

National Gallery Technical Bulletin

Volume 8, 1984

Published by Order of the Trustees,
Publications Department,
National Gallery, London

National Gallery
Technical Bulletin

Garry Thomson, Scientific Adviser
Martin Wyld, Chief Restorer

Ashok Roy: Editor

© 1984, The National Gallery, London

ISBN 0 901791 94 6

ISSN 0140 - 7430

Designed by James Shurmer

Printed by Westerham Press,
Westerham, Kent

Tintoretto's Paintings in the National Gallery

Joyce Plesters

Part III: Technical examination of the four remaining works attributed to or associated with Tintoretto

Parts I and II of this article concerned the four paintings in the collection which are accepted as by Jacopo Tintoretto: *S. George and the Dragon* (No.16); *Christ Washing His Disciples' Feet* (No.1130); *The Origin of the Milky Way* (No.1313); *Portrait of Vincenzo Morosini* (No.4004). Part I (*National Gallery Technical Bulletin*, 3 (1979), pp.3ff.) gave their condition, history of restoration and recent treatment. Part II (*National Gallery Technical Bulletin*, 4 (1980), pp.32ff.) described the materials and technique and drew comparisons with results from other paintings by Tintoretto, particularly key works in public collections in Venice.

In his *Catalogue of the Sixteenth Century Italian Schools*, C. Gould includes four other pictures under the general heading of Tintoretto [1]:

No.1476 Ascribed to Jacopo Tintoretto, *Jupiter and Semele*

No.2147 Style of Tintoretto, *Portrait of a Cardinal*

No.2900 After Tintoretto, *The Miracle of S. Mark*

No.2161 Follower of Tintoretto, *Portrait of a Lady*

Of these only one, No.1476, *Jupiter and Semele* is included in the most recently-published *catalogues raisonnés* of Tintoretto's work by P. Rossi and R. Pallucchini [2,3].

In a Collection like that of the National Gallery, built up over more than a century and a half by purchases, gifts and bequests of single pictures and collections it is inevitable that a number of works of lesser importance will accrue and that attributions may change in the course of catalogue revision. The terminology employed in National Gallery *Catalogues* for classifying works of less certain date, attribution or provenance was explained by M. Davies in the introduction to his *Catalogue of the Earlier Italian Schools*: 'ATTRIBUTION: A picture labelled as *by* a painter or from his *Studio* is presumed to have been produced as his in his shop. If doubt needs emphasis, *Ascribed to* is prefixed. If there seems to be a connection of style but not of hand, *Follower of*, *After*, *Imitator of* or *Style of* is prefixed. *Follower* replaces the word *School*, here reserved for a town or district; *After* indicates a copy of any date; *Imitator of* explains itself; *Style of* indicates a vague relation.' [4].

It was considered that it might be a useful exercise to carry out technical examination on the four remaining works associated in the *Catalogue* with Tintoretto's name and, by comparison with results from pictures of certain attribution, to see if any further light could be thrown on their status. Readers of the *Technical Bulletin* will have realized that detailed technical examination is

almost invariably associated with treatment, usually cleaning and restoration. This could not be the case with the pictures described in this article since neither their importance nor their condition earned them high priority for treatment, though in fact one of them, *Jupiter and Semele*, proved interesting enough in the preliminary stages of investigation ultimately to warrant cleaning and restoration. Study and sampling of the others was severely limited by the thick discoloured varnish.

A brief comment is perhaps called for on what part technical evidence can play in attribution. At the time of writing, methods in use for dating archaeological objects, particularly carbon isotope dating, are not generally applicable to easel paintings, although that situation may soon change. Certain other methods, such as estimation of minor and trace elements in pigments, whilst successful as isolated research projects, have not become routine, probably because of the special facilities and expertise they require. Dendrochronology is limited to wood panels and certain wood species and dating is of the wood, not necessarily of the painting. Lacking methods of positive dating, the most that can be deduced from scientific and technical examination in favour of a picture's authenticity is that the materials and techniques are consistent with the attribution, date or school claimed for it on stylistic or other grounds. By contrast, a single piece of evidence (such as the detection of an anachronistic pigment) can serve conclusively to disprove the date, school or authorship of a painting. It is rare for a masterpiece to become a work of no importance overnight, or for the reverse to occur, though something of the kind happened with the National Gallery's portrait of *Pope Julius II* (No.27). An early acquisition, and always regarded as an early copy, it was finally recognized, largely as a result of technical examination (instigated by a keen-eyed art historian) as Raphael's original version [5]. It is, however, in sorting out the somewhat lower categories of attribution listed above that scientific and technical methods may find regular use [6].

No.1476, Ascribed to Jacopo Tintoretto, 'Jupiter and Semele' (Fig.1 and Plate 4, p.35).

Size and format: $9 \times 25\frac{3}{4}$ (0.225 × 0.658). There is a slight correction to the height as given in the *Catalogue*; on account of the irregularity of the panel an average value is given here.

Acquisition and provenance: Purchased 1895 at the sale of Lord Leighton's pictures as by Andrea Schiavone. The attribution to Tintoretto was suggested by E.K. Waterhouse in 1927 [7] by comparison with *Six Biblical Scenes* in the Kunsthistorisches Museum, Vienna [8]. Like No.1476 they are supposedly *cassoni* panels and

acquired as by Schiavone but reattributed to Tintoretto [9]. Waterhouse pointed out the common feature of the brown-green umbrella-shaped trees. The present writer can confirm similarities between No.1476 and the *Six Biblical Scenes* and their respective X-radiographs.

