

Surface coatings and decorative scheme

E.1.1822 Outer Coffin box

General comments

The outer coffin is the most damaged within the Nespawershefyt nested coffin set. The coffin has considerable obscuring grey surface dirt. The structure is stable but has significant historic damage.

The box has a different colour scheme on the inside and outside – the exterior is predominantly yellow and white-based while the interior is more red-coloured and vividly decorated.

The exterior of the outer coffin was covered with two white preparation layers. Red earth was used to draw in the figures and hieroglyphs. There is a yellow layer found throughout the yellow areas: it appears to be yellow earth with orpiment (see notes on the yellow passages). The general palette is restricted to blues (Egyptian blue), greens (Egyptian green) and red (red earth). There is occasional use of blacks used to paint in final details before varnishing, but less than on the inner coffin or the mummy board. A thick yellow organic coating (probably a natural resin varnish) was applied selectively but messily to the figures and to the text, leaving the white preparation layer exposed in the background.

On the proper left shoulder of the coffin is what appears to be a repair in the paste layer. This overlies the original decorative scheme. The later paste layer has been painted over to hide the repair. This repair appears to be broadly contemporary with the object and may have repaired over a crack that opened up on the coffin after decoration, but before use.

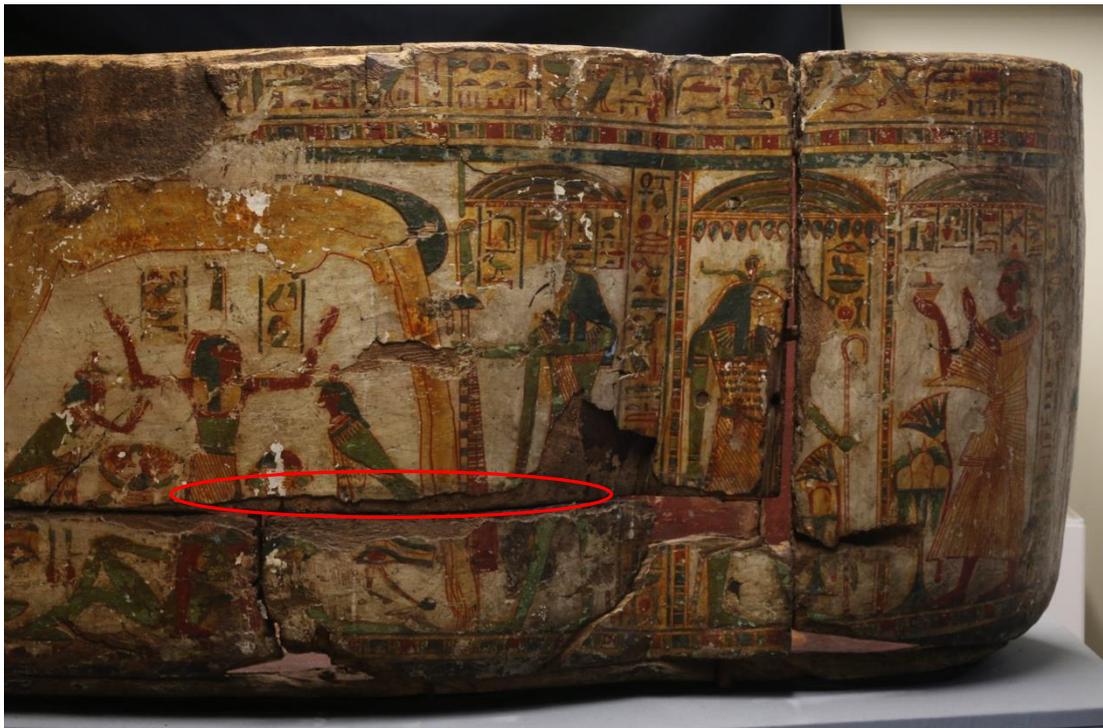


Figure 1: Detail of Nespawershefyt Outer Coffin exterior, repair on proper left shoulder

Notes on the yellow passages

The yellow passages of Nespawershefyt's outer coffin box (interior and exterior) are difficult to understand, especially as different pieces of analysis produce contradictory evidence. The surface of the outer coffin box has a white background with areas of yellow, varnished decoration (see Figure 2). The white areas are created by leaving the preparation layer undecorated and unvarnished.

The yellow areas contain orpiment, but are also varnished in a natural resin varnish which has degraded to a yellow colour over time. The varnish is applied messily over hieroglyphs and painted figures, but the yellow colour follows this precisely; however, the cross sections show that these are two separate applications of yellow, on either side of the paint application. The yellow layer appears to lie underneath the red underdrawing layer, which is quite confusing considering how selectively applied the yellow is.

This phenomenon is the same on the lid and the box of the outer coffin, however on the box, the orpiment appears to be mixed with yellow earth (occasionally) to form a thicker, more paint-like layer. Both lid and box differ from the inner coffin (lid and box) and mummy boards: these objects are covered with orpiment and varnish, but have been clearly established that the orpiment is applied as a wash layer immediately after preparation, and the varnish (while degraded and yellowed) does not contain any pigmentation (orpiment or otherwise).

