Marble, tortoiseshell, wood and other materials created in paint and lacquer during the Baroque period in Denmark

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Introduction

Faux marble created with paint has been known since ancient times. However, in the Baroque period (1660-1740), marble, wood, tortoiseshell, and other rare or expensive materials were imitated with the aid of paint and lacquer. The production of painted faux materials on surfaces of furniture and interiors was not only a matter of saving money on very expensive materials. To produce things that were not what they seemed to be was a very popular topic in the seventeenth century.

This paper attempts to get a clearer picture of the development of material imitation in Denmark in the Baroque period. The setting for this investigation is two of the royal palaces in Denmark. In Rosenborg Castle in Copenhagen and Fredensborg Palace north of Copenhagen there are several examples of painted faux materials. They were executed in the period from 1663 up to the 1730s by a small number of specially trained painters – marblers or lacquer masters - working for the Danish king.

The study covers four main areas:

• The treatises and recipes that describe methods and materials which the painters might have known and used in their work.
• Examples of imitations are examined through Architectural Paint Research (cross-sections and uncovered surfaces).
• The lacquer masters who manufactured faux materials on objects and interiors for the Danish king.
• The origins of the design of the imitations. Did the painters have real stone samples, tortoise shell etc. to work from, or are the imitations from this period pure fantasy?

Imitation in the Baroque period

Since classic times, trying to imitate nature has been a challenge for the painter. Executing the imitation so well that the spectator is tricked into believing that genuine materials have been used. The seventeenth and eighteenth centuries were a golden period for the art of imitating materials that were used for decorating a surface on either a wall or a piece of furniture. Why this is so, is not clear, but there are some indications that the imitations are somehow linked to the introduction of the imitation of Asian lacquer.

The encouragement to imitate Asian lacquer starts with the shortage of genuine Asian lacquerware on the European markets. As early as around 1610 the Dutch entrepreneur Willem Kick is making Asian lacquer imitations on boxes of various sizes.1 The scant general knowledge of Asian craft and fashion determines the motives which are painted on the lacquerware as well as the materials and methods used. This results in items picturing the European idea of Asian decoration instead of being a proper imitation. As time passes, and the knowledge of Asia increases, the quality of the imitations improves.

Even though the Europeans don’t have much knowledge of Asian urushi lacquer in the early part of the Baroque period, they manage to produce quite a presentable imitation of the surface of Asian lacquerware. However, they use materials which can be purchased in Europe and with which they have experience. This ‘japanning’ probably inspired craftsmen to mimic other materials with comparable glossy, hard and smooth surfaces such as polished marble, polished tortoiseshell and polished wood.

The treatises and recipes in the Baroque period

It is a fact that the treatises of the seventeenth century list the art of japanning right next to the art of marbling and creating faux tortoiseshell, as is seen in the two early publications Polygraphice - The Arts of Drawing, Engraving, Etching, Limning, Painting, Varnishing, Japanning, Gilding, etc., by William Salmon, first published in 1672, and A treatise of Varnishing and Japanning, by Stalker and Parker, published in 1688. Both treatises use the same materials and methods for japanning as well as for marbling, faux tortoiseshell and other materials.2 The oldest Danish recipe book dealing with the subject is called, in translation, ‘A short and detailed instruction on how to prepare lacquer and how to japan, so arranged that anybody on their own can beautifully lacquer, in simple lacquer and Brilliant (Venturin Lacquer) with all kinds of
colours’. The book was published in 1746 by an unknown author.

Examining the recipes in these publications we find which materials and working methods were recommended. But even though these publications are quite detailed we cannot be sure that the author completely understood the working process or the materials, since the recipes often were translated from another language or just copied from an older work. It is also likely that the knowledge of a method went from master to apprentice. Through the generations experience grew and new smarter methods were developed.

