

EXCAVATION OF TWO BEAKER DOMESTIC SITES NEAR KOLHORN GENERAL INTRODUCTION

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ABSTRACT: From 1979 to 1986, two Beaker Culture domestic sites in a former tidal flat landscape were investigated near Kolhorn, in the province of Noord-Holland. The reasons for the excavation and its aims and method are briefly discussed, and the progress of the excavation is summarized, to serve as a background for the reports to follow.

KEYWORDS: Beaker Cultures, domestic sites, excavations, tidal flat landscape.

1. THE REASON FOR THE INVESTIGATIONS

In the Waardpolder, north of the village of Kolhorn, in the *gemeente* of Barsingerhorn, province of Noord-Holland, two small Beaker domestic sites in close proximity were excavated from 1979 to 1986 (fig. 1).

Up to 1844 Kolhorn was a fishing village in West-Friesland¹, on the former Zuiderzee. In 1844, two polders were created to the southeast and north of Kolhorn: the Groetpolder and the Waardpolder (Waiboer, Wiedijk & Oudt, 1945). The topsoil in these polders was fresh marine clay, which hid many traces of medieval activities such as the digging of peat saturated with salt water, to be burned for salt-making. This clay is eminently suited for agriculture. Following the gradual mechanization in the second half of this century, and the consequent demand for larger parcels, many boundary ditches were filled in.

In 1973, J.J.C. de Heer and his brother, having acquired lot 28 of the Waardpolder (Barsingerhorn, cadastral section B, No. 2333, on the southern limit of the Waardpolder, directly north of the Kolhornerdiep), and wishing to fill in one of the inner dividing ditches, levelled two elevations of 'roughly 0.5 m' which were situated north and south of that ditch², at a distance of 70 m from core to core (Woltering, 1976). In so doing, they stripped off the layer of clay, uncovering black crumbly soil rich in organic material and ashes, a large quantity of which was also shoved into the ditch (fig. 3).

It was in this black soil that the farmers themselves first recognized the archaeological finds, consisting of bone fragments, potsherds, stone fragments and flint. In the following months, upon ploughing, local collectors picked up many finds on these sites. In March 1975, A. Schermer (of Schoorl)

notified the Rijksdienst voor het Oudheidkundig Bodemonderzoek (R.O.B., Amersfoort), which led to an inspection on 24 March by the provincial archaeologist of Noord-Holland, P.J. Woltering, and J.F. van Regteren Altena (Woltering, 1976).

Upon consultation, the present author asked the Department of Physical Geography of the University of Utrecht to start investigations at the site. Under the direction of Professor J.I.S. Zonneveld and Dr. P.J. Ente (Development Authority of the IJsselmeerpolders), who had conducted investigations in the same area at an earlier date, the students P.M. Banga and P.J.A.M. van Dijk undertook boring campaigns from 1975 to 1977 in order to establish the extent of the sites, their geological situation and their setting in the contemporary landscape. Their report (Banga & van Dijk, 1979) will appear as part of the Kolhorn publications.

In the meantime, the R.O.B. contacted the Ministry of Cultural Affairs in order to have the sites listed and protected as archaeological monuments, to which the landowners de Heer entered a protest, as they wished to deep-plough the field in question.

Consultations between the R.O.B., the Ministry and the Biologisch-Archaeologisch Instituut (B.A.I.) of the University of Groningen, and negotiations with the landowners, eventually led to an agreement. The B.A.I. was asked to take on the responsibility for investigating the sites before their destruction. The brothers de Heer granted the B.A.I. time and permission for the investigation. The Ministry refrained from listing the sites as archaeological monuments.

Once an agreement was reached with the brothers de Heer concerning indemnification for the inconvenience and loss of yields caused by the excavations, the work profited from their whole-hearted cooperation. I would like to thank them for their

