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Location, Location, Location: the Construction and Preservation of Roman Burial Mounds in the Dutch River Delta

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Roman period; burial mounds; river delta; The Netherlands; palynology; micromorphology; construction; preservation.

Introduction

During an excavation in the Holocene Rhine river delta (The Netherlands), six largely intact Roman burial mounds dating from the 2nd and 3rd century AD were found.¹ Such a discovery is a unique find for The Netherlands. Why were these mounds built at this location and why have these mounds been preserved? These questions have been answered using an interdisciplinary approach. This study included field observations, micromorphological analyses, grain-size measurements, AMS ¹⁴C-dating and a palynological study. By combining the results of these studies, we were able to make a reconstruction of the palaeo-landscape and the environmental changes that occurred through time.

Site Description: Soil Profiles and Burial Mounds

The site is located on the Over-Oudland fossil channel belt which was active from the Neolithic till the Bronze Age. A residual channel from this channel belt was found on the site. A palaeo A-horizon had formed in the upper sandy and silty overbank deposits from this channel belt. The burial mounds were built on top of this palaeosol. Lithologically, the burial mounds were difficult to discern from the surrounding soil.

The palaeo A-horizon and burial mounds are covered by a 20-cm-thick bluish clay deposit. The presence of this clay layer was vital for discerning and recognising the burial mounds because it was draped over the former terrain surface—including the burial mounds—thereby conserving the original topography in the subsurface. As a result, it was possible to discern the shape and form of the burial mounds by following the bluish clay layer (Fig. 1). A second palaeo A-horizon had formed in the upper part of the blue clay layer. This palaeosol is also overlain by a sandy to silty clay deposit of approximately 1 meter thickness. Modern soil has developed on the top of these sandy and silty clays.

The burial mounds are approximately 40 to 50cm high. Of the six burial mounds, three were circular and two were square. Three of the burial mounds were surrounded by a ditch and one, a square mound, was surrounded by an earthen wall. The burial mounds were probably built by people who lived in a nearby settlement, the remains of which were found in an earlier research project, located 200 meters to the southwest of the site. The remains of cremations were found in the top of four burial mounds. In two mounds, these remains also included pottery which had been added to the grave as a burial gift. On the basis of the pottery remains, the burial mounds could be dated to the 2nd and 3rd century AD.

1 Verniers 2012.



Fig. 1 | Profile of one of the excavated burial mounds.

Methods

Micromorphological analyses were conducted on samples taken from the top, the flank, the surrounding ditch and the surrounding earthen wall of one burial mound. Also the sedimentary characteristics of a natural, undisturbed soil profile were studied. Samples for grain size analyses were taken from all burial mounds and from different locations within a natural soil profile. The organic fill of the nearby residual channel provided material for a palynological study and material for AMS ^{14}C -dating. All the samples were processed and analysed using the standard method.

Results

The palynological record from the nearby residual channel gives us the vegetation development from the Early Iron Age (810–515 BC)² to the Early Roman Age (73–227 AD)³. In the Iron Age, patches of deciduous forest with oak and hazel are present in the area. In the surrounding area, cereals and other crops were grown. In the Early Roman period the landscape opened up as the cultivation of cereals expanded along with an increase in the area of fallow land. This increase in fallow land coincides with a decrease in grassland and can probably be related to land clearings for the construction of the burial mounds. Meanwhile, the water depth in the residual channel decreased from 150cm to 50–100cm in the Roman period. A dense vegetation cover in the channel and immediate surroundings limited access to the water.

The burial mounds were built on top of a palaeo A-horizon. During the micromorphological analyses, little to no evidence was found regarding preparations of this soil prior to mound building. An increase in charcoal particles on the boundary between the palaeo A-horizon and the burial mound could suggest the use of fire to clear the area prior to building.

Micromorphological analyses suggest that the burial mounds were constructed using local materials. The sediment used to construct the mounds shows the same lithological characteristics as the sediment taken from the natural soil profiles. Grain size analyses showed that all mounds were constructed of very silty clay. Because the mounds consisted of a uniform sediment matrix, it is likely that they had been built in one phase. Volumetric calculations indicated that the material removed from the surrounding ditches

2 2560 ± 45; KIA-43210.

3 1870 ± 30 BP; Poz-41826.



Fig. 2 | Impression of the landscape in the Late Roman period: drawing by L. van der Feijst.

alone could not account for the volume of clay needed to raise the mounds. Additional clay was therefore needed to construct the mounds. An area was found on the site where the natural soil had been disturbed without the presence of a mound. It is therefore proposed that this area was used as a source for the material used for building the burial mounds.

It was found that the site did not experience large-scale erosion or degradation. This is evidenced by the micromorphological research which revealed that the top of the burial mounds were virtually undisturbed. Furthermore, limited soil formation on the top of the burial mounds suggests that the mounds have been exposed for just a short period of time favouring preservation. However, grain size measurements suggest that minor disturbances of the burial mounds did occur, probably caused by wind and water movements. The sedimentary characteristics of a thin 'transitional' layer on top of the mounds showed similarities to the sediment from the burial mounds as well as to the clay layer deposited on top of the burial mounds. This layer is therefore interpreted as a mixing layer created by erosion and redeposition of water-saturated sediment.

We believe that the burial mounds were inundated by a flood. However, this flood did not have a significant erosional impact in the immediate surroundings of the burial mounds. The clayey deposit on top of the burial mounds had a very low sand and silt content. This sediment type is associated with low-energy environments (low-velocity water flow or standing water), which explains the minimal erosion found in the micromorphological record. Based on the age of the burial mounds, the start of activity of the nearby Hollandse IJssel River and minimum soil formation, the flooding of the burial mounds and deposition of the 20-cm-thick bluish clay layer should have taken place in the Late Roman period.

The flooding and deposition of the Late Roman clay layer has not only preserved these mounds but also given us a vital guide in finding and recognising the burial mounds. The burial mounds were further buried during the Middle Ages which helped conserve the mounds even more.

Conclusions

Based on the analyses of the different proxies, we conclude that:

1. the Late Roman burial mounds were constructed on former pastures near a water source (residual channel). The mounds were built on top of a palaeo A-horizon which was not prepared;
2. the mounds were constructed using local materials and were not built only using the material from the surrounding ditches;
3. the top of the burial mounds had been reworked but no large-scale erosion or degradation had taken place;
4. subsequent flooding and deposition of clay favoured preservation of the mounds.

An impression of the landscape in the Late Roman period with the burial mounds is shown in Fig. 2.

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