



Joseph Coscia, The Metropolitan Museum of Art

Figure 1. Parisian ebony cabinet-on-stand, mid-seventeenth century,
The Metropolitan Museum of Art, Gift of Mrs. Harold Fowler, 1931, (31.66,a,b).

A Seventeenth-century Parisian Ebony Cabinet Restored by Herter Brothers

Part one by Mechthild Baumeister

ABSTRACT

An ebony cabinet brought from Spain to Philadelphia in the early nineteenth century by United States naval agent Richard W. Meade, and since 1931 in the collection of The Metropolitan Museum of Art, is a fine example of a type of furniture fashionable in Paris during the first half of the seventeenth century. A restoration in 1884–85 by the established New York cabinetmaking and interior design firm Herter Brothers was documented by two inscriptions stamped into the back of the cabinet, while information that Charles Guenold, a cabinetmaker in Philadelphia and previous owner of the cabinet, had supposedly already restored it two years earlier, was only discovered during the recent investigation into the cabinet's complicated history.

In seventeenth-century Europe, ebony was an exotic and expensive material, which generally was glued to substrates made of locally available woods. Its economical use on the cabinet is also seen in the layering technique that allowed ebony veneers, carved ebony reliefs and ebony ripple moldings to be applied using a minimum amount of this valuable material. Hidden inside the furniture is a colorful, architectural perspective made of various materials such as different species of wood, mirror plates, and marbled or stained ivory and bone forming a central compartment that contrasts boldly with the cabinet's somber black exterior and the interior façade.

The extensive nineteenth-century restorations were skillfully executed and well-integrated into the fabric of the original. The article presents distinctive features of the techniques and materials used in the manufacture of the cabinet and its restoration, describe the extent of the alterations, and consider how the nineteenth century cabinetmakers approached the task of restoring this piece of historic furniture. This paper will also discuss certain elements of the cabinet that were not reconstructed during the 1880s restoration, such as the secret compartments behind the architectural perspective, which can be understood on the basis of technical evidence and comparative study of similar ebony cabinets.

INTRODUCTION

A Parisian ebony cabinet-on-stand in The Metropolitan Museum of Art is one of approximately sixty surviving examples of a type of furniture that was fashionable in France during the reign of Louis XIII in the first half of the seventeenth century (fig. 1).¹ The possession of such a cabinet, elaborately decorated with carved ebony, engraved ebony veneer, and ebony ripple moldings, reflected the high status of its owner, who would have used it to store and display valuables and curiosities.² In seventeenth-century Europe, ebony was an exotic, expensive material imported from Madagascar and nearby islands.³ Ebony workers came from Germany and the Low Countries and settled in the French capital early in the seventeenth century, where they were known as *menuisiers en ébène* and later as *ébénistes*, which became the French term for makers of veneered furniture of all kinds.



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Figure 2. Ebony cabinet, with interior façade visible.

