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# Gerard David's 'The Virgin and Child with Saints and a Donor'

Martin Wyld, Ashok Roy and Alistair Smith

## Problems encountered during cleaning

Martin Wyld

The early history of No.1432 (Plate 8, p.60 and Fig.2) cannot be proved, but there is considerable evidence to suggest that it was painted for the altar of S. Catherine in the chapel of S. Anthony in S. Donatian's in Bruges [1]. The donor, who kneels at the left, is thought to be Richardus de Capella (Richard de Visch de la Chapelle) who became a cantor of S. Donatian's in 1463. He died in 1511, having obtained leave to restore the chapel of S. Anthony in 1500. The arms on the collar of the dog (Fig.1) correspond with those of de Visch. The staff, which lies on the tessellated pavement near the donor, corresponds closely with the description of a cantor's staff in inventories of S. Donatian's. The style of No.1432 is very close to that of the documented altarpiece of 1509 at Rouen.

No.1432 is stated to have remained on the altar of S. Catherine until 1793, later appearing in two sales in Paris. The first of these was in 1877, and the second, at which it was bought by Mrs Lyne Stephens, in 1881. Mrs Lyne Stephens bequeathed the picture to the National Gallery in 1895.

We are fortunate in knowing something of public reaction to the picture at the time of the first Paris sale in 1877, and something of its then recent history. It appears from 'The Chronicle' of L'Hôtel Drouôt, the Paris auction rooms, that the picture had been sent to 'M. Etienne le Roy [. . .] the eminent commissaire-expert of the royal museums of Belgium, whose depth of knowledge and talent are universally respected. M. le Roy took good care not to restore this admirably preserved painting; he did absolutely nothing except partly remove dirt produced by smoke from wax candles'. After the picture had been sold, catalogued as painted by Hugo van der Goes, on 18 January 1877, controversies arose on two separate points. The first was about the attribution, and does not concern us here, though the sale catalogue states that the picture 'bore the monogram of the master', which seems peculiar. Certainly there is no sign of a false monogram as far as can be seen in Fig.7. The second controversy concerned the condition and the effects of the recent cleaning. M. Alfred Michiels, writing in *Le Constitutionnel* on 19 January in an article entitled 'A Painting by Gerard David' blamed a M. Féral for the state of the picture: 'The expert, unhappily, has smeared it, one could better say tarred it, with a thick coarse varnish which almost prevents one from seeing it. It is necessary to take up all sorts of positions, now to perceive the whole, now to discern the details.

Without the unfortunate varnish many people would have been better able to appreciate its merits. Now, the experts ought to make it a point of honour, firstly to enquire about the provenance of paintings, secondly, not to treat delicate and precious works in a way that a coach builder would not dare to treat even a ramshackle old cart.' M. Gonse, in another magazine, wrote that 'some parts are very well preserved, with all their primitive éclat; others have almost disappeared beneath a quite recent restoration'.

M. Féral appears in the catalogue of the second sale in 1881 as one of the 'experts' employed by L'Hôtel Drouôt. 'The Chronicle' of L'Hôtel Drouôt comments on the above remarks, 'This is hard on the unfortunate experts; do they really merit such terrible abuse?', and then goes on to deny that M. Féral had touched the picture at all, maintaining that M. le Roy alone had been concerned in the recent restoration. 'The Chronicle' further quotes M. Tesse, who had written a long letter to the magazine *L'Art* on 22 January: 'The picture is however in perfect condition. Only, by a nicety perhaps a little exaggerated, there has been left an old varnish which gives the picture a certain irregularity of aspect, which a more audacious, and above all more dangerous, cleaning would have made disappear, to the prejudice of the work.'

These conflicting accounts by people who all presumably saw the picture in the same condition and circumstances are reminiscent of much correspondence which has appeared in English journals in the last thirty years or so. There is a basic confusion, tediously familiar to restorers today, between the opinions of Michiels and Gonse, who thought that the appearance of the picture after treatment by 'the expert' was due to something applied by him, and that of Tesse. Tesse thought that 'there had been left an old varnish' which would seem more plausible than Gonse's view that parts of the picture 'had almost disappeared beneath a quite recent restoration'. We do not know if any of these commentators had seen the picture before the cleaning. Behind the conflicting opinions seems to be an assumption that treatment by 'an expert' was as likely to mean deliberately obscuring a picture with a brown coating as it was to mean uncovering the original paint by removing something from the surface. No doubt the methods employed by 'the experts' of the time justified the uncertainty as to whether a picture was likely to be more or less visible after treatment. The same uncertainty persists today. Although modern conservation is primarily concerned with preserving and uncovering, there is a widely held view that restorers still set out to make pictures fit in with their own notions of the style of the artist. It is this which has led to much of the controversy



**Figure 1**  
The arms of  
Richardus de  
Capella (Richard  
de Visch de la  
Chapelle) on the  
dog's collar.

surrounding the cleaning of pictures. The critics of cleaning think that the restorer's taste has decided the appearance of a picture whereas in reality it is the picture itself, free of dirt, yellow varnish and old re-touchings which they are seeing, and which they may not like.

