

Identifying and repainting historical graining techniques in interiors dated before 1800

■ Bernice Crijns

Introduction

Restoring historic interiors often includes reconstruction of the paintwork. Historical painted faux finishes can be part of these reconstructions. Although these imitations are fun to encounter in an interior, comprehending them isn't an easy task. They are both difficult to date and to identify. Herein we review what information is prerequisite to redecorate an historical faux finish. Knowledge of historical recipes, materials and techniques are – of course – of great importance. For a better understanding of historical faux finishes a project has been started using case studies of painted imitations as references to get a bigger picture of their development through the ages.¹ This article sets out the first results of my work in progress and focuses on the art of graining in the middle of the eighteenth century.

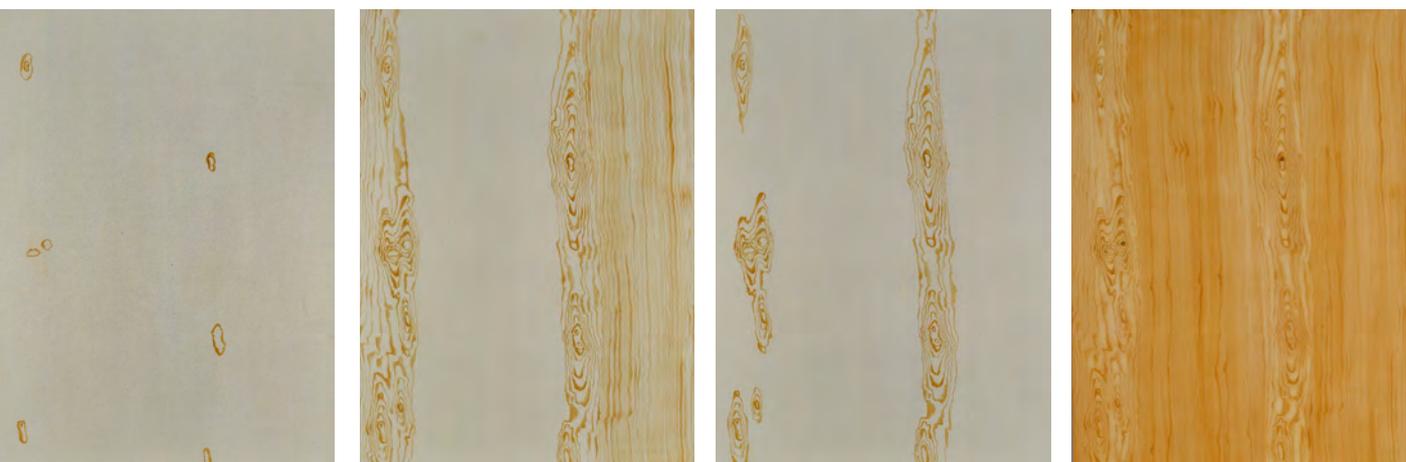
Faux painting

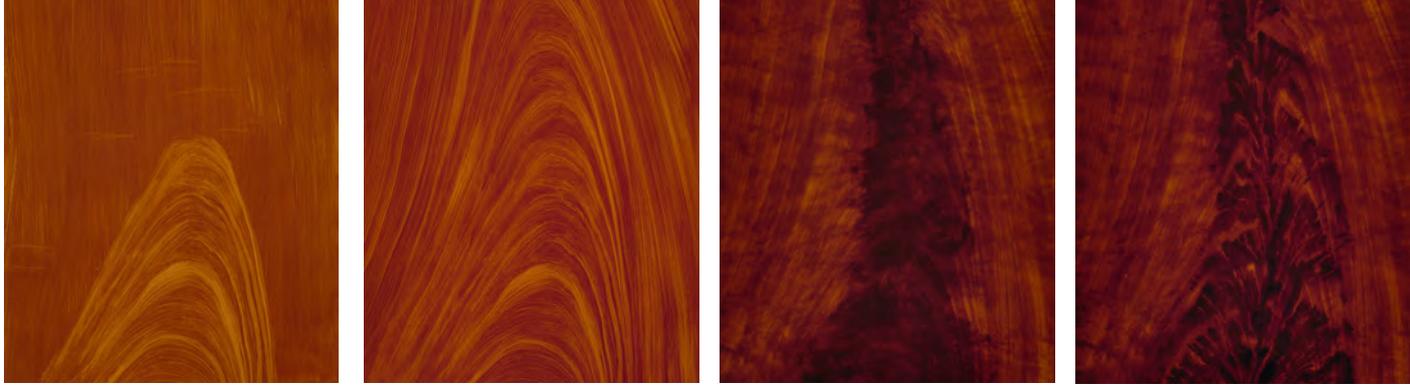
Painted imitations have a long history. There are even examples known dating from Egyptian times. They are made with various kinds of paint,² used to decorate interiors and furniture, painted on a whole range of substrates (varying from stucco, wood, textile, metal to paper) and imitate natural materials; mostly expensive wood, marble or even faux Boulle. All practices depend on fashion, the availability of the natural material and of the painting materials used. Faux painting is a decorative technique practiced in every period of time.³ The figuring can be a realistic copy of the natural material or it can be depicted in a decorative, picturesque or naïve manner.

