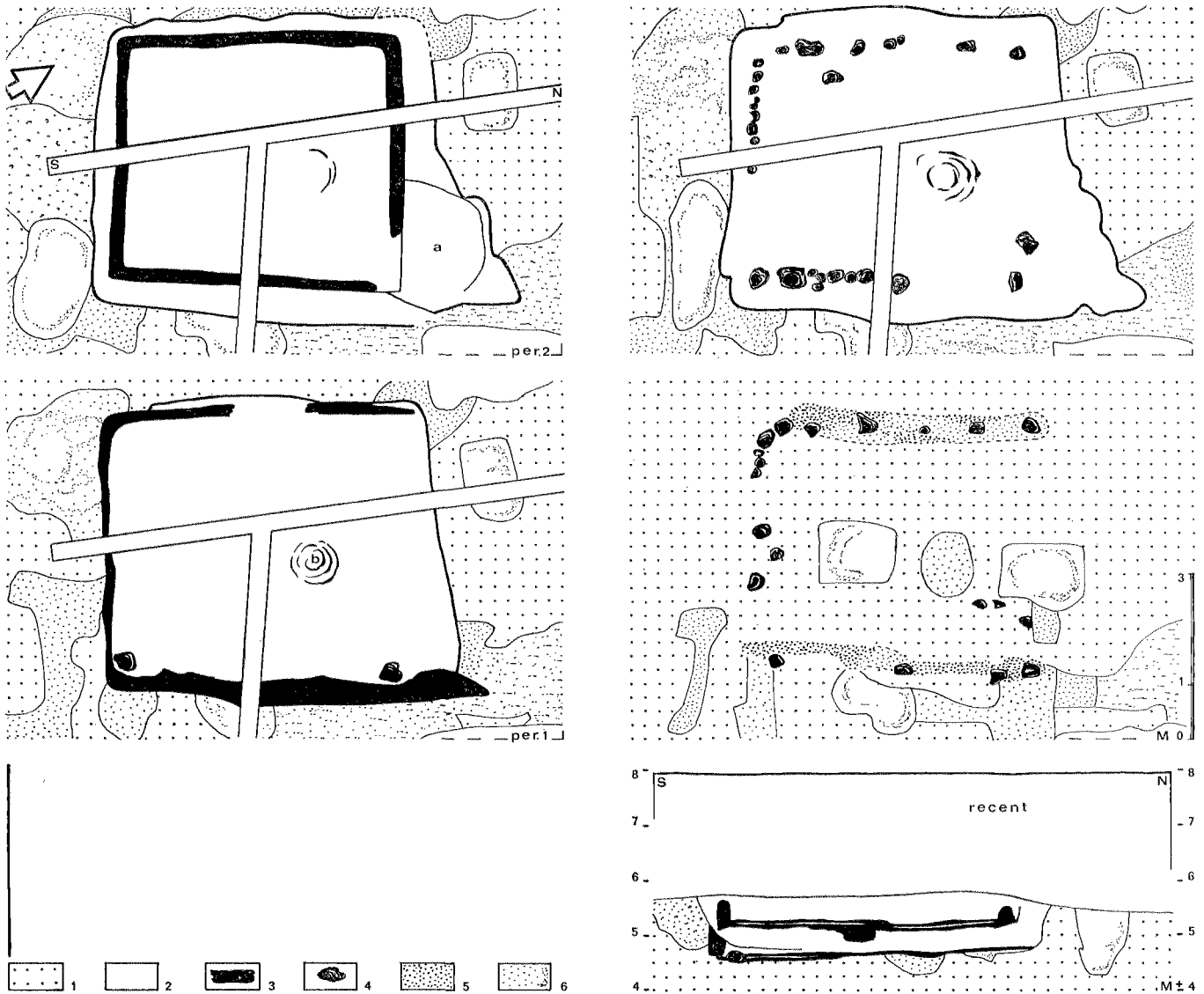


Fig. 6 Deventer: Stromarkt, Sunken Hut. 1. Sand; 2. Hut Filling(s); 3. Wall and Floor of Loam; 4. Erratics; 5. Foundation Trench; 6. Disturbed Ground. a. Entrance; b. Hearth

teenth century.<sup>60</sup> The function of the addition, however, cannot be identified. As it adjoined the *palatium* and the privy (Extension E) was on the outside, a domestic purpose for Addition D is probable. The partial abandon-

ment of Addition D must have taken place during the thirteenth century, especially when Extension E was constructed. The privy was the last construction of this romanesque complex, in which erratics, iron-stone, and tufa were used. The layer of tufa debris, mentioned before, appeared to be completely covered by a layer of burnt material. The highest point of this layer was about 7.00 m + NAP, approximately the level of the oldest church-

60 Dorgelo 1956, figs. 6 and 7 (the field-drawings, however, are more distinct), 55-56.

floors. Right on top of the layers of burnt material were recent mixed layers, finds from which, however, date from the fourteenth century. Dorgelo concluded from this fact that this burnt layer must have been the result of the big town fire of 1334.<sup>61</sup> This fire must have also destroyed the buildings of the Bisschopshof.

After the fire the *palatium* was rebuilt in brick in Gothic style. No historical information is available concerning this rebuilding. There is only a little evidence for the later history of the new palace. Nor is there any archaeological indication of its existence, as all strata above the burnt layer were disturbed during the construction of cellars of seventeenth-century houses and later buildings on the site of the Bisschopshof. The only remains of the Gothic palace is a brick stepped gable in the north wall of the west transept of the Lebuinuskkerk. A mid-fourteenth-century date for this gable is not available, as the size of the bricks used could not be examined.<sup>62</sup> The gable suggests that the new palace was narrower than its predecessor; while the east front remained unchanged, the west front was 2 m further to the east; a space of 4 m was thus created between the palace and the choir of the Mariakerk.<sup>63</sup> The complete building seems to have shifted to the south, so that the south front was situated on the same place as the transept wall upon which the above-mentioned stepped gable was constructed. In our opinion, the survey of the Bisschopshof of c. A.D. 1580 was based on the new situation.<sup>64</sup> Only one picture is known of this Gothic building, a bird's-eye view of the town painted in 1578;<sup>65</sup> it shows a rather cramped building, with a north-south orientation, connected to the church. Almost in line with the west front of the palace there is a wall going to the north; this may be the remains of the old tufa buildings. The view also shows a curved enclosing wall to the west ending against the Mariakerk; this wall was also indicated in the survey of c. A.D. 1580. After 1334 the water on the west side was evidently no longer of importance in the planning of the Bisschopshof; this is confirmed by the results of the archaeological research. Briefly summarized, it may be said that the Gothic reconstruction of the Bis-

schopshof after 1334 was very different from the previous romanesque buildings, both in planning and in architecture.

In 1610 the Gothic Bisschopshof was pulled down to make way for the present Hofstraat, due north of the Lebuinuskkerk and the Mariakerk. The extant ruins of the romanesque buildings were cleared away at the same time and the tufa foundations also removed; textual sources for this are available.<sup>66</sup> Confirmation of this clearance was found in the fact that, during the excavations, the robber trenches of the romanesque walls generally came from a high level, even in the case of Building A (fig. 5). It may be that a quantity of undamaged remains are only to be found in the area of the new Hofstraat; some observations have confirmed this,<sup>67</sup> and it is to be hoped that archaeological research may continue in that area in the future. The demolition of 1610 (after the buildings had already been secularized in 1528, and after Deventer for a short period, between 1559 and 1577, had become the see of a new bishopric) signified the end of all of the town's outward show as a residence of the bishops of Utrecht. A tradition had come to a close; one which began among the episcopal exiles of the ninth and tenth centuries, was planned on a grand scale by the bishops of the eleventh century, and one which during the following centuries was sustained by successive ecclesiastical Lords.

#### *Stromarkt – 1966–67*

Adjacent to the episcopal area was the old royal *urbs*, after 1046 the seat of episcopal secular power. Subsequently, the position of the count of Salland was filled by the dean of the chapter of the Lebuinuskkerk who resided in the building, afterwards called Sandra House, situated at the junction of the Sandrasteeg and the Stromarkt.<sup>68</sup> In 1966–67 investigation in the area was possible because of new building work northeast of this building, and gave the opportunity of comparing through excavation part of the royal *urbs* with the episcopal residence.<sup>69</sup> The upper metres in the section at the Stromarkt were so severely disturbed in recent times that recognizable medieval strata were no

61 Dorgelo 1956, fig. 12, 56.

62 Ter Kuile 1964, 45.

63 Dorgelo 1956, 47.

64 From this, the discrepancy can be explained between the actual romanesque walls found and the Gothic walls as suggested by Ter Kuile (1964, 33 and fig. 11).

65 It depicts the siege of the town by Rennenberg in that year; the picture is in Stedelijk Museum De Waag, Deventer. Relevant detail in Dorgelo 1956, Plate VII, 2.

66 Dorgelo 1956, 57–58.

67 Dorgelo 1956, 44–45.

68 The extent to which this building represents the old deanery is open to discussion. Remains of a trachyte wall could date from the tenth century (Koch 1957, 170–171); according to Ter Kuile (1964, 83), however, this wall should be dated to the twelfth century on technical and historical grounds.

69 Interim report Halbertsma 1967.

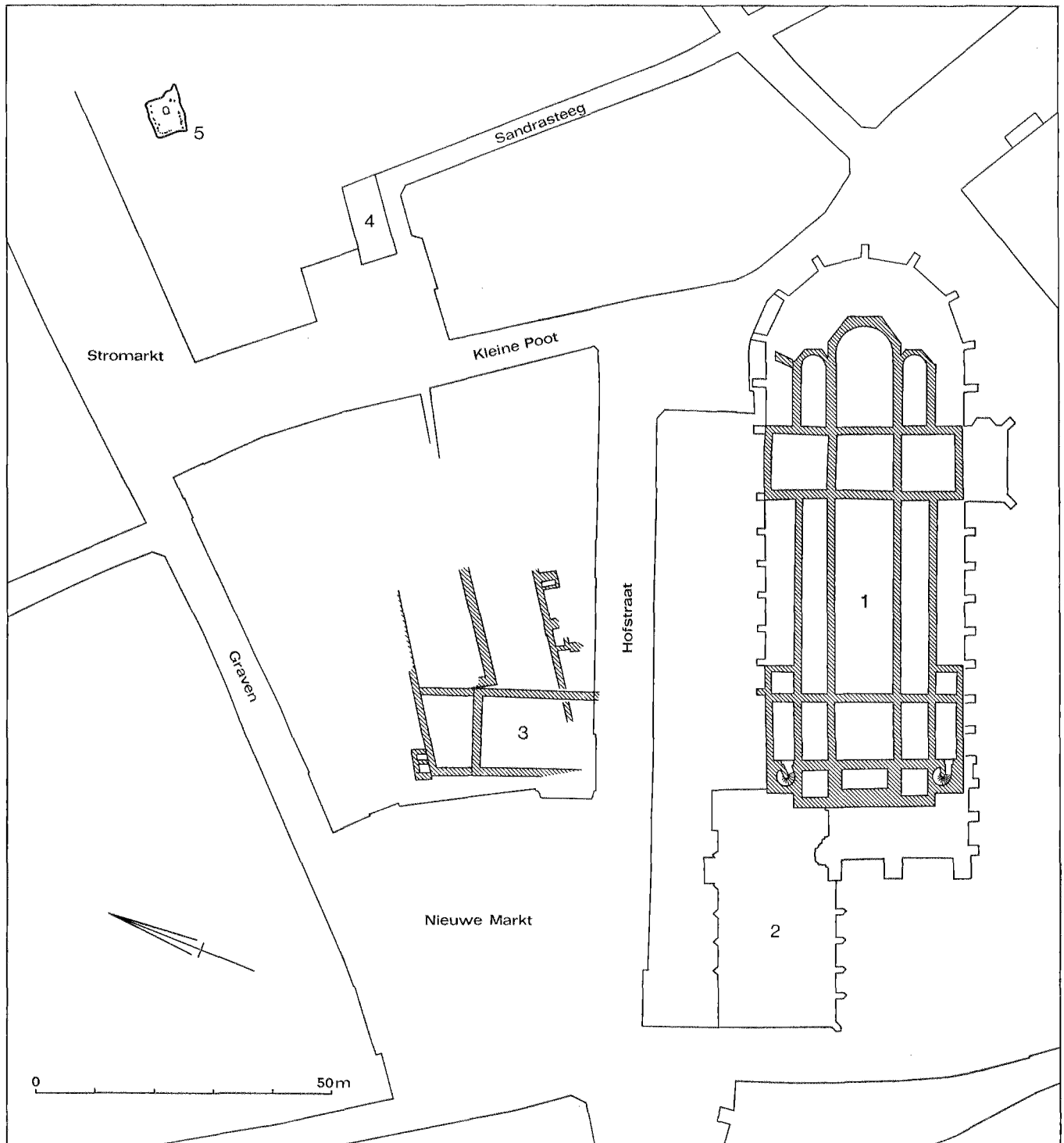


Fig. 7 Deventer: Lebuinuskerk and Bisschopshof (10th(?)–13th centuries). 1. Lebuinuskerk (after Ter Kuile 1964, Figs. 7 and 14); 2. Mariakerk (after Ter Kuile 1964, Fig. 20); 3. Bishop's Palace; 4. Deanery (Sandra House); 5. Sunken Hut



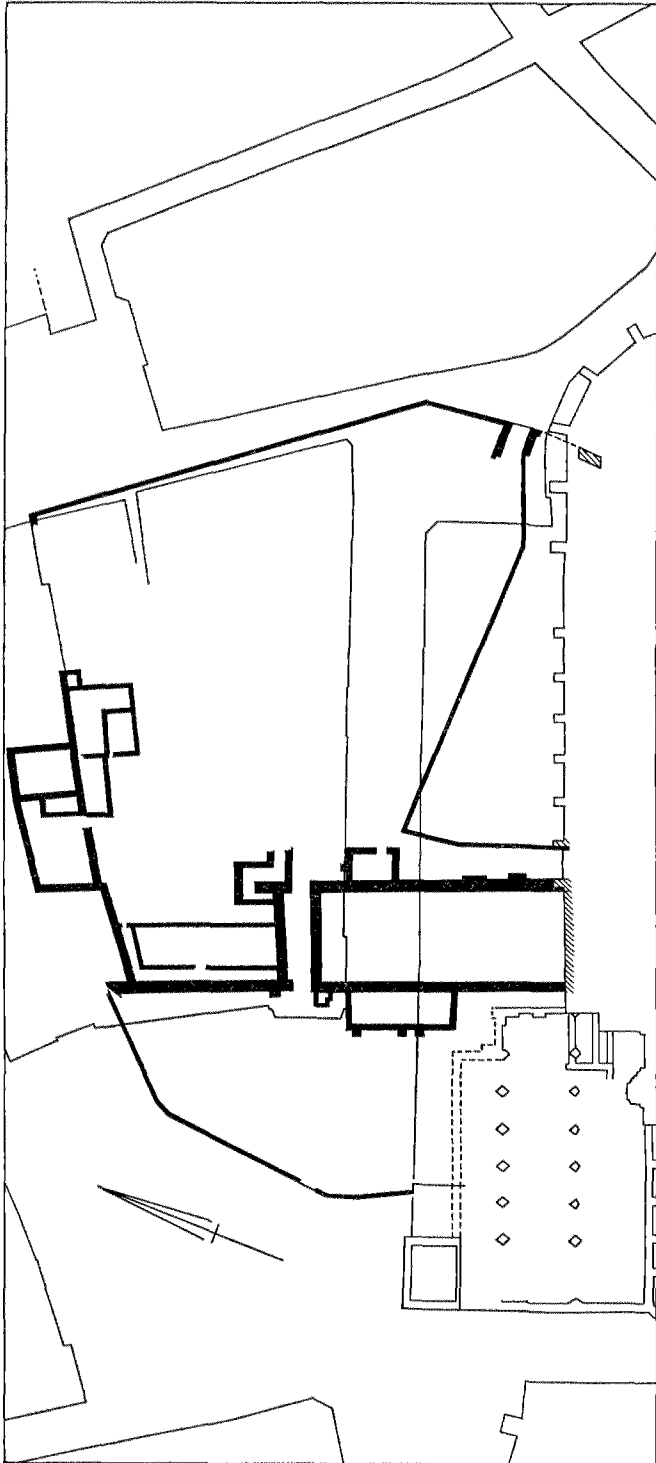


Fig. 8 Deventer: the Bisschopshof in the sixteenth century; the original survey (Municipal Archives Deventer no. 1128) transferred to the modern plan

longer present. In the undisturbed sand, at an average height of *c.* 5.75 m + NAP, many traces of occupation (post-holes and rubbish pits) were discovered; these date from the Carolingian period. Several finds from earlier periods came to light, but here, as in the Nieuwe Markt, the first real occupation was established only since Carolingian times. The lack of stratigraphy and the existence of countless overlapping features made it impossible to discern meaningful patterns; this was also the case at the Nieuwe Markt. Here also the overall picture revealed clearly the orientation of the occupation area, which was southwest–northwest or at right angles. This orientation was that of the deanery and also of the early planning of the town whose streets lay parallel with and at right angles to the IJssel. In other words, the orientation of the street pattern within the royal *urbs* must have been a continuation of the original Carolingian plan. Moreover, it accorded completely with the earliest orientation of the Bisschopshof on the Nieuwe Markt.<sup>70</sup>

#### *Sunken hut*

Only one phenomenon could be clearly recognized among all soil-marks belonging to both the Carolingian and later periods: a rectangular sunken hut, built in two phases, and remarkable because of its relatively late dating (fig. 6). The level from which the dwelling had been dug was no longer present, due to the already mentioned recent disturbances. The only remains were the lowest parts of the sunken walls, and two floors and some pits belonging to the building.

The first phase consisted of a rectangular floor, *c.* 4.75 × 6.00 m, with walls on three sides. The east side had been left open, apparently to serve as entrance; although there was no other evidence for an entrance, the vertical sides of the building-pit suggest that the hut was only accessible by a ladder. The first phase of the hut was dug more than 1.20 m into undisturbed sand, to an average height of 4.60 + NAP. The walls, on average 25 cm wide, were composed of a smooth loam; turf banks usual in this type of wall were not present. The walls were set into – founded would be too strong a word – a rather loose row of erratics: granite, iron-stone, and marl, all with traces of mortar

<sup>70</sup> see pp. 378–379.

suggesting previous use. Moreover, the long walls (north and south) were inserted into a shallow trench. The floor consisted of a layer of loamy material which became thicker from the centre to the west – the part farthest removed from the entrance – and appeared to be mixed with lime mortar; there were no traces of a hearth, nor any traces indicating specific use of the dwelling. It was possible to date the building by pottery found in some pits covered by the floor (earlier), the floor itself, and the filling of the hut on top of the floor (later); all finds dated from the end of the eleventh and the first half of the twelfth centuries.<sup>71</sup> The first phase of the hut must have been constructed during that period.

The second phase was a rebuilding with a nearly identical construction on the same spot, this time, however, 0.40–0.50 m above phase one. There is no apparent reason for the reconstruction.<sup>72</sup> From the external measurements it appeared that the floor-plan had diminished slightly in size (4.75 × 5.25 m) in this phase. The east side was walled as well; only the southeast corner had an opening of c. 1 m, which contained an entrance. At the level of this entrance the dark earth of the hut fillings extended outside the edge of the building-pit; this extension of dark earth was, however, the only evidence of the entrance. The walls had a construction similar to phase one, and again were based on the characteristic erratics. The east wall, however, did not have these erratics, except for some near the entrance. The bottom of the floor lay at an average of 5.10 m. The floor itself consisted of at least three loam layers containing fragments of lime mortar, separated by humic layers; these could possibly have been the remains of three floors. Again there were no traces of a hearth. The finds above the floor of phase two differed in no way from the finds relating to phase one, mentioned above. It may be concluded that phase two also dates from the end of the eleventh and the first half of the twelfth centuries.

Both phases of the Deventer sunken hut show many similarities to one excavated at Emmen (Province of Drenthe).<sup>73</sup> Shape and size are almost identical. The depth at

Emmen was 1.40 m below ground-level, and the homogeneous wall filling, which was also present, was explained as filling-soil between the side of the pit and the wooden or wattle wall of the hut, although no trace of such a wall was found either in Emmen or Deventer. But, in Deventer there was no trace of a bank of turf like that in the sunken hut at Emmen. As in the Deventer phase two, the Emmen entrance was found near one of the corners in a long wall, although this entrance was somewhat wider than in Deventer, and was characterized by post-holes and remains of a threshold. A similar extension was found near the entrance. No structural remains, such as a saddle-roof supported at ground-level, came to light either in Deventer or in Emmen. A final similarity lies in the dating. Although the Emmen hut is dated to around 1000, the pottery depicted suggests a somewhat later dating; in any case, the finds are almost identical with the sherds from the Deventer hut. As was the case in Deventer, no traces or other finds were detected to indicate a definite use of the hut. The Emmen hut remains a somewhat isolated phenomenon; the construction in Deventer is especially interesting because of its location.

The investigation into the sunken hut supplied a piece of new information concerning the medieval topography in the old royal *urbs* of Deventer (fig. 7).

The hut was situated in the area which had belonged to the deanery since 1046, *i.e.* on a plot obliquely behind, that is north of the deanery buildings. At the end of the eleventh and the beginning of the twelfth centuries, this plot was probably a relatively remote part of the grounds where few other buildings stood. A connection between the hut and the remaining topography appears from its orientation which is similar to that of the deanery and the old street plan. The orientation of the hut forms an eleventh-century link between the earliest Carolingian remains and the present day street plan. With this in mind, the deviation in orientation of the eleventh-century collegiate church and the adjacent *palatium* on the near-by

71 The finds consisted of pottery of Pingsdorf type with painted decoration, which, according to Bruijn (1959), belongs to this period; also vitrified ceramics with rouletting; thick-walled yellow relief band amphora; and coarse to very coarse tempered thick-walled globular cooking pot. It should be noted that Paffrath ceramics are almost completely lacking in this context. Roman finds, including a roof-tile with the stamp of the Leg. xxx, are comparable to similar finds from the Bisschops-

hof. These finds were probably brought to Deventer via the river IJssel among building material from the demolition of Roman fortresses along the Rhine.

72 Halbertsma (1967) suspects that the high level of the river IJssel was important here. But this need not have led to complete reconstruction, as the raising of the floor-level would have been sufficient.

73 Van Es 1964.

episcopal terrain is even more remarkable. Since the eleventh century, the bishop's residence has exerted a substantial influence upon Deventer's development.

## 5 ALTERATIONS

The flexibility in the size of medieval towns has through all time been considerable. There have been extensions and reductions; a number of towns even disappeared completely. In the main the extensions attract most attention, but the study of the reductions is also of importance. In the author's opinion, the archaeological examination of medieval town extensions should deal with three topics.

First of all, there is the settlement which became a town by gradual extension of a pre-urban nucleus. The development of Alkmaar (Province of North Holland) from a village situated on the Old Dunes (9th–10th centuries) into an urban trade centre (12th century and later) is a good example. The original foundation was an agrarian settlement situated on a north–south oriented dune-ridge along which was carried an important road; a river ran due east and parallel to the dune. Road and river converged near Alkmaar, a favourable position for an urban centre to come into existence. Consequently, the town was extended from the dune-ridge (where the oldest medieval finds were made) towards the waterway. A number of archaeological observations in the town centre demonstrated this development.<sup>74</sup>

A second topic for research is to be found not in the gradual extension of the town but in the planned creation of new suburbs, which were often walled in. Such new quarters could be considered as some part of a 'new town', and it is not surprising to meet repeatedly the toponym 'Nieuwstad' in medieval town centres as the name of a street or of an entire quarter. The archaeological research by the ROB into this theme has been limited to some observations in IJsselstein (Province of Utrecht). This little town almost doubled in size at the end of the fourteenth century. In this extension, the Nieuwpoort, in the south-east, some remnants of the medieval street plan and the town-wall were found. Parts were also excavated of a Cistercian monastery that originated in the same period. The occupation was forcibly abandoned by the town of

Utrecht at the end of the fifteenth century.<sup>75</sup> The Nieuwpoort, deserted fairly soon after its founding, shows clearly the swing of the pendulum in the planning of medieval towns.

The third and last aspect which should be mentioned is (as far as the Netherlands is concerned) characteristic for the town planning of the low-lying west: extension towards the water. Fillings and level-raising, together with extensive timber reinforcements of the new land have been a normal phenomenon in the medieval towns of the western part of the country. On the one hand this was done to improve the access to the waterside in connection with the expansion of the trade-traffic, but next to this the wish to extend the building areas played a big role. This important aspect of medieval town extensions has been examined thoroughly by the ROB in two towns: Staveren (Province of Friesland) in the twelfth and thirteenth centuries, which will be discussed below as an example of mobility of planning, and Dordrecht (Province of South Holland) in the thirteenth to sixteenth centuries.<sup>76</sup>

### TWELFTH- AND THIRTEENTH-CENTURY EXTENSIONS OF STAVEREN (PROVINCE OF FRIESLAND)

#### *Introduction*

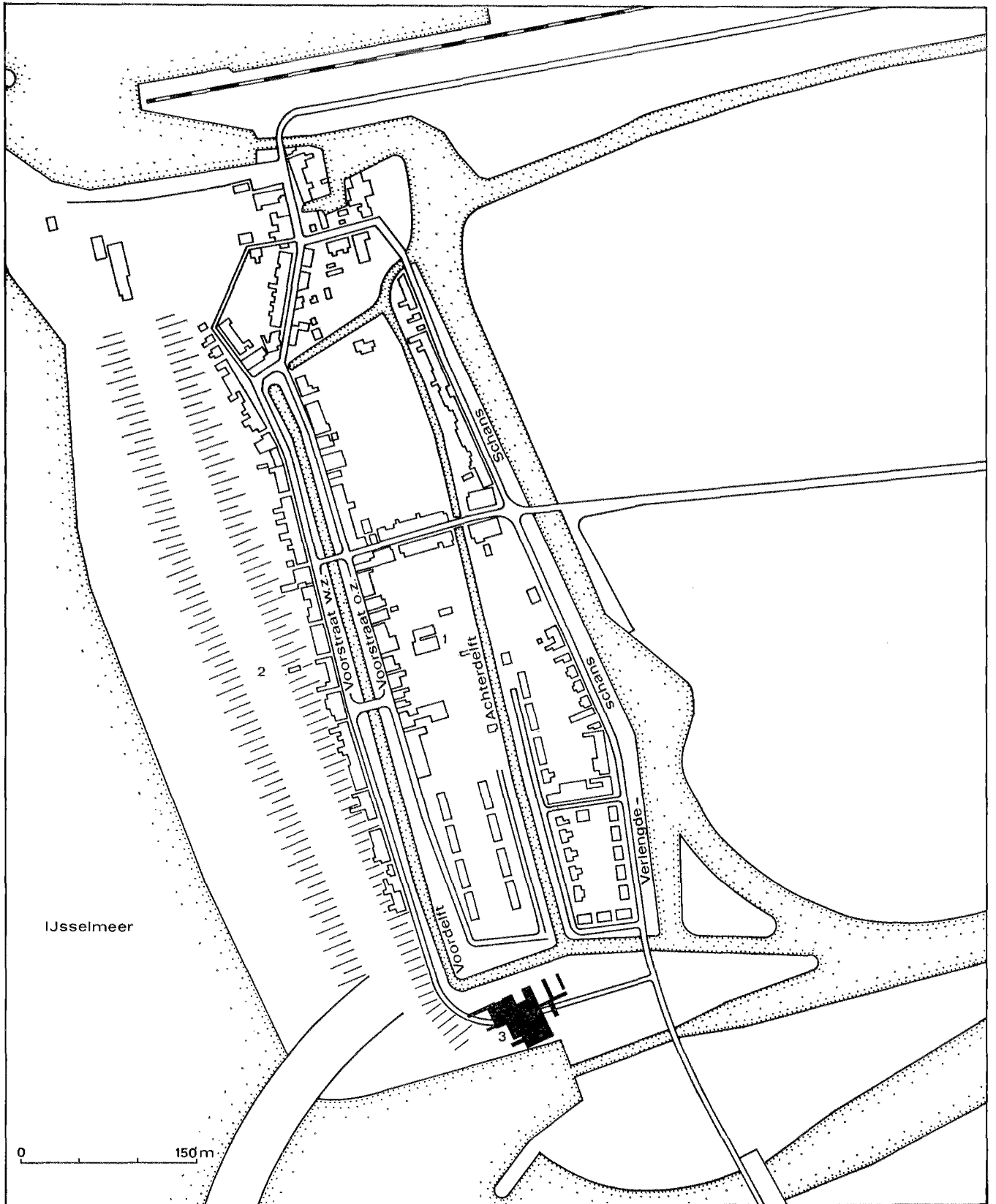
The town of Staveren is situated in the southwest of Friesland on a favourable spot along the long waterway from Rhine-IJssel and Rhine-Vecht to the North Sea. It originated in Carolingian times around a monastery (St Odulphus, founded in the eight thirties) and subsequently developed into a predominantly commercial town. Expansions and contractions of the town were determined by the tides of economic activity, but also the ebb and flow of the near-by sea exerted its influence, and in fact changed the topographical situation to such a degree for it to be exceedingly difficult to form an idea of the original size of the medieval town.

Staveren today borders on the south Frisian fenlands which, in the past, extended much further to the west and south. It is impossible to tell the exact extent of this area in the Middle Ages, since large parts were flooded and washed away. It is probable that Staveren first originated

74 Cordfunke 1972. N.B.: strictly speaking, the Alkmaar investigations are not ROB excavations but extensive observations by local amateur archaeologists; relations have been so close from the beginning, however, that these observations may be

considered as an exceptional form of ROB town-centre research. 75 Visser 1964, 117–8, 130, and fig. 5; *NKNOB* 1949, col. 190–1; *NKNOB* 1956, col. 124, col. 139, col. 193; Stooker 1938.

76 See note 130; the relating passage also in Sarfatij 1973, 41.



on the banks of a channel that was directly connected with the main watercourse through the southern marshes, the Vlie. This stream was an extension of the river Vecht which in turn branched off the Rhine at Utrecht. From the twelfth century onwards severe floods caused the Vlie to widen to such an extent that eventually a gulf was formed: the Zuyderzee (now IJsselmeer). The vast marsh along the channel was originally drained by a large number of streams and rivulets that emptied into the Vlie, but most of these also disappeared as a result of flooding in the Middle Ages. The upper reaches of two of these streams still exist, namely, the Linde and the Tjonger; they probably drained the northern marshes. It is not inconceivable that Staveren was situated on a similar watercourse, and it has been suggested that the present-day Voordelft (the central canal in Staveren) is in fact a 'descendant' of this stream,<sup>77</sup> possibly canalized.<sup>78</sup> The mound upon which the monastery stood, west of the present town, also succumbed to the floods in the Middle Ages: after the violent attacks by the sea in the second half of the twelfth century matters worsened during the fourteenth century, and, eventually, in 1415, it became necessary to move inland. The original site of the monastery disappeared under the sea and now lies 800 m west of the present harbour.<sup>79</sup>

Besides the topographical changes caused by natural forces, many changes in Staveren were brought about by man. Although much precious land was lost to the sea, it was the sea that enabled trade to flourish and thus caused the town to expand. Extensions to the town were normally undertaken toward the south, and in the twelfth and thirteenth centuries a whole area of new town had been built along the elongated Voordelft (figs. 9 and 9a). The size of these medieval extensions to Staveren is not known. It is probable that construction continued along both sides of the water, causing the inner harbour to become

considerably larger. The entire western part was eventually destroyed by the sea, and any remaining traces must now be buried under the sea-dike and are thus inaccessible to further investigation. On the north the extensions adjoined the original centre of Staveren, which, according to H. Halbertsma, had developed along both sides of the Voordelft.<sup>80</sup> The southern boundary of the extensions to the town could not be established with any accuracy since it lay outside the area of excavations.<sup>81</sup> The buildings themselves were constructed on a fairly narrow ridge along the water, a common feature in many medieval towns in the low-lying west of Holland.<sup>82</sup> The new part of the town, built in the twelfth and thirteenth centuries, fell into disuse towards the end of the fifteenth. A renewed occupation started in the early seventeenth century and lasted until the end of the eighteenth century. During the last quarter of the last century the site was levelled off to a considerable extent; many traces of the old occupation periods were lost. A new housing project today has made the site part of the city for the third time in its history (figs. 9b–d).<sup>83</sup> Prior to the final destruction of all medieval traces of occupation an archaeological investigation was undertaken by the ROB in 1963 and 1964, over an area of c. 50 × 60 m.<sup>84</sup> The flexibility of medieval town plans is the background against which this part of our study should be seen: some aspects of the development of Staveren may serve to illustrate this. Many traces of the medieval extensions to the town still existed, but unfortunately the above-mentioned digging in the last century proved to have destroyed most of the floor and street levels. Although vertical stratigraphy was thus out of the question, several interesting traces could be distinguished quite clearly on the horizontal plane.

#### *Raised levels and artificial deposits*

The stream along which the extensions of the town were built had cut its way through the peat down to the underlying sand (fig. 12). In the excavation site the surface level of the sand varied between 2.25 and 3.00 m — NAP; the layer of sphagnum that had grown over the sand had

◁ Fig. 9 Staveren. 1. Church; 2. Sea-dike; 3. Stadsfenne (Excavation 1963–64)

77 According to Halbertsma (1960, 443–444 and 1964, 257–258) this could be identified as Nagele, which we know from historical sources, but which has completely disappeared today; this waterway comprised the lower reaches of the Tjonger, Linde, and Overijsselse Vecht.

78 See p. 394.

79 Halbertsma 1960, 444–445.

80 Halbertsma 1964, 258.

81 In southern direction probably no further than the boundary dating from later times (17th century), which has been adhered to again in the modern extensions.

82 See p. 400.

83 Called *Stadsfenne* since the last century (= 'the common').

84 Provisional reports by Halbertsma (1963; 1964).

been compressed to an average thickness of 1 m by the deposits laid down to raise the ground-level.

In various places, probably in slight depressions in the peat, there was a sediment of clay silt, undoubtedly brought down by the stream. The stream must have been rather broad, sloping gradually down from the peat layer which was severely eroded on the surface. The frequent spade-marks in the eastern slope may indicate a period of peat-cutting prior to the extension of the town or perhaps they point to a previous canalization of the natural course of the stream. The first step in extending the medieval town consisted in heightening the peat embankment and narrowing the stream, obviously for the purpose of reaching the deep water of the stream. The bank was heightened with 1 to 1.5 m of clay containing large quantities of peat and wood debris; the original stacks of clay sods could still be clearly distinguished in places. This heightened area extended toward the east (inland) over a distance of at least 45 m. The clay that was deposited in the water was much cleaner, except for the remarkable presence of a great amount of chips of wood. The embankment, having thus been founded on a firm substratum, was then divided into rectangular plots at right angles to the waterfront. Nine of these plots, varying in width between 4.50 m and 7 m, could be examined.<sup>85</sup> Material evidence of the plots consisted of the remains of wooden fences running over the bank and onto the clay-fill in the stream. Rows of posts, upright boards, and wattle structures formed long partitions. Thus the plots did not end on the bank proper but continued onto the adjoining wharves constructed on the reclaimed land.

In order to stabilize the deposits, short rows of posts, wattle, or planking were fitted across each wharf (fig. 10). Three such cross structures were distinguished in the profile cut in plot 1, but their number probably varied in the different wharves. The combination of partition fences and cross-fences resulted in 'boxes' which made the reclaimed land much firmer. The wharves 'outside the dike' ended on the waterfront with a common border of squared and pointed solid oak piles driven into the river-bed at regular intervals; the embankment was faced with oak planks.

This heightened area, without traces of construction (apart from the wooden divisions), was then gradually covered by an habitation layer, a thick bed of dirty clay in

which most of the occupation traces were found. Only the lower part of this layer remained: the floor was 0.50 to 1.00 m–NAP, but the surface of the deposit was impossible to establish due to recent disturbances (down to *c.* 0 NAP). This is all the more regrettable since the medieval buildings were constructed on crest of the heightening. It was, however, possible to distinguish in section the slightly convex surface of the occupation layer between the divisions between the plots; this again points to the assumption that gradual and individual raising of the level was undertaken after the main base had been laid. The occupation layer extended from the highest point of the embankment over the filled area down to the revetment. Beyond this oak revetment the layer of coarse clay continued as a thin band more than 20 m to the west.

The raised embankment together with the filled area, the final wood revetment, and the overlying occupation layer may be seen as the result of a continuous process starting in the twelfth and thirteenth centuries. Although the remains suggest that land reclamation was undertaken very gradually, the lacunae in the stratigraphy make it impossible to distinguish the various stages.

#### *Road, jetty, and buildings*

The remains of this new part of the town all indicated that the buildings were wooden. A road, a jetty, buildings from two different periods, and some other traces of construction will be dealt with below (figs. 10 and 11). The remains of a street or path were found in the area between the bank and the infill of the stream. This road, 5–5.50 m wide, followed the course of the river (north–south) and intersected all the plots at right angles; it continued in both directions beyond the excavation site. The wooden

Fig. 9a Twelfth- and thirteenth-century extensions in the southern part of the town. a. Fen stream; b. Wharves; c. Road; d. Buildings

Fig. 9b The southern part of the town *c.* 1560, after the map of Jacob van Deventer (The shading on the Figs. 9b–d represents the built-up area)

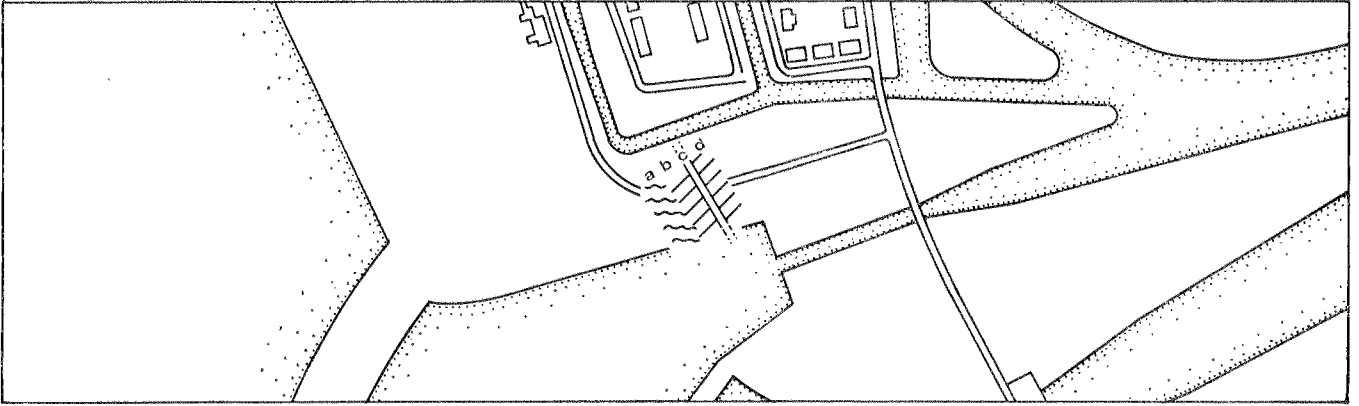
Fig. 9c The southern part of the town in 1616, after the map of N. Geilkerck

Fig. 9d The southern part of the town *c.* 1830, after the first cadastral survey

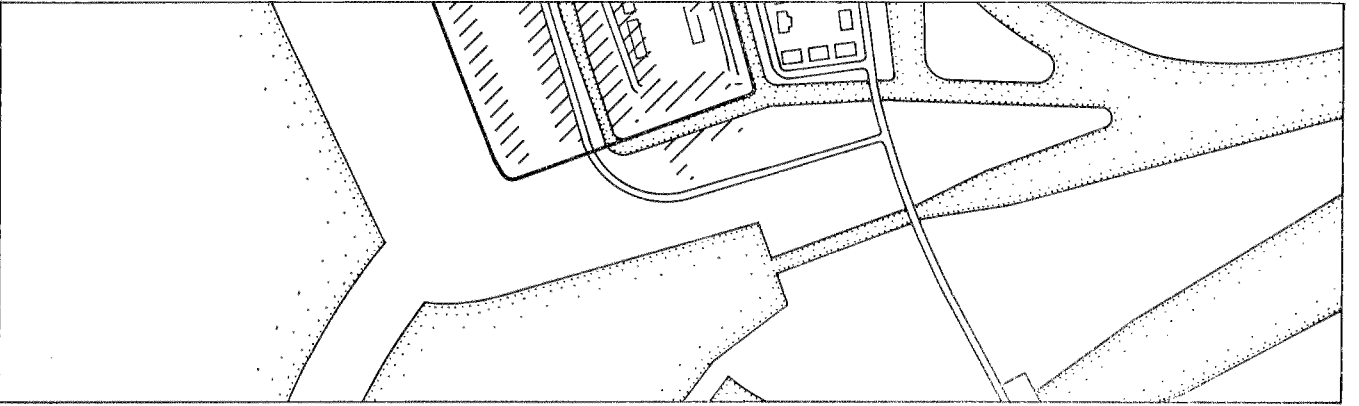
85 Width plot 1 – 5.00 m; 2 – 6.00 m; 3 – 4.75 m; 4 – 4.50 m; 5 – 6.00 m; 6 – 6.50 m; 7 – 4.00 m; 8 – 3.50 m; 9 – over 7.90 m.

It is quite possible that plots 7 and 8 formed one single plot until they were divided during the second period of construction.

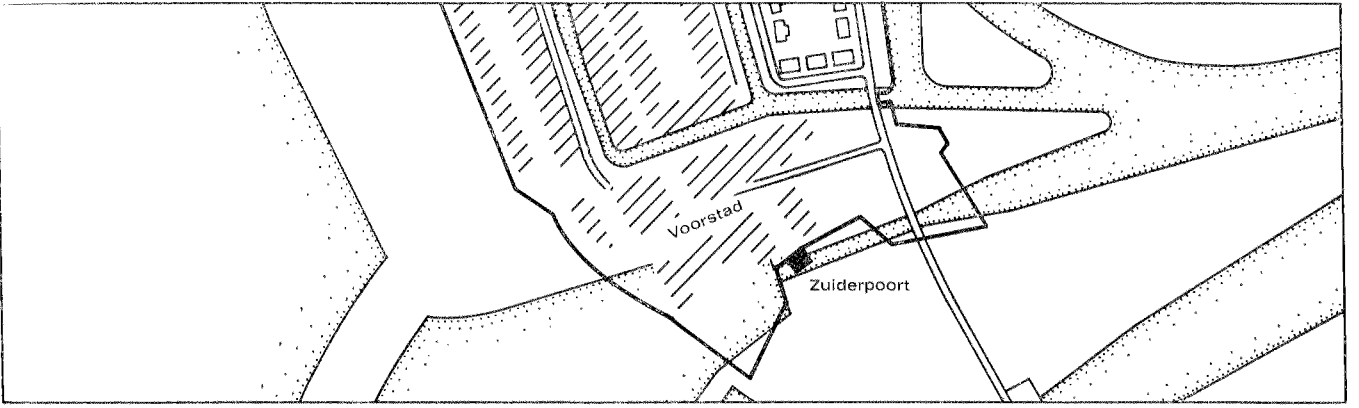
9a



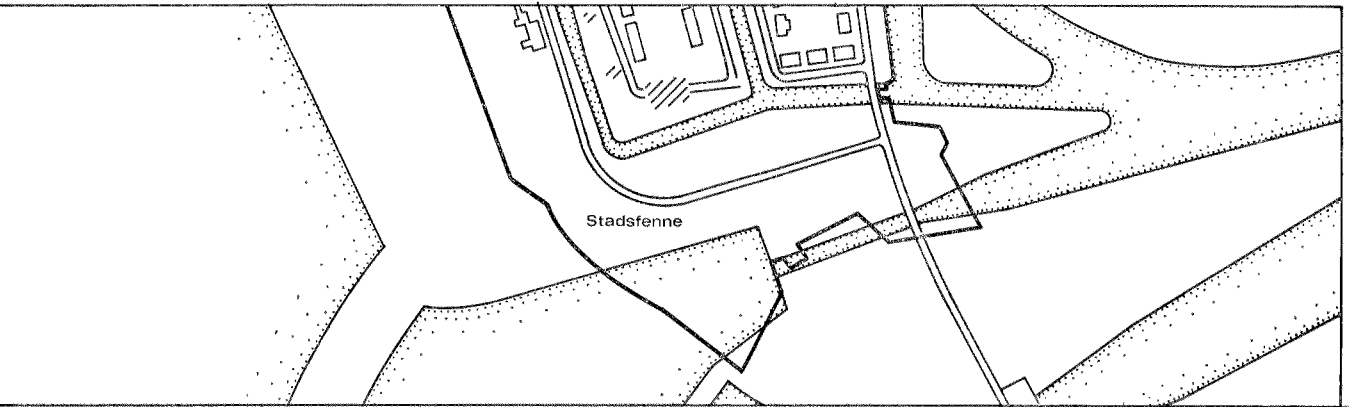
9b

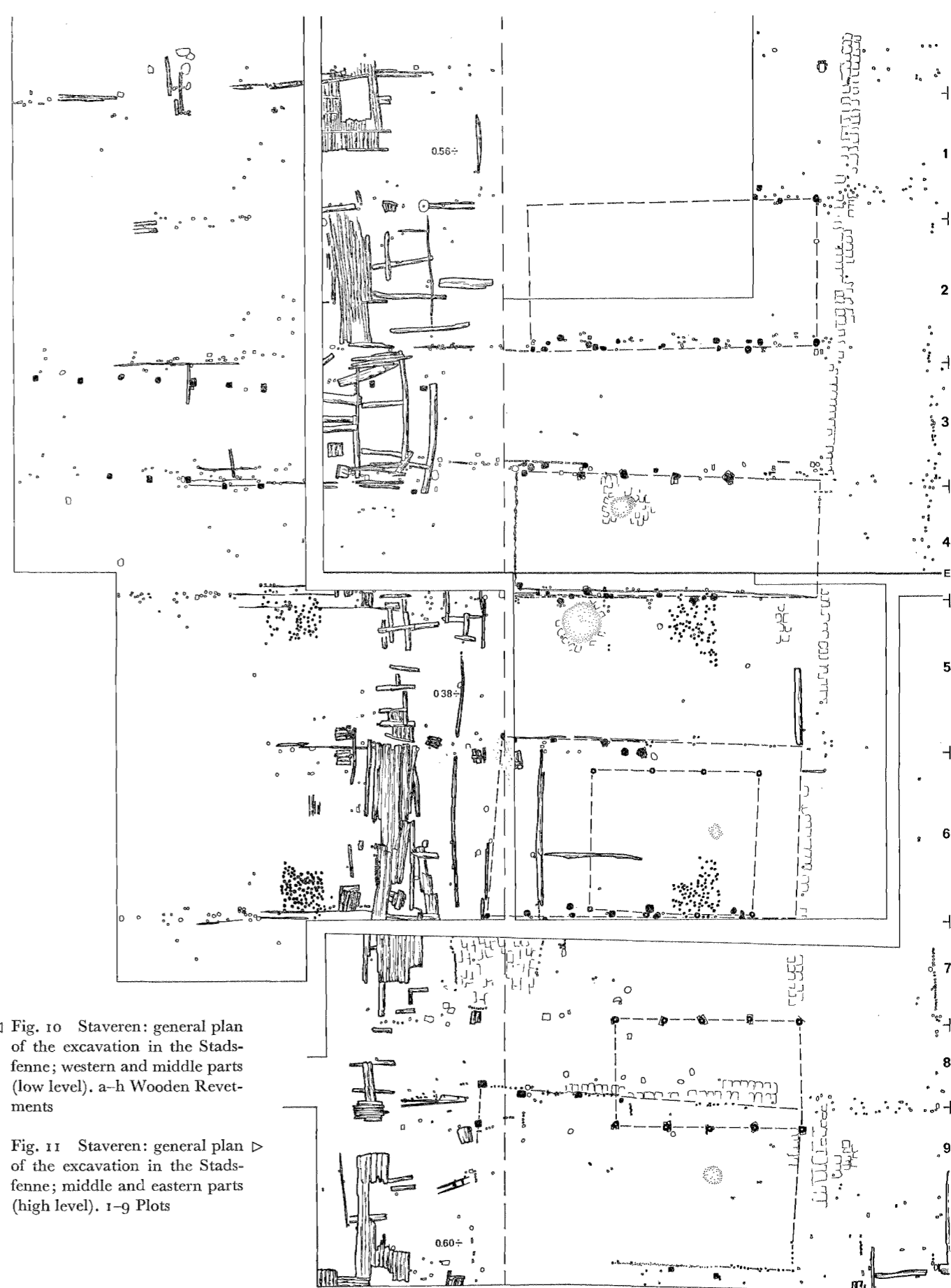
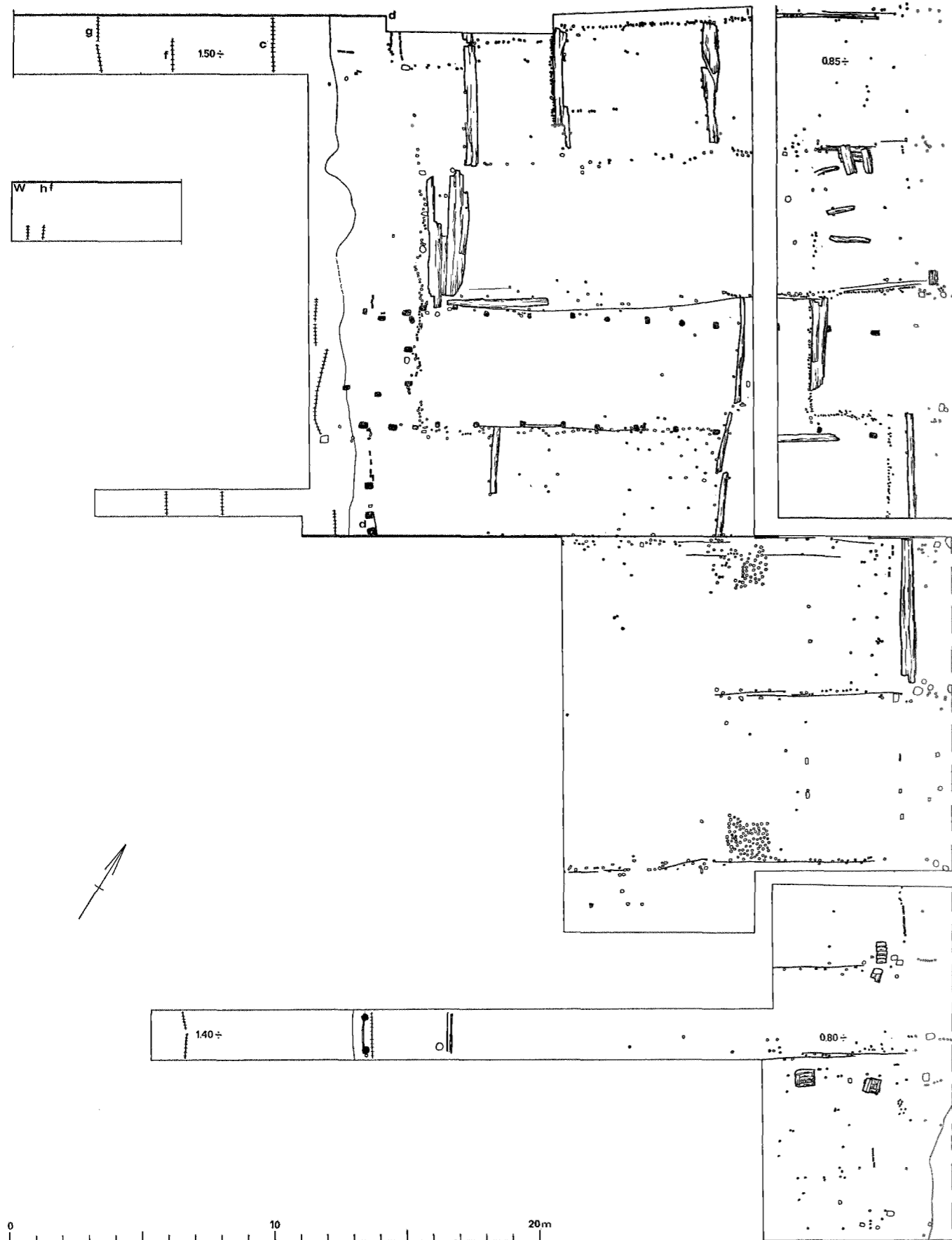


9c



9d





◁ Fig. 10 Staveren: general plan of the excavation in the Stadsfenne; western and middle parts (low level). a-h Wooden Revetments

▷ Fig. 11 Staveren: general plan of the excavation in the Stadsfenne; middle and eastern parts (high level). 1-9 Plots



path consisted of a base of cross-beams supporting a surface of longitudinal planking. Despite the fragmentary state in which these traces were found, one remarkable feature could be observed: the length of the planks was equal to the width of the plots.<sup>86</sup> The wooden planking is the only clue to the level of the path, but the varying levels of the different plots and the relative depth (0.20–0.40 –NAP)<sup>87</sup> make it seem unlikely that this path was a pedestrian thoroughfare. A few stones were found on a higher level (paving? or possibly remains of a floor or a secondary construction?)<sup>88</sup> but they were so fragmentary that a satisfactory explanation for their occurrence cannot be given.