Fig.7 shows No.1432 at the time of the second Paris sale of 1881. The quality of the photograph, and the deterioration which may have taken place in the hundred years since it was taken, make it difficult to assess which of the various contemporary opinions it supports. It is not impossible that the picture's appearance had changed since 1877 due to the rapid discolouration of a thick surface coating or even to its having been restored again since the first sale four years earlier. There are signs of a marked craquelure, not present in the earliest National Gallery photograph of No.1432 (Fig.2), in the foliage behind S. Barbara and the Magdalen, and, to a lesser extent, above the donor's head.

The first entry in the National Gallery's Manuscript Catalogue after the arrival of Gerard David's altarpiece in 1895 reads, 'Varnish darkened and dirty, but in good condition underneath'. After this is written,

'The varnish was removed all but a thin pellicle and the picture re-varnished with mastic'. No more treatment has been necessary since then but for minor repairs to a join in the panel. We shall never know whether 'the expert' of 1877 left the picture more or less visible than before, but we can be certain that some varnish at least was removed in 1895. Of the years between the death of Richardus de Capella and the first Paris sale we have no definite knowledge of any cleaning or restoration which may have been done. In the light of the information gained during the cleaning of David's altarpiece, and assuming that M. le Roy's work on the picture was accurately reported ('he did absolutely nothing except partly remove dirt produced by smoke from wax candles') we can assume that at least one restoration had taken place before 1877.

#### **Examination before cleaning**

The Trustees of the National Gallery approved the cleaning of *The Virgin and Child with Saints and a Donor* at their meeting in November 1977, having seen the picture, on which two small cleaning tests had been

made, in conjunction with the 'conservation dossier' and a condition report. All the conventional tools had been employed before the report was written — X-radiography, infra-red photography, examination by microscope and so on — and the main conclusions reached were as follows:

1. The oak panel, made up of four planks butt-jointed horizontally, was in good condition. All four edges were original, there being an unpainted border about 1 cm wide all round.
2. There were no major paint losses. Wide cracks, apparently formed during the drying of the paint, could be seen in many places, most noticeably near the Magdalen's head.
3. Apart from the cracking of the paint, three other parts of the paint surface attracted particular attention. First, the Magdalen's brown cloak, which, though it appeared to be in good condition, was speckled with dark re-touchings. Secondly, the vine leaves on the wall behind the donor's head were almost black, as if a copper 'resinate' layer had darkened. Thirdly, the central part of the brocade suspended behind the Virgin's head was almost uniformly greyish-black, though a raised pattern could be seen, and, under intense light, a dark red colour.
4. The varnish was considerably discoloured and had many brown spots in it.

As usual at this stage of conservation work, the extent of old restoration on the picture could not be judged exactly. Re-touchings could be seen crudely covering the wide cracks in places, for example on S. Barbara's cheek (Fig.3). A few small losses in the lower part of the Virgin's robe were also covered by re-touchings many times larger than necessary, the size of the losses being known from the X-radiographs (Fig.5), and that of the re-touchings from the infra-red photograph (Fig.6).

### Cleaning and scientific examination

It was obvious that Gerard David's altarpiece was going to present the sort of problems which can be solved only by scientific examination. Usually, the questions which arise during the cleaning of a painting, or which arise even before cleaning starts, as in this case, can be asked more precisely after the removal of extraneous and obscuring surface coatings.

Experience has also shown that cross-section examination and paint-medium analysis are more easily carried out if they are not confused by surface dirt and discoloured soft-resin varnishes. The problems are more likely to be solved, particularly those to do with cross-section and paint-layers, if great care is taken in locating the area from which the sample is taken, so that all the layers present are included and the number of samples taken is as limited as possible.

No great difficulty was either anticipated or encountered during the cleaning of the greater part of the paint surface of No.1432, but the three ambiguous areas mentioned above needed to be investigated. Plates 5 and 6 on p.59 show the picture during cleaning. Plate 5 was taken some time after the

scientific examination had been completed, i.e. after the status of the dubious paint layers had been established.

The samples of paint for the cross-sections had been removed from the picture at an earlier stage, when a few small areas, each about 20 cms square, had been cleaned.

The least complex of the problems concerned the Magdalen's robe. Small cleaning tests made on it removed not only the varnish but also a highly soluble thin red pigmented layer. Examination by microscope at 40× magnification showed that this red layer filled all the cracks in the thicker paint underneath and also seemed to go over the re-touchings which covered a few small areas of paint loss along a join in the panel. It is most unlikely that an original paint layer, however thin, will remain soluble after nearly five hundred years, or indeed still be present on a picture which has been cleaned at least twice.

The combination of this, the scientific evidence and the way in which the thin red layer covered cracks and re-touchings were conclusive, and it was removed. It became obvious later (Plate 5, p.59) that the original glaze was worn, which would, in the past, have been sufficient reason for re-glazing the whole area of the cloak. The red glaze did succeed in hiding the wearing, though it also made the colour much hotter and browner.

The black vine leaves behind the donor's head (Plate 6, p.59) were a more complicated problem, because they bore some resemblance to a discoloured copper 'resinate' layer. Microscopic examination was not conclusive; the black layer seemed to overlap the back of the head rather crudely, and also to cover cracks in the paint, but copper 'resinate' does not always behave like other paint layers. Apart from its tendency to turn from green to black or dark brown, it also seems to be more flexible, and will not necessarily crack with the layers underneath it. However, in this instance, the cross-section analysis was conclusive; it was not a copper 'resinate' layer at all, although underneath it there did exist a thin, discoloured glaze.

