

THE pre-Reformation chapel of St Anthony, in the isolated and sparsely populated area of Cartmel Fell was founded about 1500 and is mentioned in 1504, when Robert Briggs gave to Cartmel Priory a chalice and a “pese” which he stipulated were to be lent at Easter time “to housel with” at the chapel at Cartmel Fell¹.

The dedication of the chapel to St Anthony, a popular medieval patron, was well chosen as he is the patron saint of hermits and charcoal burners. Its isolated position has fortuitously preserved both the chapel and much of its contents. Of these the most noteworthy is the polychrome wooden crucifix figure believed to have come from the rood screen (Plate 1).

Only two other pre-Reformation crucifixes such as this are known to exist in Britain, both from outlying areas of Wales. The Kemeys figure was found in 1855 and the Mochdre figure (with a figure of the Virgin Mary) in 1867. The three figures when complete, would have been of comparable size: approximate heights: – Kemeys 91 cms, Cartmel Fell 80·5 cms, Mochdre 76 cms.

In 1875 the chapel was visited by the Society, which was responsible for the first documentary and photographic evidence of the figure.² It was noted as being

“in the vestry . . . standing up in a corner like an old umbrella”.

Nevertheless it excited some interest and was exhibited in Carlisle (at the August 1882 meeting of the Royal Archaeological Institute) and in London (in April 1886 to the Society of Antiquaries).

By the turn of the century the damp condition of the chapel was becoming an increasing problem and the figure was removed to the Vicarage for safe keeping, and returned after the chapel had been refurbished in 1912.

In August 1978 concern was expressed about the deteriorating condition of the figure and it was brought to Abbot Hall Museum, Kendal for conservation. The examination and treatment of the figure was carried out over a period of three months and involved one hundred hours of work. A Faculty was later granted allowing the Museum to retain and display the figure for five years.

Almost certainly the figure is contemporary with the chapel. Mr John Russell, of the Department of Medieval and Later Antiquities, British Museum, considered the figure to be late fifteenth-century and Mr P. E. D. Williamson, of the Department of Architecture and Sculpture, Victoria and Albert Museum, dated similarly and further stated it to be of English work. Scientific dating methods such as carbon 14 and Dendrochronology, were considered but not pursued due to their high cost and the destructive sampling required. However, paint examination and pigment analysis, identified pigments “quite consistent with [this] suggested date range”. (See appendix).

Technical Examination

This was carried out to discover the true physical condition of the artifact upon which the later conservation treatment could be based. Unfortunately, due to the difficulty of arranging for X-rays, X-ray examination post-dated the treatment.



PLATE I. – The Cartmel Fell Figure after conservation.

I. X-ray Examination

This was carried out by Dr J. Brown, Senior Consultant Radiologist at Lancaster Royal Infirmary (AP: 300 mA 50 KV; lateral 300 mA 55 KV). (see Plates 2 and 3). It

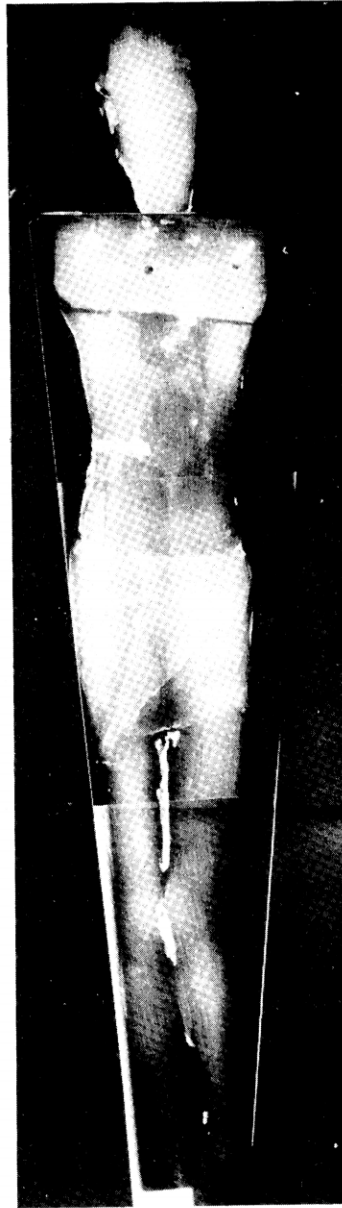


PLATE 2. – X-Radiograph antro posterior view

confirmed the generally good condition of the wood but also identified the woodworm-damaged area at the back of the head. It also showed that six iron nails or parts of nails used to secure the back plate for the arms, and a 2 in. nail used as a repair were corroded. If X-ray had been available before treatment, attempts to remove some of the nails would have been undertaken. However the corrosion appears to be stable and no problems should occur if the figure is kept in a controlled environment.