However, a closer comparison was found nearer home. Two panels of similar format attributed to Tintoretto are in the Seilern Collection recently bequeathed to the Courtauld Institute and since 1982 exhibited at the Institute's Galleries. They were, prior to 1936, in the collection of W. Forbes of Medwyn, again as Schiavone. Their similarity to *Jupiter and Semele* is noted by H. Braham in her catalogue of the (ex-Seilern) Princes Gate Collection (based on Count Seilern's own catalogue) [10]. All three pictures are attributed to Tintoretto by Pallucchini and Rossi who cite the relevant literature and date them 1543–44. The Princes Gate pictures are: *Latona changing the Lycian Peasants into Frogs*, Princes Gate Collection, no.118 (Fig.2); and *Apollo and Diana killing the Children of Niobe*, Princes Gate Collection, no.119 (Fig.3). Henceforth in this article to be referred to as *Latona* and *Apollo and Diana* respectively.

The rather unusual subjects are from Ovid's *Metamorphoses*. Tintoretto had included all three in fourteen wooden ceiling panels depicting episodes from Ovid's *Metamorphoses* now in the Galleria Estense at Modena. These are on a larger scale and in a more dramatic manner. The present author was permitted to examine the two Princes Gate panels and to take a few samples of paint and pigment from edges and small damages. For conciseness the three panels will be discussed together.

Condition, history of restoration and recent treatment: The panels have a convex warp. While *Jupiter and Semele* and *Latona* have retained the original thickness of the panel, the back of *Apollo and Diana* has been roughly planed-down to reduce the thickness and subsequently impregnated with wax, presumably in an attempt to reduce warping. In all three the coarse wood grain of the panel is apparent at the paint surface. The only treatment given to *Jupiter and Semele* between 1896 and its cleaning and restoration by A. Reeve in 1979 was securing of loose paint and revarnishing. *Latona* and *Apollo and Diana* still have a discoloured varnish.

The support: All three panels are single planks tangentially cut from near the heart of the tree, the wood grain running horizontal with the picture composition. The wood, tentatively identified by the author as spruce (*Picea* sp., see Plate 5a, p.35) was confirmed by the Princes Risborough Laboratory of the Building Research Establishment. Tree-ring measurement carried out by the Ordinariat für Holzbiologie, University of Hamburg, on the X-radiographs (Figs.4–6) proved that the panels of *Jupiter and Semele* and *Latona* came from the same tree. That of *Apollo and Diana* is likely to have done, but, having been reduced in thickness, it has too few annual rings for certain proof. A check of the measurements showed that all three were of the same height (allowing for irregularities in the shape of the planks), but that whereas *Jupiter and Semele* was the same width (65.8cm) as *Latona*, *Apollo and Diana* was a little wider (67.7cm). None of the three seems to have been cut down in size for the paint and ground go up to and in some places

over the edges of the wood.

An unexpected link between the three panels was discovered at once. On the back of each, in two separate places, was an impressed mark, a monogram consisting of an 'A' and an 'S' in reverse linked by a small cross and enclosed in a double circle (Fig.7). The mark, though seeming old, had been applied to the panel of *Apollo and Diana* after the latter had been thinned down but before impregnation with wax. The existence of the stamp mark on all three indicates that they must have been together at some time, possibly part of the same collection, before acquisition of *Jupiter and Semele* by the National Gallery in 1896.

The ground: Thin gesso ground, the inert identified by X-ray diffraction powder analysis (XRD) as pure gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$).

Underdrawing: An infra-red photograph (Fig.8) of *Jupiter and Semele* reveal some strong black underdrawing, part charcoal, part brush. Lines indicating the perspective of the tiled floor are seen to continue towards a vanishing point just beneath Jupiter's cloak. The strong outlines of Jupiter's limbs are reminiscent of Tintoretto's drawings on paper of nude figures. Semele's breasts, face and features are boldly drawn. Infra-red reflectography succeeds in penetrating the dark glazes of the bed-hangings to show the vigorous drawing of the folds. Infra-red photographs are not at present available of the Princes Gate pictures.

The paint medium: of No.1476 was identified by gas-chromatographic analysis as linseed oil.

The pigments: In addition to lead white, earth pigments and carbon black, the following were identified: *Azurite* as the blue pigment throughout in all three pictures. *Malachite* in the opaque green underpaint of landscape and foliage; like the azurite it appears to be the natural mineral form. '*Copper resinate*' glazes, discoloured to brown particularly in the 'umbrella-shaped' trees, have been used extensively in landscape and foliage, and for Semele's bed-cover where the green colour is better preserved. *Vermilion* occurred in the brightest red of the flames in *Jupiter and Semele* and as underpaint beneath a red glaze in a sample from Queen Niobe's dress in *Apollo and Diana*. Particle characteristics indicate the mineral or dry-distilled forms of mercuric sulphide. *Red lake pigments* are a prominent feature of all three pictures. In No.1476 the red-brown glaze of the terracotta-coloured floor tiles was identified as *lac lake*, while *madder lake* was detected in a sample of red glaze from the bed-hangings. The analyses initially carried out by R. White using thin-layer chromatography (TLC) were repeated on further samples using the recently-introduced method of high pressure liquid chromatography (HPLC), and whereas an identical result was got for the floor tiles, the further sample from the bed-hangings was found to contain a mixture of dyestuffs, at any rate *lac* and *madder*. By the same methods the scarlet glaze on Niobe's dress in *Apollo and Diana* proved to be *kermes lake* (Plate 5b, p.35) [11]. *Lead-tin yellow 'type I'* was identified by laser microspectral analysis (LMA) and XRD in the yellow cloud surrounding Jupiter in *Jupiter and Semele*. *Realgar* (arsenic disulphide, As_2S_2) as the orange pigment of



Figure 1 Ascribed to Tintoretto, *Jupiter and Semele* (No.1476), spruce panel, 0.225 × 0.658.

