

Barrows and Roads

Some Possibilities Based on Soil Classification Maps

BY ANDERS OTTE STENSAGER

Abstract

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Based on soil classification maps of south-east Jutland, the article presents some possibilities for the study of prehistoric roads and wagons. Further, it will be argued that the character of the soil conditions and the nature of the prehistoric wagons may have influenced the location of the roads.

Anders Otte Stensager, stud. mag., Department of Prehistoric Archaeology, Copenhagen University, Denmark.

Introduction

Roads contain the collective memory of human travel from prehistory to the present. The extent and nature of traces of a road are closely connected to the purpose and accessibility of the road, and also the economic resources and interests that might have determined its siting. The nature of the road also reflects the type of traffic that moved along it and the landscape it crossed. Even though travel through open country provided endless possibilities, the traces it left behind are only sporadic and hard to see archaeologically. Over the millennia, new roads replaced the old ones, which were either modernized or completely abandoned, while others were re-routed or perhaps supplemented by new ones. Common to all of them, however, is that the roads were people's lines of communication, which were always conditioned by the nature of the countryside.

Road research in Denmark has only to a limited extent been linked to changes in landscape utilization. As early as the 1890s

Sophus Müller realized that long linear arrangements of burial mounds might mark the routes of prehistoric roads in areas with uneven topographic conditions. The distribution of the mounds was clustered in particular areas of the landscape suitable for the establishment of roads. In this way the roads of the Neolithic and Early Bronze Age became a part of archaeology, and Müller's theory later became the basis for the work of other researchers, for example, that of Therkel Mathiassen on settlement patterns, in which roadways were included. Remarkable research into sunken roads and road traces led first Hugo Matthiessen in the 1930s, and then Mads Lidegaard in the 1970s, to assemble an impressive database of particularly medieval road lines along the Royal Road in Jutland, involving both mapping and meticulous landscape studies. Work in Sweden has been more intensive since the early 1960s, involving the use of topographic maps in the attempt to chart prehistoric roads (Jørgensen 1988, pp. 101-116; 2001, pp. 3-14; Mathiassen 1948; 1959; Müller 1897, pp. 297 f.; 1904, pp. 1-64; Thörn 2002a, pp. 135-148;

2002b, pp. 3–7; Stensager 2002, pp. 8–11). More recent research into the prehistoric roads of Denmark has mainly concentrated on establishing typologies of roads and attempts at chronologies, and also on linking the Iron Age roads to the formation of a central power in eastern Denmark.¹

Sophus Müller’s “highways”

Although Sophus Müller’s work is often criticized, it did form the basis for several subsequent investigations and analyses that led, among other things, to the recognition of similar “highways” in Scania. These investigations have shown that the placing of Bronze Age burial mounds in particular can be linked with possible road intersections and lines of communications, which were probably in existence as early as the Battle Axe period (Rudebeck 2001, p. 103).

Similar investigations have not been carried out in Denmark recently, but with Müller’s method in mind we may expect corresponding finds of road intersections elsewhere in Denmark. It is more difficult, however, to determine the function and date of the particular roads. This is due especially to the lack of large-scale landscape analyses of the individual roads, and their potential link to settlement patterns from an archaeological perspective. Suggestions that, for example, metaphysical roads or processional ways could well have existed in prehistory are very difficult to prove (Larsson 2001, pp. 113–123). Much more extensive geophysical prospection is needed, to reveal the nature of the landscape and the roads. Dating is the next problem, because dates might derive from the establishment of the road, a chance period in its use, or a temporary extension of it. These are difficult to distinguish archaeologically. Finally, it must be stressed that abandoned road traces near burial mounds need by no means be contemporary with them. Occasional finds of wheel ruts under burial mounds demonstrate that graves may be constructed where a road previously ran.²

Although there are therefore reasons to be cautious about Müller’s theory of the link between mounds and roads, there are nevertheless reasons to praise his methodological observations. The rows of mounds and the traces of roads that Müller investigated did notably traverse landscape barriers like rivers or valleys. Together with the finds of disc wheels going back to the Late Neolithic, there are reasons to believe that a well-developed network of roads must have existed as early as the end of the Neolithic,³ a road network for which Müller indirectly laid the basis.

The placing of roads

If an area with a sufficient number of roads is chosen, it should be possible to gain an impression of the individual factors that might have determined the geographical placing of the roads. Here a part of the south-eastern region of South Jutland is chosen (fig. 1), an area where the mapping of medieval roads in particular has been most intensive (especially the investigations carried out by Hugo Matthiessen and Mads Lidgaard), but also one where there are roads older than the burial mounds (cf. note 2). The burial mounds in this area are notable both for their tight clustering, and for a great variety of secondary features such as ard furrows and house sites under the mounds themselves (Rasmussen 1993). When maps dating from the time of land reform and those of soils are included, a picture of intensive land use emerges in which the construction of both roads and burial mounds occurs side by side in agriculturally productive regions.⁴ The overwhelming majority of the mounds are built on fertile areas, at the junction between areas of heath sand or glacial meltwater sand, and morainic soils. The mounds are thus placed centrally in the soils which must be regarded as having the highest fertility in the area – in this case morainic deposits laid down during the last glacial period around 14,000 years ago.