The situation in plot 3 seems to be the most straightforward: two long rows of squared oak posts ran in a direction that differed slightly from that of the boundary lines of the plots. The total length of the rows was 14 m; they were placed 4 m apart. From the fact that both rows of posts slanted inwards it may be concluded that they formed the substructure of a pier or jetty. This jetty joined the buildings on the landward-side (about which more will be said below), across the road and the wharf, to the wooden quayside. It should be added that the jetty was situated in front of the unobstructed passage between the buildings on plots 2 and 4.

The buildings just mentioned were situated to the east of the road. In fact they were constructed on a building-line that virtually coincided with the eastern border of the road. Characteristic of the buildings was the application of much worked wood, generally in rows along the partitions of the plots, *i.e.* in the slight depressions between the strips of habitation. Thick posts and thin ones (which probably supported walls), planks and wickerwork (indicating walls and fences) were used alternately. An arrangement into specific groups according to the different building periods is very difficult on account of the faulty stratigraphy. However, the finds, which date from the twelfth and thirteenth centuries, do indicate a direct relationship between these periods and the heightening undertaken during extensions to the town. In so far as any classification of the buildings may be attempted, we may distinguish some kind of a system in which empty plots were alternated with built-up plots. In our opinion, there were constructions along a common building-line on

plots 2, 4, and 6; possibly these buildings belong to one and the same period. Evidence of a second building period was found in two buildings situated further back (east) in plot 6 and the combined plots 8 and 9.

The buildings from the first period were very similar, un-aisled, and with walls corresponding to the plot divisions. As an illustration plot 4 will be discussed in some detail. The fairly heavy vertical oak roof-posts usually had a flat bottom resting on some small planks.<sup>89</sup> Only one post was placed in a post-hole (repair?); the almost complete lack of post-holes may indicate that the buildings were constructed at the same time as the formation of the occupation layer. The long walls were double: horizontal planks (presumably anchored to the posts belonging to the raising and extension of the plots) on the interior and a row of vertical planks on the exterior. The short front wall (on the west side) was made of wattle; the wall at the back had disappeared. This construction measured 11.50 × 5 m. No traces suggesting interior partitions or an entrance were found. The floor, too, had been removed by recent disturbances; a small charred area was the only possible evidence of a hearth. But in spite of this, it seems unlikely that this building was inhabited: in our opinion, it must have been something in the nature of a barn or silo or other type of warehouse.

What has been discovered in relation to the buildings of the second period? The only traces of the construction on the combined plots 8 and 9 were two rows of five oak posts marking an area of 7 × 4 m. These posts too were flat-bottomed and rested on small planks. No traces of a wall construction were found either on the long or on the short side. We cannot therefore exclude the possibility that the row of roof-posts represents only the central nave of an aisled building, in which case the walls would have been further apart – but once again no traces of these walls were found. Whatever the case may be, the building does represent a later period of wooden constructions. In the first place it was situated further back (east). (Had the road and thus the building-line become obsolete?). In the second place it overlaid the old partition between plots 8 and 9; moreover, all the posts stood in post-holes and the bottom of the posts rested on a higher level than in the previous period. In all respects this building could be compared with the construction on plot 6, which was also

86 This is clearly to be seen in plots 2, 3, 6, and 9.

87 The reconstructed floor level of the buildings lay above NAP, presumably between 0.15 and 0.20 m +.

88 The height in this case permitted comparison with the level mentioned in the previous note.

89 The ends reached down to between 0.30 and 0.60 m – NAP.

situated further back. The function of these buildings, however, is even more difficult to establish than in the case of the first period.

After the road, the jetty, and the building, it seems that a last period of wooden constructions is represented by four foundations formed by piles in the plots 5 and 6. These piles were placed together in 'bundles' measuring  $2 \times 2$  m, and were located in the four corners of a rectangle measuring *c.*  $17 \times 12.50$  m. This rectangle was enclosed by the land on one side and by the waterfront on the other, and also included the road. The piles (average 10 cm in diameter) were found directly under the recently disturbed level, from where they extended a minimum of 2.25 m, so that the pointed ends reached down to 2.20 m -NAP. Although these piles clearly belong, stratigraphically, to the medieval occupation, they must date from a later period than the buildings, road, and jetty. In several places the piles had been driven through the remnants of the structures, and the second-period building on plot 6 was also constructed within the above-mentioned area and must eventually have been covered by the structure on top of the pile-foundation. The possibility that the traces of the stone floor mentioned on p. 398 belonged to this construction should not be excluded in view of a certain similarity in the location of these finds. There is not sufficient material, however, to indicate the nature of the building that was constructed on the pile-foundation. Perhaps some stacks of wood found between the pile-foundations also belonged to this building. These stacks consisted of four to six layers of short pieces of wood, piled up crosswise, usually three per layer, and may be interpreted as supports for the joists of the ground floor. They were located near the road, on three of the partitions between plots 5 and 6. That they were positioned after the road was built is indicated by the fact that one of these stacks of wood rested on the road surface. Moreover, in view of their relatively high stratigraphic position, it is quite likely that they constituted part of the pile-foundation. But even so this combination does not make it any easier to establish the nature of the superstructure.

#### Conclusion

The twelfth- and thirteenth-century extensions to the south of the town of Staveren were the result of the economic prosperity of the time. The position of the town

was very favourable: it was situated between the Frisian domain (which shook off all central government authority during the thirteenth century) on one side, and lay to the northeast of the county of Holland on the other. Staveren benefited from the more or less peaceful political relations between these two regions,<sup>90</sup> but when the political climate worsened Staveren's position became very unstable, as we shall see. The prosperity of the town was probably also directly influenced by great storms which caused severe flooding from *c.* 1170 onwards,<sup>91</sup> and damaged the north side of town. It is possible that these storms, by washing away large tracts of the surrounding peat bogs, opened a new passage from the south of town to the Zuiderzee. The fen stream, on whose banks Staveren originated, initially drained the marshes in northerly direction (possibly the same watercourse as is known historically as Nagele),<sup>92</sup> and now also became accessible from the sea to the south. The inhabitants of Staveren must also have been interested in extending their brisk trade-relations towards the south.

The frequent spade-marks in the peat embankment suggest that the fen stream was canalized. An attractive site for occupation was thus formed in the extension of the old inner harbour, the Voordelft.

The embankment of the fen stream was raised considerably and subsequently divided into plots at right angles to the river. The breadth of these plots varied greatly. The heightening was undertaken in combination with deposits in the water along the bank. Thus wharves with a communal quay-side emerged in the area 'beyond the dike.' The object was obviously to reach the deep water of the stream. Another indication of this is the jetty which extended over the full length of one of the wharves linking the original bank and the quayside. The jetty crossed over a wooden path parallel to the stream which had been laid previously and cut across all the wharves. Behind the path, on the raised bank, buildings were erected, never more than one deep and on alternating plots. The buildings had a single-aisled construction and were as wide as the plots on which they stood.

The extension of towns by heightening banks and filling in waterlogged areas may be considered a common feature of medieval towns. Nevertheless, only in recent archaeological researches have these phenomena been observed *in materialibus*. In the waterside towns of the low-lying

90 Heeringa 1893, 27 ff.

91 Gottschalk 1971, 196-197. Also the St Odulphus monastery eventually had to be moved (p. 393).

92 See p. 393, note 77.

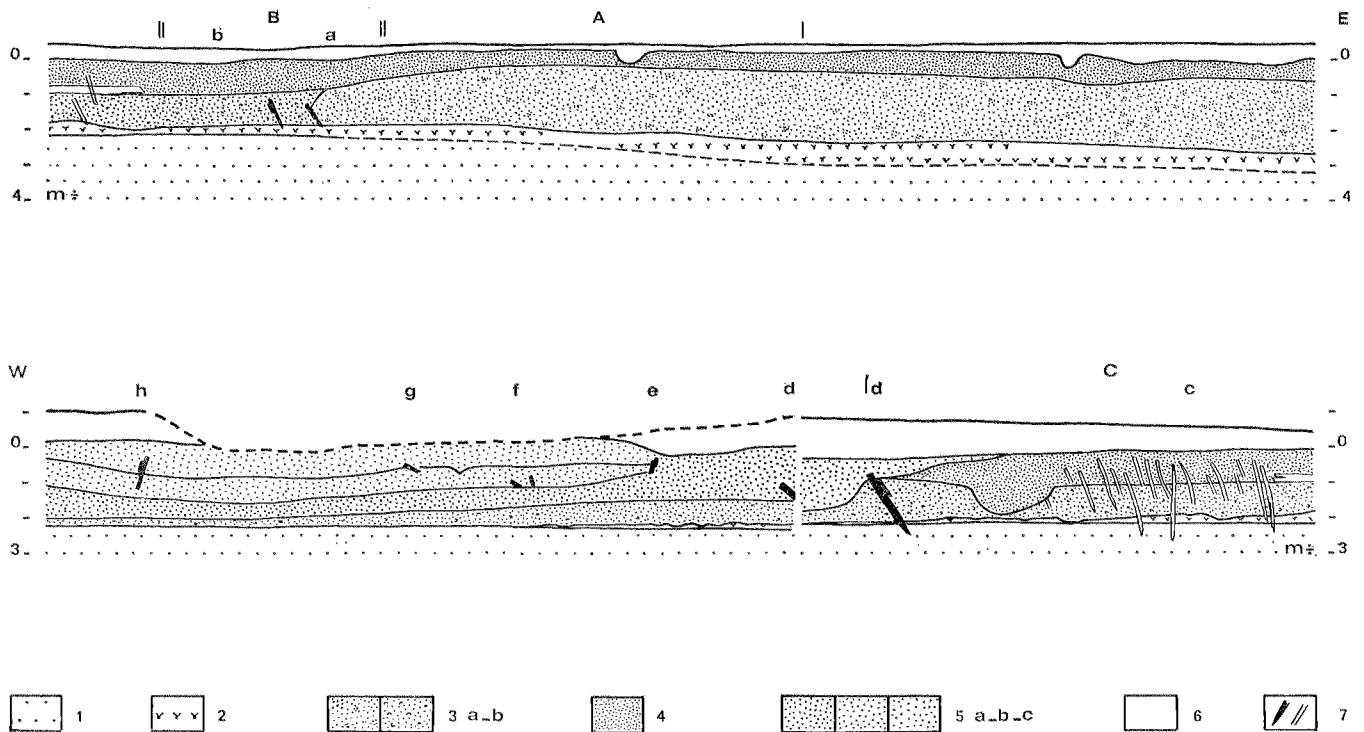


Fig. 12 Staveren: Stadsfenne, section W-E. A. Building; B. Road; C. Wharf. a-h Wooden Revetments. 1. Sand; 2. Peat; 3a. Fillings of Sodds of Clay; 3b. Fillings of Clay with Chips of Wood; 4. Medieval Occupation Layer; 5a-c. Late-medieval Fillings; 6. Recent Layers; 7. Timbers

western part of the Netherlands this form of expansion must have been inevitable. Excavations at Dordrecht (Province of South Holland)<sup>93</sup> have shown clearly that the process of raising started before 1250 and came to an end not before the sixteenth century. The lay-out, however, was unlike Staveren. The river into which the town of Dordrecht was extended ran behind the houses that were situated along the main street. The extensions were initially confined to limited groups of plots, thus forming abutments that protruded into the river. A lane was constructed along the abutment to connect the main street to the wooden revetment at the end. This lane shows similarity to the jetty at Staveren. But the extension there seems to have been carried out in an unbroken line. The same

was found in Amsterdam (Province of North Holland),<sup>94</sup> where the river Amstel formed the axis. The embankments on both sides were also enlarged, as it seems, in unbroken lines in the fourteenth and fifteenth centuries, thus narrowing the river-bed considerably. At Staveren, Dordrecht, and Amsterdam the same phenomenon of successive revetments to prevent the earth from slipping down into the river was found on each plot.

The investigations at Staveren and Dordrecht into groups of plots revealed that the position of the revetments differed on each plot. An overall concept of planning was only found in the continuous partitions of the plots and wharves and in the communal quay at the riverside. A similar duality showed the wooden path at Staveren: on

93 Sarfatij 1972, 625-628.

94 Van Regteren Altena 1968, 124-130; Van Regteren Altena-Zantkuyl 1969, 235-242.

one hand the uniform construction along one trace, on the other a divided surface of planks and different levels apparently in connection to individual plots. Other instances of this duality such as the difference between the uniform heightening level and the habitation level on the bank which varied from plot to plot and the constructions of individual buildings on a common building-line appears to reflect a typical medieval system of organizing large-scale earthworks. Also the reclamation of fenland and (initially) the construction of dikes, were based on the principle of a general plan carried into effect individually. Excavations in Bergen (Norway)<sup>95</sup> and King's Lynn (Great Britain)<sup>96</sup> have shown that this approach to urban expansion was common in other parts of Europe, too, where construction sites were gradually enlarged by extending the embankments further into the water.

The new section of Staveren must have adjoined the old town further north. In the middle of the last century, regularly spaced rows of tree-trunks and planks were found ('across the canal' = east of the Voordelft?), which were compared, at the time, to the well-known wooden paths through the fenlands of Drente.<sup>97</sup> Our wooden path could be the extension of this 'road'. However, the construction of the excavated part of the Staveren road was different from that of the fenland wooden roads, and was much wider than usual.<sup>98</sup> Roads with wood paving are a common feature in medieval towns, but to my knowledge they invariably consisted of a surface of planks or logs laid across a base of lengthwise timbers,<sup>99</sup> and are furthermore generally narrower than the road in Staveren. Besides, a correspondence between road sections and the breadth of the plots has not been found outside Staveren.

Unfortunately, the remains of the wooden superstructure were insufficient to permit classification according to one of the known types of timber constructions of north-western Europe. Only the buildings on plots 4 and 8/9 allow for a tentative classification (fig. 13). They are closest to the type of construction with wooden uprights defined and described by Rudolph and characteristic of northern Germany and the west Netherlands.<sup>100</sup> As usual

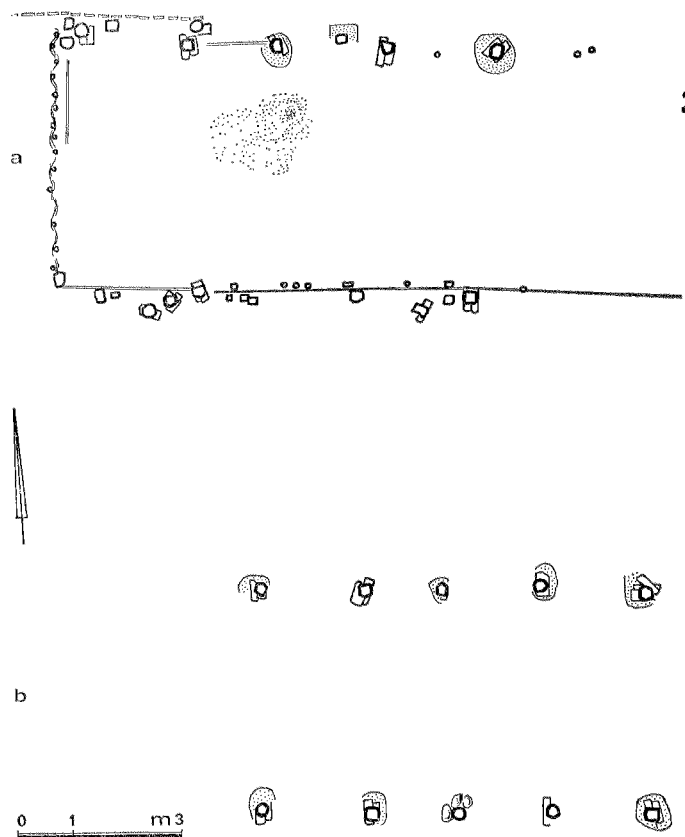


Fig. 13 Staveren: Stadsfenne. a. Building on plot no. 6; b. Building on plot no. 8

in this type of construction, the wooden posts in Staveren were only partially worked: no traces were found of wall attachments (only the lower parts in the foundation were preserved). We can only guess at the nature of the connection between the vertical posts and the superstructure. An additional difficulty is that the vertical posts occur in pairs – as is necessary for this type of construction – in plot 8/9, but only in two sections of plot 4. Nevertheless, the sparse remains of the walls, consisting of an interior wall of horizontal planks and an exterior of vertical planks

95 Herteig 1969.

96 Clarke 1973.

97 Pleyte 1877, 50.

98 Hayen 1957. The road in Staveren comes closest to the types b and c mentioned by Hayen (1957, 177); however, there are considerable differences in number and position of the underlying cross-beams.

99 Type A in Hayen (1957, 172–176). Cf. Novgorod (USSR) (Thompson 1967, 13 ff.), Haithabu (W. Germany) (Schietsel 1969, 19–26), Århus (Denmark) (Andersen *et al.* 1971, 30 ff).

100 Rudolph 1942, 109 ff.

(without a trace of a structural connection with the uprights), are still an indication of the typical construction with upright timbers. That the uprights rest on short planks, however, is an extraordinary feature of both buildings, while the sinking of posts (in plot 4) into the occupation layer itself has not been encountered elsewhere at Staveren.

The construction of the buildings gives no indication of their function, and it was hard to find traces of occupation. Some traces of a fireplace were found on plot 4, but the only charred area that could be evidence of a hearth was found in the second-period building on plot 6. The problem of the function of these buildings was further complicated by the recent removal of earth down to a level below the medieval floor. But in spite of this these buildings should, in our opinion, be considered as barns, warehouses, or silos rather than as dwellings. In view of this the twelfth- and thirteenth-century extensions were probably intended in the first place to enlarge the harbour area.<sup>101</sup> In our opinion, the contemporary wells behind the buildings, with their contents of varying origin, also reflect the commercial nature of this new section of town.<sup>102</sup>

The economic growth of Staveren in this period is linked up with the revival of Frisian trade. This trade, which connected north and east Europe to the western part of the Continent, had its roots far back in the seventh century.<sup>103</sup> A strong decline occurred in the ninth and tenth centuries as a result of the Viking invasions, but the commercial relations across the North Sea and the Baltic never seem to have been interrupted completely. When the Frisian trade revived in the eleventh century, Staveren regained a central position.<sup>104</sup> Its predominance in the growing market of the twelfth and thirteenth centuries was expressed in the enlargement of the town. The end of the fourteenth century, however, signified a turn in the town's welfare and the decline became increasingly evident after 1400. Three factors were involved: first, the sea became a direct threat to the town (an indirect effect was that old watercourses were silted up and new ones formed, a development which coincided with the emer-

gence of a new trade route from Holland/Flanders to Scandinavia and the Baltic countries). Besides this geographical factor, there was an economic factor: the emergence of stiff competition, notably by the Hanseatic League led by Lübeck, which made the use of other ports for transshipment such as Brugge more convenient.<sup>105</sup> Third, there was a political factor characterized by the growing anarchy in the rule of Friesland during the fourteenth century, which unfortunately coincided with an urge for expansion on the part of the county of Holland. Since Staveren had long been a bastion of Holland in hostile country, the town became deeply involved in these political developments. The result of these disputes was that trade came virtually to a standstill towards the end of the fourteenth century.<sup>106</sup> The sad end of the affair was the sacking of Staveren, followed by a fire in 1420 or shortly after, which is presumed to have destroyed the south and southeast sections of the town. After this calamity the town was rebuilt on a much smaller scale and, during the fifteenth century, it led a very modest existence 'forgotten and far away.'<sup>107</sup>

A good example of the archaeological traces left by this historical development are the continual fillings along the wharves (fig. 12). In the western part of the excavation site, on either side of the wooden quayside facing, traces were found of the various successive deposits. These deposits formed the upper layer of the area from the quayside, over the sloping embankment, up to the level marked by the recent digging. Filling was continued beyond the quayside until the fifteenth century. The reclaimed land was raised to NAP level with sods of sphagnum and sand, and also, as in the past, strengthened with wood. Four wooden revetments mark the chronological development of land reclamation in western direction between the fourteenth and the first half of the fifteenth centuries.<sup>108</sup> The last one was built 20 m away from the first, but filling also continued beyond the last revetment. The final stages of the entire process could not be examined because the levels concerned have now disappeared under the sea-dike. It is quite possible that a similar development took place on the opposite bank of the fen

101 The twelfth-century efforts of the town of Staveren towards economic independence is also apparent in the direct support by the emperor in 1123 (Niermeyer 1937, 17-18).

102 See p. 375.

103 Jappe Alberts-Jansen 1964, 20 ff.

104 Jappe Alberts-Jansen 1964, 48-51.

105 The improved construction of ships made longer voyages over more open sea possible.

106 Heeringa 1893, 42 ff., 69 ff.

107 Heeringa 1893, 90, 96.

108 Finds from the deposits against the revetments date from the 14th, 14th to 15th, and the first half of the 15th centuries, respectively.

stream, but any remains of such deposits would now also lie under the present sea-dike (figs. 9 and 9a). In view of the sparse find material from the fifteenth and subsequent centuries, it would seem that the southern part of the town (known as Voorstad at the time) fell into disuse in the course of the fifteenth century. One might suppose that the recent diggings could be blamed once again for the lack of archaeological material, but the absence of deep water-wells from the relevant period indicates that occupation really did cease at that time.

On the oldest map of the town (dating from *c.* 1560)<sup>109</sup> the medieval section is marked outside the town walls (fig. 9b), but towards 1600 it became part of the town once more and was gradually re-occupied. The seventeenth-century plans of the town show that Staveren was fortified in that period, at which time the resettled Voorstad was enclosed by a wall, a gate, and a moat (fig. 9c). Obviously, the shallow traces of the new occupation were the first to be disturbed by recent digging. The only archaeological evidence to be found were ten wells with contents from the seventeenth and eighteenth centuries. Also part of the fortified gate from this period was excavated: it consisted of heavy brickwork in the shape of the letter E, founded on a sturdy wooden construction of horizontal and vertical posts. This was probably the abutment into the outer moat which served as the foundation for the gateway. The size of this construction indicates that the gate must have been at least 10 m wide. The square structure of the gate with the usual drawbridge over the moat is confirmed by seventeenth-century maps giving a bird's-eye view of the town, and by the name of the gate, 'Zuiderpoort' (South Gate).<sup>110</sup>

Building continued in the Voorstad throughout the seventeenth century, but a contrary development of decline and contraction set in towards the end of the eighteenth. Early in the nineteenth century the fortifications were demolished and the Voorstad was abandoned once again (fig. 9d). On the oldest cadastral survey of the town, dating from about 1835 and on the municipal map from 1865, the area is marked as 'Stadsfenne' (or common).<sup>111</sup> Not long afterwards 'a complete levelling of the terrain formerly taken up by houses and streets but now falling into decay and becoming common land, in order to alleviate the dire poverty by the sale of this fertile terp

earth'<sup>112</sup> was undertaken. The present-day plans to extend the town in the same direction (for the third time in history) occasioned the archaeological investigations conducted in 1963 and 1964. The alternated use of the site as Voorstad and common is a good example of the mobility of the town plan during eight centuries, of which the medieval period was by far the most important.

## 6 ELEMENTS

It is apparent that the possibilities of carrying out archaeological research in medieval town-centres are extremely uncertain. Often only a small part of the town is available for examination: one building, some house plots, a part of the town wall. Yet every element has certain urban aspects that may be worth while. The town-centre research executed by the ROB in many towns was concerned with a variety of such elements, which could be examined partly or completely. The first impression is that there seems to be little or no coherence between these excavations. Nevertheless an attempt will be made to arrange groupings in the somewhat kaleidoscopic picture in such a way that the elements can be placed in a wider setting. Again, the observations will be followed by a more extensive discussion of one of the excavations.

Churches form the largest group of separately examined town elements. Although ROB excavations in churches were initially a consequence of destruction during the war and post-war building, at present the restoration of ecclesiastical buildings is in most cases the reason for archaeological research. Church excavations have become so numerous that it is justified to speak of some sort of specialization within the archaeology of the Middle Ages.<sup>113</sup> Because of their general presence in both the town and the country, churches are perhaps the least characteristic as an urban element. The urban character is still expressed in its spacious, voluminous dimensions: a town church had to house many worshippers. This may be illustrated by one example, the St Maartenkerk at Doesburg (Province of Gelderland).<sup>114</sup>

Archaeological research indicated that the present church was preceded by a basilica in tufa (outside measurements *c.* 30.00 × 17.30 m). The three aisled church had a tower on the west side; chancel and aisles ended in semicircular

109 By Jacob van Deventer (Fruin (ed.) 1916–24).

110 The earliest illustration, by N. Geilkerck, dates from 1616 (Emmius 1616).

111 Kuyper 1865, Municipality of Stavoren.

112 Halbertsma 1964, 259.

113 Since its foundation the ROB has executed many church excavations; see Mank-Loeb 1972.

114 Halbertsma 1968; Ter Kuile 1958, 59–65.

apses. Presumably the building was erected shortly after 1235, but this is uncertain. The church was rebuilt on a much larger scale from the end of the fourteenth century onwards (dimensions now approx. 69.00 × 26.50 m) in brick with partial use of tufa. The rebuilding was carried out in an unusual way: from west to east, so that the old tufa church could have remained permanently in use during building operations. The new church also acquired a tower, west of its predecessor, built into the body of the church. The new basilica was eventually completed sometime between 1517 to 1521. The new edifice now had a 5/8 chancel and square-ended aisles.

A group of religious buildings typical for the town was formed by the friaries of the later Middle Ages. They were introduced by the mendicant orders since the 13th century. The monastic lands occupied relatively large areas compared to the limited size of most medieval towns. They were usually situated out of the centre and near the town walls, where unbuilt sites were still available. Sometimes sites were also found in the middle of the town, especially in those cases when terrain was donated to the friars. Preaching was one of the main tasks of the mendicant orders; consequently, their conventual churches were usually large and spacious. The communities of friars often played an important part in medieval urban society; meetings of the town council and the guilds were frequently held inside the friary. The monastic buildings were therefore of direct importance to town life. In effect the archaeological research of friaries has as yet covered only some aspects. The large monastic grounds above-mentioned are seldom completely available for research.<sup>115</sup> A relatively extensive excavation was executed by the ROB in the Dominican friary at Haarlem (Province of North Holland); this will be discussed later in more detail. At present an examination of the Dominican friary at Leeuwarden (Province of Friesland) is in progress. Finally, reference should be made to the many chapels and religious buildings in the town, associated with small monasteries, communities, almshouses, and hospitals. Some of these were either completely or partly examined. As was the case with the churches, the ground plans of the chapels differ so little from their rural counterparts that they can hardly be called urban by the external form.

On the contrary, buildings used by the town government,

that is, town-hall, market hall, and other public buildings, may be called typically urban. One of this group, the house of aldermen at Axel (Province of Zeeland) was partially excavated by the ROB<sup>116</sup> A small section of a hall running north-south was found; to the south side was a conglomerate of additions, among which were two barrel-vaulted cellars. There were various but barely distinguishable building periods. The remains were in such a poor condition that the identification with the historically known house of aldermen is a notion, although a strong one. The oldest remains dated from the end of the fourteenth century; the final dating concurs very well with the period around A.D. 1588, the year when the hall was demolished.

The castle in a town may also be considered as one of the urban buildings. The aspect of the development of a town next to and in direct relation with an existing castle has been discussed above.<sup>117</sup> In those cases the relation was between one castle, usually of respectable size, and one town. The number of castles has multiplied sharply during the process of penetrating more deeply into medieval society. Particularly on the lower strata the castle diminished from a big stronghold towards a fortified house, which was still defensible but very often merely formed a status symbol for its owner. These houses are characteristic for country and town in the late Middle Ages. In the last case they developed into fortified town-houses which in the Netherlands can be found most frequently in the town of Utrecht.<sup>118</sup>

A similar house, a late medieval tower house, was excavated by the ROB in Franeker (Province of Friesland).<sup>119</sup> It consisted of a rectangular brick building: outside measurements 8.25 × 11.75 m, average thickness of the wall 1.20 m, brick size (*kloostermop*) 29.5/31 × 15/16 × 8.5/9 cm. Of the original west front 7 m of a standing wall had remained as a part of a later addition. The entrance door was more than 3 m above the old ground-level; there is every reason to consider this door to have been the only entrance to the tower. The entrance could be covered by a system of slits and a kind of machicolation built inside the wall. Liquids could be poured through the wall from the parapet walk via the machicolations with the opening in the wall 1.50 m above the door. The openings were 1.10 m high and connected to the parapet walk by

115 Many changes in usage have taken place since the secularization in the Reformation.

116 Trimpe Burger 1967, 43-46.

117 See p. 374.

118 Temminck Groll 1963, 11 ff.

119 Halbertsma 1973.

brickwork ducts 0.50 m long. The parapet walk probably had a crenellation into which the slits were built. It may be concluded from the levels of two floors of which the remnants were found right above each other inside the building that the tower must have been at least 8 m high.<sup>120</sup> The floors belonged to a room at ground-level – although walled in on all sides, it was not a cellar. The building could not be dated by the size of the bricks because this type of brick has been in use for several centuries. The machicolations, however, indicate a construction of shortly after the second half of the fourteenth century. It is known from historical sources that the tower, at the beginning of the fifteenth century, came into the possession of the nobleman Sicke Sjaerda, called *hoofdeling* ('captain') in Franeker, and a powerful man according to Frisian standards. Reasons exist to consider this lord the builder of this tower, as was assumed by the excavator.<sup>121</sup> This type of tower is called a *stins* in the Frisian language, and because of its builder's family name the Franeker tower was called *Cammingha stins*.<sup>122</sup> The building with its elevated dwelling floor, exclusively accessible via an outside stair, with underneath a completely closed-off space (storage-room?) originated from the countryside, where the *stins* was the defensible brick house of a farm of considerable size, in Frisian called *state*. The combination *stins* and *state* occurred in several places in late medieval Friesland.<sup>123</sup> This combination, however, is also found elsewhere; the brick house, fortified or with only the idea of fortification, is then called a *stenen kamer*.<sup>124</sup> The *Cammingha stins* at Franeker is a good example of the filtration of this originally agrarian type of house into the town. Matters are much more complicated in the case of the ordinary medieval urban houses. To establish connections with the agrarian type of house much more town-centre research is necessary than has been done up till now in the Netherlands. Many traces of houses dating from the ninth century were found during an examination in the Polstraat, Deventer (Province of Overijssel). Parts of buildings of both wood and tufa were excavated, but the very

brief, provisional report revealed nothing more conclusive about their nature.<sup>125</sup> Relatively early remains of wooden and tufa buildings were found during excavations at Tiel (Province of Gelderland). Although no dating of the latter was given in the excavation report, its age may be deduced from the fact that the foundations of a tufa building were intersected by some old burials.<sup>126</sup> The timber structure in Tiel gave some indication that it may have been a farm. A part of a farm dating from the twelfth century was also excavated; thick dung layers confirmed its agrarian use.<sup>127</sup> When such a feature is lacking it is difficult to make a definitive statement, especially in view of the incompleteness of many town excavations. At Sittard (Province of Limburg) a row of heavy posts alternating with lighter poles was excavated; this sequence is assumed to have represented the wall of a medieval house. The remains dated from the twelfth to the thirteenth centuries.<sup>128</sup> An example of the almost complete indefiniteness of small town excavations is the house 'De Moriaen' at 's-Hertogenbos (Province of North Brabant); the excavation determined only that an addition must have been built in the courtyard behind the distinguished patrician house during the Late Middle Ages, and that the addition must have been altered many times later on.<sup>129</sup>

Dordrecht (Province of South Holland) provided the ROB with the opportunity for research into a large town's redevelopment.<sup>130</sup> A series of houses from the fourteenth and fifteenth centuries situated along a side-street were excavated here. The street, initially perhaps only a footpath off the main street, became more important in the course of time and the buildings on it kept pace with this development. In fact, they were built in the backyard of the house on the corner of the main street; it is remarkable that the depth of the houses on the side-street did not exceed the width of this single plot (approx. 5 m). In this way shallow houses of identical width were constructed along the street, but with a changing length of minimal 5 m to more than 20 m. The small ones were almost square and are

120 See plan and reconstruction by W.J. Berghuis in Van der Molen 1971, Fig. 2 and Fig. 8 (p. 45).

121 Halbertsma 1973, 38.

122 See Van der Molen 1971 for the complete history of the *Cammingha-stins* up to the present day.

123 Spahr van der Hoek 1962.

124 Meischke 1969, 66 ff; Van Regteren Altena-SarfatiJ 1969, 215–221.

125 *NKNOB* 1949, col. 49.

126 ROB excavation south of the Caecilia Chapel (*BROB* 1950/22, 3).

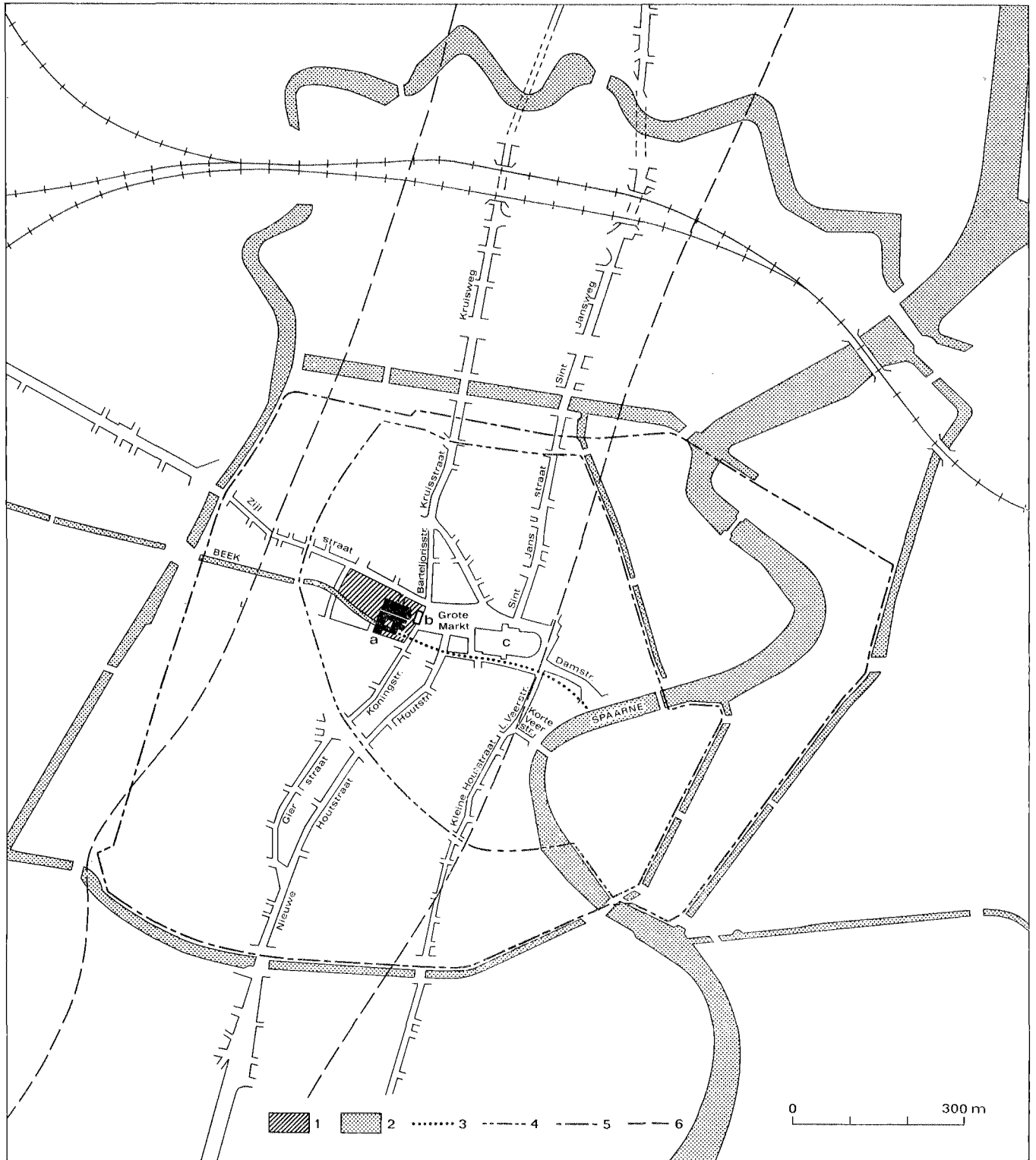
127 ROB excavation in the *Ambtmanstraat* (*BROB* 1950/12, 23–24; Glazema 1950, 23).

128 *Opgravingsnieuws* (Excavation news) June–August 1955.

129 Renaud 1962a.

130 Provisional reports: SarfatiJ 1972 and the publications in *NKNOB* 1968, 1969, 1970, and 1971; a definite publication is in preparation.





known as *cameren* in many late medieval towns.<sup>131</sup> Building, however, did not develop consistently but went ahead with leaps and bounds, after which the gaps were filled in. Centuries of habitation had brought about great changes in the interior of the houses: the positions of narrow side walls were shifted occasionally, changes which resulted in a chronology of lengths in one and the same house; sometimes there was also a partial or complete rebuilding with foundations on the original walls. Yet there were a number of constants in these houses which stress their coherence. First of all there was the narrowness which was restricted by the width of the plot; a result of this was that all houses were unaisled and consisted of two rooms at the most. Presumably most of the houses had one floor. The upper part of the building was perhaps partially or completely made of wood, the material used for the lower part was always brick. All in all, these houses may be called typically urban; there is nothing which could indicate an agrarian origin. This origin did emerge in Amsterdam where houses were found from the same period; their two-aisled form shows evident relations with the surrounding countryside.<sup>132</sup> Dordrecht was much more urbanized than Amsterdam during the fourteenth and fifteenth centuries, but it is possible that at some places in Dordrecht characteristics of vernacular buildings will be found also. Continued archeological research in this town will have to indicate this.

The last elements of the medieval town which will be discussed are the elements of public character, such as the town gate and wall, moat and port, insofar as they were examined by the ROB. In Geervliet (Province of South Holland) the foundations of a gate called Landpoort were examined; the gate appeared to have consisted of a simple rectangular building with a passage in the middle.<sup>133</sup> The gate called Kamper Buitenpoort in Amersfoort (Province of Utrecht) was more complicated; there the gate itself,

known since 1427, was a rectangular building in the town wall; the abutments and arches of the connecting bridge across the moat were found on the outside.<sup>134</sup> At the end of the sixteenth century the gate was incorporated in the town's new fortifications. Parts of town walls are occasionally uncovered during general building or construction work. Thus part of the town wall of Hardenberg (Province of Overijssel) was excavated by the ROB.<sup>135</sup> It appeared to have been constructed with iron-stone. On the outside the slope of the moat, afterwards completely filled up, could be traced. Comparable excavations were executed at Sittard<sup>136</sup> where the town wall consisted of marl blocks. The profile of the downward course of the moat slope was noticed here as well. Investigation of long phenomena such as walls and moats is usually limited to a few sections. This is also the case with harbours. A trench dug into the filling of the Oude Haven at Medemblik (Province of North Holland)<sup>137</sup> showed that this harbour initially had a depth of over 6.5 m. The width remained unknown because only one side could be examined. As is often the case, the port was originally a natural stream, whose banks were made suitable artificially for harbour activities. It could be established that after the earliest occupation at Medemblik in the ninth century, and certainly since the thirteenth century, the banks were reinforced with posts and planks to provide mooring places for ships. The bank itself was raised during its lengthy use, so that an elongated terp, a so-called *walterp*, was formed along the harbour. The preliminary report compares the situation at Medemblik to the harbour works in the Voorstad at Staveren, the opponent on the other side of the Zuiderzee. The development of the harbour in Medemblik, however, went much more in vertical direction than in Staveren.<sup>138</sup> Additional research will have to be carried out at Medemblik to clarify the importance of this medieval port.

#### THE DOMINICAN FRIARY AT HAARLEM (PROVINCE OF NORTH HOLLAND)

The buildings which house the present town hall of Haarlem incorporate part of the remains of the Dominican friary that existed in Haarlem from the thirteenth to the

◁ Fig. 14 Haarlem: Town Centre. a. Dominican Friary; b. Counts' Hall; c. Grote Kerk. 1. Conventual grounds; 2. Water; 3. Subterranean Course of the Beek; 4. Thirteenth-century Town Wall; 5. Town Wall c 1550; 6. Sand-ridge of the Old Dunes

131 Meischke 1969, 83-85.

132 Van Regteren Altena 1968, 126-133.

133 Hoek 1968, 83 and 86.

134 Halbertsma 1965.

135 Renaud 1962b.

136 Renaud 1961.

137 Halbertsma 1971.

138 See pages 393-394.



sixteenth centuries. Some archaeological observations were made while the town hall was being restored,<sup>139</sup> when it was possible to investigate part of the old church and fragments of other monastic buildings. A part of this paper is devoted to the position of the friary in the medieval town. Ever since their foundation in the thirteenth century the mendicant orders were closely associated with towns and had a great influence on many aspects of urban life. The archaeological investigation will deal with two features of the Haarlem friary: its situation in the town and its building history.

### Introduction

The medieval centre of Haarlem (fig. 14) lies on one of the ridges of the Oude Duinen (the Old Dunes), a sandy deposit running parallel to the coast. An old road running along the dune ridge and a waterway, the Spaarne, due east of the ridge both serve to connect north and south. This river was originally the drainage stream for the vast peaty area behind the sandy coastal barriers, which were enclosed by two branches of the Rhine delta: the Oude Rijn in the south and the IJ in the north.<sup>140</sup> During the Middle Ages the Spaarne was an important connection with the IJ, and thus also with the northern part of the county of Holland, and even with Friesland. Haarlem began where the land route and the waterway converged. The oldest record of Haarlem dates from the tenth century, but the exact location of the first settlement is still a point for discussion. It could be along the land route on top of the ridge, because an early medieval find was made there (*i.e.* on the Grote Markt), but difficulties in stratigraphy suggest that this find belongs to remains of a settlement elsewhere.<sup>141</sup> Whatever the case, it is certain

that the first settlement at Haarlem did not have the character of a town. It was not until 1245 that Haarlem was granted municipal rights.<sup>142</sup> It presumably did not expand until after the middle of the thirteenth century when it occupied almost the whole breadth of the Oude Duinen ridge.<sup>143</sup> As will be seen, the distribution of finds lends archaeological support to this historical picture.

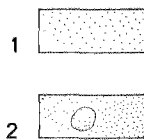
Land belonging to the counts of Holland lay within the boundaries of the thirteenth-century town. It was situated on the west part of the ridge near the junction of two roads: the above-mentioned road, called Heerweg, to the east, and Zijlweg which crossed it to the north. This area was bounded on the south by a ditch, the Beek, which was probably dug through the ridge during the first half of the thirteenth century to drain the peaty basin to the west into the Spaarne.<sup>144</sup> To the east the counts' property bordered a square, formerly 't Zand, now called the Grote Markt (Market Square). The counts' hall, the Gravenzaal, still stands on the square, and is now part of the town hall. This building, however, dates from the middle of the fourteenth century at the earliest, and its building period is related to the town fires of 1347 and 1351, during which an older hall was destroyed. Presumably shortly after the new house was finished, but definitely before 1388, the count donated it to the town, which has used it as town hall ever since.<sup>145</sup> Before that time, the counts of Holland allowed the Dominicans to build a friary on the site behind the hall. The year of its foundation is unknown, but it probably took place *c.* 1290 during the time of Count Floris v (1256–1296).<sup>146</sup> What did the early Dominican foundation look like? How did the monastic buildings develop? What was the older hall(s) like? Excavation enabled at least some of the points to be clarified.