One of the earliest recipes I have been able to find regarding the imitation work of marble, tortoise-shell etc. is found in the publication by William Salmon. In this book there are a number of imitation recipes. Salmon presents us with examples of what usually is imitated in the following introduction to the subject: If you are to imitate anything, as Amber, Lapis Lazuli, Marble, Tortoise shell, etc. you must first make the imitation of them upon that which you would Varnish. With their proper Colours, as in Limning or Painting with Oil, which must be thoroughly dry; then by the former section go over all with the Varnish so often, till you see it thick enough, letting it dry every time leisurely.

The recipes for marbling
Salmon presents two recipes for marbling. They represent two different methods where the layer structure consists of different binding materials. Both recipes are for a white marble with black veins and grey clouds:

- Distemper painted motives finished with layers of lacquer to obtain a high gloss
- Motives painted solely with layers of lacquer

Stalker & Parker present only one recipe and it resembles the first of Salmon. The contents and the phrasing are almost the same, so Stalker & Parker must have copied the older work. The two oldest Danish recipes on marbling from 1746 only refer to the lacquerwork itself. In these recipes the author describes exclusively the manufacture of the finishing lacquer layers of a black marbling and of marbling with other colours. How to produce the black and coloured marbling – the ground layers with painted veins and other details – is not mentioned at all.

Recipes for tortoiseshell
Salmon presents four ways to imitate tortoiseshell. They represent four different methods where the layer structure consists of different binding materials:

- Ground: Leaf silver. Flames: Glue paint and coloured lacquer. Finish: Lacquer
- Ground: Leaf silver. Flames: Oil colours. Finish: Lacquer
- Ground: Red and yellow colour. Flames: Coloured lacquer. Finish: Lacquer
- Ground: Red and silver or gold colour. Flames: Coloured lacquer: Finish: Lacquer

Stalker & Parker present two recipes. Both of them are inspired by Salmon’s recipes 1 and 3. However, Stalker & Parker are also supplying more advice on choosing methods and materials, and they give a small history lesson on the fashion of tortoiseshell. The Oldest Danish recipe on tortoiseshell from 1746 is somewhat different but resembles to a certain extent the third of Salmon’s recipes as the ground for this tortoiseshell is not a layer of silver but a red ground. The flames are made with glue paint and the colours are applied from the lightest colour towards the darkest, which is the opposite of all the former recipes. The imitation is finished with several layers of lacquer which are polished and finished with a last layer of clear varnish.

Other recipes
In the treatises there are a magnitude of different varnish recipes which cover a wide spectrum of optical effects: coloured lacquers, such as red, blue, green, yellow, olive-coloured, chestnut-coloured, and white. Lacquers for wood without colour. Imitation of Indian lacquer, Bantam work, lacquer for Japanese and Chinese golden figures and gold or silver speckles in lacquer (a venturine lacquer). Imitations of lapis lazuli stone, marble, tortoiseshell. Imitation of amber is mentioned but not described in detail. Imitation of porcelain is described in the Danish treatise from 1746.

In the early Baroque treatises there is no mention of how to manufacture faux wood, however, several examples of this are to be found in the Baroque period in Denmark.

Methods and materials
Analysing these early recipes we find that they strive to imitate the real material, it being marble or tortoiseshell. For example, regarding the imitation of tortoiseshell it is recommended to have a little piece of shell next to you when you work, in order to make the imitation as correct as possible. The recipes vary from complex mixtures and methods to more simple ones. Some are only semi-
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When the materials used in the recipes are listed it is clear that some materials are represented in several of the recipes. When the materials used in the recipes are listed it is clear that some materials are represented in several of the recipes.7

Figure 1 shows the complete list of the materials mentioned in all the recipes examined. The list is divided into three groups: colours (pigments and dyes), binders & solvents and lacquers.

**The ground layer**

All recipes describe a smooth ground made of glue paste of some sort. On top of this a colour is applied which is giving the imitation the right glow. Silver is in this context regarded as a colour.

**The veins and flames**

After this, the structure of the imitation is roughly divided into three methods:

1. The imitation is applied solely in lacquer layers which are polished.

2. The imitation’s first layers are executed with either oil paint or distemper (various sorts). When the motif is finished several lacquer layers are applied and polished.

