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Bellini's 'The Blood of the Redeemer'

Allan Braham, Martin Wyld and Joyce Plesters

The transformation of Bellini's 'The Blood of the Redeemer'

Allan Braham

The recent restoration of one of the subtlest and most complex of Giovanni Bellini's early masterpieces, *The Blood of the Redeemer* (No.1233: see Plate 1, p.29 and Fig.2) (1) has proved both a rewarding and a surprising undertaking. While the style of the painting, and the relation between form and content, are freshly revealed, so too are the remains of three or four prominent clouds, hovering above the inlaid pavement in the foreground behind the figure of Christ, which materially alter the balance of the painting in design and in meaning.

The clouds now appear as little more than billowing shapes on the surface, with frills coloured blue at their bases and edges, and flecks of vermilion and gold scattered throughout the blue. Originally they would almost certainly have incorporated the heads of seraphim and cherubim, coloured red and blue, which appear frequently in the sacred paintings of Bellini, and also make their presence felt at about the same time in the work of his brother-in-law, Mantegna (especially in his triptych of the *Adoration of the Kings* in the Uffizi). Similar clouds, bearing the heads of cherubim and seraphim, are a prominent feature of the central panel of Bellini's S. Vincent Ferrer altarpiece (Figs. 3 and 4) which was painted probably in the later 1460s at approximately the same time as *The Blood of the Redeemer* (2).

Usually in the work of Bellini such clouds appear not hovering near the ground, but floating in the sky, and in the later paintings of the artist the clouds are less linear in appearance and the heads more naturalistic in treatment. Vestiges of medieval art, they increasingly conflicted with the more realistic character of Renaissance painting, and this may indeed partly explain why they were removed by an early owner, leaving the ground below the paint visible. Yet the crime of removing them at all (they can scarcely have disappeared spontaneously) remains largely a mystery, since the resulting gaps would in any case have had to be painted over–tolerance of such blemishes in the interests of aesthetic objectivity being a comparatively recent development.

Apart from its missing cherubim and seraphim Bellini's painting is basically well-preserved, though there are scattered damages in the sky and wearing in the landscape and the pavement, where the white tiles, supporting visually the pallor of Christ's body, are now seen to alternate with tiles of a porous green, which blend with the landscape beyond the figure of Christ. The green of both landscape and pavement, initially presumed to have been painted in copper resinate (see p.23), has now discoloured towards brown, and the tiles, extended to cover the clouds, were largely reinforced in brown, which matched in colour, but not in its dense texture, the darker shades of the landscape background. The sky too has gained in subtlety of colour through restoration and in the distance beyond the church spire on the left it is now bathed with the pink hues of dawn, which enlarge upon the cosmic meaning of the painting (3). Rising in the east, the dawn irradiates with light the bar of cloud that lies across the sky almost level with the arm of the Cross, and is itself coloured a muted brown.

The main subject of Bellini's painting, closely related to the themes of the Pietà and the Man of Sorrows which the artist made particularly his own, appears in Italy, principally in Tuscany, in the later fourteenth century and was popular for the decoration of the doors of Sacrament tabernacles (4). Bellini's image, showing the Saviour not merely with the symbols of the Passion (cross, crown of thorns and wounds), but also actively assisting his Blood to flow into the chalice held by an angel, is a variant of the subject, occasionally occurring in the later fifteenth century, which lays particular emphasis upon the Holy Blood and almost certainly refers to a famous dispute, chiefly involving the Dominicans and Franciscans, which reached a point of crisis in the 1460s, when the painting was produced (5).

The details of this conflict may no longer have the power to stir much passion, but Bellini's patrons were no doubt fired by its implications–and the same may even be true of the artist himself. The Dominicans, it appears, held to the belief in the divinity of Christ's blood between the Crucifixion and the Resurrection while the Franciscans as passionately denied the divinity of the blood (6). In a Bull of 1464 (*Ineffabilis*), Pope Pius II forbade the dispute to continue, but his successor, Francesco della Rovere, who reigned as Pope Sixtus IV from 1471 to 1484, stated the Franciscan position in a text of 1467 (published in 1472), *De Sanguine Christi*, where he conceded that the blood of animals in pagan sacrifice prefigured the spilling of Christ's blood, but argued that mankind had been saved not by the blood of the Redeemer but by his death.

While Bellini's painting loses none of its magic in the ramifications of this long-forgotten conflict, the dispute itself must be relevant to the probable destination and to the dating of the picture, and likewise to its exceptionally elaborate programme, which extends into the landscape and includes the classical reliefs of the parapet in the middle distance. In the

almost total absence of fixed dates for the early works of Bellini, *The Blood of the Redeemer* is generally dated to the early or mid-1460s (7), following not very long after *The Agony in the Garden* (No.726), which is itself closely related to Mantegna's painting of the same subject (No.1417) possibly of 1459 or thereabout. The restoration of *The Blood of the Redeemer* appears to confirm this reading of the dating, showing especially in the treatment of the nude Christ a greater flexibility and ease of handling than in comparable details (hands and feet, etc.) of *The Agony in the Garden*. Because of its subject matter the picture is likely to have been commissioned for a Dominican foundation, conceivably for SS. Giovanni e Paolo, the principal Dominican establishment in Venice, and the church for which the S. Vincent Ferrer polyptych (Figs.3 and 4) was painted probably after 1464.

The purpose of the painting–in view of its size and its theme–was probably, as has been proposed, for the decoration of a tabernacle door (8). The panel on which it is painted is likely to have been set into a wooden frame equipped with a lock and hinges, for it shows in itself no physical evidence of being a door panel. The organization of the composition, as has also been suggested, with the tiled pavement preceding the landscape, would mirror the physical character of a cupboard (9), and the presence of the parapet in particular gives a sense of enclosure to the space. If this was indeed the original function of the panel the painting itself is perhaps more likely to have been on the inside than on the outside of the door. Quite apart from its satisfactory state of preservation, the composition of the painting is oriented decidedly to the left (see Fig.5), as though originating, when the door was opened, from the Sacrament concealed within the cupboard, and the complexity of its still unexplained subject matter would no doubt have seemed in the 1460s more suitable for private than for public contemplation.

The central meaning of the painting, however, resides in the figure of Christ and is plain for all to see. With head rising above the distant prospect of hills, gently inclined towards the angel kneeling in the foreground, he dominates the entire composition. Though influenced by the art of Mantegna and by the sculpture of antiquity, and to this extent not discordant with the reliefs of the parapet, the figure seems wholly Christianized. The pose inspires confidence by possessing the stability of a sculpted figure, but it suggests too the miraculous fleetingness of a mystical vision borne along by the clouds of now missing cherubim and seraphim. The weight-bearing foot is largely hidden by the Cross, while the left foot, raised to show the nail wound, barely touches the intersecting tiles of the pavement. The face too, now freed from its veil of discoloured varnish, is also well judged to express the two worlds united in the body–the features exaggerated into a mask of tragedy that speaks of the suffering and compassion of the Christian deity (10).

The angel who so carefully holds aloft the chalice towards the blood flowing from Christ's wounded side is in contrast a creature of wholly heavenly beauty, with golden hair and brilliant wings and a dress of celestial blue that closely echoes in its elaborate folds the clouds of blue originally present beyond the figure of Christ and behind the chalice itself. The slippers of the angel are now seen to be the brightest note of colour in the painting–a brilliant scarlet that dominates all the redder tones present throughout the left side of the painting, the side that is figuratively warmed by the blood of the Redeemer.

