ANCIENT MONUMENTS LABORATORY

REPORT

4443

SERIES/No CONSULTANT

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TITLE Soil report on Rangoon Street, City of London

FH10 LAB(2SP)883

Soil Report on Rangoon Street, City of London

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During the autumn of 1982 Rangoon Street was excavated by the Department of Urban Archaeology (excavator, David Bowler). When the site was visited only the upper part of the natural soil deposits rmained - the Dark Earth deposits having been removed. These natural deposits were sampled. However, as there was no Dark Earth left in this context, a random sample was taken from the site periphery. The site was first occupied in the mid 1st Century AD, and Dark Earth is believed to have accumulated until the 4th Century, after which there is some late Saxon activity concluding with a double inhumation dated 1015 ± 30 AD (David Bowler, pers comm: Bowler, 1983).

Analytical and micromorphological findings are presented in Table 1, and in the Micromorphological Description. Some microfabric details are illustrated in Plates 1-3. These data may be compared with other Dark Earth sites in "Notes on Coarse Inclusions" (AM Library) and in Macphail and Courty (in press, AM Library). In the latter the information from Rangoon Street is discussed in the light of the Dark Earth analysed from much tighter archaeological contexts at Southwark.

Bowler
At Rangoon Street (pers comm) has suggested a cultivation origin for the Dark Earth - additions of "manure" aiding its accretion. The microfabric of the truncated natural soil (1557: Plate 1) supports this contentions by showing signs of mixing (of several previously stratified soil levels), including the incorporation of A horizon soil material. Unfortunately, no Dark Earth from dateable plough soil events (Bowler, pers comm) was examined so cultivation throughout the Roman period on this site cannot be confirmed, although the cultivation origin of Dark Earth has been reviewed (Macphail and Courty in press). The sample of Dark Earth actually examined contains only poor evidence of every being a ploughsoil, by for example having a few coatings which could relate purely to exposure to the elements rather than to agriculture and little biological activity - a factor reflected in the high C/N ratio. In short, this example of the Dark Earth from Rangoon Street has more in common with the Dark Earth from Southwark by having the same fine fabric characteristics (Plates 2 and 3), which from the latter have been tentatively interpreted or accumulations from

Micromorphological Description : Coarse / Fine Limit 20 um.

Rangoon St City of London

1557 B(g) (Plate 1)

Structure: fine subangular blocky; channel structure: Porosity (20%) common coarse (0.5cm-1cm) cracks between aggregates; very few fine (30um) channels intrapedally: Mineral: Coarse/Fine, 75/25: Coarse: very dominant very fine, (angular to sub-angular): medium and coarse (sub-rounded to sub-angular) sandy size quartz; poorly sorted: frequent soil (fabric (b)) fragments: few flint, including small stones (2cm): very few opaques and sharp-edged nodules: glauconite present (common in fabric (b): Fine: A) dominant brown (PPL), yellow orange (RL): b) frequent dark yellowish brown (PPL), orange-brown (RL): c) few grey/pale brown (PPL), very pale orange (RL): d) few dark brown/black (PPL), dark grey-brown (RL): Organic: Coarse: charcoal present in fabric (d): Fine: a) charcoal possibly present; frequent amorphous organic matter: b) amorphous organic matter present: c) charcoal possibly present, frequent amorphous organic matter: d) frequent charcoal/charred plant material, common amorphous organic matter: in general possible amorphous organo/phosphate present: Groundmass: a) moderate birefringence; striated: b) moderate birefringence; weakly striated: c) moderate birefringence; weakly striated: d) low birefringence, weakly crystallitic: generally prophyric: Pedofeatures possible thin dissaggregated excrements present: Textural soil fragments (b) common (relic) clay coatings: very few fine (30-50um) dusty, including fine amorphous organic matter, coatings in minor porosity of fabrics (a) and (c): Depletion: fabric (c) probably depleted of iron: Crystalline: Vivianite (Plate 1) crystals present (see Amorphous): Fabric: soil heterogeneity due to mixing: Amorphous: common weak to strong (fabrics (b) and (a)) impregnative ferriginous nodules: frequent ferro-manganiferous nodules (fabric d): possible amorphous organo-phosphate present, as void infills (location of vivianite).

"Dark Earth" Plates 2 and 3

Structure: compacted medium sub-angular blocky with fine (120um) to large (1mm) microaggregates; crack structure: Porosity (30%) common very coarse cracks; few compound packing voids and fine (15um), short (50-250um) channels intrapedally: Mineral: Coarse/Fine 65/35: very dominant very fine (angular to sub-angular) medium and coarse (sub-rounded to sub-angular) sand size quartz:

unsorted: few flints: very few opaques and sharp-edged nodules: glauconite, limestone fragments present: few artefacts; very few pottery, mortar and burned daub; "brickearth", soil fragments, bone and shell present: Fine: a) very dominant dark brown, black (PPL), greyish; includes ash, dark brown (RL): Organic: Coarse: few charcoal: root fragments present. Fine: a) common charcoal/charred plant material; dominant amorphous organic matter, well preserved: amorphous "organo-phosphate" present: Groundmass: a) low birefringence, weak crystallitic: enaulic: Pedofeatures: common extremely thin elongate excrements, coalescing to moderately thin: frequent moderately broad rugose: Textural: fine (30um) dusty coatings present: Crystalline: very few, calcitic coatings: vivianite present: Amorphous: frequent impregnative ferro-manganiferous nodules: pale yellow-brown possible "organo-phosphate" (includes vivianite crystals):

(Plate 2)

(Plate 3)

Table 1 Rangoon Street: analytical data

Sample	% Loss on Ignition	% Organic Carbon	pH
1557 (Bg)	1.75	0.41	-
"Dark Earth"	3.69	1.54	7.4

(method, Avery and Bascomb, 1974)

	Organic	Organic	N*	C/N
Dark Earth	1.94	3.34	.92	21.1

(method, Bonneau and Souchier, 1982: analyses by INAPG Grignon, France)

NB * % x 10

Captions Rangoon Street, London

Plate 1. Photomicrograph: B(g) horizon (natural) 1557: Dominant brown fabric of sandy soil (fabric type a) with channel infill of probable organo-phosphate (yellow) and possible vivianite (very dark blue) material. Plane Polarised Light (PPL). Length of frame 5.225 mm.