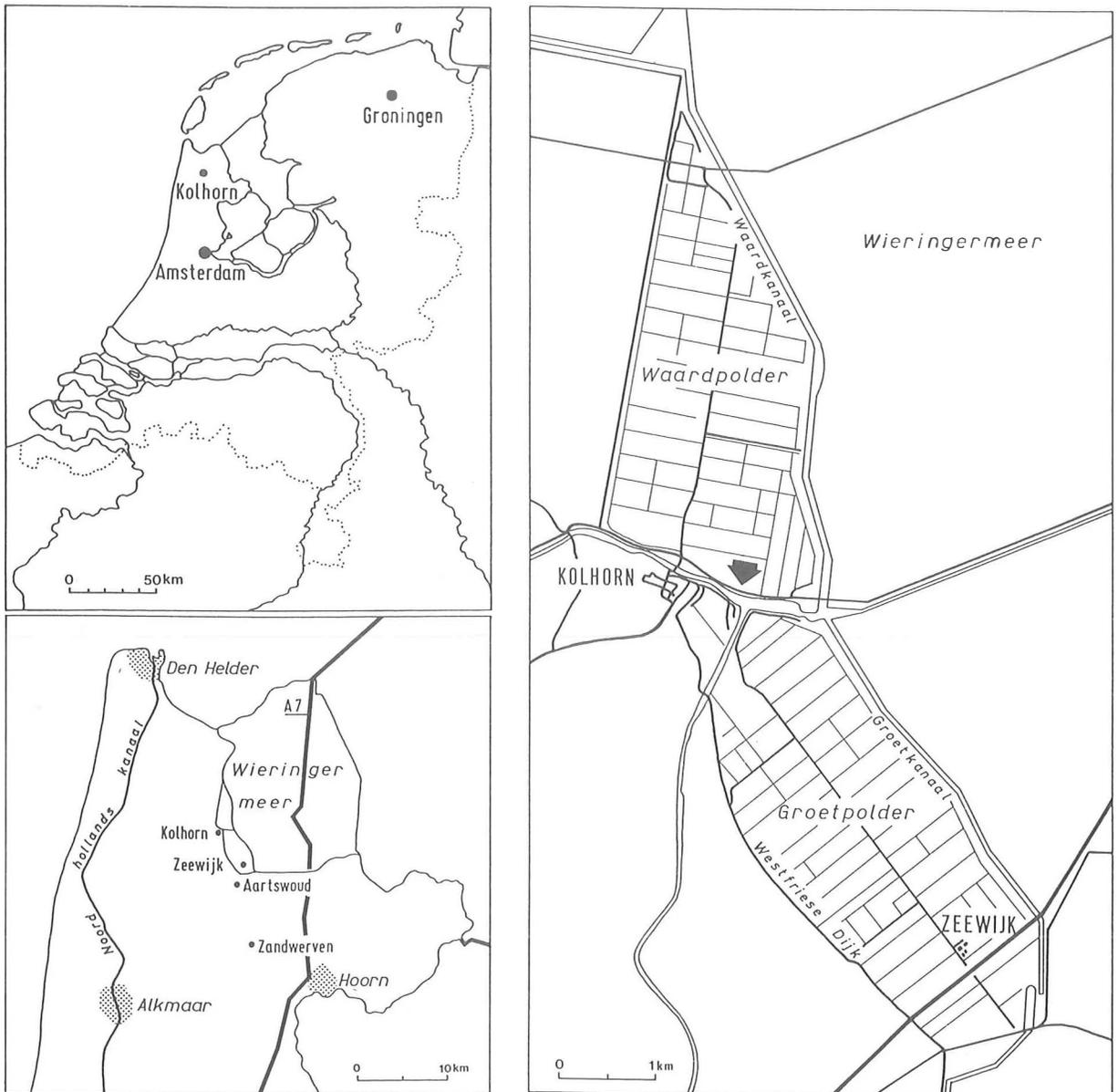


Fig. 1. Situation of Kolhorn and related sites. Drawing J.H. Zwier.

friendliness and interest throughout the work.

As to the analysis of recorded data and finds, following the actual excavations, it was agreed that in view of existing obligations the B.A.I. should be allowed to delay analysis. At the request of the A.E. van Giffen Instituut voor Prae- en Protohistorie (I.P.P.) of the University of Amsterdam, which at the time was involved in analysing the palaeobotanical remains from nearby Aartswoud, the palaeobotanical material from Kolhorn would be put at the disposal of this Institute, too.

The excavations of the sites began in September

1979 and lasted into 1986. They were carried out in eight annual two-month campaigns under the direction of J.N. Lanting (1979-1980) and the present author (1981-1986), and with the assistance of students and other volunteers.³

As for the B.A.I. staff, during the first two campaigns K. Klaassens, J.H. Zwier and from time to time A. Meijer were present at Kolhorn for technical assistance, J.H. Zwier as a draughtsman drawing the sections and plans. In later years, K. Klaassens and J.H. Zwier and also L. Tol would provide technical help at the beginning and end of each campaign.