3. The imitation is started as method 2. But only the first detailed layer of the imitation is performed in distemper or oil. The following layers are made with coloured lacquer. Again when the motif is finished several lacquer layers are applied and polished.

The three methods result in imitations with a slightly different expression. The distemper and oil marbling can result in a rather flat imitation with only little depth. The method with many coloured lacquer layers, on the contrary, has a certain depth in the image. The large amount of lacquer layers also enables polishing into a high gloss.

**Baroque imitations in Denmark**

In the Baroque period imitation was very popular in Denmark. Interiors and furniture were richly

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**Figure 1** List of all materials used in the early and later Danish Baroque recipes for the imitation of marble and tortoiseshell.

**Figure 2** Rosenborg Castle. Painted by Johan Jacob Bruun, c. 1740.
decorated. The royal palaces represent very fine examples of fully imitated interiors and furniture. Especially Rosenborg Castle, Frederiksberg and Fredensborg Palaces offer numerous examples. In the last fifteen years a number of decorations at Fredensborg Palace and two of the rooms with imitations at Rosenborg Castle were examined by Archaeological Paint Research. Together they show the development from the earlier Baroque period to the later part. In the following, details of this development will be presented.

### The early Baroque imitation methods

One of the oldest examples of faux material from the Baroque period we find at Rosenborg Castle in Copenhagen (figure 2). In 1667, the royal bedchamber was renovated in one of the most fashionable styles of the time: Chinese lacquer with a golden decoration and tortoiseshell imitation. The Chinese decoration lacquer I will not get into at the moment, but I will concentrate on the tortoiseshell (figure 3).

This tortoiseshell was painted on the framework of the existing oak wood panelling in the original bedchamber of King Christian IV, some years after he had died. The new king and queen had the room renovated in a new style. To carry out the renovation the king chose the Dutch lacquer master Francis de Bray, who came to Denmark at the king’s request in 1663. De Bray had just finished his first Chinese-inspired interior decoration in black and gold colours with raised and inlaid work in one of the tower chambers when he started the decoration of the bedchamber. This was to be another Chinese-inspired interior: Chinese golden motives on a blue-green ground with the framework covered with faux tortoiseshell and silvered mouldings. The wooden wall panels were covered with a layer or two of glue paste ground which was carefully sanded and smoothed. Markings of each piece of faux tortoiseshell to be painted were cut into the ground adding to the imitation (figure 4). When regarded in raking light the surface shows the edges of the tortoiseshell pieces. This feature is rarely seen in the creation of painted faux material in Denmark, but it gives an almost three-dimensional, very lifelike look to the surface.

The structure of the imitation itself was analysed through a series of cross-sections sampled from one of the painted doors. The first paint layer on the glue paste ground are three layers of pinkish and orange yellow colour (figure 5). The first two layers are fairly thin while the third layer is thicker. We have yet to discover if these layers are painted with distemper or oil colour. On top of these three layers is the first layer of lacquer. It is a thin layer with a dark brown, almost black colour. A much thicker layer of lacquer follows. It seems to be another sort of lacquer because in UV light it has a different florescence. This layer has a yellow colour. It is very thick and the top of the layer is smoothly sanded. The next layers of lacquer are much thinner and have even thicknesses. They have slightly
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Marble, tortoiseshell, wood and other materials created in paint and lacquer during the Baroque period in Denmark. Different colours ranging from medium brown to light yellow and their UV florescence is also slightly different. Typically, a coloured layer is surrounded by colourless layers. There are up to six of these thin layers. In total the tortoiseshell imitation has been built up by at least nine layers.\(^\text{11}\)

Examining the cross-sections from the room paneling it is clear that the method used by De Bray is a fairly complex method involving the application of many layers of various types with frequent sanding in between.