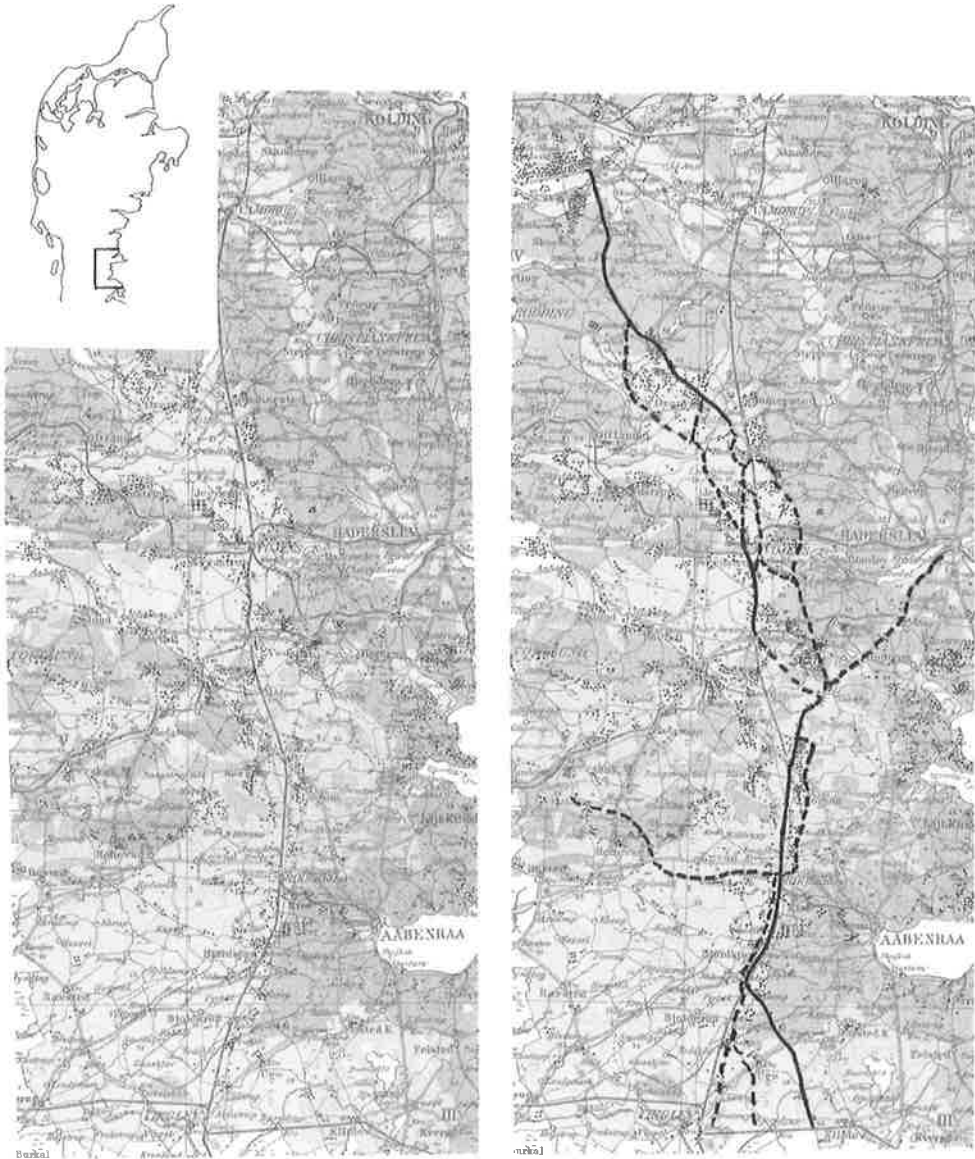


Fig. 1. Left: map of Stone and Bronze Age burial mounds in south-east Jutland (after Brøndsted 1957). Right: the main arteries of travel along the Royal Road. Solid lines: recorded by Matthiessen in 1951. Dotted lines: recorded by Lidegaard in 1980–92. Darkgrey areas: morainic or glacial meltwater deposits. Lightgrey areas: heath sand and glacial meltwater sand (after the soil map of South Jutland, Geological Survey of Denmark 1989).

