

SOIL REPORT ON "DARK EARTH" AT KEAYS LANE, CARLISLE

During the early Autumn of 1979 the Carlisle Archaeological Unit (Field Officer, Mike Macarthy) was excavating a Roman site at Keays Lane which comprised a 2nd Century wooden structure beneath a 3rd Century stone building. The remains of these buildings are covered in approximately one metre of "dark earth". This material was sampled and analysed for alkali extractable humus and loss on ignition, as a comparison for more detailed studies of "dark earth" in London.

The neutral pH values, soil colours and Positive phosphate response (see data) all are in accord with "dark earth" studied elsewhere. The loss on ignition analysis, together with the extraction of alkali humus reveal that not only is the deposit rich in organic carbon but also most probably in carbonised carbon, as evidenced by charcoal fragments in the sample. The variation between the two levels suggests the heterogenous nature of the "dark earth" as suspected elsewhere. More interestingly, the high quantities of alkali extractable humus which are two to four times that normally found in the "dark earth" of London are both evidence of the deposit's original high organic matter status, and also represent the better preservation of organic material in a site that has not fully dried out, as is common in London. It might be briefly commented that the higher organic status of sample B is reflected in its darker (wet) colour.

Generally, the "dark earth" can be regarded as a mixture of occupation and destruction material, mineral and obvious anthropogenic material stemming from the natural parent material, previous buildings and human usage. Charcoal again derives from the latter, while the soluble organic matter may derive from cess material, which would also contribute towards the phosphate present. Certainly, cess has been identified from "dark earth" elsewhere.

An appraisal of the "dark earth" from this site and others will be finished shortly, and will perhaps help interpret this material more fully from Keays Lane.

Data

Sample	pH	Phosphate	Alk. sol. humus	% loss on ignition	Colour	
					Wet	Dry
A	6.9	Pos.	118.0	5.16	10YR3/1	10YR4/2
B	6.7	Pos.	144.0	5.53	7.5YR2/0	10YR4/1

N.B.

- a) Alk. sol. humus, mg. per 100 gms. air dry soil.
- b) Phosphate, Pos. - Positive, 0.4-0.8% P_2O_3 .

R. I. Macphail

30th January 1980