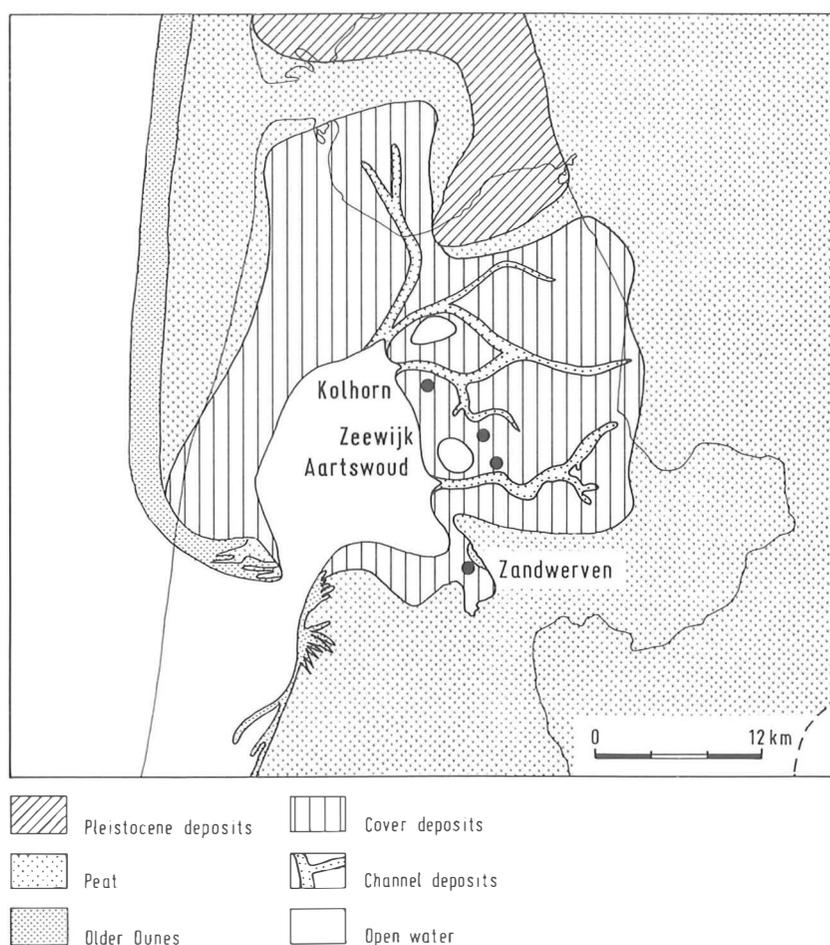


Fig. 2. Kolhorn and related settlement sites in the post-Calais IV A2 transgression landscape. Note the present-day coastline of the province of Noord-Holland. Adapted from Hallewas, 1981.

The Province of Noord-Holland always took an interest in the excavations, each year providing the funds for the running expenses. When the excavations were concluded, the Province also made funds available for partial analysis of the archaeozoological material and for the sorting of finds, and for the hydro-geological study of the well.

2. THE SITUATION OF THE SITES (figs 1-3)

Prior to the excavations, the sites clearly showed up upon ploughing as black patches in the arable, measuring c. 25x20 m (northern site) and 20x15 m (southern site). The patches corresponded with the surface over which all covering clay and part of the archaeological deposit had been removed. In reality, they represented the cores of the settlement sites. During the boring campaign, it became clear that both sites were situated on the highest, western natural levee along a narrow creek near the upper-

most part of a former tidal-flat creek system, which had begun to silt up (Banga & van Dijk, 1979 and in prep.).

The denuded cores of the sites were surrounded by settlement deposits, in part ploughed-up into the clay, but, towards the periphery, undisturbed beneath this covering clay. In the course of the occupation, settlement deposits spread out, especially across the creek to the lower eastern bank, so that eventually the sites extended over a surface with dimensions of 90 m (E-W)x60 m (N-S; northern site) and 70 m (E-W)x40 m (N-S; southern site).

During the excavation, it appeared that whereas in the northern site a basal layer of archaeological deposits had been left untouched over the whole of the surface, archaeological deposits left after leveling the core of the southern site had been incorporated in the arable by the ploughing in subsequent years. It was only on the eastern side of the sites, on the talus of the creek, that settlement deposits had survived intact to any thickness. All this will be dealt with extensively in the detailed descriptions of the