### Traces of timber buildings

Traces of occupation were found down to about 1.50 m below ground-level. The occupation layers started at approximately 0.25 m + NAP, immediately above the Old Dunes ridge (fig. 17). The top of the sand was covered by a 20-cm-thick layer of disturbed, sandy soil, into which a number of post-holes had been dug. The post-holes were

◁ Fig. 15 Haarlem: southern part of Pit c; timber buildings.

1. Post-hole Phase 1;
2. Post-hole Phase 2



139 Between 1954 and 1958 by the Dienst Gemeentewerken, Haarlem; more extensive excavations by the ROB in 1956. A first publication by H.E. Phaff in Royaards *et al.* 1961, 124–134.

140 De Cock 1965, 18–20.

141 De Jong 1973, 240.

142 Temminck 1969, 118.

143 *Cf.* De Jong 1971, enclosure (map). The oldest plan was made by the famous cartographer Jacob van Deventer.

144 De Jong 1971, 135–137 and 145–146; the Beek may have also been a drain for the new town – its water strongly polluted with domestic refuse makes this plausible.

145 Royaards *et al.* 1961, 11–12.

146 Henderikx.

few in number and formed no recognizable pattern (fig. 15). Finds from the occupation layer and from a few post-holes date the first sign of habitation to about the middle of the thirteenth century, possibly within the first half, but definitely not before 1200.<sup>147</sup> It should be added that no earlier finds occurred as intrusions in later contexts.<sup>148</sup>

The earliest occupation material was covered by a thin burnt layer at *c.* 0.45 m + NAP. Such raising of the ground surface by 15–20 cm may have been connected with one or more new timber structures, for which large post-holes, 50–80 cm deep, were dug through the burnt layer; the level to which these post-holes belong was destroyed at a later period. The new timber structure must have been an impressive building, even though the ground plan is far from complete (fig. 15). On the one hand the area available for excavation was far too limited, on the other the ground was severely disturbed by later digging. General features only could be established. It appeared that the building had an almost true north–south orientation. Only the northern gable was found; it consisted of two parallel rows of posts, of which the inner row had an interpolated post-hole at the eastern and western ends. This pattern may represent the end of a three-aisled building, although the few lines of post-holes in the interior which could be traced do not form good evidence. The building must have been over 8 m long – the row of post-holes along the south wall of the excavation-trench cannot have been a gable. The width could not be established. Finds from the post-holes and from above the burnt layer suggest that this second wooden construction dates to the second half of the thirteenth century.<sup>149</sup>

The post-holes were then covered by a layer of earth used to raise the ground-level. Although its thickness could not be determined precisely, as its top was mixed with the disturbed recent upper layer, it must have been considerable. The traces of new structures in this layer suggest that the height must have been increased by 0.50–1.00 metre.<sup>150</sup>

#### *Brick structure*

The new structures consisted of brick buildings of the

Dominican friary. Robber trenches of the east end of the church were found in the heightening layer on the site of the above-mentioned timber constructions. There is hardly any information about the middle part of this church, because of modern building development in the area. The west front, of which the foundation still exists, was available for archaeological examination.

The external measurements of the church were *c.* 51 × 17 m, while the longitudinal axis deviated slightly north–west–southeast from true orientation (fig. 19). The east and west ends of the church imply that it consisted of a nave and one north aisle; both chancel and aisle ended in 5/8 apses. The position of the north wall of the church could be deduced from small parts of the wall of the north apse and the north corner of the west front. A line between the junction of the two apses and a buttress at the inside of the west front indicated the position of the arcade separating nave and aisle; investigation on the site of the most westerly pillar, however, only produced an area of debris (fig. 19: Pit B). The suggested internal arrangement was, however, supported by the presence of traces of pilasters on the north side of the partly extant south wall of the church, which is now incorporated in the north side of the cloister. Investigation established two places with protruding courses of brick which were almost completely cut away to foundation level; from these foundations it appeared that the pilasters must have been at least 1.40 m wide and have projected 0.62 m at the most. In view of the 5.75 m intervals between the pillars, a reconstruction of a church with seven bays is suggested.<sup>151</sup>

A narrow annex parallel to the south side of the church gave at first sight the impression of a square-ended southern aisle. In that case the south wall ought have been an arcade; no indication of this was found, however, on the existing wall, especially on the former exterior. Moreover, it appeared that the west front of the church did not extend beyond the corner of the south wall of the church. The annex to the southeast part of the church must therefore have been a part of the complex of monastic buildings which had lain here. The depth of the foundations (0.05–0.45 m + NAP), and the size of brick used (28/30 ×

147 The most remarkable find from this layer is a rim fragment of Andenne ware from period IIIa (*c.* 1225–1300) (Borremans-Warginaire 1966).

148 The lack of Pingsdorf, Paffrath, early Andenne, and local thin-walled cooking-pots is surprising as this is the usual association of finds in the Netherlands during the second half of the twelfth century.

149 The finds consist of many fragments of thick-walled globular cooking-pot of hard fabric and decorated with brush strokes plus some early Siegburg ware.

150 This also appears from the deepest burials (see p. 413).

151 Royaards *et al.* 1961, fig. 4.

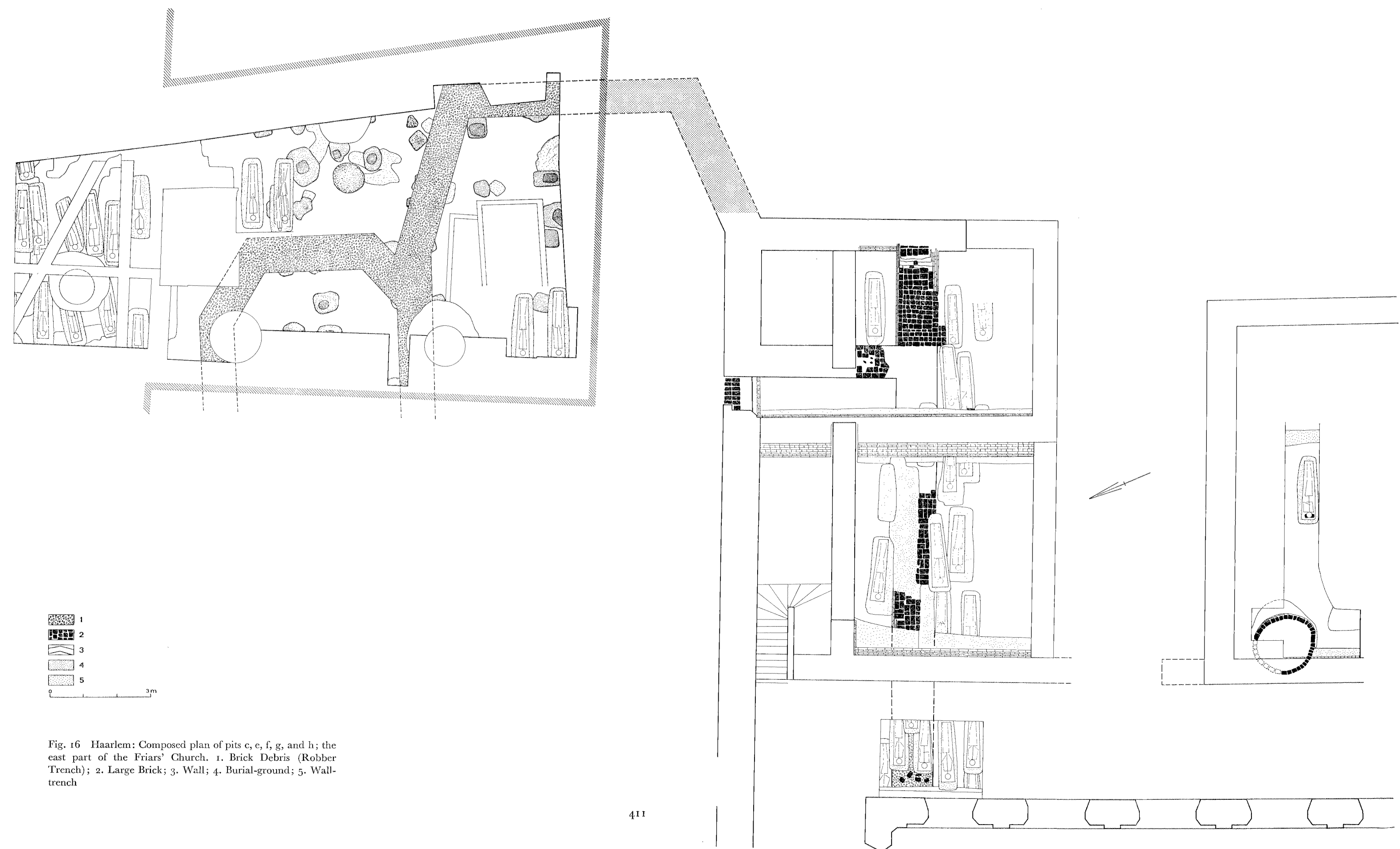


Fig. 16 Haarlem: Composed plan of pits c, e, f, g, and h; the east part of the Friars' Church. 1. Brick Debris (Robber Trench); 2. Large Brick; 3. Wall; 4. Burial-ground; 5. Wall-trench

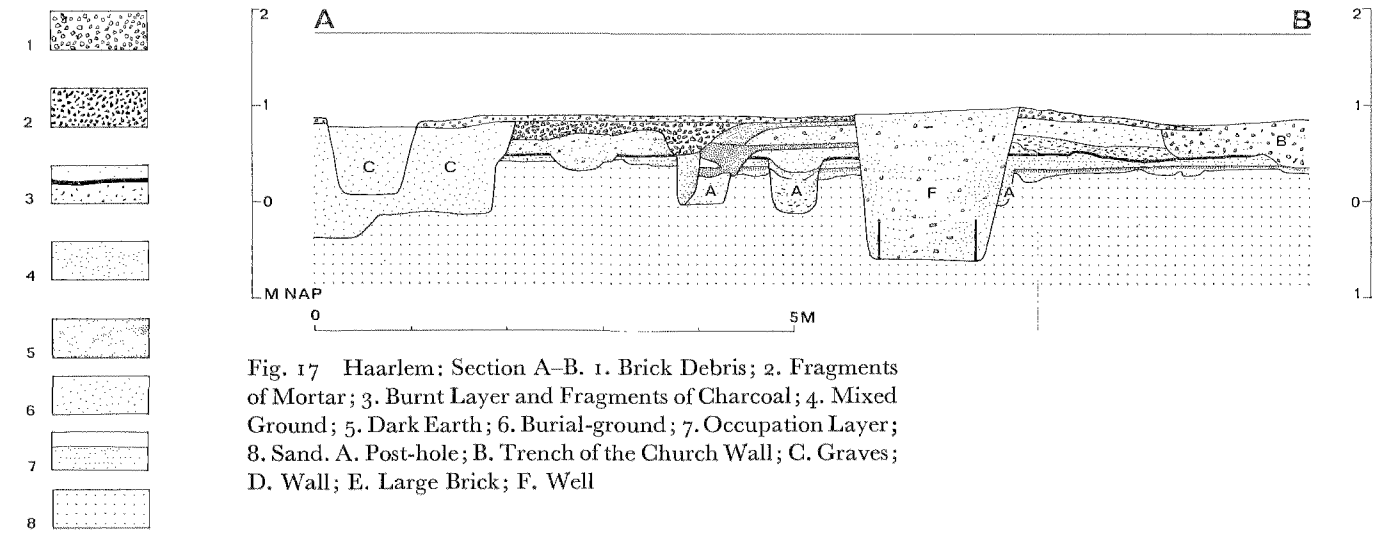
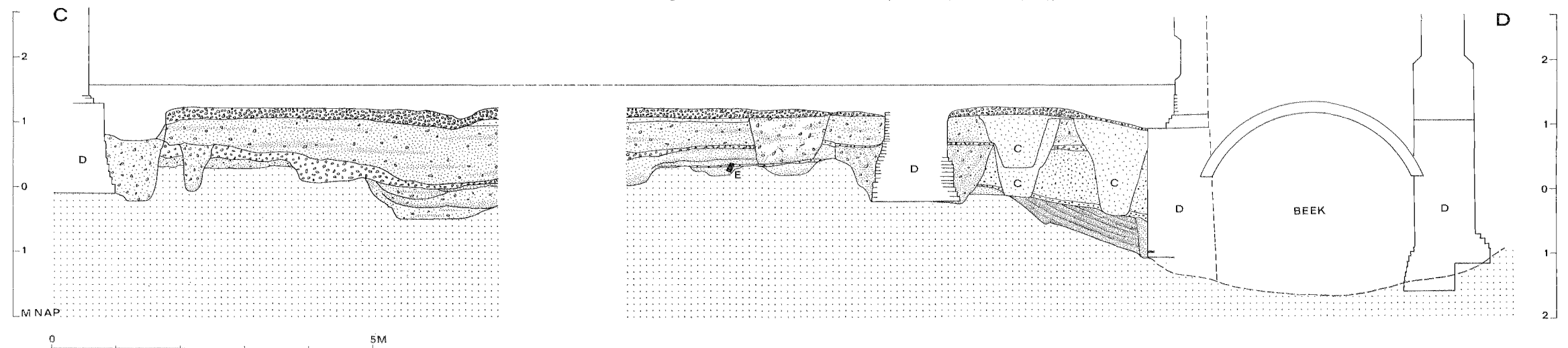


Fig. 18 Haarlem: Section C-D (Same legend as Fig. 17)



14/14<sup>5</sup> × 6<sup>5</sup>/7<sup>5</sup> cm) for church and annex, prove that the latter was part of the original brick construction. The differences in building techniques present in the sparse remains indicate that the construction must have been phased. The phases could not be established because of the remote chances for investigation.

*Mutatis mutandis*, this is also the case with the building remains found further to the southwest, on the site of the present Pandhof (the cloister). Archaeological observations (fig. 18) revealed that the foundations of the inner square of the present arcade partly consist of brick of the above-mentioned size. The question whether perhaps (part of) the Pandhof was also part of the original brick construction must be left unanswered, again due to the limitation of the archaeological investigation. It became clear, however, that the most southerly appearance of this building material is in the foundation of the present colonnade of the refectory, which came into existence during a much later renovation. This foundation of large bricks went quite deep (to 1.12 m - NAP), and may be considered to have been the initial retaining wall along the Beek, the ditch which enclosed the whole area on the south side. A building level (0.60 m + NAP) associated with this wall was interrupted by a new wall some metres to the north. This wall and the retaining wall along the Beek together formed the southern corridor of the cloister during a second construction phase. The renovation of the monastic buildings, during which the refectory was built, was probably related to the topmost layer of debris (at 1.25 m + NAP).

The building remains suggest that the plan of the friary to the east, west, and south stayed largely unchanged since the first phase of the brick construction. The cemetery wall from the first phase lay along the northern extension of the west front of the church, and there were also numerous burials northeast of the church. This implies that there was also little change in the north.

Burials occurred in different places and in many superimposed layers. Although the main cemetery (at least the one containing the largest number of graves) was situated north of the church, the inside of the church was also, albeit infrequently, used for burials. Graves were found south of the church as well; these must be associated both with the annex from the first building period and with later constructions on the same place, namely, the sacristy and the library. The walls of the latter two newer buildings overlay the oldest graves (fig. 16). The greatest

depth registered among these graves corresponded very well with the deepest (= oldest) graves north of the church, namely, 0.25 m - NAP. If an average burial depth of 0.90-1.20 m is assumed, then the floor-level of the friary belonging to the first building period may be put at 0.65-0.95 m + NAP.

Many changes and renovations took place during the centuries of the friary's existence, in the course of which the domestic buildings in particular were drastically altered. In this respect attention is drawn to the changes mentioned in the southeast annex to the church, the new layout of the Pandhof, the vaulting and enclosing of the Beek necessary for the construction of the refectory, and so on. Archaeological investigation also contributed to this complicated building history. The General Restoration Plan should be consulted for the remains of buildings of the friary still standing above ground-level.<sup>152</sup>

There is archaeological evidence for conclusions of some importance: (1) The area which has been investigated implies that there have been no radical changes in the size of the property from the 0.2 hectare which the first brick buildings covered. (2) The position and shape of the friary church, pulled down in 1579, are known, while some information about the appearance and shape of other monastic buildings was also gained. (3) Finally, the investigation also supplied important information for dating the Dominican friary in Haarlem. Because of the date of the non-monastic timber building which preceded it, the brick church cannot be dated earlier than the second half of the thirteenth century. The lack of early fourteenth-century finds among the friary material is remarkable. Although these were often found in disturbed contexts, the oldest finds from the upper layers appear to date from the second half of the fourteenth century. Unfortunately, the size of the bricks is hardly helpful for dating. The entire first phase of the brick building was executed in bricks measuring 28/30 × 14/14<sup>5</sup> × 6<sup>5</sup>/7<sup>5</sup> cm, a size which, with some marked exceptions, is not encountered before 1300. They were used, however, throughout the fourteenth century and also into the fifteenth century. When all the archaeological indications are put together, it may be concluded that the oldest brick phase of the monastery complex dates from shortly after 1350.

#### *Conclusion*

The investigation showed that the remains of settlement in the area of the town-hall complex in Haarlem are not earlier than c. 1250. One may wonder if there is any direct connection between these early remains and the granting



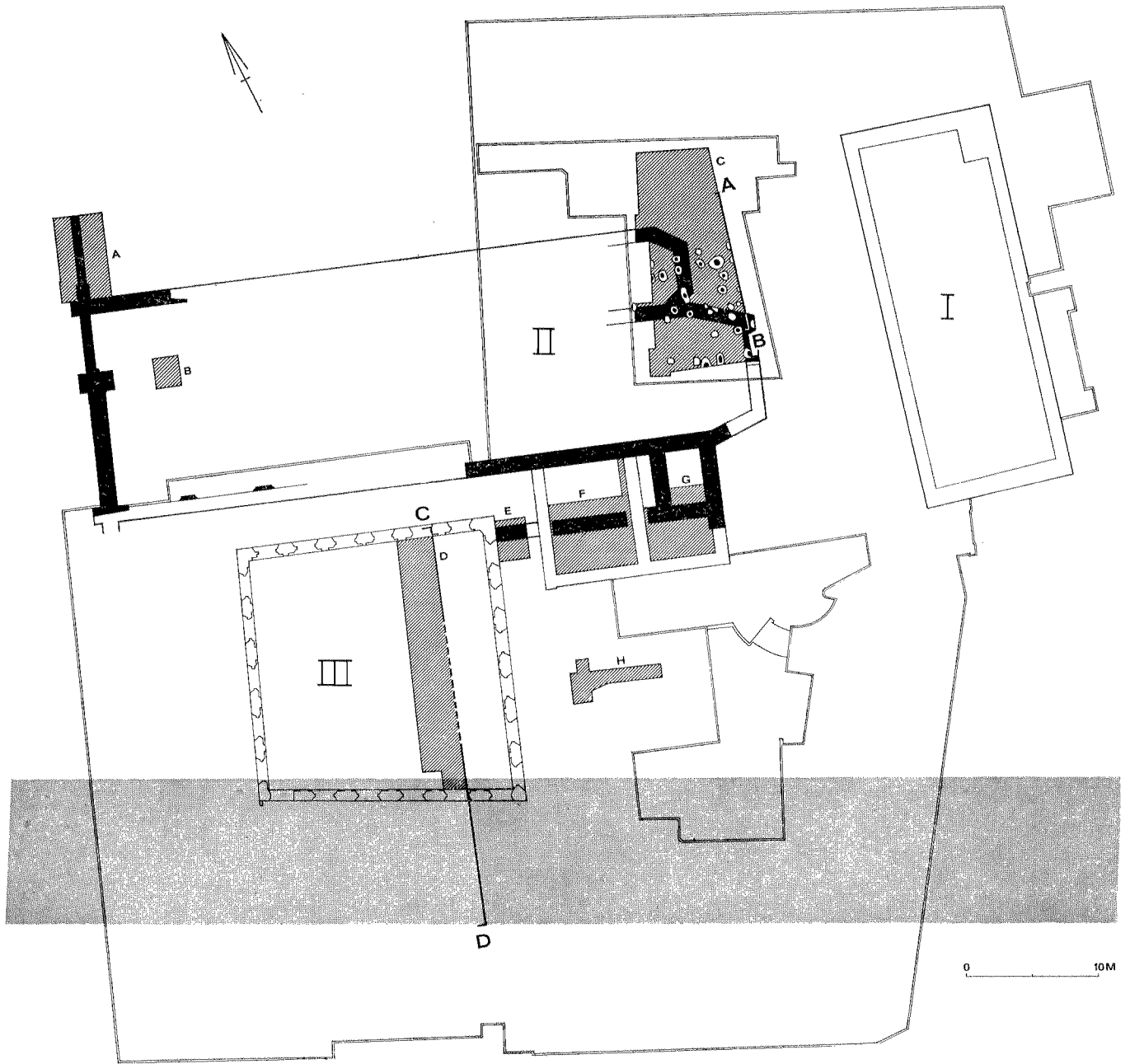


Fig. 19 Haarlem: Site of the Dominican Friary; i. The Counts' Hall; ii. The Friars' Church; iii. The Cloisters. 1. Excavated Areas (A-H); 2. Walls and Wall-marks; 3. Post-holes; 4. The Beek; 5. Present Buildings

of a charter in 1245. The oldest settlement was situated on top of the sand of the Old Dunes ridge upon which the centre of the old town was built. The scanty traces, some post-holes, are insufficient evidence to establish the nature of the occupation; they may indicate the first residence of the counts of Holland, who owned property there. The habitation was ended by a fire in the second half of the thirteenth century.

After the ground was raised, a new timber structure, presumably large and heavy, was erected; this was only partly examined (fig. 19). The building dates from the second half of the thirteenth century and may have been a wooden predecessor of the church or one of the domestic buildings of the Dominican friary, which was founded in Haarlem *c.* 1290 on the property of the counts of Holland. The plan of the post-holes, however, shows no similarity to the ground-plan of a church; moreover, the post-holes seem too large to have served another kind of monastic building. To this can be added that the orientation of the building, almost due north-south is identical with that of the present Gravenzaal, which is situated in front of it at a distance of *c.* 15 m. Architectural evidence suggests a date for the Gravenzaal of not before *c.* 1350.<sup>153</sup> Some traces of previous buildings have been detected under the Gravenzaal,<sup>154</sup> but it seems quite improbable that the much smaller post-holes found there belonged to a wooden predecessor of the Gravenzaal. In our opinion, such a predecessor should be looked for further west where the large post-holes of the heavy building were found. A count's hall was constructed there in the second half of the thirteenth century; this was destroyed by fire around 1350. A supporting argument is found in the remarkable position of the Gravenzaal on the Grote Markt. The Gravenzaal juts out so far that it seems to obstruct the passage of traffic along the main road leading along the dune ridge. But this could not have been the case. The archaeological evidence found underneath the Gravenzaal indicates some building in this place in a rather early phase; it must have stood right on the border of the count's land. One may suppose, however, that the count's hall would have stood originally

at some distance from the street, further back in spacious grounds.

It is known that serious fires ravaged the town in 1347 and 1351, during which the timber hall, among other things, was destroyed.<sup>155</sup> Traces of these fires were not found during the excavation, since the relevant layers were completely disturbed during later infillings and building. After the fires there was a change in topography. The Gravenzaal was rebuilt in brick, but this time 15 m east of its predecessor, that is, just on the border of the count's land. The reason for this change is not obvious. A plausible explanation, however, would be the count's wish to create more space on his lands for the extensive building – or rebuilding? – of the Dominican friary.

Apparently, the old friary was also destroyed during the fire of 1351.<sup>156</sup> As no remains of the first friary were found in the excavations, we are inclined to think that it must have lain on the spot of the unexcavated middle part of the new church, which is due west of the former hall. Of course, this is mere supposition, but, again, the shift of the Gravenzaal eastwards so as to acquire more space would be explained very well by this. Moreover, at the west side the area for the new construction of the church was bounded by a ditch. In any case, the area was raised considerably before rebuilding took place. In view of a number of observations made further east at the Grote Markt, where similar raising of levels was discovered, it could be concluded that during the fourteenth century this and other sections of the town were raised as part of a specific plan.<sup>157</sup>

The new church had two aisles. There is some pictorial evidence which supplements the information obtained from the excavations. A panel painting by the Meester of Bellaert, dated *c.* 1460, shows the chancel with the two aisles of the church, while a bird's-eye view by Thomas Thomaszoon from 1578 shows the church in its entirety just before it was demolished.<sup>158</sup> The excavation supplied only a few features of the ground-plan. With measurements of *c.* 51 × 17 m the Haarlem church is one of the smaller churches of the Mendicant Friars.<sup>159</sup> The main

153 Royaards *et al.* 1961, 11.

154 *Verslag*... 1971.

155 Therefore not *c.* 1100, as reported by Phaff, and consequently also Royaards (Royaards *et al.* 1961, 126 and 11 respectively), and Temminck (1969, 117). The first excavation report (*NKNOB* 1956, col. 195) gave the correct, thirteenth-century dating of the find material.

156 Although only through a very apocryphal source (De Jonghe 1717, 59).

157 De Jong 1973, 245–246.

158 Royaards *et al.* 1961, 19–27.

159 The average measurements of friars' churches are *c.* 60 × 20 m; there are, however, some much larger ones and also some much smaller than the church in Haarlem (*Cf.* Oberst 1927, 29 (Tafel II)).

outlines agree very well with the ground-plans of many other friary churches, especially those which were built north of the Alps during the thirteenth and fourteenth centuries.<sup>160</sup> The characteristics of Haarlem, such as the two aisles, the hall church, the 5/8 apses of presbytery and aisle, the lack of transept and tower are very often encountered in the group of churches of the mendicant orders. The hall church appears to be the most common type of friary church in the northern half of Germany, the region that more or less coincides with the Dominican province of Saxonia.<sup>161</sup> The greatest part of the present territory of the Netherlands also belonged to this province, that is the part north of the Rhine and the area of the islands in the southwest.

Two other Dominican hall churches with two aisles are known in the Netherlands. The Dominican church in Leeuwarden (Province of Friesland) probably dates to the thirteenth century. It also has one aisle to the north; the chancel, however, ends in a 7/12 apse, while the form of the original end of the aisle is (still?) unknown.<sup>162</sup> The Dominican church in Nijmegen (Province of Gelderland), especially in its second phase of building, shows a remarkable similarity to the Haarlem church. This was also a hall church with a narrow aisle to the north; here again a 5/8 apse in the presbytery and a square-ended aisle. The external dimensions of *c.* 47 × 17 m are also similar; the nave was divided into eight bays.<sup>163</sup> The date of this period is not known exactly, but there are indications of great building activity which resulted in the construction of a new church during the last decades of the fourteenth century.<sup>164</sup> The size of brick used in Nijmegen does not provide evidence for an exact date either, but again the resemblance with Haarlem is remarkable. Both churches may well have been built after 1350. The other monastic buildings in Haarlem lie as usual south of the church, and will be discussed briefly. An annex was built against the southern side of the church, either at the same time as the church or shortly after. Its purpose is not easy to define. Presumably this annex passed westward into the northern cloister-walk, which

was also built against the church. Some archaeological evidence suggests that the first building period of the cloister coincided with the construction of the church. The south wing of the cloister, along the canalized Beek, was initially also the southern boundary of the monastic precinct. There was no archaeological information about the other monastic buildings belonging to this phase of construction of the Dominican friary.

Finally, our investigations have shown that in the thirteenth century the town of Haarlem developed out of the original ninth-century *villa* situated on the ridge of the Old Dunes close to and along the Spaarne. The town expanded in westerly direction until it covered the entire sand ridge. The granting of a municipal charter in 1245 was the official recognition of the completion of this development. A large area of the new western part of the town belonged to the counts of Holland; remains of settlement from the middle of the thirteenth century were found in these areas. At the end of this century, *c.* 1290, some of this land was put at the disposal of the Dominicans for building a friary. No traces were found of this first friary, but there was some evidence of a timber building dating from the same period, which may have been the first residence of the counts of Holland. Both the secular and the religious buildings must have been destroyed by fire around 1350, after which both were rebuilt in brick. The counts' hall was shifted to the east to provide more room for the new friary. This new residence was the present Gravenzaal. The new Dominican friary was provided with a two-aisled hall church, which was demolished in 1579, after the Reformation. The monastic buildings have been frequently rebuilt since the thirteenth century; many of these structures, the Gravenzaal included, are now part of the town hall complex. This piece of land – owned by the counts of Holland, dismembered to accommodate a Dominican friary, and then handed over its entirety to the civic authorities – is still, as in medieval times, the heart of Haarlem.

160 Krautheimer 1925; Donin 1935; Oberst 1927; Scheerer 1910; Konow 1954.

161 Krautheimer 1925, 130.

162 Halbertsma 1972, and through personal contacts; neither architectural nor archaeological investigations connected with the restoration have yet been finished.

163 Brunsting 1957.

164 Verkerk 1973, 22 ff. There was also an aisleless, undated, church before this one: it was largely absorbed into the north aisle of the new hall-church during the second building-period. The aisleless church, however, was a new construction on top of an older chapel, which was granted to the Black Friars, presumably in 1293, when the Dominican friary at Nijmegen was founded (Brunsting 1957, 145; Verkerk 1973, 12 ff).

## 7 ACKNOWLEDGEMENTS

My thanks are due to Mr H. Halbertsma, who kindly permitted me to use the results of his investigations at Staveren. Mr R. Woudstra helped in interpreting the field-plans of the excavation at Haarlem. I am grateful to Mr H. Halbertsma, Mr R. E. Künzel, Mr H.H. van Regteren Altena, and Mr J.G.N. Renaud for discussion and advice. The drawings are by Mr H.J. Bloklander (figs. 3, 7, 8, 14), Mr S. Bokma (figs. 6, 12, 13), Mr H.M. C. de Kort (figs. 1, 2, 9, 9a-d, 10, 11), Mr J.G. Lampe (figs. 4, 5), and Mr W.A. van der Sluijs (figs. 15, 16, 17, 18, 19). The translation by Mrs I. Rike and Mrs B.J. der Weduwen was corrected by Mrs F.M. Daendels; Dr H. Clarke kindly took care of the archaeological and historical terms. The typing was done by Mr W.C. Mank and Miss V. Stroschia.

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## 8 ABBREVIATIONS

- BAI Biologisch-Archaeologisch Instituut, Groningen  
*BKNOB* *Bulletin van de Koninklijke Nederlandse Oudheidkundige Bond*  
*BROB* *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek*  
 NAP Nieuw Amsterdams Peil (Dutch Datum Level)  
*NDV* *Nieuwe Drents(ch)e Volksalmanak*  
*NKNOB* *Nieuwsbulletin van de Koninklijke Nederlandse Oudheidkundige Bond*  
*OBO* G.J. ter Kuile, *Oorkondenboek van Overijssel; regesten 797-1350*, Zwolle, 1963-69, 6 Vols.  
*OBU* *Oorkondenboek van het Sticht Utrecht tot 1301*, 's-Gravenhage, 1920-59, 5 Vols.  
 ROB Rijksdienst voor het Oudheidkundig Bodemonderzoek (State Service for Archaeological Investigations), Amersfoort

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# Bunschoten: Rise and Fall of a Little Town in the Middle Ages

figs. 1-5; pls. xxxv-xxxvi

On 30 May 1967 several lots in the present village of Bunschoten, province of Utrecht, were registered as national monuments on cultural-historical grounds. The reason for this registration was that no analogous instances are known in the Netherlands of the partially preserved structure of the ground-plan of a medieval town centre.

Although the ground-plan – or rather the system of walls, discernible on the terrain enclosed by the moat – was levelled because of reparcelling in the nineteen fifties, local conditions are such that a reconstruction of the pre-levelling situation must not be considered impossible. In the form of a historical-geographical exploration this article may provide and interpret material which, in the near future, will be one of the starting-points for a justified policy with regard to this unique monument.

Bunschoten is a picturesque borough a few kilometres north of Amersfoort. Disregarding the new post-war extensions for the moment, one sees that the buildings of the area consist of a number of farms on both sides of a road. This configuration fits in with the agrarian settlement-types known in the Netherlands; morphologically it is characterized by a main road with buildings on either side. In a wider sense – that of the cultural landscape – Bunschoten occupies an exceptional position. The location of the agrarian living – and working – units is truly remarkable in respect of the parcelling. The cultivated land of Bunschoten has a linear stripfield division of medieval origin. A general characteristic of this parcelling system is the division of land into strips at right angles to a watercourse, a dike, a road, or any other nucleus for clearance activities; the farms are built along the whole length of this nucleus in connection with the position of the parcels. The interrelation between settlement and parcelling is so marked that one might hesitate whether –



Fig. 1

theoretically speaking – to call it a settlement-type or parcelling-type.

The situation in Bunschoten departs from the standard-situation as described above and is worth mentioning because, despite the linear stripfield division of its agrarian cultivated land, the settlement is concentrated only along a small part of the clearing-nucleus. Morphologically speaking, settlement and parcelling within the municipal



territory are in this case two clearly distinguishable entities.

In former times Bunschoten was a circumvallated town; settlement took place within its walls to the exclusion of the surrounding area and this accounts for its deviation from the standard-picture. For a better understanding of the situation further information as to when Bunschoten became a town and the date of its foundation will be discussed in the present publication. Recent developments in toponymy have made the name of Bunschoten – in the eighteenth century still a matter ‘about the origin of which nothing can be said for sure’<sup>1</sup> – an important source of information for obtaining insight into the state of the original landscape before clearing was undertaken. As the toponym Bunschoten was not recorded in a charter before 1226 it is not entered in the *Toponymisch Woordenboek* (Toponymical Dictionary) by Gysseling. Nevertheless, comparison with place-names that do occur in this standard-work on the subject makes a reasonably accurate interpretation of the name of Bunschoten possible. According to Gysseling the prefix in names like Bunking (province of Gelderland), Bunnik (province of Utrecht), and Bunsbeek in Belgium (province of Brabant) is derived from the Christian name Bunno or Buno, and this also holds for Bunschoten.<sup>2</sup> Gysselings’s explanation of the name of Schoten in Belgium (province of Antwerp) and in the Netherlands (province of North Holland) helps to elucidate the suffix. Schoten is derived from Germanic *skautum*, which indicates a ‘wooded corner of sandy soil projecting into swampy ground.’<sup>3</sup> Consultation of pedological maps to verify this derivation showed that in a way Bunschoten answered to this description. The large-scale Dutch soil map (NEBO-kaart 1:200.000) clearly shows a projecting spit of land of pleistocene origin. Nowadays this becomes almost exclusively visible during drilling-operations, because it has gradually been covered by peat-soil and marine clay, but the spit of land has pleistocene sand everywhere at a depth of less than 1.50 m below the present surface. The holocene layer is often considerably thinner, for instance in the case of the elon-

gated shoestring sand which starts southeast of the central part of Bunschoten and reaches eastward across the boundary into Gelderland; the deposited layer of clay is very thin (0.15–0.40 m)<sup>4</sup> which is one of the reasons why it can easily be distinguished on air photographs (pl. xxxv). In the original natural landscape of Bunschoten, a swampy area, the existence of a sandy elevation immediately below the surface had definite consequences for the vegetation; these are nowadays reflected in a zonal arrangement of different kinds of peat, dependent on the quality of the subsoil water, that is, rich or poor in minerals. Accordingly, as the pleistocene sands reach greater depths to the north and west, so peat is formed in a poorer soil. There is a transition from wood peat to carex peat, from carex peat to sphagnum peat. The original natural landscape consisted of two main parts: a pleistocene elevation grown with paludal wood – the suffix *schoten* – and a practically tree-less area with a flora composed of reed, sedge, and sphagnum.

In view of this environmental-morphological distribution the statement laid down in the *Tegenwoordige Staat der Verenigde Nederlanden*<sup>5</sup> and adopted by Van der Aa in his *Aardrijkskundig Woordenboek* (Geographical Dictionary)<sup>6</sup> that at one time Bunschoten was called Hegeschoten is not to be repudiated, for the prefix hege- can either mean *hoog* (high) or *hoger* (higher), or *haag*, *heg* (hedge). As Hegeschoten is nowhere mentioned in connection with Bunschoten, however, no further attention will be paid to this theory. Of far greater importance for the genesis of Bunschoten is a statement by A.J. Maris in her doctoral dissertation on the village of Eemnes (province of Utrecht) to the effect that a part of the present municipality of Bunschoten was formerly called Uitwijk. (Wtwik).<sup>7</sup>

In 1203 a charter was drawn up in which Diederik II van Ahr, bishop of Utrecht (1198–1212) declared that Ghiselbert, dean of the Chapter of St John at Utrecht, had granted him an annual sum of ten pounds from the Deventer Mint, in exchange for which he (Ghiselbert) had received a new tithe (novam deciman) near the river

1 Tegenwoordige Staat der Verenigde Nederlanden. Amsterdam 1772. Deel xxii p. 248. Cf. also: Nederland in Vroeger Tijd (facts). Vol. xii p. 248.

2 M. Gysseling; Toponymisch Woordenboek van België, Nederland, Luxemburg, Noord-Frankrijk en West-Duitsland (vóór 1226) 1960. Vol. I p. 205.

3 ib. note 2, Vol. II p. 901.

4 Bodemkaart van Nederland (Dutch soil Map) 1:50.000. 26 W.–32 W. unit k HN 21.

5 ib. note 1, p. 248.

6 A.J. van der Aa; Aardrijkskundig Woordenboek der Nederlanden. Gorinchem 1840 p. 822.

7 A.J. Maris. Eemnes, rechtsgeschiedkundige ontwikkeling van gemeente en waterschap. Utrecht 1947 pp. 17ff note 4.

Eem.<sup>8</sup> The most important passage is as follows: *Et nos ei pro recompensacione resignati beneficii dedimus novam decimam juxta Eme, videlicet in Wtwik quam predecessor noster bone memorie, dominus Baldwinus episcopus, divisit ab antiqua decima, que pertinet ad curtem episcopi in Amersforde.*

Bishop Diederik thus gave away the new tithe of Wtwik on the river Eem, a tithe which had been divided from the old tithe of the episcopal *curtis* at Amersfoort under his predecessor, Bishop Boudewijn II (1178–1196).

According to the *liber rubeus* of the Chapter of St John at Utrecht, in which the contents of the document have been preserved, Wtwik was situated ‘in Bunschoten.’<sup>9</sup> Some twenty years later the tenure of a part of the tithes near Uitwijk<sup>9a</sup> was disputed by the monastery of St Paul at Utrecht. Sentence pronounced by Bishop Otto II on 4 February 1227 maintained the Chapter of St John in possession,<sup>10</sup> but under Bishop Wilbrand van Oldenburg (1227–1233) (the) tithes of Uitwijk eventually came under the jurisdiction of St Paul’s Abbey by exchange. In a charter from Bishop Otto III dated 19 July 1247 in which this was definitely laid down,<sup>11</sup> Uitwijk’s right to levy tithes was circumscribed as: ‘the area stretching broadwise from the canal that formed the division between the old and new tithe to the canal situated more eastward to the Veluwe, and lengthwise from the Harsaterdrecht to the sea.’<sup>12</sup> Maris is of the opinion that the canal or watercourse that marked the division with the old tithe under the episcopal *curtis* of Amersfoort could only have run along the north boundary of Eembrugge.<sup>13</sup> The eastern canal nearer to the Veluwe can be identified as the Laak. If a line is drawn between the far northeast point of the territory of Eembrugge and the Laak, it coincides with the south boundary of the municipality of Bunschoten, which ran along the Haardijk and the Duister- or Malewetering before the re-parcelling of some years ago.

This identification of the south boundary of Uitwijk with

that of Bunschoten is corroborated in two charters concerning tithes in Bunschoten which the St Paul’s Abbey had given in fee. On 30 June 1385 the monastery granted Johan van Clarenborch Janssoen in fee ‘a tithe situated in Bunschoten, which Jan van Clarenborch’s father held in fee from us when he was alive; it was bounded on the south by Heerscheweg, on the north by the property of Jan roede Janssoen, on the east by the Laak and on the west by the Eem.’<sup>14</sup>

Another reference to the fief dates from 12 October 1475, when Alphar Ruysch bestowed upon Lysbeth Willemsdochter van der Horst an annuity of seven ‘*oude Franse schilden*’, which he received from ‘a tithe reaching as far as Veenstraat in Bunschoten, bounded on the south by Haerscheweg, on the north by the property of Jan die Rode Jansz, or his descendants, or those who lawfully inherited it, on the east by the Lake and on the west by the Eme.’<sup>15</sup>

The topographical data provided by the records mentioned above need hardly any explanation; *Eme*, and *Lake* stand for Eem, and Laak, respectively, Heersche- or Haerscheweg stands for Haardijk, which no longer exists (fig. 3).

If the southern boundary of Uitwijk is thus satisfactorily determined, the extension to the north is still a matter for dispute.

Maris considers the fief described in the letters dated 30 June 1385 and 12 October 1475 to be identical with Uitwijk, which must therefore be located in the southern part of Bunschoten.<sup>16</sup> In my opinion, however, there is no conclusive evidence to support her theory, so that Uitwijk may very well have covered the whole area of the present Bunschoten.

Apart from the above-mentioned tithes on the south boundary St Paul’s Abbey granted other tithes in Bunschoten, which may have belonged to Uitwijk. On 19

8 Oorkondenboek van het Sticht. Utrecht tot 1301. no. 560. 9 *ib.* note 7. p. 18.

9a ‘in partem decime sue apud Utwich’

10 *ib.* note 8. no. 756.

11 *ib.* note 8. no. 1134.

12 *ib.* note 7 ‘a fossato illo, ubi per predictum episcopum nove ac veteris decime divisio facta est, usque at fossatum superius versus Velwam in latitudine, in longitudine verso Harsaterdrecht usque ad Mare’

13 *ib.* note 7. p. 18.

14 Rijksarchief at Utrecht (RAU) (Public Record Office at Utrecht) no. 505-1-fol.43<sup>vo</sup>:

‘...een tiende die ghelegghen is te bunschoten, die Jan van Clarenborch siin vader van ons plach te houden doe hi leefde daar boven aen die zuuytside naest ghelant is die heersche wech, Jan roede Jans soen aen die noertside, die lake op te oeste ende op te westende die Eme’.

15 RAU. 505-3 fol. 446<sup>vo</sup>: ‘...uut eenen tienden, gelegen tot Bunschoten in die Veenstraat, daer zuytwert naest gelegen is den Haerschen wech, noertwert Jan die Rode Jansz off sijn nacomingen of dair sijt mit recht gelaten hebben, oestwert die Lake en de westwert die Eme’.

16 *ib.* note 7 p. 18.



Fig. 2 Situation of the Eem towns in the Nedersticht

March 1381 'the tithes in Bunschoten' that were preciously held in fee by her father were transferred to Joncfrou belie aernt daughter of Liesvelt.<sup>17</sup> Although the location of these tithes in Bunschoten is unknown they are undoubtedly not the same as those which Jan van Clarenborch received in fee in 1385. Even more decisive is the

information that in 1443 St Paul's Abbey permitted a certain Henric Henric Willemszoon to hold in fee tithes in the municipality of Bunschoten at Spakenburg, con-

17 RAU no. 505-1 fol. 40: '(to) Joncfrou belie aernt dochter van Liesvelt... the tithes in Bunschoten' (were transferred).

sisting of about 150 acres.<sup>18</sup> The possibility that the tithes mentioned above were the outcome of later drainage and clearing activities – St Paul's Abbey had a right to levy new tithes – can be disputed on account of the boundaries recorded in the charter dated 19 July 1247. For the territory of Uitwijk did not only reach from the watercourse running north of Eembrugge as far as the Laak, but also from the Harsaterdrecht to the sea. If, on etymological grounds, it may be inferred that the Harsaterdrecht ran near the Haardijk, it is an indisputable fact that 'the sea' stood for the Zuiderzee, the present IJsselmeer. Consequently one cannot but identify Uitwijk with Bunschoten.

If additional evidence were called for it might be pointed out that from the point of view of geographical settlement the interpretation of the boundaries as given above seems quite acceptable. The boundary extremities of the settlement are situated on the ends of lines connected with the clearing of the original landscape. In its width the size of the territory belonging to Bunschoten is determined by the length of the linear stripfield division; along the longitudinal axis Veenestraat, probably the point where clearing was started, was the guiding principle. Because of the fact that between 1178 and 1196 it was separated from the old episcopal *curtis* of Amersfoort the last quarter of the twelfth century is a plausible date for the foundation of Uitwijk, alias Bunschoten. This date roughly corresponds with the date of other settlements with a linear stripfield division.<sup>19</sup>

The reason why the name of Uitwijk was later on changed into Bunschoten is a matter for conjecture. It may have been that Uitwijk – an autonomous *wijk* (more or less identical with a village) as compared with older centres of habitation and administration – was the name proceeding from the episcopal administrative machinery, while Bunschoten was the name given by the local colonizers to their territory.

Sources mention the toponym Bunschoten comparatively late. It was found for the first time in a deed dated 20 February 1294, the last will of Wulfger, canon of the

cathedral at Utrecht.<sup>20</sup> It comprises a reference to *bonus meis de Bunschoten* and a *presbyterio de Bunschoten*. With due regard to the canon's estates it is rather the second quotation that is important because of the implications of the word *presbyterio*. According to Nolet and Boeren it may denote the equivalent of the modern Roman Catholic priest, although in several charters it is found to refer to a spiritual advisor of the church without a parish.<sup>21</sup>

Further investigation of the matter will be relevant because in solving this question it may become possible to determine to some extent the age and size of a settlement under the care of a *presbyterio*. A village that cannot afford to maintain a full-time priest either indicates its relative insignificance or a comparatively early stage of development.

Conclusive evidence, however, that the Bunschoten *presbyterio* must by all means be considered a full-time parish is found in a charter dated 1 November 1300, where Bunschoten is called a *kerspel* (parish).<sup>22</sup> Thus the importance of the settlement and its age are given additional stress.

The charter also contains a promise of *schepenen, raitsluyden ende kerspel van Bunschoten* (magistrates, councillors, and the parish of Bunschoten) to assist the town of Amersfoort against anyone except their *rechten heere den bisschop van Utrecht* (their lawful lord, the bishop of Utrecht). Apart from the term *kerspel*, the use of the words *schepenen* and *raitsluyden* are indications that, as far as secular authority was concerned, Bunschoten already had its own administrative machinery at an early date.

The final passage of the charter is quite remarkable: 'And in order to keep this document closed and unopened we have sealed this letter with the seal of Bunschoten, our town.'<sup>22a</sup>

Does this mean that Bunschoten had town privileges in 1300? Maris agrees with Enklaar's supposition that this clause was due to a mistake of the copying clerk.<sup>23</sup> A similar mistake was allegedly made in a charter of the same contents and the same date, dispatched by the

18 RAU no. 505-3 fol. 142<sup>vo</sup>: '...in den gerichte van bunschoten te spakenborch, houdende omtrent vier ende viertich acker lants'. (1 akker = 13440 m<sup>2</sup>).

19 H. van der Linden. De Cope. Utrecht 1956.

20 ib. note 8 no. 2614.

21 W. Nolet en P.C. Boeren, Kerkelijke Instellingen in de Middeleeuwen. Amsterdam. 1951. pp. 320-1.

22 ib. note 8, no. 2993. cf. also: A. van Bemmelen. Beschrijving van de stad Amersfoort, Utrecht 1860, Vol. II, no. XI, p. 865;

W.F.N. van Rootselaar, Amersfoort (777-1580). Amersfoort 1878. Vol. I p. 303.

22a Ende opdat dese stucken vaste blijven en de onverbroken, so hebben wij desen brieff besegelt met onser *stadt* segel van Bunschoten.

23 ib. note 7. p. 13-14; D. Th. Enklaar. Schepenbanken ten plattenlande van Utrecht. In: Verslagen en Mededeelingen van de Vereeniging tot uitgave der Bronnen van het Oude Vaderlandsche Recht. Vol. VIII p. 59.

