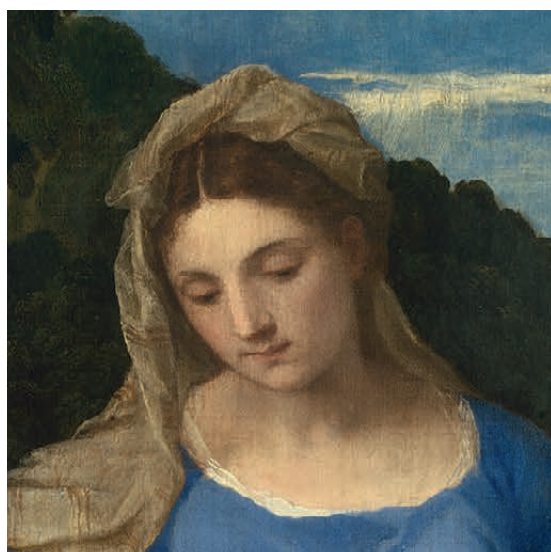
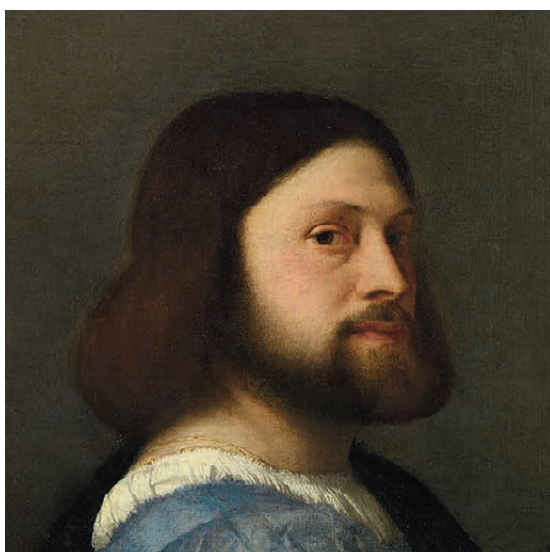
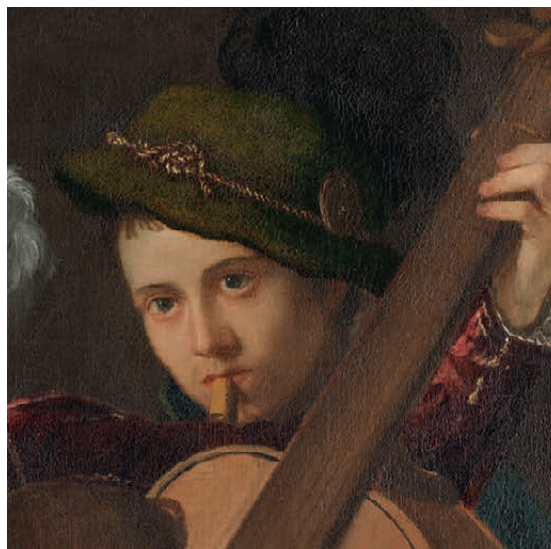


National Gallery Technical Bulletin

VOLUME 34 *Titian's Painting Technique before 1540*



National Gallery Company
London

Distributed by
Yale University Press

This edition of the *Technical Bulletin* has been supported by the American Friends of the National Gallery, London with a generous donation from Mrs Charles Wrightsman

Series editor: Ashok Roy

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First published in Great Britain in 2013 by
National Gallery Company Limited
St Vincent House, 30 Orange Street
London WC2H 7HH

www.nationalgallery.co.uk

British Library Cataloguing-in-Publication Data.
A catalogue record is available from the British Library.

ISBN: 978 1 85709 552 4
ISSN: 0140 7430
1035936

Publisher: Jan Green
Project Manager: Claire Young
Editor: Lise Connellan
Design: Libanus Press
Picture Research: Rosalind McKeever
Production: Jane Hyne and Penny Le Tissier
Repro by Alta Image
Printed in the United Kingdom by Butler, Tanner and Dennis

FRONT COVER

Titian, *Bacchus and Ariadne* (NG 35), 1520–3 (detail).

TITLE PAGE

TOP LEFT: Titian, *The Holy Family with a Shepherd* (NG 4), c.1510 (detail).

TOP RIGHT: Titian, *The Music Lesson* (NG 3), c.1535 (detail).

BOTTOM LEFT: Titian, *Portrait of Gerolamo (?) Barbarigo* ('*The Man with a Quilted Sleeve*') (NG 1944), c.1510 (detail).

BOTTOM RIGHT: Titian, '*The Aldobrandini Madonna*' (NG 635), c.1532 (detail).

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CAT. 1

The Flight into Egypt

The State Hermitage Museum, St Petersburg

c.1507

Canvas, 204 × 324.5 cm

Thread count of canvas: 15 warp, 13 weft per cm (plain weave)

Cleaned and restored in 2000–12¹

This large canvas can be identified with the picture of 'Our Lady on the journey to Egypt, in the middle of a great forest and with landscapes that are very well painted' described by Vasari in the 1568 edition of his *Lives* and perhaps seen by him during his visit to Venice in 1542.² He recorded that it hung in the *sala* of the San Marcuola palazzo built on the Grand Canal for Andrea di Nicolò Loredan (now known after later owners as Ca' Vendramin Calergi). Subsequent descriptions by Carlo Ridolfi in 1648 and Marco Boschini in 1660 confirm that it remained there throughout the seventeenth century, before its removal to Saxony and thence to Russia. Vasari claimed that Titian painted the canvas after he had finished the side wall of the Fondaco dei Tedeschi (see essay, p. 6), but Vasari's chronologies are seldom exact. The slightly awkward design and a naive, almost childish quality to the figures and animals suggest that this may be the work of a very young artist,

perhaps no more than sixteen or seventeen years old. The landscape, however, is magnificent in its panoramic breadth and also displays a boldness and freedom of paint handling that might support the idea that Titian had early experience as a painter of murals (see essay, p. 6). The frieze-like arrangement of the figures and animals, sometimes a little clumsy in their juxtaposition, set against the background of variegated foliage and with a foreground filled with a carpet of decorative plants and flowers, has been described as 'like a tapestry'.³ Andrea di Nicolò Loredan owned a large number of tapestries and may have been more interested in them than in painting.⁴ Could it be that he commissioned the young painter, perhaps quite cheaply (and certainly when compared with the cost of tapestry), to make this painting to hang with tapestries in a *sala* of his newly built palace?

The possibility that *The Flight into Egypt* was

FIG. 51 *The Flight into Egypt*, X-radiograph.



FIG. 52 Titian, *The Flight into Egypt*, c.1507. Oil on canvas, 204 x 324.5 cm, excluding the later addition of c.10 cm to the right-hand edge. St Petersburg, The State Hermitage Museum, Inv. GE 245.

destined for a very specific location is supported by the particular construction of the support. Normally a canvas of these dimensions would have a single horizontal seam in order to join two lengths of canvas of the fairly standard width of approximately one metre (see essay, pp. 10–11). In this case, however, there are two seams, stitching together three bands of linen woven on an unusually narrow loom. It has been observed that the canvas for the Kingston Lacy *Judgement of Solomon* (see essay, FIG. 16), now generally agreed to be by Sebastiano del Piombo, which is almost the same size as *The Flight into Egypt* and was also in Palazzo Loredan in the seventeenth century, has two seams as well.⁵ While this might suggest that the two young painters were working closely together at the time, it could also be that the patron had the canvases assembled before sending them to the painters, exactly as was to happen with Titian's paintings for Alfonso d'Este's *studiolo* (see CAT. 8), thereby ensuring that they fitted their destinations.

Before he abandoned *The Judgement of Solomon* unfinished, Sebastiano made changes to his composition that were arguably unprecedented in their extent for any painting produced in Venice until then.⁶ X-radiography of *The Flight into Egypt* has shown that Titian too

made a radical alteration, not just to the design but to the subject of the painting (FIG. 52). Initially, right in the centre of the large canvas he began to paint the figures of Joseph and the Virgin kneeling apparently in adoration of the Christ Child,⁷ although, given the extent of the landscape, perhaps an episode more like the Rest on the Flight was actually intended.⁸

The study of the paint cross-sections confirms that the canvas was prepared with gesso alone (for example, FIGS 55, 56 and 62). Infrared examination revealed mainly adjustments to contours,⁹ but the X-radiograph shows that, apart from the rethinking of the Holy Family group, the composition was quite carefully planned. Details such as the tree trunks against the sky, the tree stumps in the foreground and many of the figures in the background, including the delightful flock of sheep (FIG. 53), all appear dark and so must have been left in reserve when blocking in the paint of the sky and the landscape in the middle distance and foreground. This is confirmed by a cross-section from the bull (FIG. 56), showing over the gesso a light brown underpaint, which is then modelled with a darker brown mixture containing mainly earth pigments and a little black, lead-tin yellow and verdigris.

With such an extensive landscape various shades of



FIG. 53 *The Flight into Egypt*, detail.

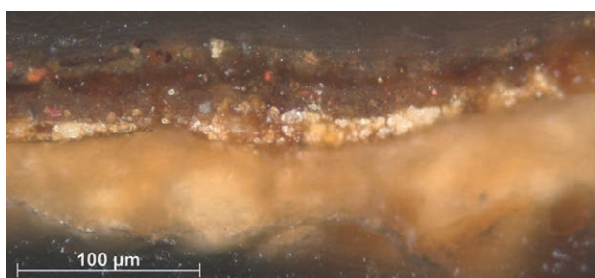


FIG. 56 *The Flight into Egypt*, paint cross-section from the bull at the far right of the composition.

green inevitably predominate. In addition, the change to the main figure group means that a layer of green from the first lay-in of the landscape also appears as the lowest layer in most of the paint samples from their draperies (see FIGS 58, 60–4). This base colour consists of mixtures of verdigris, lead-tin yellow and lead white. A small amount of copper chloride is present in the green paint; this is most likely connected with the method of manufacture of the verdigris.

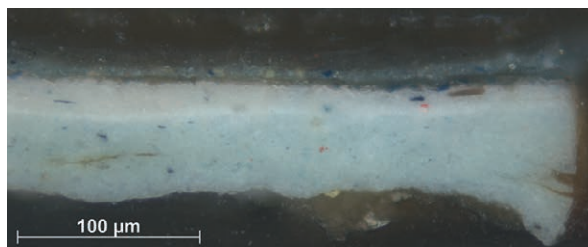


FIG. 54 *The Flight into Egypt*, paint cross-section from the sky (sample taken before cleaning), showing a thick light blue layer of lead white and indigo, followed by a very thin white or pale blue layer and a pale purplish blue layer of lead white and a little red lake. The uppermost blue layer is overpaint.

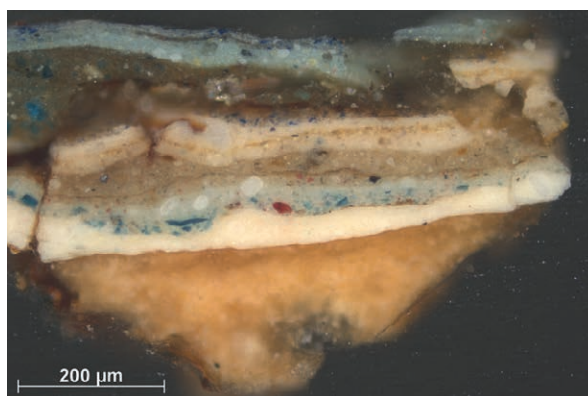


FIG. 55 *The Flight into Egypt*, paint cross-section from the mountain (sample taken before cleaning). Near the bottom of the layer structure, beneath multiple overpaint layers, is the purple-blue of the mountain. It lies on a pale blue or white paint that is directly on the gesso.