If we now consider the region's roadways, the majority are on the same morainic stretches as the burial mounds, and seem in several instances to have followed the same geographical alignments (fig. 1). The heath sands to the west

are of no great value either for cultivation or for grazing. The valleys and level heaths of the region were thus of limited significance for prehistoric and medieval agriculture. The flat-bottomed erosional valley which leads up to the

stretches of moraine, however, provided better possibilities for exploitation, whether for arable or grazing. Fields on the moraines must therefore be regarded as a possible method of exploitation.

Most of the region's roads seem to have been located with reference to this resource potential, but more thorough analyses of soil conditions are of course needed before further conclusions can be drawn. From the point of view of the history of the roads, it cannot be ruled out that grazing along the roadsides may have been important for the long-distance movement of animals. To this must be added the fact that both the construction of the road and its use could be best carried out on soils without a high sand content. A road, regardless of its particular purpose, had to be constructed in the place or places where the soil conditions seemed most favourable, and where there was closest access to the potential resource base. Not all routes can necessarily be assumed to have had the same purpose, but important needs must have been what determined whether a road should be constructed – whether it was a simple gravel or brushwood track, or a regular cobbled road. Nor can we ignore the fact that the choice of materials may have been dictated by the surrounding conditions. Roads of planks and stone cobbles needed large quantities of raw materials, which had to be available in the vicinity. Nor can it be ruled out that the type of construction was to an extent determined by innovations in vehicle technology. Heavy ox-drawn wagons with disc wheels of the type known from Kideris or Rappendam inevitably required a firm and solid road surface for easy and trouble-free travel. Heath sands provide no advantages of this type, and would mean that travel was slower and more awkward. The stronger medieval wagons differed in having reinforced wheels and oblique spokes, which reduced the likelihood of accident when they drove on uneven or sloping ground.

The basal layer of the road is thus of significance for the construction of vehicles, and not least of wheels, hubs and axles.⁵ Recent investigations in Scania have revealed that the

overwhelming majority of both prehistoric and medieval roads were covered with sand, gravel or peat. Regular cobble stones do not seem to have been driven on (Jørgensen 2001, p. 12; Thörn 2001, pp. 51–60; 2002a, pp. 135–148; 2002b, pp. 3–7). Finally, the load size of the individual wagon types had to be taken into account when the basal layer was considered, and this also raises questions about the function of the particular vehicles. Social factors and needs make themselves felt here, whether we are dealing with ordinary working vehicles or more specialized ones of the type found at Dejbjerg, with limited functional utility. The development of individual wagon types as a result of social factors thus undoubtedly also influenced the characteristics of vehicles.

Conclusion

The interplay between the physical characteristics of the soil and the development of wagon technology were important aspects influencing road construction in the landscape. One can, however, be led astray if the various aspects examined here are considered in isolation, without critical evaluation of whether the particular aspects are expressions of local or regional phenomena. We still do not have detailed analyses of the landscape like those that have been carried out at Galsted in south-west Jutland, where among other things there was a series of Pre-Roman Iron Age settlements exclusively located on morainic and meltwater deposits.⁶ Similar settlement arrangements must be expected in south-east Jutland.

It is a collective view of society at one point in time that we consider when we want to explain traces of travel. Maps of soil types only give us a small part of the wider perspective of the activities, which were dependent on the needs of individual users and of society as a whole, with regard to roads and every aspect of wagon technology. The many reconstructions of prehistoric vehicles will certainly be able to contribute much to our understanding of

prehistoric and medieval development of land transport, not least when in due course they are exposed to different types of roads and basal layers out in the landscape. In this way we will have to potential to gain new insights into the societies of one or more periods, for which the roads formed the essential backbone.

Notes

- 1 For example, the extensive investigations of the Roman Iron Age graves from Himlingøje and Skovgårde in south-east Zealand have traditionally been used for analysing the infrastructures of the area and theories about the establishment of an east Danish centralization of power.
- 2 E.g., Lundshøj ved Gram (Hansen 1979, p. 73, note 7).
- 3 The disk wheel from Kideris Mose (Hansen 1979, p. 73, note 8; Schovsbo 1987, p. 241, no. 96).
- 4 Maps dating from the time of the land reforms: Kort & Matrikelstyrelsen; soil maps: Geological Survey of Denmark 1:200,000.
- 5 The project at Langå, Hollufgård, in 1986–87 showed that the creation of wheels and hubs on wagons like the one from Dejbjerg were essential for the whole roadability of the wagon (unpublished report by Gunnar Hønborg, Hollufgård 1987).
- 6 Rindel 1999, pp. 82 ff. By comparing the mapping of barrows from the Stone Age and Bronze Age in this area with the settlements from the Pre-Roman Iron Age it can be shown that both types of establishments are placed inside the geographical areas of morainic or glacial meltwater deposits (Brøndsted 1957; Geological Survey of Denmark, soil map 1989; Rindel 1999, p. 82, fig. 2).

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