The removal of varnish from the brocade left the central part of it looking, if anything, blacker than before. In places the pattern, so visible on the X-radiograph (Fig.5), could be seen to be greyish-blue and the background to be very deep red. Unlike the Magdalen's robe or the vine leaves, there was no suspicion of re-paint on the brocade. The texture of the paint and the various craquelure patterns were identical with those of adjoining areas and with other thickly painted parts of the picture. Once again the cross-sections provided essential information, the main conclusion being that the original paint had undergone an irreversible change.

A full description of the work on the cross-sections taken from the questionable parts of the picture and from elsewhere will be found in the next part of this article. Suffice it to say here that the cross-section analysis is an indispensable part of cleaning pictures such as Gerard David's altarpiece.





**Figure 2 (Above)**  
The picture before cleaning and restoration.



**Figure 3 (Right)**  
Full-size detail before cleaning of S. Barbara. The uneven and spotted appearance of the face is due to discoloured re-touchings. Photograph taken 1977.

**Figure 4 (Far right)**  
S. Barbara's face, photographed in 1932. The re-touchings are not so darkened as in Fig. 3.



**Figure 5**  
X-radiograph of the brocade behind the Virgin's head. The pattern, and the folds in the fabric, show much more clearly than on the picture itself.





**Figure 6** Infra-red photograph of the lower part of the Virgin's robe before cleaning. The dark patches, and the dark line along the horizontal join in the panel, are old re-touchings. A drawing-in line can be seen in a fold in the red drapery on the left.

## Restoration

The old varnish and re-touchings, including the black re-paint on the vine leaves, were easily soluble in normal cleaning solvents (one part of propan-2-ol, one part of 2-ethoxyethanol, six parts of white spirit). The solubility of the paint over the vine leaves suggested that it was not of great age, and the same could be surmised about the remainder of the re-touchings. Those on S. Barbara's face (Fig.3, taken in 1977) had discoloured considerably since a previous photograph was taken at the National Gallery in 1932 (Fig.4).

The restoration necessary was minimal; the prominence of some of the wide cracks exposing the buff-coloured ground near the heads (particularly the Magdalen's) and on the right-hand red pillar was reduced, and the repaired join in the panel (the end of which is visible in Plate 5 on p.59) and the few small lacunae were touched out. The medium employed for re-touching was Polaroid B72 and the varnish, a thin layer of which was sprayed on the picture before and after re-touching, was MS2A.

The opinions of 1887 quoted at the beginning of this article have some relevance in view of the change in the appearance of the picture during cleaning. Assuming that the National Gallery Manuscript Catalogue accurately describes the work carried out on No.1432 at the time of its acquisition in 1895 ('the varnish was removed all but a thin pellicle, and the picture re-varnished with mastic') and that no re-touching was done then, it is clear that some parts of the picture must have been very dark and obscured after M. le Roy's work in 1877. Whether or not M. le Roy had himself re-touched the picture, as well as partly removing 'dirt from wax candles', it is certain that the brocade behind the Virgin's head, the lower part of her robe and the vine leaves behind the donor's head must all have been black in appearance. The blackness was probably accentuated by the recent removal of dirt. This might account for M. Michiel's complaint that 'It is necessary to take up all sorts of positions, now to perceive the whole, now to discern the details'. Certainly the details of the brocade and of the over-painted vine leaves could only have been discernible from very close range.

If 'The Chronicle' of L'Hôtel Drouôt is correct in its description of what had been done to the altarpiece before the sale, another, earlier restorer must have painted over the vine leaves, and the Magdalen's cloak, before 1877. It is interesting that all the writers quoted notice the unevenness of the varnish, and all disapproved of the effect of it, even M. Tesse, though he seems to have thought that the picture would have been endangered by any further cleaning. It is to be hoped that the recent cleaning has not realized M. Tesse's fears.

## Reference

1. DAVIES, M., *National Gallery Catalogues: Early Netherlandish School*, 3rd ed. (London 1967).

## Acknowledgement

I would like to thank Miss Elspeth Hector for her help with the French texts.

**Plate 5** Gerard David, *The Virgin and Child with Saints and a Donor* (No.1432). S. Barbara and the Magdalen, detail during cleaning. The original glaze, slightly worn, can be seen on the lower part of the Magdalen's cloak.

**Plate 6** Gerard David, *The Virgin and Child with Saints and a Donor* (No.1432). The donor, with a small cleaning test on his surplice, but before the removal of the re-paint over the vine leaves.

**Plate 7** Gerard David, *The Virgin and Child with Saints and a Donor* (No.1432).

Photomicrographs of paint cross-sections (a–d), photographed by reflected light at 220× magnification; magnification on the printed page shown beneath each photomicrograph.

(a) Dark brown foliage of the vine leaves behind the donor's head, before cleaning.

(Chalk ground and lead white underpaint missing from sample.)

1. Azurite (trace).
2. Lead-tin yellow + azurite; the yellow pigment predominates.
3. Azurite + lead-tin yellow (trace); opaque green paint of foliage.
4. Browned original copper 'resinate' type glaze.
5. Dark brown overpaint containing a brown ochre mixed with charcoal; removed during cleaning.