X-ray also showed iron corrosion products in the hole at one end of the back plate for the arms. This leads one to think that originally the individually carved arms would have been affixed with nails rather than wooden dowels.

Pigments containing elements of high atomic weight are radiopaque, particularly, in this instance, lead white, and, for this reason, the extent and position of the remaining fragmentary polychrome was revealed. Although present, metallic gold in the form of gold leaf is too thin (in the order of 1 micron across) to register on X-ray.

2. Visual Examination

Using an adjustable magnifier (4×) and a binocular microscope (10× and 20×) this showed

- (i) Physical damage of splits and cracks (and possible deliberate iconoclastic damage).
- (ii) Insect damage caused by *Anobium Punctatum* (Common Furniture Beetle) mostly to the back of the figure especially the back of the head.
- (iii) 95% of the polychromy disappeared, and the rest is in poor condition and flaking away. The location of the surviving polychromy can be seen in Figs. 1, 2 and 3. The colours present are:
 - (a) Green for the crown of thorns
 - (b) Gold leaf over red 'mordant' for hair, beard and robe. The beard is of the 'goatee' type.
 - (c) Flesh colour for the face and body.
 - (d) Brown outline for the ribs.
 - (e) Red for the lips and blood from the wounds. The paint occurs both as a red colouration of the flesh colour, and as thick drops freely applied to represent drops of blood. The latter appears *above* the wound in the side so could have come only from the crown of thorns. This would seem to indicate that the original polychromy depicted blood, emanating from this source running down the face on to the chest.
 - (f) Blue for the lining of the robe or the shading of the inner thigh.

The survival of these fragments can in many cases be attributed to their protected position in the recessed details of the carving and also because the carving in high relief has provided a good "key" for the ground and paint. The exceptions are small areas of flesh colour of the chest which have survived against the odds in very exposed conditions.

The back of the figure, which would have been hidden by the cross, was probably never polychromed. Two splashes of green paint (with no ground or preparation) are present, a visually similar colour occurs on the Cowmire Hall pew in the Chapel.

(iv) Wood and Carving. Examination of the wood was carried out visually by Professor C. D. Pigott, Professor of Biological Sciences, Lancaster University, who identified the wood as Oak (*Quercus* sp.).

The carving varies from areas of high relief intended to emphasize the polychromy and



PLATE 3. – X-Radiograph lateral view of arm section

complementary to it, to lightly inscribed details that would not be seen in the final polychromed state. Equally, apparent 'imperfections' in the carving may be related to the polychromy. For example, the two vertical convex lines running down the brow from the crown of thorns to the right eye-brow might be regarded as modelling for the gouts of blood to be painted later.

3. Paint Analysis and Pigment Examination

Six samples of minute size were removed from the break edges of the paint using a sharp scalpel. Miss Joyce Plesters, a Principal Scientific Officer, at the National Gallery, very kindly arranged for their analysis by her colleague Dr Ashok Roy, Scientific Officer, whose report is set out in Appendix I.

The ground, medium and pigments were identified, the technique of applying the polychrome was ascertained and identification of the colours gave a clearer idea of the original appearance of the figure. A black and white copy of a coloured photomicrograph (3.s.l.) is shown in Plate 4, the stratified layers of paint and ground and the presence of the different pigments are clearly identifiable.