*scepene, buermeyster ende het mene kerspel van Emebrugge* (magistrates, mayor, and the common parish of Eembrugge), where the final passage reads: In order to keep this document closed and unopened we have sealed this letter with the seal of Eembrugge, our town.<sup>24</sup>

The mentioning of town-seals must indeed be looked upon with great reservation and the utmost suspicion. In view of the phrase 'seal of the town' in the final sentence of both charters one would expect at least the word 'town' in the beginning as a confirmation, whereas actually the word 'parish' is used. Consequently the possibility that Bunschoten was indeed a town in 1300 must be considered extremely doubtful. Very often its town privileges are traced back to a letter from Bishop Floris van Wevelichoven, dated 11 Augustus 1383: 'We, Floris, by the grace of God bishop of Utrecht, make it known to everybody that, with the consent of our city of Utrecht, for many faithful service that was and will continue to be rendered to us, and to our predecessors, bishops of Utrecht, and to the bishopric of Utrecht by our good people with our town of Bunschoten, and for a certain sum of money which they have paid us... we make it known that we have granted and will grant in the name of ourselves and our successors, bishops of Utrecht, to our town of Bunschoten and its citizens and their descendants all such privileges as are described below, to last in perpetuity.'<sup>25</sup>

A closer examination of this extract and the five privileges granted by the bishop reveals that it is nowhere explicitly

stated Bunschoten became a town. On the contrary, the terms used indicate that Bunschoten was already recognized as a town, and that the charter of 1383 is nothing but an extension of privileges.

This implies that Bunschoten was granted town privileges before 1385, and this is warranted by an entry in the so-called *Cameraarsrekeningen* (treasurer's accounts) of Deventer.

In these accounts Bunschoten is called a *civitas* (town) with *scabini* (magistrates). Cautious use of the sources mentioned above justify the assumption that in all probability Bunschoten became a town between 1300 and 1355. Information from another source, the accounts of the bailiff of Amersfoort, makes it possible to define this period within even narrower limits. In 1336 the accounts include fines collected *int kerspel van Bunschoten* (in the parish of Bunschoten).<sup>27</sup> This could mean that the town privileges of Bunschoten were granted between 1336 and 1355.

A brief comparison with the date of origin of other towns in the Nedersticht (the west part of the bishopric) reveals that:

Amersfoort became a town on 12 June 1259,<sup>28</sup> Rhenen received town privileges between *c.* 1230 and 1258,<sup>29</sup> Vreeland perhaps in 1265,<sup>30</sup> but at any rate between 1250 and 1267,<sup>31</sup> Oudewater probably in 1257<sup>32</sup> but in any case before 1282,<sup>33</sup> Het Gein on 30 January 1295,<sup>34</sup> Eembrugge between 1336 and 1340,<sup>35</sup> Eemnes-Buiten about 1352,<sup>36</sup> Baarn between 1346 and 1390.<sup>37</sup>

24 Gemeente Archief Amersfoort (GAA) (municipal archives at Amersfoort), charter no. 1. Published in: J. Hovy. De vroegste bestuursgeschiedenis van Amersfoort en de stadsrechtverlening van 1259. In: Spiegel der Historie, Maandblad voor de geschiedenis der Nederlanden, 4th year of issue 1969, no. 1 Omme dat deze stukken vast bliven en de onverbroken, hebben wi desen brief beseghelt mit onser stat seghel van Emebrugge.'

25 R. Fruin. De Middeleeuwsche Rechtsbronnen der kleine steden van het Nedersticht van Utrecht. In: Oud-Vaderlandse Rechtsbronnen. Vol. III. 's-Gravenhage. 1903. pp. 177 ff. S. Muller Fzn. Regesten van het Archief der Bisschoppen van Utrecht. Utrecht 1917-19. no. 1064: 'Florens bi der ghenaden Goeds bisschop t'Utrecht, doen cont allen luden, dat wi bi goetduncken onser stat van Utrecht om mennighen trouwen dyenst, die ons ende onsen voirvaderen, bisschoppen t'Utrecht ende den ghestichte van Utrecht onse goede lude mit onser stat van Bunschoten ghedaen hebben en de noch doen zullen, ende om een zeker summe van ghelde, de zi ons betaelt hebben... so hebben wi ghegheven en de gheven voer ons ende voer onse nacomelinghen, bisschoppen t'Utrecht, onser stat van Bunschoten ende horen borgheren ende horen nacomelinghen al

alzulke vrijhede alsoe hyrna bescreven staen, ewelike te dueren.'

26 C.A. Rutgers. Jan van Arkel, Bisschop van Utrecht. Groningen 1970. p. 95. note 135, containing a reference to: J.J. van Doorninck en J. Acquoy. De Cameraarsrekeningen van Deventer 1888-1914. Vol. II p. 307.

27 S. Muller Fzn. Registers en Rekeningen van het Bisdom Utrecht. 's-Gravenhage 1889. Vol. I pp. 500/501.

28 J. Hovy. De vroegste bestuursgeschiedenis van Amersfoort en de stadsrechtverlening van 1259. In: Spiegel der Historie. Maandblad voor de Geschiedenis der Nederlanden 4th year of issue 1969, no. 1 p. 2.

29 W. van Iterson. De stad Rhenen. Assen 1960. Chapt. VI.

30 *ib.* note 8. no. 1681.

31 *ib.* note 8. no. 2861.

32 *ib.* note 8. no. 1428.

33 *ib.* note 8. no. 2146 ... 'infra villam vel opidum de Oudewater'...

34 *ib.* note 8. no. 2668.

35 *ib.* note 7. p. 62.

36 *ib.* note 7. p. 63. *cf.* also *ib.* note 26. p. 95.

37 *ib.* note 7. p. 74.

With the exception of Het Gein, the granting of town privileges in the Nedersticht as given in the survey above could be roughly divided into two periods: the middle of the thirteenth and the middle of the fourteenth centuries. Without claiming to be exhaustive one may ascertain that the economic, political and situational circumstances were decisive factors for the foundation of towns, and in most cases it was a closely connected combination of the three. The first group of towns, including Amersfoort, Oudewater, Rhenen, and Vreeland, originated in a period of great economic expansion. They are all situated on important traffic-routes in places where goods could easily be exchanged. Apart from this economic background the rise of these towns was largely determined by politico-strategical considerations. In the middle of the thirteenth century, the Nedersticht territory was threatened on all sides by the counts of Gelre and Holland. In case of danger Amersfoort was to resist the enemy in the northeast, Oudewater was to defend the southwest, Vreeland with its episcopal castle constituted a valuable stronghold in the turbulent northwest, and Rhenen sealed off the southeast.

The second group of towns, comprising Eembrugge, Eemnes-Buiten, Bunschoten, and Baarn,<sup>38</sup> has not only its foundation-period in common, but is also strongly connected from the territorial point of view. The towns occupy the lower course of the Eem valley in one uninterrupted formation (fig. 2), presumably for politico-strategical reasons. If Utrecht had not put the population under an obligation by granting them town privileges the lower course of the river Eem might very well have fallen to Holland or Gelre, in which case Utrecht's last free outlet to the north would have been cut off.

Above all the granting of town privileges to Eembrugge by Bishop Jan van Diest between 1336 and 1340 greatly stimulated to the foundation of other towns in this region, which occupied a military as well as a political key-position.

At that time Eembrugge covered a far larger area than the small modern village of that name: it also included

the present municipality of Eemnes in so far as this was situated east of the *Wakkere dijk*. Consequently the whole western part of the threatened territory, automatically acquired town-rights when these were granted to Eembrugge. The position of Bunschoten which lay east of the Eem is not completely clear. Should it be assumed that the town privileges were largely restricted to the west bank of the Eem? As demonstrated above, Bunschoten's town privileges are dated to the period between 1336 and 1355, so that a simultaneous granting of privileges to Bunschoten and Eembrugge must not be precluded. In that case the loyalty of the east side of the Eemvalley was secured at the same time. Should this assumption be incorrect, then Bunschoten undoubtedly owes its privileges to Bishop Jan van Arkel (1342–1364) who freed the Nedersticht from the meddling of its neighbouring dukes and counts around the middle of the fourteenth century.<sup>39</sup>

Once Bunschoten had become a town it was fortified. The first reference in this respect was found in a charter dated 26 January 1398 laid down by Frederik van Blankenheim, bishop of Utrecht. Section 14 of this charter states that 'the magistrates of Bunschoten will be allowed to inspect their dikes, roads, town walls, streets, and all the compulsory labour on such dikes as had been raised there in the past, till the days that we shall review the law concerning dikes, for those who possess land along the dike.'<sup>40</sup>

The exact date of the construction of the ramparts cannot be established, but in view of the Bunschoten town-rights this must have been between 1336 and 1398. The concentrated method of building in the town centre may be dated to the same period. The original pattern of a *streekdorp* (a village with farms along the full length of the main road) was disturbed. The buildings used for the agrarian industry were centralized inside the walls. Bunschoten was therefore from the very beginning characterized as a fortified town occupied by farmers, a town in which trade and traffic – the mainstays of any rising, full-grown medieval town – played only a very minor part. It is mentioned only sporadically in connection with

38 Later on another town was founded in the Eem valley: Eemnes-Binnen(dijks) a rural municipality that had seceded from Eembrugge on 7 September 1439. This secession has been left out of consideration because it is irrelevant to the present investigation.

39 C.A. Rutgers. Jan van Arkel. Bisschop van Utrecht. Groningen 1970.

40 R. Fruin. De Middeleeuwse Rechtsbronnen der kleine steden van het Nedersticht van Utrecht. In: Oud-Vaderlandsche Rechtsbronnen. Vol. III. 's-Gravenhage 1903. pp. 177 ff.: Item dat die schepen van Bunschoten schouwen sullen moigen by horen lyden dijken, wegen, *borchwalen*, straten ende alle banwerk op al sulke banne, als dairup stayt ende van alds herkomen is, ter tijt toe dat wy een beter dijkrecht overdragen mit denghenen die onder den dijcke geërfd sin'.



Fig. 3 Settlement-geographical map of the municipality of Bunschoten, according to the situation of 1932  
 1 Communal boundaries, 2 Dikes, 3 Roads, 4 Direction of the parcels, 5 Watercourses and moats

traffic, as in 1360 when Bishop Jan van Arkel granted to the people of Bunschoten, Eembrugge, Baarn, and Eemnes-Buiten the privileges of levying charge for the use of the bridge across the river Eem, 'next to our castle at Eembrugge and the one across the canal between Soest and Baarn.'<sup>41</sup> A charter dated 11 August 1383 reveals that Bunschoten had a harbour spanned by a bridge: 'Further-

more we grant them (the inhabitants of Bunschoten) and their descendants the right to charge dues for a bridge,

<sup>41</sup> W.F.N. van Rootselaar, Amersfoort, Amersfoort (777-1580). Amersfoort 1878. Vol. 1 p. 345. '...neffens onsen huysse te Eembrugge en die over dien grave gaet die gelegen is tusschen Soest en Baeren'.

namely the bridge which they paid for with their own money across the harbour at Bunschoten' (fig. 5).<sup>42</sup>

An entry in the accounts of the diocese of Utrecht over the year 1378/79 shows that toll was collected on the road as well.<sup>43</sup>

The conclusion may be that Bunschoten was not exactly a flourishing settlement, so that its ramparts will not have been very elaborate. According to Van der Aa<sup>44</sup> and Van Rootselaar<sup>45</sup> its fortifications consisted of walls, gates, and towers, but it is doubtful whether such a line of defence ever materialized. A fortification of earthen walls, possibly with palisades, and on the outside surrounded by a moat seems the maximum one can reasonably expect for Bunschoten.<sup>45a</sup> The gates may have been made of stone, but it is extremely difficult to reconstruct the original situation because the ramparts were destroyed fairly soon, and never restored. History has simply not allowed us time to acquire any specific information about the ramparts. Between the first testimony of their existence and the report of their destruction in 1428 or 1430 the ramparts are mentioned nowhere in the sources. The only relevant information is derived from material dating from the time when the dismantlement of Bunschoten was an accomplished fact. The town was deprived of its defences because of the unfortunate political stand it took in a conflict between the bishop of Utrecht and Philip, Duke of Burgundy. In the course of 1427 Bunschoten was occupied by Philip's army with the cooperation of its inhabitants, so that the Eem valley was sealed off.<sup>46</sup> This so infuriated the citizens of Utrecht against Bunschoten –

which had been at odds more than once with the bishop of Utrecht<sup>47</sup> – that they marched against the collaborating town and destroyed its ramparts. Opinions differ as to the date of this punitive expedition. According to Van der Aa<sup>48</sup> and Van Rootselaar<sup>49</sup> the citizens of Utrecht marched northwards in 1428, but 1430 seems more logical. In a document dated 31 March 1429 Philip extended the truce between himself and the inhabitants of Bunschoten on the one hand and Rudolf van Diepholt, postulant of Utrecht, and the city of Utrecht on the other hand, until 10 April of that year.<sup>50</sup> In a letter dated 29 October 1429, Rudolf van Diepholt and the city of Utrecht granted a truce to Philip of Burgundy and the town of Bunschoten till 1 May of the following year.<sup>51</sup> War dragged on into the year 1429, as appears from these letters of truce, and the assumption is justified that during 1429 Philip's troops stayed in Bunschoten. How else can it be explained that, while tax was paid by the inhabitants of Bunschoten for the year 1427–28,<sup>52</sup> it was not paid (*nyet aff gecoomen*) for the years 1428–29 and 1429–30 according to the diocesan accounts.<sup>53</sup> In view of this it was to be expected that the decision to go and punish Bunschoten was taken only after peace had been concluded at Utrecht on 12 January 1430<sup>54</sup> and the withdrawal of Philip's troops. Bunschoten 'razed to the ground for admitting and helping the Hollanders' never recovered from this blow.<sup>55</sup> In addition heavy duties were imposed upon them amounting to at least 1050 *oude schilden*.<sup>56</sup>

Only an occasional remnant of the ramparts was saved, as appears from an official letter dated 12 February 1800

42 *ib.* note 40: 'Voert so gheven wi hem en de horen nacomelinghen, dat si bruggheghelt moghen nemen tot eenre brugghe van den bruggen die si over hoer havenen te Bunschoten, van hoer selfs goede ghemaket hebben.' (Fig. 5).

43 K. Heeringa. *Rekeningen van het Bisdom Utrecht*. Utrecht 1926. Vol. 1 1st entry p. 22.

44 *ib.* note 6. p. 823.

45 *ib.* note 41. p. 498.

45a W. van Iterson. *De stad Rhenen*. Assen 1960. p. 147; H.H. van Regteren Altena. *De opgravingen in de Sint Olofskapel te Amsterdam*. In: *Jaarverslag van de vereniging 'Hendrik de Keyser'* 1970. pp. 33–34.

46 *ib.* note 41. p. 498. On 30 May 1427 Philip, Duke of Burgundy, declared war on Rudolf van Diepholt, postulant of Utrecht, *cf.* *Algemene Geschiedenis der Nederlanden*, Vol. III. pp. 269–299.

47 S. Muller Fzn. *Regesten van het archief der Bisschoppen van Utrecht*. Utrecht 1917–19. nos. 2138, 2145 en 2302 successively.

48 *ib.* note 6. p. 823.

49 *ib.* note 41, p. 498.

50 S. Muller Fzn. *Regesten van het archief der stad Utrecht* 1896, no. 720. *cf.* also nos. 714, 722, 726, 727 and 738.

51 *ib.* note 47, no. 2617.

52 *ib.* note 43, p. 291.

53 *ib.* note 43, p. 319; p. 347.

54 *Algemene Geschiedenis der Nederlanden*. Vol. III. pp. 269–299. *cf.* also *ib.* note 50, no. 750.

55 Kaspar Burman. *Utrechtsche Jaarboeken van de vijftiende eeuw vervattende het merkwaardige in het Gesticht en voornamelijk in de stad Utrecht*. Zedert den jare 1402 en vervolgens voorgevallen. Utrecht 1750. Dl. 1 p. 338, '...omdat het de Hollanders ingelaten en geholpen hadt, tot den gront toe afgebroken(zijnde)...'

56 *ib.* note 47, nos. 3014, 3068, 3070, 3098, and 3151.



of the local authorities of Bunschoten concerning the leasing of the *Cingels en burgwallen* (ramparts) belonging to the village.<sup>57</sup> The letter stipulates amongst other things that if the *Binnen-Cingels* or *Burgwallen* west and east of the built-up, area, the remnants of the medieval circumvallation are let out on lease, 'the authorities are free to remove earth from the ramparts wherever and whenever they may need it.'<sup>57a</sup> In my opinion this clearly indicates that in 1800 parts of the ramparts were still visible in the environment as raised earthworks. That part of the Burgwal which survived modern re-parcelling because it had been partly built upon does not show difference in height very distinctly, but nevertheless it exists, the difference being roughly 50 cm, occasionally reaching a maximum of 75 cm.

If a settlement is reinforced the need for gates is automatically felt. Their likely position in Bunschoten would have been the intersection of Veenestraat – which runs right across Bunschoten to Spakenburg – with the now vanished *binnen-burgwal*. And indeed, the point where Veenestraat enters the old centre of Bunschoten from the south is still popularly known as 'the gate' (*de poort*).<sup>58</sup> In the north matters are more complicated because there had been a harbour which was filled up in the nineteen twenties and thirties. Traditionally nothing is known of a gate, but the whole situation justifies the assumption that there had

nevertheless been one. Whether or not Bunschoten had at one time also an east and a west gate is a difficult question. Maps representing the situation as it was before the 1950 re-parcelling show two lanes leading west from the Westburgwal, which might indicate the existence of a gate, but this is not very likely; the problem is rather whether they were medieval quays for loading and unloading.<sup>59</sup>

In my opinion it is incorrect to regard the water that one can see west in pl. xxxvi: 1 as the original town-moat and the above-mentioned lanes as abutments.<sup>60</sup> The medieval moat will certainly have been much wider, beginning immediately at the foot of the *binnenburgwal*.<sup>61</sup> The old course of the moat is clearly visible in a parcel of land to the left when one enters the old town centre from the south via 'the gate'.<sup>62</sup> The lanes must therefore be dated to the period after the moat had filled in. They may have served as a quay for the unloading of these ships that did not call at the overgrown and filled-in part of the moat.<sup>63</sup> The same arguments hold for a lane at the east side of Bunschoten. The town-moat was first mentioned in a charter dated 10 November 1477, kept at the Amersfoort municipal archives. It refers to call the land owned by the afore-mentioned Gryete, in the direction of the peat-area, land that had been Wouter Oelmanns' property, and which stretched eastward from the town-moat as far as Gelre'.<sup>64</sup>

57 Oud Archief der Gemeente Bunschoten (archives dating from before 1813). Inv. no. 23: '...Cingels en burgwallen, Het Dorp Competeerende'. In view of the confusing and ambiguous use of the terms Cingel, Burgwal, Binnenburgwal etc. the Dutch words have been used; for an explanation of the terms cf. p. 431 ff. 57a ...ook zal het den Gerechte vrijstaan om specie van de burgwallen te halen, daar en waar dezelve het nodig zullen hebben...'

58 Mr J. Koelewijn, 18 Dorpstraat, Bunschoten kindly provided this information on 28 July 1970.

59 cf. Fig. 4. On the boundaries of the Cadastral Parcels (Old Numbering), Sections A 370 and A 371 and the boundaries of the Cadastral Parcels (Old Numbering), Sections A 371 and A 376.

60 Section A 1257, Old Numbering.

61 In the west the moat must have been extended over the Old Cadastral Parcels: Section A 358; Section A 1256; Section A 1348; Section A 1260; Section A 370; Section A 371; and the northwestern part of Section A 376. In the east over the Old Cadastral Parcels: Section A 1080; Section A 1082; Section A 224, and Section A 223. Cf. also Fig. 5 and the reconstruction by H. Halbertsma in: *Zeven Eeuwen Amersfoort*. Amersfoort 1959. Fig. 3 p. 27.

62 Pl. xxxvi: 1.

63 A small plot of ground in the immediate vicinity of the lane bordered by the Old Cadastral Parcels, Section A 370 and Section A 371, was at one time known as *botermarkt* (butter market). If the Bunschoten dairy-products were conveyed temporarily via this plot of land, this would certainly account for the presence of such a quay.

64 GAA no. 507 '...al zulck lant als gryete voers. heeft te vene in dat lant dat wouter oelmanns plach te wescn van die stat grafted oestwert opstreckende aen dat lant van ghelre toe...'

Together with the charters G.A.A. nos. 464 and 508 this document throws a curious light on the position of Jan Rode Janss' property. It was mentioned above in connection with two charters dated 30 June 1385 and 12 October 1475 (notes 13 and 14) in which tithes in the Southern part of Bunschoten were granted in loan by the St Paul's Abbey. Jan Rode Janss' lands always formed the north boundary of that tithe. In the GAA charters no. 464 (dated 12 May 1468) no. 507 (dated 10 November 1477) and no. 508 (13 January 1478) Jan Rode Janss' property is always mentioned in connection with *burgwal* or moat. This might imply that the tithes mentioned immediately above reached as far as the built up area of Bunschoten.

Although this first reference to the moat is of late date, yet it is indisputable that it was dug at the same time as the *burgwallen*. In the Netherlands, a watery country *par excellence*, the digging of a moat was the most elementary protective measure, a measure which did not require a high level of development. Even practically still-born towns could pride themselves on having a moat as, for instance, the small towns of Vreeland<sup>65</sup> and Het Gein<sup>66</sup> in the Nedersticht.<sup>67</sup>

To the uninitiated the nomenclature of the fortifications as mentioned in the sources is truly baffling. This is due to the rather intricate structure of the town. Around it lay the remnants of the original fortification or ramparts. As they were enclosed by a moat these ramparts were called *binnenburgwal* (inner rampart). The *binnenburgwal* west of the built-up area was called *west-binnenburgwal*, the one at the east *oost-binnenburgwal*. Confusion was caused by the fact that *west-binnenburgwal* could also refer to the whole region west of the built-up area: the actual inner rampart plus the meadows and hay-fields behind it. The same holds for *oost-binnenburgwal*. Besides the singular, the plural *west-binnenburgwallen* en *oost-binnenburgwallen* is

found, terms which comprise the inner ramparts as such, together with the curious small earthen banks erected to border the parcels of the above-mentioned meadows and hay-fields.<sup>68</sup> To add to the confusion one such small bank could also be called *burgwal*. The term *binnenburgwal* denoted the circular road which ran outside the moat around the town. Like the *binnenburgwal* it was subdivided into an east and a west part: *oost-buitenburgwal* and *west-buitenburgwal*. To set up some order in this verbal tangle the *binnenburgwallen* will henceforth be referred to as: *binnenburgwallen* in the strict and the general sense of the word. The *binnenburgwallen* in the strict sense denote the remnants of the actual fortifications: the *binnenburgwallen* in the general sense indicate the fortifications together with the smaller banks that serve to define the boundaries between the parcels.

On the other hand matters were complicated again by the use of the terms *binnencingel(s)* and *buitencingel(s)*, synonyms for *binnenburgwal(len)* and *buitenburgwal(len)*. The same distinction that was made between *binnenburgwal(len)* in the strict and the general sense of the word can be applied to the *binnencingel(s)*.<sup>69</sup>

65 When digging the moats of Vreeland people used an already existing meander of the Vecht. *cf.* amongst other things the Topographical Map of the Netherlands, 1:50.000, sheet 31, Utrecht 1854.

66 *ib.* note 8, no. 2668: 'locum infra fossatum'. *cf.* R.J. Ooyevaar, *Onderzoek naar de historische gegevens van het Gein en het aldaar gelegen klooster Nazareth*. In: *Westerheem*. Vol. XIX, no. 5, October 1970 p. 215.

67 Eembrugge was probably fortified about the middle of the fourteenth century by Zweder Uterlo, a church official (*vicaris*) in his conflict with Bishop Jan van Arkel, *ib.* note 39 p. 59, notes 278 and 279. The town of Eemnes-Buiten, Eemnes-Binnen, and Baarn never reached the stage of being fortified. How the inhabitants of Baarn defended themselves in 1443 in another way can be read in the town accounts of Amersfoort for that year. Baarn promised to pay for 20 rods (1 rod = 5 ½ yards) of the townwall of Amersfoort provided they were allowed to take refuge in Amersfoort in times of danger. *cf.* J.G.N. Renaud en G. van der Mark, *Middeleeuws Amersfoort*. In: *Bulletin Koninklijke Nederlandse Oudheidkundige Bond*. Sixth Series, Vol. 12, 1959, column 201.

68 *cf.* fig. 5 and pl. xxxv.

69 *ib.* note 68. This subdivision is based on documents kept at the Gemeente Archief at Amersfoort (GAA); documents of the Rechterlijk Archief of Bunschoten, filed at the Rijksarchief at Utrecht (RABU) and documents found in the Oud-Archief der Gemeente Bunschoten (archives dating from before 1813) (GAB).

To refer to the source in which the terms were found the following method and sequence has been adopted: the archives in which the document is filed; its inventory-number; its date of entrance (if any); and its reference number (if any).

*Binnenburgwal* in the strict sense: Probably. RABU, 1200-1, 1733, Dec. 17, no. 64: 'de gemeene burgwal'; RABU, 1200-1, 1736, Jan. 21, no. 102: 'op de burgwal'. *Binnenburgwal* in the general sense: RABU, 1200-1, 1734, Juli 29, no. 75: 'de gemeene Burgwal'; RABU, 1200-1, 1734 Aug. 13, no. 76: 'de gemeene Burgwal'; RABU, 1200-2, 1750, March. 11, no. 125: 'Burgwal'; RABU, 1203, 1729, Apr. 24: 'den Gemeene burgwal'; GAB II, 1808, June 5: '(de)'Burgwallen'; GAB, II, 11, 1811, May 1: '(de) Burgwallen'; GAB, 23, 1800, Febr. 18: 'de binnencingels of burgwallen.' *Buitenburgwal*: Probably. RABU, 1200-1, 1740, Nov. 1, nr. 180: aan de buyten Burgwal; Probably. RABU, 1203, 1729, Febr. 21: 'de gemeene burgwal'; Probably. RABU, 1203, 1803, May 31: 'de gemene dorpsburgwal.' Small bank(s) serving as parcel boundarie(s) called 'burgwal': RABU, 1200-1, 1733, Dec. 17, no. 64: 'mede een gemeene burgwal'; RABU, 1200-1, 1741, Febr. 24, no. 4: 'Seekere grashof gelegen ten oosten, binnen de Zingels van Bunschoten genaamt het Else Hoffje beland met de gemeene burgwallen'; RABU, 1200-1, 1741, Dec. 14, no. 17: 'een grashoff ... Ronsomme met de gemeene Burgwallen...'; RABU, 1203, 1729, febr. 21: 'ten oosten en westen de gemeene burgwallen.' *Binnencingel* in the strict sense: Probably. RABU, 1200-1, 1737, Febr. 5, no. 115: 'een grashof gelegen binnen de Zingels'; Probably. RABU, 1200-1, 1738, May 12, no. 146: 'een grashoff gelegen binnen de Cingels'; Probably. RABU, 1200-1, 1738, June



Fig. 4 Copy of the cadastral map of Bunschoten, Section A (Veenzijde), first sheet (19th century)

The *buitenburgwallen* or *buitencingels* never had a military function; this was exclusively marked out for the *binnenburgwallen* in the strict sense of the word. The purpose of the framework of banks defining the

parcels remains an open question.<sup>70</sup> They were certainly not constructed to prevent the scattering of earth by the wind; the environment in which the banks occur was damp enough to resist this influence. It is also unlikely

12, no. 152: 'een grashoff gelegen binnen de Cingels'; RABU, 1200-1, 1740 m Nov. 1, no. 180: 'binnen de Cingels van Bunschoten.' Binnencingels in the general sense.: Probably. GAB 12, 1798, May 1: 'de binne-Cingel'; GAB 23, 1800, Febr. 18: 'de binnen cingels.' Buitencingels: GAA, charter no. 1289, 1629 Oct. 3: 'lants gelegen te velde, streckende uyt de stadts Cyngel;

westwart'; RABU, 1203, 1803, May 31: 'de buite dorps cingel'; GAB, 11, 1808, June 15: 'de Buyten Cingels'; GAB, 11, 1811 May 1 'de Buyten Cingels'; GAB, 12, 1798, May 1: 'de buite Cingels'; GAB, 13, 1811, July 8: 'de Buiten Cingels'; GAB 23, 1800, Febr. 18: 'de buiten Cingels.'

<sup>70</sup> cf. fig. 5 and pl. xxxv.

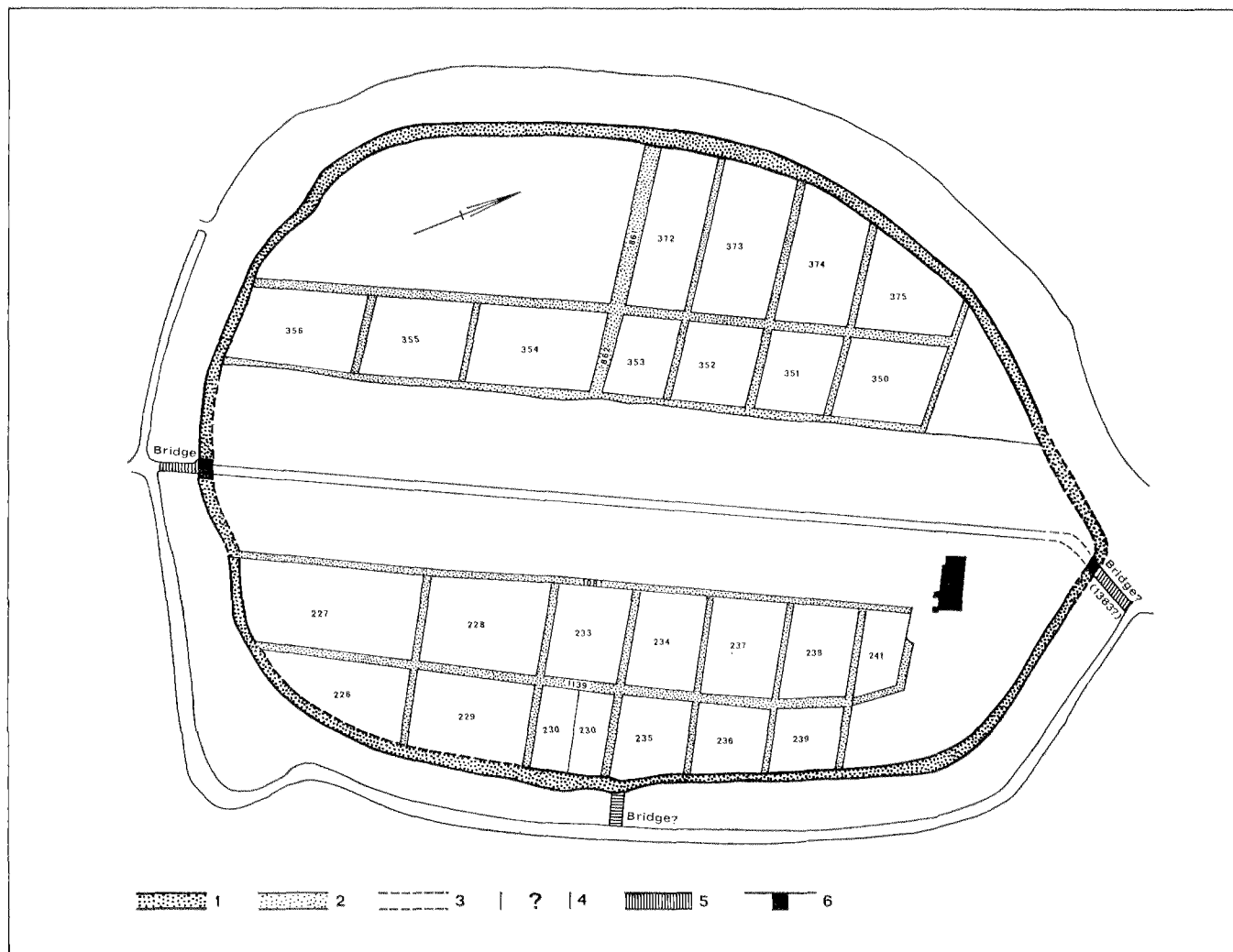


Fig. 5 Reconstruction of Bunschoten before the destruction of the *burgwallen* in 1428-'30

1 Traces of the *burgwallen* (in the strict sense) that could be recovered before the 1950 reparcelling, 2 Position of the *burgwalleetjes* dividing the parcels before the 1950 reparcelling, 3 Reconstruction, 4 Dubious, 5 Bridge, 6 Gate

that they were constructed as a means of approach to the parcels under cultivation, for were that the case they would have been far fewer in number. The whole configuration is too regular to warrant the theory that they were formed by natural causes, but then again one cannot possibly imagine how they could have fitted into some military defence-system. The sporadic medieval sources as well as the much more abundant later ones do not disclose anything further about the original function of

these mysterious banks. Nor do the available maps help us at all, as they are too recent to be of any assistance and they provide the same picture as in fig. 4. The only possibility left is the supposition that the banks in question must be seen as the sad remnants of a rather ambitious medieval extension-scheme, whose streets were already marked out. This theory is supported by the circumstance that – in so far as could be ascertained – the *burgwalleetjes* have always been *gemene* (common) *burgwalleetjes*,

which meant that they have always belonged to the community.<sup>71</sup> The alleys leading from the village main-street to the *burgwalletjes* also seem to have been communal property.<sup>72</sup> From the information available one gets the impression, however, that the *grashoven* (meadows and hay-fields) situated within the framework of *burgwalletjes* were, at any rate in the eighteenth century, private property.<sup>73</sup> The available data suggest that all the streets and the old fortifications were municipal property, but definite connections with a possible medieval extension-scheme cannot be made for the simple reason that the archives referring to Bunschoten do not go back far enough.

With one minor exception no traces of the *burgwallen*, neither in the strict nor in the general sense can be found in the present landscape, due to the re-parcelling that took place in 1950, when the surface was levelled and new ditches were dug.<sup>74</sup> The *buitencingel* on the east side was straightened, so that the present Oostcingel, in so far as it

runs along the town, does not represent its original situation. The terrain east of the old centre has now become a housing project. It has no longer any beautiful scenery to offer, in contrast to the area west of the old centre, although here too little of the original landscape remains.

The moat outside the village is the only surviving feature, but it is too narrow to present a true picture of the medieval situation. The terrain to the west is nevertheless extremely valuable from a cultural-historical point of view, for, despite re-parcelling activities, the present formation, moat and *buitencingel*, still indicates that at one time Bunschoten was circumvallated.

The low-lying meadows inside the ramparts, extending to the village centre, are indispensable features in completing the picture, and one could actually say that this uninhabited area is a true continuation of the original situation.

71 Only the sources left unmentioned in note 69 are referred to here. Note 69 repeatedly mentions *gemene burgwallen*. RABU 1200-1, 1743, Jan. 24, no. 32: *de gemene burgwal*.

72 This information is incomplete and therefore inconclusive. Only a very minor part of the Rechterlijk Archief has been examined. RABU, 1200-1, 1734, Aug. 13, no. 76: *een gemeene steeg*; RABU, 1200-1, 1743, Jan. 24, no. 32: *'een gemeene steeg*'; RABU, 1200-2, 1750, March 11, no. 125: *de gemeene steeg*'; RABU, 1203, 1729, April 24: *den Gemeene steeg*'.

73 For the inconclusiveness of the evidence *cf.* note 72.

74 *cf.* Fig. 4. Old cadastral Numbering parcels Section A 1320, A 1338 and A 1336.

75 *cf.* p. 15.

A characteristic feature of oud-Bunschoten is its town-centre, a

configuration of often beautiful farms on both sides of that part of Veenestraat enclosed by the *burgwallen*. The old town-centre, the old built-up area, is situated considerably higher than the other parts of the town. The highest point lies around the church (c. 1.50 m +NAP). The other parts of the town, the hay-fields, and the meadows inside the *burgwallen* in the strict sense of the word are situated between 0.12 -NAP and 0.43 -NAP.

To Van der Aa the higher situated centre suggested a possible protective measure against flooding, but in my opinion it is merely due to the fact that the construction of ramparts promoted the formation of a local centre with a continuous occupation. An indication in this direction is that the street which cuts the built-up area lengthwise often seems to be lower than the premises of the adjacent farms.

# Le château du XIII<sup>e</sup> siècle aux Pays-Bas

## Bilan de vingt-cinq années de recherches\*

figs. 1-21, échelle 1:500

Pour retrouver l'aube de cette exploration scientifique, il faut remonter d'un quart de siècle; c'est à cette époque, en effet, qu'on découvre une réponse aux deux questions suivantes: *quand* et *comment* a démarré l'étude systématique du château aux Pays-Bas? Il est probable que l'ouvrage de cet érudit que fut feu le jonkheer E. van Nispen tot Sevenaer impressionne encore favorablement les mémoires. Ce travail, paru en 1942 dans la série 'Protection de notre Patrimoine' (*Heemschutserie*), constitue une première tentative d'approche de l'évolution architecturale du château. De toute évidence, le développement du plan terrier ne le satisfait point. Comme on pouvait l'attendre d'un directeur du 'Service d'État à la Conservation des Monuments Historiques' il braqua également son attention sur l'évolution dans l'espace: il s'intéressa, en d'autres mots, à la troisième dimension. Que l'auteur était conscient que l'archéologie lui servirait d'auxiliaire indispensable, je l'ai déjà exposé antérieurement. Au cours de la rédaction de son texte lui revenait régulièrement à l'esprit que la plupart des châteaux des Pays-Bas avaient disparu jusqu'aux fondations. Faut-il dès lors s'étonner qu'il se trouve à l'origine de cette riche floraison de fouilles du 'Service d'État à la Conservation des Monuments Historiques'?

En fait, celles-ci commencèrent en 1941 dans le périmètre de la ville détruite de Rotterdam; on rechercha alors la trace de châteaux ensevelis depuis de longues années. La première question, que l'archéologue se posa, traita certainement du 'quomodo'; la seconde du 'cur'. Qu'on ait voulu débarrasser le Château de sa gangue mythique personne ne le contestera. Depuis toujours le rêve romantique a hanté électivement chemins de ronde et créneaux.

Il n'est pas surprenant, par conséquent, que la nouvelle version sera retenue comme thème d'examen par le 'Service national de Recherches Archéologiques' (fondé en 1949). Puisque, au début, seule l'urgence détermina le choix des châteaux à examiner (terrains menacés de constructions nouvelles), il n'était jamais question d'investigations groupées autour de grands problèmes centraux. Ce n'est qu'à la longue que le vaste territoire fut découpé en régions, aux thèmes parfaitement reconnaissables.

Il est tentant, près 25 ans, de survoler ces foyers de recherches et, en occurrence, les données apportées par elles à la discussion des nombreux problèmes; mais, ce serait là dépasser le cadre imposé à ce livre mémorial. Ainsi l'auteur s'est restreint à une seule période; le XIII<sup>e</sup> siècle s'y prête à merveille.

Le Dr. J. Te Winkel, au siècle passé, se lança déjà dans une étude du château du XIII<sup>e</sup>; il se tourna vers la poésie courtoise et sur la foi de 'Walewijn', voire d'autres épopées il y alla d'une restitution. Mais il ne se rendit pas compte que des descriptions poétiques empruntées à des auteurs, vivant et écrivant dans des régions fort distantes de notre Europe, ne le conduiraient pas loin.

Suivant l'opinion d'auteurs contemporains tels que François Gebelin, Pierre du Colombier, Rocolle et Allan Brown, pour n'en citer que quelques-uns, le XIII<sup>e</sup> siècle est une époque de changements étendus et fondamentaux. La redécouverte d'auteurs latins y fut pour beaucoup. L'on sait que Végèce, écrivain de la Basse Antiquité était lu et analysé avec ferveur,<sup>2</sup> que son œuvre sur la poliorcétique a probablement fourni le secret de ce que Gebelin appelle 'la formule de Philippe-Auguste'

\* Je remercie vivement mon collègue belge le Dr William Ubregts, castellologue lui aussi, qui a bien voulu traduire mon article en français.

1 Te Winkel 1879.

2 Du Colombier 1960, 41.

(1180–1223). Le fameux ‘De Re Militari’ a encore été traduit en 1280 par Jean de Meung sous le titre ‘Livre de Chevalerie’.

Les recherches historiques, architecturales et archéologiques nous ont appris que des glissements typologiques se font jour au XIII<sup>e</sup> siècle et que ceux-ci ne se réduisent point aux pays grands constructeurs de châteaux, avec la France en avant-garde. De même, dans le territoire des comtés de Hollande et de Gueldre, du duché de Brabant et de l’évêché d’Utrecht, les conséquences de ces attentions nouvelles deviennent lisibles. Pour ne citer que la Hollande, des différences radicales se font jour entre les châteaux du comte Florent V en Frise occidentale et les châteaux érigés par le comte Guillaume I après la guerre de Looz.

L’histoire du droit, qui se souvient que l’élévation de forteresses est un droit régalien (= réservé au roi), se demande, à juste titre, dans quelle mesure la compétence militaire des comtes et des ducs a ‘permis’ à ceux-ci de se construire des châteaux. L’on sait que déjà Frédéric I<sup>er</sup> Barberousse (1152–1190) a accordé, dans ce domaine, une certaine liberté aux princes territoriaux, supports de son pouvoir. Une liberté qu’ils s’étaient, sans aucun doute, déjà arrogée. Sous son petit fils Frédéric II (1215–1250) ce droit régalien s’aliène encore plus et les deux diplômes essentiels: la ‘Confoederatio’ (1220) et le ‘Statutum in favorem principum’ (1232) n’ont légalisé qu’un état de fait. Il faut bien admettre que de grands seigneurs n’ont pas attendu ces deux privilèges pour se construire, à leur guise, des châteaux ou demeures fortes. Les seigneurs de Heinsberg, qui s’étaient peut-être accolé le titre comtal, bâtissent déjà au XII<sup>e</sup> siècle une première forteresse sur le rocher en tuffeau de Valkenburg, en tant que seigneurs du lieu. L’empereur, après le siège de 1122, détruisit cette forteresse; mais, longtemps avant 1200, il s’y éleva de nouveau une maison forte.

L’ardeur bâtisseuse de l’évêque d’Utrecht ne semble pas avoir été aussi grande. L’évêque Hartbert (1139–1150) fonda le premier castrum à Coevorden et l’évêque Godfried de Rhenen (1156–1178) construisit en pierre Horst près de Rhenen, renforça Woerden contre le comte de Hollande et fit élever Montfoort et Vollenhove pour protéger le Sticht. Il faut descendre jusqu’à Henri de Vianden (1250–1267) pour voir réapparaître un bâtisseur de châteaux; son nom est lié à Vreeland. Les comtes de Hollande paraissent s’être moins distingués par leur activité de constructeurs. Le couvent d’Egmond semble avoir servi de forteresse: une enceinte de pierre et des douves en répondent. De par cette fonction, ce couvent

se compare donc aux monastères francs, qui, eux aussi, au début, avaient une destination militaire; l’arrivée des Normands n’a pu qu’accélérer et favoriser cet aspect des choses. Déjà avant l’élévation de l’abbaye de Rijnsburg à charge de la comtesse Pétronelle, cet endroit passait pour un point plus ou moins fortifié. Mais, c’est en vain qu’on cherchera quelque château comtal important avant Guillaume II et Florent V qui développèrent Haghe. Les comtes possédaient près de Vlaardingen une ‘curtis’ plus ou moins forte. De même, Vogelenzang-lez-Bennebroek et Aelbrechtsbergh (près de Bloemendael), ce dernier plus tardif, ont été résidences comtales.

Les activités des ducs de Gueldre se déroulent en bonne partie dans une zone qui ne relève pas des Pays-Bas. Ils avaient emprunté leur nom à un de leurs châteaux situé aux abords de la petite ville de Geldern en Rhénanie et se démenaient avant tout dans la région mosane, actuellement incorporée dans la province de Limbourg. Ils achètent en 1279 Kessel et Henri, un frère du comte, construit vers 1260 Montfort, près de Ruremonde.

Au cours de la brève période où le comte de Hollande Guillaume II a été roi des Romains, il engagea au comte Otton de Gueldre le Valkhof, si fortifié, à Nimègue (1248). Barberousse avait quasi reconstruit le Valkhof vers 1160. Le comte de Gueldre l’entretint convenablement, l’étendit et y résida à répétition.

A défaut d’études préliminaires approfondies, nous serons brefs au sujet du rôle des ducs de Brabant en tant que constructeur de châteaux. Le centre de gravité de leur pouvoir se localisa ailleurs, en dehors de l’actuelle province du Brabant Septentrional. Ils ont été apparemment incapables d’empêcher de grands seigneurs comme ceux de Heusden et de Cuyck de poursuivre une politique castrale personnelle et congrue.

Se pose finalement la question: comment les princes territoriaux se sont accommodés du droit régalien sur la fortification? Comme il a été dit plus haut, ils jouissent en fait de ce droit, avec ou sans l’agrément de l’empereur. Au temps de Frédéric II leur situation fut légalisée et les historiens insistent que c’est dès ce moment qu’on est en droit de les considérer comme princes territoriaux, d’autant plus qu’en 1220 et 1232 d’autres droits tout aussi importants furent sacrifiés par l’empereur.

La pression de la petite noblesse sur les grands seigneurs se fit d’ailleurs déjà sentir depuis longtemps. Dès la moitié du XIII<sup>e</sup> siècle les ministériaux et les chevaliers pouvaient plus facilement acquérir une maison de pierre, donc à prétention militaire. La réintroduction de la fabrication de la brique, notamment, accroissait les possibi-

lités, économiques cette fois, de se construire une maison forte. Le rôle de la brique dans l'évolution castellologique en notre pays a été peu étudié, mais doit avoir été considérable. Dans des régions où la féodalisation n'a pu s'implanter, l'on découvre des traces de cette intervention du matériau dans le droit local. Les stipulations juridiques, valables pour une partie de la Frise orientale et contenues dans le 'Brokmer Brief' (XIII<sup>e</sup> siècle), révèlent à l'article 159 que personne ne peut se construire une maison de pierre.<sup>3</sup> Plus tard on défend la construction de maisons de pierre avec des murs de plus de 3 pieds d'épaisseur.<sup>4</sup>

Dans les comtés de Hollande et de Gueldre, ainsi que dans l'évêché d'Utrecht les princes restaient plus ou moins maîtres de la construction castrale; ils disposaient d'ailleurs d'une formule fréquemment employée: le droit d' 'assurance'. Un chevalier ou un ministériel recevait l'autorisation de se construire une maison défensive de pierre à condition qu'ils 'ouvraient' leur maison au comte. Il va de soi que le comte usait assidûment du lien féodal; il se fait offrir la maison avec les terres environnantes; il les rend en fief. 'Maison ouverte' signifiait encore que le comte pouvait disposer de la maison, quand il l'entendait, comme de la sienne propre. Il pouvait donc y loger une garnison, suivant les exigences du moment; les dommages de guerre étaient remboursés.<sup>5</sup> Un exemple précoce de pareil contrat se découvre au comté de Hollande, quand le comte Thierry VII permet à un certain Biggo de Pendrecht de se construire une maison forte en 1199, pourvu qu'il l'ouvre au comte.<sup>6</sup> Dans l'évêché d'Utrecht nous connaissons le cas de Stoutenburg construit en 1259 par les seigneurs d'Amersfoort qui se retirèrent de cette localité après lui avoir octroyé des droits urbains. Dans la charte correspondante il est clairement mentionné que l'évêque considérait Stoutenburg comme maison ouverte.<sup>7</sup>

Durant tout le XIII<sup>e</sup> siècle le développement des villes s'accélère et les droits urbains sont accordés à la chaîne. Il est évident que la présence d'un château ne plaisait jamais aux bourgeois. Déjà au XIII<sup>e</sup> siècle se concentrent des forces qui, au cours du XIV<sup>e</sup> vont freiner, à grande échelle, la naissance de châteaux nouveaux. La plus ancienne convention entre villes qu'on possède à ce sujet est celle de 1300 entre Amersfoort et Bunschoten afin d'empêcher l'érection de maisons fortes dans le pays au bord du fleuve Eem.<sup>8</sup>

Il est légitime de se demander si la haute ministérialité n'a pas donné naissance à une riche architecture castrale au XI<sup>e</sup>-XII<sup>e</sup> siècle. Peut-être était-ce le cas des Amstel qui apparaissent très tôt ou des Uten Goye (près de Houten). On n'en sait rien; le terrain où s'élevait la résidence des Uten Goye n'a toujours pas été exploré. Il est probable que ces demeures plus ou moins fortifiées ont pris l'aspect d'un groupe de constructions en bois, entourées d'une levée de terre avec ou sans palissade, le tout protégé de douves. Ces résidences comprenaient indubitablement une exploitation agricole et se rangeaient dans la catégorie des 'curtes' dont la fortification était soumise à certaines restrictions dès le règne de Charlemagne. Les prescriptions du capitulaire 'de Villis' et plus tard du 'Saxenspiegel' sont fort nettes.