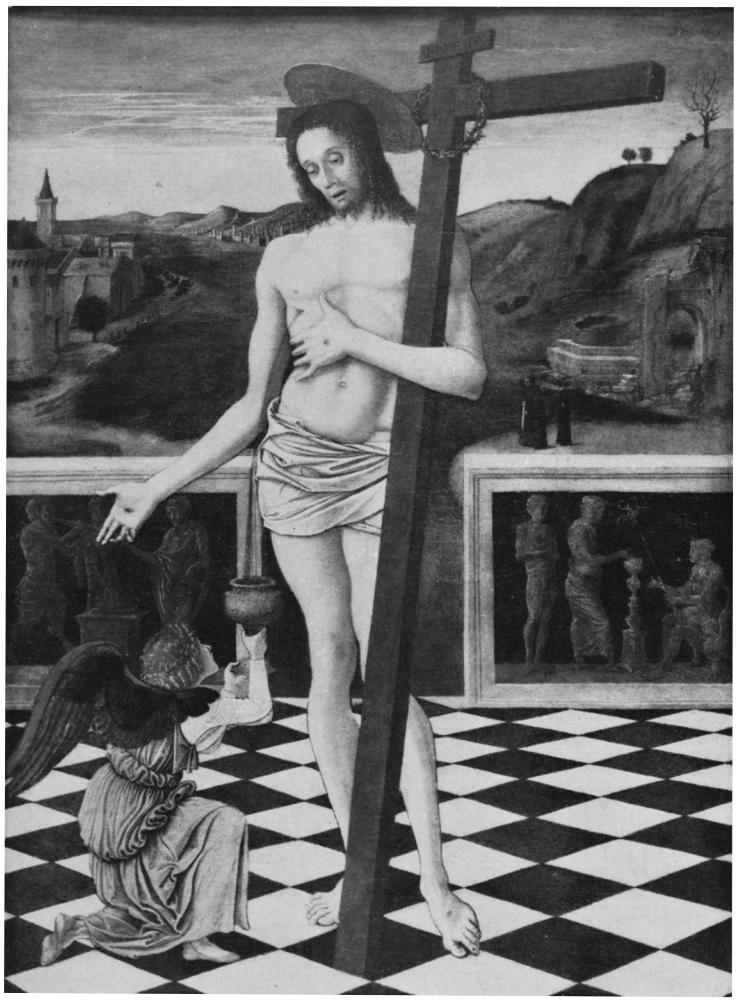


Figure 1
Giovanni Bellini, *The Blood of the Redeemer*, before restoration, (painted surface 47×34cm).

Though it may have been only occasionally visible, the eloquent central image of the picture was inevitably a cornerstone in the history of Venetian painting, principally as a masterpiece of Renaissance Christianity, but also influencing treatments of the subject of the Redeemer until well into the sixteenth century, including Sansovino's gilt bronze relief for the Altar of the Sacrament in S. Mark's (Fig.6), where Christ appears in the sky amongst a host of cherubim and angels, placing his left foot upon a cherub head. In the treatment of the background, however, referring symbolically to an issue of the mid-fifteenth century, Bellini's painting was less obviously influential in Venice.

The programme of the painting was presumably planned at least in outline by a theologian involved in the dispute about the Holy Blood, who sought to enlist both nature and the classical past in the service of Christian doctrine, but his message has largely eluded satisfactory interpretation, partly because so little evidence is available about the knowledge of

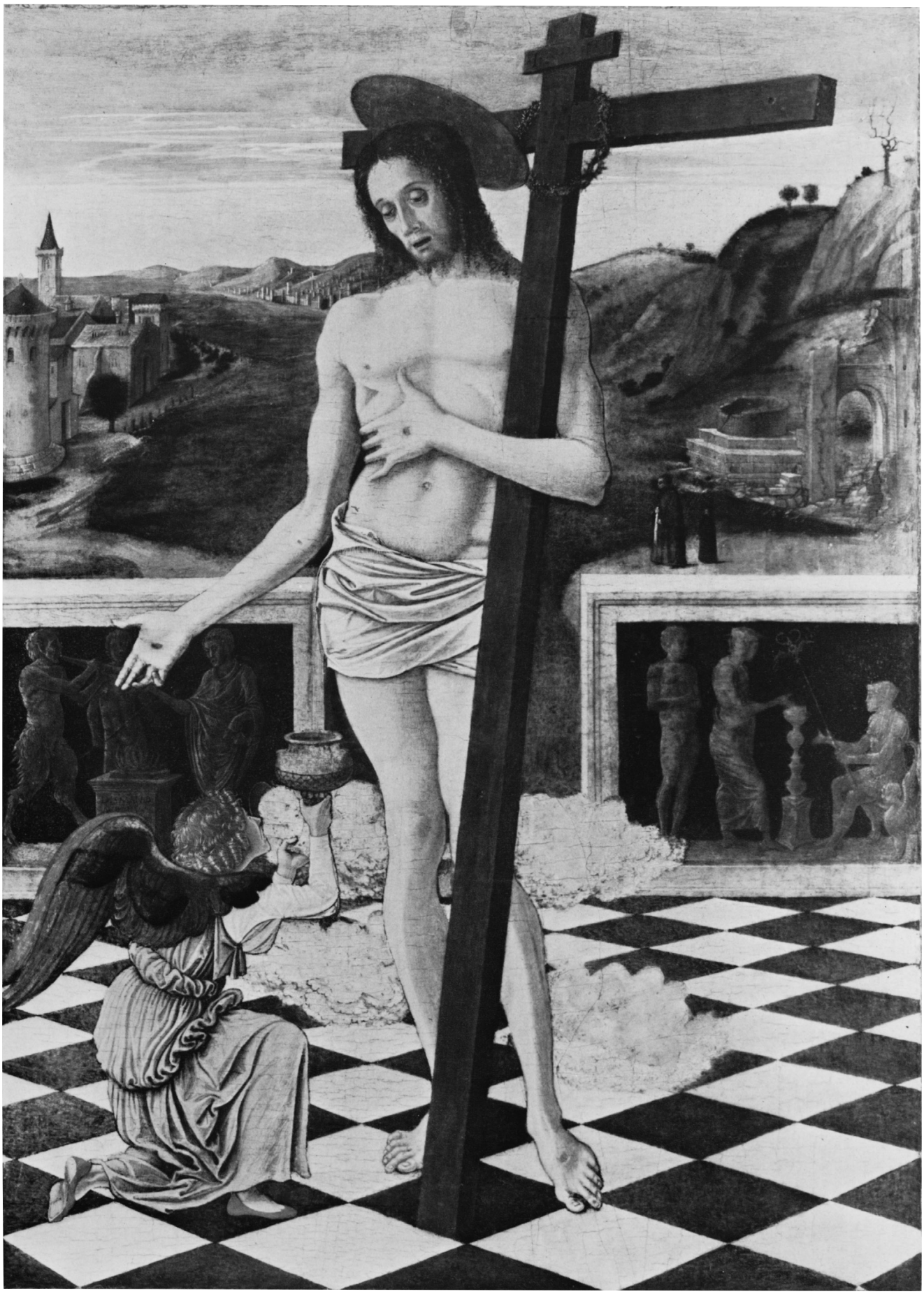


Figure 2 The picture after cleaning and restoration.

classical religion in the fifteenth century. The elucidation of the full programme may add little to the appreciation of Bellini's art, but it is a mystery a shade more accessible now that the painting has been cleaned.

While the landscape to the left of Christ with its fortified settlement of churches and its distant town is now seen to be blessed by the warm rays of dawn, the country to the right remains in contrast a desolation (11). A ruined gateway and the stump of a giant brick column are its main architectural features, and the hill that rises behind them is marked by a single barren tree silhouetted against the sky. Human life is visible in the landscape in the shape of two figures walking away from the ruins (Fig.7) towards the town on the left. They traverse a path that curves forward–no doubt symbolically–towards the platform where Christ stands in the foreground. The two might be taken as a priest with his acolyte (12), and the leading figure is now clearly shown to be dressed in blue, a colour worn by certain priests in Venice (13), but with sleeves of muted purple, while the acolyte wears black. The 'priest' carries a white object that appears to be a thin white cloth or veil falling in two points at his knees. It has been suggested that the Host would be an appropriate object for him to carry (14), but even more suitable might be the empty veil, brought forward from the old world to the new, that will eventually be used to protect the sacramental wine in its chalice.

Just as the landscape is conceived in obviously contrasting halves, the classical reliefs on the parapet may also illustrate an historical progression, the contrast between them providing a clue to their likely meaning. The reliefs derive even more obviously than the figure of Christ from the art of Mantegna, and in both the figures are painted in gold against a background of flecked marble. The marble is now seen to be of different colours, muted green on the right and on the left a deep red, which partakes of the warmth of tone reserved in the painting for the side towards which the flow of Christ's blood is directed. The reliefs seem to refer not, as might be expected, to blood sacrifice in antiquity, but apparently to burial customs, and they thus lay emphasis less upon the blood of the Saviour than upon the greater issue of redemption as a consequence of the shedding of the Holy Blood.