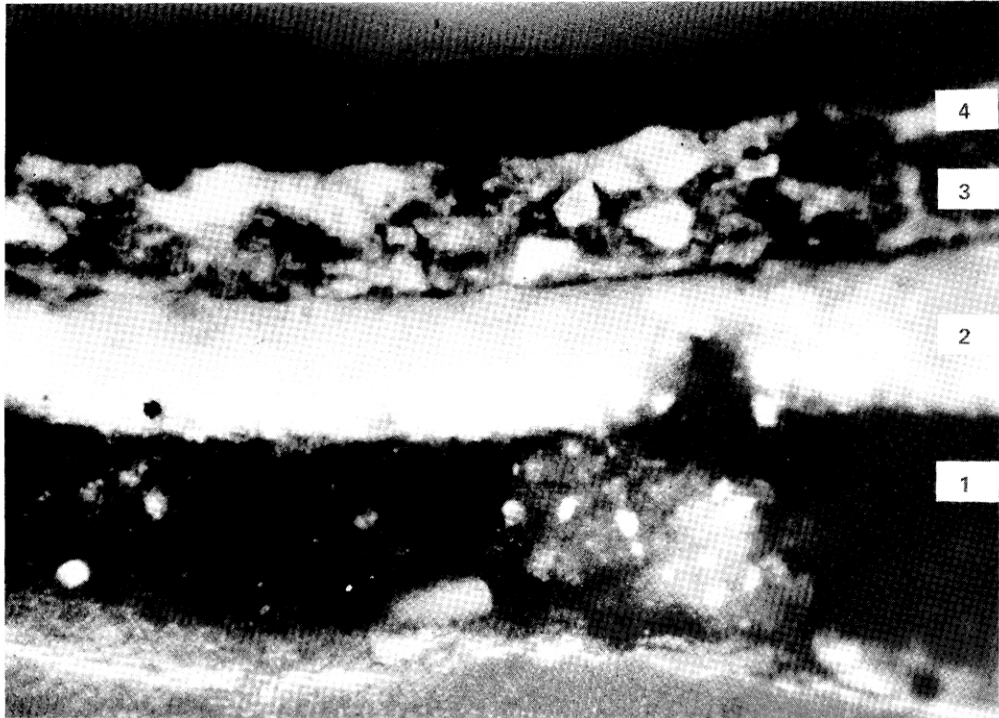


PLATE 4. – Photomicrograph (110 \times) of a paint cross-section taken from the legs of the figure (see Appendix).

Conservation

1. Preliminary cleaning had already been undertaken in order to carry out the technical examination. The figure was now cleaned under magnification using cotton wool swabs moistened in distilled water, and a variety of hand tools.

2. The flaking paint surfaces were consolidated with poly vinyl acetate (Vinamul 6815)

3. The many splits and cracks along the grain of the wood were rejoined with poly vinyl acetate ('Evo-stick' Resin 'W') adhesive, each repair being held with a variety of sash and 'G' clamps for 24 hours until the adhesive set.

4. Various points of attack by wood borers occur at the back of the figure, honey-combing the wood and making it particularly susceptible to moisture; the worst damage has occurred to the back of the head. Consolidation was therefore carried out to reconstitute the missing wood and to provide a barrier to moisture. For this the resin chosen was Xylamon L Hardening diluted 1:1 with trichloroethylene to increase the penetrating power. This resin is durable and contains a fungicide, leaving a permanently toxic deposit (0.9% Lindane) to discourage reinfestation. The resin hardens with a minimum of shrinkage combining with the frass in the galleries in the wood to strengthen the interior.

5. The figure was given two coatings of a microcrystalline wax ('Renaissance') to provide a further moisture resistant coating and the wax was lightly polished to improve the appearance of the figure.