Figure 2 Tintoretto, *Latona changing the Lycian Peasants into Frogs*, spruce panel, 0.229 × 0.658. Princes Gate Collection (no.118), Courtauld Institute Galleries, London.

Figure 3 Tintoretto, *Apollo and Diana killing the Children of Niobe*, spruce panel, 0.229 × 0.677. Princes Gate Collection (no.119), Courtauld Institute Galleries, London.

Figure 4 Ascribed to Tintoretto, *Jupiter and Semele* (No.1476), composite X-radiograph.

Figure 5 Tintoretto, *Latona changing the Lycian Peasants into Frogs*, composite X-radiograph. Princes Gate Collection (no.118).

Figure 6 Tintoretto, *Apollo and Diana killing the Children of Niobe*, composite X-radiograph. Princes Gate Collection (no.119).



Figures 4-6
(Above)
See full
captions on
facing page.

*Latona's dress and the drapery of the fleeing figure on the right in *Apollo and Diana* (Plate 5c, p.35).*

The layer structure: In many places painted directly and fairly thickly in one or two layers. As can be seen from the radiographs, the flesh is solidly painted in lead-white-based flesh tones. 'Copper resinat' greens have been employed in the usual way for glazing landscape and foliage, but have become entirely brown in the umbrella-shaped trees painted without green underpaint. The bed-hangings in *Jupiter and Semele* have a curious layer structure, for the apparently black interior of the canopy is effected by means of a red lake glaze over a deep green 'copper resinat' layer (Plate 5d, p.35), and exactly the same layer structure occurs in the dark shadow of the red drapery between the legs of the

recumbent figure in the bottom left corner of *Apollo and Diana*. There is also an intermediate red glaze under parts of the blue pattern of the dress of the figure far right in *Latona*, which also has so-far unidentified yellow-brown glazes in the shadows.

General comments and comparisons

The wood panels: The identification of the wood as spruce (*Picea* sp.) is consistent with their being of Venetian/Veneto origin. The majority of Italian panel paintings are on poplar. Spruce has rather rarely been identified except in Venetian/Veneto works (an example in the National Gallery is Carpaccio's *S. Ursula taking leave of her Father*, No.3085). All but a few, for the most part early works, of Tintoretto are on canvas, but the



Figure 7(Right) Impressed mark (actual size) on the backs of the panel of *Jupiter and Semele* and the two Princes Gate panels.



Six Biblical Scenes in Vienna are reported to be painted on spruce (*Fichtenholz*) [8].

The stamped mark on the back of all three panels, which might be a collector's mark ('AS' or the mirror-image, 'SA') has not, in spite of helpful suggestions, so far been traced [12]. It is not in Lugt [13]. It seems possible that if all three panels were once together they may have decorated the front of a *cassone*, with perhaps *Apollo and Diana*, marginally the widest, in the centre. There is a further possibility that they were part of a decorative scheme for a room (such as that which Tintoretto is known to have carried out in his youth for the writer and critic Pietro Aretino). Other small panels and canvases have from time to time been suggested as being part of the same series. The most likely candidate, another Ovid *Metamorphoses* subject, *Argus and Mercury* is recorded as being the same size and format as *Jupiter and Semele* and *Latona*. It is in the Suida Manning Collection, New York. Unfortunately, like so many panel paintings in American collections, it has been transferred from wood to synthetic board (Masonite) thereby eliminating the evidence of the identity of the wood or any marks on the back of the panel.

The ground: A pure gypsum ground, while consistent with the picture being Italian School, has been found, within a number of examples of gesso grounds examined by XRD, to occur more frequently in Venetian pictures than Florentine or Siense, in which anhydrite or anhydrite/gypsum mixtures are usual (further results may make some sort of statistical study possible).

The pigments: All the pigments identified are consistent with the three pictures being of the sixteenth-century Italian School and all have been identified in accepted works by Tintoretto [14–16]. The use of realgar for orange drapery is a practice almost exclusive to the sixteenth-century Venetian School, Tintoretto included [14–19]. While red lake pigments were lavishly used by all Venetian sixteenth-century painters, exploitation of the whole range, even in a single picture, seems characteristic of Tintoretto, a possible reflection of his parentage and his association with the Scuola di San Rocco, both connected with textile and dyeing industry. Hence the presence of two different red lake dyestuffs in *Jupiter and Semele* and a third in *Apollo and Diana* need not surprise us. Interesting is the identification of lac lake in the red-brown glaze applied to alternate tiles of the cream and terracotta chequered floor both in *Jupiter and Semele* and *Christ Washing His Disciples' Feet* (No.1130). In the latter painting, madder lake was identified in a purplish cloak and a different lake, possibly kermes, in Christ's pink robe. In *The Origin of the Milky Way* (No.1313), the crimson of Jupiter's cloak was identified (by TLC) as lac lake, as was also the red of the bed cover.