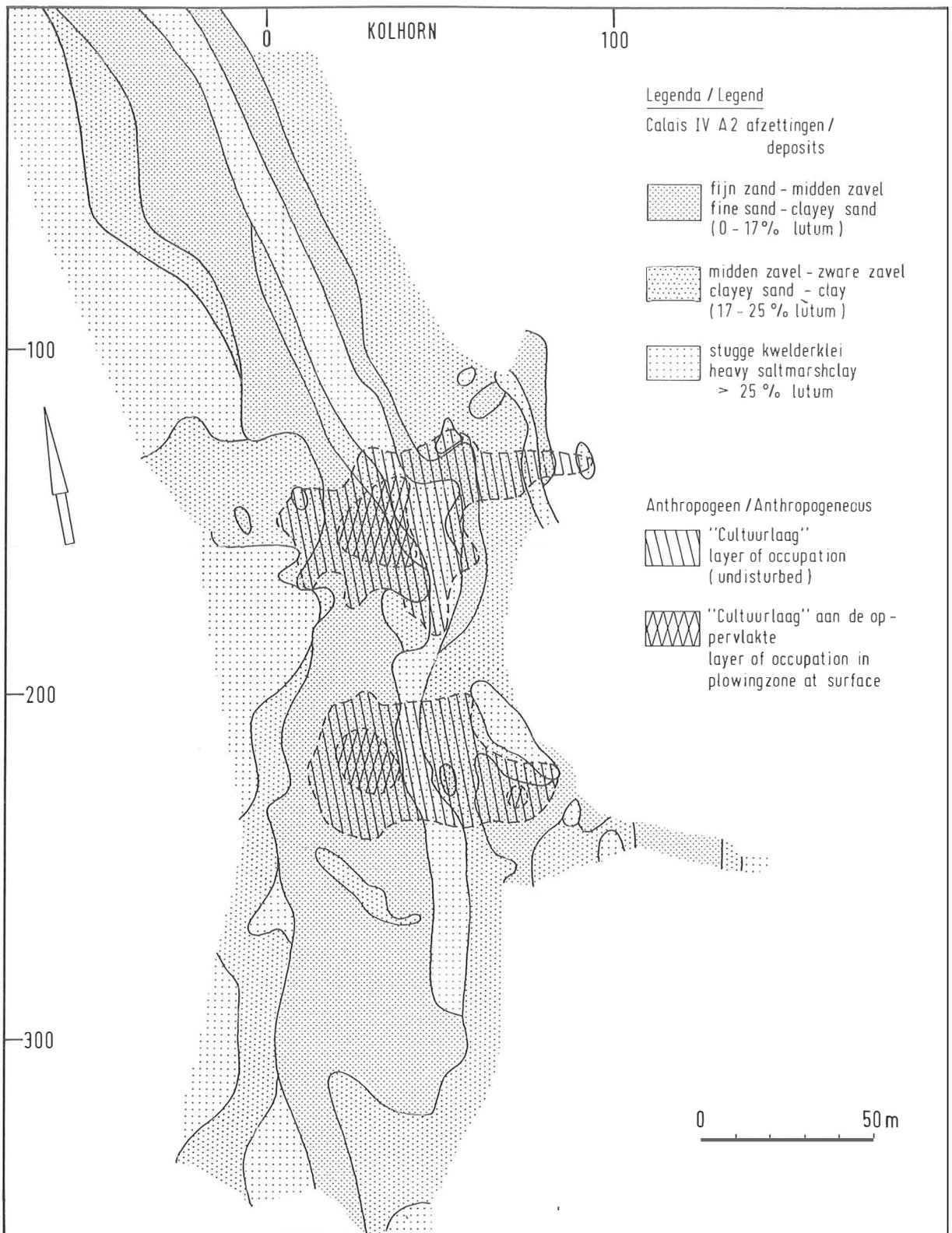


Fig. 3. Kolhorn, northern and southern sites, on the levee of an upper branch of a former creek of the Calais IV A2 tidal system. After Banga & van Dijk (1979).

northern and southern sites, which are in preparation.

3. AIMS AND QUESTIONS

It should be realized that the excavations were undertaken as rescue excavations, for which initially a period of four years had been granted. That in the end the excavations could be extended over eight years is due to the interest and help of the owners of the field and the willingness of the Province of Noord-Holland to provide the necessary funds. In part, the prolongation was due to the fact that the excavations (see below) proved more time-consuming than anticipated. But also the discovery of a man-made well in the southern site enlarged the surface that required excavation.