6. It was decided that a "restoration" in the form of a coloured drawing of a scale of

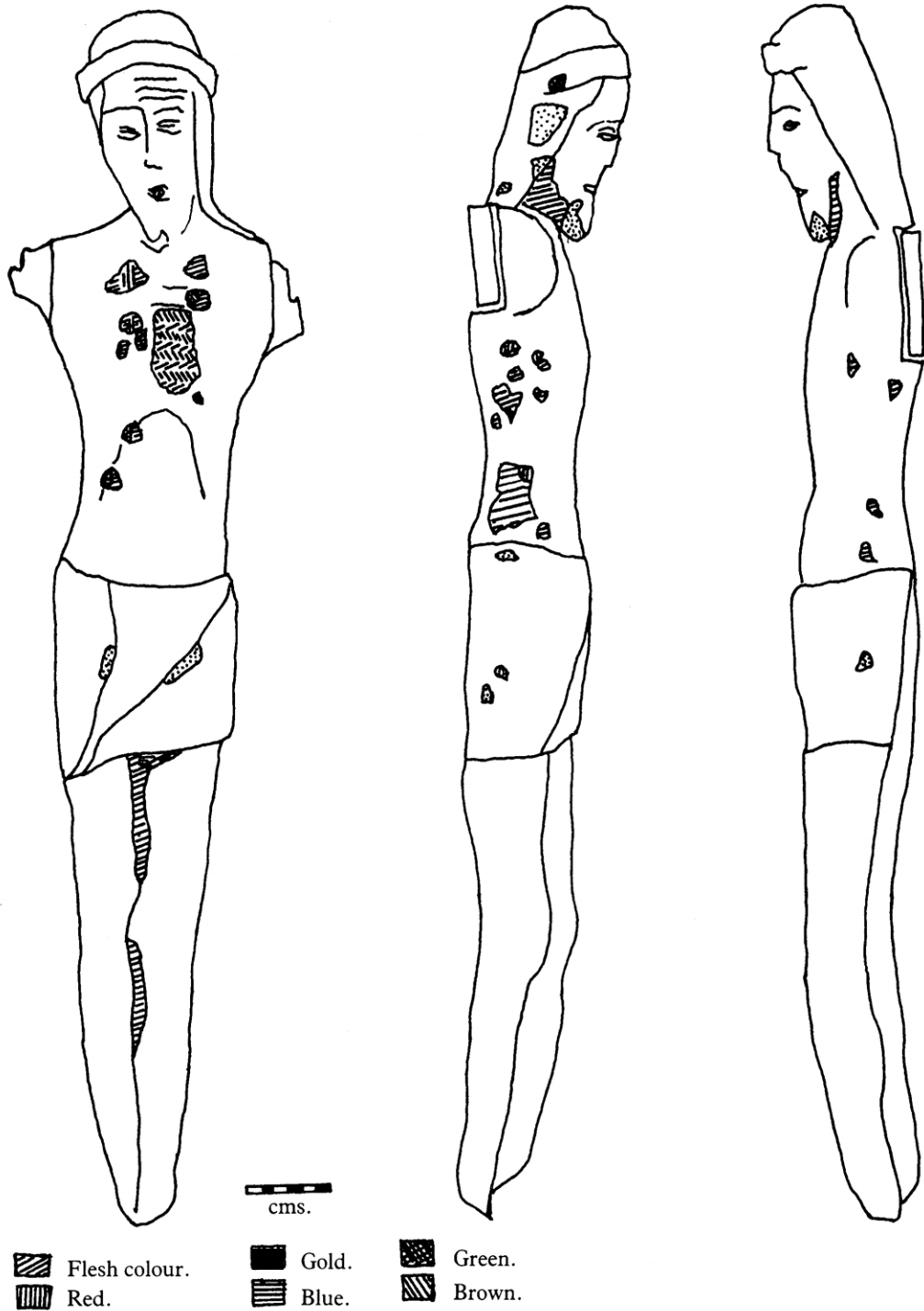


FIG. 1. – Surviving fragments of Polychrome shaded.

2:1, be displayed next to the figure showing the colour scheme as far as could be deduced from the investigation. Areas of existing polychrome are represented in a darker shade of the particular colour.

Two details recorded in the 1876 photograph that are now lost have been included in the 'restoration drawing': the blood on the face from the crown of thorns, and the more complete version of the crown of thorns resembling an heraldic torse.

Stratigraphical examination and pigment analysis confirmed that the figure had never undergone major repainting; pigment analysis identified only two possible repaints – both in the same colour as the original. Thus the 'drawing' is based upon the original colour scheme of the figure. Inevitably, from the sparse information remaining, it would be very fortunate if it were correct in every detail, but enough information exists for it to be claimed that the original appearance of the figure was not substantially different from that shown in the 'drawing'.