Determining the location of the orpiment in the layer structure on the outer coffin box has been difficult. It has been complicated by the poor quality of the cross sections on this object (the varnish layer has broken apart in almost all instances). At the present time, I can only present the data as we were able to interpret it, but I cannot make sense of it. Further research is required to properly understand the application of yellow to this object, and to compare it to the other objects in the Nespawershefyt nested coffin set.

The 'yellow' section for the interior and exterior of the coffin in this report will attempt to present the results, but will refrain from any significant conclusions as to paint application or materials.



Figure 2: Nespawershefyt, E.1.1822, exterior of outer coffin box, detail of yellow painted figures

Results:**Exterior:****Preparation layer**

The outside of the outer coffin box appears to be covered in a double white preparation layer. Cross sections OB6 and OB21 clearly show this double layer structure with no discernible intermediary dirt layer. Under visible light, the two layers look very similar, however they can be distinguished in ultraviolet light, as the two preparation layers fluoresce differently – one fluoresces blue and the other does not, remaining grey.

PLM of two ground samples (OB17 and 18) – one from a loss (OB18, in a yellow area of text) and the other from the background (OB17). Both appear to contain calcite in its sparite form (particles are medium sized with smooth rhombic habit, some striated, which twinkle on rotation in plane polarised light and strongly birefringent in crossed polars with no evidence of microfossils) but the sample taken from the background (OB17) appears to have some micritic calcite (bacterioid, fine particles in large aggregates with similar optical characteristics to sparite. No microfossils.)

The lower layer varies in thickness from less than 1mm to c.5mm near to shoulders. The upper layer is thinner, and has delaminated and flaked off in places. Egyptian Blue particles have been noticed in both layers. VIL images suggest that there are low levels of disturbed Egyptian blue across the object.

Yellow

XRF analysis of yellow areas on the exterior outer box suggest that there is orpiment present across the outside of the coffin on areas of yellow skin, yellow objects, the background around hieroglyphics and linear elements between the scenes on the side panels, but is not present on the white background.

A cross section from a solidly coloured red dress (OB28, see Figure 3) shows a bright yellow paint layer lying on top of the white preparation layer below the red paint of the dress. The yellow is much more opaque and brightly coloured than the yellow wash seen in OB21 and even on other cross sections from the same set of nested coffins. In those other objects (inner coffin lid and box, mummy board) the thin, glittery wash was composed of orpiment, whereas here on the outer coffin box, this layer has the appearance of a more thick, buttery and opaque paint layer. SEM/EDX of cross section OB28 indicated this layer contained predominantly yellow earth as well as orpiment (see EDX results, end of report). This result is challenged by the XRF analysis, which finds the peaks for iron for the yellow areas to be very similar in size to areas of white background paint (ARTAX 05) or even the wood (ARTAX 07) – suggesting that the iron in the yellow areas is not coming from any yellow passages, or is at background levels.¹

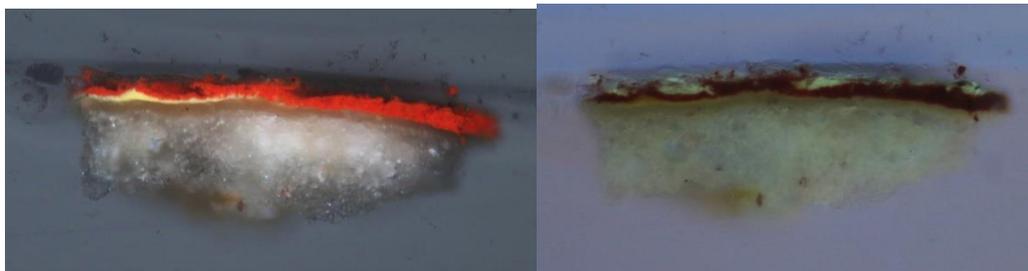


Figure 3: E.1.1822 Cross section OB28 (exterior), 20x, visible light (left), ultraviolet light (right).

¹ XRF of red areas, known to be red earth, had much higher levels of iron than either the yellow, the white or the wood areas.

A cross section taken from the drawn red fold in some yellow robes (OB21) indicated a thin yellow paint wash was painted first, followed by the red folds in the robe. This thin yellow paint layer is much more consistent with other objects within this set of nested coffins (i.e. a dispersion of pale yellow particles forming a thin paint layer) compared to the thick yellow paint layer found elsewhere on this object. However its location in the layer structure of the outer coffin raises a number of questions. If the yellow wash was applied selectively to figurative and text areas, how was it applied without any guiding drawing? The drawing looks like it was accomplished in one sitting (i.e. there is no evidence that it was outlined before the wash was applied and then details were drawn in later). XRF shows no evidence for arsenic presence in the white areas. There is no other underdrawing found in these areas.