At the planning stage of the excavation in 1978-1979, the only other sites known in West-Friesland, apart from a number of stray finds from the Beaker Period in the area, were the slightly earlier site of Zandwerven and the site of Aartswoud, roughly contemporary with Kolhorn and in course of excavation by the late Professor W. Glasbergen (I.P.P., Amsterdam). At Zandwerven, only occasional stratigraphical observations and finds of the Vlaardingen and Single Grave Cultures were recorded (Altena & Bakker, 1966). At Aartswoud, a site of much greater extent than Kolhorn, the chief purpose of the excavations was of stratigraphical, typo-chronological and palaeo-environmental character (van Iterson Scholten & de Vries-Metz, 1981). Yet another circumstance determining the aims of the excavations at Kolhorn was the fact that the site of Aartswoud had never been subjected to any amount of serious ploughing and still lay under a protecting turf cover with a relatively high groundwater table, i.e. under highly favourable conditions for a good preservation for years to come. It was therefore considered desirable that Aartswoud, apart from the narrow trenches dug by Glasbergen, should be left untouched for future research.⁴

Taking all this into consideration, it was decided that at Kolhorn problems related to horizontal distribution such as settlement structure, house plans, and activity areas should determine the methods of excavation to follow. This implied a minimum of trench-digging and concentration on uncovering larger areas.

In concrete terms, the following questions determined the excavation:

1. *In relation to the environment:* What type of landscape was it to which these Beaker people had felt attracted? What were their subsistence activities? Was their occupation of seasonal or more permanent character?

2. *Structurally:* Would it be possible to identify

plans of houses or other structures and traces of activities and their spatial organization, to reconstruct a settlement structure? Did the area of settlement activities extend beyond the deposition area of settlement debris as recorded by boring?

3. *In terms of culture history:* Are we dealing with fresh adaptations to coastal conditions of people from the higher diluvial areas (as presumed, for instance, by Louwe Kooijmans, 1985: pp. 64-65), or instead with a cultural transformation; in other words, were the occupants descendants of the coastal dwellers of the Vlaardingen Culture? This question became especially intriguing after the discovery in 1983 of a well in the southern site (see van der Waals, 1988, and the contributions by van der Waals and by Zuurdeeg, Coenegracht, van der Wal & Reynders, this volume).

It will be noted that these questions in part strongly resemble those governing the Swifterbant excavations (1971-1979; see a.o. van der Waals & Waterbolk, 1976; Deckers, de Roever & van der Waals, 1980; van der Waals, 1988). This is not surprising. Notwithstanding an intervening period of a thousand years, these sites are in many respects remarkably similar.

4. METHOD OF EXCAVATION

At Swifterbant, in order to apply the same analysis of spatial distribution to all variables, not only all features but also all fragmentary finds were individually taken up and recorded in a three-dimensional cm grid. From the outset, it was clear that in the case of Kolhorn such a procedure would be much too time-consuming in view of the time granted by the agreement.

After experimentation in 1979, the following method was devised⁵: a metre grid was projected over the whole area (fig. 4). Within the sites' perimeter, squares of 10x10 m would be excavated, chequer-board-wise: only the 'white' squares were to be investigated. These were called 'pits' and numbered in order of excavation (fig. 4). Within these pits, the archaeological sediment was to be dug out per square metre and per layer of 0.10 m, to be transported in wheelbarrows and then to be wet-sieved over a 2x2 mm mesh.

For the purpose of wet-sieving, four sieves were installed, over which the water was hosed, driven by a motorpump (figs 5-7). A special ditch was dug for the water supply. At one end, a sedimentation basin was dug out for the water with the earth coming from the sieves, with an overflow into the ditch. The sedimentation basin had to be emptied every fortnight.

All material from the sieves would be cleaned, dried and sorted during the excavation, at the excavation's base, so that the finds of the different



Fig. 5. Kolhorn, the wet-sieving installations. Photo by courtesy of the Instituut voor Prehistorie, University of Leiden.



Fig. 6. Kolhorn, the wet-sieving in progress. Photo by courtesy of the Instituut voor Prehistorie, University of Leiden.