The king’s lacquer master also executed the marbling in the marble room at Rosenborg Castle (figure 6), which was decorated in 1667-1670.\(^\text{12}\)
This marbling was created on the doors while the walls were covered with stucco marble – another

Figure 4 Example of the faux tortoiseshell painted at Rosenborg Castle in 1667. The yellow arrow shows a marking line cut into the glue paste ground in order to make a three-dimensional illusion of the cut and shaped pieces of tortoiseshell. These lines are quite visible in raking light and add to the illusion of the door being mounted with pieces of real tortoiseshell.

Figure 5 Cross-section of the tortoiseshell executed in 1667. Magnification 10x, polarised light and UV fluorescence

Figure 6 In the marble room the walls are covered with stucco marble and the doors are painted with lacquer. The interior was painted in 1667-1670. Only minor restorations have been carried out over the years. The marble room was painted by the king’s lacquer master the Dutch specialist Francis de Bray.

Figure 7 A part of one of the doors showing four different marble types. The blue section of the rhomb shape is a digital reconstruction of original blue transparent lacquer which has now turned into a greyish colour.
imitation technique. The design of the marbled doors resembles the design of the stucco marble. However, the intensity of the colours differs. Also note that the colours of the stucco marble – mainly the red and yellow colours – have degraded into grey colours, while the marbling on the doors is in a very good condition.

The marbling is built on a thin, smooth glue paste ground. A design for the faux marble pieces has been cut into the ground in order to resemble the edges of the various pieces of marble. Also here the result is quite an effective illusion when you observe the marbling in raking light. Each type of marble – there are four different stones – consists of various numbers of layers according to the type of marble being imitated (figure 7). The application method of the layers also differs: some are painted wet-in-wet (a la prima) while others are painted on a dry layer. Some layers have been dabbed on while others are applied with a brush. The different effects are used in order to imitate the stone. The paint materials must have been fairly non-viscous because often drippings are seen. The layers are all executed in lacquer. An examination showed that the marbling consists of up to nine different types of layers. Some of the layers seem to have been sanded and smoothened, and eventually finished by application of one or more layers of clear lacquer.

The faux tortoiseshell in the Chinese bedchamber and the marbling in the marble room are examples of imitations from the early Baroque period. They represent methods that come close to the methods described in the treatises of the same period (Salmon and Stalker & Parker).

Figure 8 Fredensborg Palace. Painted by Johan Jacob Bruun, 1739.

Figure 9 The altar at Fredensborg Palace Church. The marble work in the church was made by the king’s marbler Elias Green.

Figure 10 Detail of the top decoration.
The later Baroque imitation methods

In Denmark we also find imitations of various materials in the later part of the Baroque period. At Fredensborg Palace (figure 8), which was inaugurated in 1722, the imitation works were created by another of the king’s marblers, Elias Green. He worked at the palace several times. In 1727, he created what is known as his main work in the church of the palace. His signature is incorporated in the marbling on one of the columns of the altar (figures 9-11). Almost all doors of the main palace were executed with wood imitations while the door frames were finished with various sorts of imitations: marble, amber and tortoiseshell (figures 12, 13) – various wood types and even a dark blue-grey which could be imitating steel (figure 14). Unfortunately, these decorations have later been covered with new layers of paint.

Other examples of marbling from the later Baroque period are found on a table (figure 15) which was part of the furnishings at another palace – Frederiksberg – which was finished in 1709 and rebuilt in 1729. In this palace the wooden parts of the interior were marbled. Even the furniture was marbled. A table from these interiors still exists.

Besides visual analysis and stratigraphic examination of several rooms in Fredensborg Palace the table has been uncovered completely; the results contribute to our knowledge of imitations from this period.

The visual analysis

Typical for this period are the colour richness and the large number of different imitations put together: marble next to amber or tortoiseshell. The same richness in decoration is seen on the table which is decorated with three different types of marble (the table top of real marble is a fourth type). On the doors two or three different wood imitations are mixed with coloured lacquer. The doors of almost each room have their own wood and colour combination.