All three blue pigments commonly found on Titian's earlier works are present. A small amount of ultramarine, mixed with lead white, was used for the upper part of the sky (FIG. 54). It is applied on an underpaint of indigo and white, exactly as in *The Holy Family with a Shepherd* (CAT. 4), and also the latest painting to be included in this study, *The Triumph of Love* (CAT. 13). The distant mountain is painted with azurite (under many layers of restorers' repaint in the cross-section; FIG. 55), mixed with a little red lake to give a purple-blue hue, and azurite was also used for the Virgin's blue mantle (FIG. 57). In the paint sample (FIG. 58) the blue not only overlaps the shoulder of the ass, but also the very edge of the head of Joseph in the first figure group. Several pinkish layers of flesh paint can be seen. These in turn lie over green paint from the landscape, since the head was enlarged slightly. The sample from the neck of the ass was from a point close to that from the Virgin's cloak, so also included the flesh paint from Joseph's head, beneath the dark grey-brown



FIG. 57
The Flight into Egypt, detail.

surface paint. This was applied over a warm pinkish brown underpainting, and included large black particles with the distinctive appearance of coal black,¹⁰ also found in areas of black and grey in other works, among them the *Portrait of Girolamo Fracastoro* (CAT. 9) and *Bacchus and Ariadne* (CAT. 8).

More indigo and lead white appears in a cross-section from the stockings of the figure leading the ass, perhaps an angel (FIG. 59). This sample is of particular interest as it was taken from a point that overlies the first kneeling Virgin and Joseph. Therefore the lowest layer is not green, but a pale pink consisting of lead white, red lake and translucent inclusions in which zinc was detected by EDX analysis, perhaps the same zinc soaps and zinc sulphate found in a few other paintings in this study.¹¹ The location of the sample suggests that this is likely to be from the first Virgin's dress, probably abandoned at the underpainting stage since there is only a single pink layer. Between the pink and the final blue layers there are a couple of layers of a light yellow-brown paint containing lead white, lead-tin yellow, a small amount of copper pigment (perhaps verdigris) and translucent inclusions that seem to be lead soaps. This is probably the paint of the landscape, and indeed it is clear in the X-ray image that in this area there are many overlapping forms. Another cross-section shows that

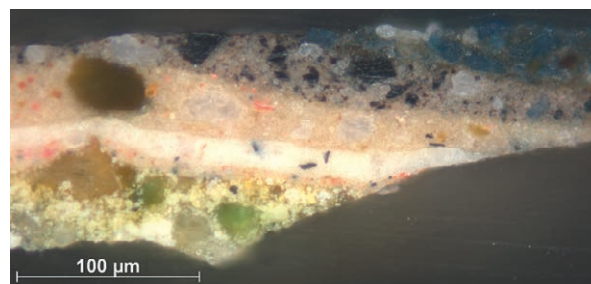


FIG. 58 *The Flight into Egypt*, paint cross-section from the Virgin's mantle. The dark blue paint (from a shadow) at the top right contains azurite and a little lead white and lies on the grey paint of the ass. The orange pink paint may be the flesh of Saint Joseph in the first figure group, which also overlaps the first green lay-in for the landscape.

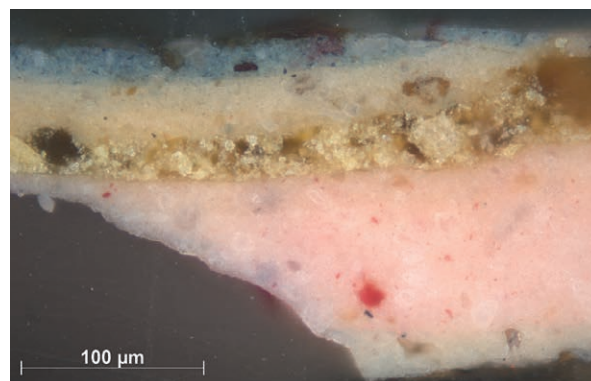


FIG. 59 *The Flight into Egypt*, paint cross-section from the angel's blue stocking.

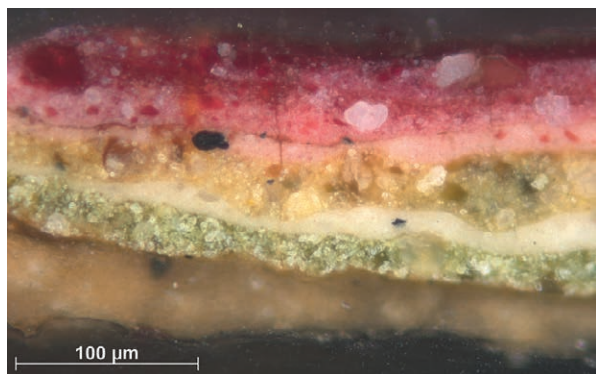


FIG. 60 *The Flight into Egypt*, paint cross-section from the Virgin's pink dress.

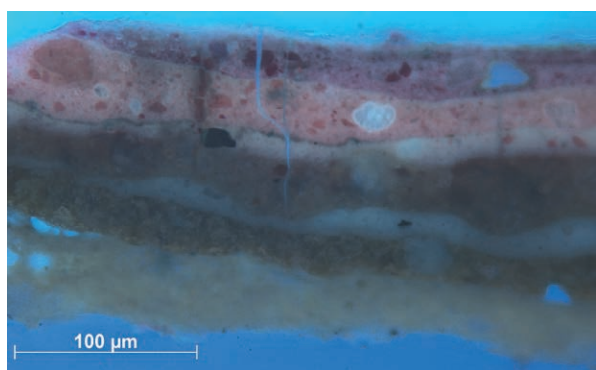


FIG. 61 *The Flight into Egypt*, paint cross-section from the Virgin's pink dress under ultraviolet illumination.

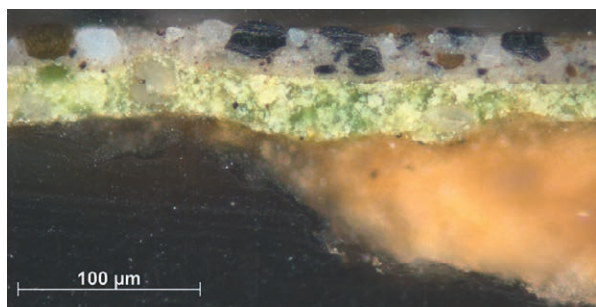


FIG. 62 *The Flight into Egypt*, paint cross-section from Joseph's grey stockings.



FIG. 63 *The Flight into Egypt*, paint cross-section from Joseph's purple cloak.

this same paint also appears beneath the grey cloak of this figure.

The Virgin in the final painting wears a satin-like red dress, deeply glazed in the shadows (FIGS 61, 62). Over a light pink containing red lake and lead white there are two layers of red lake with only a small amount of lead white. No sample was available for dyestuff analysis, but the orange fluorescence under ultraviolet illumination of some of the particles in the lower layer suggests the presence of madder, while those in the upper layer do not fluoresce, probably indicating a red lake containing a different dyestuff. The discovery of both kermes and madder in samples from several of the National Gallery's earlier works by Titian, with the cheaper madder apparently mainly in the lower glaze layers (see essay, p. 28), suggests that a similar technique was used here.¹²

Joseph's grey stockings, which, like the paint of the ass, contain coal black, were painted directly over the light green of the first lay-in of the landscape (FIG. 62) and the dull purple of his robe was achieved by mixtures of azurite, red lake and lead white (FIG. 63). The build up of colour is exactly as in all the other areas of purple in the paintings included in the study (see essay, p. 27), with first a rose pink layer containing just red lake and white, then a bluer layer containing red lake, azurite and lead white, and finally a darker more translucent layer (best seen at the right end of the sample) of mainly red lake and ultramarine. These three layers are over a light pinkish orange paint. This is probably part of Joseph's cloak since it is similar to the underpaint in a sample from another area of this drapery, but lighter (FIG. 64); as with several samples



FIG. 64 *The Flight into Egypt*, paint cross-section from Joseph's yellow robe.

from *Christ and the Adulteress* (CAT. 2), the complexity of the layer structure is often the result of overlapping forms. The golden yellow highlights of Joseph's cloak contain lead-tin yellow and lead white, applied over the orange-pink mid tone and, at the sample point, also overlapping the dark orange-red of a shadow. The dark orange, which appears relatively translucent on the painting itself, is composed mainly of earth pigment, while the paint of the mid tone is a mixture of the same earth pigment with lead white and lead-tin yellow.¹³ In all these layers there has been extensive lead soap formation, visible as large translucent inclusions (FIGS 63, 64).

The binding medium in all samples analysed was found to be linseed oil.¹⁴ The relatively opaque and direct technique, with most of the colours containing considerable amounts of lead white or lead-tin yellow means that the paint has dried well, without the defects evident on *Christ and the Adulteress*. The use of translucent glazes is limited, and confirmation that the light tones of the

foreground meadow are intended and have not lost glazes of the type that feature on the clumps of grass in the slightly later *Holy Family with a Shepherd* (CAT. 4) is supplied by two samples from the lower right corner (FIGS 65, 66). In both, the first layer is a light dull yellowish-green which is the base colour for the foliage, as visible in the detail (FIG. 67). Over it are layers of mid to dark green, containing the usual combination of verdigris, lead-tin yellow and lead white, with the final darkest green having some yellow earth in the mixture in addition, but no true glaze. If such a glaze had existed one would expect to see it beneath the red petals of the flowers, painted with a mixture of vermilion, red lake and white. These are a very late addition, added over an unpigmented layer, which fluoresces under ultraviolet illumination; this may represent a varnish or oiling out layer. Set off against the green, they lift this corner of the painting and draw attention to the details that were surely intended to charm and to delight.

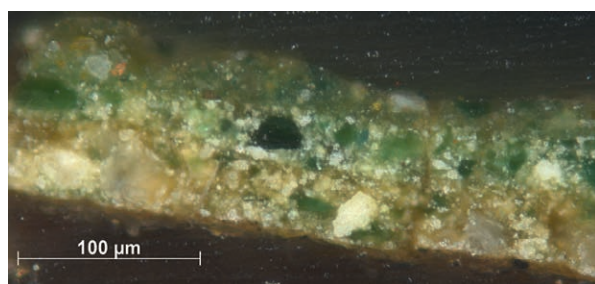


FIG. 65 *The Flight into Egypt*, paint cross-section from the foreground foliage.

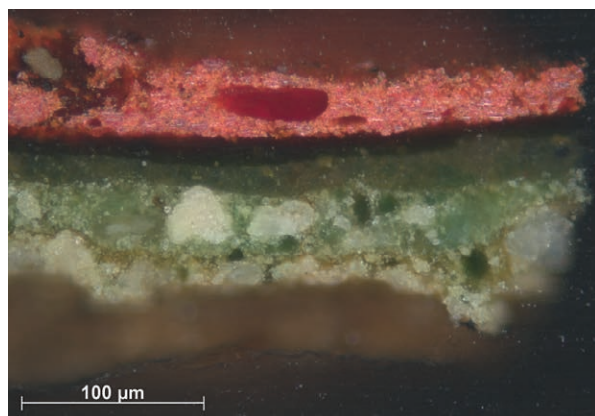


FIG. 66 *The Flight into Egypt*, paint cross-section from the red flower.

