

Roman Poultry, Macphail Soil Figures

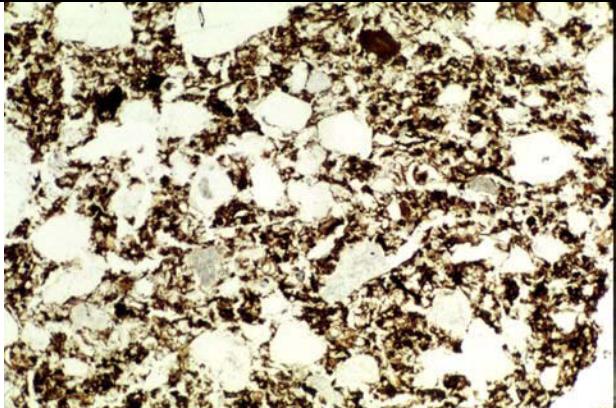


Figure 1. Photomicrograph {897/1}: Acid (pH 3.7), humic (11.4% LOI), sandy silt loam Ahg horizon, with *in situ* fleshy roots, organic excrements, with phytoliths and diatoms present [low phosphate (510 ppm P₂O₅) content and high P ratio (2.1), and very low MS (2×10^{-8} SI kg⁻¹)]. Open Area 1, (Period 1): Humic alluvial gley soil (palaeosol) formed under Alder woodland (Scaife, this volume), in the valley of Tributary 2. Plane polarised light, (PPL) frame width is 5.5 mm.



Figure 2. 13 cm long thin section scan {973/4}: Upper layer - finely bedded sandy silt loam, with gravel and organic fragments. Acid (pH 3.2) and humic (9.3% LOI), with very low MS (14×10^{-8} SI kg⁻¹), but moderately high phosphate (1730 ppm P₂O₅). See Figs. 3 and 4 for microprobe analysis.
Lower layer - massive sandy silt loam with occasional organic stringers. Acid (pH 3.5) and poorly organic (3.3% LOI), with very low MS ($7 (5 \times 10^{-8}$ SI kg⁻¹) and low phosphate content (480 ppm P₂O₅). Open Area 4, Period 2: minerogenic acid colluvial sediment/soil accumulation off Road 1, with possible animal traffic leading to occasional rises in phosphate content.

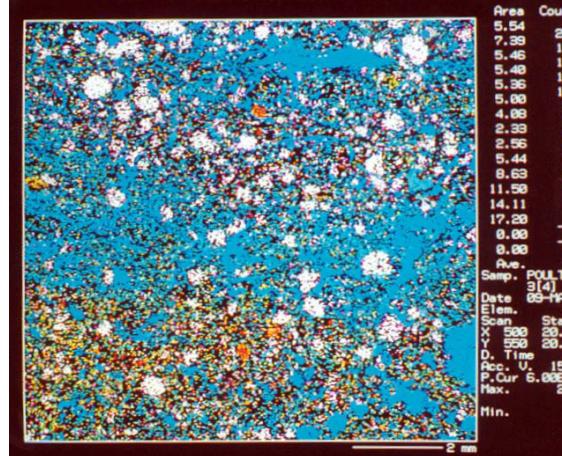


Figure 3. Upper laminated {973/4}: microprobe map of Si showing typical upper sandy lamination (that includes plant detritus) over a silt and clay lamination.

Bar = 2 mm

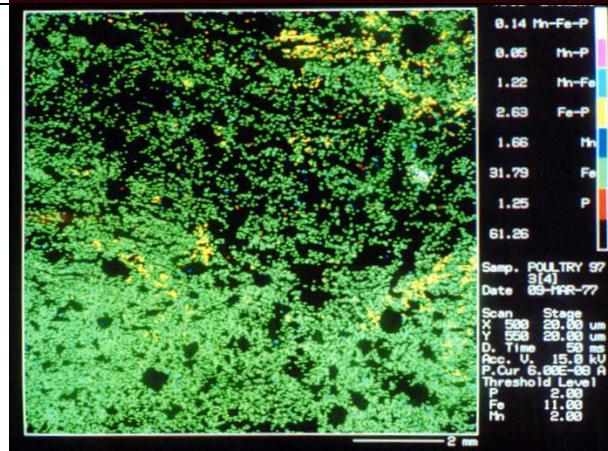


Figure 4. Upper laminated {973/4}: microprobe map of P (P, mean 0.03%, max. 0.18%) showing likely phosphate cemented organic ('dung') detritus, and secondary phosphate formation in the underlying silt and clay lamination.

Bar = 2 mm



Figure 5. 13 cm long thin section scan {968/7}:

Uppermost layer - compacted aggregates of burned dark humified organic-matter (dung?) tempered brickearth soil and few charcoal inclusions (2.3-3.8% LOI; $185-625 \times 10^{-8}$ SI kg $^{-1}$, 1080-1410 ppm P₂O₅). B17, Period 6: debris of burned dung-tempered brickearth daub buries the burned floor of B3RML, following the razing of this building.

Middle layer - massive, compact, laminated, dung-? and straw-(longitudinal and cross-sections) tempered brickearth floor (3.9% LOI) that has undergone some burning (156×10^{-8} SI kg $^{-1}$), as well as having been influenced by secondary phosphate (vivianite)(1320 ppm P₂O₅).

B3RML, Period 3: A carefully prepared brickearth floor that included tempering with dung and straw, and which was weakly affected by the Boudican fire.

Lowermost layer - mineralogenic (4.3% LOI) layer of building debris – some burned (56×10^{-8} SI kg $^{-1}$), and gravel, that shows inwash of silty clay and secondary phosphate (vivianite; 1430 ppm P₂O₅), and uppermost layer of layered charcoal. OA5, Period 3: a coarse foundation dump affected by local anthropogenic wash.

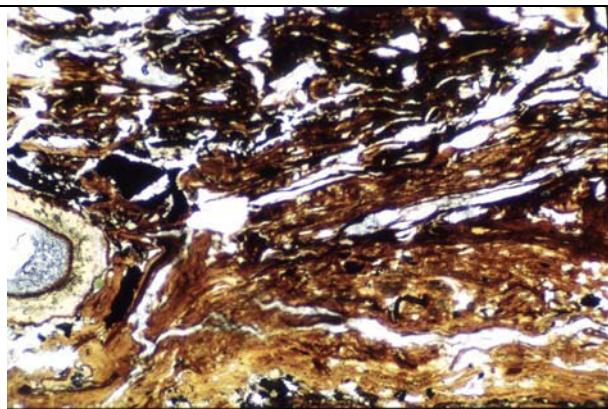


Figure 6. Photomicrograph {422}: finely bedded organic deposit of plant tissues, amorphous organic matter, commonly intercalated with silt [(pH 6.6), extremely humic (34.6% LOI), with very high amounts of phosphate (4170 ppm P₂O₅), and very low MS (14×10^{-8} SI kg $^{-1}$)]. Open Area 32, Period 7: Deposition of likely animal bedding and stabling waste. PPL, frame 5.5

	mm.
--	-----