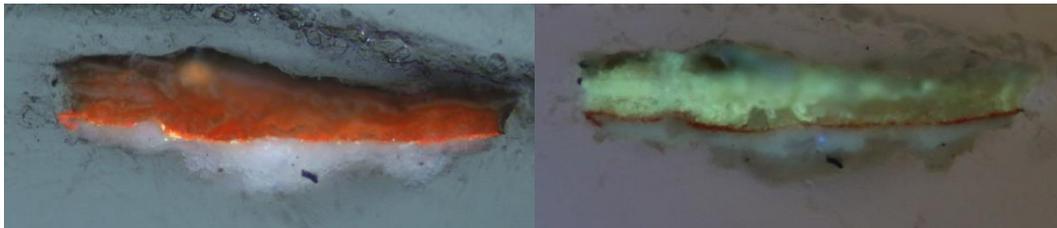


Figure 4: E.1.1822 Cross section OB21 (exterior, red), 20x, visible light (left), ultraviolet light (right).

Cross section OB6 does not show evidence of this yellow layer, but this cross section is disrupted by the broken up organic layer, and it is difficult to interpret.

Identification of the location of the orpiment layer is complicated by the presence of a thick organic coating that was applied selectively after all other colours. This broadly covers the painted figures and hieroglyphs and the upper rim of the coffin box, but not the white background. This layer is consistent in texture, UV fluorescence and colour with a degraded natural resin varnish, which probably contributes towards the yellow appearance of the passages. It is not obvious whether this varnish was originally a clear or yellow layer, but either way the ageing of the layer would cause it to take on its current yellow colour. This organic layer can be seen in cross sections OB6, OB21, OB26 (where it has penetrated the porous Egyptian blue layer) but not OB27, which was taken from an area of white background. The application is fairly uneven, with gaps in the brush strokes visible, but the original boundaries are confused by its extensive flaking. The varnish layer is crazed and cracked, giving it a sparkly appearance and changing the appearance of the colours of the pigments. The varnish has delaminated to different degrees, in places only part of the layer has sheared off, in others all of the varnish layer is lost, in the latter case sometimes the paint layers are pulled off with it.

All of the varnished areas tested with XRF show significant arsenic levels consistent with orpiment, even a red area (ARTAX S04). This may be due to the orpiment layer under the red paint. Analysis of x-sections and further XRF on other parts of the coffin suggest that the orpiment is not in the varnish, but is an extensive layer underneath most of the other painted areas. SEM/EDX of a cross section from the inner lid showed that there was no orpiment in the varnish layer. No such analysis was carried out on the outer box, but it is probable that the varnish layer here does not contain any pigments.

It is probable that the varnish is contributing significantly towards the yellow colour figures and text areas. While these areas contain orpiment, it may have degraded to colourless As_2O_3 , arsenolite, a common deterioration product. This is suggested by some of the cross sections, which show characteristic sparkle and particle shape, but lighter colour than expected for an orpiment layer. If this is the case, the degraded natural resin varnish is the main cause of the coffin's yellow areas (regardless of the resin's original colour).

The composition and text were outlined in red earth, painted on top of the yellow layer. This can be seen in cross section OB21, where the red sketching occurs on top of the yellow wash layer. FORS analysis (FORS sample 0 from red on footboard) as well as PLM and Raman analysis (sample OB13) confirmed the pigment was red earth: the dispersion exhibited fine, rounded, high-relief particles in aggregates which had moderate birefringence masked by their body colour in crossed polars.

The same pigment used for drawing was also used to fill in the red painted areas. This included some of the faces and skin, clothing and red rectangular blocks between various decorative elements of the design (cross sections OB21 and 28).

The hieroglyphs and text elements of the design (ankh symbols on the foot board and wadjet eyes on the side panels) were painted with the same red that was used for the outlining. This drawing layer was applied before the blue and green pigments, which can be seen to obscure the original red. The drawing here is an underdrawing for these elements rather outlining them for in-painting.

Blue and Green

Blue areas were identified as being painted in Egyptian Blue by VIL images, as well as by PLM and cross section analysis. PLM (OB16, taken from the blue band running horizontally along the top of the proper left hand side) showed the pale blue particles to be smooth, anhedral and low-relief with pale blue birefringence in crossed polars.

The blue wig from the figure of Horus on the proper right hand side of the coffin (cross section OB26, near the footboard) is green in appearance, but is painted in Egyptian blue (see VIL). The discolouration is probably due to the penetration of the organic layer into the porous Egyptian blue layer, as can be seen by the fluorescence of this layer under UV light.

The blue pigmented layer has a red discolouration lying underneath. This layer looks like a separate paint layer in cross section, but a close examination of its presence on the outer coffin's exterior shows that it is restricted specifically to the blue areas, and seems to be a deterioration product (or discolouration) of the blue pigment. This cross section (OB26) was examined via SEM/EDX (S. Bucklow, 01.05.2015) and was found to contain similar elements to the Egyptian blue layer (Si, Ca, Cu) and may include a copper oxide. This same phenomenon has been observed elsewhere on Nespawershefyt on the inner coffin and mummy board, as well as in the interior of the outer coffin.

