ROW DOWN, LAMBOURN, BERKS.

SCIENTIFIC ADDENDUM

To the report on the excavation of Two Mounds on Row Down, Lambourn, Berks.
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In view of the particular soil conditions at this site, the following record of scientific work carried out on some samples appears to be important in several ways. It is probable that such conditions are more common on the Chalk than is generally realised. The remarks apply only to one of the mounds, Row Down West (RDW), although the other (RDE) is mentioned in comparison.

Soil samples were taken from the Key Section (S 5) by the excavator and the results of analyses carried out on a selection are shown in Table 1.

The firing tests[1] were carried out by Mr. W. E. Lee at the Ancient Monuments Laboratory. In the circumstances, no mollusc shells would be expected to survive and cursory examination of a number of critical samples did indeed suggest that a detailed search would prove unrewarding.[2]

The investigations had two primary aims: first, to establish whether conditions had been suitable, or not, for the preservation of an inhumed burial; and secondly, to locate any buried surfaces in the 'nucleus' and from any possible environmental differences between them to confirm its prehistoric origin. In both cases the answers turn on the appraisal of the mutual relationships between the different soil horizons involved, and the work has therefore thrown some light also on various observations of secondary importance, apart from showing the 'inverse' connection between the two main problems.

Although shown on the 6 in. Geological Survey map as lying directly on the Upper Chalk, the site must be taken to be included in one of several small areas mentioned in the relevant Memoir as covered by spreads or knolls of clay with flints. The most important single factor is clearly pH. At all the horizons tested, the soil is *prima facie* too acid for unburnt bone to survive for any appreciable time. The uniformly poor condition of the iron objects tends to support this, especially as these could have been buried for no more than half the length of time which a prehistoric inhumation would have spent in the equivalent layer 5. The same acidity, however, has made it possible for pollen to survive. On the other hand, both chalk fragments and bone were found in the bulk matrix of Layer 3, indicating that conditions there were more favourable to bone and rather less so for pollen; although the latter was present in the lowermost inch of this layer it came from what was regarded as an intermediate zone, as described below. The nature of the matrix of Layer 3, in this respect, would

[1] *Proc. Suff. Inst. Arch.*, 1958, pt. 1, XXVIII, 27.

[2] We are much indebted to the following specialists for their valuable assistance: Dr. P. J. Adams, Geological Survey and Museum; Dr. M. P. Kerney, Dept. of Geology, Imperial College of Science; Dr. R. J. Stephenson, by courtesy of the Scientific Adviser, London County Council; and Dr. G. W. Dimbleby of the Commonwealth Forestry Institute, whose report appears below.

Table 1.

RESULTS OF ANALYSES

Excavator's Layer or Feature No.	Description	A.M. No.	pH	Organic matter (relative values from firing tests)	Iron (relative values from firing tests)	A.M. 580080 (pollen sample No.)	Depth below surface (in.)
L 1	Recent turf and topsoil	—	—	—	—	2	1–2
L 3	Make-up of mound	—	—	—	—	16	15–16 (lowest inch)
L 4A	Uncertain (part of upcast?)	8074	5·8	High	High	—	16–19
L 4B	Old soil or turf line?	8073	5·4	High	High	20	19–20
L 5	Old subsoil or former soil cover	8075	5·0	Low	Medium	22	21–22
F6	posthole:—						
	below	8076	5·3	Low	Medium	—	—
	filling	8077	5·3	Medium	Medium	—	—
	beside	8078	5·4	Very low	Medium	—	—

be consistent with the excavator's interpretation as "scraped from the surrounding area", but it clearly came from an area not immediately on the clay on which the mound rests. If the mound had in fact been a prehistoric barrow, and been robbed as such in Roman times, or similarly, if a Roman barrow robbed in the 18th century, it is difficult to say with any confidence whether or not any inhumation would still have been recognisably present then. Apart from pH, it is probable that the degree of drainage impedance would have considerable influence on the fate of buried bone. Some of the soil evidence here, particularly the type of manganese staining, would suggest restricted drainage, and thus favour a comparatively longer life for bone than would otherwise be expected. On balance, however, even if a well-defined grave pit had been discovered, any prehistoric inhumation it might have contained could well have disappeared by now without leaving any clearly visible trace. Under the other mound (RDE) one would have expected such evidence to survive.