Layer structure and general technique: The summary drawing in black seen by infra-red has similarities with Tintoretto's drawings on paper. The perspective of tiled floors seems to have been something of an obsession with him, perhaps influenced as Cecil Gould has observed [20] by Serlio's treatise, so it is interesting to see the lines drawn for the purpose. A fairly simple layer structure occurs in some of his earlier, and some of his smaller works (for example, *S. George and the Dragon*, No.16) but even in these, characteristic tricks such as having intermediate glaze layers, particularly of red lake, are evident. Strong outlining of limbs as a final touch on top of flesh paint as in the figures of *Jupiter and Semele* is frequently seen in Tintoretto's pictures. He uses it to emphasize the forms of the limbs (Schiavone uses the same method, but principally to create a formal pattern of curves). The faintly comic expression of Semele's face is only partly due to slight damage near the eyes. In his early work Tintoretto seems to have had some difficulty depicting people full-face. He often avoided doing so, even in as mature a work as *The Origin of the Milky Way* (No.1313), coming to terms with the problem finally in his late portraits like *Vincenzo Morosini* (No.4004). The

Figure 8 Ascribed to Tintoretto, *Jupiter and Semele* (No.1476), infra-red photograph showing black under-drawing.

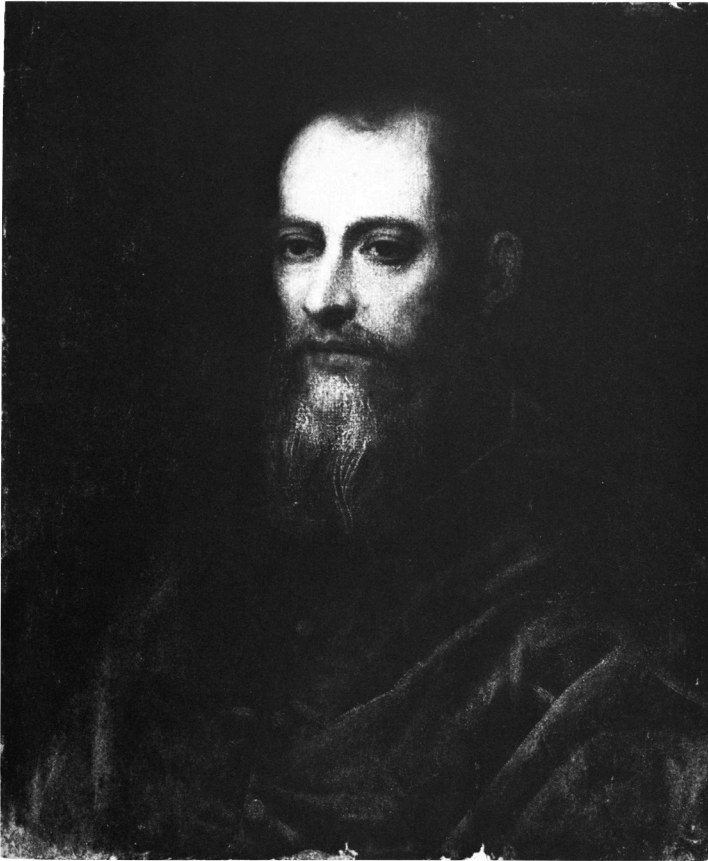


Figure 9 Style of Tintoretto, *Portrait of a Cardinal* (No.2147), canvas, 0.641 × 0.533.

black 'button' eyes of Semele are seen in the Vienna *Six Biblical Scenes* and in the later series (c.1555) of *Biblical Scenes* on canvas in the Prado.

No.2147, Style of Tintoretto, 'Portrait of a Cardinal' (Fig.9)

Size and format: 25¼ × 21 (0.641 × 0.533).

Acquisition and provenance: Purchased in Venice from the Galvagna Collection, described as 'Style of Tintoretto'. Like No.2161 below, it was lent to the National Gallery of Ireland in 1857 and not entered in the *London Catalogue* before 1925.

Condition and history of restoration: The 'Manuscript Catalogue' states '1926 Brown varnish removed: revarnished', presumably on return from Ireland. Inspection in 1949 disclosed the canvas to have been lined, but noted a crack or tear going from bottom edge to right of centre. The recent X-radiograph (Fig.10) shows a vertical tear from top to bottom through the head, joining a horizontal tear across the sitter's left shoulder. A wax relining was done in 1953 but no further treatment since. The discoloured varnish is very thick and, judging from a few cross-sections, multi-layered and sandwiching dirt and much repaint and retouching. The varnish makes difficult a proper assessment of the picture, and also sampling. X-radiography reveals what seems to be a different sitter, but it is difficult to say without cleaning tests whether the face has been totally painted by a later hand or the artist reused an old canvas.

Support: Canvas of moderately fine plain (tabby) weave (Fig.11a) bearing close resemblance to that of *Portrait of Vincenzo Morosini*, No.4004 (Fig.11b).



Figure 10 Style of Tintoretto, *Portrait of a Cardinal* (No.2147), composite X-radiograph.

Figure 11a
Style of Tintoretto, *Portrait of a Cardinal* (No.2147). Canvas weave (actual size) as seen on X-radiograph. Thread count: warp (vertical on photograph) 14½ threads/cm, weft 13½ threads/cm.

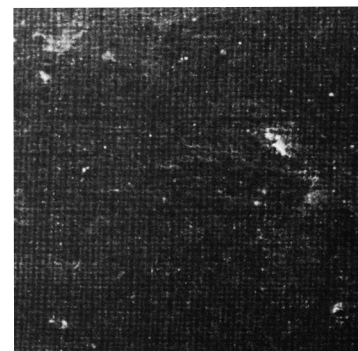
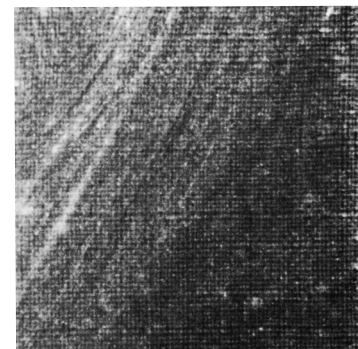


Figure 11b
Tintoretto, *Portrait of Vincenzo Morosini* (No.4004). Canvas weave (actual size) as seen on X-radiograph. Thread count: warp (vertical on photograph) 17½ threads/cm, weft 14½ threads/cm.