The green PLM sample (OB15) had very poor colour, having almost colourless polycrystalline particles in large platy aggregates with low birefringence with many inclusions, combined with calcite (although though this may be contamination from the ground). This is consistent with Egyptian green. The green colour in this area is notably poor in comparison to that seen on the inner lid (IL10), and on the inside of outer box OB20 (– await DS's analysis). The blue and green pigments have been applied more densely than the other colours on the outer coffin, but do not show the thick, extensive modelling found on the inner coffin. The way that the blue pigment has pooled on the exterior sides suggest that it was painted with the coffin flat on its base. Where the blue and green areas overlap the blue has generally been applied last, although there are some exceptions to this layering on the footboard.

VIL images suggest that there are low levels of disturbed Egyptian blue across the object.

Black

There is little use of black - it is used to outline the eyes, facial features of animals, beards and a black border along the bottom of the outside panels. These details were painted over the other

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Outer coffin exterior

colours, as final details. When viewed in dispersion the particles are medium-sized, angular and irregular combined into polycrystalline flakes, characteristic of char black (PLM OB14).

White

Where the outer coffin is white, these areas are unvarnished and unpainted (i.e. exposed preparation layer), rather than covered with a white paint. There is no evidence for any white paint on this outer coffin (OB27).

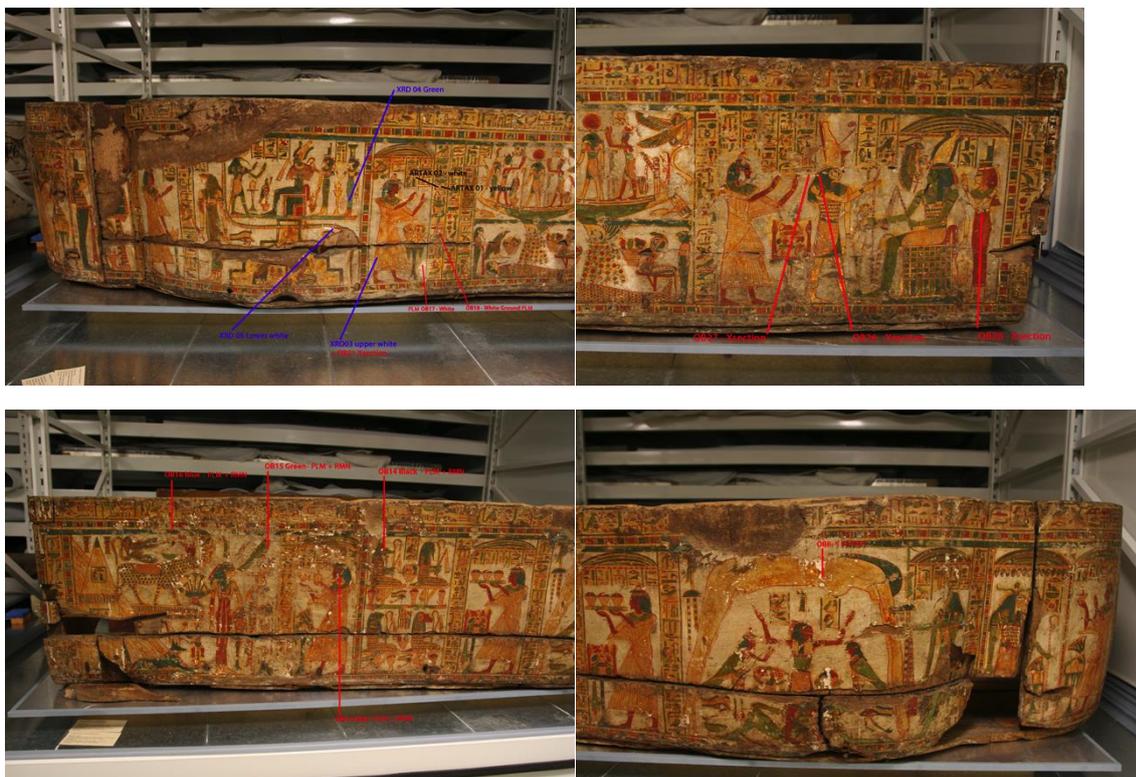
List of cross sections from exterior of outer box:

OB06	X	Yellow from woman's flesh	outside, upper half
OB21A	X	Red over white	Outside, middle
OB26	X	Green from Horus hair	Outside
OB27	X	White background	Outside
OB28	X	Red in woman's dress	Outside

PLM samples from exterior of outer box:

OB13	PLM	Red	outside, lower half
OB14	PLM	Black	outside, lower half
OB15	PLM	Green	outside, lower half
OB16	PLM	blue	outside, lower half
OB17	PLM	White	outside, upper half
OB32	PLM	Green repair along edge	Exterior

Sample maps



Interior:General notes

NB: In the report for the interior of the outer coffin, I will refer to the 'main figure', meaning the central yellow varnished character.