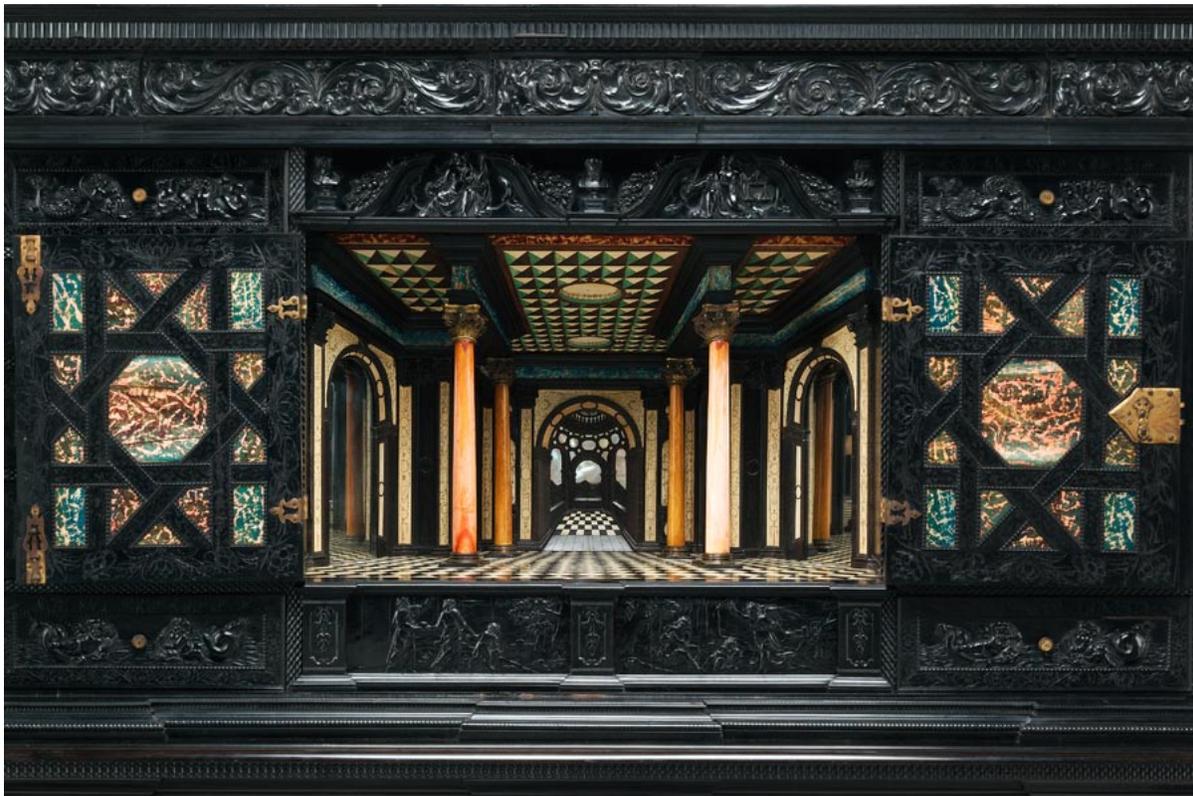
The carved scenes on a number of these cabinets derive from illustrations in various early seventeenth-century editions of the Bible. Woodcut illustrations by Jean Cousin in *Figures Historiques du Vieux Testament*, first published in Paris in 1596 by Jean le Clerc, served as inspiration for some of the carved panels on the Metropolitan Museum's cabinet. Depicted on the exterior of the left door is *The Judgment of Solomon*, and on the right, *Solomon and the Queen of Sheba*.

Behind the two large doors of the cabinet is an elaborate interior with two smaller doors flanked by drawers (fig. 2). A colorful architectural perspective, known in French as a *caisson*, forms the central compartment in each of the known ebony cabinets, contrasting boldly with their somber black exteriors and interior facades (fig. 3). The *caissons* are composed of a variety of materials; in this case, they include various species of wood, marbled or stained ivory and bone and, most importantly, mirrors that give an illusion of infinite space and show objects displayed in the *caisson* from all sides.

HISTORY

A remarkable event in the cabinet's history is documented by an inscription stamped twice into the back: "restored 1884-5 Herter Brothers" (fig. 4). This renowned New York cabinetmaking and interior design firm was established in 1864 by two German immigrant cabinetmakers, Gustave (1830–1892) and Christian Herter (1839–1883).⁴ By 1883 the firm had passed out of their hands and was under the direction of William Baumgartner and William Gilman Nichols. The role of Herter Brothers as restorers is less well known, but its services included repairs and restorations of furniture of its own design and furniture made by other firms, as well as antique furniture and woodwork. As early as 1866, the company was assessed on that part of its business related to repairs, which constituted a small but regular monthly share of the firm's income.⁵

The ebony cabinet was brought from Spain to Philadelphia in 1820 by Richard Worsam Meade (1778–1828). Meade, an American merchant who established his business in Cadiz in 1803, was also the United States naval agent for the Cadiz



