Thin-section Analysis of Peterborough Ware from Dyffren Lane, Powys (DL06)

Alan Vince

Samples of three Late Neolithic Peterborough ware vessels found in a pit deposit on the first terrace of the Upper Severn at Dilwyn Lane, to the south of Welshpool, Powys, were selected for thin section analysis by Alex Gibson. Thin sections were produced by Steve Caldwell, University of Manchester, stained using Dickson's method (Dickson 1965) and examined by the author.

Description

All three sections have a very similar appearance in thin section and a single description is given here.

The following inclusion types were noted:

- Conglomerate. Sparse to moderate angular fragments of a conglomerate up to 3.0mm across which includes grains of volcanic rock (laths of plagioclase feldspar up to 0.2mm long in a brown groundmass), quartz, mudstone (possibly altered volcanic glass) and plagioclase feldspar). The grains are ill-sorted and range from c.0.1mm to c.1.5mm. The cement is amorphous iron/clay minerals and slightly darker in colour than the groundmass.
- Clay/iron concretions. Rare areas of dark brown staining up to 1.0mm across.

The groundmass consists of optically anisotropic baked clay minerals with few visible inclusions. The clay is either oxidized, light brown, or darkened by the presence of carbon. Mostly, it is homogenous but areas of lamination mainly c.0.1mm thick but ranging up to lenses 0.5mm thick occur. These vary in colour, probably due both to variable organic content/survival and iron content.

Discussion and Conclusion

Without a detailed comparison with local clays, especially the Upper Boulder Clay which outcrops in the upper Severn Valley (1971, 98-100), it is not possible to interpret these sections with any certainty. It seems likely that the groundmass is derived from Palaeozoic mudstones, which occur in the Ordivician strata of the Welsh Borderland, but the lack of any relict clay pellets suggests that, if so, these mudstones were heavily weathered and redeposited, either as boulder clay or lacustrine clay or glacial age. The rock fragments might be natural inclusions in a boulder clay but, given their similarity in all three sections, it is also possible that they represent the deliberate crushing/fire-cracking of a single cobble.

The Alan Vince Archaeology Consultancy, 25 West Parade, Lincoln, LN1 1NW
http://www.postex.demon.co.uk/index.html
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Conglomerates which might well be similar to these inclusions occur in the Ordovician, Silurian and Devonian strata of the Welsh borderland.

Bibliography

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