ANCIENT MONUMENTS LABORATORY - GEOPHYSICAL SURVEY REPORT No.

DATE: 16 - 17.5.78

1. SITE

OS grid reference: SP 195 904

Field no. 4235, 5941,6724

Location: on the eastern slope of Grimstock Hill, overlooking the river Cole near its confluence with the river Tame. Geology: boulder clay on Keuper Marl

Archaeological evidence: evidence for Roman buildings in excavation trenches prior to modern development.

2. SURVEY

Object: to examine the adjacent ground for additional buried remains.

(a) Magnetic survey Type of survey: automatic and scanning Magnetometer: fluxgate Range: 100 Y Chart recorder setting: 16 Logged for computing: y/cm vies/no (b) Resistivity survey (i) Area survey (II) Traverses Configuration Wenner and Double Dipole • Specing -- probes • 1 m. traverses : various Meter • Martin-Clark (c) Other tests (i) Magnetic susceptibility x10^{-*} emu/gm topsell: 37 subsoil: fill: (ac bridge readings) ditch fill : 9.5 (11) ditch fill : 2.4 Survey grid measured to: field boundaries Plans/charts enclosed: magnetometer survey - location plan. 1:2500 1:500 magnetometer traces resistivity traverses and location.

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3. RESULTS.

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Magnetometer survey:

Areas for magnetic survey were selected near the excavation (sqs. 5 - 7 in field 5941, and also in the adjacent field, 4235, where a low mound was considered worth investigating (sq. 1).

All the magnetometer traces show a moderately high soil noise and virtually no recognisable archaeological activity. Square 1 is magnetically quiet and there is no indication as to the cause or constituents of the local rise in ground surface. Areas 2 - 5 are a little more disturbed but this is largely caused by surface irregularity and the possibility of occasional igneus pebbles in the underlying drift. There appear to be no ditches, although a few anomalies, perhaps pits, have been tentatively outlined. The alignment in the NE corner of sq. 4 represents the edge of the excavation. Areas 6 and 7 show a similar reaction to elsewhere, and the traces are interrupted in part by the spoil heaps. Part of a ditch running NW - SE in sq. 6 appears to be the only magnetically detectable feature.

There was not time to record a magnetic survey in field 6724, and so this was scanned with the magnetometer at intervals of approximately 5 m. No significant anomalies were found.

Resistivity survey:

Resistivity traverses (numbered 1 - 11) were made over parts of the same ground as that covered by the magnetometer, including two long traverses in field 6724. Of traverses 1 - 3, no. 2 shows the greatest evidence for archaeological disturbance, the anomalies at 14 - 18 m. possibly representing a pair of buried walls. More tentatively, the higher values recorded throughout traverses 1 and 3 could similarly suggest the presence of walls lying parallel to the traverses.

Traverse: 4 - 6 show little that cannot be attributed to surface disturbance or natural variations in soil consistency although the possibility of an archaeological origin for some of the anomalies, such as those indicated, should not be discounted. Traverses 7 - 10 cross the predicted course of a wall and the series of anomalies most likely to represent this are marked on The poor response on traverse 8 may be due to a gap in the wall. the plan. The traverses in field 6724 were placed over the central and most level part of There is a large high resistance anomaly occurring over some 20 m. the field. at the N end of traverse 12. This must be caused by a substantial buried feature which could be anything from a dense rubble scatter to concrete foundations. There is also the possibility that it could be a road crossing the traverse diagonally and therefor running E = W up the hillslope. Elsewhere Elsewhere along these traverses the situation is relatively quiet, except for three more or less well-defined anomalies in the southern half of traverse 11. These show the characteristic double peak of Wenner values, often associated with a discreet feature such as a wall. The most distinct of these have been marked on traverse 11, but it is worth noting that traverse 12 contains comparable anomalies and also a generally raised portion (45 - 85m.) which may also be significant.

4. CONCLUSIONS.

Neither magnetometer nor resistivity results have proved particularly satisfactory on this site. This is often the case with drift soils where magnetic susceptibility can be low and confused by the presence of igneus pebbles (although these were not proved to be present here). A pebbly drift

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can also give a deceptively noisey resistivity background.

Magnetic susceptibility tests on soil samples show that the topsoil is lower than average $(37 \times 10^{-6} \text{emu/gm.})$ and that the exposed ditch fills, often very pebbly and indistinct from the subsoil matrix, have even lower values $(2.4 - 9.5 \times 10^{-6} \text{ emu/gm.})$. Magnetic detection on the site would be feasible only where features are substantial and their fills have been considerably enhance by occupational activity such as burning and decomposition. It is safe to say that such features are probably absent over much of the area covered. Less substantial or poorly magnetic features would be missed.

Time was insufficient to do more than sample the area with resistivity. A high noise level makes most of the readings ambiguous except where features are very substantial, and perhaps modern in origin. An extensive area survey would lend greater confidence to interpretation and might well reveal useful patterns.

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