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Ancient Monuments Laboratory
Report 91/91

SECOND SOIL REPORT ON WEST HESLERTON, NEAR MALTON, NORTH YORKSHIRE; THE CEMETERY EXCAVATION, AREA 2BB.

R I Macphail BSc MSc PhD

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Summary

This short interim report (main report in preparation) confines itself to the soils of area 2BB, and follows an extensive study of the soils at West Heslerton reported upon in 1982. Field observation and data from two bulk samples suggests that brown soil deposits of probable Neolithic date cannot be securely argued as colluvial in origin, although this mechanism of transport cannot be ruled out. Overlying dark sands, however, were probably affected by podzolisation, extant into the Anglian period at this northern end of site 2.

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SECOND SOIL REPORT ON WEST HESLERTON, NEAR MALTON, NORTH YORKSHIRE: AREA 2BB

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Introduction

During 1986-7, excavations (director of West Heslerton Parish Project, Dominic Powesland) of the Anglian cemetery at West Heslerton, south of the A64 (Area 2) were carried out. In 1978-82, the cemetery and Roman and prehistoric archaeology north of the A64 (Area 1) were excavated (Powesland et al. 1986). An appraisal of the palaeoenvironment, based mainly on soil data, had also been carried out (Macphail 1982 AMLR No. 3706; Fisher and Macphail 1985; Powesland et al. 1986, fig. 73). Soil studies of Area 2 have continued (1987-1991), extending from the Vale of Pickering edge sands, up the colluvial chalk footslope of the Wolds scarp. This present report, however, will confine itself to the small amount of work specifically undertaken in Area 2BB (Appendix 1, fig. 1).

Methods and samples

Soils were examined in the field (Hodgson 1974), and bulk samples were analysed according to the methods of Avery and Bascomb (1974).

The sand sequence at Area 2BB (fig 1) was thought from field observation, to represent unpodzolised pre-Late Bronze Age hillwash soil (over natural lacustrine sands), that predated darker brown blown sands of Late Bronze Age to Anglian in date (Powesland, pers. comm.). Samples from the hypothetical blown and hillwash sands were taken to test these ideas.

Results

The soils are Typical Brown Sands of the Newport Series (Newport 1 Association; Jarvis et al. 1983) and totally comparable with the soils of Area 2 (Macphail 1982). Analytical data is presented in table 1. There are no significant textural differences to suggest that the lower brown layer (sample 2) is of colluvial origin, rather than of wind blown origin. Its well sorted nature, however, may also reflect the well sorted parent material sands of the area (Macphail 1982). This lower layer may be Neolithic in date, and its brown colour, and possible relic worm channels, may possibly suggest it is the remains of brown earth soils in the area, especially as this material infills Neolithic features (Powesland et al. 1986, fig 73; Powesland, pers. comm.).

On the other hand, the upper dark brown sand (sample 1) may have been influenced by podzolisation, as it is slightly more cemented and acid, contains more organic matter and has a higher magnetic susceptibility, the last possibly broadly reflecting the combined effects of a higher iron content as well as any human impact (burning). The blown sand may have its origins in eroded sandy soils that were podzolising to various degrees of development from the Bronze Age to the Anglian (Fisher and Macphail 1985). At Area 2BB, there may be tenuous evidence (colour and consistency) of the Anglian soils being very weakly cemented by podzolisation. (Upslope towards the Wolds, this was not the case; Macphail in prep.)

Conclusions

The soil sequence at Area 2BB seems to represent brown soil formation in sands overlying, and probably deriving from, lacustrine sands. Brown soils were extant in the Neolithic, but their presence as a transported deposit higher up the sequence cannot be securely argued as a result of colluvial activity, although this mechanism cannot be ruled out. The dark brown sands above are probably of windblown origin, and can be dated in broad terms as Late Bronze Age to Anglian, during which time podzolisation was affecting the area. Weak podzolisation also probably affected stabilised Anglian soils here.

Aknowledgements

The author wishes to thank Dr Stephen Carter for analytical data.