Graining techniques and materials

We focus mainly on the imitation of wood, also known as graining, painted on architectural elements. As a start the basic principles of graining will be explained here. There are two main techniques used to manipulate paint to look like wood.⁴ The imitation is made either by adding paint layers or removing them. A tangentially sawn pinewood, for example, can be built-up painting the heartwood and sapwood on a dry coloured ground layer (figures 1a-d). The second technique works differently. A transparent paint – called a glaze or wash –⁵ is applied on a dry coloured ground layer (figures 2a-b). This glaze or wash is partly removed to create the wood pattern. Both techniques can also be combined (figures 2c-d) by partially removing or adding paint; in this case a crotch mahogany is imitated. Painters have experimented throughout time with techniques and materials. Everything is allowed – as long as it does the trick. More tools are used besides brushes. When identifying an imitation it is hard to specify the exact natural material that was counterfeited and which materials and tools were used. But if they can be identified, they can be quite surprising. For instance, a technique which in Dutch is generally called 'blotevoetenmarmor' and which could be translated into 'barefoot marble' (figures 3). The figuring is made using bare feet making footprints in a wet glaze. It is used to decorate floors and is therefore also called '(kinder) voetjesvloer' which means '(children's) feet floor'.⁶ The name is as funny as the feet technique looks, because the result in brown paint looks more like a faux wood instead of marble.⁷

Figures 1a-d Successive stages of counterfeiting pine by J. Berghuis, photo G.J. Dukker, A.J. van der Wal, P. van Galen, Collection RCE, object nrs. 409.030-409.034, 1992.





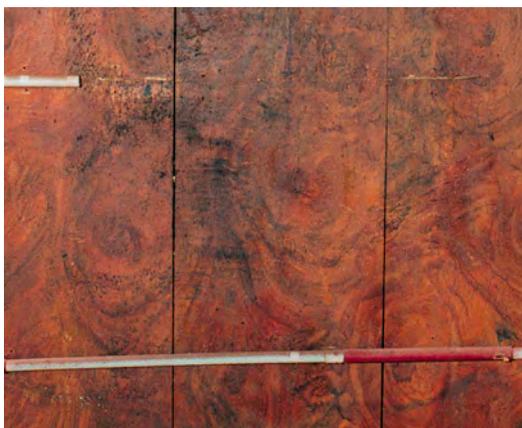
Figures 2a-d Successive stages of counterfeiting mahogany by J. Berghuis, photo G.J. Dukker, A.J. van der Wal, P. van Galen, Collection RCE, object nrs. 409.022, 409.082, 409.080, 409.079, 1992.



Figure 3 Floor decorated with 'blotevoetenmarmer' in the vicarage (built in 1877) of the town of Wouwe Plantage, photo G.J. Drukker, Collection RCE, object nr. 339.281, 2001.



Figure 4a-b A grained door discovered in Trompenburg (c.1675), 's-Graveland. Photo A.J. van der Wal, Collection RCE, object nr. 507.931, 2003.



Restoring faux finishes in historic interiors

Two restorations will illustrate the objectives to recreate a decorative scheme. Usually in situ research examines the different decorative finishes during time, on all parts of the interior. Historical decorations throughout time are revealed using paint analysis of paint cross-sections and making stratigraphic uncovering sections of the subsequent built-up paint layers.⁸ Due to lack of money and time it is not uncommon that the conclusions of the research of the historical finishes are incomplete. Consequently, redecoration is done with quite some assumptions of what the original decoration could have looked like. This paper looks into requirements necessary to recreate one specific type of decoration, i.e. painted faux materials.

In the country house Trompenburg in the town 's-Graveland, a curious historical wood imitation was discovered on a door. The door was discovered behind a false wall (figures 4a-d). The large round figuring is thought to date to the 1670s, the date this house was built. This imitation is usually referred to as a naively painted walnut burl but it could very well counterfeit an oyster veneering, a new fashionable finish at the time.⁹ During the restoration all other doors on the ground floor were repainted following the style of this historical graining; using modern tools, materials and techniques.

In the former palace of Princess Mary Louise of Hessen-Kassel, today known as the Prinsessehof Museum in the town of Leeuwarden, the Nassau room (1731-1765) is decorated with gilt leather. This room is one of the many where the research method of historical finishes identified various faux finishes under a modern blue coloured finish (figures 5a, b). In this case they presumed to match the mid-eighteenth-century gilt leather and these imitations were reconstructed, again using modern tools, materials and techniques (figure 5c). Repainted versions do not always resemble the historical situation and raise the question 'to what level are the repainted rooms a wonderful exam-



Figures 5a-b The room in the Prinsesenhof before reconstruction (a). Close-up of historical blue faux marbling (b). Both photo's SRAL 2002, unpublished report *Kleuronderzoek in de voormalige eetzaal van Maria Louise van Hessen-Kassel in Het Prinsenhof te Leeuwarden*, Van Kempen, Danielle, Stichting Restauratie Atelier Limburg. The same room after reconstruction of the historical faux finishes (c). Photo Chris Booms and Jan van Galen, Collection Rijksdienst voor het Cultureel Erfgoed, objectnr. 695.377, 2004.

ple of twenty-first-century skills?' And why is that? With this question the need arose to consult professionals working in this field, to find out if they were also asking themselves how to get it right.