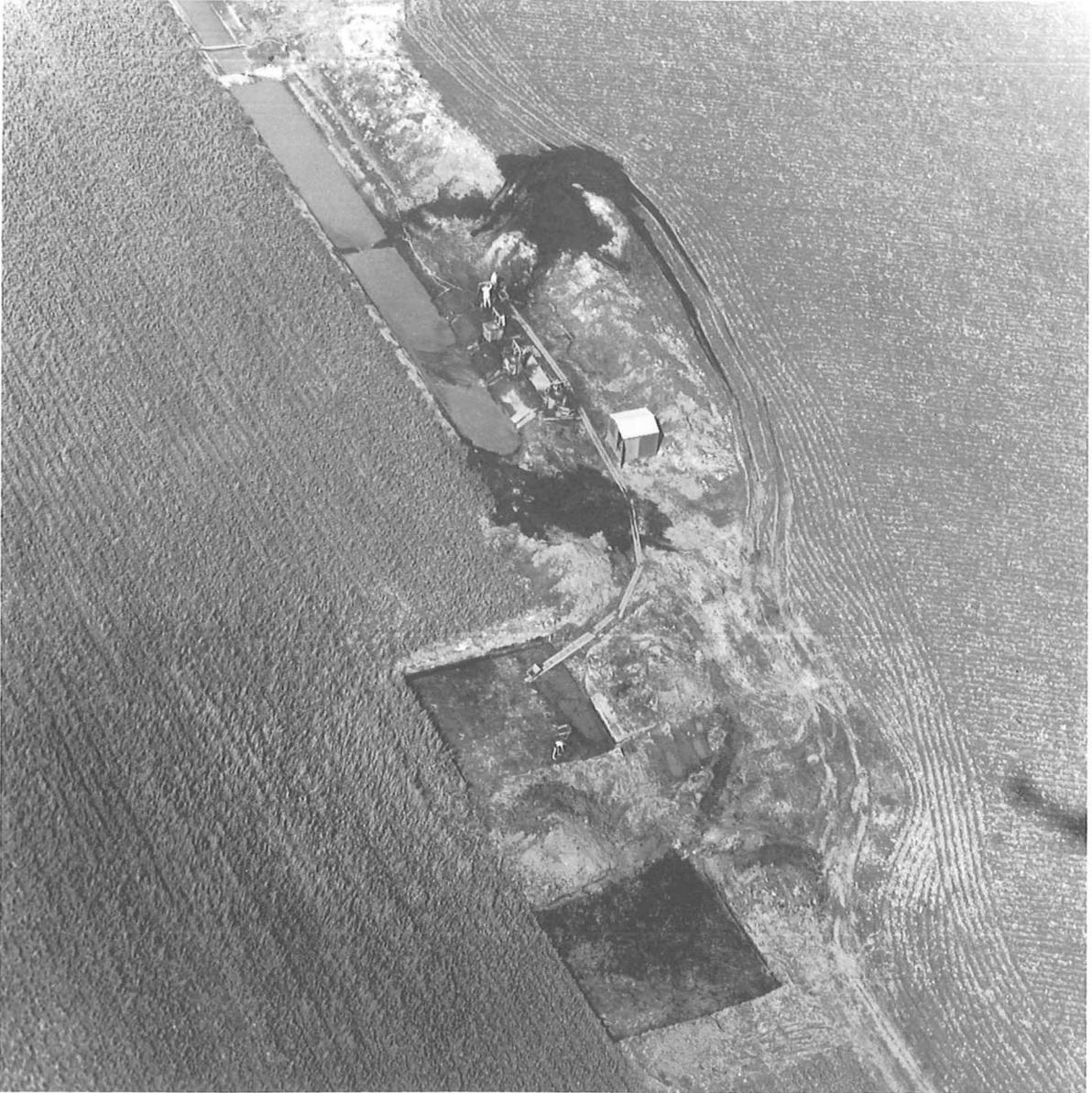


Fig. 7. Kolhorn, the excavation in the Waardpolder in 1980, as seen from the air, with excavation area, ditch excavated for the purpose of wet-sieving, and wet-sieving installations. Photo I.P.P., Amsterdam.

categories, labelled according to the coordinates of the central point of the relevant square metre and layer, were ready to be handed to the specialists. In general, all finds remaining on the sieve would be preserved. But in the case of shell fragments, which at places were collected by dozens of kilos, only a sample of representative specimens was kept, the rest being discarded after weighing in dry condition.

Originally, during the first campaign of chequer-board digging, the intention was to strip the whole of the archaeological deposit (including the 'black'

squares) after the completion of the excavation in the 'white' squares, in order to observe all features simultaneously and more easily detect house plans and the like. Therefore, no features were recorded in Pits 1-4, excavated during the 1980 campaign. During the 1981 campaign, it was realized that such a large-scale registration of features was a virtual impossibility, due to the highly differential drying out of the patchy subsoil, and the fact that often wood was preserved in the postholes, which would soon dry and crumble. Moreover, the registration was com-

plicated by hundreds of mole burrows, doing much to obscure the general overview. It was therefore decided to finish each pit immediately upon excavation of the sediment. Even by the end of 1981 it became questionable whether house plans were present. As we did not like to bulldoze away all unexcavated sediment either (half of the site, after all), the initial plan was abandoned.