The relief to the left (Fig.8) shows three figures around a small altar–a satyr with a flute, possibly representing Pan, a naked figure with a rod or bow, and a clothed figure who carries a jug and gesticulates towards the altar and the flames rising upon its top. The base of the relief is interrupted by the wings and the head of the angel; the bottom right hand corner is also concealed by the clouds behind Christ, as shown by cleaning, which has also revealed a large basin in the relief close to the jug and immediately above the face of the angel.

The inscription upon the altar, now definitely confirmed as part of the original painting, shows approximately the rite in which the trio of ill-matched figures is engaged. It is an act of devotion, or pro-

Figure 3
Giovanni Bellini, *S. Vincent Ferrer*, central panel of triptych in SS. Giovanni e Paolo, Venice, 167×67cm; (photo Agenzia Fotografica Internazionale).

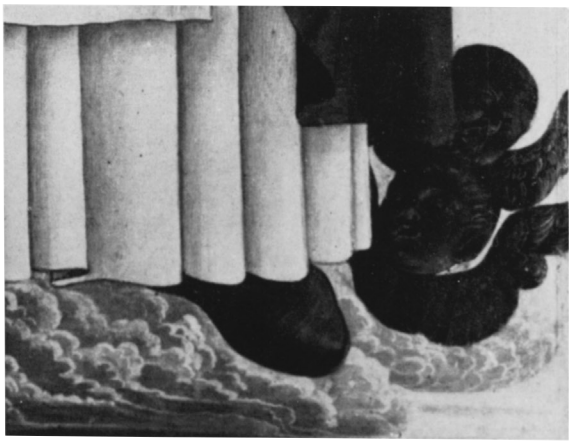


Figure 4
Detail of Fig.3. Groups of seraphim and cherubim.

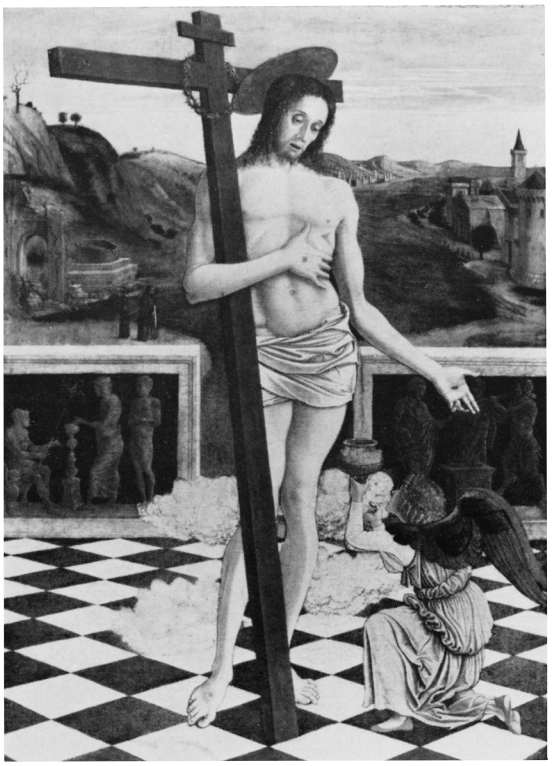


Figure 5
Fig. 2 reproduced in reverse.

Figure 6
Jacopo Sansovino, *Allegory of the Redemption*, S. Mark's, Venice (43 × 37cm).

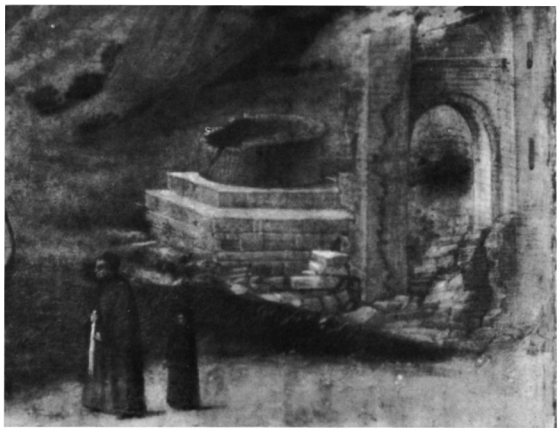


Figure 7
Detail of Fig. 2, the figures and buildings in the landscape to the right.

Figure 8 (*top*) Detail of Fig.2, the relief to the left.
Figure 9 (*above*) Detail of Fig.2, the relief to the right.

pitiation, to the benevolent gods of the departed (the *manes*, as opposed to the malevolent *larvae*), with which the name of Aurelius is also closely associated: DI[VI]S MANIB[VS]/AVRELIVS/[. . .]T(?)I (15). The inscription fixes the scene within the lifespan of ancient Rome, and perhaps more specifically to imperial Rome if the name it bears refers to the Emperor Marcus Aurelius (121–180AD), famous for his commitment to stoicism, or Aurelianus, who imposed worship of the Sun as a state religion in 274AD.

It has been suggested that Christ's right hand, superimposed at the centre of the scene, seems to cancel the action of the relief (16), but his gesture appears rather to embrace at a suitable distance the altar of the Roman dead. Since the relief, coloured red in the background, occupies a prominent position on the left of the painting and appears to be laid historically after the lifetime of the Saviour, it may be intended to show that the blood of Christ, from the time it was shed, extended the possibility of redemption even to the pagan world–a notion, allied in meaning to the Descent into Limbo (17), that is not without its relevance to the pictorial style in which the artist conceived the image of the Redeemer.

If the relief to the left of the picture relates the *manes* of ancient Rome to the Christian concept of redemp-

tion, the corresponding relief to the right (Fig.9), which contains no helpful inscription, might be expected to refer to after-life in antiquity before the coming of Christ and before the introduction of altars to the dead, and this may indeed be guessed as its basic meaning. In this relief a naked youth, arms folded as if in resignation (and immediately below the 'priest' in the landscape) stands behind a clothed figure, dressed in body armour and a beaked helmet, who is shown in lively conversation with a seated man on the extreme right. Prominently placed between the two is an object that is possibly an incense burner (thymiaterion) (18), perhaps deliberately contrasted with the altar of the left-hand relief, and the standing figure may be shown in the act of offering incense, if he is not merely gesturing. The burner itself seems to be a mark of the function and the authority of the seated figure, like the decoration of griffons upon his throne and the caduceus of Hermes that he carries. Possibly he represents Hermes himself, matching on the right of the picture the figure who may be Pan (the son of Hermes) on the far left, but in the absence of the winged helmet and sandals that indicate the presence of the god he need be no more than a herald invested with the powers of Hermes.

One of the chief functions of Hermes in Greek mythology was that of escorting the souls of the dead to Hades (*psychopompos*), a duty in which the caduceus was of especial significance (19), and it may well be a transaction of this kind to which Bellini's relief refers, although the source from which the scene was derived, in the middle years of the fifteenth century, will probably remain difficult to identify. Fundamentally, however, the programme of the painting seems to hinge upon the contrast between the overwhelming image of the Christian Redeemer, with his accompaniment of seraphim and cherubim, and pagan customs under their presiding deities, Hermes and Pan, that were superseded to a greater and lesser degree by the promise of Salvation marked by the sacrifice of Christ.