Overcome/master difficulties in repainting historical faux finishes

A meeting was organised at the annual *Kleurhistorisch platform* (a forum on painted historical finishes) to explore the question 'What do I need to be able to paint or - let someone paint - a historical imitation well?'¹⁰

To get consensus between the 130 different participants covering a variety of professions and their individual opinions – we used a Socratic debate.¹¹ The outcome represents five so-called general, commonly held truths. The outcome was that getting it right is all very much about co-operation. The most relevant 'truth' for this article on repainting imitations turned out to be 'good research and good execution'. In this section 'good research and good execution' will be specified.

Good research and good execution are defined at the forum as requiring five specific actions. These actions are related to each other and are set out below.

I. Uncover larger areas of the historical imitation.

The repainting of a faux marble on an altar in Museum Our Lord in the Attic in Amsterdam is discussed at the Forum. Figure 6a shows the altar before restoration. In figure 6b the altar is covered on the left side with a white preparatory ground layer. On the right – large areas of over-painting have been taken off – to uncover the original marble imitation. In this way the copier had immediate reference to what the marble should look like.¹² Figure 6c shows the result. It is not always possible to uncover sufficiently large areas; due to lack of financial resources or time limit or because removal of the historical layers is not eligible.

II. Use paint analysis.

Paint research on a wooden portico dated in the mid-eighteenth century revealed faux finishes in red, white and, seemingly, black marble (figure 7). It turned out it wasn't black at all. The layer structure consists of a white ground layer covered with a layer with blue smalt pigment covered with a transparent glaze of a red lake. Both the smalt



Figures 6a-c Photo RCE, object. nr. reala014b (a).
Photos L. Polman, 2010 (b, c).



Figure 7 Photo B. Crijns, 2004.



and the red glaze aged during time to colourless darker paint layers, giving the impression of a black paint.¹³

III. Make mock-ups (figures 8a, b).

The result of mock-ups, based on the research discussed above, was something completely different: a purple coloured imitation (figure 8a). Through mock-ups the painter gets a better understanding of the layers found in the paint analysis and of the desired effect.

IV. Collaborate.

An organ in the Organ Museum in Elburg. It is a composite organ - composed of different organs made into one. Without paint it looks like patchwork. Some parts date from the mid-nineteenth century. These parts had but few paint fragments. The paint researcher explained her research of the historical finishes at the Forum and talked about assumptions and misunderstandings.¹⁴ She had suggested in her report the finish might be 'oak graining'. The painter of the graining had a hard time matching the oak with these quite orange-tinted historical colours. The researcher usually works in the beginning of a conservation project, and painter comes in last. Thus they do not get the chance to communicate. Luckily in this project they had a benevolent client - there was room for interdisciplinary consultation, knowledge was exchanged as were joint experiences. Thus a better result could be achieved. The paint laid on the organ now imitates the light orange graining often found on church furniture in the middle of the nineteenth century.



Figures 8a, b Photos L. Polman, 2004.

V. Look into references of historical examples.

There are many kinds of historical references to be studied when repainting an imitation. Historical written sources in archives or, for instance, the seventeenth-century manuscript by Jacoba van Veen. Or historical examples that have survived time, such as ceilings and doors that had been covered with false ceilings or walls. Also the research done by others on historical references is valuable. Take, for instance, the research done by Jacco Hooikammer and Hans Piena on walnut-grained furniture in the nineteenth century, which has been repainted over the years and subsequently changed colour from red to almost white sometimes.¹⁵ Quantitative research like this and synthesis of research is essential for getting the bigger picture. And furniture research can be used as valuable references for architectural finishes as well.

Figure 9 Behind a socket a small fragment of a reddish brown finish can be seen. Photo B. Crijns, 2016.



Getting the bigger picture looking into historical examples

At the Cultural Heritage Agency of the Netherlands (RCE) I am involved in preliminary research on identifying and dating various historical painted imitations. The research aims at better understanding of painted faux materials, achieving appreciation of authentic painted faux materials in historic interiors, and making the case that conservation is as important as repainting them.

This section will focus in particular on visual effects of some eloquent and dated examples of wood imitations. Some examples include supporting paint analytical information or are related to information from written resources. I wanted to investigate if it is possible to visualise an evolution in the art of graining. If there is an evolution, a reference collection could help to understand undated and unidentified graining in the future.

