THE PREHISTORY OF THE NETHERLANDS

VOLUME 1

Edited by L.P. Louwe Kooijmans
The Prehistory of the Netherlands

Volume 1

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Note on the dates used in this book

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

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

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

See chapter 1, section 'periods and dates' for the principles of radiocarbon dating.
From extensive coring research it had for quite some time been known that the old river dunes in the river district had been occupied not only in the Neolithic, but even in earlier times. Unfortunately, the high costs involved in excavation had precluded further research into the occupation sites. The discovery, during prospecting for the new Betuwe railway line in 1994, of two new river dunes, both with evidence of Late Mesolithic occupation, near Hardinxveld-Giessendam did therefore not come as a major surprise, but was indeed a stroke of luck (fig. D1). It was found that the sites would be disturbed by the creation of the body of sand needed to construct the railway, so they would have to be excavated. This took place in 1997-'98. To save time and for financial reasons excavations were at both sites restricted to a single, large section of the periphery of the settlement site that was assumed to be representative of the entire periphery plus part of the adjacent swampland (fig. 4.9, plate 11A). The excavations yielded a wealth of new evidence and information.

As in most other parts of Europe, our understanding of the Mesolithic was hitherto based almost entirely on the flint scatters of former camps. Only very few wetland sites are known with preserved organic remains from which so much extra information can be obtained: Star Carr in England, Noyen-sur-Seine in France, Friesack in Meckelenburg (Germany). Wetland sites dating from the Late Mesolithic are however known only from southern Scandinavia and the Baltic countries. They have governed our understanding of this period to such an extent that the European Mesolithic may be considered a clone of the Danish Mesolithic. So from this perspective the two Hardinxveld sites are particularly valuable.

The sites were located on two small river dunes, known as Polderweg and De Bruin, whose tops lay 5 and 4 m below NAP, respectively. Both dunes were first occupied around 5500 BC. People continued to live on the dunes until the rise in the water level caused them to disappear beneath peat and clay, the first around 5000 BC and the second around 4450 BC. The short distance of about one kilometre between them suggests that the two dunes were islands in the immense surrounding swamps affording dry living areas for one and the same community (plate 12).

The settlement sites themselves lay at the tops of the dunes. Large, shallow, flat-bottomed pits dug in those parts are assumed to be the features of sunken huts. This is also

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**fig. D1**

Section based on cores of part of the buried river-dune landscape of the Alblasserwaard region with the Polderweg dune at the centre. Horizontal scale 1:8000, elevation 40 times enlarged.
suggested by postholes with fairly small diameters, the deepest of which still contained the remains of a 6-cm-thick post. On both dunes deceased members of the community were in the first centuries of use buried at the occupation site, and so were the occupants' dogs, with which they evidently had a close bond (fig. D2). One of the deceased was a woman of about fifty (fig. 9.4). Human bones, some deriving from young children, were also found among the refuse. This evidence, along with the sites' dimensions (lengths of 80 and 90 m), shows that the dunes were not just hunting and fishing stations, but base camps for entire households. This is indeed confirmed by the broad range of bone and antler artefacts found at the sites and by the results of microwear analysis of the flint artefacts.

The thousands of animal bones show that beaver, wild boar, red deer and otter were the most important hunted animals. The beavers and otters were caught with traps, the deer and boars were actively hunted. Roe deer and furred animals - European wildcat, pine marten and polecat - were also killed in small numbers. The hunters killed large quantities of waterfowl: many mallards, but also typical winter visitors such as the red-throated diver, goosander, goldeneye, wigeon, Bewick's swan and whooper. White-tailed eagles will have been shot for their feathers and possibly also for prestige. The tremendous amounts of fish remains suggest that fish, in particular pike, was the most important source of food. Pike is indeed so prominently represented as to imply that the occupants took advantage of the spawning season, when the fish overcome their usual timidity and venture into shallow waters. That is in the second part of winter, around February. Besides the represented bird and fish species, the parts of red deer antler found on the dunes also show that the sites were winter camps: 20% of the bases derive from killed animals, which must have been shot between September and January, and the other 80% are gathered beams, which will have been picked up in February and March. Water nuts (some of which showed signs of burning) and hazelnuts were collected in the early autumn. The complete absence of remains of young deer, young beavers and typical summer fish such as sturgeon, salmon and thin-lipped grey mullet suggests that the camps were not occupied in the summer, at least not in phase 1 of the Polderweg site (fig. D3). We do have some evidence for summer use from the later phases: a few bones of the purple heron and young deer and remains of adult sturgeons. The sites' function seems to have changed in those phases, possibly as a result of the introduction of arable farming, which will have demanded more permanent residence on the sandy soils (see below).