Notes and references

1. Davies, M., *National Gallery Catalogues: The Earlier Italian Schools* (1961), pp.60–1.
2. On the dating of this altarpiece see Robertson, G., *Giovanni Bellini* (1968), pp.43–6. Opinions about the attribution of the altarpiece are summarized by Pignatti, T., in *L'opera completa di Giovanni Bellini* (1969), p.91. The weaknesses which have been noted in the painting may not be unconnected at this early date with its large scale.
3. The symbolic character of the warmth on the left of the picture was noted by Meiss, M., in *The Art Bulletin* (1945), pp.175–6. For the identification of the pigments, especially the brown, originally supposed to be copper resinate, see the accompanying paper by Joyce Plesters on p. 22.
4. The subject is discussed by Middeldorf, U., in *Scritti di storia dell'arte in honore di Mario Salmi*, II (1962), pp.273–89 and by Eisler, C., in *The Art Bulletin* (1969), pp.107–18 and 233–46.
5. Robertson, G., *The Journal of the Warburg and Courtauld Institutes* (1960), p.46.
6. Details of the debate and about the contribution of Pope Sixtus IV are given by Ettlinger, L.D., *The Sistine Chapel before Michelangelo* (1965), pp.9 and 83–4. (Also, Eisler, op.cit., p.234 and n.98.)
7. On the dating see Robertson, G., *Giovanni Bellini* (1968), pp.33–4.
8. Ibid., p.33; Eisler, op. cit., p.236, suggests a cupboard door in the centre of a predella.
9. Robertson, G., *Giovanni Bellini* (1968), p.34.
10. Ibid., p.33, where the possible influence of Flemish painting is considered. Eisler, op.cit., p.235, relates the setting to S. Paul's Epistle to the Hebrews, ch.9.
11. Girewich, V., discusses the placing of Christ's wound on the right side and the primacy of right over left in *The Journal of the Warburg and Courtauld Institutes* (1958), pp.358–62.
12. Robertson, G., *Giovanni Bellini* (1968), p.35.
13. This fact was kindly pointed out to me by Miss Jennifer Fletcher.
14. Robertson, G., *Giovanni Bellini* (1968), p.35.
15. For the interpretation of the inscription I am particularly indebted to my colleague, Miss Margaret Jones (Mrs Cooke). The *manes* are discussed by Altheim, F., *A History of Roman Religion* (1938), pp.163–4. The reliefs are taken to be prefigurations of Christ's sacrifice by Panofsky, E., in *Festschrift für Max J. Friedländer* (1927), p.294, while that to the right was unconvincingly identified as showing Mucius Scaevola by Saxl, F., in *The Journal of the Warburg and Courtauld Institutes* (1939), p.351.
16. Davies, M., op.cit., p.61.
17. The interesting relation between the reliefs and the more common subject of Christ's Descent into Limbo, rescuing the redeemed of the Old Testament, but also occasionally classical heroes (see Réau, L., *Iconographie de l'Art Chrétien*, II (1957), pp.531ff and 537, with further bibliography) was kindly pointed out to me by my colleague, Mr Michael Levey, to whom I am greatly indebted for this and other suggestions and improvements in the present note.
18. Robertson, G., *Giovanni Bellini* (1968), p.35.
19. For example, De Waele, F.J.M., *The Magic Staff or Rod in Graeco-Italian Antiquity* (1927), esp. p.68.

The cleaning and restoration of Bellini's 'The Blood of the Redeemer'

Martin Wyld

Since *The Blood of the Redeemer* was purchased in 1887 the paint surface had not been cleaned, re-touched or varnished (Fig.1). Nothing is known of any restoration done before the picture came to the Gallery. At some time the back of the panel had been planed down and almost covered by a heavy wooden construction. This construction was removed in 1948 (Fig.10) because it was beginning to cause splits in the wood by restricting its slight natural movement. The panel is of poplar and Bellini's technique is that commonly used by Italian painters of the mid-fifteenth century, i.e. there is a gesso ground and the paint medium is mainly egg tempera.

Examination

When it was suggested in 1977 that *The Blood of the Redeemer* should be cleaned, a superficial visual examination sufficed to establish that most of the paint surface was in good condition, though rather obscured by a discoloured varnish. Re-touching could be seen in many places in the sky near the horizon. The chequered paving stones behind Christ's legs and the inside lower corners of both the classical reliefs were completely covered by re-paint. The closer examination possible with a low-powered stereoscopic microscope at between 5× and 40× magnification confirmed this, it being possible to see exactly where the minute secondary craquelure of the paint became blurred by the re-touching. Full-size black-and-white photographs and some photomacrographs at 2× magnification were taken to record the appearance of the picture, and X-radiograph and infra-red photographs were taken to further explore the condition. Many factors influence the amount of information which can be obtained from X-radiographs but fundamentally they record the presence of the pigment white lead (the only white pigment commonly used in easel painting until the end of the eighteenth century) and, to a lesser extent, that of other pigments such as vermilion containing elements of high atomic weight. Thus in this case (Fig.11) the paint of the sky shows clearly because it consists mainly of white lead mixed with azurite. Where the original paint is missing, as it is in numerous small areas just above the horizon, the image is dark instead of light. Further down, the highlights of Christ's body and loincloth, and of the angel's right arm, are clearly visible. Their continuity, in contrast to the sky, shows them to be well-preserved. The lighter paving stones, which are thinly painted in white lead, are also visible on the X-radiograph. However, the landscape and the reliefs do not register strongly except for the highlights of the buildings and the top of the balustrade. The reliefs are painted partly in gold powder, which, like their obscure classical themes, probably reflects the influence of Mantegna on the young Bellini. Gold has a very high atomic weight but used in either leaf or powder form is too thin to absorb X-rays. The grain of the wood is clearly visible throughout, and so are two horizontal battens and the remains of a seal (centre bottom) fixed to the back of the panel.

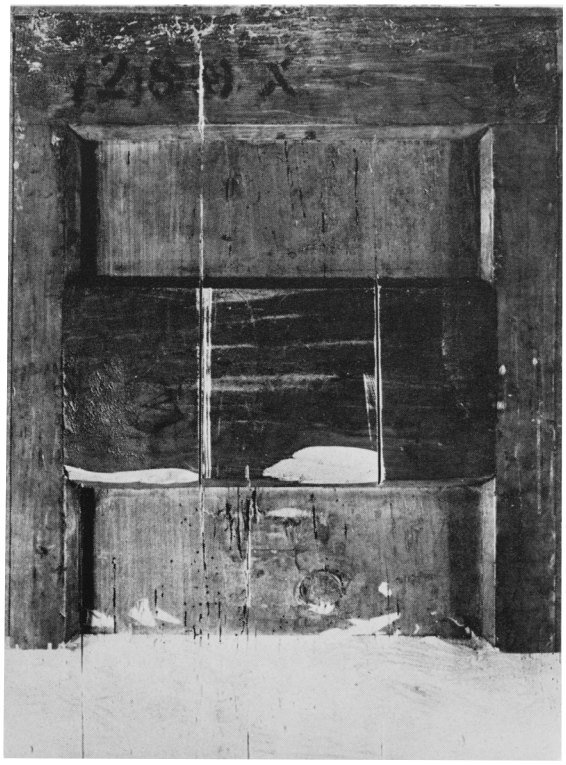


Figure 10 The back of the panel during removal of the added frame, 1949.

Infra-red photography is to some extent complementary to X-radiography. A photograph taken under infra-red light is more penetrating than an ordinary black-and-white photograph, and reveals some of the differences in the paint surface which may not be visible to the naked eye. The re-touchings covering the paint losses in the sky are visible (Fig.12), showing as darker than the original paint. Above the horizon the re-touchings correspond very closely with the 'holes' seen on the X-radiograph, but higher up, for example above the halo and in the top right corner, are much larger than the few small losses they cover. The infra-red photograph also shows variations in the paint texture of the lower corners of both reliefs whose full significance was not appreciated until later. Although the majority of the re-touchings could be seen without difficulty in ordinary light, the technical photographs provide a clear record. Fig.13 is a photomacrograph taken at 2× magnification and shows the difference between the texture of Bellini's paint and of that applied by a restorer. The angel's robe is well-preserved, and the cracks in it are clean fissures in the brittle tempera paint caused by shrinkage of the gesso ground and by slight movement of the wooden panel. In the re-touched part of the picture, to either side of the chalice and below the angel's arms, the cracks in the oil re-touching show as lighter and are of a different pattern from those in the original paint.

It is easy to establish that part of a picture is covered by re-paint but much more difficult to assess the state of any original paint which remains underneath,

Figure 11 The X-radiograph of the whole picture, taken at the time same as Fig. 1. Note the dark areas above the horizon which are paint losses. (42kV, 20mA, 40 sec.)

Figure 12 Infra-red photograph before cleaning. The dark patches in the sky are old re-touchings.

unless it contains a large proportion of white lead and so shows on the X-radiograph. Infra-red reflectograms can be useful in this context, but with *The Blood of the Redeemer* most of the re-paint was impenetrable. Cross-section analysis provides evidence only of the exact spot from where the sample is taken; the paint layers may be entirely different a fraction of an inch away. It is not unusual for old re-touchings to cover much larger areas than necessary–those in the upper part of the sky which show in the infra-red photograph are good examples of this. Further close examination of the picture and photographs suggested that there might be damages in the bottom corners of the reliefs. In the X-radiograph a faint division, lighter above and darker below, meanders horizontally across the right hand relief at the level of Christ's knees. The infra-red photograph shows a lighter patch in the corner of the left hand relief, ending in a curved line between the angel's face and the chalice.