From the environmental viewpoint the total absence of any clearly visible buried surface is both disappointing and puzzling. Although Layer 2 was distinct from Layer 3 "there was no definite 'old turf' line"; nor were any observed in or under the nucleus, or even under the (18th century) subsidiary mound. This might at first sight suggest some kind of merging effect peculiar to the conditions, obliterating interfaces at a fairly rapid rate, possibly connected with the nature of the drainage, and due largely to redistribution of mobile clay, associated with compaction under weight. The absence of any grave pit might then be explained in a similar way. This would not necessarily be at variance with the manganese staining and overall "stability" of mineral iron—both of which were indicated by the firing tests—because the restriction in drainage that is implied would refer to the bulk matrix rather than to any interfaces. Nor need any "obliterating effects" be inconsistent with the relative clarity of robber pits and postholes where differences in soil texture would be more marked and, compared with any grave pit, also more recent.

Nevertheless, it does appear far more likely from other experience that any buried surfaces would have remained clear enough even under these conditions. Post hole F6, even though in the gravel, had in the "slightly darker" filling near the base enough (unburnt) organic concentration to be developed by the firing tests. In the "purplish-brown" filling of F2 the organic residue of the decayed post was actually visible. Most significant of all, the firing tests failed to reveal any concentrations of organic matter such as are normally associated with buried surfaces.

One is thus forced to conclude that, as a result of successive coincidences, at least four levels which must at various stages have been surfaces (however temporary) did not in fact become buried with their upper horizon(s) intact. Truncation might appear to be the most likely cause, although the effects of "trampling" under such conditions (as noted by the excavator) cannot be discounted. Whatever the reasons, the pollen evidence must be seen against this background.

Although unfortunately inconclusive, Dr. Dimbleby's comments could then be taken to supply certain pointers. Differential preservation effects are unlikely to account for any differences between the three lower samples. The relatively low count in the modern control may be related to its slightly chalky nature. The minor variations between samples 16 and 20 might be explained on the basis of the difference between the (clay) mound and the surrounding area (see above). If one accepts this, the three major distinctions suggested by the pollen analysis may be taken to favour, however slightly, the presence in the nucleus of horizons undisturbed since burial in prehistoric times (sample 22). Sample 20 would represent a corresponding level buried *in situ* later (apparently in Roman times, from the archaeological evidence) and sample 16 perhaps the (disturbed) surface levels scraped up from the surrounding area at the same time or not very much later.

ROW DOWN
POLLEN ANALYSES

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Samples 2, 16, 20 and 22 were submitted for pollen analysis. The main features of each spectrum are given in the table.

All represented a treeless condition, though No. 22 showed a greater influence of tree pollen than the others; even hazel was low, though the value in No. 2, the modern turf, showed that it had not reached its present-day low status in the neighbourhood.

Table 2.

