

MMK Report 12/1/4
Copy sent to Mr. ...

1615

ANALYSIS OF WALL PAINTING PIGMENTS FROM BEDDINGTON VILLA, SURREY

Paul Wilthew, Ancient Monuments Laboratory

A qualitative elemental analysis of each field of pigment was carried out using energy dispersive X-ray fluorescence. No significant differences were detected between fields of the same colour, and therefore only one field of each colour was sampled and analysed by X-ray diffraction to determine the crystalline compounds present. Calcite and quartz were found in each sample.

White

A white ground was present under each of the other colours, and in some fields only white was present. The ground and the white pigment could not be distinguished and were identified as calcite. Calcite (CaCO_3) is very commonly used as a ground or as a white pigment.

Red

Only iron and calcium were detected in significant quantities in the red fields. The iron:calcium ratio was much higher than that found in the white areas and the pigment is almost certainly an iron oxide. No positive identification of the pigment could be obtained by X-ray diffraction, presumably because it was not sufficiently crystalline, which is often the case with iron oxide pigments.

Yellow-Brown

Again only iron and calcium were detected in significant amounts. The iron:calcium ratio, although lower than that found in the red fields was very much greater than that found in the white areas. The pigment is, from its appearance and elemental composition, almost certainly an iron rich earth pigment but it was not sufficiently crystalline to be positively identified.

Grey

Only one, small, field of grey was present. The elemental analysis of this area was similar to those of white areas, and it is probably a mixture of calcite and a carbon black.