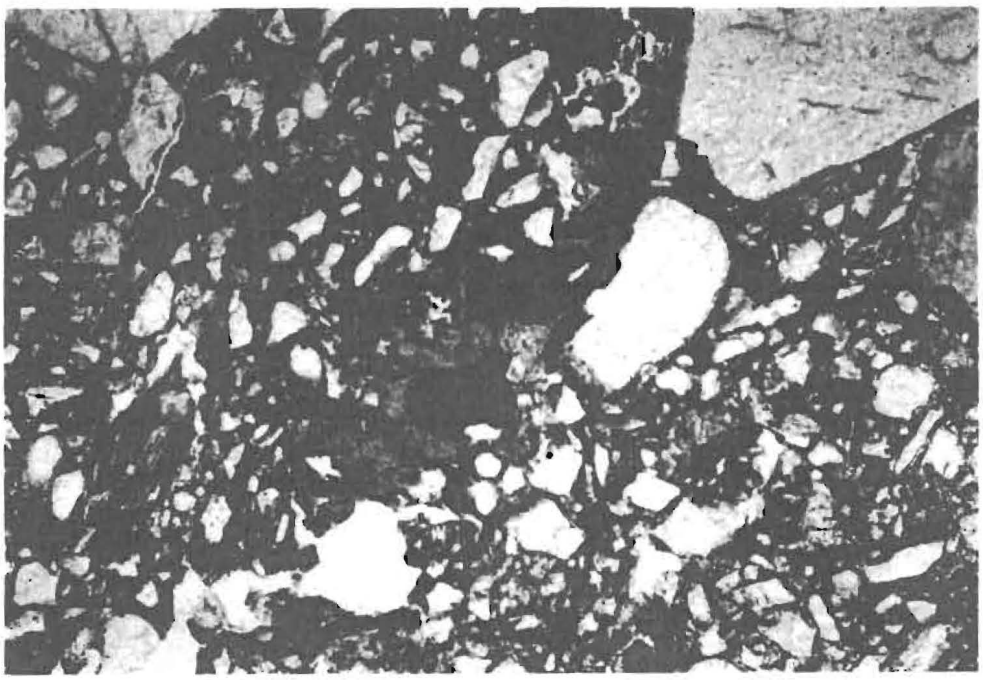

Plate 2. Photomicrograph: Dark Earth: Typical dark brown fine fabric, of intimately mixed fine charred organic matter and mineral soil. PPL. Length of frame 5.225 mm.

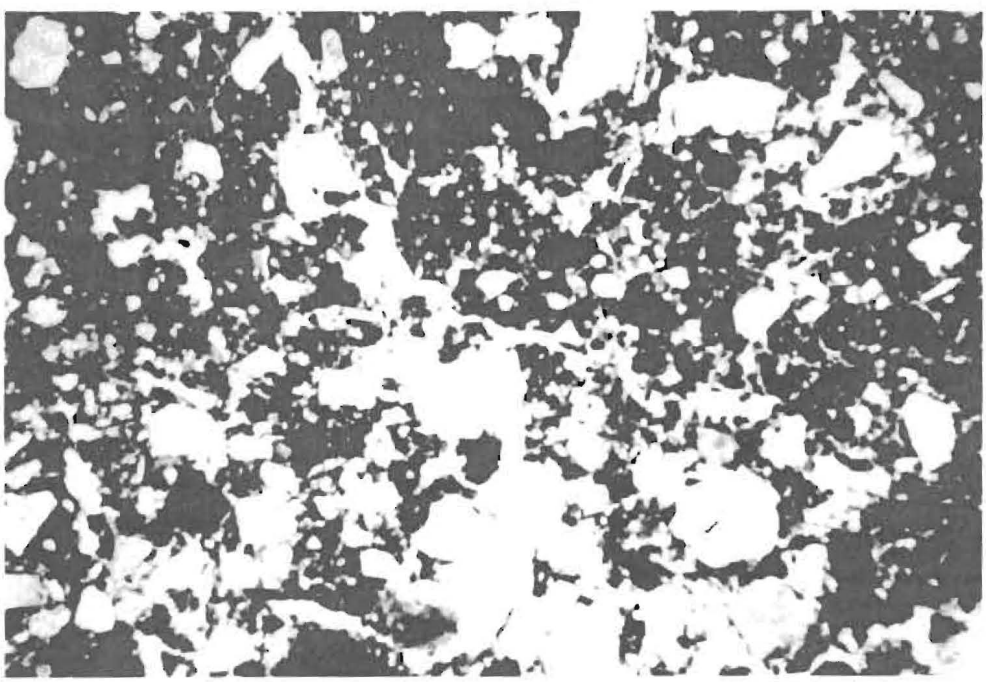

Plate 3. Photomicrograph. As above: Finely calcitic material (including ashes) produce a weakly birefringent fabric. Crossed Polarised Light.