POLLEN ANALYSES

	Counts				%				Absolute Pollen Frequency			
	2	16	20	22	2	16	20	22	2	16	20	22
Alnus	1	3	5	5	0·5	1·9	2·4	2·8	300	225	375	500
Betula	1	—	—	1	0·5	—	—	0·6	300	—	—	100
Fraxinus	1	—	—	—	0·5	—	—	—	300	—	—	—
Pinus	3	+	+	1	1·4	+	+	0·6	900	+	+	100
Quercus	3	2	4	11	1·4	1·2	1·9	6·2	900	150	300	1100
Tilia	—	—	—	1	—	—	—	0·6	—	—	—	100
Ulmus	1	—	—	—	0·5	—	—	—	300	—	—	—
Corylus	2	6	14	8	1·0	3·7	6·7	4·5	600	450	1050	800
Gramineae	75	13	15	38	36·1	8·0	7·1	21·3	22500	975	1125	3800
Cerealia	1	—	—	—	0·5	—	—	—	300	—	—	—
Caryophyllaceae Cp. sceranthus	1	—	—	—	0·5	—	—	—	300	—	—	—
Chenopodiaceae	—	+	—	—	—	+	—	—	—	+	—	—
Compositae:												
Centaurea	—	—	—	+	—	—	—	+	—	—	—	+
Liguliflorae	39	76	100	50	18·8	46·9	47·6	28·1	11700	5700	7500	5000
Tubuliflorae	4	1	1	1	1·9	0·6	0·5	0·6	1200	75	75	100
Cyperaceae	1	—	—	—	0·5	—	—	—	300	—	—	—
Plantago	50	19	15	20	24·0	11·7	7·1	11·2	15000	1425	1125	2000
Ranunculaceae	1	—	+	—	0·5	—	+	—	300	—	+	—
Rubiaceae	2	1	2	1	1·0	0·6	1·0	0·6	600	75	150	100
Succisa	—	2	—	1	—	1·2	—	0·6	—	150	—	100
Umbelliferae	3	—	3	1	1·4	—	1·4	0·6	900	—	225	100
Varia	2	1	—	7	1·0	0·6	—	3·9	600	75	—	700
Dryopteris type	4	4	20	20	1·9	2·5	9·5	11·2	1200	300	1500	2000
Lycopodium annotinum	—	—	+	—	—	—	+	—	—	—	+	—
L. clavatium	—	1	—	1	—	0·6	—	0·6	—	75	—	100
Polypodium	—	+	+	2	—	+	+	1·1	—	+	+	200
Pteridium	13	33	31	9	6·3	20·4	14·8	5·1	3900	2475	2325	900
(Sphagnum)	(1)	(1)	(1)	(1)	(0·5)	(0·6)	(0·5)	(0·6)	(300)	(75)	(75)	(100)
NTP/TP%					2000	2260	1511	626				
TOTAL	208	162	210	178					62,400	12,150	15,750	17,800

Table 3.

	2	16	20	22	
Trees	4·8	3·1	4·3	10·7	Percentages of total pollen plus fern spores
Corylus	1·0	3·7	6·7	4·5	
Gramineae	36·1	8·0	7·1	21·3	
Liguliflorae	18·8	46·9	47·6	28·1	
Plantago	24·0	11·7	7·1	11·2	
Pteridium	6·3	20·4	14·8	5·1	
Other Ferns	1·9	2·5	9·5	11·2	
NTP/TP%	2000	2260	1511	626	
Total Pollen Frequency	62,400	12,150	15,750	17,800	Grains/gm dry soil

There is, however, no good evidence from the pollen analyses that any of the three lower samples represents a buried surface; the absolute frequencies are all consistently low. It is therefore unsafe to try to interpret any of these spectra in terms of ecological conditions except in so far as all are clearly related to farming. Cereal pollen was only recorded in the modern sample, but the others showed high percentages of grasses and weeds of cultivation, particularly Liguliflorae and plantain.

From the table it will be seen that No. 2 is distinct from the rest both in composition and in having a higher overall frequency. Furthemore No. 22 has no close parallel among the others; it may stand in a stratigraphical relationship to No. 20, but in view of its higher APF this seems doubtful.

Nos. 16 and 20, however, show a reasonably close similarity both in percentages and frequencies; there are differences (e.g. *Dryopteris*—type spores) but the mutual affinities seem obvious.

Since all four spectra are so deficient in tree pollen there is no possibility of comparative dating, even if one could be sure that each was a surface sample. In the circumstances these analyses can contribute little to an interpretation of the earthwork.