The conclusions reached before any cleaning was undertaken were, briefly, that there were flake losses in the sky, that the landscape, the two principal figures and most of the two reliefs were well-preserved but that the bottom corners of the reliefs, all the paving stones around Christ's legs down to the level of his ankles, and the darker stones elsewhere, were covered by re-touching.

Cleaning

Having formed as clear an idea as possible of the picture's condition, and recorded it in numerous photographs, removal of surface dirt and discoloured varnish began. Cleaning was started on the sky, partly because of the knowledge of its condition already gained and partly because in a light, cool passage the contrast between a cleaned and an uncleaned area is enhanced, making it easier to see how much varnish is left. Removal of the varnish presented no unexpected difficulties. With a very few exceptions, the paint of fifteenth century Italian pictures, whether in oil or tempera, has undergone chemical changes which make it insoluble. Oil re-touchings can also become extremely hard with time, but fortunately those on the Bellini were easily soluble. The right hand side of the picture was cleaned first, working downwards, and eventually the damaged area in the corner of the relief was reached. The feet of the left hand figure in this relief, which were known to consist of re-touching (Fig.14) dissolved easily. It was expected that underneath would be the damaged paint and gold powder of the original feet, or a complete loss of paint in which case the gesso ground would appear. Instead, there appeared a thin layer of blue paint, directly on top of the gesso and having every appearance (texture, pigment size, craquelure, hue) of being original. Further cleaning uncovered the very cracked remains of a whitish paint layer and some drawing-in lines very similar to those which the infra-red photograph show to exist under the top part of the angel's wings. It was apparent that the re-touchings, far from being a reconstruction of a damaged area, did not correspond to the original design at all. Cleaning was

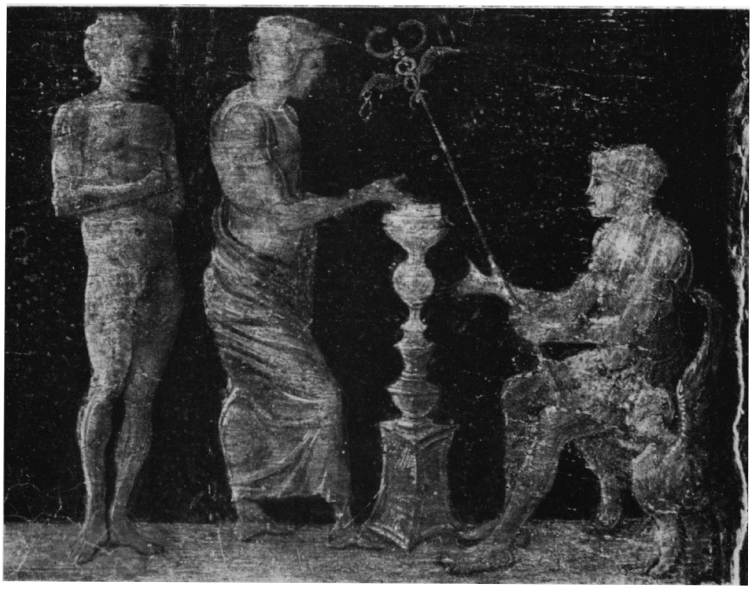
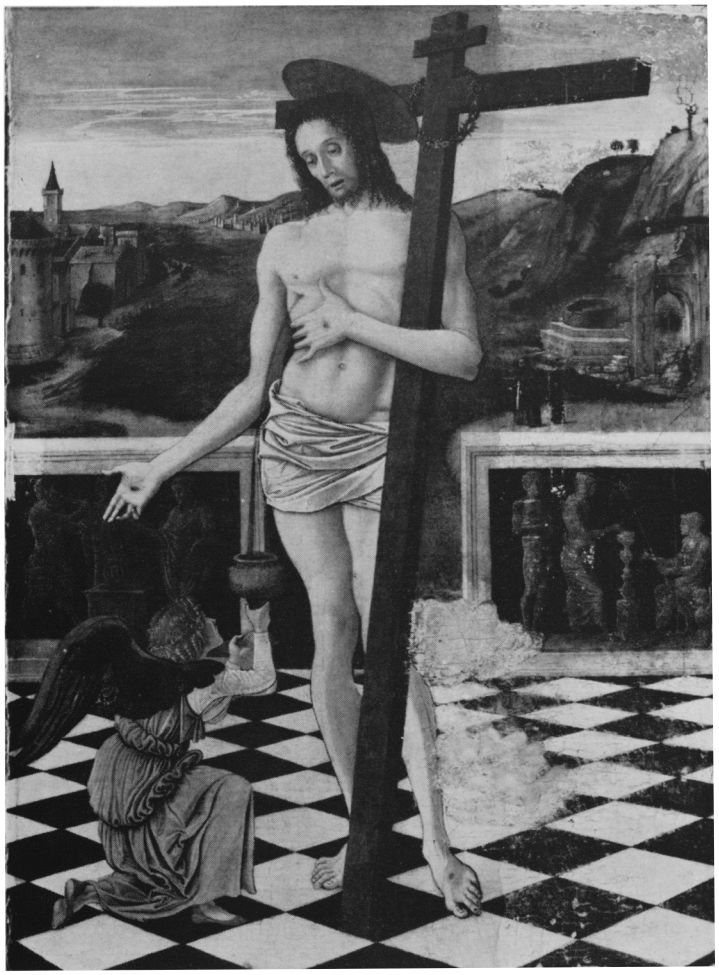


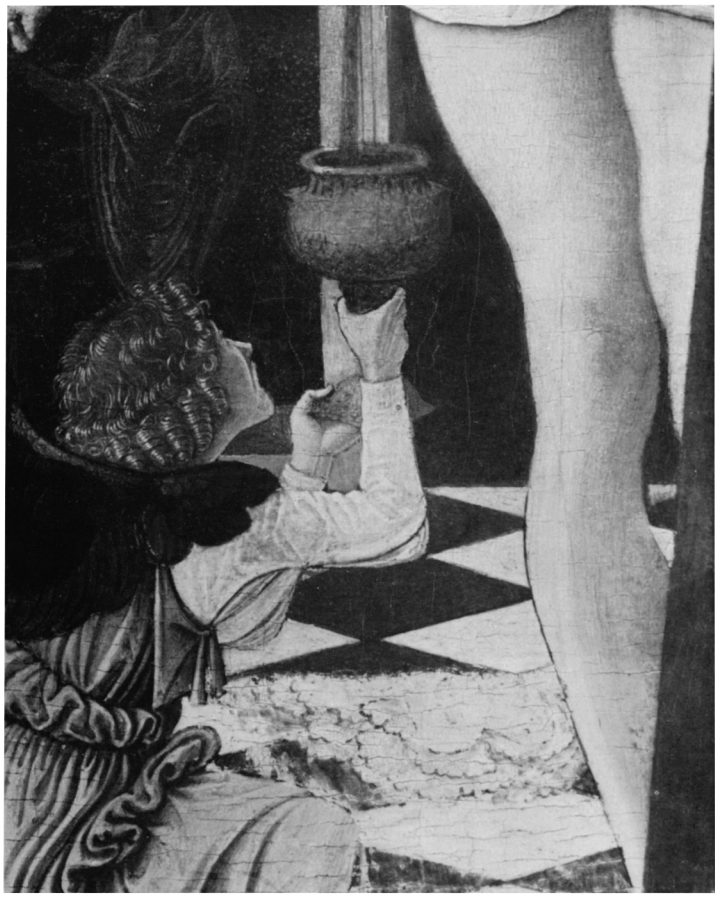
Figure 13 (*top left*) Detail before cleaning. The angel is well-preserved, but all the paving stones to the right are false.

Figure 14 (*above left*) Detail before cleaning. The lower left corner, including the feet of the left hand figure, are false.

Figure 15 (*top right*) The right hand side of the picture has been cleaned. The line through the sky and the two light paving stones is the edge of the discoloured varnish.