Ground: Double ground of thin gesso on canvas with an upper layer of black, mainly charcoal plus a little brown earth pigment, in a medium with characteristics of drying oil (Plate 5e, p.35).

Underdrawing: Since there is a black ground, no black underdrawing was anticipated, but the X-radiograph (Fig.10) shows bold and hasty sketching-in of the costume in lead white or other lead pigment, and traces of a hidden curtain as in the X-radiograph of *Vincenzo Morosini* (Fig.13).

Medium: Analysis by GLC was postponed until cleaning.

Pigments: A small range of colours was present. Apart from lead white, earth colours and black there was present *red lead* (lead tetroxide, Pb_3O_4 , identified by LMA), as the orange paint of the presumably gold braid and gilt buttons of the costume as seen in the radiographs. It also seems to have been used for some of the strong highlights of the costume. Two samples of red glaze (varnish and repaints removed) from the garment were found by TLC, and confirmed by HPLC, to be *lac lake*.

The layer structure and X-radiographs: Under the many layers of dirt, varnish and repaint there seems to be the layer structure of the original painting. Beneath the pinkish flesh now seen, lies a more brownish flesh paint containing a few green earth particles. A cross-section from the top left-hand corner has a thick lead white layer between the black ground layer and the grey background paint which may represent a highlight of the hidden curtain. A section from the garment



where the 'gold braid' is visible on the X-radiograph, has a brilliant orange layer, which proved to be red lead, between two layers of crimson glaze (Plate 5e, p.35). As mentioned above, the X-radiographs show an entirely different sitter, clean-shaven with short (white?) hair, wearing a braid-trimmed coat and narrow white ruff. The head in the radiograph itself shows *pentimenti* and is more strongly modelled than that now seen with the unaided eye.

General comments and comparisons: The materials of the original painting as so far established are consistent with its being sixteenth-century Venetian and features are present which occur in Tintoretto's own work. A similar double ground, gesso plus a carbon black layer, was found in *Christ Washing His Disciples' Feet* (No.1130). The *Portrait of Vincenzo Morosini* (No.4004), has a similar double ground (though the apparently blackish brown upper ground is seen under the microscope to be of the 'palette scraping' variety as found also on *The Origin of the Milky Way*, No.1313). The X-radiograph reveals similarities with *Vincenzo Morosini* in the *pentimenti* of the head and the bold brushstrokes in

Figure 12
(Far left)
Tintoretto,
Portrait of Vincenzo Morosini (No.4004), canvas, 0.845 x 0.515.

Figure 13
(Left)
Tintoretto,
Portrait of Vincenzo Morosini (No.4004), composite X-radiograph.



Figure 14
After
Tintoretto,
*The Miracle of
S. Mark*
(No.2900),
paper stuck
down on
canvas,
0.406 × 0.597.

the undermodelling of the costume. The cross-section of the 'gold braid' of the costume bears a strong resemblance in structure and colouring to that from the gold sash of *Vincenzo Morosini* (Plate 5f, p.35), but with the chemical difference that in the former the orange pigment is red lead, in the latter a realgar/orpiment mixture. Red lead has been identified in works by Tintoretto [18], including *The Last Judgement* in the church of the *Madonna dell'Orto* in Venice [15]. Though not much found in easel paintings it was probably cheaper than realgar but lacked its glistening appearance. Its substitution for realgar might suggest the work of an assistant or copyist. So little is known about the materials and techniques of Tintoretto's portraits, let alone those of studio versions and later copies, that it seems useless to speculate. Cleaning of No.2147 would be a major task.

No.2900, After Tintoretto, 'The Miracle of S. Mark' (Fig.14)

Size and format: 16 × 23½ (0.406 × 0.597).

Acquisition and provenance: Lady Lindsay Bequest, 1912. The picture is a small copy of one of Tintoretto's most famous works, the large (4.15 × 5.41 m) signed canvas painted for the *Scuola Grande di San Marco* and now in the *Accademia Galleries*, Venice. Small versions have been put forward as possible preliminary studies for the painting [21]. No.2900 has, however, been assumed since it entered the Gallery, to be a nineteenth-century copy. The *Catalogue* entry in 1913 added the comment 'perhaps by Etty (in Venice 1832)'. It was dropped for a time then revived by Gould in his

Catalogue, who remarks 'that it might be the work of Etty would not be impossible, but there is no positive evidence'.

Condition and history of restoration: Obscured by dirt and discoloured varnish; in reasonable condition apart from wide shrinkage cracks in bituminous-looking brown shadow and S. Mark's orange cloak.

Support: Paper stuck down on canvas (catalogue entries imply simply canvas).

Ground: A thin coat of chalk and glue on the paper.

Underdrawing: None visible by infra-red.

Medium: Microchemical tests indicate drying oil.