Avant de passer aux résultats de 25 années d'exploration, il est raisonnable de jeter un regard sur l'évolution de l'architecture castrale en Europe occidentale. Dans cet ensemble les Pays-Bas – territoire plus ou moins sous-développé – ne forment pas une province culturelle à part, aux destinées architecturales propres, ponctuée de formes particulières et promise à un développement spécifique. On fait volontiers débiter l'évolution de l'architecture des châteaux avec les constructions de Foulque Nerra, comte d'Anjou, qui, autour de l'an 1000, assurait les frontières de son territoire en y élevant des tours fortes, des donjons. Un article de Marcel Deyres fut publié au début de l'année 1974 dans le *Bulletin Monumental* (Tome 132-1) avec des vues nouvelles au sujet des activités de ce bâtisseur. Ces vues ont été attaquées pendant le Colloque Château Gaillard à Blois (1 au 8 septembre 1974). Reste en suspens dans quelle mesure ces tours doivent être considérées comme les descendantes directes des tours de garde romaines, des 'burgi'.

La tour a fait école.<sup>9</sup> Dans le célèbre roman de chevalerie, le Roman de Rou, on relate déjà que chacun se construisait des châteaux en fonction de ses moyens financiers. Or, le donjon, la tour d'habitation a évolué vers un type de fortification, qui s'est maintenu au cours des siècles; en d'autres mots, la tour d'habitation n'est pas liée à une époque. Du point de vue architectural, l'aspect peut quelque peu varier: la tour peut être carrée, rectangulaire, polygonale, circulaire. Elle peut se doter d'un chemin de ronde en encorbellement, pourvu de mâchicoulis et, aux

3 Halbertsma 1954, 132-3.

4 Formsma/Luitjens-Dijkveld Stol/Pathuis 1973, 3-12.

5 Cfr. e.a. Van Iterson 1954 et 1955; Kalkwiek 1975.

6 Van den Bergh 1866-73.

7 Hovy 1969.

8 Hovy 1969.

9 Ubregts 1973.



angles, d'échauguettes. Le plan peut se compliquer soit par l'accolement d'une tourelle d'escalier, soit par la saillie de tours de flanquement.

La tour exige évidemment d'être assurée. Sa protection, dans sa forme la plus simple, consiste en une première ligne de défense, constituée d'une palissade où l'entrée est déjà conçue comme un obstacle. Dans des régions où le sol se laisse aisément creuser, on a probablement préféré un fossé sec ou rempli d'eau. La terre récupérée peut tantôt exhausser l'assiette de la tour, tantôt créer autour de la tour une levée, avec ou sans palissade. Dans des contrées à relief accusé la tour se plante, soit au sommet d'une colline bien isolée, soit à l'extrémité d'un éperon. Dans ce dernier cas, la position du donjon se renforce souvent par le creusement d'une douve sèche, désignée en allemand par le mot si expressif d' 'Abschnittsgraben'. Lorsque, en pays de plaine, on élève une colline artificielle pour y ficher une tour d'habitation dominant les environs, l'on fait appel à la variété bien connue du château à motte. Il est évident que la manière de protéger la tour est variable.

La plupart de ces levées de terre sont circulaires; le carré ou le polygone sont rares. Par contre l'enceinte en briques ou en pierres peut dessiner aussi bien un carré qu'un polygone ou un cercle.

Si la tour d'habitation est de tous les temps, on ne peut pas en dire autant de son adjonction spectaculaire: la motte.<sup>10</sup> Elle disparaît au cours du XIII<sup>e</sup> siècle. Guillaume de Normandie défend expressément à ses turbulents barons de se construire des fortifications, qu'elles se trouvent au milieu des marécages, fréquents dans les vallées richement irriguées, ou qu'elles s'implantent sur des collines artificielles ou non. Le château à motte est exposé à la sape: c'est son point faible; cela s'est révélé en plus d'une circonstance. Et, si, dans notre pays, on élève encore des mottes au cours du XIII<sup>e</sup> siècle, il faut en conclure que ce fut plutôt en fonction de considérations de 'standing' ou comme protection contre les inondations qu'en réponse à des impératifs militaires. Ces questions sont encore fermement discutées dans le cas des éminences-refuges zélandaises. Celle près de Borssele, la fameuse 'Montagne de Troie', portait d'ailleurs le château originel des Borssele; ce 'refuge' est incontestablement une motte. La combinaison de l'enceinte et de la tour d'habitation entraîne des modifications dans la disposition des composantes architecturales. Alors que la tour du Valkhof se dresse au milieu du site castral et que le donjon d'Oost-

voorne est encore entièrement détaché du mur d'enceinte, nous voyons que, dès le milieu du XIII<sup>e</sup> siècle, le donjon s'intègre souvent dans l'enceinte. La petite tour du 'burcht' à Leyde a été accolée contre la face interne des courtines. De même, le donjon de Montfoort (daté aux environs de 1170) et celui de Vollenhove (même date environ) s'appuient indiscutablement contre le mur d'enceinte. La tour d'habitation d'Egmond faisait même saillie à l'extérieur et flanquait de ce fait l'entrée, qui se trouvait immédiatement à côté de la tour.

A l'époque où ces plans s'élaborent, la motte n'a pas encore définitivement cédé le pas; c'est ainsi que nous voyons le château d'Oostvoorne se dresser sur sa motte, tout comme le 'burcht' de Leyde. Sur sa motte, le donjon de Steyn chevauche son enceinte polygonale. Teylingen près de Sassenheim, au contraire, et Egmond, créés tous deux probablement après la guerre de Looz (vers 1205) ne placent plus leurs espoirs dans un emplacement dominant l'attaquant, mais bien dans de larges douves. Dans notre pays, du reste, le château sur motte a été royalement pourvu de fossés.

En France, vers 1200 le château rond est en perte de vitesse; les architectes de Philippe-Auguste (1180-1223) se retournent vers le castrum rectangulaire. En langage médiéval ces projets se traduisent par des quadrilatères à tours d'angle rondes en saillie; des tours semblables hérissent le milieu des côtés. Ces plans présentent parfois des variantes. On ne reconnaît pas toujours facilement le donjon dans ce château quadrangulaire. A Dourdan, il prend l'allure d'une tour d'angle plus grande, plus grosse que les autres; un fossé sec le sépare de la cour intérieure et donc du restant du château. Remarquons qu'à Coucy, également, l'énorme donjon s'isolait du complexe castral au moyen d'un fossé sec.

L'Île de France ne détient pas l'exclusivité de l'élaboration du château sur plan quadrangulaire; en Savoie les architectes de Pierre et de Philippe de Savoie y contribuèrent beaucoup; il faut encore rappeler l'apport de l'Italie méridionale sous Frédéric II (1215-1250) au cours de la première moitié du XIII<sup>e</sup> siècle. Plus au nord Edouard I<sup>er</sup> profite de ces expériences lors de la construction de ses châteaux au Pays de Galles qu'il vient de conquérir. Il est vrai que des Savoyards, comme maître Jacques de Saint-Georges ou 'Master James of St. Georges' (c'est sous ce nom qu'il apparaît dans les sources anglaises) y participèrent largement.<sup>11</sup>

Dans notre pays la rénovation se remarque avant tout

10 De Bouïard 1967a et 1967b.

11 Taylor 1974, App. C, III.

dans les châteaux élevés par Florent V en Frise Occidentale, vers 1285. Jusqu'à cette heure, toutefois, des données précises nous manquent au sujet de l'apparition du premier château quadrangulaire aux Pays-Bas. Florent aura créé Muiden après la cession du Gooiland par l'abbesse d'Elten; de cette façon nous demeurons aux environs de 1280. Sur la foi d'examen on verra que, dans la seconde moitié du XIII<sup>e</sup> siècle, se construisent encore des châteaux sur un plan essentiellement circulaire: le 'retournement' peut donc se placer à la fin du XIII<sup>e</sup> siècle.

Le schéma de l'évolution castrale, dont ne sont indiquées ici que les lignes de force, se fonde sur les conclusions de la recherche en Europe occidentale, avant tout en France et en Grande-Bretagne. Pour cela des exemples dûment datés servirent de jalons. Etant donné que le matériel historique présent y est plus riche qu'aux Pays-Bas, les possibilités et les probabilités d'édifier un schéma d'évolution fidèle s'annonçaient d'autant plus grandes dans ces pays.

La question qui s'impose est celle-ci: en quelle mesure l'examen, à l'intérieur de nos frontières, nous autorise-t-il à déclarer ce schéma étranger également applicable à notre pays? Il faut dépister, en même temps, avec quel retard nos constructeurs ont suivi leurs exemples français. Il est évident qu'il faudra se fonder, avant tout, sur les conclusions de l'archéologie essentiellement nationale. Des fouilles longtemps oubliées réalimentent les discussions; cela est inévitable. Il s'en dégage une difficulté assez bizarre: à la longue, en effet, de nouveaux points de vue se sont dessinés, qui modifient notablement les interprétations anciennes. La revue de fouilles exécutées il y a des dizaines d'années confronte finalement le chercheur (et surtout lui) avec des déficiences dans l'examen, qu'il se pardonnerait à peine, mais qui demeurent malheureusement incorrigibles. Il faut aussi ajouter que la recherche historique a avancé de beaucoup. Elle a clarifié les arrière-plans, rectifié des datations et circonscrit plus d'une activité architecturale.

Jusqu'à maintenant, aucun reste de tour en bois n'a été découvert dans notre pays. Même en dehors de nos frontières, bien peu de chercheurs ont éprouvé le plaisir de déterrer un donjon de bois. Les sources écrites fournissent, par contre, une riche moisson de données. La plupart du temps des bâtiments en pierre ont pris la relève de constructions en bois. Dans son récent article Marcel Deyres

insiste sur le fait que les tours de Foulque Nerra, pour la plupart, ont été, dans une première étape, élevées en bois. Plusieurs motifs militent en faveur de ce matériau. Si la tour est édifiée au-dessus d'une motte, qui a été élevée récemment, il n'est pas recommandable d'y construire immédiatement une tour en pierre. Le tassement de la terre nouvellement amoncelée causerait inévitablement, par descente inégale de pesantes maçonneries, de dangereuses fissures, à leur tour motif d'un effondrement terminal. De plus, les tours de bois coûtaient moins et s'élevaient plus aisément que leurs homologues de pierre; bref, elles exigeaient une main-d'œuvre beaucoup moins spécialisée.

Il existait encore un motif purement militaire pour préférer les tours de bois: il arrivait que les charpentiers en construisaient à domicile 'en préfabriqué' pour les déposer ensuite, à l'improviste, au point stratégique.<sup>13</sup> Mais puisque le bois n'a fatalement qu'une existence limitée, il faut bien, par nécessité, passer à la construction d'une tour de pierre. A moins que la fortification ait terminé son service et qu'elle puisse tranquillement disparaître; dans cette hypothèse seule la motte indique une activité architecturale antérieure.

Les tours bien datées de notre pays plaident en faveur de constructions en 'dur'. La tour de Barberousse, édifiée vers 1160 au Valkhof, à Nimègue, s'affirme, sur les vieilles représentations comme un formidable donjon. La plus ancienne maison forte sur le Valksberg sous Valkenburg, qui est datée vers 1115, se composait, suivant des observations récentes, d'un bâtiment rectangulaire avec des murs de quelque 2,50 m. d'épaisseur. A Heusden, nous avons découvert les fondations d'une tour de pierre remontant à la seconde moitié du XII<sup>e</sup> siècle (fig. 1). Cette tour surprend par sa forme octogonale. Sa première assise (c'était d'ailleurs tout ce qui restait de cette tour) était constituée de pierres de nature variée. Le diamètre atteignait environ 8 m., l'épaisseur des murs 2 m. La semelle était directement posée sur le sol, sans tranchée de fondation.<sup>14</sup> Presque contemporaine de cette tour fut élevée une autre tour trapézoïdale de quelque 10 m. sur 10 m. Le mur extérieur nord est plus gros que les trois autres; ses fondations sont plus profondes. Toutes ces courtines ont une structure identique: deux parements de tuffeau, dont les blocs mesurent 40 cm. de long et 10 cm. de large, enserrent des déchets de carrière.

Que peut-on tirer de ces deux pauvres restes du plus an-

12 Deyres 1974.

13 Hemelrijk 1950; Rocolle 1973, 27 et suiv.; 44 et suiv.

14 Renaud 1949.

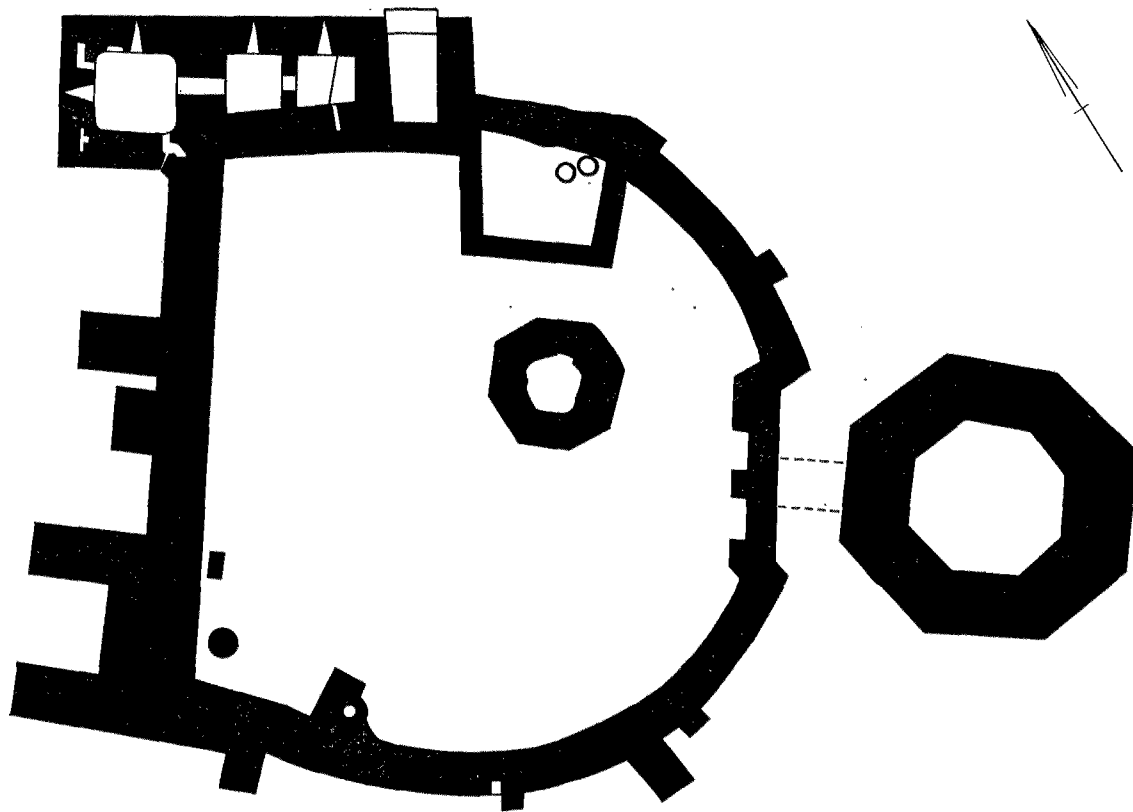


Fig. 1 Plan du château de Heusden; les deux tours datent de la seconde moitié du XIII<sup>e</sup> siècle, le donjon octogonal remonte au XIV<sup>e</sup> siècle

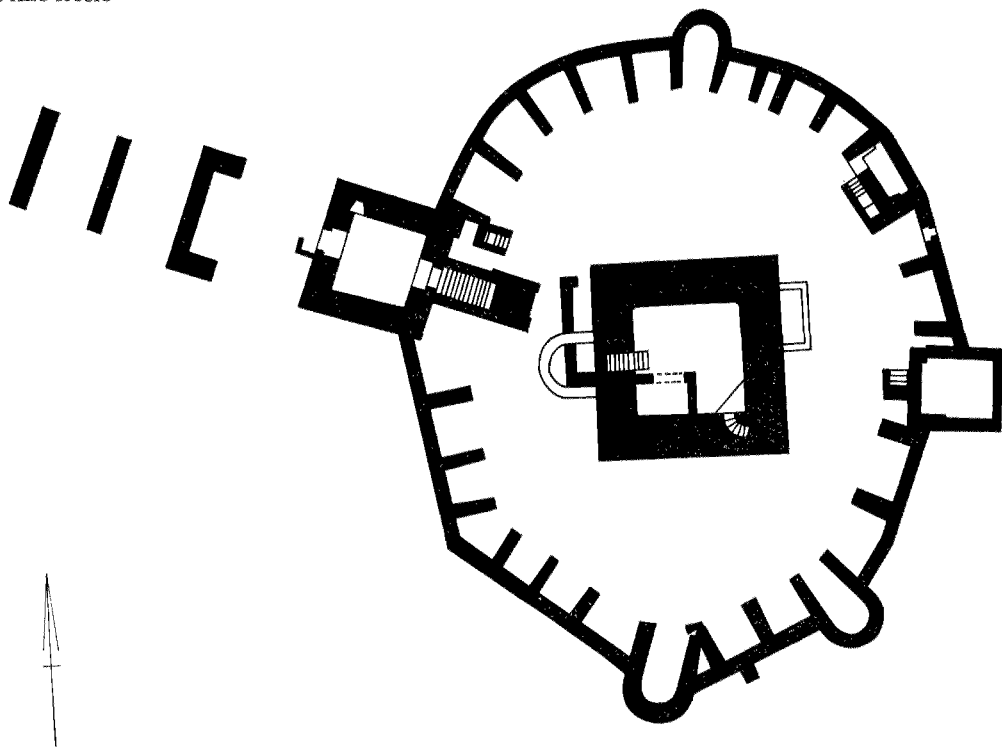
ancien château des seigneurs de Heusden? On n'y relève aucun détail architectural; on ne dispose que du plan. L'octogone, indubitablement, constitue une exception. Comme points de comparaison se présentent à nous les tours de Brustem et de Kessenich, toutes deux dans l'ancien comté de Looz. Le donjon de Kolmont avait même dix côtés.<sup>15</sup> Il est frappant que l'évolution du château de Valkenburg passe également par deux périodes, durant lesquelles une tour polygonale dominait l'ensemble. Au nord, le bâtiment trapézoïdal regardait le fossé. Servait-il d'entrée? Cela est loin d'être certain. Les deux puits intramuraux qu'on y a découverts indiquent plutôt une fonction d'habitat. Il faudra chercher l'entrée, à côté

de ce bâtiment, qui commande ainsi le pont et la porte. L'assiette circulaire du château d'un diamètre d'à peu près 40 m. a-t-elle à un moment porté une motte? Plus d'une fois on a constaté qu'on a déposé une tour, sans creuser de fondations; après quoi l'on ensevelit le pied de la tour sous un monticule de terre, jusqu'à un niveau relativement haut. Selon toutes les apparences la tapisserie de Bayeux en fournit un exemple, par la construction de château de Hastings.

A Heusden, aucune observation n'oblige à cette conception. Lors du comblement des douves le niveau de circulation de la fin du Moyen Age fut déversé dans les fossés; les pieds des murs de refend disparurent dès lors. Mais même les plus anciennes représentations montrent une cour intérieure assez surélevée, ainsi que des constructions périphériques. A ce moment la tour octogonale a

15 Claassen 1970.

Fig. 2 Plan du château à motte d'Oostvoorne; de donjon – construit en briques – remonte au XIII<sup>e</sup> siècle



déjà disparu depuis longtemps. S'il y avait eu motte, le bâtiment d'habitation se serait adossé à la pente. Cela ne serait pas impossible puisqu'il y a un exemple, à Oostvoorne. Mais, ainsi qu'il a été dit plus haut, il n'existe aucune indication qui plaide pour une telle disposition. Il faut plutôt songer à une palissade se rattachant au bâtiment d'habitation. Le mur d'enceinte aura donc remplacé cette palissade, après des réparations réitérées, évidemment. Même de solides poutres ne résistent pas durant des dizaines d'années là où l'air et l'eau se touchent. Peut-être que l'étude des vieux comptes révélerait des données qui résoudre ce problème. Il n'est pas exclu, non plus, que la terre récupérée lors du creusement des douves ait servi à construire une levée circulaire, couronnée d'une palissade. Alors qu'en fait nous disposons de trop peu de renseignements sûrs pour passer à une restitution du plus ancien château de Heusden, une chose reste demeure suffisamment établie: il s'agit, en tout cas, d'une tour isolée, qui ne s'intègre donc pas dans une enceinte. Heusden est, par conséquent, un exemple du type le plus ancien. En disant cela, on ne souffle mot sur

la datation. Les seigneurs de Heusden apparaissent dans la région au cours de la seconde moitié du XIII<sup>e</sup> siècle. Un seigneur ne dispose pas immédiatement d'un château. Une datation vers 1150–1200 est néanmoins hautement probable sur la foi des tessons.

Une comparaison avec Oostvoorne s'impose (fig. 2). Du château d'Oostvoorne, berceau des seigneurs de Voorne, des restes importants ont été conservés et consolidés. Ici aussi, dans la cour intérieure, se dresse, isolée, la tour d'habitation. Ce château possède quelque chose de plus: on lui a ajouté un élément défensif. Le bâtiment, en effet, s'élève sur une hauteur, probablement une vieille dune intérieure. En un mot, Oostvoorne peut passer pour un excellent exemple de château à motte. Autour du bord du plateau courait un mur-bouclier, pourvu de quelques tours saillantes et d'un chemin de ronde appuyé sur des arcades aveugles. Le bâtiment d'entrée s'adossait au talus de la colline et formait une cage d'escalier par où l'on grimpait jusqu'au niveau du château. La signification militaire du château à motte saute directement aux yeux; l'emplacement de la tour sur une hauteur forçait

l'assaillant non seulement de vaincre le double obstacle douve-enceinte, mais en plus la différence de niveau. Pour les défenseurs la motte joua aussi le rôle d'un soutien dans le dos. Avant l'invention de la poudre, la tactique militaire médiévale préféra une défense à partir d'une position dominante. Ce n'est que longtemps après et sans doute sous le coup d'expériences douloureuses qu'elle allait prendre conscience des dangers réels de la sape et de la mine. Entretemps nous ignorons si, en-dessous des fondations de la souche de la tour, ne se cachent point les restes d'une tour antérieure en bois. Si nous nous limitons à la construction en briques il faut bien accorder que Oostvoorne est un phénomène inhabituellement riche. Bien que les murs soient suffisamment épais pour les creuser d'escaliers, le bâtiment principal est pourvu d'une tourelle d'escalier accolée: cette tourelle, dans la terminologie française, reçoit le nom de 'petit donjon'. En effet, on retrouve un donjon-miniature, qui reçoit une expression formelle intéressante dans le Château des Comtes à Gand, pour ne citer qu'un exemple proche de nous. Les matériaux mis en œuvre sont de grandes briques, appelées 'kloostermoppen'. Ce matériau exclut d'ailleurs une datation trop précoce. Quoique les Voorne se rencontrent dans les sources dès 1108, les premiers seigneurs de ce nom n'ont certainement pas habité le donjon de briques. Comme à Heusden il faudra placer les activités architecturales vers les années 1150-1200.

En face de cette incertitude il est temps, petit à petit, d'épingler quelques faits permettant des raccords avec la matière. Du soi-disant testament de l'évêque Godefroid de Rhenen (1156-1178) nous apprenons que son père construisit une fortification de bois sur une éminence dans les marais à l'est de Rhenen, dans le hameau actuel d'Achterberg. A l'occasion d'un conflit avec la Gueldre elle fut détruite; Godefroid et ses frères élèvent alors une tour de pierre. Le château passe dans l'histoire sous le nom de Horst, désignation fort expressive. En vue de protéger le Sticht Godefroid fit encore édifier Montfoort et Vollenhove.

Montfoort est connu d'un certain nombre de représentations. Il fut détruit en partie en 1672 ou du moins vers cette époque. En ce moment, ne subsiste qu'un fragment de la basse-cour, avec très peu de maçonneries du XIII<sup>e</sup> siècle. Comme la partie principale du château s'est soustraite jusqu'à ce jour à tout examen, nous ne pouvons nous renseigner sur la façon, dont les architectes de Godefroid ont exécuté leur tâche. Les représentations suggèrent que la forme dominante était le cercle et que le donjon était incorporé dans l'enceinte. En comparaison avec

Heusden et Oostvoorne se remarque un glissement dans l'emplacement du donjon.

La situation à Vollenhove se déduit également de ses représentations. Tous les essais des fouilleurs pour acquérir un complément d'information au sujet de Vollenhove échouèrent hélas! complètement. L'examen de 1969 nous apprit que l'agrandissement du port, c'est-à-dire des douves du château, avait fait disparaître une partie de l'emplacement de celui-ci. De plus, en abaissant le niveau de l'île les terrassiers avaient en même temps effacé les ultimes traces des fondations. Un résultat décevant. Les représentations, cependant, nous enseignent que la grande tour en tuffeau a été l'accent dominant dans un complexe rond ou ovale. Il est difficile de dire si cette tour s'est simplement appuyée contre l'enceinte ou si elle a été intégrée dans celle-ci. Il semble donc que Montfoort et Vollenhove ont été deux représentants d'un même type. Aucune de ces deux fortifications ne peut se ranger parmi les châteaux à motte, sur la foi de nos représentations. Le talus minuscule et négligeable au pied du mur de Montfoort ne permet pas de l'introduire dans la catégorie des châteaux à motte, comme certains le voudraient. Certes, le mur extérieur est ainsi légèrement protégé contre le gel, mais les défenseurs ne jouissent pas pour autant d'une position dominante. Comme ce petit talus n'influence nullement le niveau du chemin de ronde, derrière les créneaux, le critère si avantageux du château à motte n'est pas présent: la disposition d'un niveau de défense à plusieurs mètres au-dessus de l'assaillant. Hauteur de l'enceinte et hauteur du talus ne s'ajoutent donc pas à Montfoort, en faveur des défenseurs.

Quoique Vollenhove fut construit sur une moraine terminale et que le fossé fut creusé assez profondément, nous n'avons toujours pas affaire à un château à motte. Le niveau de la cour intérieure aura à peu près celui de l'église médiévale encore existante. Nous rappelons que le château sur motte n'était pas le seul type de fortification en service au XIII<sup>e</sup> siècle. Nous nous sommes arrêtés plus haut au fait que les interdictions de Guillaume de Normandie traitaient aussi bien des châteaux sur motte que des fortifications où l'élément aquatique (le marais) constituait la composante défensive par excellence.

Longtemps, la signification du 'burcht' de Leyde est demeurée une énigme (fig. 3). On pensait bien que l'espace à l'intérieur de l'enceinte devait être assimilé à un camp emmuré où la garnison pouvait bivouaquer tant bien que mal en époque de nécessité. L'auteur examina ce site en 1949-1950 et encore durant les restaurations des années 1964 à 1970; il en tira de nombreuses données.

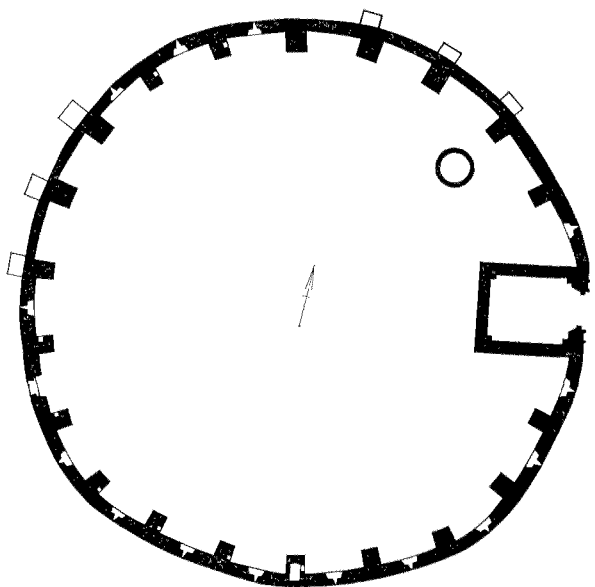


Fig. 3 Plan du château à motte de Leiden (c. 1150)

En tout premier lieu, il s'avéra que les défenseurs pouvaient disposer d'une tour accolée aux courtines. Une tour modeste, qui mesurait à l'intérieur 4 m. sur 5 m. Les restes permirent de conclure qu'elle était voûtée. Une chronique médiévale cite cette tour à propos du siège de 1204. On ne savait pas quoi en penser et longtemps on tint l'enceinte pour le 'toerne'.<sup>16</sup> L'examen a démontré que la colline, située à la pointe occidentale de l'île formée entre les bras du Rhin, est artificielle. L'exhaussement eut lieu probablement en deux phases. Y eut-il déjà une fortification au premier stade? On songe à une palissade bordante. Voilà une question non tranchée. Le grand baille, qui accompagne le château à motte, n'a pas été retrouvé, mais nous le supposons situé entre la colline et l'église Saint-Panorace.

La datation présente des difficultés; elle ne sera pas trop précoce à cause de la présence d'un chemin de ronde sur des arcades aveugles et de l'emploi de certains matériaux; l'enceinte se compose, en effet, de tuf et de briques fort anciennes. Holwerda est même allé jusqu'à prétendre que la brique n'a été utilisée que pour les réparations effec-

tuées après le siège de 1204. Si l'on considère les courtines dans leur ensemble, briques et tuf se côtoient. Le mur n'est pas très épais: deux parements enserrant, néanmoins, un cœur intermédiaire, formé en partie de déchets romains de construction. Les petits blocs de tuf sont, par contre, nombreux dans les parements. Comme le comte de Hollande disposait des ruines des 'castella' romains de Valkenburg et de Rodenburg, le 'burcht' de Leyde peut en toute logique lui être attribué. Dans le traité de Bruges (1296) ce château est d'ailleurs cité parmi les alleux du comte de Hollande. Puisque, dans des sources de 1156, se rencontre un certain Alwinus Castellanus, celui-ci peut être admis comme le premier vicomte du 'burcht'.

Dans les années 1204-1206 la Guerre de Looz se transpose à l'intérieur des frontières du comté de Hollande. Les partisans du futur comte Guillaume I sont acculés et Louis de Looz se déplace avec son armée du sud au nord, sans rencontrer de résistance. Il brûle les 'maisons' d'Albert Banjaart (près de l'actuelle Beverwijk) et de Wouter d'Egmond (à Egmond-sur-le-Hoef). Question fondamentale; les enceintes de Teylingen, près de Sassenheim, et d'Egmond-sur-le-Hoef existaient-elles déjà à ce moment? Ou bien ont-elles été bâties après la Guerre de Looz? Apparemment elles ne jouent aucun rôle dans la relation de ce conflit. En se souvenant d'une constatation qui remonte loin et suivant laquelle les stratèges songent avant tout à la guerre précédente, on peut s'imaginer que Guillaume, une fois devenu comte, a autorisé son fidèle compagnon de se construire une maison forte. Les Teylingen sont d'ailleurs issus de la maison comtale de Hollande; ils appartiennent de ce fait encore au clan. La situation de Wouter d'Egmond est tout aussi précise: avoué de l'abbaye d'Egmond, il était au moins censé défendre les intérêts d'une institution sous protection comtale.<sup>17</sup> De plus, seul le bras de mer dit Rekere le séparait des Frisons toujours insoumis. Lui aussi, sans aucun doute, remplit les conditions pour recevoir une licence de se construire une forteresse avec cette restriction probable, toutefois, que cette maison doit rester ouverte au comte. Le donjon s'intègre dans l'enceinte, fait ainsi légèrement saillie en direction du fossé et peut donc aisément être placé dans la première décennie du XIII<sup>e</sup> siècle (fig. 4).<sup>18</sup>

Il a été supposé quelquefois qu'Egmond fut, à l'origine, un château à motte (fig. 5); mais, il n'y a pas d'arguments pour l'affirmer. L'accès se trouvait à côté de la tour. Les

16 Renaud 1974.

17 Hof 1973.

18 Renaud 1964.

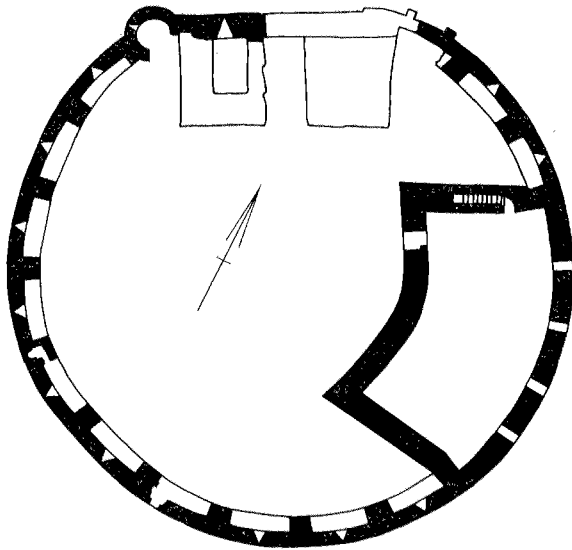


Fig. 4 Plan du château de Teylingen, début du XIII<sup>e</sup> siècle; la tour plus tardive que le mur d'enceinte

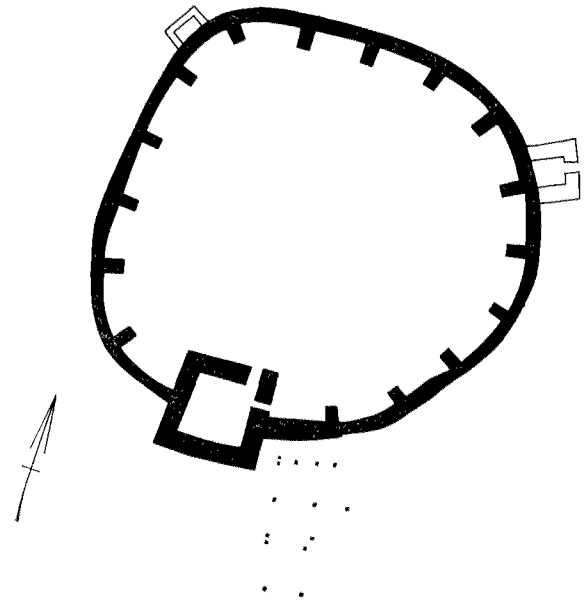


Fig. 5 Plan du château d'Egmond, d'après les fouilles; début du XIII<sup>e</sup> siècle; on a consolidé les fondations

poutres des chevalets du pont et un épaississement mural enlèvent le dernier doute à ce sujet. A l'encontre du donjon d'Oostvoorne, celui d'Egmond ne servit ni de porche, ni de cage d'escalier. L'extrémité évasée d'un égout suppose encore le conduit d'une latrine et celle-ci, à son tour, annonce des possibilités de logement à l'intérieur de la tour. L'enceinte a-t-elle succédé à un château à motte? Rien ne permet de conclure en ce sens.

Ici s'offre l'occasion de dire quelques mots sur l'examen de la ruine de Brederode. Certes, il était connu depuis longtemps qu'à l'arrière du complexe principal un mur à contreforts circonscrivant toute la partie postérieure était tendu entre la tour d'angle nord et la façade sud. On ne cessait de répéter qu'il s'agissait là d'un reste du premier château de Brederode et qu'il pouvait donc remonter à la première moitié du XIII<sup>e</sup> siècle, c'est-à-dire aux environs de 1230.<sup>19</sup> Quoi qu'il en soit, le nom de Brederode apparaît pour la première fois dans une charte de 1244, qui nous fait connaître Guillaume de Brederode. Il n'est point seigneur dans la région où se dresse le château, c'est-à-dire dans la seigneurie de Velsen, que les Brede-

rode acquièrent d'Hugues de Naaldwijk vers 1255. Une enquête sur l'origine du château rectangulaire aux Pays-Bas impliquait inévitablement un examen de l'enceinte de Brederode. Sous la conduite de monsieur Vons la A.W.N. Velsen participa à une exploration durant l'automne de 1971. Le résultat fut une surprise. Après avoir arraché à grand-peine les arbres implantés sur le mur, phase durant laquelle il fallait procéder avec la plus grande précaution afin de ne pas désagréger les maçonneries, nous découvrions que celles-ci étaient constituées de briques de format divers. Le sol fournit des tessons assez tardifs. Il semble, par conséquent, que la muraille a servi de revêtement à un bastion tout aussi tardif. Elle a été plus ou moins réparée et revêtue de carreaux rouges.

Que penser de la ruine de Brederode? Le château n'est cité dans les sources qu'en 1321. Mais, quand un nommé Guillaume de la famille des Teylingen se fait expressément appeler 'de Brederode', il faut bien convenir qu'il a possédé 'Brederode'. Si l'on pouvait démontrer que la ruine actuelle est le reliquat d'un château, qui remonte à la moitié du XIII<sup>e</sup> siècle, dans ce cas on aurait affaire au plus ancien château rectangulaire. Mais, c'est là brusquer les choses.

19 Van Reyen 1965.

Entretiens doivent être étudiés quelques châteaux circulaires dont la date initiale de construction est plus ou moins bien connue. En premier lieu, Moermond, près de Renesse, dans l'île de Schouwen (fig. 6). Moermond a été détruit par les inondations de 1953. Par un pur hasard, lors de la vidange du fossé en face du château en place, apparurent des maçonneries qui appartenaient à un polygone de quelque 60 m. de diamètre. Sur le côté nord se dessinaient les fondations d'une tour rectangulaire en saillie. Certaines indications la font considérer comme une tour d'entrée. Contre la face intérieure du mur ont été plantés des groupes de poteaux. Il s'agit donc d'un chemin de ronde sur des arcades aveugles. Au milieu du terrain nous avons trouvé une fondation angulaire avec, au sommet de l'angle, une tour ronde, une tour d'escalier visiblement. Le manque de place fit renoncer à une fouille plus poussée de ce logement; il se dressa, en tout cas, isolé sur l'aire castrale.<sup>20</sup>

Ce bâtiment n'est pas totalement inconnu. Il fut probablement élevé par Costijn de Zierikzee; en 1229 il échangea des terres avec le comte Florent IV et entra ainsi en possession du terrain où fut découvert le plus ancien Moermond. En 1244 le comte Guillaume II y résida. Durant les troubles après le décès du comte Florent V, Moermond, en 1297, fut assiégé et détruit par Wolfert de Borssele, un ennemi de Jean de Renesse. D'après ce que Melis Stoke nous rapporte, Wolfert ne put s'en rendre maître qu'en affamant la garnison; c'est là la preuve que le site et la construction en avaient fait une forteresse redoutable. Les ressauts aux angles du polygone mural suggèrent que ces épaissements donnent naissance à des tours en saillie, au niveau du chemin de ronde.

Bien que, finalement, seul un tiers environ du château ait été fouillé, une conclusion semble, en tout cas, de mise: il s'agit toujours d'un bâtiment (donjon?) isolé sur l'aire castrale, mais efficacement protégé par son enceinte polygonale.

Souvenons-nous de l'exemple de Montfoort, élevé par l'évêque Godefroid de Rhénen vers 1170; son plan montre un donjon intégré dans l'enceinte. Le 'burcht' de Leyde également a été projeté suivant ce principe. On peut en déduire que, après l'apparition d'un nouveau stade évolutif, les formes plus anciennes ne sont pas abandonnées pour autant.

Vers la moitié du XIII<sup>e</sup> siècle Thierry, sire de Teylingen, se bâtit une maison à Warmond (fig. 7); la maison déperit

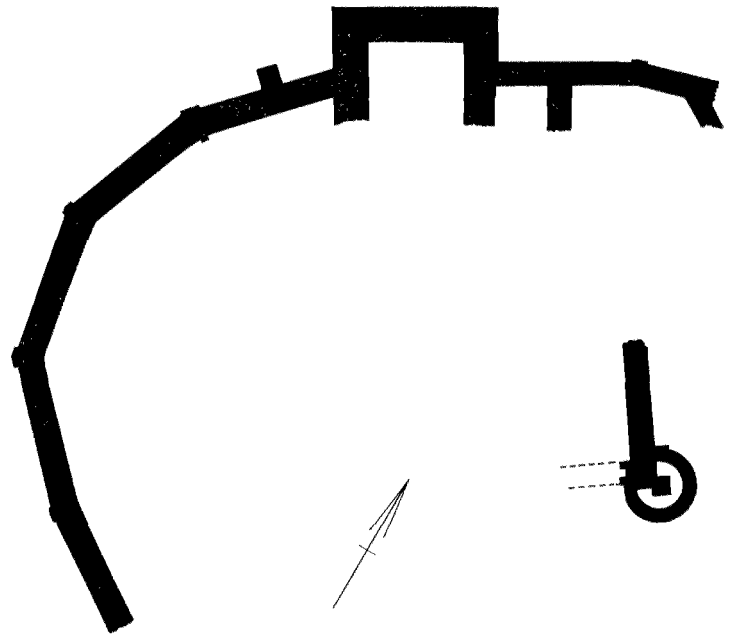


Fig. 6 Le château de Moermond d'après des fouilles inachevées, XIII<sup>e</sup> siècle

au cours du XIV<sup>e</sup> siècle et vers 1400 le duc Albert de Bavière offrit le terrain et les ruines à un ordre monastique. Comme le sol était sur le point d'être complètement bouleversé, une fouille fut entreprise durant l'été de 1965. Malgré le retournement annuel de la terre ainsi qu'il sied au potager du séminaire l'examen a fourni une image assez complète du château.<sup>21</sup>

Quoique beaucoup de murs eussent disparu jusqu'aux premières assises de la maçonnerie, l'aire castrale affichait clairement une forme circulaire assez irrégulière, néanmoins, avec des aplatissements à l'ouest et au nord. Les dimensions sont d'environ 41 et 46 m. À l'ouest, contre l'enceinte, s'appuie un donjon de 11 m. sur 14,50 m., pourvu d'une annexe. Alors que les fondations de l'enceinte étaient formées d'un gril de poutres longitudinales et transversales entre lequel et au-dessus duquel étaient déposées les briques de la première assise, les courtines du donjon, elles, s'appuyaient sur des arcs tendus entre des contreforts. Les contreforts d'angle étaient en équerre. Tant les longs côtés que les petits avaient un contrefort

20 Van Beveren 1960.

21 Renaud 1969.



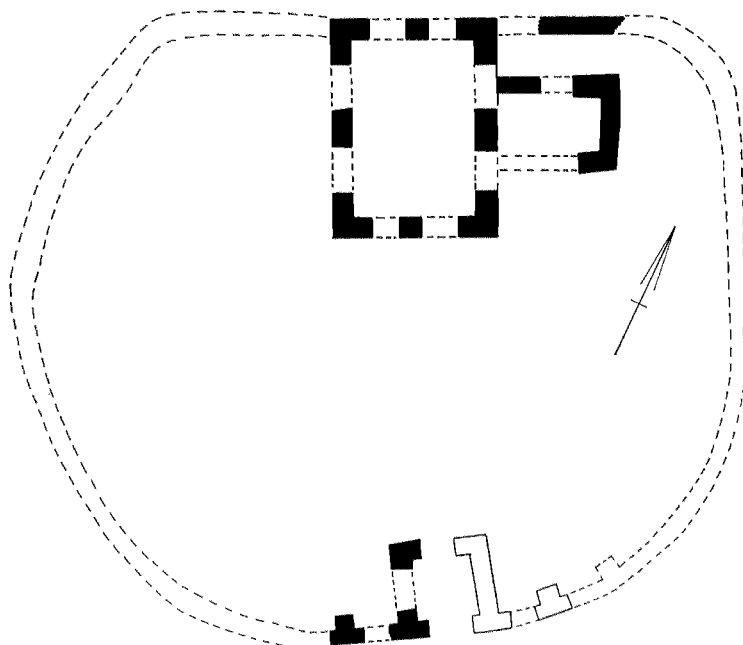


Fig. 7 Le château dit 'Oud Teylingen' à Warmond d'après les fouilles; c. 1270

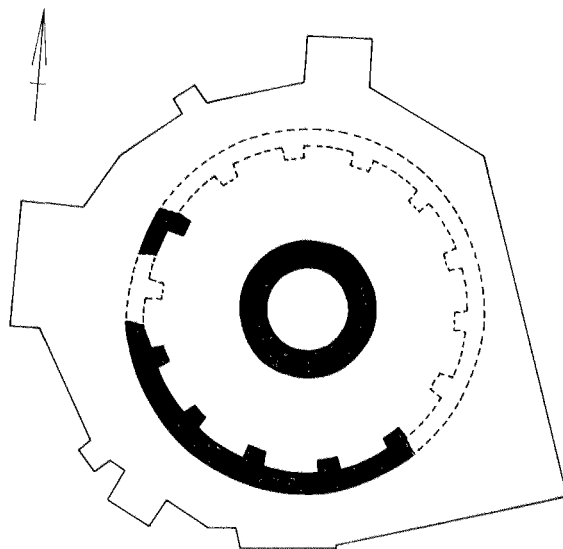


Fig. 8 Le château primitif de Geysteren d'après les fouilles; milieu du XIII<sup>e</sup> siècle

intermédiaire. Les parties hautes de la tour, épaisse d'environ 1,30 m., reposaient donc sur huit points d'appui reliés au moyen de huit arcs.

Le bâtiment d'accès, situé au S.-E. en face du donjon, présentait le même schéma de fondation, tout en ne disposant que de quatre points d'appui. De part et d'autre de l'entrée l'examen du sol permit de constater que les courtines de l'enceinte avaient des contreforts intérieurs; l'existence supposée d'un chemin de ronde en est une conclusion prudente.

Par l'extinction de la branche principale de la famille de Teylingen encore durant le règne de Florent v Teylingen-Warmond retourna au comte. C'est pourquoi son développement fut freiné, voire arrêté. Ainsi qu'il a été dit plus haut, le château a déjà du être en ruine au milieu du XIV<sup>e</sup> siècle.

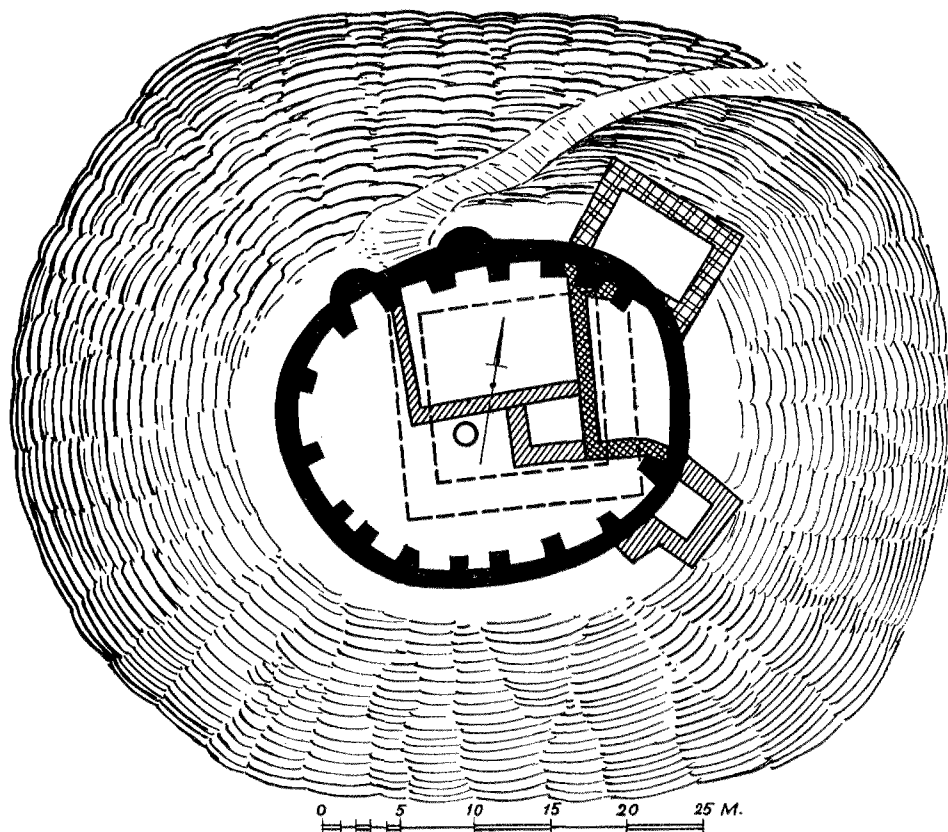
L'histoire ne nous apprend quasi rien sur le château de Geysteren à Wansum-sur-Meuse; dans l'ultime hiver de la seconde guerre mondiale il fut atteint de façon irréparable. Il doit avoir été commencé au XIII<sup>e</sup> siècle et probablement vers le milieu de celui-ci. L'examen entamé en 1958 fut interrompu par manque de fonds. Une série

de campagnes organisées au cours des vacances estivales avec l'aide du N.J.B.G. (Nederlandse Jeugdbond ter Bestudering van de geschiedenis) le continua et le termina, avec des résultats assez étonnants. Arrêtons-nous un instant à la période la plus ancienne: les fouilles révélèrent un exemple très pur d'une tour circulaire isolée de son enceinte. Les développements architecturaux ultérieurs firent disparaître une bonne partie du plan originel. Environ la moitié de l'enceinte fut conservée et même plus de la moitié de la tour. Les fondations sont en grès ferrugineux, les parties hautes probablement en tuffeau. La tour a un diamètre d'environ 8 m.; l'épaisseur des murs atteint 1,70 m. Les appartements de la tour à cause de leur diamètre réduit (il ne dépassait pas 5 m.) n'offraient que peu d'espace habitable. On peut en conclure que la vie quotidienne se déroulait surtout dans la baïlle.