On behalf of the palaeobotanical and archaeozoological investigations, a special double sampling strategy was devised. For the archaeozoologist, twenty two-litre samples of soil were collected per 10x10 m pit from each layer (the arable excluded), distributed over the pit as the knight jumps. For palaeobotany, a one-litre sample of soil was collected from each square metre and each layer (the arable excluded). Throughout the excavation, one experienced volunteer was occupied with sampling soil; from 1983 onward the samples for palaeobotany were floated at the site by a student.⁶

5. DATA RECORDING⁷

Prior to excavation, the surface was levelled at the centre point of each 1x1 metre square. This procedure was repeated each time a layer had been excavated. These data were entered on special forms.

Findings generally were recorded according to the central coordinates of the 1x1 metre square and to the sequence number of the layer from which they originated.

Special finds attracting attention during the excavation and features received special numbers. Finds associated with features were also collected and recorded separately.

6. THE EXCAVATIONS

1979 (24 September - 31 October). Two huts from Swifterbant were erected: one for administration and as a day-time accommodation for participants, the other as a working space for the treatment and sorting of finds and as a storeroom for material.

The first campaign was used to conduct a reconnaissance of the broad part of the western natural levee on which both sites were situated, but outside the sites' perimeters. This was done in order to trace any archaeologically verifiable activities which might have been engaged in outside the settlements as characterized by the black, organic deposits. Among other things, we hoped to find any graves that might have been situated there. Nothing of this kind was found. The trenches proved very useful for studying the composite natural build-up of the polder soil.

Furthermore, within the southern sites' perimeter, a small trench of 11x2 m was dug in order to

experiment and select the best technique for excavating the archaeological sediment and for find recovery.

1980 (23 June - 20 August). Northern site. Pits 1-4 excavated. No features recorded.⁸

1981 (29 June - 4 September). Northern site. Pits 5-7 excavated. Feature registration commenced.

1982 (1 June - 30 July). Northern site. Pits 8-11. In the course of this campaign, the investigation of the northern site could have been concluded, the 'white squares' of the chequerboard having been excavated. It was decided that next year first a reconnaissance of the southern site should take place, in order better to understand the relation between the two sites before deciding whether to continue one more year on the northern site and leave unexcavated the southern site, less well-preserved, or to devote ample time to the southern site as well. For this purpose, the ditch for the wet-sieving would have to be extended in 1983, cutting through part of the northern site. This determined the position of Pits 8 and 10 in 1982, excavated only as far as the ditch would destroy them.

It was during work in the former creek (Pits 8 and 10) that the hoofprints of cattle were first recognized (but not yet systematically recorded) at Kolhorn.

1983 (30 June - 5 August). Southern site. Reconnaissance by means of a series of 2x10 m trenches, fitting into the chequerboard system and transecting the site in E-W and N-S directions: trenches 12-19.

In trench 13, a man-made well was discovered and excavated. The Province of Noord-Holland awarded an extra grant for the hydro-geological investigation of the well and its surroundings. This investigation was soon afterwards undertaken by the Instituut voor Aardwetenschappen, University of Utrecht (see contributions by van der Waals and by Zuurdeeg, Coenegracht, van der Wal & Reynders, this volume).

In the creek, numerous hoofprints of cattle could be recorded. These imprints showed up in a fan-shaped pattern focussing on the centre of the site.

These finds of well and imprints were responsible for the decision to continue work on the southern site in 1984.

1984 (18 May - 6 July). Southern site. Pits 20-22 excavated.

1985 (5 June - 13 August). Southern site. Pits 23-25 excavated. Work on the southern site concluded. The fact that almost the whole of the archaeological sediment in the southern site had been worked through the arable soil by ploughing accounts for the slow pace of the work on this site: the wet-sieving of the clayey, heavy arable soil proved particularly time-consuming.

1986 (14 June - 30 August). Northern site. Pits 26-28. Excavation concluded.

In total, 1800 sq. m were excavated (1300 sq. m at the northern site, 500 sq. m at the southern site). The volunteers wet-sieved well over 1000 cu. m of soil.

7. PRELIMINARY VIEWS TO SERVE AS AN INTRODUCTION

Two small groups of people (for instance two extended families), characterized culturally by Late Single Grave and a small amount of AOC pottery, were living, either permanently or temporarily, on the former tidal flats. Their dwellings were situated on the bank beside a small creek, in the upper reaches of a creek system (Banga & van Dijk, 1979). The landscape was treeless, covered with grass and weeds of freshwater or brackish habitat, eminently suited for cattle grazing (Pals, 1984). The small creek was no longer carrying salt water, but the lagoon nearby and possibly also the main stream still were.