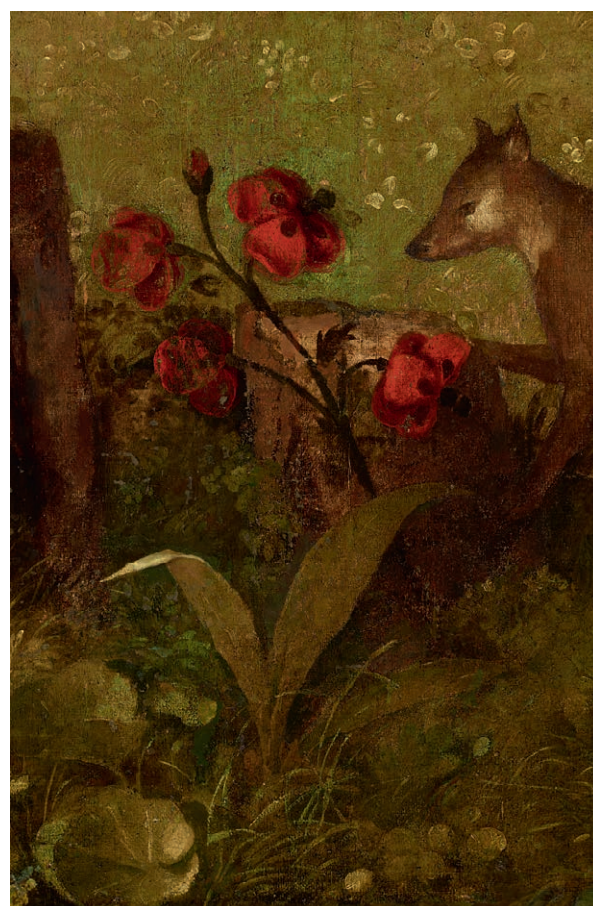


FIG. 67 *The Flight into Egypt*, detail.

CAT. 2

Christ and the Adulteress and Head of a Man

Glasgow Museums

c.1508–10

Canvas, 139.2 × 181.7 cm and 47 × 40.5 cm

Thread count of canvas: 12 warp, 9 weft per cm (plain weave)

Cleaned, restored and relined in 1951–3¹

Christ and the Adulteress was long famous as the ‘Glasgow Giorgione’, but in recent years there has been general, if not universal, agreement that it is the work of the young Titian.² The discovery during cleaning in 1951–3 of traces of a halo around the head of the seated male figure confirms that the subject is indeed *Christ and the Adulteress* and not *Daniel and Susannah*, as has sometimes been suggested. Moreover, a more prominent halo is present on a full-size copy of the composition (with some variations; for instance, Christ’s gesture), believed to have been made in the early sixteenth century and now in the Accademia Carrara, Bergamo. The copy also confirms that the original painting was cut down on the right and that the *Head of a Man* acquired by the Glasgow Museums in 1971 is a detached fragment. In addition, following removal of overpaint, a small section of the particoloured knee of the figure to which the detached head belongs reappeared at the right edge where it overlaps the Adulteress’s skirt.

The draperies share with those of *The Flight into Egypt* (CAT. 1) a plumped up, almost inflated, quality with bright highlights that impart an almost satiny sheen. The figures show many weaknesses of construction and drawing of details – the woman’s left arm and hand is particularly disturbing. Yet, in spite of its awkwardness, the composition displays a narrative ambition far greater than that of the St Petersburg canvas. The pose of the Adulteress and her bulky draperies have often been associated with the *Judith* in the Fondaco dei Tedeschi (see essay, p. 6) and it is generally agreed that Titian was engaged in painting the canvas at much the same time.

The relatively fine plain weave canvas has a horizontal join slightly below the centre. If two lengths of equal width were used, then the painting is likely to have lost at least 6–7 cm from the lower edge. The Bergamo copy confirms that this is probably the case. Allowing for this trimming, the loom width of the canvas pieces would then be close to that of the unusually narrow canvas used for *The Flight into Egypt* and the Kingston Lacy *Judgement of Solomon* (see essay, FIG. 16). *Christ and*

the Adulteress probably has a Venetian provenance and may have hung in one of the great family palaces.³ There is no evidence, however, that it was ever in Ca’ Loredan, together with these other works. At most, the coincidence of canvas width confirms a close date for the three paintings.⁴ Also in common with *The Flight into Egypt*, the canvas was prepared with gesso alone (FIG. 69); there is no sign in the paint samples of the very pale grey *imprimitura* that features in the four early works from the National Gallery (CATS 4–7).

Published infrared reflectogram details⁵ show little detectable underdrawing, mainly a few broadly brushed marks in the area of the woman’s bodice and around the bow at her waist. Any underdrawing is likely to have been approximate and sparse, however, as X-radiographs reveal a remarkable degree of improvisation in the execution of the painting. In his effort to animate the story, the painter changed, cancelled or moved almost every head in the composition.⁶

Considering the figures from left to right, the head of the Pharisee dressed in red (FIG. 71) was initially higher and tilted to the left, while to the right of the figure there is a suggestion of an inserted turbaned head, apparently looking to the left, and probably quickly suppressed. The head of the next figure, with his back turned, does not register clearly in the X-radiograph since there is little lead white in the paint of his dark hair. However, there seems to have been another head above it. Christ’s head was first painted, possibly in two positions, looking towards the light, as if addressing the figures to his right (FIG. 72). Titian then made the rather bold decision to turn the head, placing his face in deep shadow, as he indicates the Adulteress. This new position seems to have first been tried out with the head lower and more inclined. Indeed, the head in the final image barely features in the X-radiograph. The legibility of the face in the painting itself is further compromised by its worn and damaged condition and by the drying cracks that have resulted from the superimposition of paint layers from the repeated attempts.



FIG. 68 Titian, *Christ and the Adulteress*, c.1508–10. Oil on canvas, 139.2 x 181.7 cm. Glasgow Museums, Inv. 181.

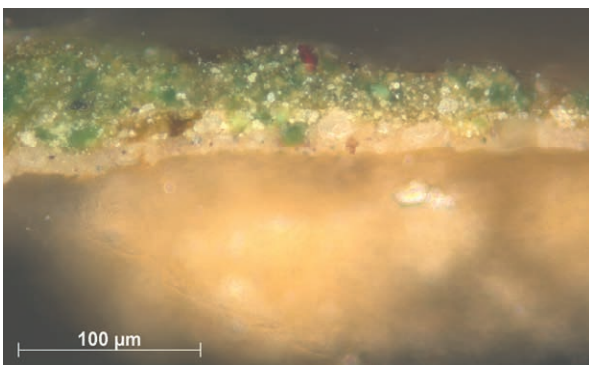


FIG. 69 *Christ and the Adulteress*, paint cross-section from the grass in the foreground.



FIG. 70 Titian, *Head of a Man*, c.1508–10. Oil on canvas, 47 x 40.5 cm. Glasgow Museums, Inv. 3283.



FIG. 71 *Christ and the Adulteress*, detail of X-radiograph.

The next two heads appear in the X-ray image more or less as they do in the painting, with their sharp triangular noses particularly prominent, but the older man, who has no lower half and leans over what appears to be a rock in a pose similar to that of Joseph in the Longleat House *Rest on the Flight into Egypt* (CAT. 3), may be a late insertion. There is also a suggestion that the wall behind Christ extended across the painting and that the landscape was originally conceived as seen through an opening, not unlike that in the Fondaco dei Tedeschi *Judith*. The Adulteress's head (FIG. 73) was first tried further to the left, while the dense X-ray-opaque highlights on the head of the next Pharisee, now draped in a shawl, suggest that originally he was to be a helmeted soldier. Finally the head in profile, now at the edge of the cut picture, was painted over the sky (or at least the underpainting), and is clearly a late addition.

Further changes can be detected in the costumes and poses of the figures. Drying defects as a result of adjustments to the red-stockinged legs of the young man between Christ and the woman are very evident in the X-ray image – areas of paint cracked by defective drying were to feature intermittently in Titian's works throughout his career. The paint of the deep red robes



FIG. 72 *Christ and the Adulteress*, detail of X-radiograph.

of the Pharisee has also developed wide drying cracks, especially in the shadows, as has the shadowed side of Christ's beard. The soldier figure seems to have had a cloak draped over his left shoulder and may not always have been in armour, while the piece of fabric wrapped around his hips was originally longer, coming down to the back of his knee. The X-radiograph (FIG. 74) emphasises the stabbing diagonal brush marks with which it was painted; these are reminiscent of the quick parallel hatched strokes used to model forms as part of the rapid execution needed when painting in true fresco.

The sumptuous palette, recently described as 'almost too rich and varied',⁷ suggests that this was perhaps a more prestigious and expensive commission than *The Flight into Egypt* (CAT. 1). Most of the paint samples display a great many layers but these are often the result of overlapping forms and colours from the many pentimenti. Without extensive sampling it is impossible to be sure whether the dark grey-brown layer that appears below the red in a sample from the robes of the Pharisee on the left (FIG. 75), for example, is from the wall behind, or whether it is an underlayer intended to deepen the tone of the red as in the shepherd's tunic in *The Holy Family with a Shepherd* (CAT. 4).



FIG. 73 *Christ and the Adulteress*, detail of X-radiograph.

In both this layer and the opaque red based on vermillion above it there are large translucent inclusions that were found on analysis to contain zinc sulphate and zinc soaps, the latter having presumably formed on reaction with the oil binding medium (see essay, FIG. 43).⁸ At the top of the cross-section, applied for the final modelling of the drapery, is a layer of red lake that HPLC indicated was based on kermes dyestuff.⁹ Two multi-layered paint samples from a shadow in Christ's blue robe in the folds lying on the ground (FIG. 76) and from his shoulder appear at first sight to resemble the complex layer structures seen later in Titian's purple draperies, having underlayers of pink or purple. These lie beneath numerous layers of blue based on ultramarine and white. Titian did sometimes underpaint



FIG. 74 *Christ and the Adulteress*, detail of X-radiograph.

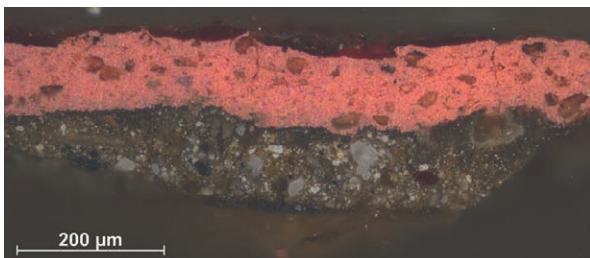


FIG. 75 *Christ and the Adulteress*, paint cross-section from the shoulder of the Pharisee on the left.

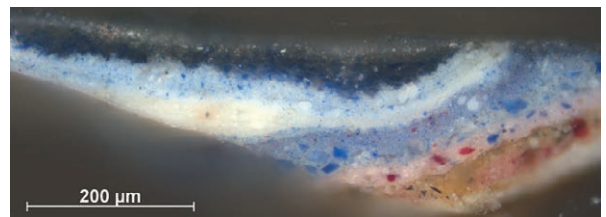


FIG. 76 *Christ and the Adulteress*, paint cross-section from Christ's blue mantle.

blue draperies with pink tones,¹⁰ but both samples come from areas quite close to Christ's red robe so it seems more likely that here there is overlap between the pink and blue of the robe and mantle. A border has been created just above the hem of Christ's blue cloak with a line of paint based on red lake (FIG. 77), now rather intermittent as a result of abrasion. More red lake occurs as a rich glaze on the wide bands of ribbon decorating the Adulteress's bodice (FIG. 78). These were painted over the pale mauve pink of her dress, which in this area consists mainly of lead white with a little red lake, and some inclusions containing zinc compounds as in the Pharisee's robe.¹¹ In a sample from the shadowed part of the bodice some ultramarine is also included with the red lake and white. The colour of the whole dress is likely to have altered as a result of fading of the lake component.¹²

A sample from the woman's brilliant green drapery includes several layers of verdigris and lead-tin yellow interspersed with copper green glazes. The complexity

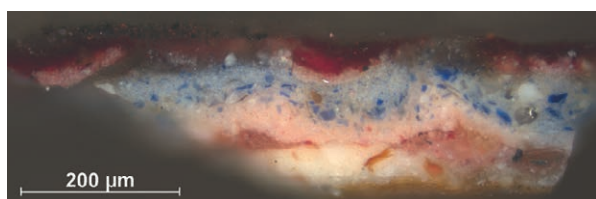


FIG. 77 *Christ and the Adulteress*, paint cross-section from Christ's pink robe.