The most spectacular artefacts are of course those of wood: large parts of two man-sized elm bows, four ash paddles, a unique axe handle, also of ash wood, and a complete, elegant 5.5-m-long canoe made from the hollowed-out trunk of a lime (fig. D4, plate 118) plus parts of some other canoes and part of a fish weir. Split wood, a few half-finished products and some chips show that such artefacts were not only discarded, but also manufactured at the site itself, and that brings us to the varied range of bone and antler implements.

The hundreds of bone and antler tools represent a toolkit that varies considerably from those known from Scandinavia - not so much in functional respect, but more stylistically. The severely battered cutting edges suggest that the heaviest implements were used for primary wood-working operations and for felling trees, but this was surprisingly not confirmed by chopping experiments using axes similar to those found at the site. The axes concerned are primarily T-shaped antler axes without a shaft hole. Small chisel blades of wild boar teeth inserted in shafts, some of which were perforated, were used for finer wood-working. The site also yielded a varied range of axes and chisels made of parts of antler beams or tines. Large quantities of discarded bases and a few crowns show that these implements were also made at the site. Damaged and broken parts were repaired. Unique and highly characteristic of Hardinxweld are fine serrations at the cutting edges of axes that were no longer considered suitable for their primary function. Microwear analysis showed that they were granted a new lease of life as scraping implements. Besides this systematic 'antler industry' there was a second production line based on the metapodia of aurochs, elks and red deer. The bones of the first two species were used to make heavy socketed axes, while the red deer metapodia served as raw materials for various chisels and awls. A few special tools are decorated with rows of dots, finely hatched geometric motifs or groups of short hatched lines. An exceptional find is a blunt gouge-shaped awl made from the ulna of a mute swan that is decorated with rows of small hatched triangles. Although the overall range does show some similarities with contemporary Danish assemblages, its most conspicuous feature is nevertheless its great originality. This implies a high degree of cultural differentia-
Polderweg, phase i. Survey of absent (white) and represented (dark grey) seasonal indicators. There are two possible interpretations: occupation in two phases — early autumn and late winter (dark grey bands) — or throughout the autumn and winter (dark and light grey bands together). What we do know for sure is that the site was not occupied in the summer, which implies seasonal movement of the base camp within an annual territory.

The hinterland of the Hardinxveld site hence lay not to the north, but to the south. This is evident from the provenance of the stone. From phase 1 date several blades of Wommersom quartzite (see chapter 8), but also a large block of Rijckholt flint that must have been imported directly from southern Limburg. A large angular lump of schist must have come from the Ardennes, and the same holds for a number of river pebbles. The Ardennes may also have been the provenance of a few small pieces of pyrite that were found among the refuse. They were probably used to light fires, along with tinder. The greater part of the flint will however have been picked up closer to the site, from the Meuse terrace deposits in the central part of Limburg, though some came from sources to the north. Generally speaking, Hardinxveld may however be considered a northern, relatively late outpost of the ‘Wommersom community’ of the southern part of the Netherlands (see chapter 8). The obvious conclusion would be to suppose the complementary summer camp in the same southern direction. The hunters may have lived in the summer at the periphery of the sandy soils, from where they could exploit the game of the hinterland and the salmon and sturgeon of the rivers. Further evidence confirming this was provided by some bone and antler tools that came to light in dredging activities during the development of the new Maaspoort district of ‘s-Hertogenbosch.

The Hardinxveld camp sites were contemporary with the Bandkeramik, the culture of the first farmers in the loess zone more than 120 km to the south, with which region the hunters seem to have been in contact. This is evident not only from the imported types of stone, but also from a typical Band-
keramik point from phase 1, from Blicquy pottery from phase 2 and from a few very large blades of Rijckholt flint knapped according to the Michelsberg tradition from phase 3. Around 5000 BC people began to produce pottery at the Hardinxveld sites. This is taken to mark the beginning of the Swifterbant culture. To what extent the sites’ occupants engaged in farming is difficult to say in the case of such winter camps in a swamp. Votive offerings deposited towards the end of the period of occupation included parts of domestic animals: cattle, pigs, sheep and goats. Those animals were evidently already being kept elsewhere. But we do not yet have any evidence of cereals, which are known from the Hazendonk site near Molenaarsgraaf 500 years later. This shows that the transition to the Neolithic in the North European Plain was indeed a hesitant process.

Notes

1 See the contributions of many specialists in Louwe Kooijmans 2001a, 2001b and 2003.