

Preliminary examination of soil samples from the  
Romano-British temple, West Hill, Uley.

During Dr. Ann Ellison's excavation of the Romano-British temple at Uley a large number of soil samples were taken, largely by Mr. Bruce Levitan. He is conducting an exhaustive study of the rich animal bone assemblage, and mollusc analyses have been carried out by Beverley Collinson. The present preliminary examination of 11 samples was instigated to examine the potential for <sup>finding</sup> other biological remains in the soil samples and to investigate specific sedimentological problems which arose during the excavations. Superficially the site is not a particularly promising one for the preservation of many classes of biological evidence. It lies at 248 m on the Cotswolds at a point where Upper Inferior Oolite overlies Cotswold Sands (Geological Survey, sheet 251). Consequently the deposits are well drained and aerated and most show some signs of present day biological activity. For this general investigation of soil samples 100 or 200 gm. sub-samples were taken, placed in water, and mixed with dilute hydrogen peroxide to aid disaggregation. Once this had occurred the sediment was washed on a nest of sieves, the smallest of which was 0.21mm, then air dried and examined under the binocular microscope at magnifications between X10 and X50. The smallest fraction to be fully sorted was that retained on the 0.5mm sieve.

Context 188b. This was within Room K of Structure I, an ancillary building associated with the temple which was interpreted in the field as a latrine shaft (Ellison 1970, p.55). A subsample of 200 gm was taken from the basal fill of the feature. A high proportion of material retained on the sieves consisted of small concretions (seldom > 5mm) of very pale brown colour (10 YR 8/4). Some of these, when broken open, revealed a darker brown interior with a slightly glassy appearance. The concretions were permeated by impressions and voids left by small fragments, probably of vegetable material. In appearance they were similar to larger concretions from a Roman pit, Context 271, at Ilchester, Somerset, which contained the eggs of parasites for which humans are possible hosts (A. Hall and H. Kenward, pers. comm.). The Uley material has not yet been examined for parasites but it seems probable that both the Uley and Ilchester concretions can be interpreted as fossil faecal material, although

in neither case is the original shape of the faeces preserved. The sieved fractions produced 54, mostly tiny, fragments of mammal or bird bone and 41 fish bones which are basically tiny rib fragments. There were also 5 fish scales or scale fragments.

Invertebrates were represented by 49 mineralogically replaced fragments of arthropods together with 27 possible fly puparia, similar to those described from other calcareous sites by Girling (1979).

Individual examples of the following land molluscs were present:-

Cochlicopa spp, Limacidae, Oxychilus cellarius, and Trichia hispida, although these are of little significance and presumably represent individuals that happened to fall into the pit.

Botanical remains were equally well preserved again largely because of mineralogical replacement, possibly by calcium phosphate as described elsewhere by Green (1979). Fruit stones were represented by two stones of cherry size and two other fragments, and there were c.15 replaced seeds. Several of the concretions carried impressions resembling wood structure and mineralogically replaced stem and root material was also present. 37 of the concretions had clear impressions of very tiny leaves, possibly ferns. In addition to the mineralogically replaced material there were a few organic insect remains, seeds and roots which seem likely to be intrusive.

The remarkable range of biological evidence preserved in this feature would seem to be the result of unusual chemical conditions conducive to mineralogical replacement and the formation of concretions, created probably by large quantities of excreta. Much of the evidence, the small fragments of vegetable material in the concretions (? bran), the fruit stones, seeds, tiny fish bones and scales, may well have passed through the gut. Such evidence is clearly of considerable interest in reconstructing the diet, health and hygiene of the temple users. Accordingly it is hoped that further specialist work will be conducted on the seeds, arthropod fragments and fly pupae. The bones and scales will be considered in Bruce Levitan's report on the vertebrate fauna.