The points of visual identification for the imitations of this period can be summed up:

• ‘Material wealth’: many different types of imitations put together in one place.
• Contrast between the heaviness or lightness of the brush strokes.
• Contrast between the forms of the designs of the imitation (large and small shapes).

Figure 15  Marbled table from Frederiksberg Palace (now Fredensborg Palace).
• Contrast between a colour-heavy marbling and a ‘mildly’ coloured marbling or other imitation.
• Contrast between a heavy and a light reflected surface (gloss).
• The use of complementary colours (e.g. red <-> green).

The use of lacquered and matte surfaces, faux tortoiseshell, amber and iron reflect a material wealth, and this variety of colours and patterns seem to be part of the baroque identity when it comes to the art of imitation in Denmark.

The imitations seem to have in common that they are not broken down into pieces according to the ‘natural size’ of the materials, as we saw on the imitations at Rosenborg. However, the uncovered areas are small, and the windows give us a limited view, which makes it impossible to draw definite conclusions. On the other hand, the altar of the church and the uncovered table show no signs of breaks in the design, where one would expect faux joints.

The stratigraphic analysis

All of the uncovered areas and cross-section samples show that the imitations of the later Baroque period are built without a glue paste ground. A typical feature is that the preparation of the wood appears to be a saturation of the wood in the form of a coating of perhaps varnish or dark coloured glue. It is always painted directly on the woodwork. Minor deficiencies in the woodwork like knots or small holes in the surface are not always filled out. This layer of saturation of the wood is not found on the table.

The structure of the imitations on the table as well as on the doors and door frames start with a thin base layer. Usually, this first colour is a medium grey colour which is believed to be distemper. The grey colour is used as a cool tone for the following layers, and it covers the wood regardless of the type of imitation. In some cases this layer is slightly multicoloured. That means that the design of the marble is already outlined in this layer. The following layers are sometimes painted with distemper and sometimes a coloured glazing is applied locally. Typical is the roughness in the design of the veins of the marble. The brush strokes are often easily visible when regarded from up close.

A further common feature of this period is the use of glazes of lacquer for contouring areas around the veins, and creating weak and strong shadow glazings, mostly in a bright colour, which due to the thinness of the layer is only a hint. These shadow glazings exist in a kind of intermediate layer between the veins and finishing lacquer layers. Some of the marbling types have been built up with several lacquer layers of which some are coloured, some are clear, and even one is milky. On both the door frames and the table the number of layers differ from one type of imitation to another. On the table each type of marble is built with up to seven steps containing one or more layers.

On top of the coloured layers are found the finishing lacquer layers. In some places they are almost colourless (though often slightly yellowed due to decomposition), in some places they are pigmented: either bright or dark. On the table these last lacquer layers were sanded into a smooth even surface, while the surface on the door frames were rougher and only a few of them were sanded.

The kings’ lacquer masters in Denmark in the Baroque period

There is no doubt that the lacquer masters of the Baroque period who were employed by the Danish kings were highly skilled. In fact, when King Frederik III wanted to renovate the rooms at Rosenborg Castle according to the latest fashion he called for the Dutch lacquer specialist Francis de Bray. He worked for the king in Denmark for almost ten years before he moved on to Sweden. Another Dutchman became the king’s new lacquer master, Christian van Bracht. He stayed in Denmark and became the father of two sons who he trained in the art of lacquering. He probably also trained Elias Green – the lacquer at Fredensborg Palace;