Pigments: Samples were taken from most colours. Apart from the usual lead white, ochres and black, there were present: *Prussian blue* as the blue throughout, and mixed with yellows for the greens; *vermilion*, which from its small regular particles is likely to be the wet-precipitated type, and therefore post-1687 at least [22]; a red lake was identified (by TLC) as *madder*, which was still in use into the present century; *Naples yellow* (lead antimonate, $Pb_2Sb_2O_7$) was found (by LMA) in the brighter yellows and orange (it has not so far been identified in pictures earlier than the mid-seventeenth century; see below under No. 2161).

Layer structure: For the most part painted direct, in a single layer.

General comments and comparisons: The presence of Prussian blue indicates a date of painting after c.1704 and

confirms that the picture is a late copy. If it is nineteenth century the absence of any pigments of nineteenth century origin suggests a date early in the century. The slightly subdued colours, even allowing for the effect of dirt and varnish, suggest that the original was not clean when the copy was made. The original was cleaned in 1965 for the first time on record, revealing again its true brilliance [23]. The author identified a sample of the orange of S. Mark's cloak as realgar on the original, but in No.2900 it is a mixture of Naples yellow and vermilion. The palette of No.2900 would be a reasonable one for Etty to have used in Venice in 1832–33 when he is known to have copied many famous sixteenth century paintings. In fact in a list in his *Sketchbook II* of pictures he copied or intended copying, the first item (and ticked) is “‘Miracle of Saint Marc” — Tintoret’, and he was apparently known in Venice as ‘The English Tintoretto’ [24]. Many of his sketches were on paper, often later worked up and stuck on canvas. The catalogue of the sale of his effects in 1850 includes numerous copies from old masters, but not one of *The Miracle of S. Mark*, but many must have been dispersed by then. It might be noted that Etty's paintings are often marred by bitumen-like cracking in the darks.

Figure 15
Follower of
Tintoretto,
*Portrait of a
Lady*
(No.2161),
canvas,
0.984 × 0.807.

No.2161, Follower of Tintoretto, ‘Portrait of a Lady’ (Fig.15)

Size and format: 38 $\frac{3}{4}$ × 31 $\frac{3}{4}$ (0.984 × 0.807).

Acquisition and provenance: Purchased in Venice in 1855 from the heirs of the Capello family as ‘Portrait of Pellegrina Morosini, wife of Bartolommeo Capello by Pordenone’. Gould has pointed out there is no evidence to refute the identification of the sitter, but dismisses the attribution to Pordenone. In her notes, in the National Gallery archives, on the costume, Stella Newton dates it around the middle of the century, adding that it cannot be much after 1550. In the 1929 *Catalogue* it had come to be described as ‘Veronese School, XVI century’. The Tintoretto connection was made in 1930 by J. Wilde who related it to a group of portraits of this type [25].

Condition and history of restoration: Dirt and thick discoloured varnish make it difficult to assess either condition or technique. There are no early records of treatment. Like No.2147 above, it was loaned to the National Gallery of Ireland in 1857. A report made in 1949 when it was back in London notes the canvas had been lined. It was then wax-lined in 1953. There is a



patch in matching canvas lower left. Cupping of the paint has made the craquelure obtrusive and there is evidence of flake loss and retouchings. The face and hands seem in moderately good condition. There is wearing on the lace infill of the neckline.

Support: Canvas of coarse herring-bone twill, weave running vertically.

Ground: Gesso, the calcium sulphate as pure gypsum (XRD).

Underdrawing: None detected by infra-red reflectography.

Medium: Microchemical tests indicate drying oil. Instrumental analysis was postponed until varnish removal.

Pigments: The portrait is a type using a limited palette. Additionally to lead white, carbon black and earth colours, *vermilion* (mineral or dry-distilled) was detected in the flesh of the left hand; *azurite*, unexpectedly in dark paint from the neckline of the black bodice; *Naples yellow* in a bright yellow highlight on the dress (LMA, confirmed by XRD, and repeated on a sample from another location).

Layer structure: Comparatively complex, though the thick opaque paint layers show no striking similarities to layer structures seen in paintings by Tintoretto. Some thick opaque underlayers of a matrix of lead white containing fine carbon black and large aggregates of lead white are somewhat similar to layers found in paintings by Paolo Veronese (for example the *Four Allegories* in the National Gallery).

General comments and comparisons: Coarse herring-bone canvas is often encountered in mid-sixteenth-century Venetian pictures (Veronese's, *The Consecration of S. Nicholas*, No.26 has a very similar canvas), including some by Tintoretto. The gypsum ground is consistent with sixteenth-century Venetian practice and was used on canvas by Tintoretto in the 1550s at the same time as he was experimenting with dark grounds [15]. The few pigments identified would be consistent also, with the exception of Naples yellow. Its earliest occurrence noted in a National Gallery picture so far has been in Claude, *Seaport, The Embarkation of the Queen of Sheba* (No.14), dated 1648. It has not so far been identified in an accepted work by Tintoretto. The samples analysed may represent later retouchings, but it seems unlikely since a cross-section shows the yellow layer directly on the grey underpaint. Were the picture of seventeenth-century or later origin it might be expected to manifest other characteristic features of the period. The enigma cannot be solved without cleaning No.2161, again a considerable task.

Concluding remarks

Jupiter and Semele (No.1476) has been firmly linked with the two Princes Gate (ex-Seilern) panels, and if they are acceptable as Tintoretto, No. 1476 ought to be as well. All three exhibit specifically sixteenth-century Venetian characteristics and some specifically Tintoretto ones. Their original function, as *cassoni* panels or otherwise, is not established. *Portrait of a Cardinal* (No.2147) was found to have a different portrait beneath of which the technique seems close to Tintoretto's and shows some resemblance to that of *Portrait of Vincenzo Morosini* (No.4004). *The Miracle of S. Mark* (No. 2900), was confirmed as a copy, of post-1704 but probably not later than early nineteenth century, and the feasibility of its attribution to Etty strengthened. *Portrait of a Lady* (No.2161) is in some doubt, both with respect to date and association with Tintoretto.