(b) Paint of the Magdalen's cloak, before cleaning.

1. Chalk ground.
2. Bone black undermodelling.
3. Very pale blue; lead white + azurite (trace).
4. Pale mauve; lead white + azurite + red lake.
5. Trace of original red lake glaze.
6. Reddish-brown overpaint containing finely-ground ochre; removed during cleaning.

(c) Dark purple of central section of brocade hanging.

1. Chalk ground (trace).
2. Thin layer of lead white underpaint.
3. Mauve of underlying brocade design; red lake + azurite + lead white.
4. Purple; azurite + red lake, presumably darkened by discoloured medium.

(d) Bright yellow highlight of brocade border.

1. Chalk ground.
2. Thin lead white underpaint.
3. Two thin layers of yellowish-brown ochre.
4. Highlight; lead-tin yellow.

(e) Dark purple of central section of brocade hanging.

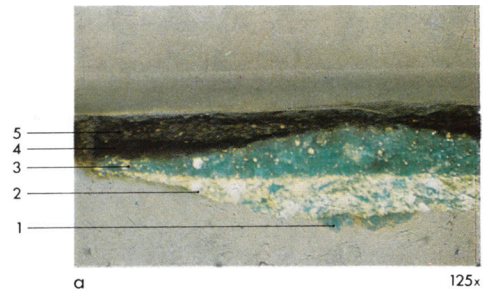
Crushed sample of layers 3 and 4 of cross-section (c), showing particles of azurite and red lake pigment embedded in a matrix of discoloured-medium. The 'black' particles are aggregates of lead white pigment which appear totally dark when viewed in transmitted light. Sample mounted in Aroclor and photographed by transmitted light at 220× magnification.

(f) Dark blue of the Virgin's robe.

Crushed sample showing deep- and pale-blue particles of genuine ultramarine from the glaze layer, and greenish-blue azurite of the underpaint, embedded in discoloured medium. Sample mounted in Aroclor and photographed by transmitted light at 220×.



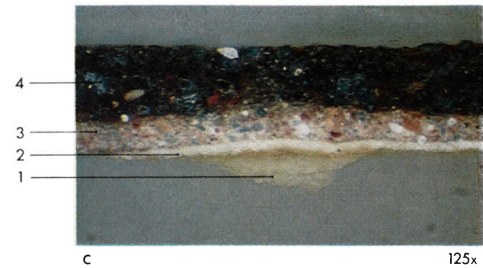
Plate 5 Full caption on facing page.



a 125x



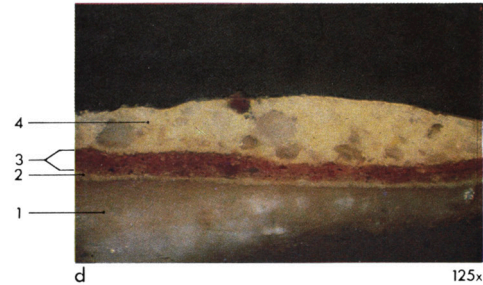
b 125x



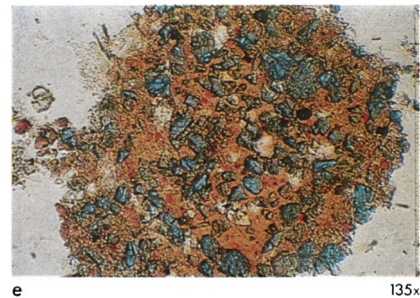
c 125x



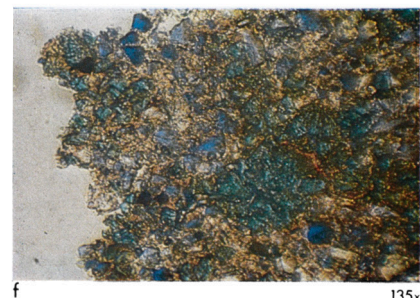
Plate 6 Full caption on facing page.



d 125x



e 135x



f 135x

Plate 7 Full caption on facing page.



Plate 8 Gerard David, *The Virgin and Child with Saints and a Donor* (No. 1432). The picture after cleaning and restoration.

## A note on materials and technique

Ashok Roy

In the previous section Martin Wyld has already mentioned preliminary investigation by the Scientific Department of areas of paint which appeared from surface examination and technical photography to present potential problems for the restorer. Of particular concern were the very dark foliage of the vine, the Magdalen's cloak and the brocade backcloth behind the Virgin's throne. In each case small samples of paint were taken from the areas of interest and mounted in cross-section for microscopical examination in order to assess the relationship of the surface paint layers to the underlying paint system. At the same time the opportunity was taken to sample several other parts of the painting, and using a variety of microscopical and analytical methods a fuller survey of the materials and technique employed by Gerard David in the creation of the altarpiece was undertaken.

### The ground

As expected for a Northern picture of this date, the oak panel carries a preparative layer of chalk, as opposed to the true gesso (calcium sulphate) of contemporary Italian works. Fortunately, one sample prepared as a thin cross-section intended for media staining tests (see below) revealed fragments of fossil shell in the ground layer, indicating a natural origin for the chalk, although the minute fossil coccoliths of which the sedimentary rock is composed cannot be resolved under the microscope except at magnifications higher than those routinely used in paint examination. Solubility and heating tests indicated the binding medium for the ground to be animal-skin glue. Thin cross-sections (8  $\mu\text{m}$  thick, cut on a glass-knife microtome [1,2]), when treated with the protein-revealing stains, acid fuchsin and amido black confirmed the presence of glue gelatin and developed a pronounced stratified staining pattern suggesting several separate applications of chalk and glue mixture to the panel.