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Figure 1: Soil section at Area 2BB

Depth	Horizon/layer	Colour	Sample
30 cm	Modern Ap	dark brown (7.5YR3/2)	
40 cm	Ferruginous ("blown") Sand	dark reddish brown (5YR3/3)	1
70 cm	("Hillwash") Sand	brown (7.5YR4/4)	2
100 cm	Lacustrine Bedded Sand	yellowish brown (10YR5/8)	

Table 1: Analytical data

Table 1a: Grain size data

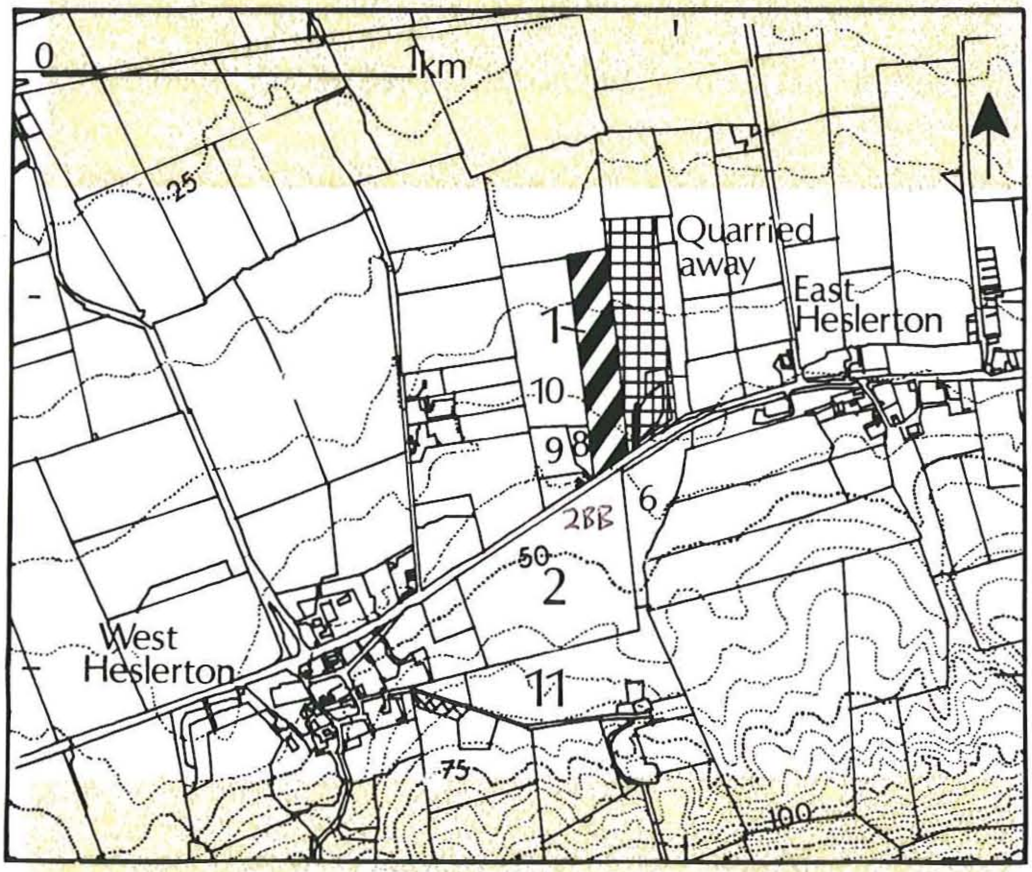
Sample	Clay	FZ	MZ	CZ	Silt	VFS	FS	MS	CS	VCS	Sand	Texture
1. (ferruginous?)	2	<1	<1	3	4	12	33	48	2	<1	94	Sand
2. (brown)	2	<1	<1	5	6	9	30	51	3	<1	92	Sand

Table 1b: Chemical and geophysical data

Sample	pH H2O	pH CaCl2	% CaCO3	%Loss on Ignition	Magnetic Susceptibility (Si 10-8 Si Kg)
1. (ferruginous?)	6.1	5.7	0.1	1.7	203
2. (brown)	6.6	6.2	0.1	1.2	144

Appendix 1

Figure 1



Location of Sites

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