A une distance d'un peu plus de 6 m. la courtine de l'enceinte suivait l'incurvation de la tour. Des contreforts intérieurs indiquaient que ce mur, épais d'environ 1 m. était pourvu d'un chemin de ronde sur des arcades aveugles. Le bâtiment d'accès ne fut pas retrouvé.

Geysteren n'est cité dans les sources qu'à partir de 1251.

Fig. 9 Le château à motte de Kessel; l'enceinte remonte au XIII<sup>e</sup> siècle



Il y a peu de raisons pour faire remonter le château au XI<sup>e</sup> siècle; l'ancienneté de son type n'est que trop tentant. C'est le moment de se souvenir que la forteresse épiscopale de Godesberg, sur le Rhin, elle aussi une tour isolée dans une enceinte, ne fut élevée qu'après 1210. L'évolution ultérieure de Geysteren est fort remarquable; elle nous écarte toutefois du XIII<sup>e</sup> siècle.

L'histoire du château de Kessel est proprement extraordinaire (fig. 9). Jusqu'à l'hiver 1944-1945 se dressa sur la colline près de la Meuse un château ovale appelé 'de Keверberg' d'après son dernier possesseur le baron de Keверberg. La Congrégation des Sœurs de la Divine Providence en devenait propriétaire et y dirigeait un internat pour enfants de bateliers. Il fut détruit durant ce fameux hiver et passa en 1954 dans les mains de la commune. La ruine fut consolidée en 1958. Au cours des déblais déjà plusieurs constatations furent faites qui servirent d'introduction à un examen général durant l'été de 1951. La consolidation de 1958 accrut encore nos connaissances.

Les comtes de Kessel apparaissent fort tôt au XIII<sup>e</sup> siècle et comme les comtes s'arrogeaient habituellement le droit de se construire une maison forte le premier des Henri (il y en eut cinq de ce nom) a déjà dû disposer d'une forteresse. Le hasard a voulu que l'examen de la cour intérieure mit au jour des maçonneries, dont nous pûmes plus facilement approcher par les caves. On se trouva devant les restes d'une grosse tour presque carrée, d'environ 15 m. sur 15 m. avec des murs épais de 2 m. Le cœur du mur était formé de gravier mosan et de mortier à base de chaux; le revêtement était constitué de blocs de grès ferrugineux et aussi d'autres pierres provenant probablement en partie de restes romains. Une fente de lumière, découverte dans cette maçonnerie, démontra que jadis la tour s'élevait isolée. Une tranchée creusée dans la pente de la butte actuelle fournissait de nouveaux éléments: dans les profils se dessinait un niveau de circulation en rapport avec la tour. Il correspondait à peu près avec celui du marché du village de Kessel et avec celui du parvis de l'église. De toute évidence la colline était de

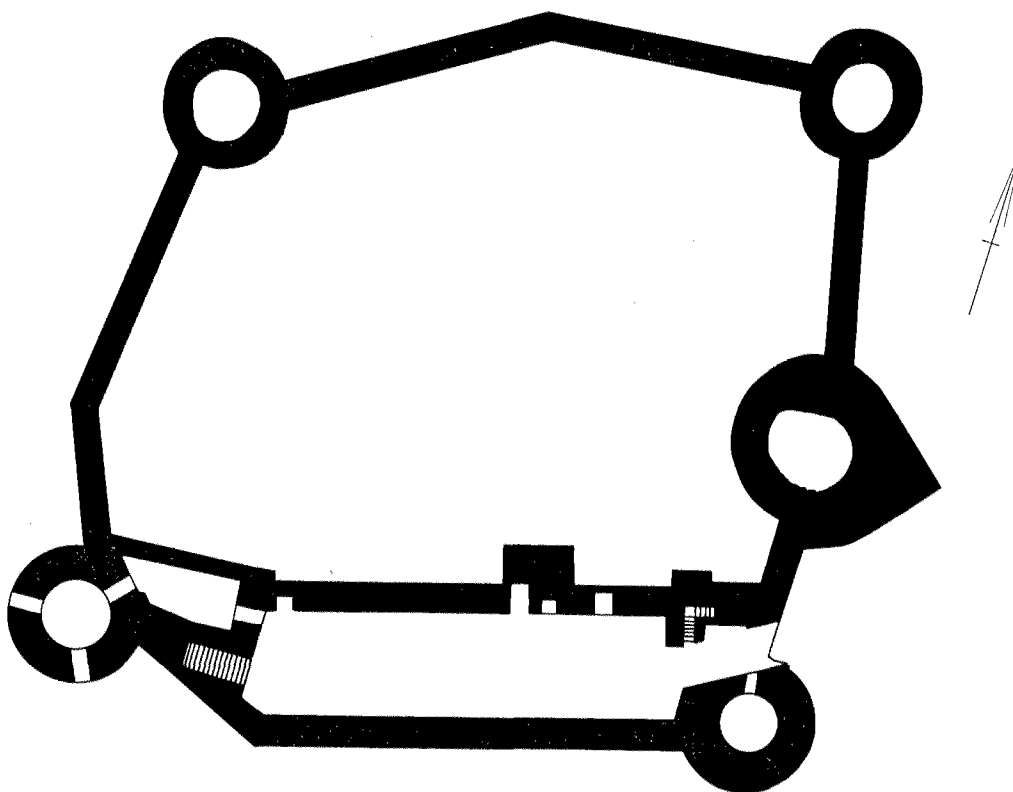


Fig. 10 Le château de Montfort; construit c. 1265

date assez récente et les comtes de Kessel avaient fiché leur château dans le niveau du moment.

La date de démolition de la tour, les circonstances de sa disparition, tout cela demeure encore caché dans les brouillards du XIII<sup>e</sup> siècle. Auparavant j'ai voulu dater la tour aux environs de l'an mille. Sur la foi de l'histoire encore embuée des premiers comtes il me semble plus exact de la placer au début du XIII<sup>e</sup> siècle. Il est vrai qu'en se fondant sur la technique architecturale la tour pourrait être plus ancienne: les premières églises prouvent les capacités artisanales en ce domaine. De plus, Hugo Borger a démontré récemment que la construction de grosses tours à des fins militaires et, sans doute, aussi représentatives remonte loin. Nous songeons aux tours de Xanten et de Soest, que Borger<sup>22</sup> place toutes deux au XI<sup>e</sup> siècle. La question essentielle est celle-ci: quand apparaissent dans la région de Kessel des personnes dont le pouvoir, dont les possibilités expliquent l'érection d'une pareille tour? Les données historiques conseillent la pru-

dence et n'autorisent qu'une datation dans la première moitié du XIII<sup>e</sup> siècle, tout au plus. La maçonnerie, en soi, n'est pas datable. Dans son ouvrage cité plus haut, Borger avertit plus d'une fois contre des datations sur la base d'archaïsmes subjectifs.

La tour a été démolie jusqu'à une hauteur de quelque 2 m. Ensuite la souche fut remblayée; on l'emmotta; ainsi naquit une éminence de quelques mètres de haut. Quand cela? Dans les remblais de la tour nous avons trouvé, près d'une fente de lumière, un tesson de Pingsdorf au guillochis décoratif caractéristique. Un motif, qui, suivant les études de A. Bruijn, apparut dans la première moitié du XIII<sup>e</sup> siècle. En affirmant que la colline a été créée au milieu du XIII<sup>e</sup> siècle il est probable que l'erreur commise sera minime.

Cette éminence fut habitée; dans l'infime parcelle de l'ancienne surface explorée de l'actuelle cour intérieure fut découvert l'extrémité inférieure d'un gros poteau calciné. Rapidement il a fallu agrandir et surhausser la colline; ainsi se créa un plateau d'un diamètre d'environ 30 m. et d'une dénivellation d'environ 9 m. Un exemple typique de château à motte. Au bord du petit plateau fut

22 Borger 1969, 203 et suiv.

élevée l'enceinte ovale avec son chemin de ronde; elle nous occupera plus loin. Il est évident que l'on n'a pas construit la muraille sur des remblais récents; le sol reçut le temps de se tasser; de plus la courtine fut posée sur des arcs de soutien dont les retombées pénétrèrent profondément dans le sol, jusqu'à 2,50 m. Quand? Du temps du comte Henri IV de Kessel, qui paraît dans les chartes coloniales à partir de 1188 ou à l'époque de son prédécesseur le comte Henri III, qui est signalé comme haut-avoué de l'abbaye Saint-Pantaléon à Cologne en l'an 1141?

La typologie du château peut nous renseigner. L'ovale de 27 m. sur 23 m. présente au nord deux renforcements arrondis saillants; entre ces deux tours, en faible saillie, se trouvait probablement l'entrée originelle. Il est admis, par ailleurs, qu'à l'exception du côté oriental la cour intérieure était complètement entourée par le chemin de ronde. L'habitation, voire un donjon auraient donc pu s'isoler sur l'aire castrale; la cour n'en révéla aucune trace. La grande tour qui au nord-est a été bâtie contre le mur forme une phase postérieure de l'évolution: l'ancien mur de l'enceinte a été retrouvé à l'intérieur de la tour. Subsiste seule l'hypothèse suivant laquelle la résidence se serait appuyée contre la partie orientale du mur; là la lecture était déroutante. On peut néanmoins souscrire aux fortes présomptions selon lesquelles l'habitat aurait occupé ce côté. Même forme alors qu'à Montfoort, Leyde et Warmond; en d'autres mots, une origine dans la seconde moitié du XIII<sup>e</sup> siècle est hautement probable.

Il est compréhensible que la forme de Kessel était plus ou moins fixée. Il faut attendre jusqu'en 1279, année où le dernier et pauvre comte de Kessel vend comté et château à Renaud I, comte de Gueldre, pour assister à des modifications. Pour répondre aux exigences de l'époque, celui-ci ne put qu'adjoindre un donjon au N.-E. de la forteresse. C'est ainsi que cet ouvrage de défense avancé, dont la face dirigée vers l'assaillant émerge du talus de la colline, protège l'accès du château et son approche.

L'archère y est d'un type rare et propre au XIII<sup>e</sup> siècle; son extrémité inférieure s'évase en étrier. Ce détail se retrouve à une archère du donjon de Montfort, près de Ruremonde.

Le château si intéressant de Kessel a, cependant, peu contribué à résoudre notre problème: quels changements le XIII<sup>e</sup> siècle a-t-il apporté à la structure des châteaux? Il n'en est pas de même du château de Montfort, situé près du village de Montfort-lez-Ruremonde. Sa date de fondation est connue. C'est vers 1265 que Henri de Gueldre, évêque de Liège et frère du comte de Gueldre, le

fit élever. Le château se trouve sur une hauteur dans la vallée du Vlootbeek. Un emplacement remarquable: en hiver, les hautes eaux gonflaient ruisseau et douves; en été, les fossés étaient parfois à sec. La cour du château était très réhaussée pour éviter que les eaux de crue n'envahissent les caves. Les fondations des courtines étaient peu profondes, mais pourvues de hauts talus, destinés à écarter les eaux hivernales du pied des murs. Le plan du château est assez irrégulier. Caractéristique est l'apparition de quatre tours d'angle rondes reliées par des courtines en ligne brisée. Jusqu'ici cette ruine si attrayante n'a été soumise qu'à un examen sommaire. En 1958, lorsque je m'occupais de l'exploration de Geysteren le moment semblait convenable pour inspecter Montfort d'une manière plus précise. Mais l'emplacement du château était si broussailleux qu'il fallait d'abord supprimer cette végétation parasite. Tous ces travaux et quelques tranchées à travers le fossé épuisèrent les fonds. Ce bref examen avait pourtant montré que les courtines du château médiéval se dégageaient de longs talus et que des bâtiments s'élevaient dans la cour intérieure, plus nombreux que l'aspect actuel ne le laissait supposer (fig. 10).

Du milieu de la courtine d'entrée (l'accès se trouve à l'ouest) fait nettement saillie la tour principale. Elle possède une arête; en France, ces tours sont dites 'à bec' ou 'à éperon'. Les châteaux de Philippe-Auguste en offrent la primeur, semble-t-il. Indubitablement, Henri de Gueldre était au courant des progrès de la poliorcétique. Ce château se rapproche, par conséquent, des exemples français déjà quadrangulaires en grand nombre. La forteresse doit avoir été construite vers 1265; le donjon sur la face occidentale fut ajouté vers 1280.<sup>23</sup>

Vers le milieu du XIII<sup>e</sup> siècle fut élevé dans le delta rhéno-mosan un château dont les fondations furent découvertes par hasard en août 1969 (fig. 11). L'examen fut effectué à la fin de 1970 et au début de 1971, comme fouille de sauvetage. Au lieu de se trouver sur le 'Bol' la curtis et le castrum des sires de Beusichem occupaient un site bas situé, au 'Wed' au sud de Vianen. La 'curtis' ou exploitation agricole est déjà citée au début du XIII<sup>e</sup> siècle; le 'castrum' y est adjoint au milieu du XIII<sup>e</sup> siècle. A cause du développement considérable de l'ensemble nous trouvons trois unités entourées d'un fossé. Nulle trace, hélas! des murs de refend: le niveau de circulation aura été trop abaissé pour combler les douves après la démolition du château. La carte de Jacques de Deventer (milieu du XVI<sup>e</sup> siècle) n'indique ni la vieille ferme ni

23 Simonis 1961.

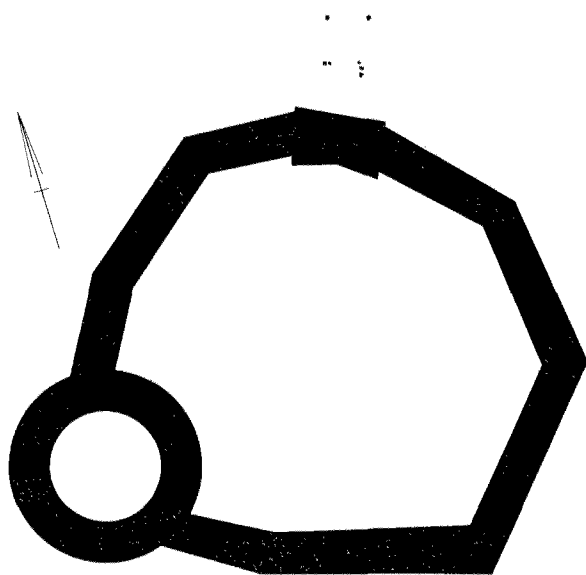


Fig. 11 Le château de Vianen d'après les fouilles; deuxième moitié du XIII<sup>e</sup> siècle

le castrum. Seule la plus septentrionale des trois composantes put d'ailleurs être en partie examinée.<sup>24</sup>

Le bâtiment principal donna encore le plus de renseignements. Une construction impressionnante, irrégulièrement octogonale d'un diamètre d'environ 30 m. Solides fondations de quelque 2,80 m. Il est donc possible que le chemin de ronde ait été épargné sur l'épaisseur du mur; mais, il est tout aussi possible qu'il ait été soutenu par une rangée d'arcades aveugles, derrière les créneaux. Il était interrompu par le donjon à cheval sur un angle du mur.

Au nord, un côté de l'octogone présentait un épaissement mural saillant vers le fossé: une indication pour y localiser l'entrée. Ces présomptions furent confirmées par la découverte d'une série de points d'appui pour les pontons menant au baille. Le fossé était ici exceptionnellement large: il mesurait quelque 21 m. Des traces de maçonnerie montraient clairement que la cour intérieure était en partie occupée par des constructions annexes. Comme le château n'a existé qu'une bonne centaine d'années, on n'a pu déceler la série des adaptations à l'évolution de la défense.

Le baille a été modifié de façon importante. Les maçonneries les plus anciennes avaient, semblait-il, des fondations assez hautes sur un lit de gravier de rivière noyé dans de l'argile. L'enceinte a été gravement endommagée et paraît avoir glissé, ou même s'être déplacée brusquement, probablement sous l'effet des inondations. On en fut finalement réduit à édifier un nouveau mur extérieur, fondé sur un grill de poutres, à son tour maintenu en place par des poteaux fichés en terre. La nature des bâtiments, malheureusement, reste indéfinissable.

Ce type de château est assez rare dans notre pays. Avec sa grosse tour ronde le château de Sterkenburg, près de Driebergen, reflète plus ou moins comment la maison de Vianen apparut à ses contemporains, malgré ses nombreuses transformations, même encore au XIX<sup>e</sup> siècle. Par son plan Vianen rappelle aussi Waardenburg, situé non loin de Zaltbommel, sur la rive nord du Waal.

La question se pose si notre XIII<sup>e</sup> siècle a prisé la tour d'habitation et si, dans ce domaine, l'examen archéologique a été aussi productif. Un représentant précoce de ce type est évidemment la maison Starrenburg, près d'Overschie (fig. 12 et 13). La fouille s'y déroula dans des circonstances fort défavorables à la fin de l'automne de 1941 et ne fut pas exemplaire. Le début de l'hiver et la menace de glissements de boues déjà en mouvement (on surélevait le terrain à des fins industrielles) invitèrent à la hâte, une nuisance pour l'examen. Les résultats furent publiés dans *Rotterdamsch Jaarboekje* (1943). Après tant d'années de fouilles, l'interprétation antérieure fournie des phénomènes n'est plus tout à fait soutenable. Mais, toutes les interprétations d'autrui ne sont pas pour autant acceptables. De plus, le progrès des recherches historiques a été si considérable – surtout grâce à C. Hoek – qu'il est impossible de les omettre en traitant de Starrenburg. Les fondations se trouvaient très près du niveau actuel: après peu de jours de fouilles apparut un rectangle de quelque 20 m. × 11 m. Un mur épais d'environ 1 m. divisait le rectangle en deux carrés, à peu près. L'épaisseur des murs extérieurs était d'environ 1,50 m. Aux angles et au milieu des longs côtés les courtines présentaient des contreforts qui se seront probablement continués jusqu'en haut.

Dans le mur nord-ouest est compris le conduit d'une latrine, dont l'orifice vers le fossé a été mis au jour à quelque 1,6 m. de profondeur. Une tour d'escalier, ruinée, occupe l'angle nord; comme la première marche a subsisté en grande partie il est aisé de se former une idée sur

24 Renaud 1971b.

25 Hoek 1971.

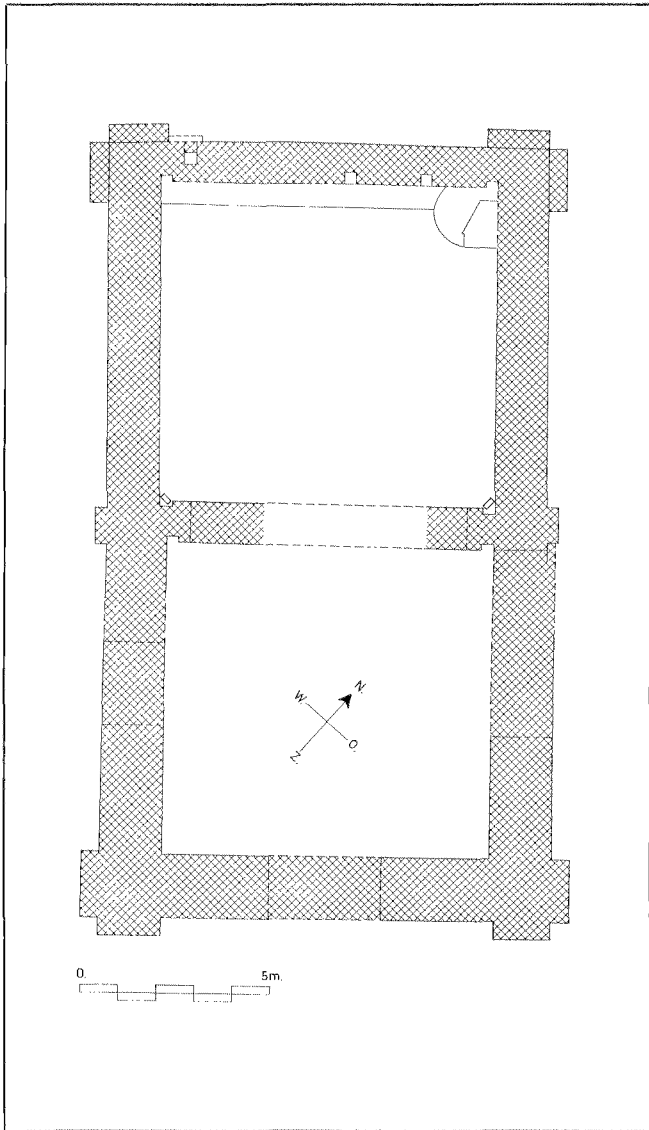


Fig. 12 Plan du château de Starrenburg d'après les fouilles; XIII<sup>e</sup> siècle

le niveau du pavement de la cave; il se trouve à 0,5 m. du niveau de départ.

Les parties nord et sud du rectangle sont différentes; les ressauts aux angles nord et ouest ne sont pas liés à la masse murale et ne remontent donc pas au projet originel, du moins pas jusqu'à la hauteur conservée de la maçonnerie. A l'est, le raccord à la partie sud se fait mal. Les travaux

auront donc commencé par le carré nord; le refend et les ressauts au milieu des longs côtés sont allés de pair.

Le carré sud a des fondations moins profondes; ses trois côtés présentent une niche plein cintre. La maçonnerie repose sur des poteaux en guise de fondation; d'environ 1 m. de long ils ont été fichés en terre fort et sont rapprochés. Quelques assises de pierre ont été conservées au-dessus de la semelle; ce qui permet de déterminer l'épaisseur des murs avec certitude; elle atteint 165 à 170 cm. Les ressauts d'angle dépassent de presque 50 cm.

La face antérieure nord-ouest émergeait apparemment des eaux des douves; ce qui n'est pas certain, pour la face postérieure. Une tranchée exploratrice perpendiculaire à la face postérieure révéla une encoche remplie de déchets de maçonnerie. Nous pouvons nous représenter un talus juxtamural naissant à la face antérieure. Sa hauteur reste une inconnue. En tenant compte du sommet des arcs de décharge le bord supérieur du talus doit s'être trouvé à environ 1 m. au-dessus du niveau de circulation au moment des fouilles, c'est-à-dire à environ 1,50 m. au-dessus du niveau de la cave ancienne. Cette légère dénivellation ne me permet pas de conclure à l'existence d'un château à motte. Aux yeux des contemporains du château d'ailleurs celui-ci semblait s'élever sur une hauteur. Les constructeurs ont sûrement compté avec les crues hivernales importantes et avec le niveau de la menue digue de Starrenburg, qui protégeait la maison; voilà l'explication de ce talus.

Une série de remarques intéressantes nous ramènent au 'carré' nord. La face antérieure est bâtie sur poteaux; c'est qu'on se méfiait de l'argile à cette époque. Suivant Muller d'ailleurs la création de polders ne démarre ici que tardivement.<sup>26</sup> L'escalier en colimaçon possède des fondations moins profondes que le mur extérieur auquel il s'appuie; une couture indiscutable démontre que cet escalier n'a pas été élevé en même temps que le mur. C'était moins net pour la face nord-est et là on peut supposer un seul temps architectural.

Dans les deux coins sud surgissait le premier claveau d'un arc naissant. Même phénomène dans le coin près de l'escalier. Dans le coin ouest les destructions étaient trop importantes pour pouvoir confirmer cet élément.

Les deux coins intérieurs nord du 'carré' sud offrent des formes architecturales identiques. Cela indique clairement qu'avec le 'carré' nord ces parties ressortent de l'exécution d'un seul et même plan de construction. Cette vou-

<sup>26</sup> Muller 1914.

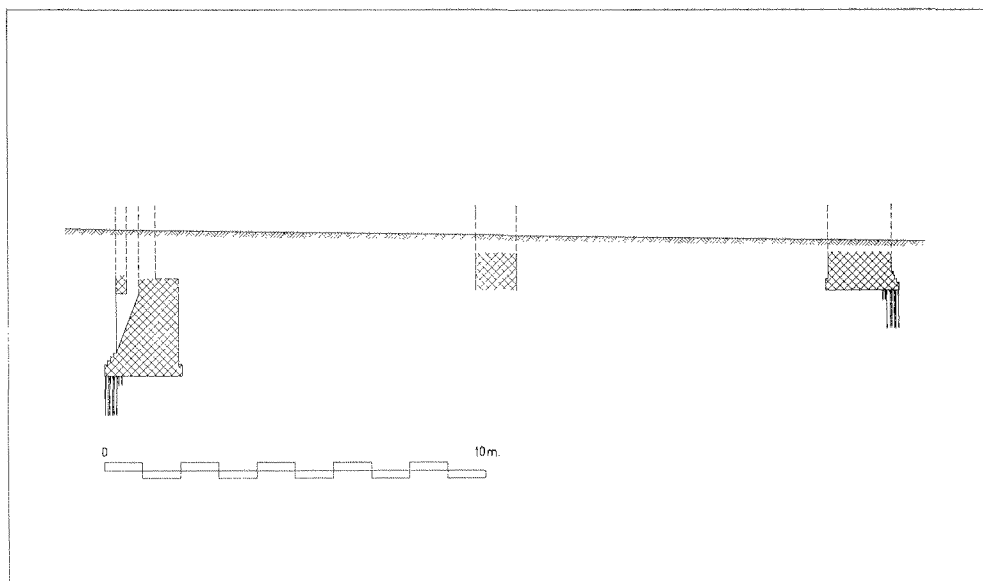


Fig. 13 Coupe du château de Starrenburg

taison diffère de celle des grands donjons, qui possèdent une seule longue voûte cintrée en berceau.

Sur la forme de la voûte il est malaisé de conclure. Cette naissance laisse bien supposer une voûte d'ogives; mais une voûte en voile n'est pas exclue, non plus. L'emplacement de l'escalier fait poser la question si cette voûte a bien été exécutée; sa construction, en tout cas, n'aura pas été facile. Il semble que, dès le début, on ait misé sur deux tableaux; les ressauts d'angle aussi, comme il a été dit, sont des ajoutés.

Quel a été l'aspect de la maison Starrenburg? Il est probable que les ressauts muraux se terminaient par des échauguettes; elles permettaient le flanquement. Les courtines, entre les échauguettes, étaient couronnées de créneaux; le toit s'enfonçait rendant possible un chemin de ronde. Au-dessus de l'entrée une bretèche n'est pas exclue. Tout ceci par analogie avec des constructions encore existantes en France et en Flandre.<sup>27</sup> Dans notre pays, aucun donjon du XIII<sup>e</sup> siècle n'a conservé les éléments susdits.

La datation de Starrenburg s'annonce difficile. Ce château a, toutefois, été certainement construit au XIII<sup>e</sup> siècle. Le nom de la maison est incontestablement en rapport avec la famille de Voorschoten, qui portait une

étoile à huit pointes dans ses armes. La maison est d'ailleurs située dans le territoire administré par les Voorschoten. Suivant le registre des fiefs sous le comte Florent V Oger de Voorschoten est feudataire pour le 'ambacht' (seigneurie), la maison et pour douze journaux de terres; son père détenait déjà ces biens du comte. Son père s'appelait Gilles de Voorschoten; il intervient dans une charte de 1247 et dans une de 1266. Il était peut-être fils de cet Ogerus Dapifer cité en 1212. Quoi qu'il en soit, une datation dans la première moitié du XIII<sup>e</sup> siècle ne me semble pas trop hasardeuse.

Au milieu du XIII<sup>e</sup> siècle fut construit à Heenvliet une tour d'habitation pour un des fils de Thierry, seigneur de Voorne (fig. 14); elle fut à l'origine de tout un complexe architectural, qui fut détruit en 1572 par les Gueux de Mer; la vieille tour d'habitation subsista et se mua en une imposante ruine presque entièrement cachée, au début de ce siècle par une abondante végétation où nichaient les hérons. C'est là peut-être l'origine du nom de 'Ravasteyn'. Après la seconde guerre mondiale le propriétaire arracha les broussailles avant de passer à l'examen et à la consolidation. Durant l'automne de 1959 fut déblayé l'amas de débris qui se trouvait devant le donjon; surgit ainsi une basse-cour emmurée dont deux côtés étaient pourvus de bâtiments d'habitation. On a pu déterminer qu'au début le donjon rectangulaire était isolé. Vers 1350

<sup>27</sup> Châtelain 1973.

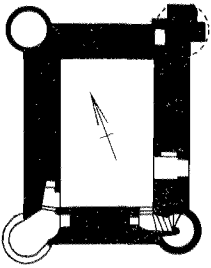


Fig. 14 Le donjon de Heenvliet; deuxième moitié du XIII<sup>e</sup> siècle

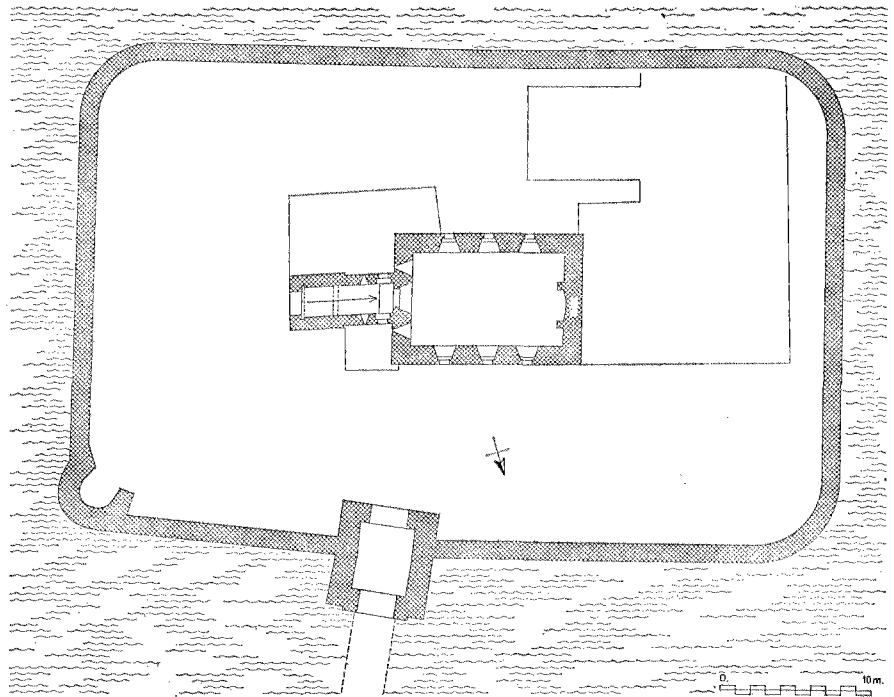


Fig. 15 Le château primitif de Haamstede; XIII<sup>e</sup> siècle

seulement une basse-cour précéda la face d'accès. Les mesures intérieures de la tour sont respectivement 9,50 m. et 6 m., les murs ont une épaisseur d'à peu près 2,60 m. Aux quatre angles du bâtiment font saillie quatre tours circulaires; celle située au sud-est fait office de tourelle d'escalier. L'entrée assez exiguë disposait d'une herse, élément rarement présent dans nos tours d'habitation. Il n'y a pas de traces d'un pont-levis.

Hugues de Voorne est cité dans une charte de 1254; il passe pour le premier seigneur de Heenvliet. Son fils, mort sans descendance directe avant 1287, s'appelle lui-même Thierry de Heenvliet. Un de ces deux seigneurs aura probablement élevé le donjon, qui se place par conséquent vers le milieu du XIII<sup>e</sup> siècle.<sup>28</sup>

A Heenvliet le donjon était baigné par l'eau des douves. Nous trouvons par contre un donjon isolé à l'origine dans une cour emmurée au sein du complexe castral actuel de Haamstede (fig. 15). Cet exemple appartient encore au XIII<sup>e</sup> siècle. L'élément distinctif de cette tour est sa cage

d'escalier; elle flanque un côté et donne accès à l'étage résidentiel situé au-dessus de la cave. Une herse bloquait l'entrée extérieure de cette cage. Des profils ont montré que la tour, dès son origine, se dressait isolée sur l'emplacement castral. Il est tout aussi remarquable que le donjon, suivant en cela des normes étrangères, était accessible par le petit donjon.<sup>29</sup> Typologiquement Haamstede, comme Oostvoorne, appartient au groupe précoce des donjons isolés. En se fondant sur sa forme rectangulaire, on le rangerait volontiers à côté du donjon de Heenvliet. L'arcature gothique du bâtiment d'entrée nous oblige à renoncer à une datation trop ancienne: il s'agit vraisemblablement d'une construction de la seconde moitié du XIII<sup>e</sup> siècle. Le manque de détails architecturaux ne permet pas de préciser les influences éventuelles. Alors que le gothique scaldien a clairement inspiré l'empattement des tours de Heenvliet, le château de Haamstede ne fournit aucune indication correspondante.

Vers 1265 Aleydis de Hainaut, régente depuis de longues

28 Renaud 1965; Bos-de Korte 1967.

29 Van Straalen/Renaud 1971.



années au nom du jeune Florent v, fit élever un château – la maison de Riviere – à la périphérie de ce qui sera, plus tard, la ville de Schiedam (fig. 16). La date exacte du début des travaux n'est pas connue. Récemment encore C. Hoek, dans un article bien documenté, a plaidé pour une datation postérieure à celle habituellement acceptée.<sup>30</sup> Dans ce château des influences méridionales, c'est-à-dire françaises devaient logiquement s'affirmer. Il importait donc grandement de savoir si l'on avait affaire, ici, à un plan rectangulaire.

Le château fut détruit vers 1572; une grosse tour carrée ruinée était toujours là. Vers la fin du siècle dernier un bourgmestre quelque peu antiquaire faisait découvrir et conserver un pan de muraille. Le plan, que l'on dessina alors, suggère bien un projet rectangulaire, non dépourvu d'un point d'interrogation du reste! Des circonstances heureuses, en 1947–1948, conduisirent à un examen complet.<sup>31</sup>

Un complexe de bâtiments assez bizarre sortit de terre. Un lourd donjon presque carré d'environ 12 m. de côté et de quelque 3 m. d'épaisseur, au niveau de la cave, dominait un rectangle de 20 m. × 17,50 m. Un fossé d'environ 15 m. séparait le bâtiment principal d'un bailli quadrangulaire très étendu, dont on a encore retrouvé une partie de la courtine orientale au cours de l'été 1974. Le mur occidental, tourné vers la ville, se révélait entièrement médiéval, alors que le mur oriental avait été reconstruit au xve siècle.

A la pointe sud-ouest se dressait une tour d'angle carrée et saillante; des contreforts appliqués contre la face interne de la courtine occidentale font supposer un chemin de ronde sur une rangée d'arcades aveugles, du côté de la ville. A l'ouest ne s'élevait, donc, aucun local habitable. Revenons au bâtiment principal; la fouille, hélas!, ne nous a pas fourni, dans son plan, une image complète du projet du troisième quart du XIII<sup>e</sup> siècle. Une aile nord s'accola au donjon vers 1350 seulement. Il paraît, en effet, que l'ensemble n'a pas été terminé du vivant d'Aleydis de Hainaut. Elle décède en 1284 et son fils Florent, apparemment, ne s'est guère soucié de Schiedam. A cette même date, d'ailleurs, le château de Riviere doit avoir été en possession du comte de Hollande Florent v; celui-ci le donna en fief à Florent d'Avesnes, son cousin.

Il semble bien qu'Aleydis a envisagé, au début, la construction d'une puissante tour isolée. L'examen du château de Riviere ne peut, par conséquent, nous renseigner sur le moment où le plan circulaire a été remplacé par le

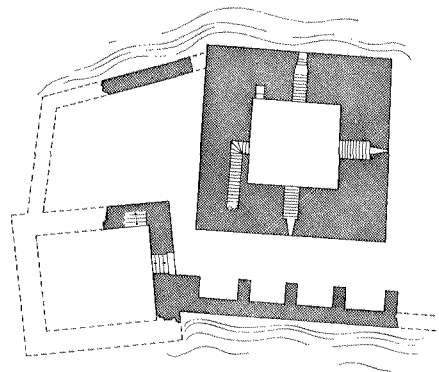


Fig. 16 Le château Riviere à Schiedam; c. 1265

plan rectangulaire. Puisque nous savons que le manoir de Nesse, près de Linschoten, a encore été élevée sur plan polygonal au premier quart de XIV<sup>e</sup> siècle, nous devons conclure que les deux plans castraux ont coexisté durant plus de cinquante ans, avant que le rectangle ne l'emporte définitivement.

Il n'est pas ici de propos d'approfondir tous les problèmes posés par le plan du château de Riviere. Certes, ce plan nous apparaît rectangulaire; mais c'est là le résultat de toute une évolution qui a commencé à une époque où le plan circulaire était complètement abandonné.

Avec l'annexion de la Frise Occidentale par le comte de Hollande Florent v, en 1282, commence une période d'une grande activité architecturale: les châteaux de Wijdenes, Medemblik, Middelburg, Nieuwburg et Nuwendoren doivent assurer la paix au territoire récemment acquis. La réalisation d'un programme aussi étendu exigeait évidemment de nombreuses années. Le chroniqueur de cour Melis Stoke raconte qu'à la mort de Florent v en 1296 le château de Nuwendoren, par exemple, n'est pas terminé. A la série des forteresses, élevées par le comte Florent, il faut encore ajouter le château de Muiden.

Le château de Wijdenes n'a pas encore été retrouvé; son plan demeure donc inconnu. Les fouilles et les anciennes représentations des autres châteaux fournissent suffisam-

30 Hoek 1974, 62 et suiv.

31 Renaud 1955.

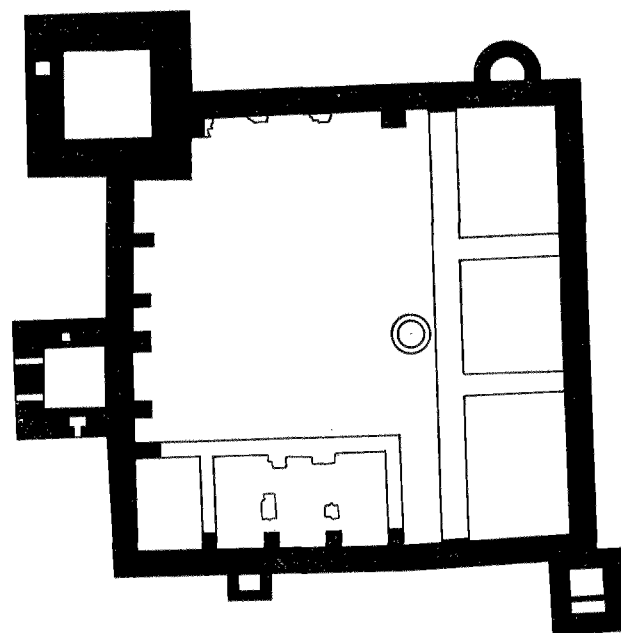
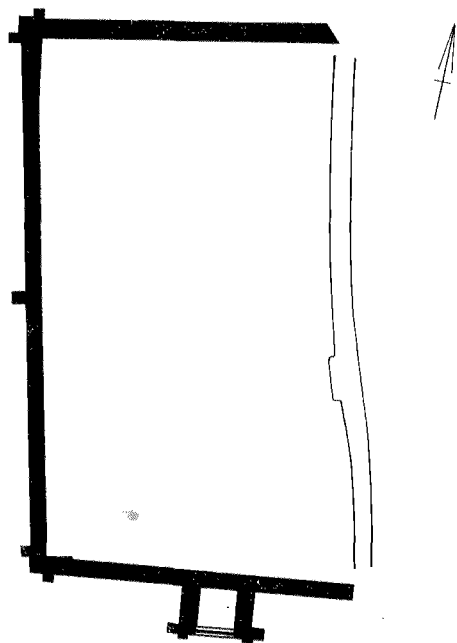


Fig. 17 Le château Nuwendoren d'après les fouilles; on a consolidé les fondations; fin du XIII<sup>e</sup> siècle

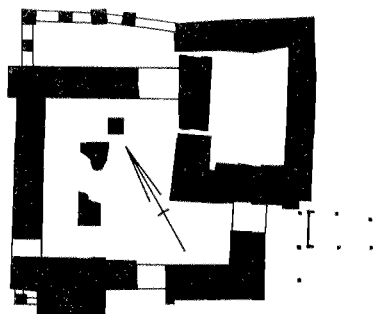


Fig. 18 Le château Middelburg, près d'Alkmaar, d'après les fouilles; fin du XIII<sup>e</sup> siècle

ment de renseignements pour se faire une idée sur leur forme, à l'époque de Florent v. Le cas de Nieuwburg soulève, cependant, quelques doutes. Son examen, en effet, a révélé que ses fondations se composent de pierres de réemploi et dès lors on peut se demander s'il s'agit bien là du plan des architectes de Florent v. Nous y reviendrons plus loin.

Les autres châteaux se divisent en deux groupes. Dans le premier se rangent Middelburg (fig. 18) et Nuwendoren (fig. 17). Leurs dimensions diffèrent très fort; mais, ils ont un critère commun: une tour qui, par l'épaisseur de ses murailles, se distingue des autres et qui, par conséquent, doit être assimilée à un donjon. Au Middelburg, il occupe l'angle droit de l'ensemble et il protège ainsi l'entrée. Nuwendoren présente une lourde tour-porche, alors que le donjon se trouve à l'angle gauche de la façade.

Les plans de Muiden (fig. 19) et de Medemblik (fig. 20) montrent clairement l'absence d'une tour dominante. Ces châteaux ne disposent pas d'un véritable donjon.

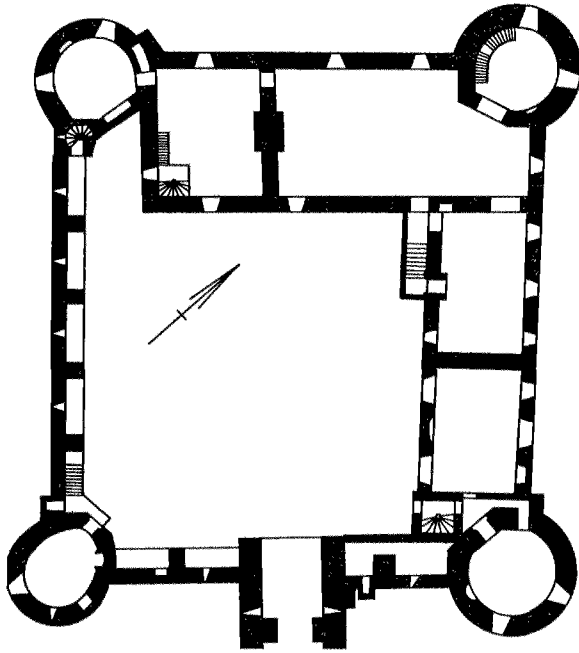
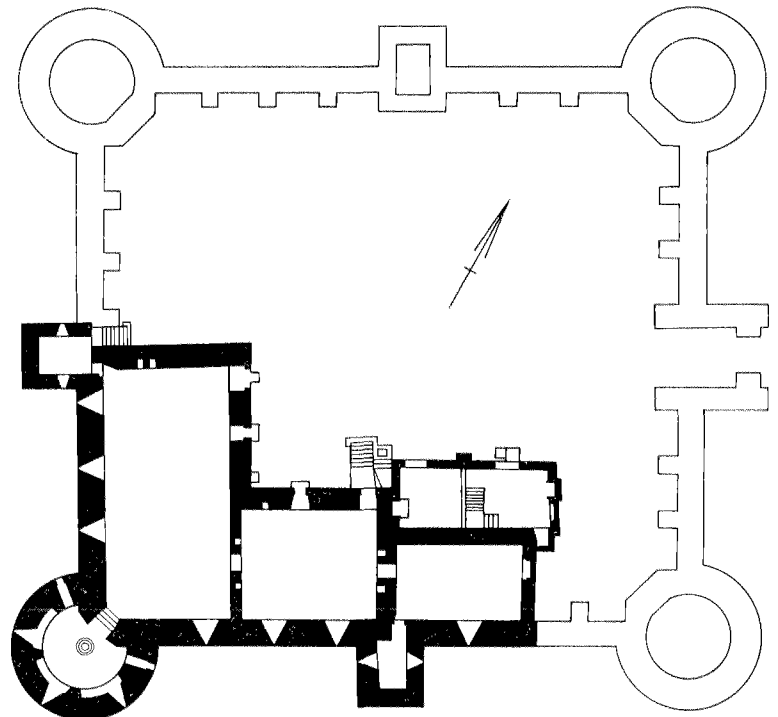


Fig. 19 Le château de Muiden; les fondations remontent à la fin du xiii<sup>e</sup> siècle

A Muiden, la tour d'angle relativement isolée, qui s'élève à gauche, en arrière, pourrait jouer ce rôle, à la rigueur; ce n'est pas le cas à Medemblik. Il est vrai qu'on ne connaît pas le plan exact et complet de ce château. Mais ses représentations datant d'avant la démolition partielle ne montrent aucune trace de donjon. La valeur défensive de Medemblik réside dans ses tours en saillie plantées au milieu des côtés; elles assurent un flanquement optimal aux sections intermédiaires des courtines.

Nieuwburg est bâti sur un plan différent (fig. 21). Il y a bien une lourde tour-porche au milieu de la façade; mais il n'existe pas de tours d'angle en saillie. Le donjon se trouve ici au milieu de la façade postérieure; il se dégage

Fig. 20 Le château de Medemblik; fin du xiii<sup>e</sup> siècle



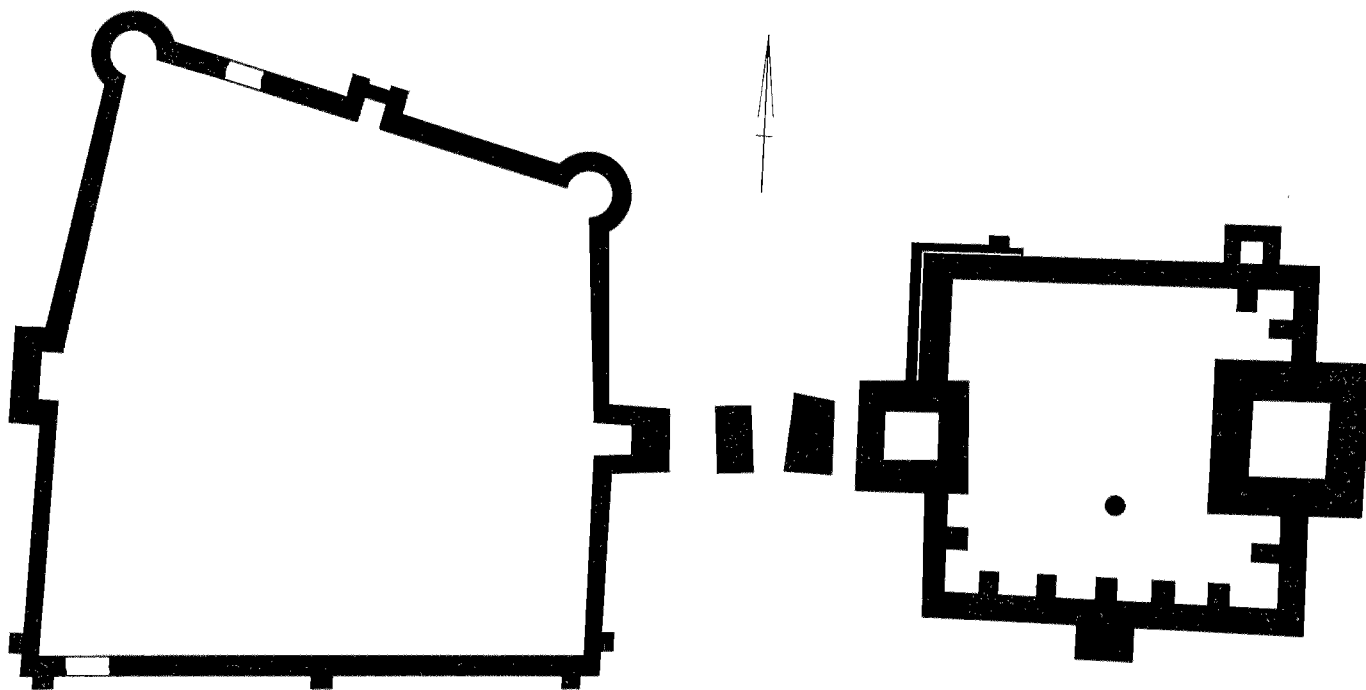


Fig. 21 Le château Nieuwburg, près d'Alkmaar, d'après les fouilles; fin du XIII<sup>e</sup> siècle

d'environ 3 m. de l'alignement de la courtine: une disposition assez inattendue, qui ne se compare à nulle autre, aux environs de 1300. L'examen n'a, d'ailleurs, fourni aucune indication au sujet de modifications fondamentales éventuelles du projet originel.<sup>32</sup>

A travers les châteaux du comte Florent v en Frise Occidentale le plan castral rectangulaire, suivant la 'formule de Philippe-Auguste', s'est donc indiscutablement imposé. Cela n'empêche que, çà et là, même après 1300, on ait encore élevé des châteaux sur plan polygo-

nal, surtout en présence d'un noyau plus ancien, comme à Geysteren. Autour du château circulaire s'élabora ici, au cours du Moyen Age, un complexe polygonal, qui posa tant de questions avant l'examen. La plupart des cas, pour lesquels nous ne voyons pas encore de solution, pourraient bien être semblables à celui de Geysteren. Nos connaissances sur les nouveaux châteaux édifiés, durant la première moitié du XIV<sup>e</sup> siècle, démontrent à l'évidence que l'avenir appartenait au château sur plan rectangulaire.