The outer coffin is structurally damaged, and there are some significant integral losses to the inner box, especially near the footboard and around the joins. There is significant surface dirt and staining across the interior.

The interior of the outer coffin has a different composition and appearance to the exterior: the background is painted in a deep, wine red, and the central figure and decoration have a yellow tint. There is extensive use of a degraded, yellow organic coating (that looks to be the same as on the exterior of the outer coffin); this coating is messily applied to the main figure only and does not continue over the red background.

The interior of the outer coffin was covered with two white preparation layers. In the area of the main figure, a (probable orpiment) yellow layer of paint was applied over top of the ground, followed by red earth drawing to sketch out the figures and hieroglyphs. The background 'wine' red (made up of red earth, possibly with black) was painted directly on top of the preparation layer. The general palette of the figure is restricted to blues, greens and reds. There is very little use of black pigment on the outer coffin compared to other objects within this set of nested coffins: only the eyes of the main figure were painted in black.

In the area of the main figure's head, a damage was filled and repainted. The materials used to fill and overpaint the damage are contemporary to the object, such as Egyptian blue and orpiment, making it likely that the repair occurred around the time the object was made.

No XRF analysis was carried out on the inside of the coffin, as the awkward angle required of the instrumentation would have put the coffin and equipment at risk.

Preparation layer

The inside of the outer coffin box was covered in a white preparation layer before any further paint layers were applied (including the background). Examination of cross sections suggest that it is probable that this is a double preparation layer, as it was on the exterior of the outer coffin (OB25). This double ground is most pronounced in cross sections taken from the rim of the outer coffin box (see cross sections OB1 and OB2), which show a lower layer of white, homogeneous particles, with a white layer directly on top of it (no intermediary dirt layer), which has similar looking white particles, but some off-white translucent phases.

Yellow

Cross sections taken from the main figure in the interior of the outer coffin show a yellow paint layer applied directly onto the ground. This yellow layer, found selectively across the surface of the box, was painted prior to any other paint layers, including the drawing (cross sections OB1, 2, 23 (see Figure 5), 24 & 25 (see Figure 6)), with one exception: yellow layers were not found underneath the 'wine' red background (OB22).



Figure 5: E.1.1822 Cross section OB23 (interior, Green – inside figure's decoration), 20x, visible light (left), ultraviolet light (right).

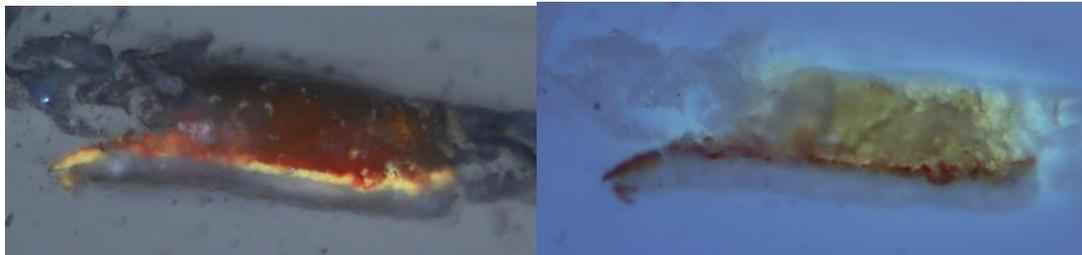


Figure 6: E.1.1822 Cross section OB25 (interior, red decoration of figure's fabric), 20x, visible light (left), ultraviolet light (right).

In cross section, the yellow underlayer on the interior of the outer box was homogeneous and vividly yellow in colour. Like the yellow found on the exterior of the outer box, this yellow is thicker than the yellow layers found elsewhere within the set of nested coffins for Nespawershefyt, which generally have a thin, washy and sparkly appearance in cross section. One such similar sample from the outer coffin box exterior, OB28 (Figure 3), was examined via SEM-EDX and was found to contain predominantly yellow earth with some orpiment present.

The yellow layers were identified as orpiment via PLM, and they were painted directly onto the white background. PLM samples showed large yellow laminar, high-relief particles with characteristic pink and green anomalous colours in crossed polars (OB12 and 7). Some particles have a more granular appearance, also common for orpiment. These samples also showed calcite in the sample with the orpiment, which is likely to be from the preparation layer. However, there was no evidence in PLM of any earth pigments present in the sample. Both dispersion samples also found to contain orpiment when examined using Raman spectroscopy.

Cross sections taken from the red drawing in the decoration on the main figure (OB23 and 25) indicated a yellow paint wash was painted first, followed by the red drawing for the decoration.

