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Soil Report on Paul Street, Exeter

R.I. Macphail. Oct 1984

In the Spring of 1983 Paul Street was excavated (Director Chris Henderson) by the Royal Albert Memorial Museum. A trench was cut approximately between the Roman City wall and the legionary fortress, which exposed Roman building levels, Roman Dark Earth deposits, and Dark Earth of the Saxon-, Early^(sample 1) and Late Medieval^(sample 2) (samples 3 and 4) periods. Dark Earth of Roman, 11th Century and Late Medieval age were sampled and analysed (Macphail and Courty, in press; AM Library). Details of the analytical data are presented in Table 1, Micromorphological Description and Plates 1-3. Inclusions are discussed elsewhere (Note on Coarse Inclusions, AM Library). A second trench 25 metres away from the 1st trench was cut in 1984 and revealed very similar deposits.

Although the archaeological context and interpretations are discussed at length elsewhere (Macphail and Courty, in press; AM Library), it is worth noting the remarkable physical uniformity of the deposits in grain size (Table 1), and microfabric (Plates 1-3). The latter illustrate how the deposit has been slaked to produce intercalations and a vughy porosity with dusty coatings throughout its history from Late Roman to Late Medieval periods. This clearly indicates a uniform mode of deposition or reworking of the deposit in this area of low ground, possibly by minor ponding up after heavy rain.

The uniform character of these deposits is also reflected in the cation data, only the progressive increase in organic content through time inferring a more intensive "garden" usage of the site.

References

Macphail, R.I. and Courty, M.A. In press. Interpretation and significance of urban deposits in (H. Jugner) ed. Nordic Archaeometry 3. ISKOS Finnish Archaeological Society.

Macphail, R.I. Notes on coarse inclusions in Dark Earth from urban sites. AM Library.

Table 1. Paul Street: analytical data (1-1205, 2-1204, 3-778, 4-778-1)

No	<u>Clay</u>	FZ	MZ	CZ	<u>Silt</u>	VFS	MS	CS	VCS	<u>Sand</u>	Loss on ignition	Organic carbon	pH
4	<u>33</u>	10	12	8	<u>30</u>	11	8	10	4	<u>38</u>	4.12	1.78	7.8
3	<u>33</u>	10	12	6	<u>28</u>	11	6	10	5	<u>40</u>	3.90	1.66	7.8
2	<u>20</u>	17	12	5	<u>34</u>	10	8	8	6	<u>46</u>	3.02	1.40	7.6
1	<u>33</u>	10	11	6	<u>27</u>	8	10	7	9	<u>40</u>	1.90	1.16	7.7

(method, Avery and Bascomb, 1974)

No	Organic Carbon	Organic Matter	N**	C/N	Ca*	Mg*	Na*	K*	Sum	Cation Saturation
4	1.79	3.08	1.26	14.2	21	2.2	.35	1.2	24.75	28.65
3	1.89	3.25	1.23	15.0	22.4	2.1	.35	1.35	26.2	29.15
2	1.57	2.71	.93	16.9	21.6	1.2	.4	1.25	24.45	27.4
1	1.22	2.10	.80	15.3	18.3	2.5	.3	1.15	22.25	24.25

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

NB * Millegrams per 100 gms soil

** % x 10

Paul St Exeter (Plates 1-3)

Level 1205

Structure: coarse subangular blocky: vughy structure: Porosity (30%) common medium (600um) vughs interconnected by medium (300um) channels: Mineral: Coarse/Fine, 30/70: Coarse: very dominant very fine (sub-angular) fine, medium, coarse, very coarse (sub-rounded to sub-angular) sand size quartz: unsorted: very few opaques and sharp edged nodules; flint present: few rock fragments; mainly fine stone-size sandstone, silt/mudstone, microcrystalline volcanics with quartzite and limestone: few artefacts: pottery, mortar, soil fragments, hammerscale, possible "iron ore", bone and shell present: Fine: very dominant dark yellow brown (PPL), bright orange (RL): possible ash present: Organic: Coarse: few charcoal and plant fragments; often charcoal not fully combusted: charcoal and organic matter often replaced/impregnated by iron hydroxide: Fine: few charcoal/charred plant remains; common amorphous organic matter: Groundmass: low birefringence, weakly stippled; possibly weakly crystalitic: Pedofeatures: Textural: few, mainly in (10um to 60-90um) dusty, moderately birefringent vugh coatings: may include silt: common medium (2-300um) simple intercalations: Crystalline: very few impregnative calcitic hypo-coatings around mortar and limestone fragments: possible clay formation on volcanic fragments: Amorphous: few, fine (50um) diffuse impregnative ferruginous nodules: organic and charcoal fragments impregnated by iron hydroxide (probably artefact).

Level 1204

Structure: (as above): Mineral: Coarse/Fine, 35/65: Coarse (as above) with frequent very fine sand: few rock fragments (as above): few artefacts; very few pottery and bone; mortar, soil fragments, hammerscale and possible "iron ore" present: Fine (as above) Organic: Coarse: very few charcoal commonly containing clay and iron hydroxide; very few plant remains, some lignified: Fine: few charcoal/charred plant material; common single cell, amorphous organic matter. Groundmass: (as above): Pedofeatures: Textural: coatings and intercalations (as above): Crystalline: possible clay formation on volcanic fragments: Amorphous: (as above).

Level 778-2 (as 1205)

Level 778-1 (as 1204, 778-2) Porosity (35%)

Except for Mineral Coarse (as above), few soil fragments (C/F 40/60) very fine sandy, yellow brown (PPL), pale orange (RL), moderately high birefringence; very few organic matter: Fine: dark brown (PPL), orange (RL): Groundmass: (as above): Organic: Fine: few to frequent charcoal/charred plant material; common cell fragments, amorphous organic matter.

Plate 3 As above. Crossed Polarised Light.