Take, for example, the unidentified over-painted finish in an extravagantly rich decorated room in Huize de Dieu in the town of Alkmaar.¹⁶ Behind a socket a small fragment of a reddish brown finish can be seen (figure 9). Historical paint research showed that wood- and plasterwork in this room was all painted with this finish.¹⁷ The questions are what kind of finish could this be and could it be a graining?¹⁸ Attempts to uncover this finish have not led to good results. Subsequently, it is unknown what the finish originally looked like, as is often the case in the restoration of interiors. Early examples before 1800 are sparse.¹⁹ Historical written descriptions of graining methods are slight, but they do give subtle clues of



Figures 10 a, b Painted wooden ceiling in Sint-Annenstraat 12 in Amsterdam. Photo Chris Booms, Collection RCE, 2017 (a). A close-up shows some remnants of veins next to the black ornamental figure (b). Photo Chris Booms, Collection RCE, object nr. 14225-59630 2017.

what could have been imitated. We will look into this in this section.

The finish in this room is the starting point of the quest looking for specific developments in graining. The room was commissioned around 1744.²⁰ In terms of graining it is an interesting date. Although there are many written instructions using staining to counterfeit specific wood colours, there are none on film-forming graining techniques known in the Dutch language from that period.²¹ The first known Dutch manual that looks into these techniques was published by the Amsterdam painter Lambertus Simis in the early 1800s. It is particularly interesting as Simis uses the practical knowledge he gained from 1765 and onwards.²² He describes a new graining technique invented in 1740. It was used to paint the most prominent rooms and halls in the Netherlands. In the beginning, he states, it usually imitated a dark coloured wood, finished with a durable and high gloss amber lacquer.²³ He mentions French walnut to be one of the first types of wood in this fashion.²⁴ A newly invented graining technique is also known to have been introduced in England and France in the late eighteenth century and early nineteenth century.²⁵ In 1828 the Englishman Nathaniel Whittock also refers to innovative nature of the techniques in his manual.²⁶ Interestingly, he additionally mentions outdated graining fashions and materials, e.g. walnut graining and amber varnish, which he states is no longer in use and has been replaced by copal varnish.²⁷

Simis calls the new technique 'gladhouten'; which could be translated as 'making smooth or (French) polished wood graining'. Simis writes 'gladhout' counterfeits fine smooth wood with paint.²⁸ Other sources from this period or later also use this terminology to describe furniture being painted 'gladhout'.²⁹ Simis gives instructions to counterfeit the 'gladhout' technique for walnut by brushing a duck's feather or quill through a translucent glaze,



Figure 11a Painted wooden ceiling in O.Z. Achterburgwal 199 in Amsterdam. Photo Chris Booms, Collection RCE, object nr. 14224-59757, 2017.

Figure 11b Close-up. Photo Chris Booms, Collection RCE, object nr. 14224-59770, 2017.



resulting in the distinct figures of walnut. If we can believe Simis the feather was used for graining since circa 1740. Thus it is remarkable, the use of a feather is a relatively new tool for Whittock in 1828. He writes he had just recently heard of its use.³⁰ The glaze Simis mentions consists of one part of ground pigment in raw linseed oil, one part boiled linseed oil diluted with turpentine. Besides walnut Simis gives instructions for other 'gladhout' techniques additionally using brushes next to the feathers: oak, mahogany, amboyna, olive, tulipwood and cedar,³⁰ using the same oil glaze to create them.³¹ Curiously, most of these types of timber were already simulated with paint before 1740, as we will see later on. Thus the question is raised to what extent 'gladhouten' broke with earlier techniques. What does 'gladhouten' mean exactly?

Simis provides some additional information, as he explains what 'gladhouten' is not. He explains a technique used before 1740, the so-called 'arabiën' or 'wortelwerk'. This could be translated as 'arabiën' or 'burl work'. It is tempting to link the name to the use of gum Arabic, as Simis describes 'Arabiën' to be a water-based imitation technique, but Simis does not confirm this.³²

This technique is still used in the 1800s as Simis gives instructions to make it in different colours, e.g. blue. It is imitated by means of rolling and turning a pig's bladder - or that of an ox - through a thin coloured wash on a white or slightly tinted ground layer. Simis usually uses burnt umber mixed with vinegar or beer. Simis explains the essential ingredient of the beer to be the sticky substance, not the alcohol.³³ As does Nathaniel Whittock, who also describes a similar technique, referring to it as a distemper of beer. However, Whittock does not use a bladder and moreover uses the beer distemper rather than oil glaze for almost all his graining.³⁴ Simis gives instructions to varnish or finish the 'arabiën' with a layer of boiled linseed oil.³⁵

Both 'gladhouten' and 'arabiën' use a translucent glaze or wash to create a specific figuring. The main difference between Simis' 'gladhouten' and 'arabiën' seems to be the use of different binding media, tools and varnishes: a water-based glaze and a pig's bladder for 'arabiën' finished with boiled linseed oil, and an oil glaze and a duck's feather or brushes for 'gladhouten' finished with an amber varnish.