After the application of all other colours of paint, a thick organic coating was applied selectively over the main figure, messily overlying the edges into the background. This layer is consistent in texture, UV fluorescence and colour with a degraded natural resin varnish, which probably contributes towards the yellow appearance of the passages. This organic layer can be seen in cross sections OB1, 2, 24 and 25, but not OB22, which was taken from the red background (which is unvarnished). The coating is unevenly applied and is discoloured and degraded, and is probably a significant contributor to the yellow colour of the main figure. However, if these areas contain both orpiment and yellow earth, they are also likely to be contributing significantly towards the yellow colour. There is no evidence of orpiment in the varnish layer.

Drawing

The decorative elements were outlined in red after the application of the yellow paint layer. Cross sections OB23 and 25 show the red paint clearly applied after the yellow paint, both lying on top of the preparation layer (taken from the edge of the green horizontal pattern in torso of main figure and the semi-circular decoration in the cowl, respectively). There are no PLM samples taken from

areas of drawing, but the appearance in cross section is similar to samples taken from the drawing on the exterior, which were found to be red earth.

Cross sections taken from the red drawing in the decoration on the main figure (OB23 and 25) indicated a yellow paint wash was painted first, followed by the red drawing for the decoration. This is consistent with other objects within this set of nested coffins, but its location in the layer structure of the outer coffin raises a number of questions. If there was no underdrawing, how was the yellow wash applied so selectively to the figurative and text areas only? It is possible on the coffin interior that the red outlining for the figure and main compositional areas was applied first (there are no cross sections taken from main outlining red areas) but the details were drawn in after the yellow paint was filled in. This would differ from the composition of the exterior of the outer coffin, where the drawing appears to have been accomplished in one go.

Background

A dark red background covers the interior of the outer coffin, and was painted up to the edges of the figure, in some areas slightly covering the red outline. This dark red paint has been identified as red earth using FORS. This was confirmed via PLM analysis of sample OB19, which showed medium red, high-relief particles with strong birefringence in crossed polars masked by particle body colour, characteristic of red earth.²

Cross section OB22 was taken from an area of red background to the left of the main figure. The cross section shows us an unvarnished, dirty layer of red directly on top of the white preparation layer. There is no evidence that the yellow paint layer which is found on top of the ground in the varnished areas is present in the rest of the objects.

VIL images show a smear of Egyptian blue up the proper right inside wall of the outer box. This overlies the red background. There is not a corresponding area of damage to the Egyptian blue on the inner coffin.

Blue and Greens

The blue has been characterised by PLM and VIL as Egyptian Blue. The dispersion shows platy, smooth particles with anhedral habit and moderate birefringence, some bubbly inclusions, and a size distribution from medium to coarse (OB11), all characteristic of Egyptian blue.

PLM sample OB20 was taken from a pale green decorative area and showed the presence of smooth isotropic particles with conchoidal fracture and zoning with varied colour from yellow-pale green to pale brown. The sample showed considerable presence of other particles, including Egyptian blue, calcite and some brown impurities, unlike the Egyptian green found on the outside of the coffin box (OB15), which was relatively homogeneous and uniform in the dispersion sample. This is perhaps indicating different grades or qualities of Egyptian green used on the inside and outside of the same coffin. VIL images show a scatter of Egyptian blue across the surface of the green areas, consistent with the traces of Egyptian blue found in the green PLM samples.

A cross section taken from an area of green decoration in the main figure (OB23) shows the green paint applied after the overall yellow paint layer and the red sketching (see yellow and red drawing, above).

A dispersion taken from the original green paint (PLM OB10) close to the fill area showed a mixture of micritic calcite and red/yellow/brown earth with traces of Egyptian Blue. This sample looks similar to other green PLM samples from the inside of the outer coffin (OB20). Examination of these

² This PLM sample was indicative of red earth; however there is a possibility that it could be ilmenite.

green areas via VIL photography shows that they contained only trace Egyptian blue (or at least compared with the surrounding blue areas, see Figure 7).