32 Renaud 1957-8; 1970; 1971a.

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# Dendrochronological Investigations of Recent Oak (*Quercus* sp.) in The Netherlands

figs. 1-4 (fig. 3 at end of book)

Dendrochronology is the study of the patterns in the increase in thickness of trees as reflected in the fluctuations in the width of the annual rings. With the knowledge of these patterns it is possible to date the wood and to determine the region where the wood had grown. In an earlier publication<sup>1</sup> I dealt with the principles and history of the method, and commented upon the little known work undertaken in 1880-81 by the Groningen astronomer J.C. Kapteyn (1851-1922).

After A.E. Douglass had evolved this method in North America in the nineteen twenties and thirties, Bruno Huber began in the forties to employ the procedure on west-European material. For a recent publication on the work done in western Europe (predominantly German) and a bibliography, I refer to the report of the Hamburg Symposium, edited by Bauch, Eckstein and Liese.<sup>2</sup>

Because oak was used in western Europe especially as building material and (supporting) material for works of art, research has been concentrated mainly on it, although other woods have also been studied.

For this reason the ROB initiated dendrochronological research into recent oak. The purpose was to examine to what extent oak from various habitats in the Netherlands formed a dendrochronological homogeneous group and the relation of the Dutch material to West-German oak chronology. Moreover, we wanted to learn more about the method itself for since Kapteyn's time every attempt at research on the subject in the Netherlands had ended in deadlock,<sup>3</sup> and, in consequence, there was no know-how present to fall back on.

In the Netherlands the oak's natural terrain is provided by

1 Brongers 1968.

2 Bauch/Eckstein/Liese 1970.

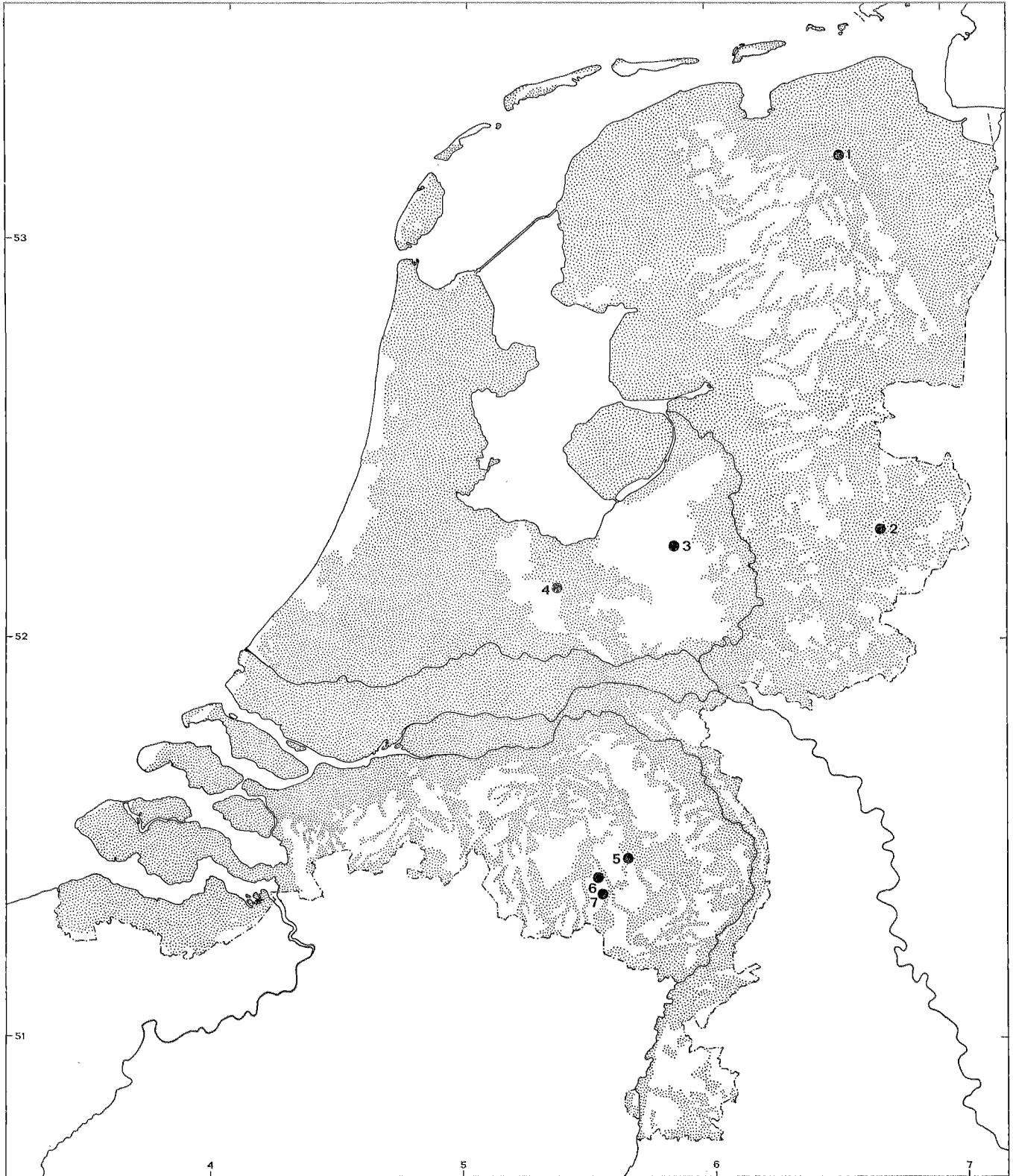
3 I wish to draw attention to the work done by J. Walenkamp and L.G.M. Baas Becking, Leiden, on samples collected during the excavation of Roman castella at Valkenburg by Professor

pleistocene sandy soils and the dunes in the coastal area; these are shown in fig. 1 by white. Slices of oak were taken from each of these areas. Several samples of each subgroup were collected. Their number and degree of overlap are shown in fig. 2.

In this way a N-S profile (Groningen, Hoog-Soeren, east-North Brabant) and a W-E profile (Amersfoort, Hoog-Soeren, Twente) have been assembled (fig. 1). For obvious reasons, an extra large quantity of samples was collected in the neighbourhood of Amersfoort; the distribution of the samples of this group can be found in fig. 3. The width of the rings of each slice, which was sawn off as near the stump as possible, was measured along several *radii*. The readings were taken at 0.05 mm. The average value of the readings of each annual ring was calculated and rounded off to 0.1 mm.

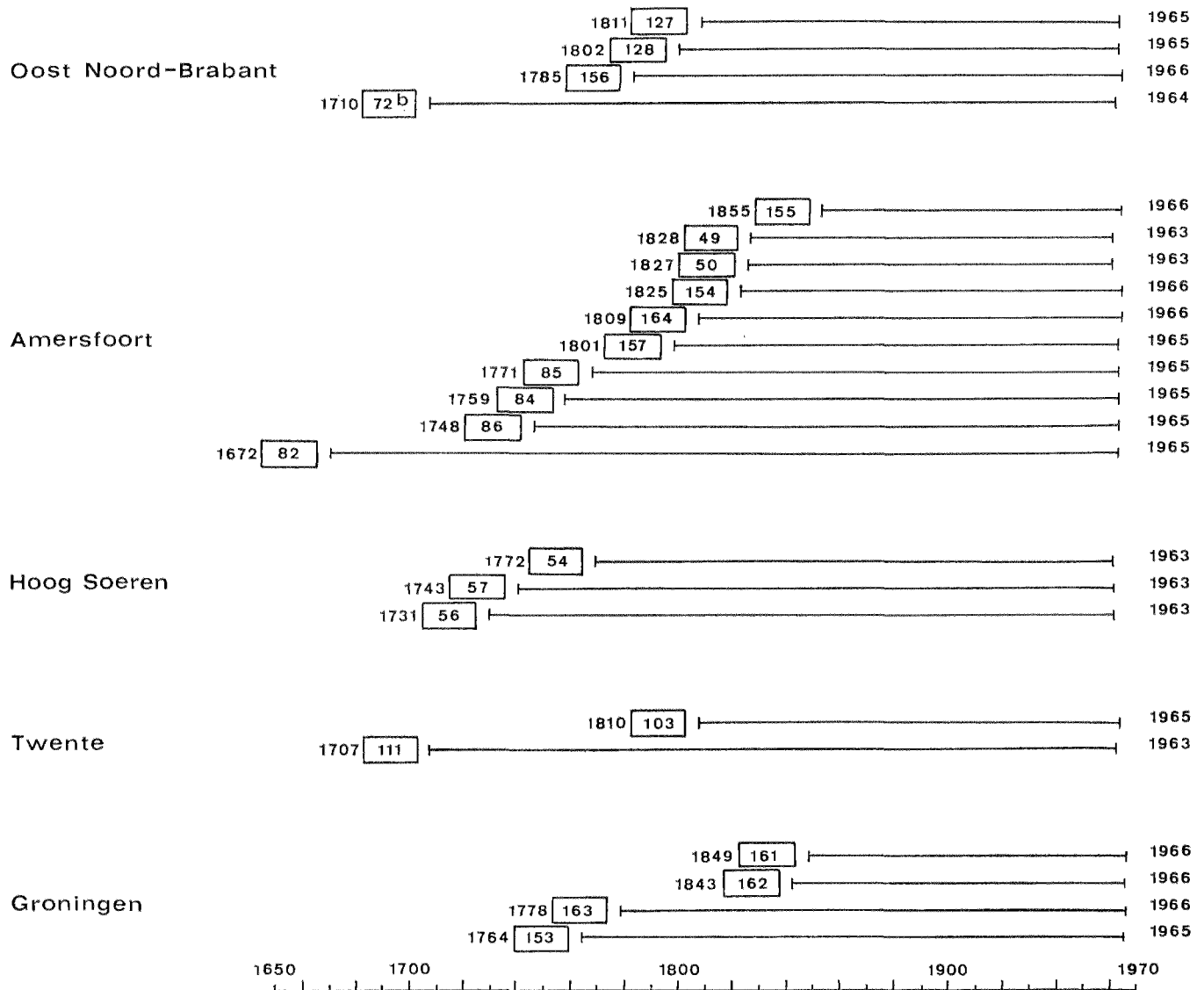
These values form the basis of the graphs presented here. The growth year of the last ring was always known. No difference was made between summer oak (*Quercus robur* L.) and winter oak (*Q. petraea* Liebl.; formerly *Q. sessiliflora*), as no fruit or leaves were on the trees when the samples were taken. The investigations have shown that recent Dutch oaks are rarely older than three hundred years. Most samples from trees older than two hundred years contained only 200 rings, and their centres were usually rotted away. Only two samples were found with a greater number of rings: 294 (sample 82) and 255 (sample 72). The centre of sample 82 was - although measurable - severely damaged; sample 72 was in perfect condition.

The result of the investigation is shown in fig. 4: the time A.E. van Giffen (Walenkamp/Baas Becking 1940-4). During the Second World War the samples were lost because of the fuel shortage. This was also the fate of J.C. Kapteyn's samples in the Botanical Laboratory, Groningen.



◁ Fig. 1 1. Groningen; 2. Oele/Twickel; 3. Hoog Soeren; 4. Amersfoort; 5. Helmond; 6. Geldrop; 7. Heeze; white area within the boundary: natural habitat of *Quercus* sp.

Fig. 2 Summary of the samples which contributed to this investigation; the figures within the rectangles are sample numbers





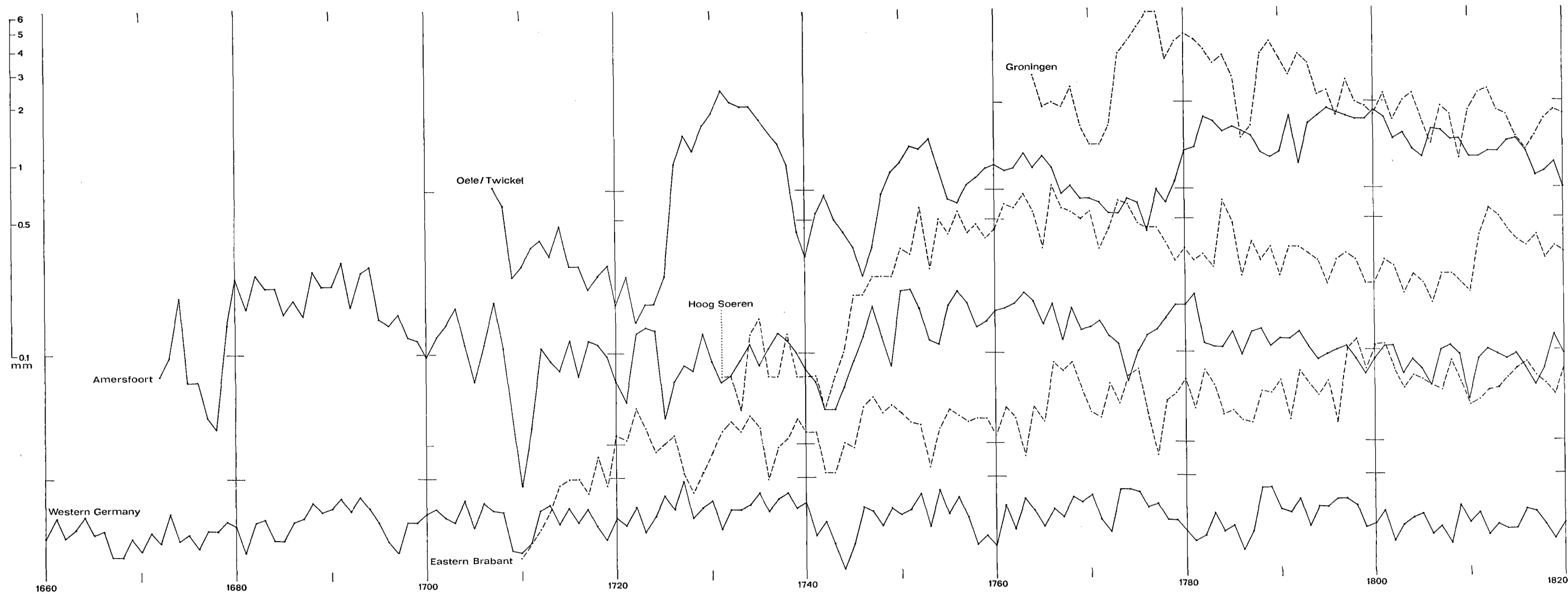


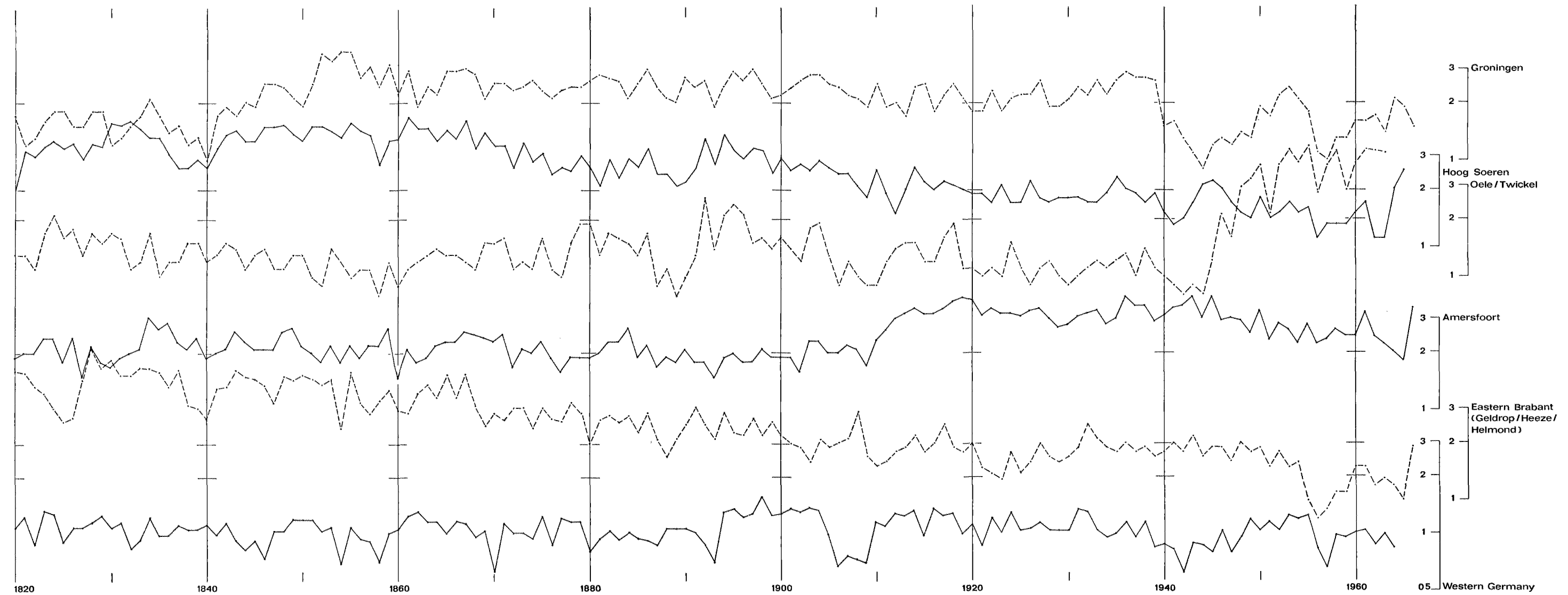
Fig. 4 Time axis (abscissa): linear; tree-ring widths (ordinate): logarithmic

axis (abscissa) is linear, while the annual-ring width axis (ordinate) is logarithmic. This is the common method of presentation in dendrochronology. The ordinates represent the mean values of corresponding year-ring widths of individual trees within one group growing in one habitat. The table below relates the *Gleichläufigkeitswerten*<sup>4</sup> of the local Dutch curves to the West-German master curve.<sup>5</sup>

Groningen	63.0%
Hoog-Soeren	73.0%
Twente	59.5%
Amersfoort	68.1%
East-North Brabant	59.9%
weighted average over the five groups	65.1%

<sup>4</sup> This is the complementary value of the *Gegenläufigkeitswert* of Huber (Huber 1943).

<sup>5</sup> Hollstein 1965.



The group which correlates best with the West-German material is that of Hoog-Soeren, where, probably because of the altitude of the growing-site's relation to the water-table, ground-water has little influence. The increase in thickness here is principally determined by the meteorological conditions generally prevailing in western Europe. It would appear that a great part of Dutch wood can be dated dendrochronologically with the assistance of West-German chronology – a piece of good luck for Dutch archaeologists. A disadvantage is, however, that it is not

easy in the Netherlands to distinguish imported wood from indigenous wood.

In a future publication I hope to deal with some recent oak curves from the west of the Netherlands (Breda, The Hague, and Haarlem).

Description of the samples:

EAST NORTH BRABANT

127 and 128: from an avenue of the castle garden in

Geldrop, mutual distance of the trees *c.* 5 m. *Gleichläufigkeitswert* from 127 with regard to 128: 88.2%.  
156: from Heeze (in front of Kapelstraat 35).  
72b: from Helmond (Warandelaan).

AMERSFOORT

155: from Maarn ('t Stort House).  
49 and 50: from Amersfoort (in front of Police Station, Stadsring) Mutual *Gleichläufigkeitswert*: 68.1%  
154: from Amersfoort (Woesteigerweg near Bathhouse).  
164: from Amersfoort (Borneoplein – corner Leusderweg).  
157: from Leusden (farm house 't Veentje', Treekerweg).  
85, 84 and 86: from Woudenberg (country-estate Geeresteijn).  
*Gleichläufigkeitswert*:  
85 and 86: 74.1%  
84 and 86: 72.0%  
84 and 85: 70.5%

6 I thank Mrs E.N.N. Walma van der Molen-van Selm, Mrs B.J. Daamen-Wiering, and Mr M. Wassen for their assistance by measuring and calculating. The preparations of samples were safe in the keeping of Mr G.J. Rombout. Finally, I wish to thank the Dutch Organisation for the Advancement

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Bauch, J./D. Eckstein/W. Liese 1970: *Dendrochronologie in Norddeutschland an Objekten der Archäologie, Architektur- und Kunstgeschichte*, Hamburg (Mitteilungen der Bundesforschungsanstalt für Forst- und Holzwirtschaft Reinbeck bei Hamburg, 77).

Brongers, J.A., 1968: Dendrochronologie, *Spiegel historiael* 3, 439-41.

82: from the front garden of the palace of H.M. Queen Juliana, Soestdijk.

HOOG-SOEREN

54, 57 and 56: from Hoog-Soeren (Crown Lands).  
*Gleichläufigkeitswert*:  
57 and 56: 79.0%  
57 and 54: 72.1%

TWENTE

103: from Oele (isolated growths)  
111: from the wood near Castle Twickel

GRONINGEN

161 and 162: from Groningen (Friese Straatweg, outside Noord Bergen). *Gleichläufigkeitswert* 161 and 162: 71.0%  
163: from Groningen (Groenestein, east side of the Hondsrug).  
153: from Groningen (Sterrebos).<sup>6</sup>

of Pure Research (ZWO) for the money grant it gave to this investigation during the period 1 March 1966 until 1 February 1968.

I cordially thank Dr J. Bauch and Dr D. Eckstein, Hamburg. Their good advice has contributed to the success of the research.

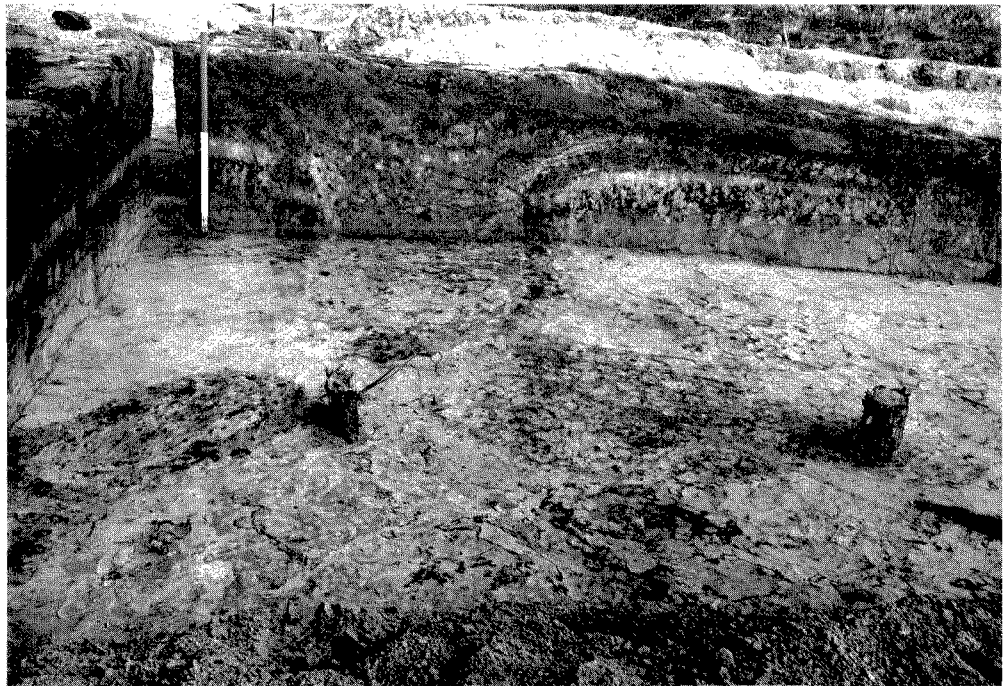
Hollstein, E., 1965: Jahrringchronologische Datierung von Eichenhölzern ohne Waldkante, *Bf* 165, 12-27.

Huber, B., 1943: Über die Sicherheit jahrringchronologischer Datierung, *Holz als Roh- und Werkstoff* 6, 263-8.

Walenkamp, J./L.G.M. Baas Becking 1940-4: Bijlage X: Rapport aangaande de studie van hout afkomstig uit opgravingen, *JVT* 25-8, 276-80.



1 Gammelke: Survey of the southwest sector of Tumulus II



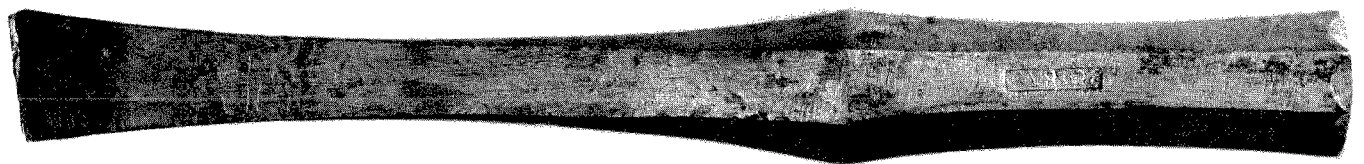
2 Gammelke: The grave in the eastern focus of Tumulus II with sunken areas and removed soil



1 Bunnik-Vechten: Wooden object resembling a chessman; Roman



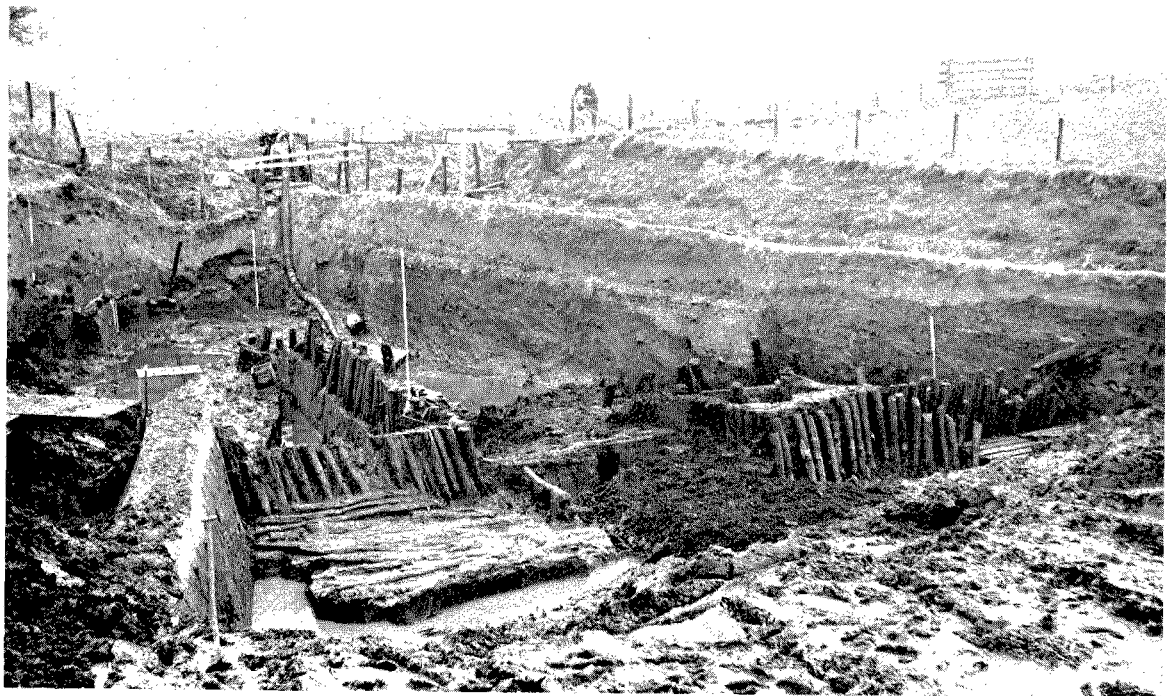
2 Bunnik-Vechten: Stamp SVRIOR, impressed four times on the iron chisel no. 3



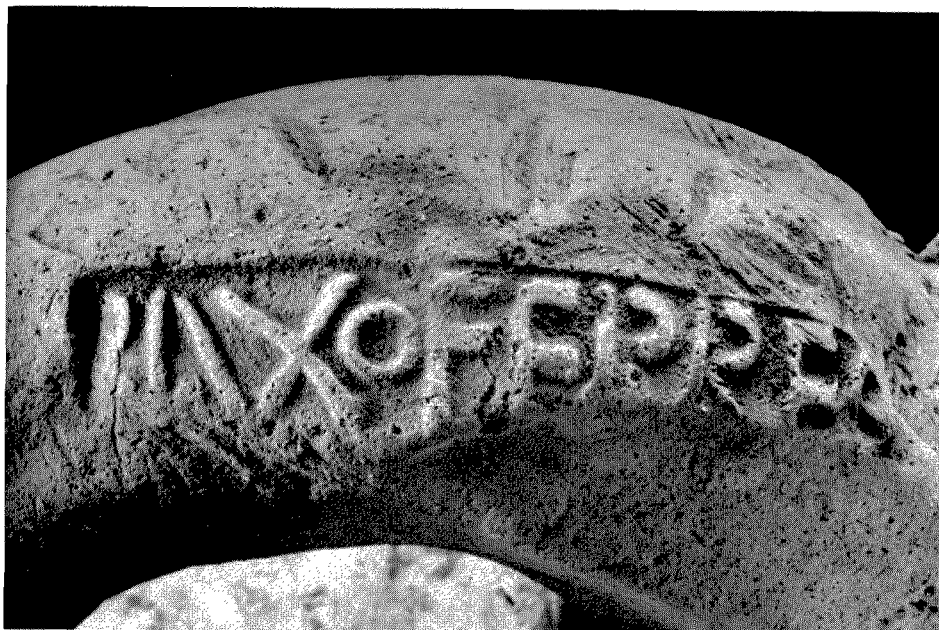
3 Bunnik-Vechten: Iron chisel with stamp SVRIOR; Roman



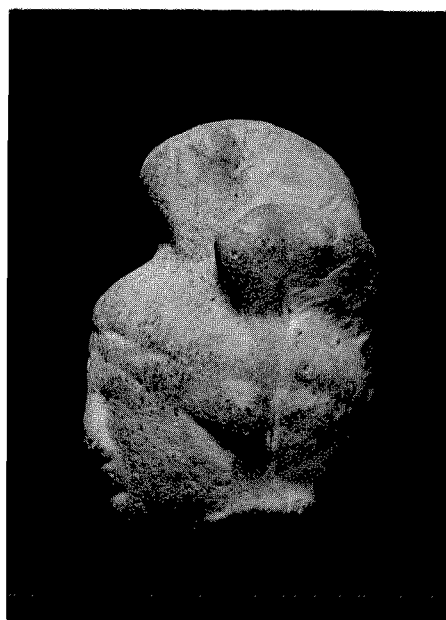
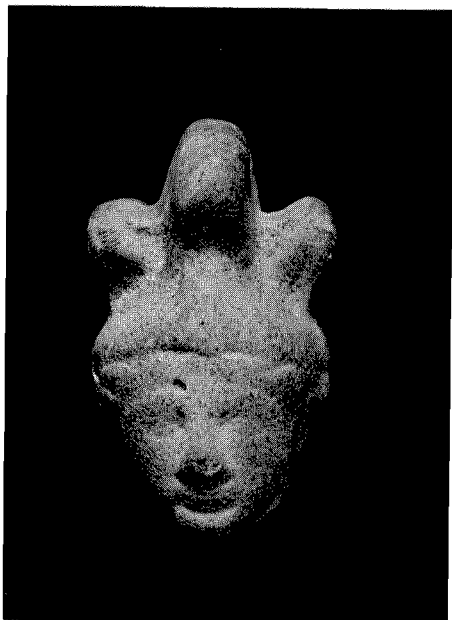
1 Nijmegen-Waalkade: North face of Roman wall in trench no. 15. The remains of a niche can be seen in its upper part to the left



2 Bunnik-Vechten: Timber structures in the old Rhine bed northeast of the *castellum* (seen from the north)

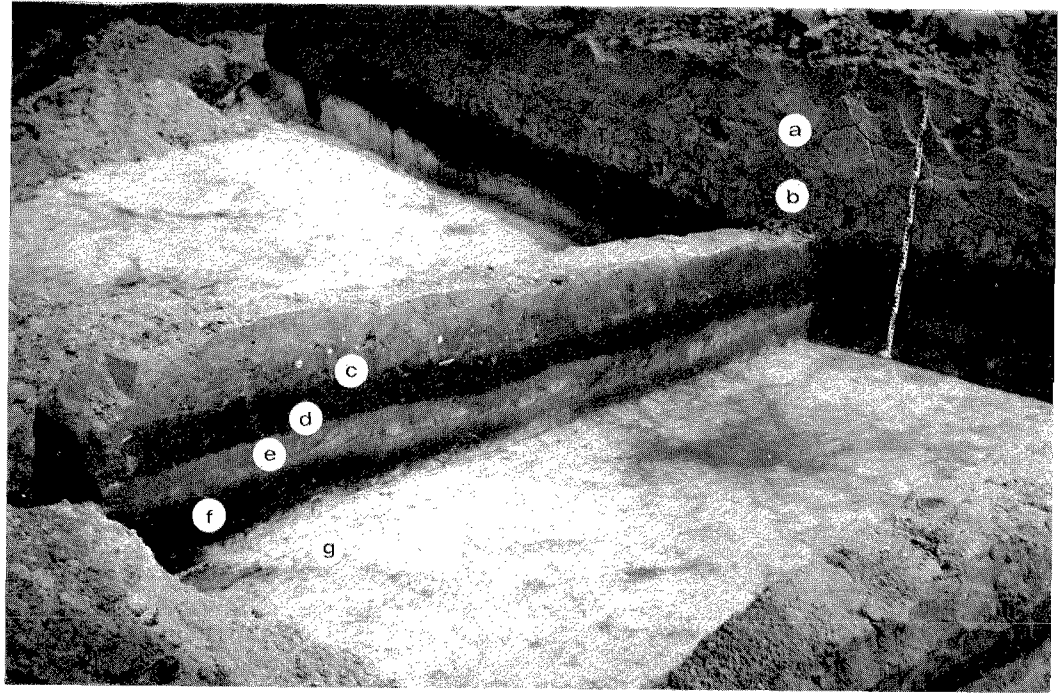


1 Aardenburg: handle of amphora with stamp SAXO FERREO (CIL XIII, 10002, 46): SAXO FERREUM, place in Spain; Municipal Museum Aardenburg, inv. no. 1962-Ovl. 116



2 Ellewoutsdijk (South Beveland): head of terracotta statuette (Minerva?), found in the Westerschelde; height 5.5 cm

1 Haamstede, Brabers: soil profile in a beach ramp covered by successive layers of younger deposits with a distinct stratigraphy of very divergent periods of culture; from top to bottom: *a* Middle Ages (10th–13th century), traces of habitation; *b* Dunkirk II transgression (clay); *c* Roman times and Iron Age, level of habitation; *d* Thin layer of peat (subboreal), becoming a thick compressed bed of peat in the sandflats; *e* Drift-sand, dunesand; *f* Neolithic layer; *g* Beach ramp, sand with eroded shell-fragments (predominantly *Cardium*); excavation ROB 1959, in cooperation with the Geological Service in Haarlem



2 Ouddorp, Goedereede, polder Oude Oostdijk: bank stabilization of heavy piles along a broad creek or canal from Roman times; excavation ROB 1958–9

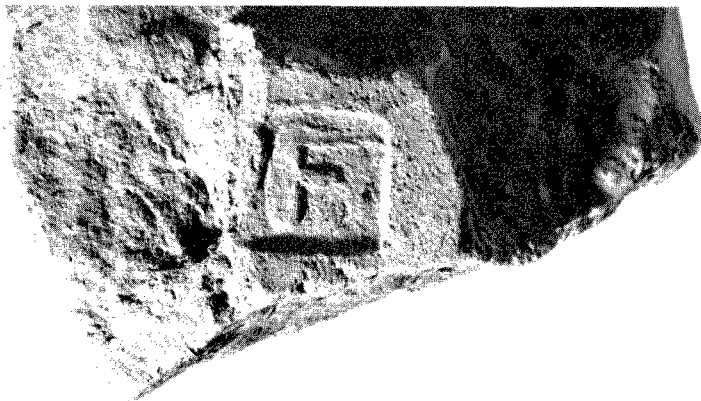




1 Ouddorp, Goedereede, Oude Oostdijkpolder: native-Roman pottery from England: grey ware (height 17.5 cm) decorated with glazed lines; excavation ROB 1958-9



2 Ouddorp, Goedereede, Oude Oostdijkpolder: fragment of a military roof-tile stamp [EX GE]R INF (retrograde); excavation ROB 1958-9



3 Ouddorp, Goedereede, Oude Oostdijkpolder: fragment of a military roof-tile stamp [CGP]F?; excavation ROB 1958-9



4 Ouddorp, Goedereede, Oude Oostdijkpolder: military inscription [C]ONT CASSI on the outside of a mortar; excavation ROB 1959-9



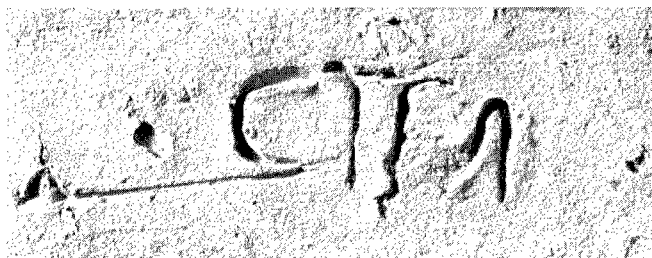
1 Aardenburg: detail of pile foundations under a Roman building from the late second or early third century (*cf.* fig. 4a); excavation ROB 1961-3



2 Aardenburg: foundation of a small Celtic-Roman temple (5.5 × 5.5 m): dating late second or early third century (*cf.* fig. 4b); excavation ROB 1961-3



1 Aardenburg: trumpet-shaped upper section of a bronze candleholder with relief decoration (ivy leaves *etc.*); Aardenburg Municipal Museum, inv. no. 1966-H 46; excavation ROB 1966



2 Aardenburg: fragment of a Roman roof-tile with stamp C II A; recurrent in Aardenburg



3 Aardenburg, Oude Vlasmarkt: fragment of Roman roof-tile with broken stamp PRIM [CORS]?, hollow letters; Aardenburg Municipal Museum, inv. no. 1962-Ovl.



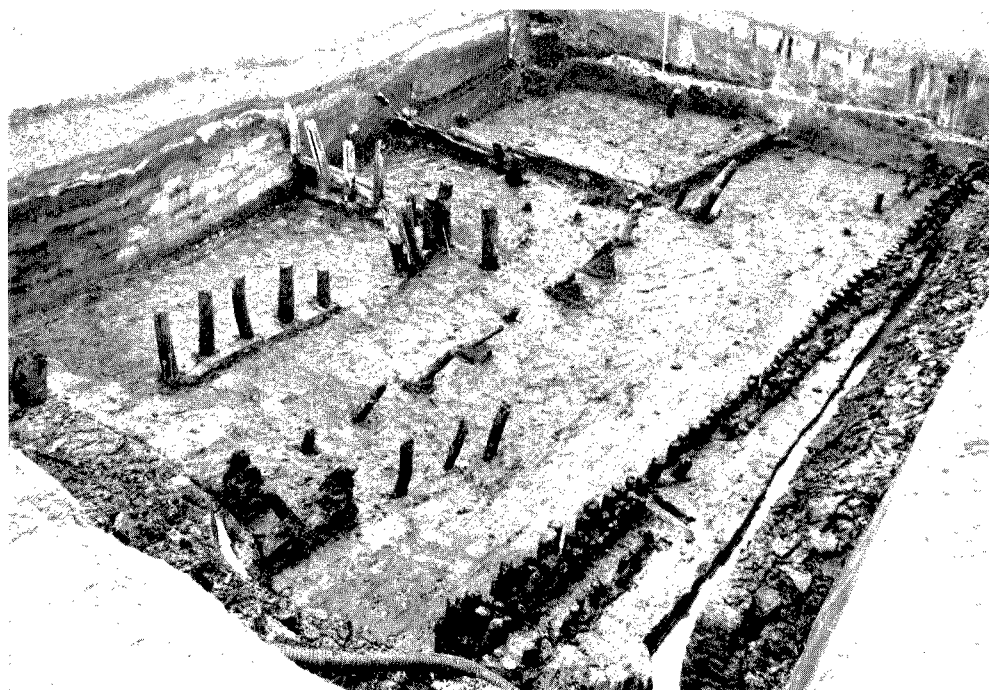
4 Brabers near Haamstede: 'Flemisch-Roman' pot, dating most probably second century; Municipal Museum Zierikzee, inv. no. 1956-Brb.