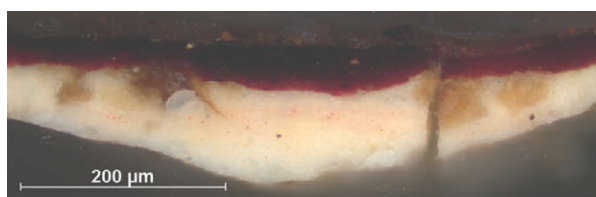


FIG. 78 *Christ and the Adulteress*, paint cross-section from the red band on the Adulteress's dress.

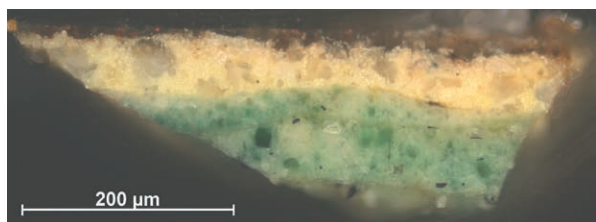


FIG. 79 *Christ and the Adulteress*, paint-cross section from the yellow sleeve of the young man.

of the layer structure may reflect that of the bunched folds of fabric, but similar areas of green with alternating opaque and transparent pigment mixtures have also been observed in paintings by Cima and Palma Vecchio, in particular.¹³ Surprisingly, a layer of verdigris with lead-tin yellow and lead white also appears in a cross-section beneath a highlight of the golden yellow sleeve of the young man to the left of the Adulteress (FIG. 79). It is not clear whether this represents a pentimento (even though the sample was not near the background landscape), a change of colour or an attempt to achieve a deliberate effect. Although previously reported as painted with orpiment and realgar,¹⁴ the shadows of the doublet are in fact a mixture of lead-tin yellow, red earth and a little vermilion, while the highlights consist only of lead-tin yellow. The overall colour is closer to the golden yellow textiles in *The Flight into Egypt* paintings (CATS 1 and 3) than it is to the deeper orange of Saint Joseph in *The Holy Family* (CAT. 4), which does contain orpiment and realgar. Lead-tin yellow has also been identified on the gold chain of the Pharisee on the left, and it was used mixed with a little black for the greenish yellow stockings of the figure cut from the right.

There is considerable variety in the flesh tints. Some are very dark. The paint of the left calf of the soldier contains mainly vermilion and black (FIG. 80), as does the face of the man in profile on the right (FIG. 81), again with translucent inclusions of zinc soap and zinc sulphate in both cases. Also evident in both cross-sections is marked cupping of the uppermost paint layer, and although this defect might be due to the thickness of the underlying layers – that in the calf of the soldier is over a duller brown paint based on earth pigments, while the man in profile was painted over a layer of azurite from the sky – it may be that instead it is the addition of zinc sulphate that has affected the drying properties. The sky is bluer in the separate fragment that has been cut from the painting on which there is only a head, and here a thin layer of ultramarine was applied over the azurite.

The paint of the plants and grassy patch in the foreground has clearly been abraded in a past cleaning. Samples show only a single layer of green based on verdigris mixed with lead white and lead-tin yellow, applied over the sandy colour of the path (FIG. 69). The upper surface of the samples is rough and broken, with no trace of the deeper more translucent greens that must once have deepened the tone and supplied

the detail, and which are still present in the similar foreground foliage in *The Holy Family with a Shepherd*.

The loss of these foreground glazes and the cutting of the figure on the right contribute to the disconcerting lack of balance in the picture as it survives. Nevertheless, in its rich palette *Christ and the Adulteress* looks forward to the chromatic splendour of the bacchanals for Alfonso d'Este (see CAT. 8), while the theatrical lighting and dynamic figure poses, so often changed in order to heighten the drama and to develop engagement between the figures, were to recur in many of Titian's paintings right through to the end of his long career.

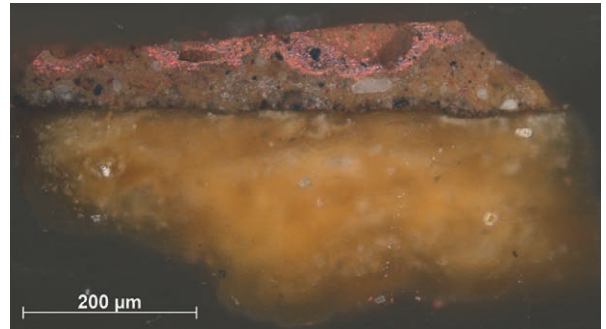


FIG. 80 *Christ and the Adulteress*, paint cross-section from the calf of the soldier.

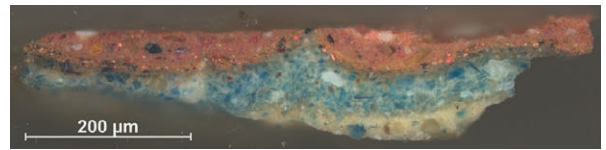


FIG. 81 *Christ and the Adulteress*, paint cross-section from the head of the man in profile on the right.



FIG. 82 *Christ and the Adulteress*, detail.

CAT. 3

Rest on the Flight into Egypt

The Most Hon. the Marquess of Bath, Longleat House, Warminster, Wiltshire
c.1508–9

Canvas laid on panel. Canvas, 39.35 × 61.85 cm; panel, 46.25 × 63.25 cm

Thread count of canvas: 13 warp, 18 weft per cm (plain weave)

This small painting is universally accepted as an early work, painted perhaps a couple of years after the St Petersburg *Flight into Egypt* (CAT. 1).¹ As in that painting, Saint Joseph's cloak is a golden yellow, almost certainly based on lead-tin yellow, as opposed to the rich orange in *The Holy Family with a Shepherd* (CAT. 4). Giorgione's Saint Joseph in *The Adoration of the Kings* (NG 1160; see essay, FIG. 5) also wears yellow (but over a blue robe). A preference for golden yellow over orange is also evident in draperies in several of the small panels from the first decade of the century that are generally attributed to the young Titian, among them the *Holy Family in a Landscape* (North Carolina Museum of Art,

Raleigh), as well as the assorted secular scenes such as the panels in Padua (see essay, FIG. 2).

The X-radiograph (FIG. 83) reveals that the painting was extended by about 5.2 cm at the top, 1.1 cm at the left and 1.7 cm at the lower edge when the canvas was laid on the panel. The newer paint has become opaque and hazy and is now slightly discoloured, no longer matching the rest of the painting. The added strip, which is clearly not original, includes most of the spreading foliage of the tree and the upper part of the tower with its conical roof on the right. Other details of the hill town are heavily retouched, including the curious crane or hoist which is probably a restorer's invention.



FIG. 83 *Rest on the Flight into Egypt*, X-radiograph.



FIG. 84 Titian, *Rest on the Flight into Egypt*, c.1508–9. Oil on canvas laid on panel, 46.25 × 63.25 cm. Warminster, Wiltshire, The Most Hon. the Marquess of Bath, Longleat House, Inv. 9550.

There are numerous scattered and now discoloured retouchings across the paint surface. Infrared reflectography confirms the presence of the extensions and retouching, but no underdrawing could be detected.² The lengthening of the Virgin's hem over her right foot and in the section of skirt immediately to the left of the trailing blue mantle are also apparent in the infrared image, as they are to the naked eye.

There are no indications of changes to the figure group in the X-radiograph but the image is partly obscured by the presence over the left two-thirds of the picture of an X-ray-opaque material, probably containing lead white. Since it does not extend across the whole canvas it is unlikely to be an *imprimatura*; nor does it seem to be from the adhesive used to attach the canvas to the panel. The wide sweeps of this X-ray-opaque material in the middle of the painting suggest the possibility that this is a lead-containing layer applied broadly with a brush, or perhaps a knife, which may have had the aim of cancelling an earlier lay-in of the design, or

perhaps even a different painting. Similar features, which appear to be cancellation layers, can be seen in X-radiographs of *Noli me Tangere* (CAT. 7) and the *Portrait of an Elderly Man* (Statens Museum for Kunst, Copenhagen).³ It is tempting to identify two lighter shapes at the right side of the X-ray image as the legs of a lounging man, but the cusped distortion of the canvas weave along the top edge indicates that the canvas cannot have been much taller, leaving insufficient room for this larger scale figure.

There is no cusping at the right edge, however, which suggests that the canvas formerly extended further to the right, its original format perhaps reflected by a much larger scale variation on the composition formerly in the Contini-Bonacossi Collection and now in a private collection in Italy.⁴ The Longleat House painting appears to be alone among Titian's early small-scale devotional works in being painted on canvas rather than panel.

CAT. 4

The Holy Family with a Shepherd

NG 4

c.1510

Canvas, 106.4 × 143 cm

Thread count of canvas: 20 warp, 23 weft per cm (plain weave)

Cleaned and restored in 1953¹

The Holy Family with a Shepherd was probably painted to be hung in a domestic setting, perhaps a grand Venetian palace, as was *The Flight into Egypt* (CAT. 1). Unlike the latter painting, in both its final and first abandoned version, the figure group has become the main subject, with the landscape reduced to a subsidiary setting. It has been suggested that the more balanced and geometrically ordered design stems from knowledge of Florentine models, in particular designs by Fra Bartolommeo, who was in Venice in 1508, and also perhaps some of Raphael's inventions, which may have been known to Titian through drawings.²

Although, on the evidence of a seventeenth-century sketched copy, it has been stated that the canvas is cut down,³ inspection of the X-radiograph (FIG. 85) reveals that this is not the case. Cupped distortions of the weave can be seen around all the edges, as can many old tack holes. Apart from some at the top edge, these are not the holes from the original

stretching; rather they are from nails hammered into the front of the strainer, either when the first tacks began to fail, or following removal of the painting from its strainer, perhaps for transport to Rome, where it is recorded in the Borghese inventory of 1693. The original tacking margins are mostly lost and the damaged edges are now covered by a border of old putty and restoration, retained when the painting was last cleaned in 1953.⁴ At the lower edge the original canvas has been extended by about 3 cm. The true height of the painting therefore corresponds with a standard sixteenth-century loom width of just over one metre.

The X-ray and infrared images (FIGS 85, 87) reveal how Titian had to strive for compositional unity and coherent interaction between the figures. As is usually the case with paintings by Titian, the underdrawing is only clearly revealed by infrared imaging in certain areas, while in others it is obscured by the thickness or the opacity of the paint layers. The starting point



FIG. 85 NG 4,
X-radiograph.



FIG. 86 Titian, *The Holy Family with a Shepherd* (NG 4), c.1510. Oil on canvas, 106.4 x 143 cm.



FIG. 87
NG 4, infrared
reflectogram.



FIG. 88 NG 4, detail of infrared reflectogram.



FIG. 89 NG 4, detail of X-radiograph.

for the drawing appears to have been the figure of the Virgin (FIGS 88, 89), the outline of her robe and the main contours of the folds sketched with long curving strokes, and the bunched folds around her knees indicated with shorter, tighter curves, rather like those that appear in the quilted sleeve of the *Portrait of Gerolamo (?) Barbarigo* (FIG. 102). Her head was drawn tilted at a different angle to that which was painted so that her eyes, with the pupils filled in to indicate the direction of her gaze, appear in the area of what is now her cheekbone. In addition, her veil was first painted hanging down the side of her face, before it was altered to create a heavier and arguably more classical head than that to be seen in Titian's earlier representations of the Virgin. Other adjustments to this figure made during painting include the reduction of the outer contour of the veil around the top of her head, changes to the previously rather straight line of her back and the shortening of the right end of her trailing red dress. The extension of her veil to the right so that it envelops the Child's head was also a late idea, painted over the rocks behind.