Context 728 (sample 32). This light olive brown (Munsell moist 2.5Y 5/4) layer in the top of a ditch was used as the foundation for Post-Roman Structure 8. The problem posed by the excavator was whether the clay could have originated on the site or had been brought from a river valley. In order to establish the exact composition of the layer a particle size analysis was done using a modified version of the method of the British Standards Institute (1977. 3.1377). This showed that the sample was a sandy silt loam comprising 16% sand; 59% silt and 25% clay. When examined under the binocular microscope it was evident that the various sand fractions consisted largely of particles which are likely to have originated in the Jurassic Limestone. There were fair numbers of oolites and crinoid fragments together with fragments of fossil bivalves. In view of its composition this sediment might easily have originated close to the site, possibly from a sandy silt lens encountered during quarrying.

Context 511 Sample I. This dark brown (Munsell moist: 7.5 YR 3/2) sediment from a fifth century bank was tentatively interpreted in the field as decayed turf material. Sieving of a 200 gm sub-sample showed that it contained small amounts of charcoal, unburnt bone and 28 land molluscs identified as follows:- Rosatis elegans (fragment); Carycnium tridentatum 1; Cochlicopa spp. (fragment); Pupilla muscorum (fragment); Vallonia costata 1; Acanthinula aculeata 1; Vitrea contracta 1; Zonitidae 1; Limacidae 2; Cecilioides acicula (intrusive burrowing sp.= 9); Clausilia bidentata (fragment); Heliella itala 1; Trichia striolata 9; Trichia hispida 1; Cepaea spp. (fragment); Helix aspersa (fragment). The presence of Trichia striolata probably reflects the fact that this species tends to be synanthropic, i.e. closely associated with human habitation (Evans, 1972, p.176). The number of apices in this sub-sample is too small for much meaningful interpretation but the fauna does appear to be a fairly varied one in terms of its ecological preferences. Species which tend to be associated with short turf are not particularly predominant suggesting perhaps that we are dealing with a bank of scraped-up occupation soil rather than turf as such. This possibility will, however, need to be reviewed in the light of Beverley Collinson's forthcoming report.

Context 22. The sample came from a very dark grey (munsell moist 10 YR 3/1) deposit which covered part of the site and contained very large numbers of bones from animals which appear to have been ritually sacrificed. A particle size analysis showed that the sample consisted of a sandy silt loam with 37.5% sand; 48.5% silt and 15% clay. Sieving of a 100 gm sample revealed that the dark colour of the deposit was due to the presence of a high proportion of finely divided charcoal. In this respect it has a similarity to the dark earth, principally urban, occupation deposits which have recently been reviewed by Macphail (forthcoming). Probably, therefore, the dark colour of the layer relates to the longevity and intensity of occupation rather than to any specifically ritual activities.

#### Ritual Pit Deposits

Three 100 gram sub-samples were examined from ritual pits in order to see whether any biological remains were present which might throw light on the ritual activities.

Context 926 (Sample 191). The flot consisted almost entirely of finely divided wood charcoal, <sup>and</sup> there were also 35 carbonised seeds. Twelve fragments of calcined bone, possibly from creations, were present.

Context 758 (Sample 141) Again the flot consisted largely of charcoal. 5 carbonised seeds were present together with 27 fragments of calcined bone. The sieved fractions contained a high proportion of fired clay fragments.

Context 847 (Sample 179). Contained charcoal, 7 seeds and 6 bone fragments.

Pot sherd residues. Five samples of material were submitted which had been found adhering to pot sherds and were regarded as possible food residues. Three of these samples (181, 182 and 183) consist of homogeneous finely divided light grey (10 YR 7/2) dust with occasional lumps of similar material. All three samples reacted violently with hydrochloric acid leaving a residue of some mineral grains, a little clay and charcoal fragments. This implies that they are calcareous deposits laid down after

deposition of the pot sherds, by percolating water. The two other samples (184 and 185) consisted of carbon caked with some mineral soil. Much of the carbon is finely divided and has no clear structure but some pieces with wood structure are apparent. The mineral material reacted fairly strongly with hydrochloric acid leaving a carbon residue. These two samples may consist simply of hearth ash caked on the outside of the pot and it is hoped to arrange further analysis to test this possibility.

Future work. In view of the considerable range of palaeoenvironmental evidence from Context 183b, it seems appropriate to concentrate future analytical work by specialists on this material.

#### References

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