Surviving examples of an earlier date show little use of glazes. Their figures have a building up in body colour.³⁶ A graining technique not mentioned by Simis or Whittock. Much earlier in time, the

Flemish painter Karel van Mander does explain such a graining technique. He recalls his tutor Pieter Vlerick graining doors and joinery in the year 1568-1569 in the town of Tournai (Doornik). He covered raw wood with a mixture of brown ochre or soot in distemper with which he made paintings ('maeligen') or strokes with a stick, as if it was a foreign timber. After it was varnished it looked well, according to Van Mander.³⁷

Surviving graining examples before circa 1800

With these different techniques in mind we will now take a look at graining examples dating from the second part of the sixteenth century to 1800.

One of the oldest known dated graining in a Dutch interior is painted on a timber frame of oak with a pine ceiling of a rare early Renaissance house (c. 1565) in Amsterdam (figure 10a). Only small fragments of original painted surface remain (figure 10b). The fine curved lines are painted on a dry yellow orpiment-containing paint layer.³⁸ The lines also contain some orpiment mixed with dark ochre and some red iron oxide (figure 11c). The pigment orpiment is available in Europe since the late Middle Ages. It was appreciated for its distinct lustre giving the surface a vivid golden hue. It is said to be not so suitable in oil.³⁹ Surprisingly, the binding media have been analysed and found to contain protein but mostly oil.⁴⁰ Even the chalk ground seems to contain some oil. Some samples show a finish with a varnish. The varnish was not analysed. Visually there are no features of 'arabiën' to be seen. Neither can we see 'arabiën' in a ceiling constructed of a grained timber frame of oak and pine floorboards in the house Oudezijds Achterburgwal 199 in Amsterdam (figure 11a). This ceiling is presumably from the same period or a little younger than the previous example. The graining looks as if it was painted with a brush on the yellow layer when it was dry (figure 11b). Again the yellow background colour contains orpiment. The analysis did not detect oil this time, but found some cholesterol which indicates that the binding medium could perhaps contain egg.^{41, 42} The report does not mention a varnish.

The municipality of Den Bosch commissioned pigment analysis of some salvaged building fragments.⁴³ Two of these fragments are decorated with graining. One of them is a secondary beam from a house in the Verwerstraat 24, it is dendrochronologically dated to 1619 (figure 12). The wood does not seem to be sanded or primed. A chalk ground had been omitted, instead a red layer was painted



Figure 12 A painted beam from a house in the Verwerstraat 24. Photo A. Friedrichs, SRAL, 2014.

directly on the bare wood. On top of a dry ochre layer a plain dark graining has been painted with opaque colour. The other grained beam is from Korenbrugstraat 16 (figure 13). The opaque graining is the first finish and has been overpainted several times. The wood is sealed with a chalk ground. The graining has a more elaborate composition, three body colours are used to create the figuring. Because of this, and the saturated paint used, it is assumed it is an oil painting and thus of a later date than the previous examples, presumably around the mid-seventeenth century. No signs of 'arabiën' here, neither of varnishes.

A shutter in the former town hall of Amsterdam (currently the Royal Dam Palace) shows a graining likely dating from the first building period (1648-1665) (figure 14).⁴⁴ It is identified by the researcher as rosewood.⁴⁶ Rosewood was very popular in this period. In Dutch it was often referred to as 'sakerdaan'.⁴⁷ The brownish red coloured background layer contains lead white and red ochre and some umber. The figuring is described as 'black stripes applied in a swift manner', and consists of a translucent reddish brown glaze or wash consisting of a large amount of (unanalysed) binding media and small amounts of lead white, quartz and chalk. An unusual composition. The wooden substrate was prepared with a chalk ground. There was no varnish detected.⁴⁸ Compared to the earlier graining references on the ceilings this graining looks different. Not only because of the colour, which is darker, also the figuring is different. It looks like a glaze evenly spread on the whole surface and manipulated to look like wood grain. It is not certain from pictures or from the report but the figuring does not look like brush strokes. Could this be a glaze, manipulated with a bladder? Could this be what Simis describes as 'arabiën'?

Slightly similar features can be seen on the rear side of a panel painting by the artist Norbert van Bloemen, dated around 1730 (figures 15a, b). This can very well be 'arabiën'. The only way to find out



Figure 13 A painted beam from Korenbrugstraat 16. Photo A. Friedrichs, SRAL, 2014.



Figure 14 Shutter in the former Town hall of Amsterdam (today the Royal Palace). Photo Josefien Tegelaar, 2007.

Figures 15a, b Rear side of a panel painting by the artist Norbert van Bloemen, c. 1730, whereabouts unknown (a). Close-up of 15a (b).



The imitation may consist of the following layers

a top coat
a coloured glaze or wash
the figuring (brush strokes, glaze/wash)
a coloured layer
a preparational layer

Table 1

Each layer has its own features ranging from:

tools to apply the layer	
pigments to colour the layer	
binding media	to adhere the colour to the substrate create specific effects
time of application	e.g. alla prima
technical skills or instructions on how to...	apply the layer manipulate the layer finish the layer
composition	e.g. paneling or grisaille

Table 2

in the future will be to make mock-ups and have a closer look at the objects themselves.