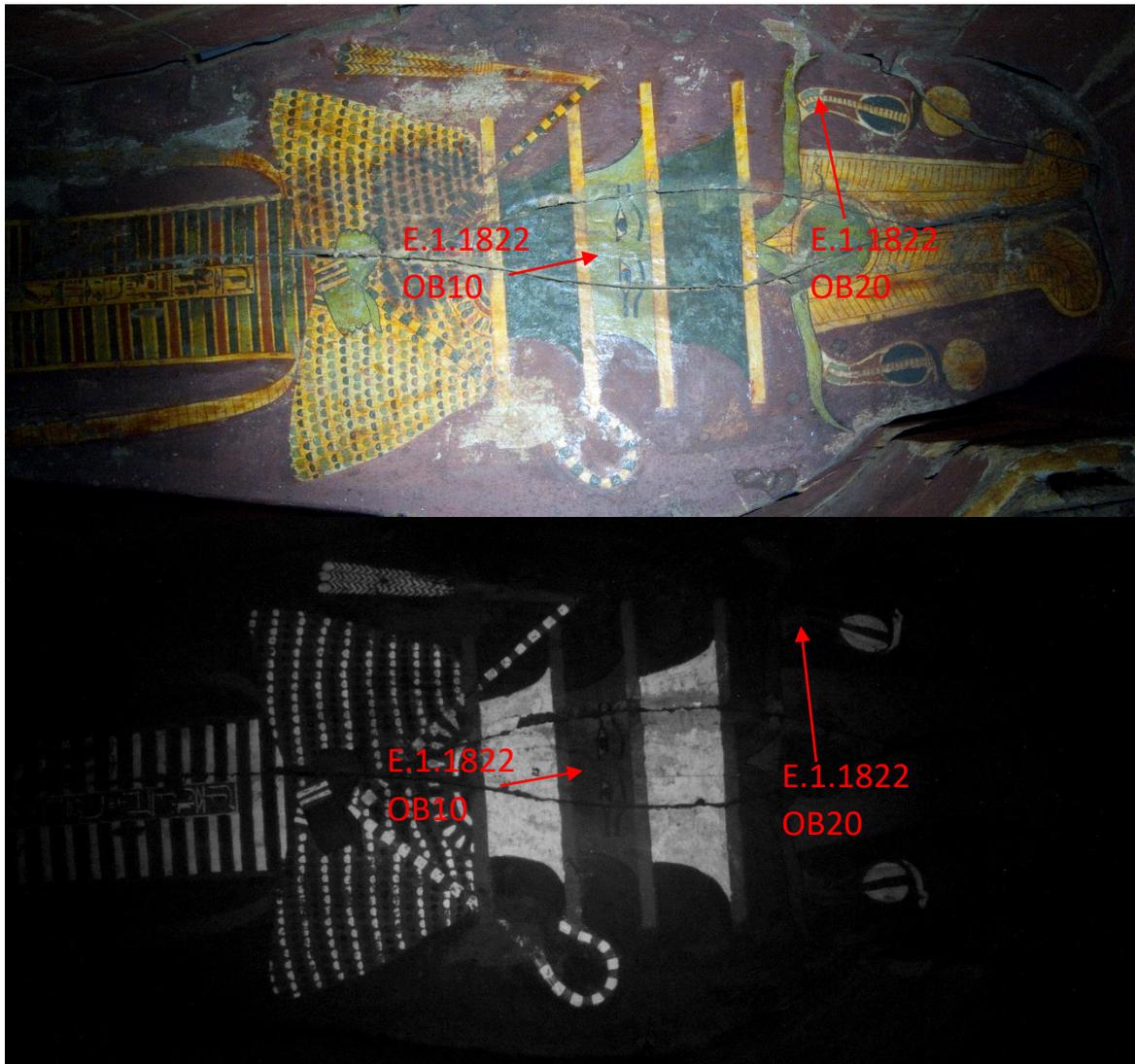


Figure 7: Detail of E.1.1822 Nespawershefyt interior of outer box, in visible light (above) and VIL photograph (below), both showing the location of PLM OB10 AND OB20

The Egyptian blue and green pigments have been painted much more thickly than other paint layers on the interior of the outer coffin, but as thickly as the three-dimensional paint layers seen on the inner coffin and mummy board. The pooling of the pigment towards the feet suggests that the paint was applied whilst the coffin was standing upright on the footboard.

Areas of blue paint were undercut by a red-orange layer. This layer, which can be seen in cross section OB29, was examined via SEM/EDX (S. Bucklow, 01.05.2015) and contained Ca, Si, S, and As. It is not clear what this is – is it a degradation layer? Is it a lower painted layer? This includes the orpiment wash, but also appears to contain some orange realgar particles, which sparkle vividly in cross section.

On the cowl decoration, these reddish areas strictly match the application of the blue and green pigment and have a more muted red colour, suggesting that this is not a separate paint layer, but discolouration of the pigment.

There is very little black used in the interior of the outer coffin compared to other objects within the nested coffins, or even with the exterior of the outer coffin. The only place where black is used is in the eye of the main figure. A dispersion sample (OB3) taken from this area revealed large, irregular polycrystalline flakes consistent with char black.

Fill

There is a linear area of damage through the proper right side of the face of the figure. This is associated with a join between two of the wooden boards making up the box. Splitting of the decorative surface has been filled with a paste and painted green, yellow, blue and possibly the red area, to fit with the colours of the original decoration. The black of the eyes was not recreated on the fill and was covered in a layer of paint. This led to the assumption in 2006 that this was a modern restoration which was therefore partially removed over the outline of the eye. The fill is not covered by varnish (see UV).



Figure 8: Box of coffin before treatment in 2006, showing extent of the fill over the face.

Three cross sections were taken along this fill. Sample OB3, taken from the black eye line before the overpaint was removed, shows a thick black layer with occasional coarse Egyptian Blue particles covered with a pale green layer. It is likely that this is either showing an ancient repair or the original layer structure (i.e. not showing the fill material) as the paint contains Egyptian Blue. This layer was examined via SEM/EDX (S. Bucklow, 01.05.2015), and the results are consistent with Egyptian blue.