Figure 16 (*right*) Further cleaning.





extended to the bottom edge of the picture, uncovering another similar area (Fig.15). The greater part of both the empty spaces consisted of bare gesso, with a bit of white paint and drawing at the lower edges and a few minute scraps of colour elsewhere. At this point the significance of the curved line between the angel's head and the chalice (visible in Fig.12) was realised: it must be a roughly symmetrical equivalent of what had appeared on the right.

The remainder of the picture was then cleaned, being photographed once more (Fig.16) while the re-touching was being removed from the left side of the pavement. The uncovering of two more almost blank areas was not unexpected. Considerably more of the blue paint layer remained on the left, and the black drawing-in lines were clearer. The possibility that Bellini left the picture unfinished can be dismissed; the fragments of vermilion and gold powder at the edges of the blank areas shows that they were at one time painted. It is remotely possible that some peculiarity of technique caused the paint to flake off. Flaking usually occurs because of a combination of unsuitable atmospheric conditions and inherent defects or stresses in the structure of a painting. The result is seldom a complete loss in one area but more usually scattered losses with irregular edges such as those in the sky. In a few known cases, lapis lazuli (natural ultramarine, made from the semi-precious stone) and gold leaf have been scraped off early Italian pictures either in order to be re-used or for their intrinsic value, but this could hardly be likely with *The Blood of the Redeemer*, the total area missing being no more than a few square inches. It seems clear that the original paint was deliberately scraped away, long after the picture had been finished, judging by the way the paint is fractured at the edge of the blank spaces. Whether the removal was thought to be desirable in itself, or was merely a means of making it easier to 'improve' the composition by painting in the pavement and relief corners on the plain gesso rather than on the coloured paint, can only be a matter for regretful speculation. The background to these changes is discussed in Allan Braham's article above.

Restoration

Plate 1 (p.29) shows the picture after restoration. The small amount of evidence remaining in the missing areas, i.e. the apparent drawing of clouds and the scraps of vermilion and gold powder at the edges, would make preposterous any attempt at reconstruction. The cleaning of the picture has been an example of how, even after the most thorough possible examination, the result can be unexpected. The clues which existed in the X-radiograph and infra-red photograph could not be interpreted before cleaning began. One example of the ambiguity of these sort of photographs can be seen in the X-radiograph (Fig.11). Above the line which rather vaguely shows the top edge of the missing area in the right hand relief is a tapering oblong shape with rounded ends, the top of which is just above the corner of the balustrade. This shape shows more clearly than the actual edge of the paint in the

relief, and yet it does not correspond, so far as can be seen, to anything either on the back of the panel or in the paint layer. There is nothing as puzzling as this in the infra-red photograph (Fig.12), but studying this photograph before cleaning started, the two lines in the corners of the relief seemed more likely to be due to the structure of the re-touching than, as was actually the case, to a hidden part of the original composition.

The composition of the picture, while altered by the scratching out and re-painting of an important part of it, had never, so far as the present writer knows, been questioned. However, once the alteration was discovered, further study of the composition in its previous state led (with hindsight) to the conclusion that the transition between the pavement and the landscape was vague and unconvincing (Fig. 1). Similarly, the extension downwards of the inside edges of the reliefs had formed a shape of odd proportions between them. The old restoration was not deceptive in terms of its texture or colour (see Fig.13). Its plausibility lay in the way it completed elements in the picture, e.g. the pavement and the reliefs, which were clearly part of Bellini's composition. Any slight awkwardness, such as the far end of the pavement against the landscape, could be accounted for by the reconstruction not precisely following the damaged original which was assumed to lie underneath. Cleaning the picture was the only way of discovering that this assumption was false, and of uncovering something of Bellini's intention.

A note on the materials, technique and condition of Bellini's 'The Blood of the Redeemer'

Joyce Plesters

Some microscopical and chemical examination of samples was done in connection with the recently-uncovered area of clouds around Christ's legs and at the same time it was thought worthwhile to take a few samples from various small damages elsewhere in the picture to provide a comparison with those from that area and to broaden a little the study of technical aspects of the picture. It should be pointed out that with an Early Italian panel painting of this type, having thin, flat, regular paint layers a much smaller sample than usual is perfectly adequate for the successful preparation of paint cross-sections. Discussion of the sample from the area around Christ's legs will be deferred until the end of this Note, since it will make better sense seen in relation to the materials and technique of the painting as a whole.

The poplar panel has what appears to be a single, moderately thin layer of gesso ground which to a large extent has retained its whiteness. It does not seem to have an all-over yellowish priming on the surface, such as was observed in the case of the gesso of the same painter's *Madonna of the Meadow* (No.599) (a layer subsequently identified as unpigmented egg, probably yolk), though a very fine greyish-yellow line is visible between gesso and paint in one or two of the cross-sections prepared.

The picture has a careful and detailed underdrawing on the gesso ground. Some of it is perceptible on the picture itself with the unaided eye, but the infra-red photograph (Fig.12) shows up details such as the hatched shadows of the folds of Christ's loin-cloth and the angel's dress. In some samples and sections of paint which included the gesso ground the underdrawing could be recognized as a scattering of black particles on the surface of the gesso and beneath the paint layers. In a sample from the angel's dress, where the drawing is thick and heavy, the black particles constituted a tightly-packed layer of a thickness comparable to that of some of the paint layers. It was not possible, unfortunately to isolate enough of the black pigment to carry out any specific chemical analysis of what from simple tests is chemically some sort of carbon black, but under the microscope comparison with reference samples suggests that the small, rather shiny, slightly faceted granules, black by reflected light, but brownish and translucent by transmitted light, are of bone black rather than wood charcoal.

Pigments identified in the actual paint include natural ultramarine, mixed with lead white, in the blue of the sky, the angel's dress and, as will be discussed below, the blue of the clouds around Christ's legs and in traces of paint deduced to be the remains of the blue cherubim. Azurite (blue basic copper carbonate, $2CuCO_3.Cu(OH)_2$) is used instead in the slightly more greenish blue of the distant landscape. Vermilion (red mercuric sulphide, HgS) was identified as the red of the angel's slippers, the blood of Christ and

traces of red paint in the area of the clouds round Christ's legs which may be remains of the corresponding red seraphim, also discussed below.

One surprise was the identification of the green pigment present. Before examination of samples under the microscope it had rather been anticipated that the very brown appearance of some of the landscape and foliage and of the dark tiles of the floor, some of which are green in part, would have been due to discolouration of a green glaze of the type loosely termed 'copper resinate', consisting of verdigris (basic copper acetate) dissolved in a resinous or oleo-resinous medium. It was found, however, that in every sample, whether from a reasonably green part of the paint, a moderately-browned green or paint apparently completely brown but suspected to have been once green, the same green pigment was present. It was a green copper carbonate of the 'globular' particle form first described by the present author as occurring in green paint on those panels of Sassetta's Sansepolcro Altarpiece which are in the National Gallery (1), and since then by Jo Kirby in the Giovanni di Paolo *SS. Fabian and Sebastian* (No.3402), an account of which is given in this issue of the *Bulletin* (see p.64). There has not yet been an opportunity to carry out X-ray diffraction analysis on the samples of the 'globular'-type green copper carbonate from the Bellini and the Giovanni di Paolo to discover whether, like the samples from the Sassettas, their composition corresponds to that of malachite ($CuCO_3.Cu(OH)_2$), nor has it yet been ascertained whether this form of pigment derives from mineral malachite or is the artificially prepared basic carbonate. A comparison was made between a paint cross-section of a sample from one of the floor tiles which in the picture appeared quite brown and one from a greener part of another tile. It was found that the brown colour was not associated with the browning of a final glaze layer (which is the type of discolouration most often occurring with 'copper resinate', where areas still appearing green usually turn out to have an opaque green underpaint beneath the browned glaze) but with the brown colour of the medium in which the green 'globular' particles of copper carbonate are suspended in the single paint layer. The main difference between the very brown areas of tiles or landscape and those where a green colour is perceptible seems to be in the packing of the green globules. In the samples from the greener paint the green particles are fairly closely-packed, whereas in the paint cross-section from what seems on the picture itself to be a totally brown tile they are widely separated by the translucent yellow-brown medium. A sample was also taken from the blackish-green background of the classical relief on the right-hand side of the picture in order to compare it with the brownish-purple (perhaps an imitation of porphyry) of the corresponding classical relief on the left-hand side. The dark–and for this type and period of painting–comparatively thick top paint layer was, unexpectedly, found to contain the same green 'globular' pigment particles, rather sparsely distributed and with a lot of surrounding brown matrix.