<table>
<thead>
<tr>
<th>Francis De Bray</th>
<th>Christian van Bracht</th>
<th>Johan van Bracht</th>
<th>Elias Green</th>
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<tbody>
<tr>
<td>(1663-71)</td>
<td>(1657-1720)</td>
<td>(1684-1710)</td>
<td>(1736)</td>
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| He is called to Denmark by King Frederik 3 in 1663. Possibly educated in Holland. Creates the The Princess’ Lacquered Tower Room, The Chinese Bed Room, The Marbled Room and a fourth room, today unknown. De Bray travels to Sweden in 1671 to work for Magnus Gabriel de la Gardie in Karlberg Palace, near Stockholm. (Weilbach) | He could either have succeeded de Bray or they could have worked together from 1669-71? Perhaps von Bracht came to Denmark to become de Bray’s assistant. Cvb Restored The Princess’ Lacquered Tower Room. Rosenborg 1716. (Weilbach) | Probably educated by his father, who assisted in marbling and japanning at the royal palaces. (Weilbach) | Licensed as Court painter. 
Probably educated by his father, who assisted in marbling and japanning at the royal palaces. (Weilbach) |
| Carsten Tønder |Christian van Bracht | Restored de Bray’s Chinese Bed Room, Rosenborg 1723. His licence was confirmed in 1725. (Weilbach) | Elias Green (d. c. 1736), master
Licensed as Court painter 1712. Renewed 1731. Marbling and japanning in the royal palaces from 1716 at Rosenborg and from 1722 at Frederiksborg. |
we know that they worked together at Rosenborg Castle in 1712. Van Bracht probably also trained his son in law Carsten Tønder, who became the king’s lacquer master after the death of Van Bracht (figure 16).

Lacquering was a special passtime for the royal family in Denmark in the Baroque period. There are several examples of lacquered items from the hands of members of the royal family in the royal collection at Rosenborg Castle. Most likely, they were taught and assisted by the king’s lacquer master.

The imitations and the real stone

The colourful and richly patterned imitations of the Baroque period have received many names, one being fantasy marble. The design of the Danish Baroque marbling has for many years been described as colourful, fantastic, peasant-like etc. Typical of the Baroque marbling are the colours, the fantastic patterns, the great movements and repetitions of the elements of the designs. Often you feel that the marblings are personal. It is true that many of the marblings which are seen in seventeenth- and eighteenth-century churches, manor buildings and town houses are very imaginative. When you look at marblings from the townhouse Møntmestergården, originally in
Copenhagen, now Den Gamle By in Århus (figures 17, 18) you understand the willingness to call these marblings fantastic. It is hard to see which sort of marble they imitate. Other examples are painted in the Great Hall at Sælø Castle, a manor house in the country side in Denmark. And again it is not easy to identify which sorts of marble they are illustrating (figure 19).

However, the marblings were executed in a period where the aim of imitating was to trick the spectator to believe that the imitation was the real thing. The better the quality of the imitation the greater the trick. The king was at the top of the society’s ladder – he had the means to employ the best painters who were able to produce the perfect imitation.

Identification
Getting close to the marbling at Rosenborg Castle and Fredensborg Palace during the examinations of the palaces interiors it became a challenge to try to identify the sort of marble which could be the model for the marbling, in case they were not pure fantasy. Using several marble encyclopaedias, most of the uncovered marbling samples were more or less identified.

A number of limitations were established before the identification:
- Sample access: marble types from Europe and the counties around Europe were preferred.
- Sample size: the uncovered paint areas were limited, leaving a large degree of uncertainty. Also, the marble encyclopaedias themselves do not mention the size of the presented piece of marble.
- Sample colour: one has to take into account that the colours of the pictured marble sample can slightly differ from the real thing.
- The colours of the uncovered marbling may have changed from original due to degradation and later treatments.
- The uniqueness of the natural stone: it is impossible to find exact matches.
- Several uncovered marblings were digitally retouched to make up for damages from earlier treatments.

More than eighteen of well over twenty samples were identified, and despite the fantastic character of some, many marblings were identified to a large degree of certainty. Figures 20 to 27 show some of the marble types which were identified.

Having been able to identify the imitated marble it is tempting to think that the Baroque painter actually was copying real marble. There are more indicators for that. For example, the diversity of the marbled expression suggests that the painter has had some kind of original to copy or to use as inspiration. If the imitator had no original design to copy, it is possible that all marble types would look more or less the same or would not resemble real marble at all. To work from a given design or to copy was largely a method Baroque painters knew. The apprentice copied the master and the master copied the more prominent painters and so on. Therefore, it is reasonable to believe that even the
most prominent painters would have been in need of some design to copy, preferably real marble, tortoiseshell etc. - exactly what Salmon recommends in his manual. Freedom for the imitator would be in his interpretation of the sample.