In the infrared images, the underdrawing in the area of the Child is scribbled and chaotic, with lines for the Virgin's shoulder, what seem to be different

conformations for the white cloth wrapped around the Child, and possibly the drapery over his legs, as well as the Virgin's right hand and the hand of Joseph's extended right arm across the Child's legs. These were all later moved or not painted. The drawing for the Child himself is more difficult to see – there is perhaps a smaller head further up nearer to the Virgin's nose and mouth, but he was mostly painted with little alteration. Joseph's hand was drawn with broad heavy lines, roughly in its present position, including the thumb, even though this was eventually hidden by the paint of the Child's legs. This hand seems to be attached to an outstretched arm drawn crossing his body in its present position (FIG. 90). There is, however, no trace of a head belonging to a figure in this first pose. The rest of the underdrawing seems to be related to the present figure. His eyes, also with defined pupils, were lower, and he was drawn as a younger man, with thick twisting curls covering his balding head. The positioning of the head on the shoulders is uncertain and the X-radiograph shows several adjustments, with the paint of the sky brushed into the area reserved for the head. The edge of the beard was then applied over the sky. Joseph's left sleeve was extended over the landscape and his orange cloak was completely reworked so that his knee was no longer



FIG. 90 NG 4, detail of infrared reflectogram.

exposed and the trailing drapery to the left was eliminated. The opacity to X-rays of the first drapery, in contrast to the final version that barely registers, suggests the possibility that the paint included lead-based pigments, perhaps even lead-tin yellow, which could mean that initially Joseph was dressed as in the two paintings showing episodes on the *Flight into Egypt* (CATS 1 and 3).⁵

The young shepherd was sketched further to the right – drawing for his curly hair and also his back, with a bulge that is probably his elbow, is visible in the reflectogram. He was then moved closer to the Holy Family group, and the paint of his face appears to cover elements of the landscape. The bold streak of X-ray-opaque paint, probably lead white, across the back of his head and also the rapid light zigzag above his ear may be marks made during the process of revising the pose. Similar strokes appear in the area around the barrel, added, as were the other details, over the broadly painted white breeches.

Cross-sections⁶ confirm that the canvas was prepared with gesso and then an *imprimatura* that consists of lead white bound in oil – identified as heat-bodied linseed oil – with the addition of a little lamp black pigment of very small particle size. While the colour of

the surface where the *imprimatura* is exposed appears as a dirty, off-white, there is sufficient black pigment in it for the broad brushstrokes with which it was applied to register in the infrared reflectogram, most clearly in the sky. The lead white component means that the same marks also feature in the X-radiograph. In some of the cross-sections (for example, FIG. 91) a few black particles can be seen between the paint and *imprimatura* layer,⁷ indicating that at least some of the underdrawing was executed over the *imprimatura*.

The Virgin's mantle was painted with ultramarine, of notably high quality (FIG. 91), although unfortunately in the shadows the paint appears blanched, diminishing the contrast in the modelling of the folds.⁸ The ultramarine was underpainted not with azurite, often used for that purpose in earlier Venetian paintings, but with the relatively cheap blue, indigo, to which a little red lake was added to supply a slight purple cast. Titian also used it for both his great altarpieces for the Church of the Frari in Venice⁹ and it appears in samples from *A Boy with a Bird* (CAT. 10), *The Flight into Egypt* (CAT. 1) and *The Triumph of Love* (CAT. 13). The sky was painted with ultramarine mixed with lead white, with the addition of small amounts of red lake and black for the clouds. The Virgin's red dress displays a conventional layer structure (FIG. 92), with a first more opaque layer of red lake and lead white modelled with glazes of almost pure red lake. HPLC analysis identified kermes dyestuff with some madder in a sample from the dress, probably in separate lake pigments, and also in separate layers, since under ultraviolet illumination the red lake in the underpaint displays an orange fluorescence characteristic of madder while that in the upper layer appears a dull pink and must be the kermes lake (FIG. 93).¹⁰ A similar combination of red lakes has been found by analysis in other paintings in this study (CATS 6, 7 and 12). The deep warm red of the shepherd's waistcoat (FIG. 94) was obtained by underpainting with dark greyish brown (hence the appearance of this area in the infrared reflectogram), very similar to the dark underlayer beneath vermilion in the figure at the left edge of *Christ and the Adulteress* (CAT. 2). Here too the red is based on vermilion; in the cross-section, from a relatively light area of his left shoulder, there are two bright opaque red layers of vermilion with a thin layer of red earth sandwiched between them and a final thin red lake glaze on the surface. This layer structure can probably be accounted for by modelling of light and shade, as well as details



FIG. 91 NG 4, paint cross-section from the Virgin's blue mantle.

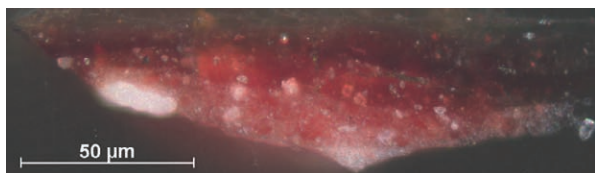


FIG. 92 NG 4, paint cross-section from the Virgin's red dress.



FIG. 93 NG 4, paint cross-section from the Virgin's red dress under ultraviolet illumination.

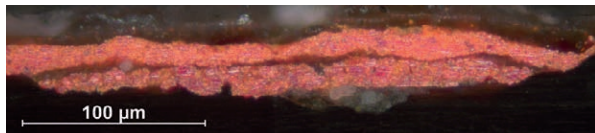


FIG. 94 NG 4, paint cross-section from the shepherd's red waistcoat.

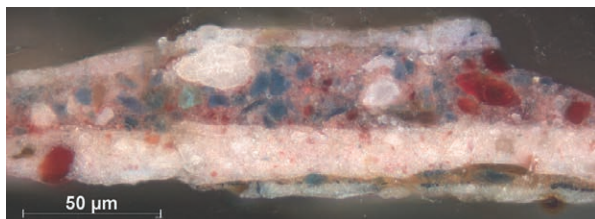


FIG. 95 NG 4, paint cross-section from Saint Joseph's purple robe.

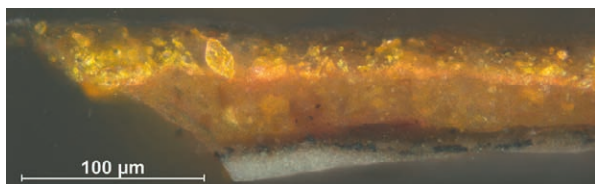


FIG. 96 NG 4, paint cross-section from Saint Joseph's orange cloak.

such as the seams and the folds in the garment, rather than modifications.

The dull purple of Joseph's robe also has a complex structure, with four layers containing varying proportions of azurite, red lake and lead white (FIG. 95). As in Titian's other purple draperies, the first, palest layer is pink, consisting of red lake and white, followed by layers of azurite and red lake, with a gradual diminution of the amount of lead white. The use of azurite, as opposed to the ultramarine of the doublet in the *Portrait of Gerolamo (?) Barbarigo* (CAT. 5), results in a warmer, more plum-coloured hue. The colour may also have become muted as result of darkening of the oil medium, as often happens with azurite-containing paint, and perhaps also some fading of the red lake. Nevertheless, it still creates a satisfying tonal balance with the rich orange of Joseph's cloak, indeed far more so than if a lighter more yellow colour had been employed as in the earlier works. The sample from the orange cloak illustrated in FIG. 96 does not include paint from the earlier drapery revealed in the X-ray image. Its layer structure, with first a khaki brown underpaint containing black, lead white and yellow earth, followed by a brighter orange yellow earth, completed with realgar and probably also orpiment in the mid tones and highlights,¹¹ is close to the layer structure found in similar draperies in altarpieces by Cima da Conegliano, the painter who appears to have introduced this colour combination that was to become such a feature of painting in sixteenth-century Venice.¹² Saint Joseph wears a cloak of this colour in Cima's *Adoration of the Shepherds*, commissioned in 1504 for the Venetian church of the Carmini, and certainly known to Titian.¹³

The areas of green in the foreground landscape are notably well preserved, with little sign of colour change. The technique is conventional, with the grass in the foreground and the more distant meadow laid in with mixtures of verdigris, lead-tin yellow, yellow earth and lead white, completed with darker greens consisting mainly of verdigris (FIG. 97). A small amount of copper chloride is present in the green paint: this is most likely connected with the method of manufacture of the verdigris.¹⁴ Most of the foliage of the trees in the background is a dull olive green or brown colour. While there may have been some discoloration of the green in some areas, examination of a sample (FIG. 98) from one of the small trees at the right, taken where a branch goes over the paint of the sky, shows that these autumnal tints are intended, since the paint contains

mainly a rather translucent yellow-brown earth, as well as a little lead-tin yellow and lead white. Some copper was also found by EDX and so it is possible that the mixture includes at least some verdigris. The yellow earth – also present in the underpaint for the orange robe – has the same mineral composition as that in most of the other works included in this study, containing (in addition to iron oxide), small amounts of magnesium-containing iron minerals as well as more significant amounts of the colourless mineral dolomite (calcium magnesium carbonate). Neither should it be assumed that the brown glazes at the junction between grass and bare earth in the foreground (FIG. 99) were once green, for they have been found to consist of a softwood pitch or tar which forms a rich orange-brown glaze when bound in oil.¹⁵ Such glazes could be mistaken for old discoloured varnish, but here they have survived in good condition, even retaining a fingerprint, made either to remove surplus colour or to check whether it was dry.

The oil used for this glaze was heat-bodied linseed oil, also identified in samples from the sky, the Virgin's blue mantle, her red lake dress and the green grass.¹⁶ The thick buttery white of the shepherd's breeches, however, is bound in heat-bodied walnut oil, presumably



FIG. 97 NG 4, paint cross-section from the green foliage.

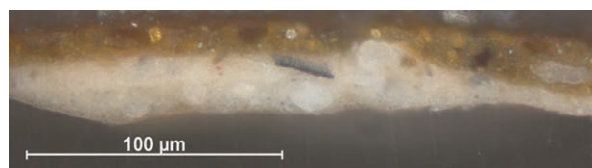


FIG. 98 NG 4, paint cross-section from the brown foliage.

chosen for its paler colour. Titian seems to have continued to make this distinction for areas of white (see, for example, CATS 10 and 12), as well as for passages painted with cooler pinks and purples (see, for example, CATS 6 and 12), and indeed many features of the execution of this early canvas were to reoccur in later works.



FIG. 99 NG 4, detail.

CAT. 5

Portrait of Gerolamo (?) Barbarigo ('The Man with a Quilted Sleeve')

NG 1944

c.1510

Canvas, 81.2 × 66.3 cm

Thread count of canvas: 22 warp, 18 weft per cm (plain weave)

Cleaned, restored and relined in 1949¹

The sitter in this famous portrait has recently been identified as a member of the important Venetian Barbarigo family, very possibly Gerolamo di Andrea Barbarigo, who in 1509 turned 30, an age when he could begin a political career in Venice, and therefore a point in life that might be marked by the commissioning of a portrait.² If this identification is correct, then the National Gallery canvas may well be the 'portrait of a gentleman of the Barbarigo family' dressed in 'a doublet of silvered satin' described by Giorgio Vasari.³ His term 'inargentato' could refer to the silvery shimmer of the satin, not necessarily to its colour. Vasari also states that Titian 'was no more than eighteen' when he painted the portrait. He met Titian and seems to have been well informed about his life and works but, if the National Gallery painting is the portrait that he described, Vasari's informant, who may have been Titian himself, perhaps exaggerated the artist's youthfulness at the time of its creation, as this would give an improbably early date of 1506–8. The sophistication of the design suggests it



FIG. 100 NG 1944, detail of X-radiograph.



FIG. 101 NG 1944, detail of infrared reflectogram.



FIG. 102 NG 1944, detail of infrared reflectogram.



FIG. 103 Titian, *Portrait of Gerolamo (?) Barbarigo* ('The Man with a Quilted Sleeve') (NG 1944), c.1510. Oil on canvas, 81.2 x 66.3 cm.

may have been painted a little after 1509, the significant date in Gerolamo di Andrea's career.