Now since green pigment is present in *all* these samples to a greater or lesser degree, it may perhaps be reasonably assumed that it was intended to impart at any rate *some* green colour to the painting, and since it has ceased to do so in some of the brownest areas from which the samples were taken, it seems reasonable to deduce that the present brown colour is the result of accidental change rather than the original intention of the artist. The cause or mechanism of the discolouration is not yet known, but copper is an element well-known for its readiness to combine with a wide range of organic materials, some of the products being brown in colour. At the time that gas-chromatographic analyses were made to ascertain the paint medium, a sample of the browned green was unfortunately not included, but the relative insolubility of the paint film in alkali would suggest that, like other parts of the picture it is in egg tempera medium and not oil. Some clue to the mechanism of the discolouration may lie in the cross-section of the sample from the dark background of the classical relief on the right. A few of the green particles look slightly yellowish or brownish, and their contours a trifle less sharp as though the surface of the pigment particle has begun to be dissolved by the medium. It is by no means clear that this brown discolouration of greens seen in the Bellini *Blood of the Redeemer* is caused by prolonged exposure to light, as seems to be the case with the browning of 'copper resinate' greens (see p.49 of this *Bulletin*). In fact, evidence is somewhat against the change having been brought about by light, for although some of the dark floor tiles exhibit more green colour than others, those which until very recently had been covered with overpaint at least since the acquisition of the picture by the National Gallery in 1887, are not noticeably greener than others not so protected. On balance the tiles in the foreground of the picture exhibit the brightest green colour, but this may be a deliberate pictorial effect. Moreover, if Allan Braham's theory (see p.12) is correct, that the picture originally formed the decoration of the *inside* of a door of a tabernacle to house the Host, then much of its early life would have been spent in darkness, in which case the greens ought to be in better than average condition if the browning undergone was light-induced. Another possible origin of the browning could be the action of some unsuitable cleaning agent, such as an alkali, applied at some time in the past, perhaps coinciding with the removal of the painted cherubim.

The porphyry-coloured paint of the background of the classical relief on the left also proved interesting, for it was composed of a mixture of vermilion, black, and here and there an admixture of a little lead white where mottling in the stone was depicted. A similar mixture of pigments was discovered in the dull purplish paint of the rocky landscape of the early small panel painting by Giovanni Bellini, *S. Jerome*, in the collection of the Barber Institute of Fine Art, Birmingham, which the author had the privilege of examining during its cleaning and restoration. It was also noted in the paint cross-sections that the backgrounds of both classical reliefs have the same underpainting, a yellow-brown layer with scattered

vermilion particles. It may be an indication that initially the artist intended the backgrounds of both reliefs to be in the purplish-brown porphyry colour, the paint of which also contains vermilion, then decided to have the background of the right-hand relief green, presumably in imitation of green marble (to match the dark tiles of the floor?) and had to put on an extra-thick layer of green paint effectively to obscure the reddish underpaint. Alas, his artistic intentions seem now to have been frustrated for the intended green colour of the relief on the right has virtually disappeared.

Microscopical examination of a sample from the gilding on the left-hand classical relief confirmed Martin Wyld's opinion that the small amount of gilding on the picture is not laid as leaf, as is usual in easel paintings, but is powder gold. Under the microscope it appears as irregular small flat flakes suggesting that it was made by the method of grinding gold leaf. The medium or mode of attachment of the flakes of gold to the underlying paint could not be ascertained. The same sort of powder gold was also found on the Bellini *The Agony in the Garden* (No.726) as highlighting on drapery and (together with 'silvering' executed in powdered tin leaf) on the Barber Institute's *S. Jerome* mentioned above. Inspection with a hand-lens of the surface of the two pictures by Mantegna in the National Gallery, the large *Altarpiece* on canvas (No.274) and the same artist's version of *The Agony in the Garden* (No.1417) strongly suggests that Mantegna also sometimes used the same type of powder gold.

Analyses of the medium by gas-chromatography of two samples of paint, blue from the sky and white from a floor tile, were made by Raymond White. For both, the ratio of fatty acids present indicated egg medium. The medium of some samples of the Bellini *The Agony in the Garden* (No.726) (2) and of the Barber Institute's *S. Jerome* had previously been identified as egg by J. S. Mills and R. White using the same gas-chromatographic technique, but a similar analysis of blue underpaint from a later work by Bellini mentioned above, *The Madonna of the Meadow* (No.599) identified the medium as egg but with a suspicion of added drying oil. It must be emphasized that particularly with pictures painted in the 15th century when oil and egg tempera media were both current and the picture was built up (as was the Bellini under discussion) in thin flat layers whichever medium was used, it is often impossible to guess from casual inspection of the picture itself or even from samples or sections under the microscope, what type of medium was employed.

In the examination of the newly-revealed cloud shapes around Christ's legs (Plate 1, p.29) sampling was done of some tiny specks of bright red and blue paint which are deduced, as Allan Braham explains on p.11, to be the last remains of the red and blue seraphim and cherubim, deliberately scraped off the picture at some time in its past and the damage then overpainted with a continuation of the tiled floor. The blue paint was almost identical with the paint of the sky, except that the blue paint layer had a rather higher proportion of natural ultramarine particles and, whereas the sky is underpainted with lead white the blue paint suspected to be of the cherub had the black underdrawing characteristic of the picture as a whole between it and the gesso ground. The cherub is therefore likely to have been a darker and more intense blue than is the sky. The red paint, presumed to have been part of a corresponding red seraph, was vermilion like the samples from the Blood and from the angel's red slippers. Additionally, a minute fleck of gilding near the site of the two samples mentioned above, proved to be powdered gold like that already described. All evidence pointed to the paint of what is conjectured to be the remains of the scraped-off cherubim and seraphim being an original part of the composition.

References

1. *National Gallery Technical Bulletin*, 1, September 1977, p.13.
2. Ibid., p.58.

Plate 6 Titian, *Bacchus and Ariadne* (No.35).

Photomicrographs of paint cross-sections, photographed by reflected light at a magnification of 250×, magnification on the printed page quoted beneath photomicrograph.

(a) Scarlet of Ariadne's scarf, left shoulder.

1. Gesso ground (trace).
2. Azurite + lead white; presumed to be blue paint of sea.
3. Lead white + crimson-coloured lake pigment, presumed pale flesh tone.
4. Deeper pink layer of similar composition.
5. Paler pink with addition of a few blue pigment particles, possibly cool highlight on flesh.
6. Finely-ground, close-packed vermilion.
7. Final thin layer of large, deep red vermilion particles.

The scarf at this point seems to have been painted over fully-modelled flesh, which is painted on top of the blue of the sea.

(b) Crimson from edge of Bacchus's cloak.

(Gesso ground missing from sample)
1. Lead white underpaint of cloak.
2. Very thick translucent glaze of crimson-coloured lake pigment.
3. Lead white layer, possibly underpaint for layer 4.
4. Azurite + lead white, corresponding to blue of distant landscape.

In this sample the blue paint of the sky goes just over the edge of Bacchus's crimson cloak, indicating that the latter was laid at an early stage before the sky was painted (cf. (a) above).

(c) Dark blue drapery of Bacchante with cymbals.

1. Gesso ground (trace).
2. Yellow ochre underpaint or undermodelling.
3. One or two grains of carbon black (intermediate drawing?).
4. Crimson-coloured lake pigment in large granules.
5. Lead white + scattered small ultramarine particles.
6. Thin layer of dark blue, high-quality natural ultramarine.
7. Brighter blue; ultramarine + lead white.
8. Final glaze of ultramarine.

It appears from this section and from inspection of the area on the picture, that the drapery was initially deep pink and the artist then repainted it in blue.

(d) Mauve drapery of Bacchante with tambourine.

(Gesso ground missing from sample.)
1. Yellow ochre (trace) underpaint or undermodelling.
2. Lead white underpaint.
3. Very pale pink; lead white + crimson-coloured lake pigment.
4. Lead white with scattered particles of crimson-coloured lake pigment and ultramarine.