Acknowledgements

The author thanks the following for help and advice: Mrs H. Braham and Dr D. Farr (Courtauld Institute Galleries), Mr J. D. Brazier (Princes Risborough Laboratory), Dr F. Klauner (formerly Kunsthistorisches Museum), Dr P. Klein (University of Hamburg), Dr P. Rossi (University of Padua), Dr H. von Sonnenburg (Doerner Institute, Munich) and Sir Ellis Waterhouse.

Notes and references

- GOULD, C., *National Gallery Catalogues: The Sixteenth Century Italian Schools* (London 1975), pp.263–4.
- ROSSI, P., *Jacopo Tintoretto*, Vol. Primo, *I Ritratti* (Venice 1973).
- PALLUCCHINI, R. and ROSSI, P., *Tintoretto: Le opere sacre e profane*, 2 vols (Milan 1982). See Vol.I, p.139, catalogue nos. 58–60.
- DAVIES, M., *National Gallery Catalogues: The Earlier Italian Schools*, 2nd ed. (London 1961).
- GOULD, C., *Raphael's Portrait of Pope Julius II: The Re-emergence of the Original* (London 1970).
- A simple example of each type of evidence might be given. 'Venice: Entrance to the Cannaregio' (No.1054), was formerly catalogued as 'School of Guardi'. At the request of M. Levey, who was revising the catalogue, it was examined and cobalt blue ('Thénard's blue'), invented as a chemical compound in 1804, was found; Guardi died in 1793. The picture is now attributed to 'Imitator of Guardi'. By contrast, examination of Perronneau's 'A Girl with a Kitten' (No.3588) established that the blue pigment throughout this pastel portrait was Prussian blue, discovered c.1704. It would have been in full use at the date given on this signed portrait, 1745.
- WATERHOUSE, E.K., *Burlington Magazine*, **50** (1927), p.344.
- Katalog: Kunsthistorisches Museum Gemäldegalerie I* (Vienna 1965), pp.129–31.
- In the early years of this century there seems to have been a trend to reattribute to Andrea Schiavone works previously attributed to Tintoretto, particularly his earliest work. It is partly explained by the then

sparsity of information on Schiavone's own work. See PALLUCCHINI, R., *La Giovinezza del Tintoretto* (Milan 1950), pp.79–89; and RICHARDSON, R.L., *Andrea Schiavone* (Oxford 1980), pp.33–4.

10. *Catalogue: The Princes Gate Collection*, published by the Trustees of Home House Society for the Courtauld Institute of Art (London 1981), pp.82–3.

11. An account of the identification of lake pigment dyestuffs by TLC and HPLC will eventually be published by R. White.

12. Sir Ellis Waterhouse suggested searching the catalogues of the Strange Collections to see if the pictures might be included, but no success was met with.

13. LUGT, F., *Marques de Collections de Dessins et d'Estampes* (Amsterdam 1921), and *Supplement* (La Haye 1956).

14. PLESTERS, J. and LAZZARINI, L., 'Preliminary Observations on the Technique and Materials of Tintoretto', in N. Brommelle and P. Smith (eds.), *Conservation and Restoration of Pictorial Art*, Butterworths (London 1976), pp.7–26.

15. PLESTERS, J. and LAZZARINI, L., 'The Examination of the Tintoretto's', in A. Clarke and P. Rylands (eds.), *Restoring Venice: The Church of the Madonna dell'Orto*, Paul Elek (London 1977).

16. The Doerner Institut, Munich, kindly made available H. Kühn's unpublished results of pigment analysis on pictures by Tintoretto in the Alte Pinakothek, Munich.

17. PLESTERS, J., 'Titian's "Bacchus and Ariadne": The Materials and Technique', *National Gallery Technical Bulletin*, **2** (1978), pp.37–47.

18. LAZZARINI, L., 'Lo studio stratigrafico della Pala di Castelfranco e di altre opere contemporanee', in *Catalogue: Giorgione, La Pala di Castelfranco Veneto* (Milan 1978), pp.45–59.

19. LAZZARINI, L., 'Il Colore nei Pittori Veneziani tra il 1480 e il 1580', *Supplemento n. 5 del 'Bollettino d'Arte'* (Rome 1983), pp.135–44.

20. GOULD, C. (1975), *op. cit.*, pp.256–7.

21. WARZEE, P., 'Le Miracle de l'Esclave du Tintoret; une Découverte Importante', *Bulletin of the Institut Royal du Patrimoine Artistique Brussels*, **6** (1963), p.91ff.

22. GETTENS, R.J., FELLER, R.L. and CHASE, W.T., 'Vermilion and Cinnabar', *Studies in Conservation*, **17** (1972), pp.50 and 52.

23. *Catalogue of the exhibition: Restauri nel Veneto 1965*, Accademia Galleries (Venice 1966).

24. FARR, D., *William Etty* (London 1958), pp.39–40, and Appendix II, p.127.

25. WILDE, J., 'Wiedergefundene Gemälde aus der Sammlung des Erzherzogs Leopold Wilhelm', *Jahrbuch* (Vienna 1930), p.253ff.

Plate 5 Tintoretto.

(a) Ascribed to Tintoretto, *Jupiter and Semele* (No.1476).