The infrared and X-ray images (FIGS 100, 101) confirm that by the time Titian came to execute this portrait, he had gained a complete command of the construction of a head and its physiognomy. Only a little underdrawing is visible in the face in infrared images, for instance the faint outline of the sitter's upper lip, and small adjustments made in the course of painting are revealed: his right eye and brow were originally lower and the profile and tip of his nose were extended to the right. The outlines of his hair and beard were sketched in with a few quick strokes, as if his head was to be rather wider than in the final painting. The background paint was then used to reduce the area of his head, building up more thickly as Titian worked around the contours, where it therefore appears denser in the X-radiograph. On the left side, the hair was finally painted back over the grey background although not as far as it was first underdrawn. The two dense strokes that appear at the sitter's left shoulder evidently contain a high proportion of lead white and may have been made to indicate the edge of the black cloak. Such marks feature in many X-radiographs of Titian's works.

The underdrawing of the sleeve is more easily visible than in the face and it confirms the young painter's assurance (FIG. 102). The basic shape of the bulky sleeve was established with long fluid curves, the shoulder seam set slightly lower than in the painted sleeve and with more of the fabric falling over the parapet. The

puffed folds at its upper edge were indicated with short curved strokes. The broken quality of the lines of underdrawing suggests that they were made after the application of the *imprimatura*. This is a fairly substantial layer of lead white in heat-bodied linseed oil (FIG. 108),⁴ to which small amounts of lamp black and yellow earth were added, exactly as in the *imprimatura* on the other National Gallery canvases that appear to be close in date (CATS 4, 6 and 7). The colour of the preparation is very pale, even with these additions to the lead white – more a cool dirty white than a true grey tone, as can be seen from an unpainted area at the left edge (FIG. 104). In common with the *imprimatura* on the canvas for 'La Schiavona' (CAT. 6), translucent inclusions are also visible in the cross-section (see essay, FIG. 21); these have been identified as containing zinc sulphate and zinc soaps which have presumably formed on reaction with the oil binding medium (see essay, FIG. 25).⁵ Zinc sulphate, known as white vitriol, is sometimes mentioned as a drier for oil paint in documentary sources (see essay, p. 25).

Lamp black occurs again with lead white in the two paint layers that make up the grey background, the colour slightly warmed by the addition of a brownish yellow earth pigment. This yellow earth, which also features in the *imprimatura*, has the same distinctive composition as that in most of the other paintings in this study, including colourless mineral dolomite in addition to the iron oxide that is responsible for the colour (see essay, p. 30). Medium analysis of the dark grey

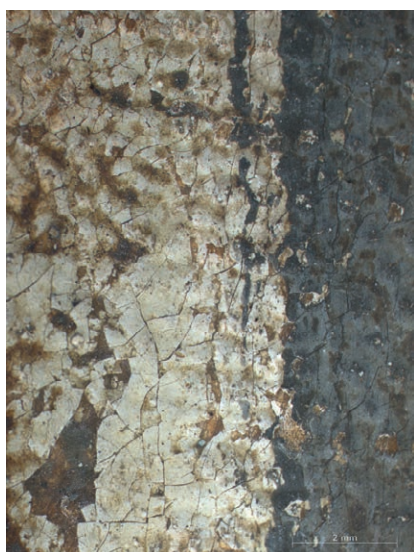


FIG. 104 NG 1944, photomicrograph showing the exposed priming at the left edge.

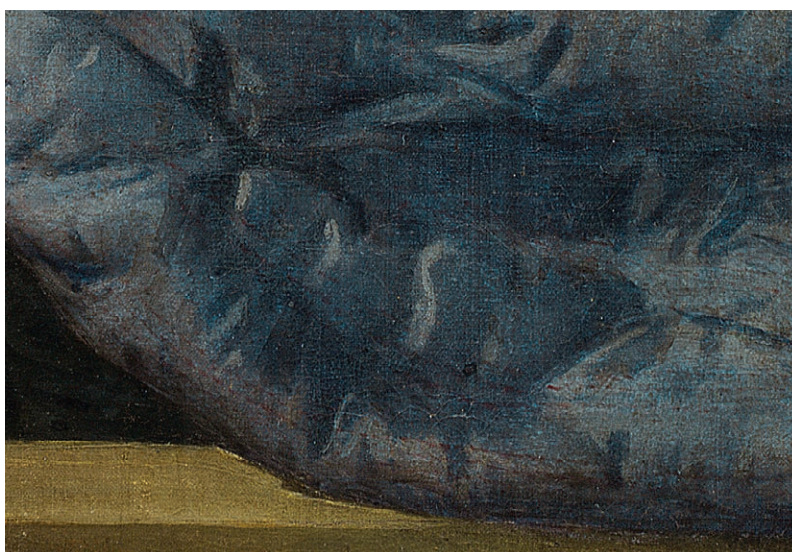


FIG. 105 NG 1944, detail of the sleeve.

background and the stone parapet found heat-bodied linseed oil in both cases.⁶

The sample (FIG. 108) from the lavender-coloured sleeve shows several paint layers; this is partly because of the complexity of the padded and quilted satin depicted (FIG. 105), but it also demonstrates the same layering to achieve various hues of purple that Titian employed on other works in this study. The first layer, therefore, is a pale pink consisting of red lake and lead white alone. Over this are layers of blue and purple, made from varying amounts of ultramarine, red lake and lead white. It is likely that there has been some fading of the red lake component in the uppermost paint layers and that the doublet was originally more purple in colour.⁷ Fading and also perhaps abrasion from past cleaning and lining mean that the red stripes of the threads that gather and pucker the fabric can now barely be discerned (FIG. 106). In contrast with these delicate details, the fine linen of the *camicia* is painted with a rapid touch, the lead white paint creating a slight impasto (FIG. 107).

When viewed close to, the sitter's features can be seen to have been painted with a masterly economy, suggestive of fine detail but without necessarily painting in the eyelashes (FIG. 109) or the individual hairs of the brow, beard and moustache. This is something that Titian could have learned from Giovanni Bellini, above all his great portrait of Doge Leonardo Loredan (NG 189). Vasari commented on the portrait of Barbarigo that he appears to have seen: 'the representation of the flesh-colour was true and realistic and the hairs were so well distinguished one from the other that they might have been counted'.⁸ Even if the counting of hairs was a commonplace device when praising a work for its verisimilitude, the sense of life that Titian gave to the National Gallery portrait is such that if this is the painting that Vasari knew, he may have believed that he saw those hairs, even though they probably never existed.⁹

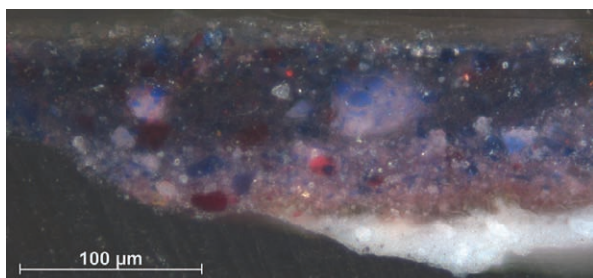


FIG. 108 NG 1944, paint cross-section from the purple sleeve.

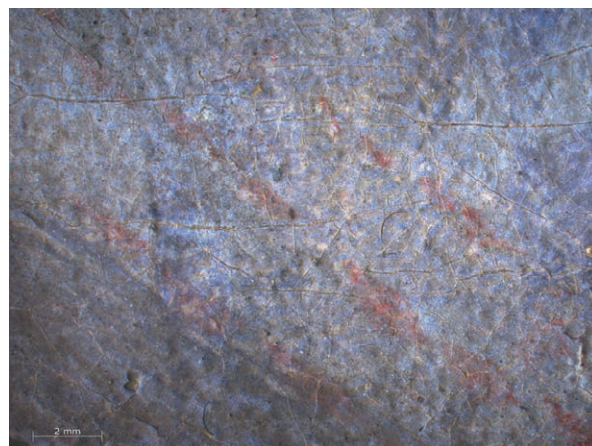


FIG. 106 NG 1944, photomicrograph showing traces of the red threads in the doublet.

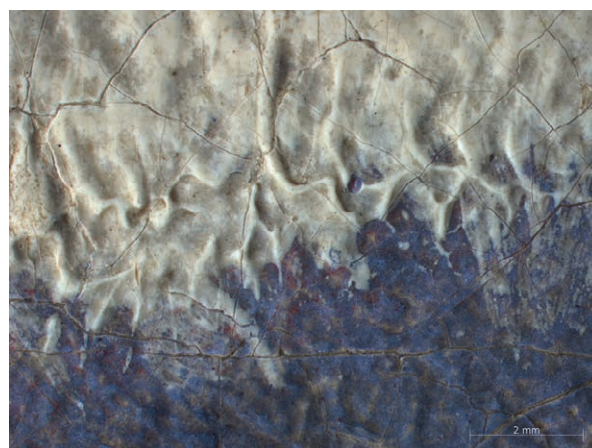


FIG. 107 NG 1944, photomicrograph showing the impasto on the white *camicia*.



FIG. 109 NG 1944, photomicrograph of the right eye.

CAT. 6

Portrait of a Lady ('*La Schiavona*')

NG 5385

c.1510–12

Canvas, 119.2 × 100.4 cm

Thread count of canvas: 17 warp, 17 weft per cm (twill weave)

Relined, cleaned and restored in 1959–61¹

The name '*La Schiavona*' (the Dalmatian woman) comes from a seventeenth-century description of the painting, while in the nineteenth century it was believed that the portrait might represent Caterina Cornaro, Queen of Cyprus, who was in exile at Asolo in the Veneto. The similarities in costume and facial type (especially the profile in relief on the parapet) to the women who appear on the right in Titian's Padua fresco of *The Miracle of the Speaking Child*, dated 1511, have often been commented upon and have led to general agreement that the National Gallery picture must be close in date. The women in the fresco are almost certainly not portraits. If the canvas painting were also not a portrait in the ordinary sense (and portraits of women were still rare in Venice at this date), then that might explain the unusually large dimensions of the canvas, as well as the innovative three-quarter length and off-centre placing of the figure.² Moreover, the number of alterations made by Titian in the course of painting would be exceptional for a conventional portrait.



FIG. 110 NG 5385, photograph taken in 1960, during restoration, when the whole painting had been retouched, including the oculus. This was subsequently painted out.

The painting is the original size. Robust twill weave canvases distort less when stretched than plain weave ones, and so there is little cusping. However, the tacking edges have mostly survived, visible, for example, on the front face of the painting at the left. The X-ray and infrared images (FIGS 112, 113) show the location of retouched losses of paint and ground along fine roughly horizontal creases that were probably caused by the rolling of the canvas for transport in the past.

When the painting was cleaned in 1959–61 extensive and easily soluble black repainting over the background was removed to reveal a window opening with sky and clouds in the upper right corner (FIG. 110).³ Initially this had been rectangular – as can be seen in the X-radiograph,⁴ where the right edge recedes in perspective – but it was changed to a large circular opening, seemingly without any recession, unlike the oculi in the *Portrait of Girolamo Fracastoro* and *The Triumph of Love* (CATS 9 and 13). This is perhaps because these ideas were abandoned before they were fully realised; fragments of what was clearly much older dark grey paint, not soluble in the solvent used to remove the later repaint, remained in places on top of the paint within this opening. Examination of samples indicated that these were identical in composition to the original dark grey elsewhere in the background, confirming that it was Titian who painted out the oculus.⁵ It was therefore covered over again in the 1961 restoration.

Some of the retouchings from the 1961 restoration register strongly in the infrared reflectogram and other dark marks are clearly part of the paint structure. Nevertheless, characteristically broad lines of liquid underdrawing can be seen in the woman's dress, mainly across her shoulders and especially around her neckline, where originally some form of twisted scarf seems to have been planned. This was draped over her left shoulder and the reduced density of X-ray-opaque flesh colour in this area indicates that Titian began to paint the figure with this arrangement, before deciding to expose more of the shoulder and perhaps to transfer the scarf to the other side. The paint of the face generates a



FIG. 111 Titian, *Portrait of a Lady* ('La Schiavona') (NG 5385), c.1510–12. Oil on canvas, 119.2 × 100.4 cm. Presented through The Art Fund by Sir Francis Cook, Bt., in memory of his father, Sir Herbert Cook, Bt., 1942.