The cross sections taken from areas of fill show thick paste layered on top of original paint. The sample from the green area of the fill (OB30) showed a ground layer, followed by a green paint then varnish (with strong fluorescence in UV), which was then covered with thick paste and a thin green paint layer but no further varnish. Analysis of this later green layer via SEM/EDX (S. Bucklow, 01.05.2015) identified elements that are consistent with Egyptian green (Ca, Cu, Si).

The yellow fill area cross section shows a similar layer structure, but the sample did not go as deep. The bottom of the cross section shows the varnish layer on top of the original paint, followed by a

thick paste layer, which is then painted with a thin layer of yellow orpiment particles (OB31 – orpiment identified in this sample via SEM/EDX by S. Bucklow, 01.05.2015).

The blue fill was found to contain Egyptian blue (PLM OB33) with calcite (probably coming from the preparation layer underneath).

Cross Sections from interior of outer box:

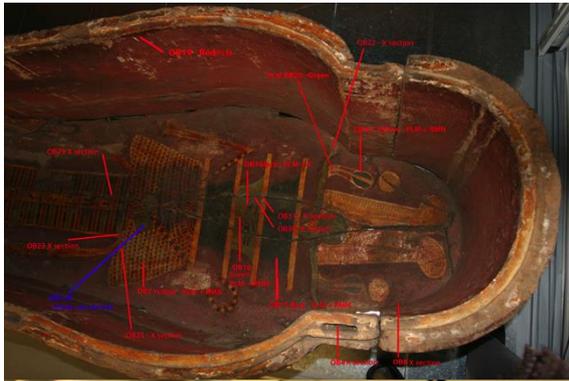
OB1	Yellow lip	inside, upper half
OB2	Yellow lip	inside, lower half
OB3	Black from eye	inside, upper half
OB4	Mortise	inside, upper half
OB5	Black stain on red background	inside, lower half
OB8	Red background	inside, upper half
OB22	Red background	Inside, upper half
OB23	Green – inside figure's decoration	Inside, middle
OB24	Yellow	Inside, no home
OB25	Red decoration of figure's fabric	Inside, red line over yellow
OB29	Blue decoration	Inside
OB30	Green fill	
OB31	Yellow fill	

PLM samples from interior of outer box

OB10	Green	inside, upper half
OB11	Blue	inside, upper half
OB12	Yellow	inside, upper half
OB19	Red	inside, upper half
OB20	Green	inside, upper half
OB33	Blue repair along join	inside, upper half
OB34	Red repair along join	inside, upper half

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Outer coffin interior



Copied from Spike Bucklow's 2015 report

OB03 Fill materials - Calcium rich with earth

Spectrum 1	Ca Al Fe	white fill
Spectrum 2	Cu Al Ca Si	blue layer
Spectrum 3	Cu Ca Al Mg	white layer

OB30 Fill materials - Calcium rich with clays

Spectrum 1	Ca Si Mg Cu Al	white fill
Spectrum 2	Ca Cu Si	green layer

OB31 Fill materials - Calcium rich with clays

Spectrum 1	Ca Mg Si Al	white fill
Spectrum 2	S As Ca	orpiment

OB28 Red over yellow - realgar / orpiment with earths

Spectrum 1	Ca Mg Al Si	white
Spectrum 2	Mg Ca As S	transparent white
Spectrum 3	S Ca Fe Al As	yellow / red
Spectrum 4	Al Ca Si Fe S	red / white

OB29.2 Blue over red - realgar and extenders

Spectrum 1	Mg Ca Al As S	pale red layer
Spectrum 2	Si S Mg Ca As	brighter red layer
Spectrum 3	S Si As Ca	sparkling red particle

OB26 Blue over red - probably a discolouration of the blue

Spectrum 1	Si Ca Cu	blue layer
Spectrum 2	Mg Ca Si	white layer
Spectrum 3	Ca	white layer
Spectrum 4	Si Ca Cu	red layer

IL16 Varnish over yellow layer - there is no orpiment in varnish

Spectrum 1	Mg Ca As S	paint layer	extender and orpiment
Spectrum 2	(Ca)	varnish layer	only traces of inorganic

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The fill materials in OB30 and OB31 are probably the same. The fill materials in OB03 are similar, and the presence of iron may or may not be significant.

The inconsistent yellow in OB28 is predominantly earth, but with some orpiment.

The dominant colourant in the red layer of OB29.2 is realgar.

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Outer coffin interior

The red in OB26 is probably a discolouration of the Egyptian blue and may include a copper oxide. There is no intentional orpiment in the varnish of IL16. (Note from Nelly 2018: This last component (IL16) is not on the outer coffin box, but rather from the inner lid; however it is included here because it might help shed light on the varnish/orpiment layering situation.)