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Fetter Lane, York: *dark earth*?

by

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Summary

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Micromorphological analysis showed that the layer was different from and not comparable to other samples of dark earth observed in Southern England. Differences are mainly in that the layer in question does not contain significant traces of earthworm activity, and other signs of biological activity are also very scarce.

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Introduction

A layer observed during excavations in Fetter Lane, York, was made of a dark (dark greyish) material post-dating Roman contexts. It was suggested that such dark layer was a *dark earth*. The aim of this study was to establish whether the context was comparable to other dark earth materials observed elsewhere in England.

Methods

A sample containing the context under exam and part of the over- and under-lying contexts, with their relative boundaries, was collected, and micromorphological analysis was carried out on the thin section obtained.

Results

Micromorphological analysis showed that the alleged *dark earth* layer is different from, and not comparable to other samples of dark earth observed in Southern England, such as those described, for example, by Macphail (1994), nor to other dark earth-like samples described elsewhere in Europe (Ervinck,

1999). Differences are mainly in that the context in question does not contain significant traces of earthworm activity, and other signs of biological activity are also very scarce. The only evidence for some plant development is suggested by a few voids which have not the appearance of root channels but could have formed under the influence (direct or indirect) of vegetation growth. Furthermore, in this layer there is no significant sign of mixing or alteration/weathering. Even rock and mineral fragments included in the context are only lightly weathered, thus weathering has been very scarce even before the fragments were put into place.

This context contains fragments of charcoal, and brick and the characteristics of the matrix and fragments suggest that after deposition there has not been enough time for the material to undergo pedogenesis (or, as mentioned above, other significant weathering). Thus, it seems unlikely that the surface of the layer under investigation has been exposed to the atmosphere for long, and it is rather likely that the layer has been deposited, possibly dumped, above the Roman context and then quickly covered with the overlying and burying materials.

With regard to such overlying materials, if biological, chemical or other type of weathering/alteration had occurred with intensity within them, the underlying (alleged dark earth) layer would probably have been influenced by them, because there is no evidence of sealing layers which could have stopped such influence. Again, however, there is no sign of such influence, which suggests that even in the immediately overlying contexts very little soil forming processes or weathering occurred. Does this mean quick burial as well for a significant part of the overlying layers?

The boundary between the alleged *dark earth* with the underlying context is sharp and clear, and the materials within the alleged *dark earth* immediately above its lower boundary are characterized by a parallel distribution and orientation pattern of the matrix component, all parallel to the lower boundary. This can suggest a significant compaction (deliberate?) of the lower part of the context. No similar parallel orientation and distribution of matrix component was observed in the rest of the context within the thin section. A possibility would be that the lower part of this context was compacted before the rest of the context was dumped or put into place. Alternatively, the fact that no trace of compaction or parallel orientation/distribution is seen in the other parts of the thin section, could also result by local (random?) variability of the sample.

Inclusions: Rare brick fragments up to 3mm large, frequent fragmented charcoal fragments of various sizes (up to 4 mm diameter), rarely clearly constituted by charred plant tissues. Few ash inclusions apparently randomly distributed.

Other technical description: Brownish dotted, locally clouded fine material, with undifferentiated b-fabric. Apedal but with some orientation of surfaces of weakness in lower part. Presence of elongated voids with partly accommodated walls, of maximum thickness 0.5/1 mm, but mainly smaller than this size. Dominantly random basic orientation pattern and unrelated related orientation of particles and voids. Locally (near lower part of context) strongly parallel basic orientation of elongated voids, with related distribution parallel to lower boundary, and strongly banded distribution of voids and particles, parallel to lower boundary. Occasional small Fe-Mn hypocoatings and occasional Fe sesquioxide nodules (only one up to 3 mm wide). Randomly distributed ash particles, frequent charcoal up to 4 mm wide, including rare charred plant tissues. Rare up to 3 mm brick fragments.

References

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