Transverse section of wood of panel identified as spruce (*Picea* species). The photomicrograph shows the junction of two annual rings. A single vertical resin duct is visible near the centre of the field.

(b) J. Tintoretto, *Apollo and Diana killing the Children of Niobe* (Princes Gate Collection no.119).

Top surface of sample from Niobe's red dress showing a red lake glaze over cream-coloured underpaint. One or two azurite particles are also present. The dyestuff of the red lake pigment was identified as *kermes*.

(c) J. Tintoretto, *Latona changing the Lycian Peasants into Frogs* (Princes Gate Collection no.118).

Top surface of sample from Latona's orange-yellow dress, the pigment identified as realgar (arsenic disulphide, As₂S₂). The red area on the left is a streak of red lake in the underpaint.

(d) Ascribed to Tintoretto, *Jupiter and Semele* (No.1476).

Dark shadowed area within bed-hangings.

1. Gesso ground (trace).
2. Thick lead white underpaint; a flake of crimson-coloured lake pigment can be seen.
3. 'Copper resinat' green glaze of bed-hangings, the green colour protected and well-preserved.
4. Crimson glaze of bed-hangings. The dyestuff of the red lake pigment was found to be a mixture, *lac* and *madder* certainly being present.
5. Thick discoloured varnish (now removed from the picture).

(e) Style of Tintoretto, *Portrait of a Cardinal* (No.2147).

Hidden orange highlights of red cope.

1. Gesso ground.
2. Thin black upper ground.
3. Crimson 'glaze' layer of lake pigment, apparently the first laying-in of the red cope.
4. Orange-red paint of highlight consisting of red lead (lead tetroxide, Pb₃O₄) mixed with red lake.
5. Red lake glaze of cope; the dyestuff of the lake pigment was identified as *lac*.
6. Accumulation of old varnish layers.
7. Thin layer of red retouching.
8. Final varnish layer.

(f) J. Tintoretto, *Portrait of Vincenzo Morosini* (No.4004).

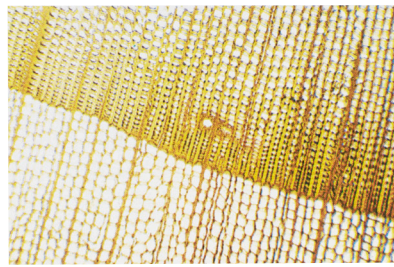
Deep purple arabesque pattern on the golden sash. Sample taken after cleaning.

1. Gesso ground (trace).
2. Brown 'palette-scraping' type upper ground.
3. Thin whitish underlayer (preliminary drawing?).
4. Thick crimson 'glaze' layer, apparently the first laying-in of the dark red robe. The dyestuff of the red lake pigment was identified as *kermes*.
5. Orange-yellow of sash; a mixture of orpiment and realgar (yellow and orange arsenic sulphides, As₂S₃ and As₂S₂ respectively).
6. Thick red glaze of pattern. The pigment was identified as *kermes* lake.



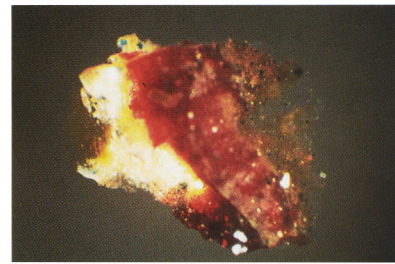
Plate 4 (Above)
Tintoretto, *Jupiter and Semele*
(No. 1476), after cleaning and
restoration.

Plate 5 (Right)
Tintoretto, photomicrographs
of samples and cross-sections.
Full caption on facing page.



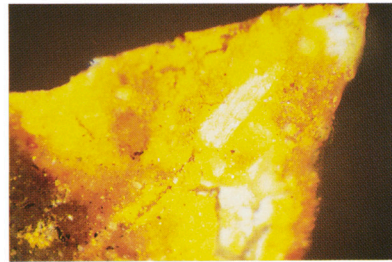
a

40x



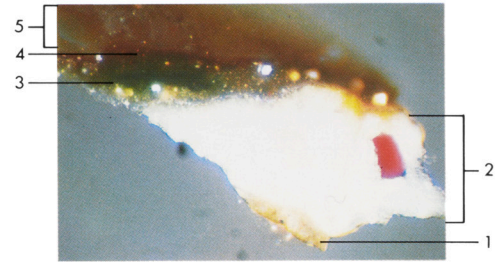
b

70x



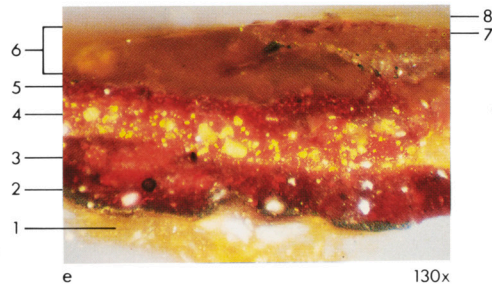
c

70x



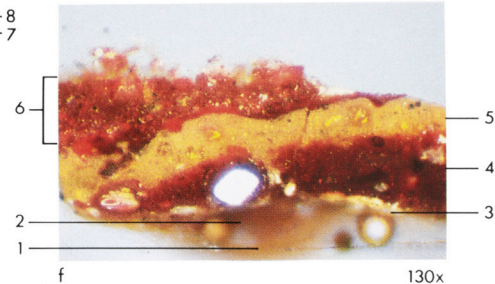
d

130x



e

130x



f

130x

Plate 6
Ugolino di Nerio, *Two angels*
(spandrel from an altarpiece)
(No. 3378).