Inspired by Simis' instructions I have started working on mock-ups. I was triggered by what Simis writes on early 'gladhouten'. He imitates walnut using a feather or a wing of a duck. Stroking it through the glaze he says it gives figures like French walnut. Simis emphasises that the right and left wing have a different character, the right giving a smoother effect. I could not resist trying this out and asked a befriended hunter, who shot me a duck. I had right and left feathers to my disposal and tried them out. And indeed they act differently! A pig's bladder in my refrigerator is still waiting to be tried out as well.

As for the finish in Huize de Dieu, only a larger uncovered area will tell us if this finish is indeed a graining and if this is perhaps painted using either a bladder or a duck's feather and thus being 'arabiën' or 'gladhout'. Besides that, analyses of the binding media must be done in order to understand what we are dealing with. Especially if a satisfactory reconstruction is desired.

Conclusion: distinguishing different techniques through time

Can we distinguish the two main techniques next time we look at new discoveries of graining in order to repaint them? It's quite obvious by now that we need to know how the imitations were made and what materials were used in order to be able to recreate them. So first we have to find out if it is a building up in body colour, a glaze or wash either in 'arabiën' or 'gladhout' manner. This can be understood by uncovering larger areas of the original graining. Secondly, systematical technical analysis needs to look into the pigments and binding media of the paint layers, glazes or washes and varnishes. In the Dutch language the first known description of a graining technique dates from 1604. The oldest surviving examples show wood figure which is painted on a dry ground layer or in a building up of body colour. There is an omission in written instructions on graining, in contrast to those that are given for the art of staining. Material analysis on graining from the end of the sixteenth and the early seventeenth century show ground layers containing orpiment, resulting in a sparkling imitation.

The first instructions in a Dutch painter's manual are of 'arabiën', a technique using a bladder to manipulate the beer distemper probably to look like burl wood. From the mid-seventeenth century on imitations using a glaze or wash of different mixtures can be identified. Some of these examples might be 'arabiën'. They seem to imitate burl, oyster veneering or rosewood, fashionable wood species at that time.

A new technique dating from around the 1740s is described, called 'gladhouten'. The exact definition of this technique remains unclear. Especially because it is uncertain in what way it differentiates from the technique of 'arabiën', apart from the innovation of using a feather next to the more common use of brushes. 'Gladhouten' is perceived to be the technique still practiced in the trade. Consisting in a buildup of a smooth coloured ground layer, an oil glaze or beer distemper to manipulate into a typical wood figuring, removing and adding paint, finished with a varnish. The first timber to be counterfeited in this way appears to be walnut.

A continuous development seems undeniable. Further research could help make a reference collection to support future reconstructions. When making reconstructions such historical references should always be looked into, not forgetting to collaborate with other specialists in the field in

order to gather as much information as possible. And last but not least it is prerequisite to make lots of mock-ups using all the gathered information of the subject to gain more knowledge.

I am grateful for those who have shared their findings generously by presenting them or making sure they were published. It results in the prospect that an evolution might become visible in the art of imitating. Sharing more reference material will definitely help us to get the bigger picture.

Acknowledgements

Thanks to Jim Mooney for proofreading.

Bernice Crijns
Architectural paint and colour expert
Cultural Heritage Agency of the Netherlands
b.crijns@cultureelerfgoed.nl

Notes

¹ The project joins up with a Vidi-project financed by The Netherlands Organisation for Scientific Research (NWO) called 'From Isolation to Coherence', see <http://www.nwo.nl/en/research-and-results/research-projects/i/30/6530.html> (retrieved December 2016).

² Film-forming paints that can be either diluted in water, spirits, oil or turpentine are the topic of this study, staining techniques are not.

³ Many authors write it is especially in vogue in specific periods. Instead I would prefer to specify the periods when faux painting is out of fashion, e.g. during the Interbellum period and post-WOII until the eighties.

⁴ B. Crijns, 'Inzicht door imitaties in zicht: het imiteren van kostbare materialen. II. Hout', in: *KM: vakinformatie voor beeldende kunstenaars en restauratoren*, najaar 2000, pp. 40-46.

⁵ Glaze usually refers to an oil medium, wash indicates it is water-based.

⁶ Examples of 'blotevoetenmarmor' finishes are found in the more wealthy interiors, it is not pre-eminently a rural practice as is frequently thought.

⁷ During the symposium the question was asked if this technique is known in other countries and if so, what it is called there. There are examples known in Belgium, kind communication Charles Indekeu.

⁸ In the last decennia this research has become a separate profession, with international conferences resulting reference publications. The latest is Lisa Nilsen, Kathrin Hinrichs Degerblad (eds), *Standards in Architectural Paint Research*, 2014.