### Paint layer structure and pigments

Of prime interest before extensive cleaning could be undertaken, was the paint structure of those areas mentioned above where the surface layer appeared to be the work of an early restorer, or had apparently undergone some significant change.

The dark brown to black foliage was initially assumed to have resulted from severe discolouration of a copper 'resinate' glaze. In cross-section, however, the uppermost paint layer proved to be an intentionally dark, semi-opaque overpaint containing charcoal black mixed with a dark brown ochre, possibly to emulate an original glaze which had already deteriorated by the time the overpaint was applied. Significantly, repeated microchemical tests failed to detect copper in the layer, although traces of a browned original glaze are visible beneath the

obscuring top layer (see Plate 7a, p.59). The structure of the underlying green foliage paint is quite complex being made up of at least three layers; firstly a layer of almost pure azurite (blue, mineral, basic copper carbonate), followed by a pale green opaque paint composed predominantly of lead-tin yellow (a manufactured mixed oxide of lead and tin) with a small admixture of azurite, and finally a deep green layer consisting of the same two pigments in reversed proportions. The colour of this last layer is very like that of a paint containing verdigris, but refractive index measurements on a small crushed sample showed the only blue pigment present to be azurite.

A cross-section of the Magdalen's cloak also clearly demonstrated the presence of overpaint. The thin top layer, composed of finely-ground reddish-brown ochre with scattered larger crystalline particles of iron oxide red (haematite), was found to penetrate cracks in the original underlying paint as well as to conceal a worn looking pinkish-mauve lake glaze (see Plate 7b, p.59). This evidence taken in conjunction with the high relative solubility of the surface paint justified its removal and restoration of the cloak to the intended 'cooler' appearance now seen on the picture.

Of more general interest is the relatively thick, black undermodelling in the shadow area of the cloak near the Magdalen's left shoulder from where the sample was taken, although the line of black pigment seen in the photomicrograph (Plate 7b) was only found in one other sample point — under the brown paint of S. Barbara's hair. Infra-red photographs show little evidence of extensive underdrawing. Based on particle morphology and their deep brown appearance by transmitted light, David's black pigment is tentatively identified as bone black, rather than a vegetable black, although insufficient material was available to detect the characteristic phosphate content of the former.

The paint structure of the central section of the brocade hanging represented a puzzling problem in that an unusual pattern in relief is apparent, especially in raking light. A clue to the way the effect has been achieved is given by the X-radiograph (see Fig.5) where the design of the pattern emerges as light areas even more strikingly. The paint in cross-section (Plate 7c, p.59) shows that the design had been laid in as a pale mauve layer comprising a red lake pigment (see below) and a small quantity of azurite mixed with lead white. The upper layer which covers the entire central strip is a fairly thick layer of azurite and red lake pigment alone, producing a rich deep purple tone. Since only the lower layer will absorb X-rays strongly, as a result of the lead white content of the paint, the clarity of the pattern on the X-radiograph is explained. Variations in the thickness of the paint of the design are responsible for the textured appearance of the surface. In order to achieve maximum depth of colour, both the azurite and red lake are present as large particles (up to 20  $\mu\text{m}$ ) in the top layer, which probably required a rather rich addition of medium for the production of a workable paint film. Discolouration of the medium with time has probably resulted in a loss of brilliance and a more greenish tone

in this part of the picture, the discoloured matrix in which the pigment particles are embedded being clearly discernible by transmitted light under the microscope in a crushed fragment of the layer (Plate 7e).

The high concentration of red lake pigment in the purple layer of the backcloth enabled sufficient material to be taken from the thick paint layer at the top edge of the panel for extraction of the lake organic dyestuff. Thin-layer chromatography of the dyestuff by J. Kirby and R. White gave a spot pattern on the chromatographic plate consistent with cochineal (the dyestuff produced by the scale insect *Dactylopius coccus* Costa, found in Mexico [3]), and closely comparable to a known specimen of cochineal run as a standard. A sample taken from the red glaze brocade design of S. Catherine's yellow dress gave a similar result. This represents a very early occurrence of a dyestuff from a New World source, although a related European scale insect origin cannot entirely be ruled out.

The brocade borders of the backcloth are also some of the more thickly painted parts of the picture. The design appears to have been worked initially in two thin layers of yellowish-brown ochre, with rich impasto highlights of lead-tin yellow (see Plate 7d, p.59). Lead-tin yellow was confirmed by laser microspectral analysis of the highlight layer in a cross-section prepared for microscopy (see Fig.8, p.49). Ochre was spectrographically confirmed as the pigment of the brown areas, whilst the blue of the design is painted over the ochre layers as a single, thick layer of coarsely-ground azurite and for the deeper tones in mixture with red lake pigment. (See Fig.7, p.47 and Fig.8, p.49.)