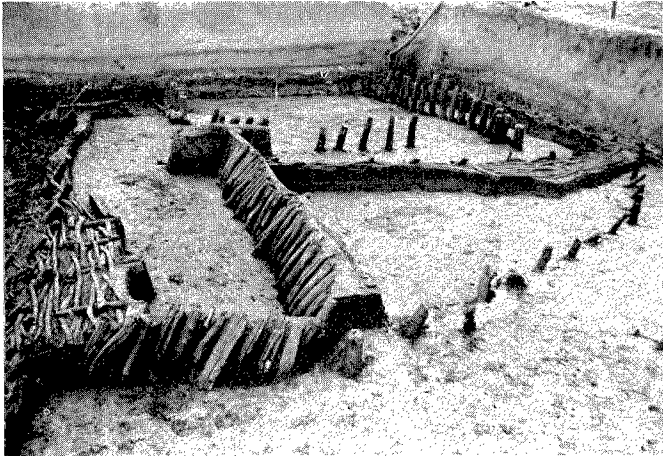
5 Harnaschpolder to the west of Delft: urn of 'Flemish-Roman' ware; Foundation for Soil Survey; see Modderman 1949, fig. 1); depot State Museum of Antiquities, Leiden, inv. no. h. 1949/1, 46-50



1 Kethel-Schiedam: General view of the excavation of the three farm-houses seen from the east



2 Kethel-Schiedam: Heavy palissade built on the water-fringe to the east of the oldest outhouse, from which the eastern part is visible as seen from the southeast



1 Kethel-Schiedam: Row of closed posts in between the out-house and the farm-house as seen from the west



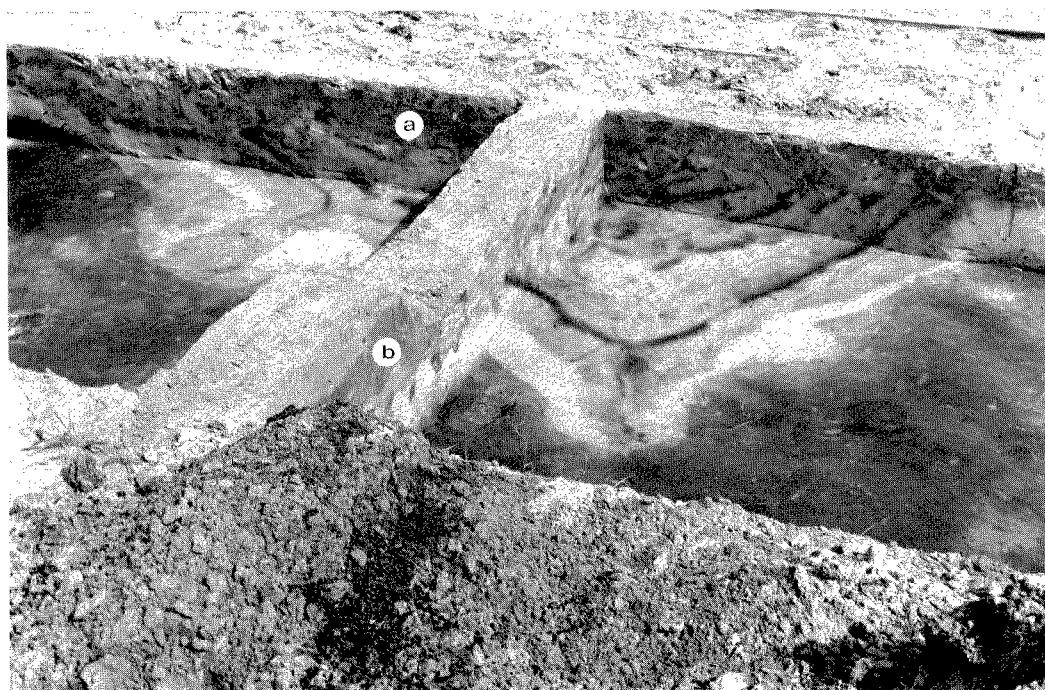
2 Kethel-Schiedam: Inner-post of second farm-house as seen from the east



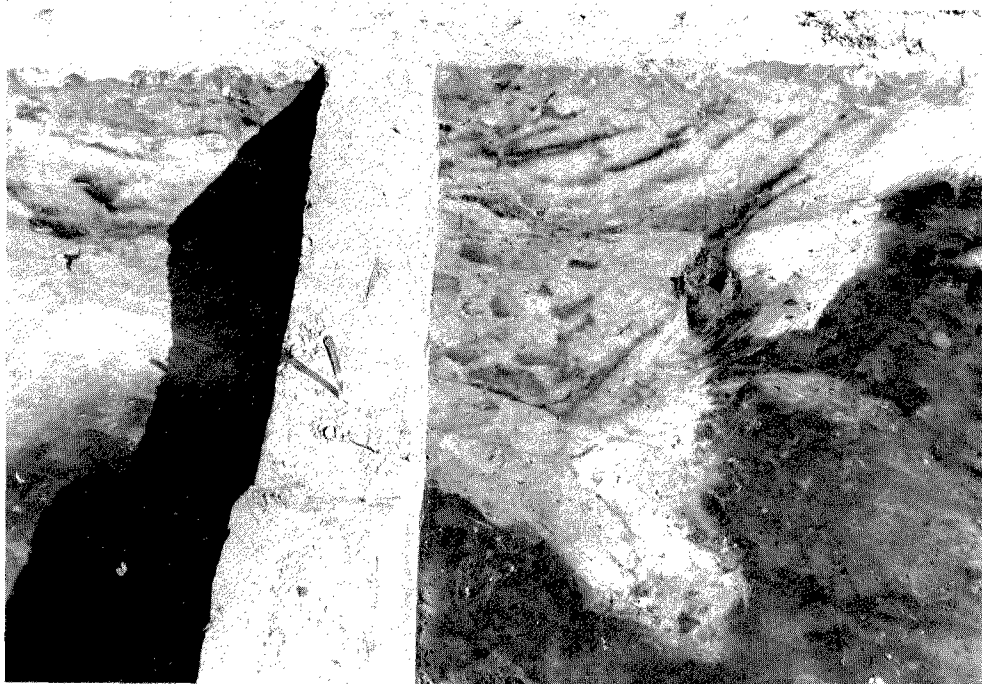
3 Kethel-Schiedam: Threshold of southern entrance to byre of second farm-house



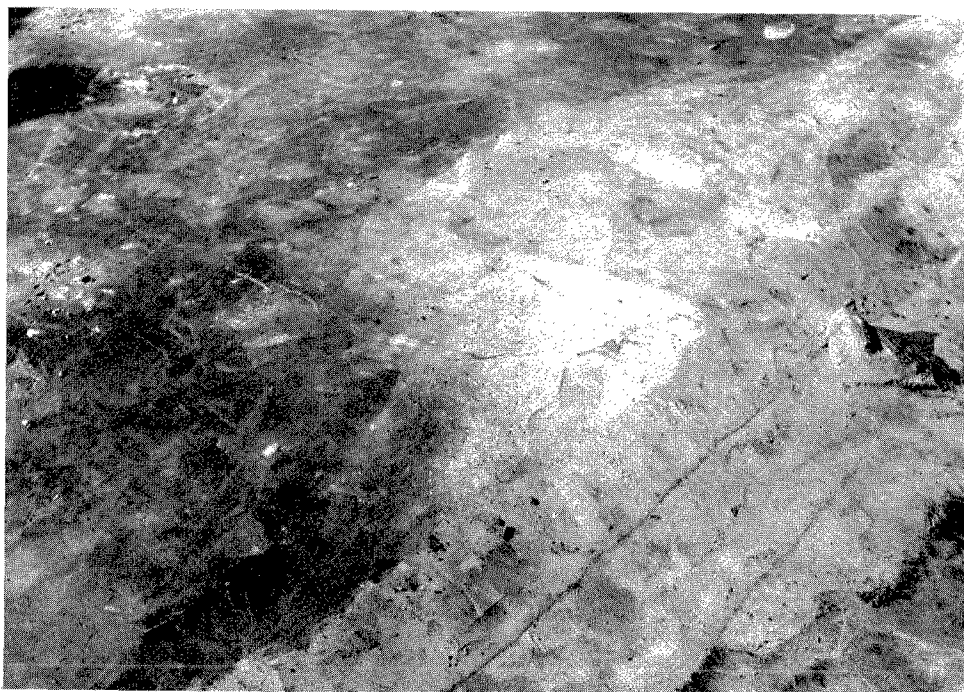
1 South–north profile with sections through the trenches (p. 196)



2 Grave II: The short east–west profile (b) at right angles to the long south–north profile (a). In the foreground, the south–western quadrant (p. 198)



1 Grave II. The southwestern quadrant on a slightly lower level than in plate XI: 2 (p. 198)

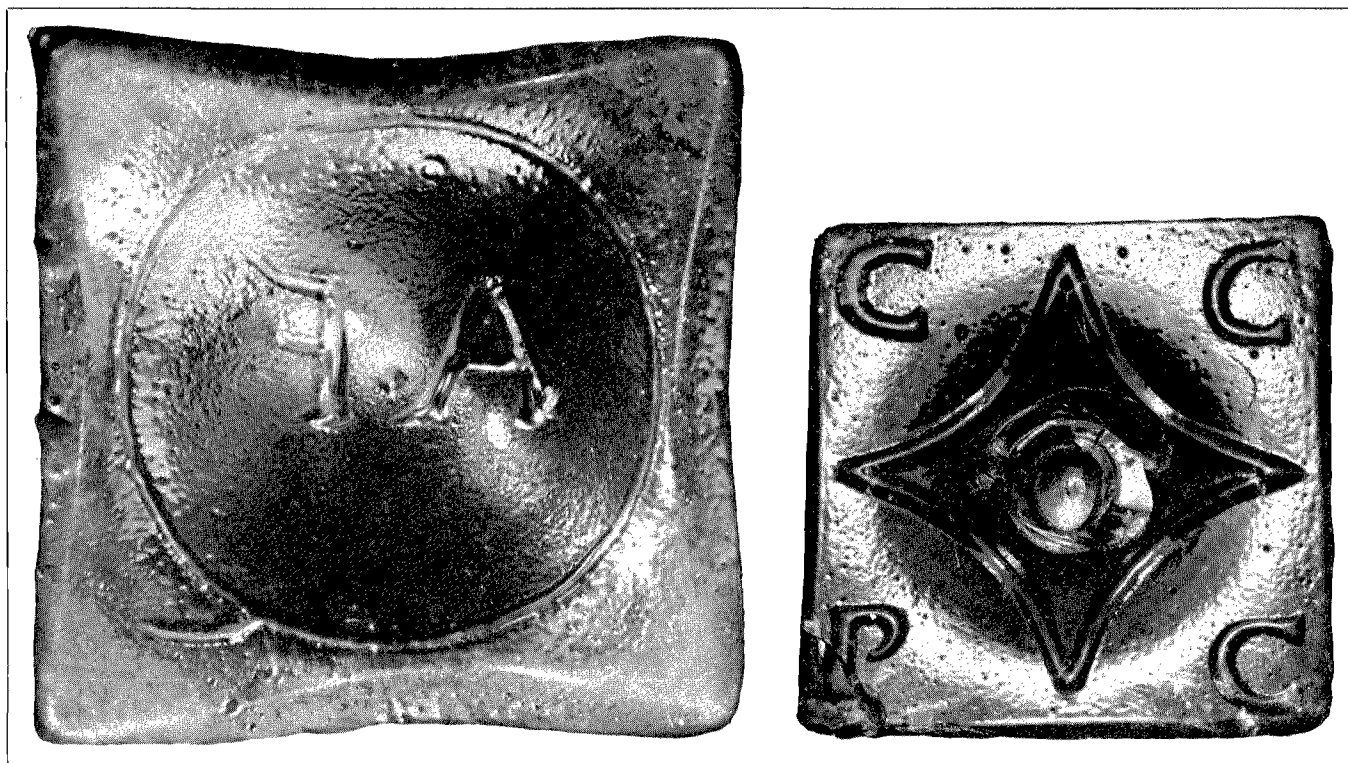


2 Section through the post in the western long side of grave II. Opposite the post one of the nails used to fasten the wooden walls (p. 198)



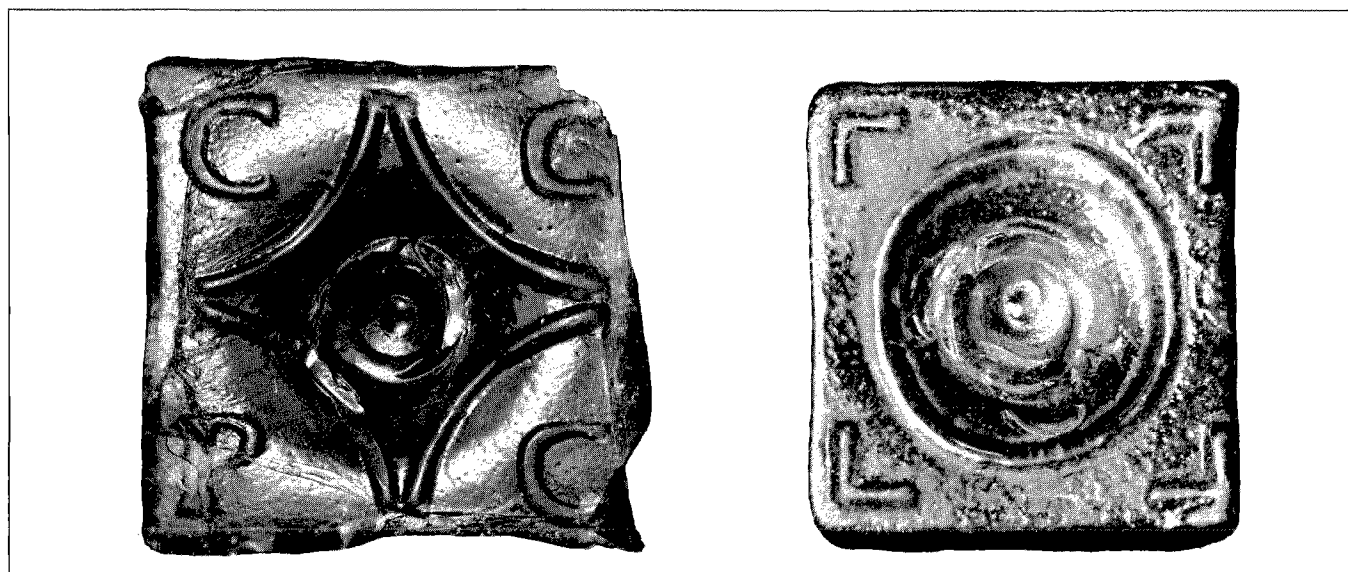
Bottom of grave III with the grave-goods *in situ*; in the foreground, the long eastern side of the grave (p. 199)





1 Underside of bottle II, 12 (p. 207) (1:1)

2 Underside of bottle II, 13 (p. 208) (1:1)



3 Underside of bottle II, 14 (p. 208) (1:1)

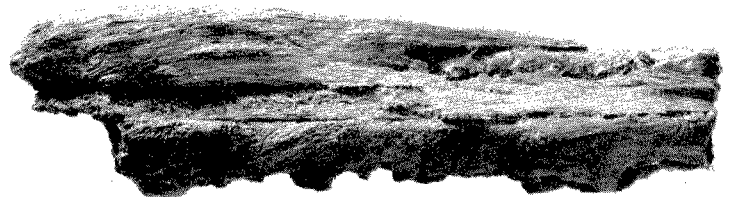
4 Underside of bottle II, 15 (p. 208) (1:1)



1 II, 18: a pair of iron rods (p. 211) (1:2)



2 II, 18: at the places of fracture the rods and the needle can be seen as cylindrical hollow cores (3:1)



3 II, 18: at the back of the rods are remnants of wood, down the length of which a seam is visible (2:1)



1 II, 24: bronze ampulla in the form of a Bacchus bust (p. 212)  
c. 2:3



2 Bronze ampulla in the form of a Bacchus bust, now in the ▸  
Dumbarton Oaks Collection, Washington D.C. The photograph  
was kindly supplied by the Museum (p. 213, n. 82) (c. 1:2)





1 II, 27: oval piece of gold foil with embossed portrait: Caracalla? (p. 214) (5:1)



Id., with head turned to the right



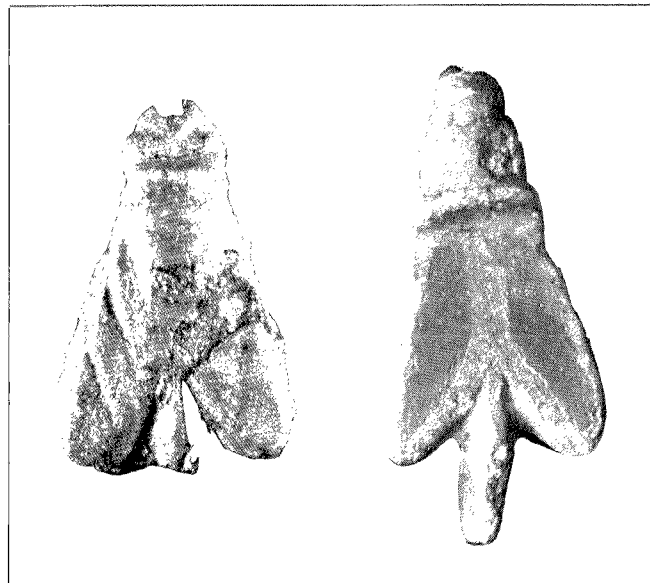
2 Caracalla. Photograph kindly supplied by the *Koninklijk Munt- en Penningkabinet*



I II, 28: piece of gold foil with embossed design (p. 215)



5 III, 1: terra sigillata stamp (p. 217) (1:1)



2 II, 29: fly (p. 215)  
(5:1)

3 Bronze cicada from Cuyk in the  
Noordbrabants Museum at  
's-Hertogenbosch (inv. no. 478) (2:1)



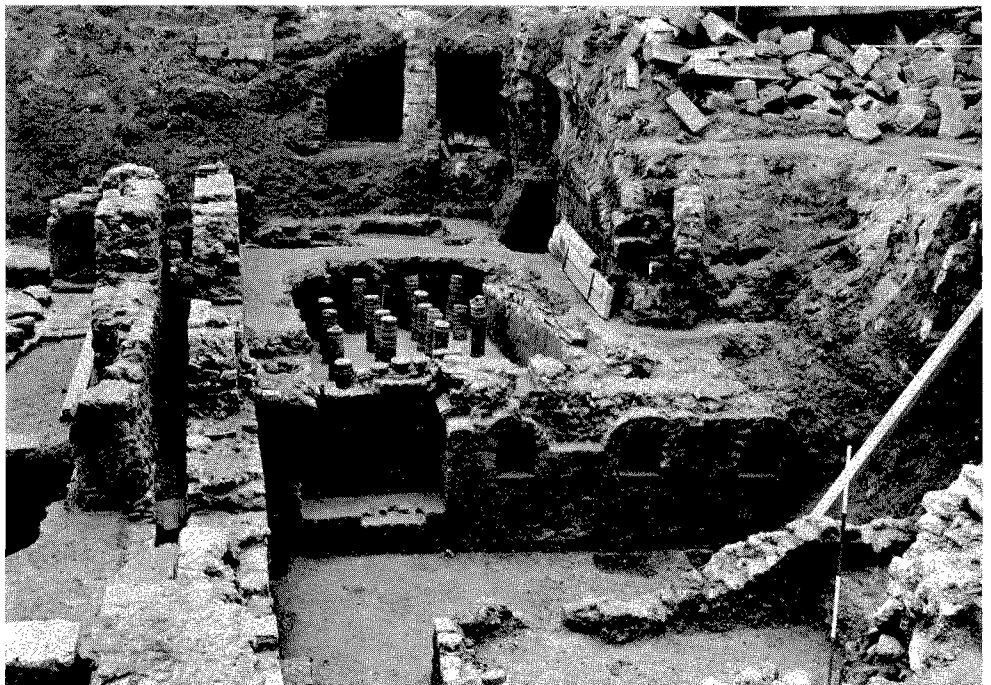
4 II, 30: piece of knitting (p. 216) (4:1)



III, 37: glass bowl with scalloped edge (p. 225) (1:1)

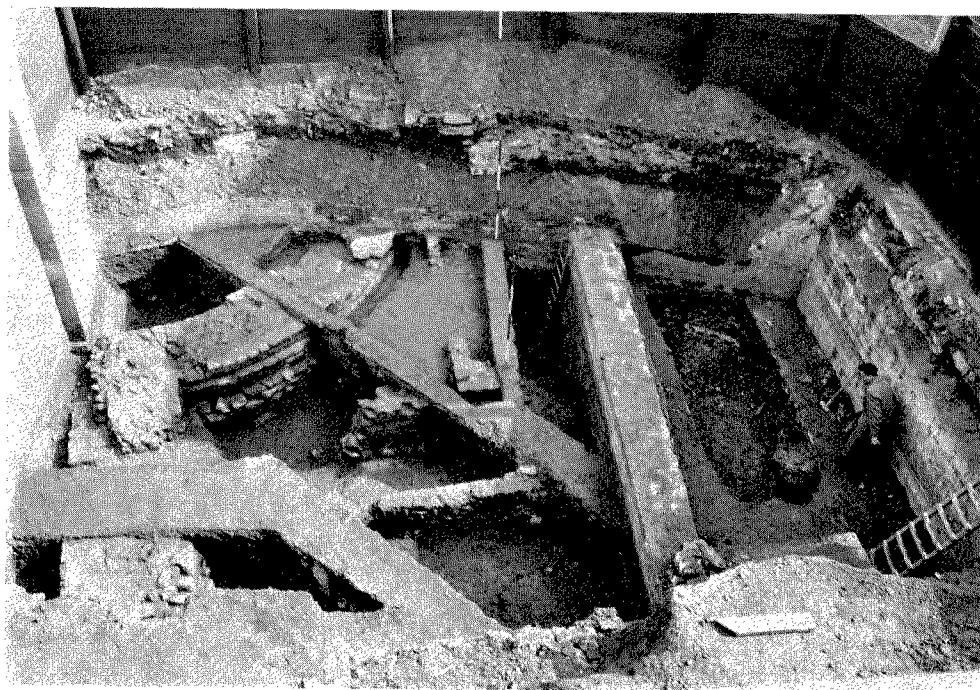


1 Maastricht, Stokstraat area: Thermal baths from the east, September 1963



2 Maastricht, Stokstraat area: Thermal baths from the east, October 1963

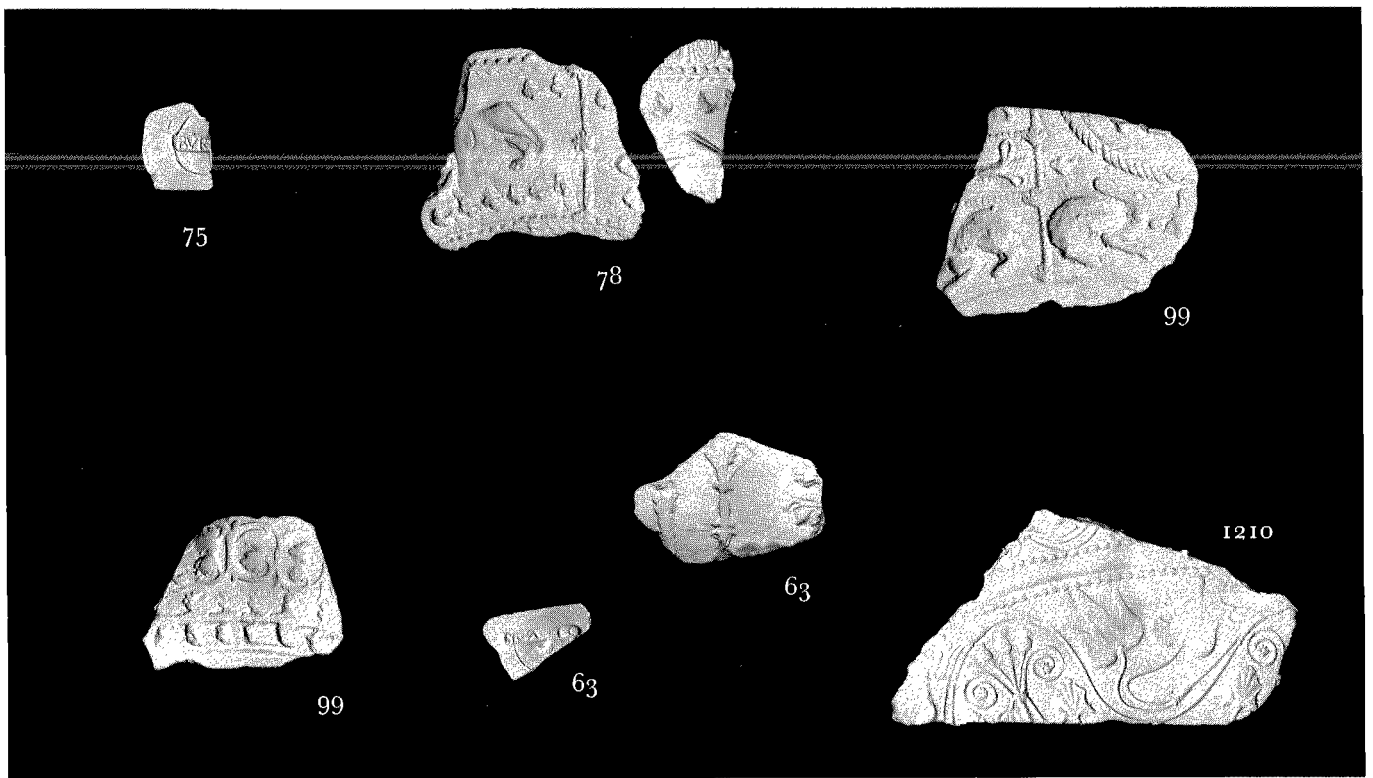




Maastricht, Stokstraat area: 4th-century tower 1956–1959 from the west



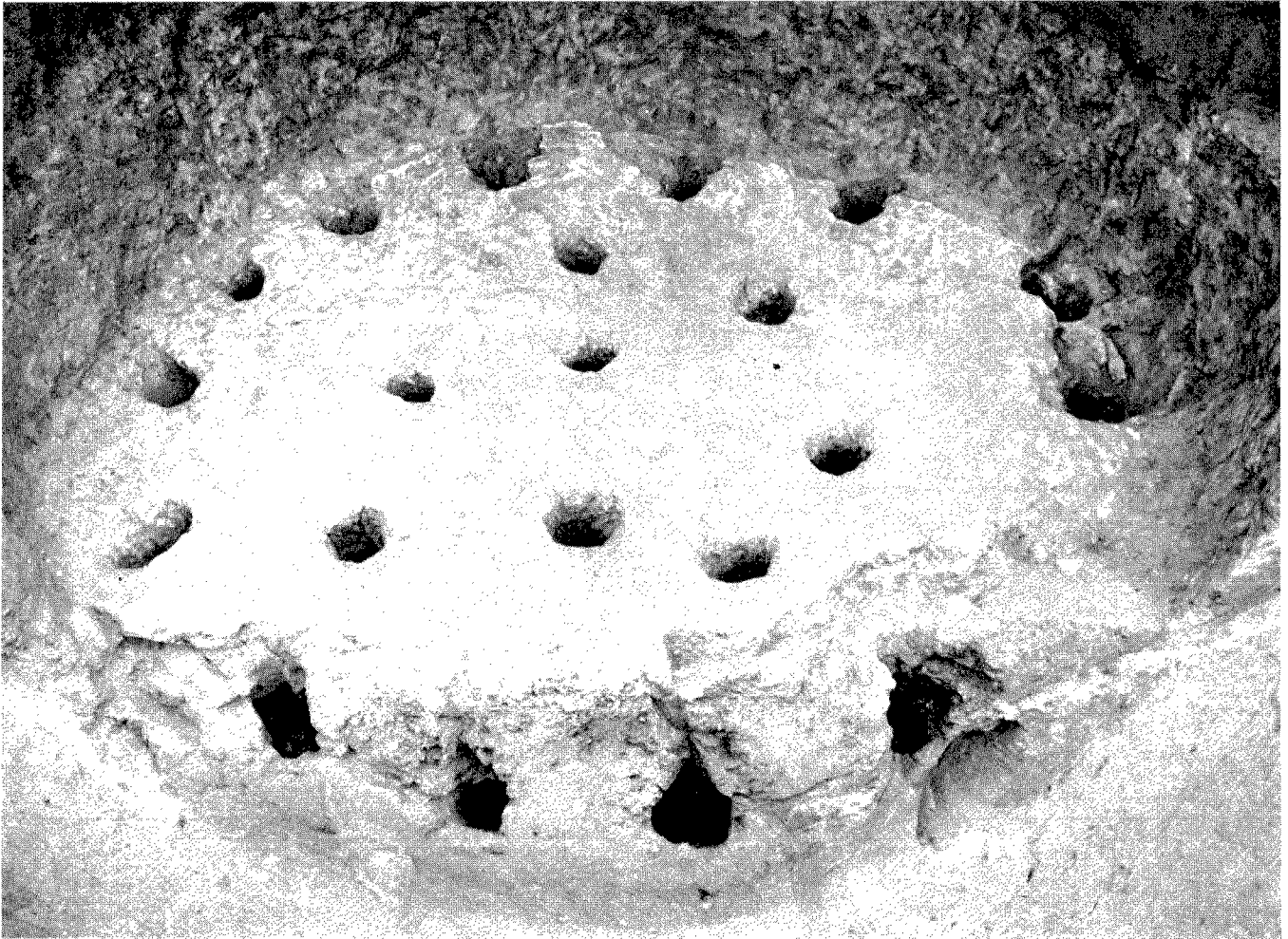
Maastricht, Stokstraat area: Filling of Roman western bank of the river Maas and Roman wall, from the south



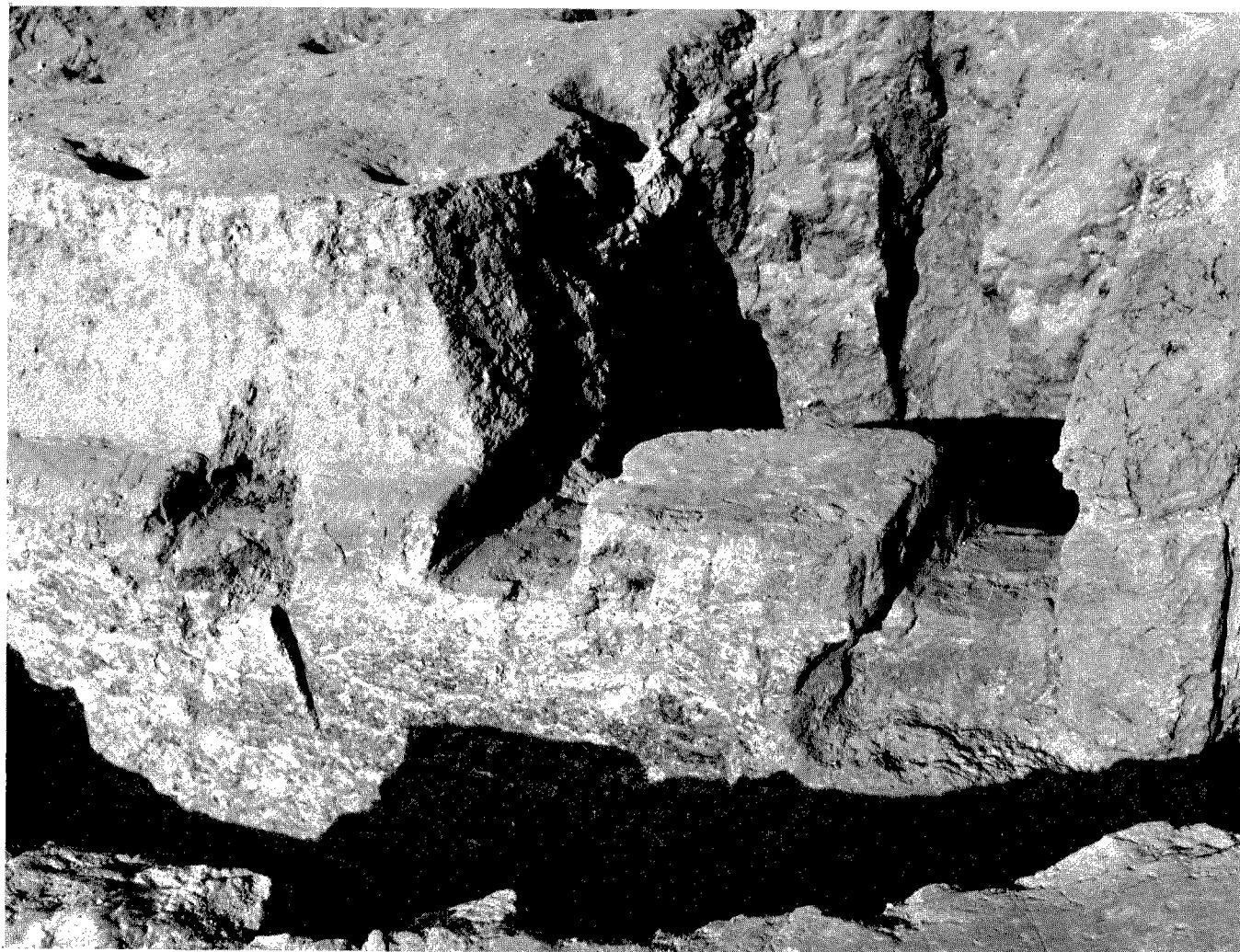
1 Nos. 63, 75, 78, and 99: Maastricht, Stokstraat area, Profile Eikelstraat–Houtmaas (see App. 1);  
 No. 1210: Maastricht, Vrijthof area (see App. 1)



2 Rimburg: Roman road and settlement, seen from the south



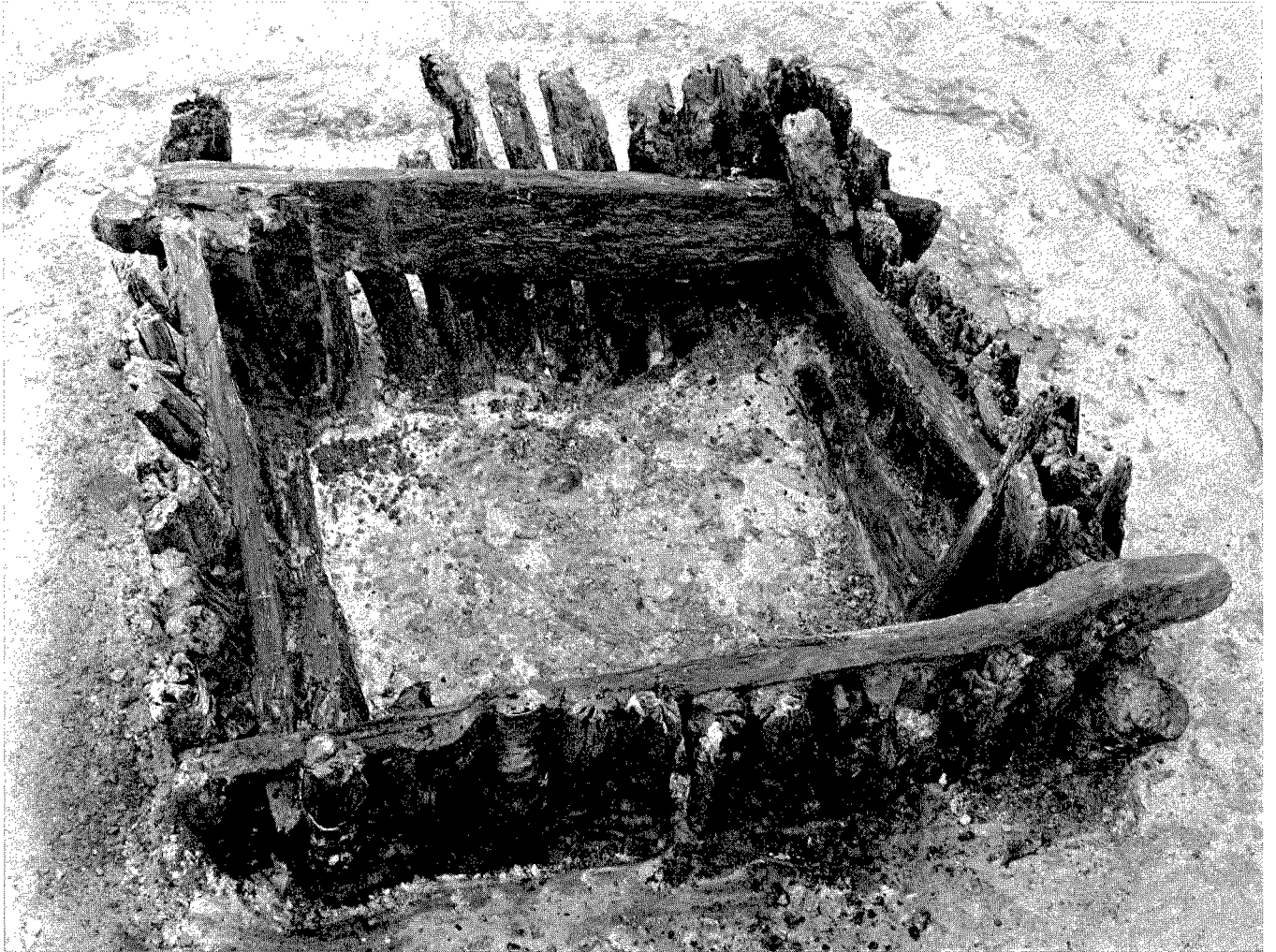
Heerlen: Kiln in Schinkelstraat: top elevation and cross section



Heerlen: Kiln in Schinkelstraat: support with 'swallow-tailed' notches and part of the grating



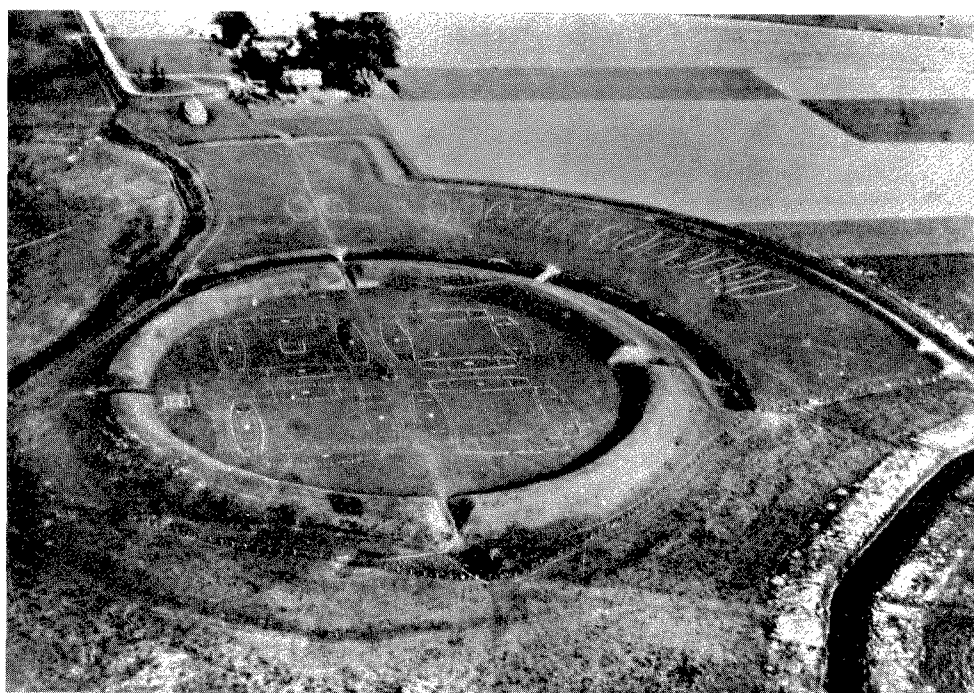
Ede, well of wattle



Ede, well



1 Aerial view of Oost-Souburg. Photograph by Slagboom and Peeters, Mil. reg. no. 30763-81



2 Aerial view Trelleborg, Denmark. Photograph by the National Museum of Denmark

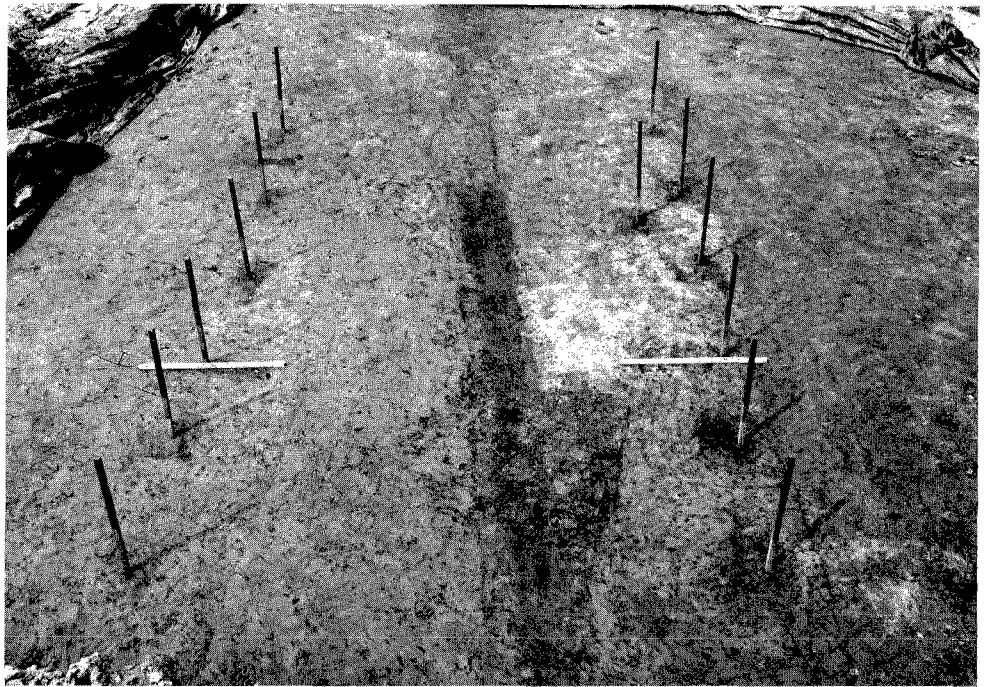




1 Survey of the excavations of 1969. In the background the parish church of Oost-Souburg



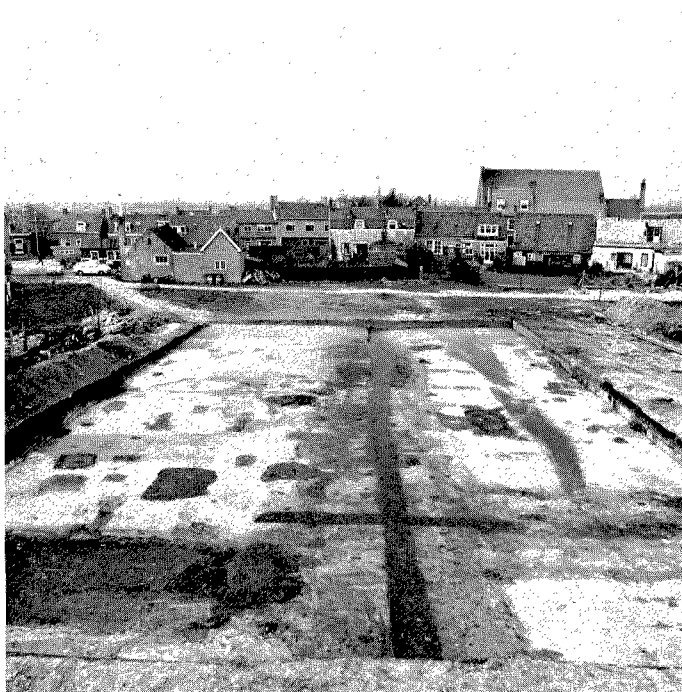
2 Row of posts along the exterior of the rampart (*cf.* fig. 5)



1 Detail of the south 'gate' (*cf.* fig. 7, p. 362); under the surface of the passage lie the remains of a wooden rubbish-shaft which was connected to the sewage/drainage systems of the site



2 Sod structures and wood remains of a 'citadel dwelling' excavated at Middelburg (after Trimpe Burger 1964, fig. 16)



1 Part of the western cross-road leading on the left and right to a side-road (*cf.* fig. 4, p. 359). At the end of the excavation the interior side of the rampart may be seen. The dark area in the centre of the cross-road is a ditch or trench dating from a late period (thirteenth century)



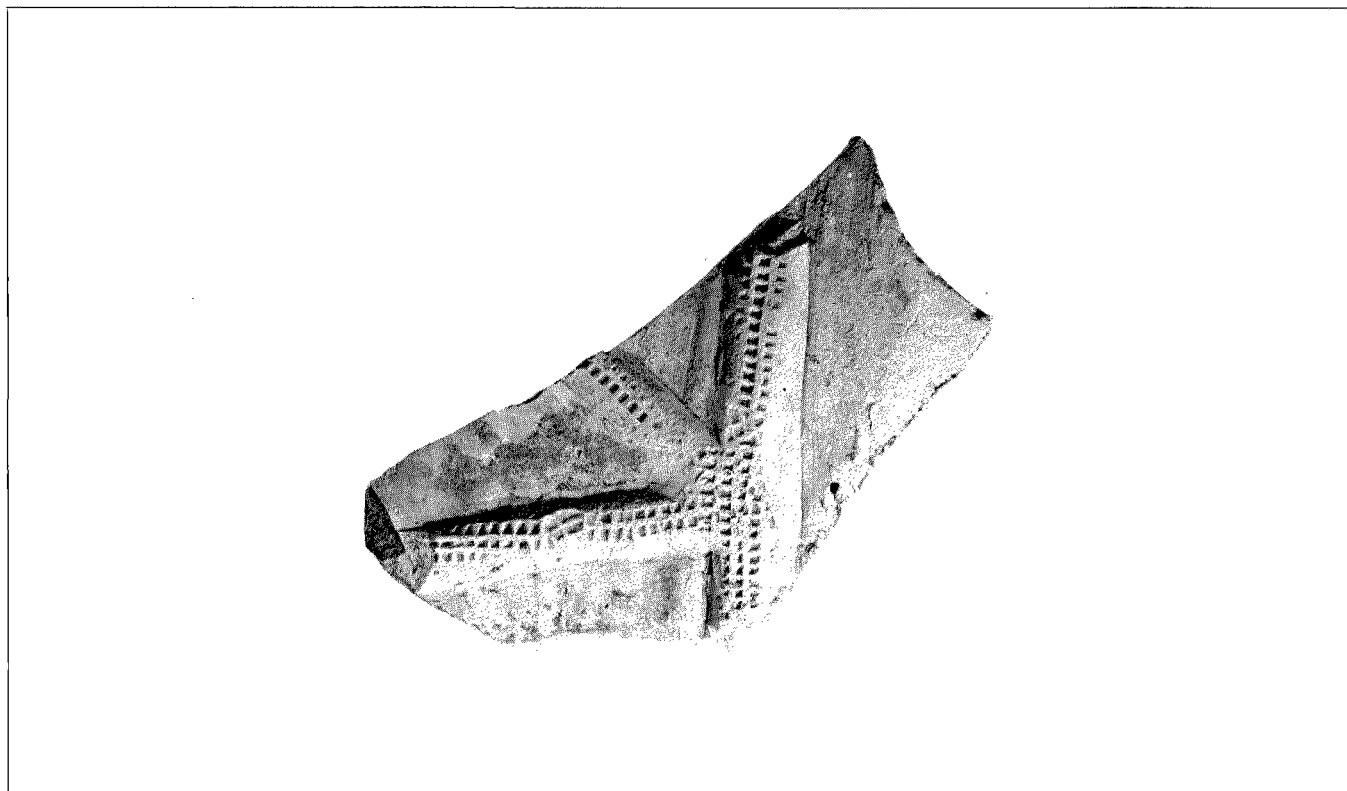
2 The middle of the cross-road (extension of the above photo) with on the left the clearly visible rows of sods along the walls of a house (*cf.* fig. 4, p. 359)



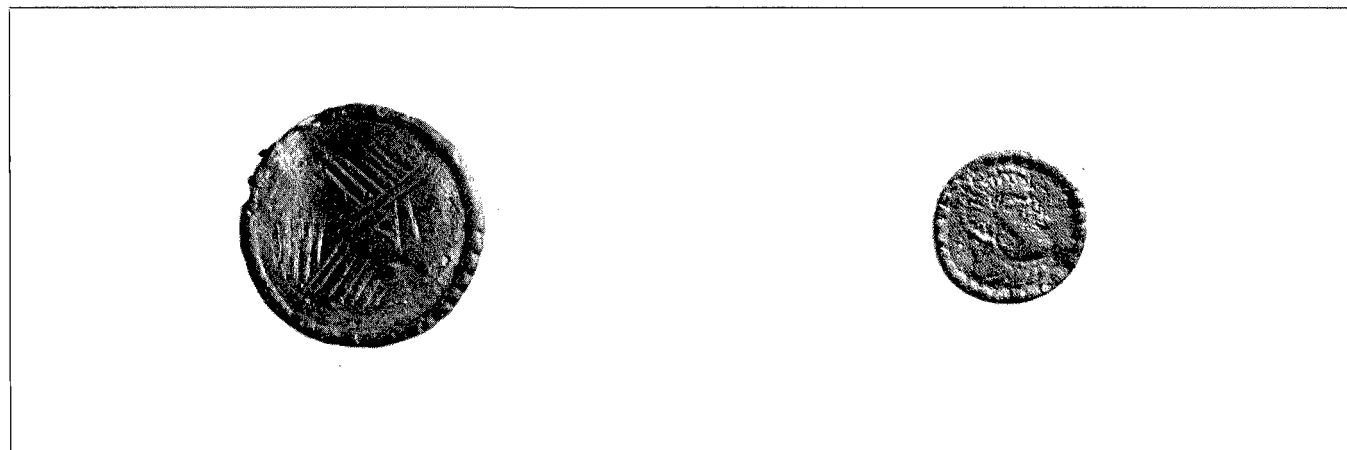
1 The cross-road close to the intersection, which is situated on the right (under the rubble deposit; *cf.* the corresponding photograph pl. xxxii: 1 and fig. 4)



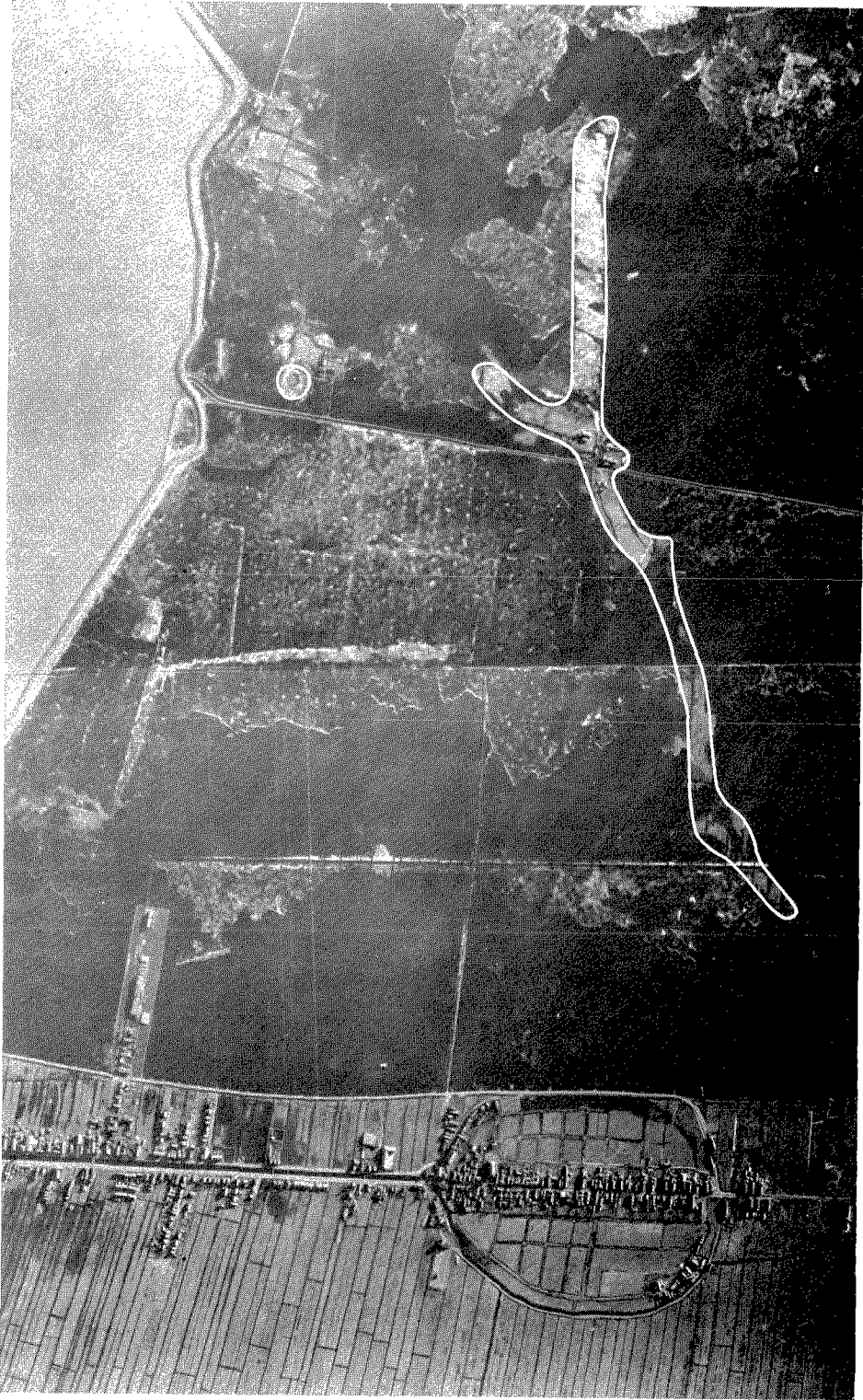
2 A side-road (from the cross-road to the north) with remains of a wooden road-surface (cross-striped) (*cf.* figs. 4 and 5)



1 Fragment of a relief-band amphora excavated at Oost-Souburg



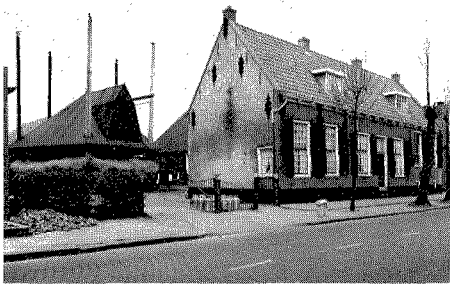
2 Pseudo-coin brooches; ninth century? Oost-Souburg



Aerial photograph of Bunschoten and surroundings before the 1950 reparation (Photo: Stiboka, Wageningen)



1 Filled-in section of the moat (Section A, lot no. 358) seen from 'the gate' (*de poort*)



2 A farm characteristic for the town centre of Bunschoten



3 The higher position of the town centre



4 The higher position of the town centre



5 Bunschoten seen from the western moat