FIG. 112 NG 5385, X-radiograph.

relatively dense X-ray image, but this is probably due to the contrast with the background paint and dress, which is less X-ray-opaque, rather than an alteration. A cross-section shows that the X-ray-opaque strokes around the top of her head result from a thickly applied warm grey paint lighter in colour than the other layers covering it that constitute the background. The difference in layer structure in this area seems to suggest, as has been proposed in the past,⁶ that this is indeed an indication of changes made during painting to the woman's head-dress rather than accumulation of background colour as the painter sought to establish the exact contour. To

the right of the hand, the fold at the edge of the skirt was defined with a series of characteristic parallel diagonal marks that are very visible in the X-ray image, made with the brush pressed down hard so that the paint has accumulated along the edges of the stroke, a more refined version of those seen in the X-radiograph of *Christ and the Adulteress* (CAT. 2).

A significant change made during painting, which is not visible in the X-radiograph, has been revealed by the recent infrared reflectography. Originally the woman's right arm was bent, her hand with loosely clutched fingers resting at her waist. Titian later simply



FIG. 113 NG 5385, infrared reflectogram.

covered this hand with another fold of drapery with very little adaptation of her massive sleeve, creating a not entirely logical bulge of fabric bunched as if caught against the folds of her skirt. The hand was then reintroduced in its present position where it appears surprisingly dark in the reflectogram. Although the final glazes are worked around it, some underpainting, at the very least, seems to have been in place before the change, consistent with the fact that it barely registers in the X-ray image.

This discovery has implications for the interpretation of the much-discussed changes in the lower right

section of the canvas.⁷ Before the addition of the present stepped parapet it seems that the woman's left arm was to be extended, with her hand much lower down, probably somewhere in the region where the relief bust is now painted, perhaps gesturing to, or placed on, whatever was intended to fill the lower right corner. The original extent of her left sleeve is especially apparent in the infrared image, because the dark grey background had also been painted with the arm in this position. It is visible to some degree with the naked eye, as both the grey background and dark purple-red sleeve are showing through the thin paint of the stone of the

parapet, which may have become more transparent over time. Most probably it was only after her left hand had been painted in its present position, resting on the raised edge of the parapet, that her right hand was moved so that it was hanging at her side.

The ridge of accumulated paint where the background was painted up to her left sleeve shows as white in the X-radiograph and can be seen running down the side of her shoulder and continuing beneath the paint of the present parapet and part of the back of the relief head, where it then turns out towards the right in a curved downward line. The shape enclosed by this line appears to be a small bulge of drapery, the pink tinge of which is just about visible through the grey surface paint. On the other side of the relief head, mirroring this curved shape, are similar X-ray-opaque lines, creating the impression of an elliptical shape that some commentators have seen as a tilted dish. In fact this is more likely to be related to the folds of the drapery, and in front of the relief head, too, pink paint can be seen through the grey of the parapet. However, as a cross-section shows, there is no pink drapery paint beneath the area of the cheek of the profile head, and so it appears that the lower contour of this elliptical drapery fold does not continue under the relief and emerge from the other side without changing its trajectory. It must instead turn upwards and down again, as it might do if passing over a hand. Beneath the surface paint in the cross-section from the cheek there is a thick off-white layer which could conceivably be flesh paint, and below that there is a very pale blue layer containing lead white and a little azurite lying directly on the priming, perhaps the paint of whatever object the hand is resting on. This remains only speculation, however, since the grey surface paint dominates the infrared and X-ray images in the head of the relief. Titian's intentions for the part of the painting at the bottom right below the relief are also still a mystery. Neither the drapery paint nor the background extend to the bottom of the painting – there is an area at the bottom right that appears slightly darker than the drapery in the infrared image – but retouching and also the grey paint of the relief and marbling obscure and confuse the legibility of any underdrawing.

It is clear in the reflectogram, however, that, once the parapet had been painted in, the first idea was for it to be inscribed with not just the single letter 'V', still visible with the naked eye, but with a second 'V'. The same initials appear in other Venetian works of the



FIG. 114 NG 5385, photomicrograph of the sleeve at the left edge, showing the gesso ground, off-white priming, and pink underpaint. The complete layer structure, including blue undermodelling and the final deep red or purple-red glazes, is only visible at the bottom right.

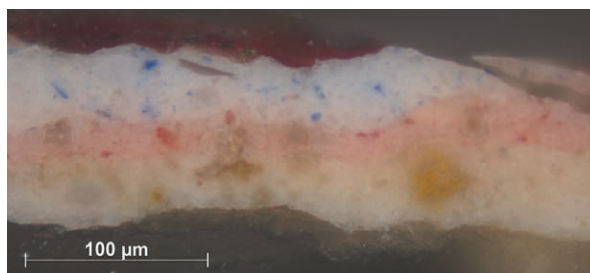


FIG. 115 NG 5385, paint cross-section from the purple dress.

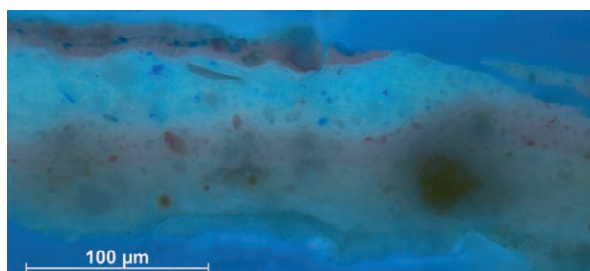


FIG. 116 NG 5385, paint cross-section from the purple dress under ultraviolet illumination.

period, including the male portraits in Washington (National Gallery of Art) and Berlin (Gemäldegalerie), which both have stepped parapets and are often considered to be among Titian's earliest portraits.⁸ The relief head was then positioned with rapid black strokes, especially around the top of the head, which are similar in character to Titian's initial underdrawing, but here they were left partly exposed to contribute to the final painted form. At the left of the painting the edge of the parapet was reworked, covering the lower edge of the skirt, and also defining the top surface of the ledge, giving an unusually precise indication of the height at which the canvas was to be viewed.

The canvas was prepared with gesso, followed by an *imprimitura* very close in composition to Titian's other works from around 1510–14 in the National Gallery, and especially similar to that of the *Portrait of Gerolamo (?) Barbarigo* (CAT. 5). It can be seen in places around the edges of the painting and has a warmer, more creamy colour than the cold greyish white on the Barbarigo portrait. It is again based on lead white with a little lamp black, but perhaps including a little more of the dolomite-rich yellow earth. Large translucent inclusions containing some zinc sulphate as well as zinc soaps are again present.⁹ The latter are a product of reaction with the medium of this layer, which has been identified as heat-bodied linseed oil, also confirmed by GC–MS analysis as the medium for the grey paint of the parapet and the black paint of the background.¹⁰

At the left edge, and in most of the paint samples,¹¹ it can be seen that the first colour to be laid in on the dress was an opaque light pink (FIGS 114, 115), containing red lake and lead white, exactly as in the purple areas of *The Holy Family* and the Barbarigo portrait (CATS 4 and 5). An opaque blue mixture of lead white and varying amounts of ultramarine appears as the second undermodelling layer in all the cross-sections of samples from the dress, while in one there is a further layer which seems to have been made a slightly darker blue by the addition of a little indigo.¹² This has then been glazed relatively thinly with red lake (which has a weak orange fluorescence under ultraviolet light; FIG. 116), and the shadows were deepened with more red lake to which some ultramarine was added to make a rich dark purple. A further thin layer of red lake is present in some areas. Instead of the linseed oil found in the parapet and background, the medium of the light pink underlayer, as well as the darker more

translucent purple and red upper layers, seems to be heat-bodied walnut oil.¹³

In a sample from the dress, HPLC analysis identified mainly kermes dyestuff, with a little madder,¹⁴ probably in separate red lake pigments, since that in the thin layer directly on the opaque undermodelling has a different, more orange, fluorescence in ultraviolet light than that mixed with ultramarine in the purple paint above it. The same combination occurs in the red lakes on *Noli me Tangere* and *The Music Lesson* (CATS 7 and 12). In a cross-section, from a point where the bodice meets the undersleeve, a layer of lead white from the sleeve appears between the underpainting and glaze layers, confirming that the glazes were applied only when the basic modelling of the dress, including the areas of white – so important for the balance of the composition – was complete.

While this complex layer structure is found in other paintings by Titian, here the interspersed pink and blue layers seem to represent a woollen fabric woven from the two colours, which appear as different coloured tufts at the neckline.¹⁵ Although the slightly uneven effect created by the brushwork of the underlayers showing through the glazes to differing extents across the drapery has very probably become exaggerated by fading of the red lake (FIG. 117),¹⁶ the technique evokes wonderfully the weight and texture of the wool. Titian's ability to depict different fabrics by suggestion rather than precise imitation is further demonstrated by his rendering of the soft linen undersleeves, the gauzy veil and the silk headdress with its glimmering gold stripes. This would have been recognised by the Venetians, who traded in expensive fabrics and wore them as displays of their wealth.

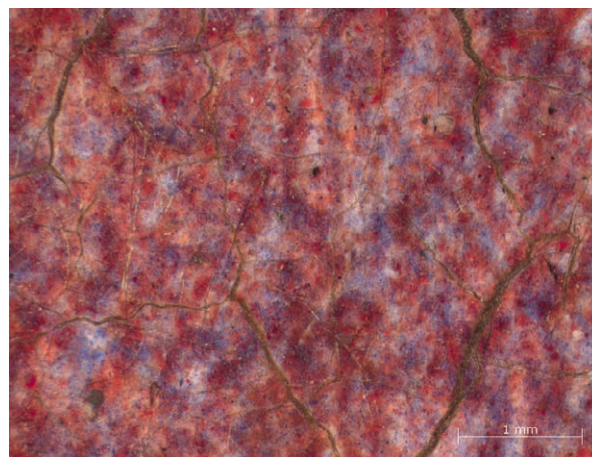


FIG. 117 NG 5385, photomicrograph of the glaze on the dress.

CAT. 7

Noli me Tangere

NG 270

c.1514

Canvas, 110.5 × 91.9 cm

Thread count of canvas: 21 warp, 18 weft per cm (plain weave)

Cleaned, restored and relined in 1957–8¹

In this modest-sized canvas showing the encounter between Mary Magdalene and the resurrected Christ, known always by the title *Noli me Tangere*, Titian's increased skills as a designer allowed him to achieve a new union between figures and their landscape setting. A date of around, or shortly before, 1514 seems likely since the group of buildings that crowns the hill on the right appears in reverse in the background of *Sacred and Profane Love* (Galleria Borghese, Rome); this is dated fairly securely to 1514.² The buildings also appear in the *Sleeping Venus* in Dresden (Gemäldegalerie Alte Meister), with the fortress and roof on the right elongated to fit the horizontal format.³ However, they seem more perfectly integrated into the landscape of the National Gallery painting.

The scale of the figures in the *Noli me Tangere* is unusually small by Titian's standards and the painting is exceptionally refined in its execution. The canvas, which has retained its original dimensions,⁴ has a fine weave. It was prepared in the usual way with gesso and then an off-white *imprimatura* (see FIG. 126). This is similar in composition to that on the previous three canvases in this study (CATS 4, 5 and 6), with the lead white tinted with a little lamp black and a very small amount of the dolomite-containing yellow earth also found in those works.⁵ The slightly broken quality of the lines of underdrawing visible in the infrared reflectogram suggests that they were drawn over the *imprimatura*, while the small size of the figures means that they are finer and more delicate than those usually seen in Titian's works (FIG. 119). With new infrared reflectography it is now just possible to see that Christ's features were drawn in with the point of the brush (FIG. 120);⁶ his right eye, with the usual dark iris to indicate direction of gaze, appears in a lower position to that of the final painting.