⁹ Hans Michaelsen and Ralf Buchholz, *Vom Färben des Holzes, Holzbeizen von der Antike bis in die Gegenwart*, 2009, pp. 96-98. Jongsma, Ruth, 'Kleuronderzoek Trompenburg, Corps de Logis, Zuidereinde 43', 's-Gravenhage, 2002.

¹⁰ <http://www.collectiewijzer.nl/2016/04/05/wat-heb-ik-nodig-om-een-imitatie-van-een-imitatie-uit-te-laten-voeren/> (retrieved December 2016).

¹¹ Socratic Method is described on wikipedia: https://en.wikipedia.org/wiki/Socratic_method (retrieved December 2016).

¹² www.collectiewijzer.nl > verslagen > kleurhistorisch platform (retrieved December 2016).

¹³ Willeke Jeeninga, *De Ridderikhoffpanden in Hoorn; Roode Steen 9, Grote Oost 3 en 5 Van biervat tot dagmenu*, 2011.

¹⁴ www.collectiewijzer.nl > verslagen > kleurhistorisch platform. (retrieved December 2016).

¹⁵ See figure 7 (p. 88) of the article by Jacco Hooikammer and Hans Piena, 'The dynamics of tradition. Painted vernacular furniture in Staphorst, 1800-2000', pp. 38-50. Edited by Miko Vasques Dias, *Vernacular Furniture. Context, form, analysis*. Proceedings Ninth International Symposium on Wood and Furniture Conservation, 2008.

¹⁶ The room is a case-study in the research project 'From Isolation to Coherence' in which the RCE participates. More information on this project can be found at www.fromisolationtocoherence.nl.

¹⁷ In combination with a gilded and glazed chimney. H. Sigmond and R. Keppler, unpublished 'Rapport Kleurhistorisch onderzoek Huize de Dieu', 2016, pp. 15-16.

¹⁸ Ige Verslype e.o., 'The Original Appearance of the "Painted Chamber" in Huis de Dieu, Alkmaar (1742-1744) The Discovery of a Remarkable Finish', hitherto unpublished article for: the Architectural Paint Research Conference March 2017.

¹⁹ Hans Piena, 'Mahoniegehoute witwerken: imitaties van materiaal, constructie en functie', in: *Cr*, jrg. 4, nr. 2 (2003), pp. 48-69.

²⁰ An elaborate archive of the house has survived including painters' bills. An article on this is being prepared by Verslype 2017.

²¹ Merel van Schroyensteen Landman, 'Herkenbaarheid van houtimitaties uit de periode 1750-1800 in de Noordelijke Nederlanden', unpublished Master's thesis, University of Amsterdam. Inske Immink, 'Rode transparante mahoniekleurige afwerkklagen op eiken meubelen uit de periode 1770-1870', unpublished thesis, ICN, 2001. Kamiel Jurrens, 'Mahonie-

imitaties op eiken. Verslag van een speurtocht naar historische mahonie-imitaties uitmondend in aanbevelingen en het restauratieverslag van een proefobject', unpublished thesis, ICN Amsterdam, 2001.

²² Lambertus Simis, *Grondig onderwijs in de schilderen verwkunst*, first edition Vol. I 1801/Vol. II 1807; second edition, Vol. I, 1829/ Vol. II, 1835.

²³ Simis deel II 1835, p. 26. Sophie van Glerum made mock-ups of various varnishes; the amber varnish showed the highest gloss, see: Sophia Alexandra Glerum, 'Afwerklagen op meubelen 1800-1900, reconstructies van negentiende eeuwse afwerkingen op basis van onderzoek naar contemporaine bronnen', unpublished Master's thesis, University of Amsterdam, 2011.

²⁴ Simis 1801, 238-243. This corresponds with the observations on graining before 1800 which Hans Piena writes about in: Piena 2003, 48.

²⁵ Ian Bristow, *Interior house-painting colours and technology, 1615-1840*, p. 53.

²⁶ Nathaniel Whittock, *The Decorative Painters and Glaziers' Guide*, 1828, p. 20: 'the very great improvement that has been made within the last ten years in the art of imitating the grain and colour of various fancy woods and marbles, and the facility and consequent cheapness of this formerly expensive work, has brought it into general use (...)'

²⁷ Whittock 1828, pp. 39 and 86.

²⁸ Simis deel II 1835, p. 24. In other sources 'gladhouten' is also being used to describe French polished wood.

²⁹ 'Een buffet, vroeger, toen het zijn rood bruin verlaksel nog had, sprekend op gladhout gelijkend (...)' in the past the buffet greatly resembled 'gladhout' when it was still covered with red brown lacquer in: *De Gids*. Jaargang 20, 1856, p. 245.

³⁰ Whittock 1828, p. 42.

³¹ Simis 1801, pp. 238-243; For oak and mahogany he gives more than one recipe: uncoloured wainscot, planed oak, wax polished oak or brushed with oil and varnished, oak tinted brown, [Relatively] new prepared mahogany, old or aged mahogany. The recipes of timbers by Nathan Whittock are partly comparable partly more comprehensive: oak, mahogany, satin wood, walnut tree, rose wood, maple, coral wood, satin wood, in: Whittock 1828, pp. 20-28.