Cross-sections prepared from samples taken from the edge of an old re-touching, and from an apparently original region of the lower right-hand edge of the Virgin's dark blue robe, showed an azurite layer in good condition, on top of which an ultramarine glaze could be seen. (The infra-red photograph, Fig.6, shows areas of high reflectance caused by the presence of this glaze.) The ultramarine particles were clearly the genuine mineral variety consisting of large, deep blue angular fragments embedded in a dark brown translucent matrix, presumably of discoloured medium or of old varnish residues (see Plate 7f, p.59 and Note 7, p.66). No feature of the ultramarine-containing layer and its relationship to the underlying paint suggested that this was not an original glaze and, indeed, the dark paint of the re-touching contained a high concentration of charcoal black, formulated to match the darkened ultramarine paint. Genuine ultramarine from lapis lazuli must have been even more costly in Northern Europe than in Italy in the early sixteenth century and David has used the pigment very sparingly, reserving it for the Virgin's robe and then only as a glaze over azurite. This and other means of economizing on ultramarine use has been noted for earlier Flemish painting [4,5]. Its presence in the picture at all is perhaps a testament to the importance of the commission.

Overall the palette determined for the David altarpiece is a fairly simple one, and bears close

comparison with that found for David's *Lamentation at the Foot of the Cross* examined by Butler at the Art Institute of Chicago [6], although the only blue pigment used in the latter was azurite. In addition to the pigments mentioned above, lead white (basic lead carbonate) was identified mixed with azurite in the blue paint of the sky, and mixed with finely-ground vermilion (mercuric sulphide) for the flesh tones.

### The medium

Seven areas of the painting were sampled for medium analysis by gas-chromatography (carried out by R. White) — both the dark and green areas of the foliage behind the donor's head, the dark blue of the Virgin's robe, two areas of sky paint, the red marble column to the right of the throne, and the central part of the backcloth. In each case the results indicated the paint medium to be linseed oil (see p.67).

Staining tests [7] using acid fuchsin and amido black, for proteins, and Sudan black and oil red O, for lipids, were also performed on several series of thin cross-sections cut from samples taken from four parts of the composition. The results confirmed the presence of drying oil in the blue paint of the sky, and showed oil to be the medium of both layers of a sample in which a copper 'resinate' glaze of the background foliage passes over the brown paint of S. Barbara's hair [8]. A thin lead white underpaint found in many of the sections also gave a particularly intense staining reaction with Sudan black, and there is some evidence that excess oil medium originally present in this underlayer had penetrated the upper part of the chalk ground.

### Notes and references

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2. For a description of the preparation of thin cross-sections of paint samples, see KIRBY, J., 'A Spectrophotometric Method for the Identification of Lake Pigment Dyestuffs', *National Gallery Technical Bulletin*, 1 (1977), p.38.
3. An account of red lake pigments, the sources and constitution of their dyestuffs can be found in Ref.2, p.35ff.
4. COREMANS, P., GETTENS, R. S. and THISSEN, J., 'La Technique Des "Primitifs Flamands"', *Studies in Conservation*, 1, 1 (1952), p.15.
5. COREMANS, P., 'La Technique Des "Primitifs Flamands"', *Studies in Conservation*, 1, 4 (1954), p.150.
6. BUTLER, M. H., 'A Technical Investigation of the Materials and Technique used in two Flemish Paintings', *Museum Studies*, Art Institute of Chicago, 8 (1976), pp.59-71.
7. See MARTIN, E., 'Some Improvements in Techniques of Analysis of Paint Media', *Studies in Conservation*, 22, 2 (1977), pp.63-7, and references therein.
8. Two samples prepared as thin sections — flesh

paint from a point next to the Magdalen's ear-lobe, and from a grey floor tile — showed a staining pattern in the upper layers consistent with the presence of egg or the use of an egg/oil emulsion as the paint medium. This may represent an attempt by the artist to minimize the effects on the light tones of yellowing with age, a problem evident in the backcloth and Virgin's robe. Unfortunately, insufficient material was available for the more certain means of gas-chromatographic analysis to confirm the limited use of egg tempera or a mixed medium.

## The art-historical view

### Alistair Smith

It is some years since Max J. Friedländer, the *doyen* of classifiers of Early Netherlandish Painting, wrote of Gerard David,

The *Madonna with three female saints and a donor* [ . . . ] is a culminating point, perhaps even an exception, in unity of lighting, warm colouring and fully developed chiaroscuro (which is increased by the condition of the panel which has a murky varnish) [1].

Some time later, in 1928, Friedländer repeated his assessment,

It is covered with a heavy coat of varnish, however, and in consequence carries an air of melancholy chiaroscuro in excess of what the master intended [2].

His ultimate pronouncement (1949) on David's development involved a precise judgement on his colour,

A warm and sombre colour scheme and a crowded composition characterise the works of his first period, whilst those of his maturity shower greater deliberation and are cooler in colour [3].