It seems unlikely that Titian tackled Christ's difficult *contrapposto* pose – perhaps the result of knowledge of prints after Raphael – without making preliminary studies on paper, probably similar in character to those for the contorted figure of Saint Sebastian for the Averoldi

Polyptych (see FIG. 33). The drawing is sketchy, with repeated lines along the contours, especially around Christ's back, shoulders, legs and the arm that crosses his body, suggesting an artist quickly enlarging by eye a previous smaller-scale study. Details such as hands and feet remain undefined in the underdrawing, but the Averoldi Saint Sebastian studies show that it was Titian's practice to leave hands and feet undeveloped in a figure drawing, making instead separate studies of them on a larger scale. The positioning of the Magdalen was also crucial for the composition. This figure, therefore, was outlined with unusual precision but the slight deviations between the painting and underdrawing, as well as adjustments made in painting, further enhance her relationship with Christ. Her head seems originally to have been slightly less tilted and the changes to her eye, nose and lips shift her gaze upwards to that of Christ. The outlines of her arm and hand were apparently straighter and more extended, almost touching Christ, but are now shown as if she has withdrawn her hand. There are several positions for Christ's arms but they too seem to have been moved slightly away from the Magdalen. In addition, her hair originally billowed out behind her (the retouching over this pentimento shows dark in infrared) and the upper edge of her trailing skirt was once higher. Even the foreground section of landscape was roughly delineated in the underdrawing, at a slightly higher level than in the painting, and the bushes sketched with quick loops and flourishes.

Despite this apparently careful planning of the picture, Titian found that he needed to make a major alteration in the course of painting. As seems to have been his habit, he began with the landscape but, as the infrared reflectogram reveals, initially he painted a hill topped with buildings on the left: the pitched roof of a building can be discerned, intersected by the dark line of the tree trunk, above Christ's head. Evidently Titian decided that this rather crowded landscape would distract attention from the figure of Christ and that the composition would be better balanced if the hill-top village were moved. To avoid the buildings showing



FIG. 118 Titian, *Noli me Tangere* (NG 270), c.1514. Oil on canvas, 110.5 × 91.9 cm.

through the paint of the luminous dawn sky, he obliterated them with a layer of paint rich in lead white that registers strongly in the X-radiograph (FIG. 121).

The broad diagonal sweeps associated with this cancellation layer in the central part of the sky, making curving arcs at the lower boundary of this area

(approximately level with Christ's shoulders), suggest that it was applied with some sort of palette knife – Titian used a knife to apply the gesso and sometimes also the *imprimitura* layers to his canvases in some other paintings.⁷ Dark shapes with broken edges visible in the X-ray and infrared images, which might easily be



FIG. 119 NG 270, detail of infrared reflectogram.

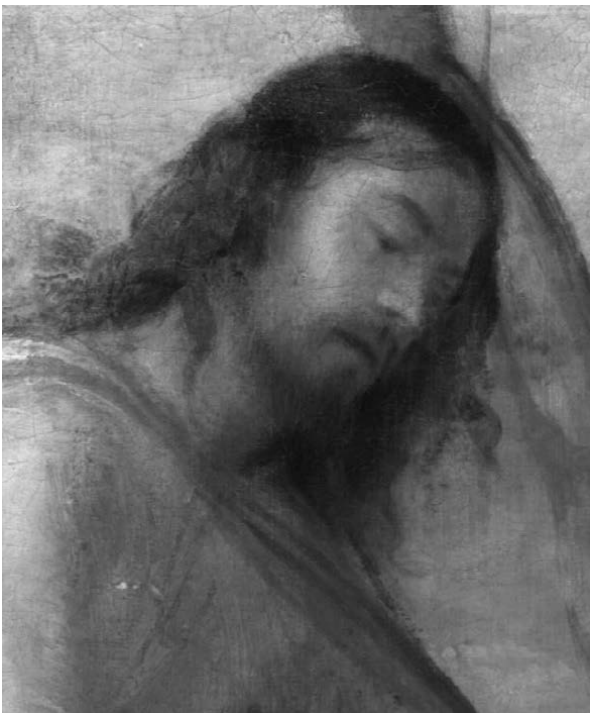


FIG. 120 NG 270, detail of infrared reflectogram.

mistaken for flake losses (or even another head in the case of the shape to the left of Christ, where there is also retouching), may be the result of the sticky paint pulling away from the surface as it was spread out with the knife.⁸

Perhaps Titian then wiped off his knife on the still unpainted lower part of the canvas, resulting in the bifurcated white shape visible in the X-radiograph in the area of Christ's legs. This has in the past been taken to represent an earlier version of his pose, turned and walking away from the Magdalen.⁹ However, the resemblance of these marks to legs is reduced when the X-radiograph is viewed on the same scale as the painting and there is no sign of a torso or any other part of the figure in this position. Moreover, infrared examination confirms that Christ was drawn in his present pose and at a preliminary stage. The lines are similar in appearance to the preliminary drawing in the Magdalen, rather than those from a later stage in the development of the composition which Titian drew to indicate the extent of the Magdalen's left sleeve, over the



FIG. 121 NG 270, X-radiograph.

completed pink folds of her dress, as can be seen in the photomicrograph (FIGS 122–4). These lines appear much blacker in the reflectogram than those of the preliminary drawing.

In painting the *Noli me Tangere* Titian displayed great virtuosity in the handling of lead white in oil.¹⁰ The

diaphanous linen of the Magdalen's sleeve displays some impasto in the denser folds (FIG. 124), and is clearly distinguished from the filmy gauze of her veil, painted much more thinly by dragging an almost dry brush over the completed paint layers beneath, which are left more or less exposed in the shadows. Christ's loincloth is also

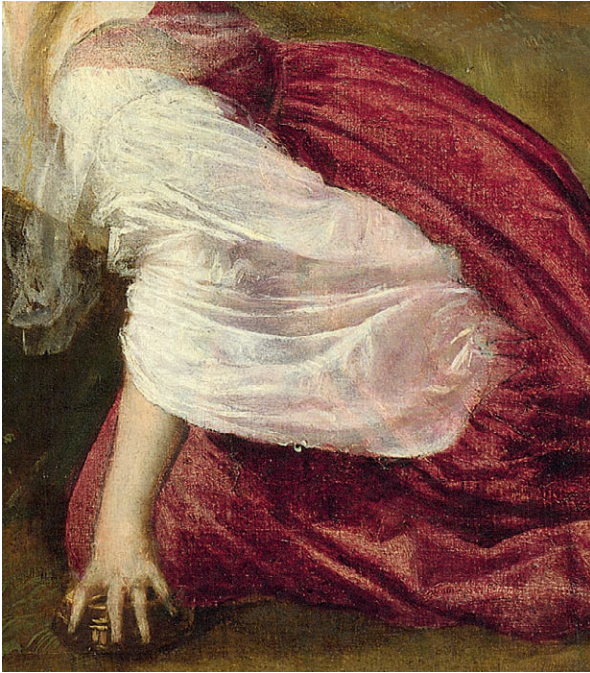


FIG. 122 NG 270, detail of the Magdalen's arm and sleeve.



FIG. 123 NG 270, detail of infrared reflectogram.



FIG. 124 NG 270, photomicrograph of the lower edge of the Magdalen's sleeve.

semi-transparent but here Titian used a more fluid paint, allowing the glimpses of flesh colour to suggest the translucency of the fabric (see FIG. 45). This contrasts with the opaque painting of his heavy white shroud.

The modelling of the folds in the Magdalen's dress relies quite considerably on the underpaint based on red lake and lead white, which graduates to a very pale pink in the lightest parts. This is richly glazed with red lake, applied thickly in the shadows and more thinly over the highlights. HPLC analysis of a sample from the deep folds just below her sleeve detected mainly kermes dye-stuff, with a small amount of madder.¹¹ This probably indicates the presence of two separate lake pigments, since under ultraviolet illumination some particles with the typical orange-pink fluorescence of madder could be seen in the lower more opaque pink layers of the sample. The contrast in the modelling of the folds may now be exaggerated by greater fading and abrasion of the thinner red lake over the highlights, but the slight unevenness caused by accumulation of glaze in the depressions of the canvas weave and in the hollows of the brushstrokes of the underpaint gives the drapery a particular soft vibrancy.

The warm grey paint used for the cloudy sky on the left of the painting, containing mainly lead white tinted with a little dolomite-containing yellow earth and some red earth bound in heat-bodied linseed oil,¹² runs beneath the foliage of the tree (FIG. 126). In the blue areas of the sky, and in the distant landscape, ultramarine was used with lead white. The foreground foliage to the left of Christ, the bushes above the Magdalen, the

sunlit parts of the landscape with grazing sheep on the left and the brightest leaves at the top of the main canopy of the large tree are still an intense, deep green colour, based on mixtures of verdigris with yellow pigments. The tree, however, has often been cited as a classic example of discoloration to brown of 'copper resinate' green glazes.¹³ The more recent examination of the painting under magnification and also of paint samples has given a better understanding of how it was painted and what Titian intended (FIGS 125–7). To suggest depth in the sprays of foliage, Titian first laid in the tree with a relatively translucent yellow-brown paint based on the same dolomitic yellow earth found in the priming and other early paintings in this study.¹⁴ It is this base colour that gives the impression of a discoloured green glaze, but although it does contain some copper pigment that may indeed have altered, the yellow earth is the main component and it seems reasonable to assume that it was never a bright green. The individual leaves were then dabbed onto this layer, not completely covering it, especially at its edges so that the translucent brown gives the effect of the light shining through the thinner foliage at the ends of the branches (FIGS 125, 127). For the shadowed leaves Titian applied a more opaque brown, containing red and yellow earths, but also verdigris and indigo, which suggests that a brown paint with a greenish cast was intended.¹⁵ Only the foremost leaves were green, based on a mixture of verdigris, yellow earth and a little lead-tin yellow and lead white, with no red earth or indigo, with the brightest yellow greens being mainly lead-tin yellow with only a little verdigris and yellow earth.¹⁶ The strong contrast between the lightest areas and the middle tones of the tree suggests that the paint has darkened to some extent, but it is clear that many of these leaves were intended to be brown or dull brownish green.¹⁷

Final touches include the reinforcement of patches of sky visible through the leaves with ultramarine and lead white (FIG. 127), and the elimination of a large branch of the tree on the right-hand side. This has been exposed by damage and was extensively retouched in the last restoration, but it remains visible in infrared. The uninterrupted triangle of bright sky formed by the tree trunk and the slope of the hill and village now echoes that of the figure group in what is surely one of Titian's most perfectly realised compositions.



FIG. 125 NG 270, photomicrograph of the tree from an area at the bottom left of the main canopy, at the very end of the branches.

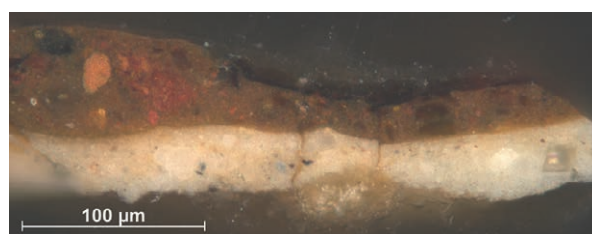


FIG. 126 NG 270, paint cross-section from the brown leaves, visible at the bottom of FIG. 125. The sample shows the gesso ground, the off-white *imprimatura*, the warm pinkish-grey of the clouds in the sky, the thin yellow-brown base colour of the tree, which can be distinguished in SEM images from the thick opaque greenish brown paint of the foliage above it. Orange-yellow and red earth are clearly visible, with dark agglomerates of indigo that appear black, as well as translucent particles of verdigris which appear brownish in the cross-section. The translucent dark brown layer at the surface comprises accumulated dirt and remnants of a degraded surface coating.



FIG. 127 NG 270, photomicrograph of the foliage in the tree, with a patch of sky, seen through the branches.