Conservation

J. Dunkerton, ‘The Condition of Pope Julius II (NG27)’, The Mellon Digital Documentation Project, 2009.

The painting is generally well preserved. Apart from the loss of the battens the panel is in an unaltered state (the nineteenth-century batten visible in the upper channel in the photograph taken in 1977 has since been removed). The wide central board has taken up a pronounced convex warp and there is some woodworm damage, particularly along the two joins. The last cleaning took place in 1970 when the overpainting of the green background was removed. There are no large losses but there are many scattered retouchings (which show as dark in the infrared reflectogram) over disruptions caused by faults in the wood, small flake losses and drying cracks, especially in the red paint of the mozzetta and throne. The areas of flesh painting are in exceptionally good condition, the only significant damage being a small vertical scratch on the sitter’s forehead. The final deep green glazes of the curtain in the background, however, have been damaged in past cleanings of the picture. On the right side the glazes retain their original thickness and depth of colour only where they have pooled in the depressions in the paint from the underlying pattern, for example the crossed keys to the right of the sitter’s shoulder. The tones must once have graduated evenly into the darkest green of the corner of the room. Here the vulnerable green glazes have been protected by the application of a final glaze of red lake to darken the colour. A red glaze was also applied to the cast shadow on the left and again the intended effect is compromised by the lighter patches of green now exposed as a result of thinning of the green glaze layers.

Support and Preparatory Layers

A. Roy, ‘Portrait of Pope Julius II’, The Mellon Digital Documentation Project, 2008.

Wood panel, identified as poplar. Gesso ground. Over the gesso, there is a thin warm light- to mid-grey imprimitura composed of lead white, finely-ground charcoal black and a small proportion of orange-brown earth pigment. The thickness of the imprimitura (judged from cross-sections) varies from place to place.

Underdrawing materials

R. Billinge, ‘Note on Underdrawing Materials of The Portrait of Pope Julius II’, The Mellon Digital Documentation Project, 2009.

No underdrawing could be found in infrared examination and none is visible on surface examination. It is probable that Raphael has made an underdrawing but in a material that does not show in infrared examiations such as red or white chalk.

Paint Binding Medium

R. Morrison and D. Peggie, ‘Paint Binding Medium Report for NG27’, 2009.

The GC and GC–MS analysis of samples from this picture indicate the use of an oil binding medium. Heat-bodied walnut oil and heat-bodied linseed oil appear to be present.

Results

GC analysis (published in 1972) of a sample from the green background and a sample from the white surplice found the binder to be walnut oil in both cases (P/S 3.0 and P/S 3.1 respectively) [1].

More recent analysis of samples taken in 2001 found a drying oil medium in each sample, identified by a large methyl azelate peak in the GC–MS traces. A degree of heat pre-polymerisation of the oil was also evident. However, variations in the ratios of methyl palmitate to methyl stearate between samples from the green background, the white cuff and the red mozzetta suggest that both linseed and walnut oil are present.

Notes

[1] J. S. Mills and R. White, 'The gas chromatographic examination of paint media part II. Some examples of medium identification in paintings by fatty acid analysis', Conservation of Paintings and the Graphic Arts, Preprints of Contributions to the Lisbon Congress, 1972, IIC, London 1972, p. 725.

GC–MS chromatogram obtained from a red paint sample, indicating the use of heat-bodied linseed oil.

Pigments and Layer Structure

A. Roy, 'Portrait of Pope Julius II', The Mellon Digital Documentation Project, 2008.

The layer structure is more complicated than the surface design would imply, since Raphael radically altered an earlier background, replacing it with the deep green backdrop now seen on the picture.

Initial Background

It is thought (from the X-ray image and cross-sectional samples) that Raphael's initial design probably involved three motifs: the delle Rovere symbol of an oak tree, papal crossed keys, and papal tiaras. These symbols were to be painted in a golden yellow colour (comprising a mixture of brightly-coloured yellow ochre with a little added red lake, revealed in several cross-sections) and contained within 'teardrop' shapes consisting of a light blue of finely-ground natural azurite and white. These alternating symbols were set against a rather darker blue azurite-containing background.

Final Background

Evidence from cross-sections and the X-ray image suggests that Raphael began but abandoned this elaborate background before it was completed and painted over these earlier design layers with three applications of a strongly-green paint, the uppermost of which is a translucent glaze of verdigris and oil. However, elements of the earlier design can be seen through the present green background. The lower green layers contain a proportion of white pigment and so their opacity is greater than that of the final, saturated surface. Darker, brownish shadows in the green background involve some red lake pigment incorporated into the final glaze layer, a technique found in other pictures by Raphael (for example NG168 and NG3943). EDX analysis of several green samples showed the presence of chlorine in the pigment, a result not uncommon for verdigris-containing paint layers.

Julius's Crimson Mozzetta

Julius's crimson mozzetta consists of two layers of solid orange-brown underpaint made up of vermilion, red earth and finely-ground charcoal black; the second layer is darker in tone than the first. The final red glaze consists of a pure crimson-coloured lake pigment, given depth and

saturation to the opaque body colours beneath, as well a strikingly rich hue. Analysis (EDX) has shown the lake has a substrate of hydrated alumina.

Acorn Finials

No genuine gold is used in the picture – however, the golden-yellow highlights on the acorn finials and tassels of the throne are painted in lead-tin yellow. Analysis suggests lead-tin yellow ‘type I’; lead soaps are present.

Microscopy

Dark green background with blue underlayer, left hand edge next to lower chair tassle, unmounted sample photographed in reflected light, Sampled 21/03/2001, S13, Visible light, 250x, The National Gallery, London, NG27 (35mm).