³² Whittock mostly uses beer distemper and only mentions oil glaze in his instructions for oak imitations. He does not use a fluid oil glaze, but a compound of various ingredients mixed together

to the consistence of thick treacle: this is called megilp. There are various ways to prepare megilp. Whittock uses 8 ounces sugar of lead, 8 ounces rotten-stone grounded in linseed oil, 16 oz melted white wax mixed with 8 oz spirits of turpentine, mixed when cold and softened using boiled oil if the megilp is too stiff. Whittock 1828, p. 21.

³³ Gum arabic is referred to in a description of how to counterfeit tortoiseshell in the undated manuscript 'De wetenschap en[de] manieren om alderhande couleuren van saij of saijetten te verwen etc. oock om te leeren het fundament der verlichterij konst', compiled by Jacoba van Veen in the second half of the seventeenth century, for the recipe see: B. Crijns, 'Veelkleurige schildpadimitaties: het imiteren van kostbare materialen. IV. Schildpad', *kM : vakinformatie voor beeldende kunstenaars en restauratoren*, 37 (2001) pp. 32-34. Piena writes 'arabiën' might refer to burl wood, Piena 2003, p. 48.

³⁴ Simis 1801, p. 243.

³⁵ Whittock 1829, pp. 27-28.

³⁶ Simis 1801, p. 243.

³⁷ Ian Bristow, *Interior House-painting Colours and Technology, 1615-1840*, 1996, p. 53.

³⁸ Karel van Mander, *Het Schilder-boeck*, 1604, f251v: 'Daer nae maeckte hij te Doornijck de deuren, al het hout-werck oock stofferende, op een aerdighe maniere verguldende al wat verguldt most wesen, en t'rouwe hout met bruyn Oker, oft roet, van Lijm-verwe aenstrijckende, maeckte metter steck hier in maelgien oft streken, als of het eenigh vreemt hout waer gheweest, t'welck vernist wesende seer wel stondt.' The phrase 'maelgien', is derived from 'maelre': via <http://gtb.inl.nl> (retrieved on 9 October 2016).

³⁹ The curved lines are sometimes referred to as an imitation of marble. Annemiek Teesing, unpublished internship report 'Een Bouwhistorisch Onderzoek bij het Gemeentelijk Bureau voor Monumentenzorg in Amsterdam', March 1992, pp. 3, 22-24. It is conceivable that the darker ground colours were originally decorated with graining too.

⁴⁰ A. Wallert, 'Orpiment und Realgar', in: *Maltechnik-Restauro*, 90, 1984, p. 45.

⁴¹ M. de Keijzer, P.B. Hallebeek, W.G.Th. Roelofs, 'Onderzoek naar zestiende eeuwse plafondschilderingen, beschilderde balken en korbelen in het pand Sint Annenstraat 12 te Amsterdam 1992', ongepubliceerd onderzoeksverslag afdeling natuurwetenschappelijk onderzoek, Centraal laboratorium werknr: 92/096, 1992.

⁴² M. de Keijzer, 'Kleuronderzoek naar de afwerkingen aan de plafondschildering in het interieur van het pand Oudezijds Achterburgwal 199 te Amsterdam', werknr: 2001-002, 2001.

⁴³ Egg tempera has been identified on a painted panel that forms part of a set of coarse white yarn cloths painted to simulate wood paneling. They were discovered in the upper room of The Lockers, at Hemel Hempstead, Hertfordshire and now part of the collection of the Victoria & Albert Museum, inv. nr. W.41-1952. <http://collections.vam.ac.uk/item/O79020/fragment-of-a-unknown/> (retrieved December 2013)

⁴⁴ Binding medium analysis was omitted. SRAL, 'Oriënterend microscopisch onderzoek van beschilderde balkenplafonds in Den Bosch', research and report: A. Friederichs, SEM-EDX analysid: R. Hoppenbrouwers, Dr. Paul van Kan, unpublished report, June 2014.

⁴⁵ Due to the coarse lead white pigments in the paint layer and the rosewood imitation.

⁴⁶ Josefiën Tegelaar, 'Project Koninklijk Paleis op de Dam te Amsterdam', unpublished architectural paint research report, 2007.

⁴⁷ It can be spelled in many ways, as Iep Wiselius shows in his article: Iep Wiselius, 'De jacht op sakerdaan', in: Proceedings Stichting Ebenist, *Houttechnologie voor meubelrestauratoren*, 2005, p. 61. The natural wood was used in this period, but it was also imitated with paint.

⁴⁸ L. Megens, M. de Keijzer R. Keppler, 'Onderzoek van de verflagen op de oorspronkelijke ramen van het Paleis op de Dam te Amsterdam', unpublished ICN onderzoeksrapport, 2007-063.

Photo credits

- Collection Cultural Heritage Agency of the Netherlands
Ruth Jongsmā
Danielle van Kempen
Leonieke Polman