The people certainly kept cattle. Whether they themselves cultivated the grain (found in quantity) on the spot or elsewhere (on the island of Wieringen for instance, or on the coastal barrier) or possibly bartered it, cannot be said. Shellfish (Niklewicz-Hokse, 1990) fish (especially flatfish from the lagoon; Brinkhuizen, in prep.) and birds (especially mallard; Zeiler, this volume) were important to them. Occasionally they also visited the beach (bone fragments of a sperm whale), and they seem to have visited the boulder-clay island of Wieringen, at a distance of 10 km, as this is the most probable source of flint, stone and amber. Even the wood for the posts, of which many remnants were found, may have been collected there.

If their dwelling sites were continuously inhabited, it seems unlikely that their occupation was of long duration. No permanent structures could be detected (Kielman, 1986).

These people were certainly not living in isolation. More and more sites are turning up in the area, from Late Vlaardingen to AOO times (Hallewas, 1981; Manning & van der Gauw, 1987; Gerrets, Bulten & Pasveer, 1988).⁹

8. NOTES

1. Traditional name for the northern part of the province of Noord-Holland, not to be confused with the province of Friesland proper.
2. Estimation mentioned by J.J.C. de Heerto P.J. Woltering and J.F. van Regteren Altena in 1975 (cf. Woltering, 1976).
3. The author wishes to acknowledge the help he received from J.N. Lanting, since he took over the excavations in 1981. As to supervision in the field, D. Kielman (1982) and P. Schut (1984) temporarily covered for the author, for which he also wishes to extend his thanks.
Volunteers who took part during two or more campaigns: Jos Lankamp (Aalten), Jelle Abbenes, Gabriel Bakkum, Kees

Filius (Amsterdam), Peter Schut (Arnhem), Michel du Maine (Assen), Guus Metselaar-Pepping (Bergen N.H.), Rick Kroon (Breezand), Filippo Dibari (Florence), Annemarie de Jager, Nienke Niklewicz, Maarten van Zanen (Groningen), Yvonne L. van den Hooven, Axel Petersen, Jan Post, Marc J. Soeters (den Helder), Willem-Simon van de Graaf (Hilversum), Bart van Venetien (Schagen), Willem Fleischer (Stadskanaal), Hijkina and Rieks Booiij (Westerbork).

Students of the B.A.I. who took part in two or more campaigns: Marion Aarts, Everhard Bulten, Ido Dijkstra, Eric Drenth, Harry Fokkens, Danny Gerrets, Annelou van Gijn, Thomas Grotmeyer, André van Holk, Aksenia Hristova, Sake Jager, Han Janssen, Dethmer Kielman, Rob Koelman, Efraim Milikowski, Ange Niklewicz-Hokse, Juliette Pasveer, Gert-Jan Reeskamp, Gerrit-Jan de Roller, Iepie Roorda, John Smit, Annechien Steendijk.

The author is well aware of the debt he owes to all volunteers, especially to those who returned to Kolhorn year after year, taking on many responsibilities and in time becoming indispensable to these excavations.

At Kolhorn, we could always call on Mr and Mrs Jimmink and their son Martin for the mechanical excavator, on Mr and Mrs Puck de Groote for electrical and sanitary installation, while Mr de Groote as an amateur film maker also recorded the excavations' progress from year to year, and on Mr and Mrs Toes and their son Arjen as a contractor and campsite owner.

4. Subsequently, Aartswoud has been listed as an archaeological monument. It is to be deplored that, nevertheless, the turf at Aartswoud has been ploughed and the field has been turned into arable land, which in due course will lead to serious degradation of the site. It is a serious shortcoming of the Monuments Act that it does not provide for reservation of sites in the interest of research in a more remote future.
5. The decision was taken by J.N. Lanting, in consultation with P.H. Deckers, H. Fokkens, A.L. van Gijn, S. Jager, D. Kielman and the author.
6. It was G.J. de Roller who found the best way to incorporate flotation harmoniously into the work procedure and who performed the actual flotations, in 1983 and 1984.
7. The registration system profited in an essential way from the ideas and assistance of P.H. Deckers and D. Kielman.
8. In the following years it was found that the creek contained practically no man-made features, whereas on the talus they are quite rare. It is not very likely that much information has been lost.
9. The author is much indebted to A.C. Bardet for correcting and improving the English text, and to M. Bierma for preparing the manuscript.

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