(e) Bright green foliage just above and to left of Bacchus's left leg.

1. Gesso ground, yellow-brown from excess glue.
2. Double layer of yellow ochre + lead white, which seems to be a *pentimento* of part of Bacchus's chariot.
3. Green earth + lead white; underpainting for foliage or landscape.
4. Azurite + lead white, presumably blue of distant landscape.
5. Malachite + lead white.
6. Slightly-browned 'copper resinate' type final green glaze.

Although the green glaze has browned with age and exposure, the area has maintained its intense green colour because of the malachite underpaint (cf. (f) below).

(f) Dark brown feathery foliage of trees right.

(Gesso ground missing from sample.)
1. Lead white underpaint, faintly pink-tinged with crimson-coloured lake pigment.
2. Ultramarine + lead white.
3. Green glaze of 'copper resinate' type.
4. Lead white layer, presumably to obliterate layers 2 and 3.
5. Ultramarine + lead white, similar to layer 2 above, but a higher proportion of blue pigment.
6. Very dark brown 'copper resinate' type glaze in which a few unchanged green particles of verdigris are still visible under the microscope.

Layers 5 and 6 are virtually a repeat of layers 2 and 3, so that it looks as if the artist was dissatisfied with his first attempt at painting sky and foliage, covered it over and began afresh. Layer 3, protected from light and atmosphere, has retained its green colour, whereas layer 6 is now almost completely brown.

(g) Orange drapery of Bacchante with cymbals, lightest area.

Crushed sample showing crystalline particles of orpiment and realgar pigments; photographed dry at 250× magnification.

(h) Sandy shore beneath Ariadne's feet; sample taken before cleaning.

1. Gesso ground (trace).
2. Lead white underpaint.
3. Granular grey layer; lead white + scattered small blue and black pigment particles.
4. Thick discoloured varnish.

Before the picture was cleaned the area looked yellow-brown instead of grey.

Plate 7 Giovanni Bellini, *The Blood of the Redeemer* (No.1233).

(a) Less-brown green of landscape, left of Christ's right arm; sample taken after cleaning.

Top surface of sample photographed by reflected light at 110× magnification, showing 'globular' green copper carbonate pigment particles in a brown matrix of medium.

(b) Partly-browned green of landscape to right of crucifix.

Cross-section photographed by reflected light at 110× magnification.
1. Gesso ground.
2. Line of brown glue priming on the gesso.
3. Lead white underpainting.
4. Brown matrix containing green globules of copper carbonate pigment.

Plate 8 Giovanni di Paolo, *SS. Fabian and Sebastian* (No.3402).

Photomicrographs of paint cross-sections, photographed by reflected light at 110× magnification.

(a) S. Fabian's red robe, area of highlight where glaze is in good condition.

1. Gesso ground.
2. Orange-red bole.
3. Silver leaf.
4. Lead white (to give highlights), in egg tempera medium.
5. Red glaze (lac lake in egg tempera medium).

(b) Green lining of S. Fabian's cope, shadowed outer edge.

1. Gesso ground.
2. Thick black undermodelling (charcoal).
3. Thin layer of orange-red bole.
4. Thick light green layer: lead-tin yellow mixed with spherulites of malachite.
5. Darker green layer: malachite spherulites in browned medium.
6. Old discoloured varnish.

Plate 6
Titian,
Bacchus and Ariadne,
No. 35.
Full caption on facing page.

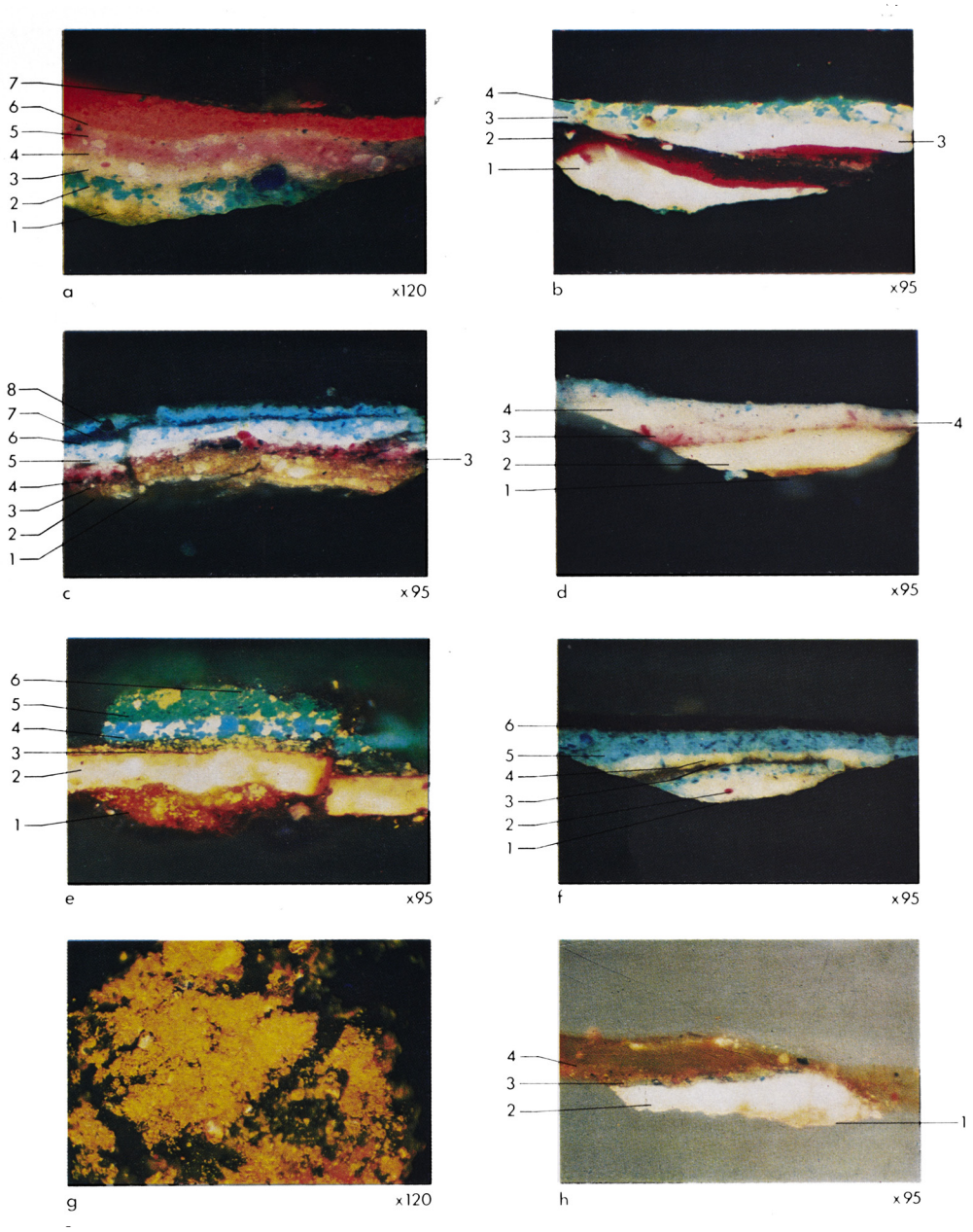


Plate 7
Giovanni Bellini,
The Blood of the Redeemer,
No. 1233.
Full caption on facing page.

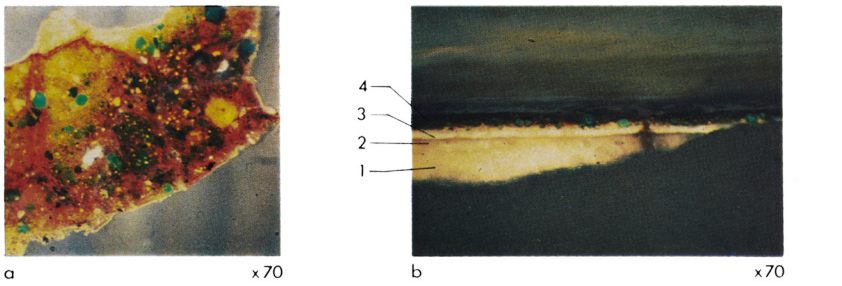


Plate 8
Giovanni di Paolo,
SS. Fabian and Sebastian,
No.3402.
Full caption on facing page.