Marble collections and inspiration sources

The uncovered marblings at Fredensborg Palace and on the table indicate that the size and amount of marble samples that were at the disposal of the painter may have been small. The size of the veins and typical characteristics are limited, and spread over a larger area. The green marbling on the table apron (figures 23, 24) suggests that the painter on occasion would integrate two or more marble types into one, either because he had only small pieces of real stone to his disposal, or to vary the expression. It is unknown if all marblers would have had their own (small) stone collection, but they could have had access to stones from other sources, such as the stone collections of their wealthy clients.

In the Baroque period furniture with inlaid stone, metal, wood, tortoiseshell etc. was often produced. A decorated table top, for example, is a small stone collection in itself. At Rosenborg Castle there are several examples of furniture with small stone collections (figure 28). In places like Fredensborg Castle the genuine marble fireplaces and marble door frames, in particular in the dome hall, could have served as an example too.

On large building sites painters might have had the opportunity to meet sculptors and other stone workers. Many craftsmen and artists at the royal construction sites came from abroad. They may

Figures 23, 24 Possible identifications of later Baroque marbling at Fredensborg Palace.
Figure 23 The marbling on the door frame in the queen’s oldest cabinet. Perhaps the inspiration for this marble is the ‘Irish Connemara marble’ or ‘Irish green’.
Figure 24 The red marbling between the pilasters in the crown princess’ bedroom. ‘Brèche Sanguine’ could be the inspiration for the red marbling. Brèche sanguine is found in Kriestel, Algeria.

Figures 25-27 Possible identifications of later Baroque marbling on table originally from Frederiksberg Palace.
Figure 25 The first parts of the white-green marbling which were uncovered on the table showed a green light and grey marble with dark grey and green veins and black minister. The marbling could be identified as ‘Verde Chassagne’, which is mined in France.
Figure 26 When the uncovering started on the other three pieces of the table’s apron big red spots of colour and small red veins popped up. It seemed as if the marbler suddenly gave full rein to his imagination. However, while searching for marble types another green marble came to the attention: ‘Jaspe du Mont-Blanc’, which is mined in Bachbett des Fernet, Saint-Hervais, Haute Savoie, in France. The big red blobs in this marble type are reminiscent of the red areas of the marbling. So perhaps in this case the marbler combined two different stone types.
Figure 27 This beautiful red marbling was very difficult to identify but the veins and colour scheme of ‘Escalettens’ show a fine match.
have had stone samples from areas where it was easier to obtain marble samples. The painter (apprentice) who had no access to real stone was taught to marble by his master. He may even have never come close to a real piece of marble. This might explain why the marbling in town houses and country manors are further away from genuine marble than the marbling at the royal palaces.

Conclusion

When comparing the execution of the younger imitations at Fredensborg Palace to the older imitation at Rosenborg it is obvious that a development has taken place. The glue paste ground is no longer used, instead a thin layer of greyish distemper functions as a ground, which at the same time gives a darker cool tone to subsequent layers.

The discarding of the glue paste ground is probably a result of experience. Often the seventeenth- and eighteenth-century treatises recommend a thin glue paste ground which is sanded to such a degree that the paste is left only thinly covering the grain of the wood.

In the Chinese bedchamber at Rosenborg Castle the glue paste ground is fairly thick, and as a result the paint layer is constantly flaking. These damages have shown themselves at an early date, and examinations have shown that large areas of the original tortoiseshell imitation have been restored already in the Baroque period.21

The techniques seen at Rosenborg, where the marble is built up of only lacquer layers, are not present in later periods. The bottom layers, including the veins of the marble, are always made with distemper or oil and the coloured and transparent layers of lacquer are used as the top layers.