It is clear from Friedländer's various texts that he always considered the National Gallery painting to be a mature work and, judging from this final assessment, that it was 'cool in colour'. Thus over a period of thirty years, Friedländer's opinion changed from believing the painting's colouring to be warm, to its being cool, an inexplicable circumstance. In fact, his second, transitional judgement stated the facts pretty well. The paint surface was obscured by discoloured varnish which has now been removed. The present appearance of the painting makes it clear that some commentators on David, less wary and more confused than Friedländer, erred in interpreting the darkened varnish as part of David's original execution. One might exemplify this trait by quoting Boon,

In the London *Mystic Marriage* he achieved a fully blooming colour harmony [4],

a judgement certainly not borne out by the painting's recently rediscovered emphasis on contrast (see Plate 8, p.60). Panofsky too seems to have made assumptions about David based on the effects of grimy varnish. He remarked on a:

treatment of light and shade which approximates to the Leonardesque *sfumato* [5].

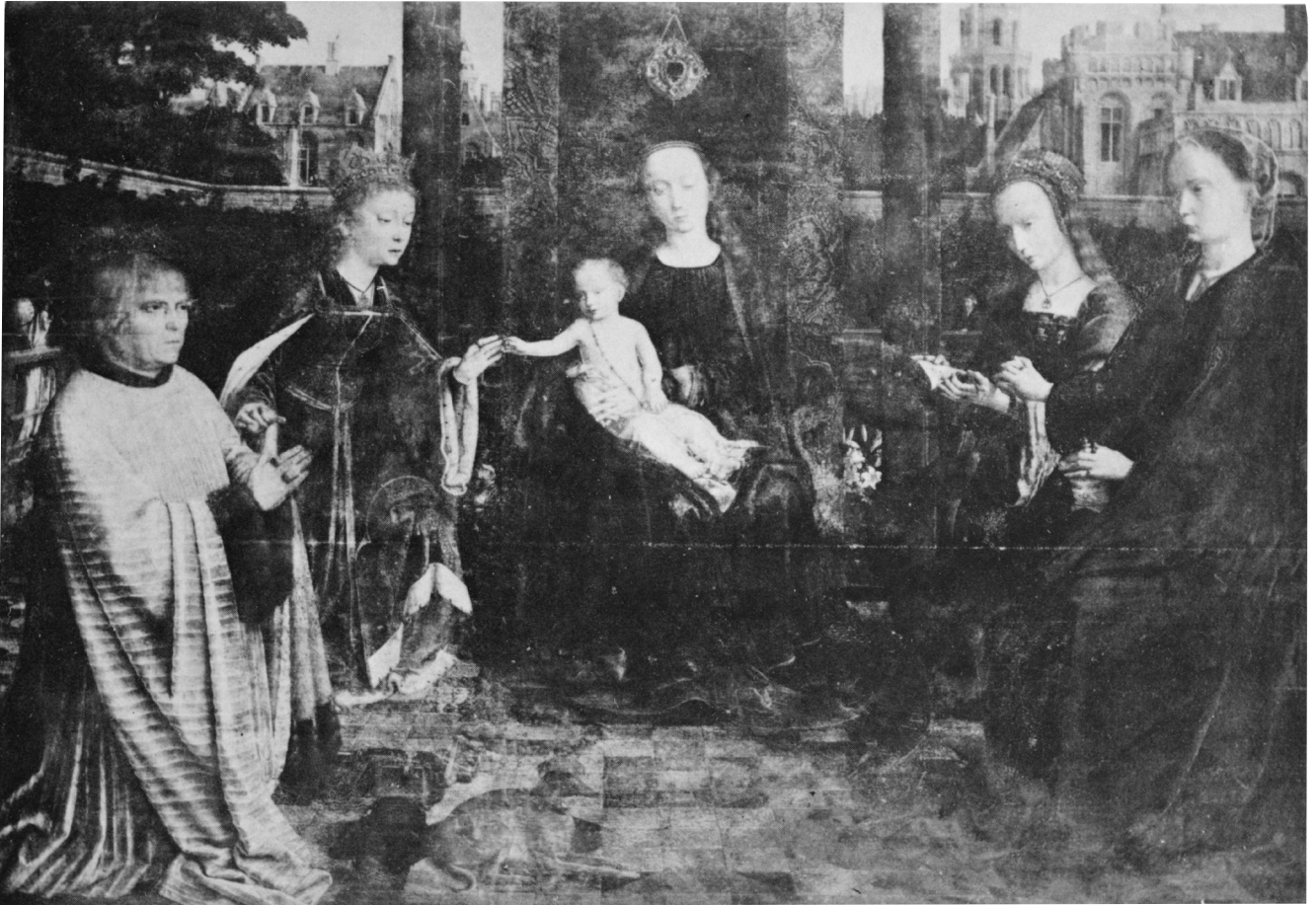
The point I wish to demonstrate is not the fallibility of art historians, or humankind in general, but rather the difficulties encountered by even first-class scholars in assessing the qualities of paintings whose condition has not been made clear by means of technical analyses.

It is now perfectly possible to quantify the effect of cleaning on the colour of a painting, for the technique recently employed in the Gallery to measure colour change [6] (by which is meant alteration of pigments over the years) can, of course, be pressed into service to measure the results of the removal of grime-laden varnish. The day is not far off when the pages of this *Bulletin* could well be studded with graphs detailing such changes. These measurements will provide an enduring reference of the state of a picture, far more accurate than can any colour photograph. It is unlikely, however, that this will significantly alter the responsibilities of the art historian, whose duty it is to describe changes in condition in words of whose precision he must despair. The 'aesthetic gain', often felt to be the result of varnish removal, will always remain intractable to measurement.