7. The figure is now displayed in the Kendal Museum of Natural History and Archaeology in a glass-fronted wooden case, made as air-tight as possible to reduce relative humidity changes and exclude air pollutants. The light sources are partly directional, partly diffuse, with window light reduced by blinds. The micro climate in the case is maintained at approximately 54% relative humidity by silica gel conditioned with magnesium nitrate, with a hygrometer installed inside for regular monitoring. An adjoining exhibition illustrates the conservation work carried out on the figure and includes contact prints of the X-Rays and colour photomicrographs of the paint cross sections.

Acknowledgements

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Footnotes

¹ P.R.O., Duchy of Lancaster: Rentals and Surveys, bundle 4, no. 12.

² CW1, ii, 389-99, and frontispiece.

APPENDIX

Oak figure of Christ: Cartmel Fell Church

By Dr A. R. Roy, Scientific Department, National Gallery.

Each of the samples sent showed at least two layers of paint overlying a white, inert ground. The paint structure at the various sample points is best judged by reference to the enclosed photomicrographs which show the layer structures in cross-section photographed by reflected light at a magnification of 110×. (The sample numbers I have assigned each fragment are completely arbitrary.)

Unfortunately, analysis of the materials involved does not give any firm clue as to the date and, of course, even if it did it would be an assumption that the paint was of the same age as the carving.

However, the pigments present are quite consistent with the suggested date range and there are no materials specifically introduced within the last 250 years or so. For example, the blue upper layers seen in s.5 have the superficial appearance of containing the pigment Prussian blue (invented c. 1704), but this proved to be the plant dyestuff indigo mixed with lead white.

1. Ground

A preparative layer of chalk is present in all the samples with the exception of s.5 (inner thigh). The binding medium appears to be animal skin glue, the presence of which was shown by a strongly positive reaction with the histochemical stain, acid fuchsin. It appears from the staining pattern that the ground layer is richer in glue towards the upper level suggesting several applications of chalk/glue ground to the figure before painting. The staining reactions also suggested a thin coat of glue size had been painted on to the figure before the ground was applied and this was subsequently sized with a second thin layer of glue before painting. The paint layers themselves showed no protein to be present. Adhesion between paint and ground is not especially good as it proved quite easy to cleave the paint layers away from their substrate.

2. Medium

Staining tests, the reaction to heat and the solubility characteristics of the paint all pointed to the presence of oil in the paint layers and the relatively low melting point (c. 110° C) suggests a second component; possible a resin.

3. Pigments

- s.1: Legs.
 - i) Chalk/glue ground
 - ii) Chalk/glue ground, rich in glue
 - iii) Brownish red: Lead white + charcoal black + red ochre + red lake (?)
 - iv) Principally lead white + charcoal black (tr.)
- s.2: Chest.
 - i) Glue size
 - ii) Chalk/glue ground
 - iii) Thin layer of glue size
 - iv) Lead white (+ excess medium)
 - v) Lead white + charcoal black (tr.)
- s.3: Blood on chest
 - i) Chalk/glue ground
 - ii) Thin layer of glue size
 - iii) Lead white + charcoal black (tr.) + red ochre (tr.)
 - iv) Red ochre + yellow ochre (tr.). Fairly thick, c. 140µ.
- s.4: Beard/hair.
 - i) Chalk/glue ground
 - ii) Thin layer of glue size
 - iii) Thin layer of lead white
 - iv) Oil/resin(?) mordant for gold leaf containing red and orange pigment (ochre)
 - v) Gilding: gold leaf

The gilding does not appear to be the usual type of gold leaf over red bole seen on many early panels. The orange-red layer beneath the gilding appears to consist mainly of medium with a relatively low melting point mixed with a tinting pigment.

- s.5: Inner thigh/
shading of
leg or robe.
- (no ground present)
- i) As s.1 (iii)
 - ii) Mainly lead white
 - iii) Indigo mixed with lead white (discoloured)
 - iv) Indigo + lead white; possible repaint
- s.6: Crown of
thorns
- i) Chalk/glue ground
 - ii) Thin layer of glue size
 - iii) As s.1 (iii)
 - iv) Transparent copper green, presumably of the copper 'resinate' glaze type
 - v) Opaque yellow green (possibly repaint)

All identifications by microscopy/microchemical analysis.

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