This development is also visible in the early treatises on the subject. These are only slightly younger than the examined samples at Rosenborg Castle. The Danish recipes which are about twenty years older than the samples from Fredensborg Palace describe only the manufacturing of the lacquer layers themselves – not the design layers executed in distemper. This could indicate that coloured lacquer layers showing part of the final design followed by several layers of clear lacquer was replaced by the execution of design layers in distemper followed by clear or almost clear lacquer layers applied on top. However, the examinations of the later Baroque imitations show that in the 1720s the coloured lacquer layers were still used in the build-up of the imitations before the application of the final lacquer layers.

When examining the recipes for creating imitation of various sorts it is difficult to establish a development in the use of materials. The list of materials seems to be fairly short and the main bulk of the materials are used across the whole period. The oldest recipes from 1672 already describe the use of different systems based on lacquer/lacquer, oil/lacquer, and distemper/lacquer. If we can see a development it must be rather a cut in the different techniques or methods and a simplification in the execution of the imitation. But this conclusion can not be drawn upon the small number of studied recipes from the later part of the period.

The materials used at Rosenborg and Fredensborg have not been tested, and a development in the use of materials has not been established. However, we hope to have the materials used for the imitations at Rosenborg tested in the future.
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Notes
2 The art of japanning and creation of faux materials are often paired with the art of gilding. All three are present in the books by Salmon and Stalker & Parker.
3 In Salmon and Stalker & Parker’s recipes the darkest colour is first applied and followed by brighter colours.
4 In this case white equals the colour white. But usually in the treatises white means clear (like water).
5 Fredensborg Palace, the wood imitations are part of the original decoration on the doors of the palace which was inaugurated in 1722.
6 Salmon as well as Stalker & Parker recommend to use a piece of tortoiseshell when imitating this material.
7 This analysis is conducted on the previously presented recipes and not on the entire collection of recipes in the early treatises.
8 Unfortunately, the marbling and faux wood in Frederiksberg Palace have to a large extent been repainted in the nineteenth and twentieth centuries.
9 Stratigraphic examinations – uncovered areas and/or cross-sections of the paint layers.
10 On this door there are at least two repair periods which were executed in the Baroque period. These repair periods will not be analysed in this context. The photo is showing a cross-section of the tortoiseshell imitation sampled in an area where only the original paint layer is represented.
11 It is possible that there are even more layers in other areas. When you take samples for cross-section you work in a very small area and the area next to it might show a different number of layers – particularly in this type of painting where the colouring and layer thickness differ so much.
12 There is no archival evidence of De Bray executing the marbling in the marble room. However, the similarities in the execution methods of the Chinese bedchamber and the marble room strongly indicate the same painter. It is also known that De Bray stayed in Denmark at the time of the completion of the room.
13 Cinnabar and lead yellow.
14 A stratigraphic examination based on layered uncovering of paint by the use of solvents and a microscope.
15 Each layer can consist of more than one application.
16 This diversity is also reflected in the rest of the interior, for example, in the painted panels and the highly coloured and/or patterned wall coverings.
17 In the 1960s a large part of one of the door frames, a door and a part of the panelling were uncovered and here no joints were found.
18 The original lacquer layers on the table unfortunately had to be removed due to extensive damage. The table had been painted several times and the original lacquer layer was damaged by sanding caused by the preparation of the second colour period. The original paint layer was uncovered in 2004.
19 A finishing lacquer consisting of many layers which have been sanded to a smooth and even surface is not seen on the door frames at Fredensborg Palace, which often have grainy surfaces. However, the archives show that when Fredensborg Palace was inaugurated the paint was still wet on the door frames and panelling which suggest that the execution of the decorations had been under some sort of time pressure to be finished. This could explain the less evenly sanded surfaces. If we look at the before-mentioned table from Frederiksberg Palace the surface of the wooden core is much smoother and the finishing layers of the marble were smoothly sanded too.
21 Archives show that two of the original four lacquered rooms (executed from 1663 to 1670) were restored in respectively 1716 and 1723.

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