It might therefore be useful, even salutary, to list some of the comments made on David's *Betrothal* from the time of its first mention in the literature as Lot 7 in a Paris sale of 1877 [7].

The most important points of the entry concern the donor, claimed to be the 'Marquis Giustiniani, abbé', and the attribution. 'By his side lies his dog on whose collar is visible the monogram of the painter.' The 'monogram' was read as an 'H', and led to the painting's being given to Hugo van der Goes. This attribution was immediately disputed. One can, nevertheless, admit the possibility of an (erroneous) reading of the letter 'H' on the collar of the Italian greyhound when one examines a photograph (Fig. 7) taken by E. Lecadre & Co. on the occasion of the picture's being sold in 1881 [8]. The finer details of the picture were then obscured, the painting being fairly accurately described (see Martin Wyld's comments above) as having been 'smeared' or 'tarred'. Peculiarly, even Michiels, who believed the painting to be by Gerard David, was convinced of the existence of an 'H' on the greyhound's collar. Curiously too, he thought that Saint Barbara was 'Ste. Amélie' [9].

It was W. H. J. Weale who discovered in the Bruges archive documents (unfortunately never published) which established the painting as being, beyond reasonable doubt, that made for the altar of S. Catherine in the chapel of S. Anthony in the church of S. Donatian (Bruges) at the command of Richard de Visch de la Chapelle. The so-called 'H' was perceived by him, grime or no grime, to be two fish which comprise part of the de Visch arms [10]. Weale managed to read much of the detail of the painting but it is significant that even the removal of varnish in 1895 (see Wyld above) did not allow this hawk-eyed scholar to perceive the inscription on the Magdalen's vase [M(?)MA]. The recent cleaning allows one to say that he misidentified the creature at one of the





windows in the background (centre left). Weale saw 'a squirrel eating a nut'. It is a cat washing.

Despite the removal of varnish in 1895, which surely should have revealed to all the basically good state of the picture (as recorded in Hanfstaengl's photograph, Fig.8), von Bodenhausen, publishing a mere ten years later, found the picture to be 'schlecht erhalten' [11]. Mind you, he was labouring under viewing difficulties — 'The appreciation of its artistic quality is possible only with difficulty, on account of the thick varnish which makes the necessary protective glass act almost as a mirror.' Statements like von Bodenhausen's must make one rejoice all the more that what is possibly David's masterpiece can now be seen without obscuring glass, varnish and falsifying retouchings.

The above brief anthology of art-historical opinion makes it all the more dangerous to attempt to describe in words the qualities of David's paint surface as it is now revealed. What is clear is that fine detailing was one of the aims of execution. I think one can also say that the colour is clear and bright and the general tone high. David had at this moment in his career a habit of setting strong hues next to each other. The Virgin's blue robe (less strong now than originally) is resplendent next to the red of the cloth covering her seat. S. Catherine's dress provides the ultimate in contrasts, in colour and handling, with the white of the donor's surplice. I find the effect rather close to that remarked by Crowe and Cavalcaselle when they examined paintings by David in 1872,

It would be difficult to find a painter of the Flemish school whose panels are more remarkable for gloss and polish, or one who spends more time in blending colours to a grainless and spotless surface [ . . . ]. In the sheen of vestments, or in gaudy juxtapositions which jar upon the eye, we miss the delicate fibre of the true colourist; and still there is brilliance and lustre to attract and please us. Landscape of variegated tints is often in singular contrast with marble pallor of flesh. [12]

No mention of colour harmony, or Leonardesque *sfumato*, but perhaps some of the pictures seen by Crowe and Cavalcaselle were less obscured by grimy varnish in 1872 than they were in the days of Friedländer, Boon and Panofsky.

## Notes and references

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2. FRIEDLÄNDER, M. J., *Die Altniederländische Malerei*, Vol.VI [*Memling und Gerard David*] (Berlin 1928), p.94.
3. Introduction to exhibition catalogue, *Gerard David*, Musée Communal de Bruges, June-August 1949.
4. BOON, K. G., *Gerard David* (Amsterdam [n.d., but 1942-48?]), p.33.
5. PANOFSKY, E., *Early Netherlandish Painting*, Vol.I (Cambridge 1953), p.352.
6. BULLOCK, L., 'Reflectance Spectrophotometry for Measurement of Colour Change', *National Gallery Technical Bulletin*, 2 (1978), p.49ff.
7. Sale Edward O(utran). Hôtel Drouôt, Paris, 18 January 1877.
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9. Alfred Michiels in *Le Constitutionnel*, Paris, 19 janvier 1877.
10. WEALE, W. H. J., *Gerard David* (London 1895), p.15.
11. BODENHAUSEN, E. F. von, *Gerard David und seine Schule* (München 1905), p.159.
12. CROWE, J. A., and CAVALCASELLE, G. B., *The Early Flemish Painters*, 2nd ed. (London 1872), p.301.

**Figure 7** (Left, above) Gerard David, *The Virgin and Child with Saints and a Donor*. Photograph of 1881 by E. Lecadre & Co.

**Figure 8** (Left, below) Gerard David, *The Virgin and Child with Saints and a Donor*. Photograph [gum print?] made after acquisition by the Gallery. Taken by Franz Hanfstaengl.