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Figure 3. Architectural perspective (*caisson*) of the ebony cabinet.

port from 1805–1816.⁶ His son, General George Gordon Meade (1815–1872), who led Union forces to victory at the Battle of Gettysburg, inherited the cabinet from his father.⁷ Of special relevance to its restoration history is a lawsuit regarding the ownership of the cabinet, initiated in Philadelphia in 1882 by Margaretta S. Meade, General Meade’s widow.⁸

An article published in the *Philadelphia Inquirer* on Christmas Day of that year under the headline “A Curious Suit. Litigation Over an Antique Cabinet Found in Memorial Hall” provides some background information about the dispute.⁹ In 1860 the Meade family had sent the cabinet, “having become considerably scratched and defaced in the course of time,” for repair to a cabinetmaker by the name of William H. Quass. The Civil War broke out and the cabinet apparently was forgotten in Quass’s workshop on Monroe Street. When Quass died in the spring of 1882, the executors of his estate held a public sale, and Charles Gunold, a cabinetmaker on Dock Street, bought the cabinet.

The article states:

The cabinet caught the experienced eye of Mr. Gunold, who purchased it and then spent much time and labor in restoring it to its former beauty. Having to a great extent



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Figure 4. Inscriptions stamped into the back of the cabinet and the stand.

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Figure 5. Details of the proper left door of the ebony cabinet showing the layering technique of the ebony. The veneer was inlaid in recesses cut into the oak substrates, and then the carved relief and ripple moldings were applied.

Mechthild Baumeister



Figure 6. Center panel of the proper left door of the ebony cabinet. When the ebony decoration was removed, cutting marks were found on recessed areas in the oak substrate along both sides of the remaining relief, indicating the extent of the original cavity prepared for the background veneer. The white lines represent the cutting marks while the dashed lines show the altered outline of the cavity that was recut because the veneer would not have provided sufficient background for the applied relief.

succeeded in this endeavor he then deposited it in Memorial Hall in charge of the [Pennsylvania] Museum, where it has since remained on public view.

A son of General Meade, George Meade, recognized the cabinet, and the lawsuit for its recovery was initiated. A letter written by George Meade in October 1882 to Dalton Dorr, Director of the Pennsylvania Museum and School of Industrial Art, which was named as a co-defendant with Charles Gunold, mentions \$800 as the price Gunold apparently had paid for the cabinet.¹⁰ Conditions of the settlement that was reached in October 1883 are not known, but according to surviving court records the cabinet had been valued by the plaintiff at \$1000, who requested an additional \$2000 for sustained damages.

The ebony cabinet made the news again in June 1885, when it was featured on the front page of *The Art Amateur Journal* and in an article under the headline “A Remarkable Cabinet:”

The cabinet was bought for a trifle at a sale of personal effects not long ago in Philadelphia by a furniture dealer of that city. He found it shockingly dilapidated, it having for many years been put to the most ignoble uses, and finally banished to the lumber room as valueless. Recognized despite the bad treatment it had suffered, as a marvelous work of Italian art of the latter part of the sixteenth century, it was sent to the Pennsylvania Museum for exhibition in Memorial Hall, where it attracted much attention.¹¹

The article also discusses the lawsuit and mentions that the settlement left the cabinet in the hands of the dealer, presumably Gunold.¹² Furthermore, the article reveals the connection to Herter Brothers: “In the meanwhile a member of the Herter Brothers had seen it, and recognizing the possibility of its complete restoration, bought it, and converted it into the admirable piece of cabinetwork we see.” After the cabinet was restored by Herter Brothers

it was acquired by Mrs. Robert Hoe as a gift for her husband, who was a Trustee of the Metropolitan Museum from 1870–1892.¹³ In 1931 their granddaughter, Mrs. Harold Fowler, gave the ebony cabinet to the Museum, where several restoration treatments were subsequently carried out.¹⁴

The cabinet has not been on display for decades, in part, allegedly, because it was considered a nineteenth-century pastiche.¹⁵ Recently, having recognized the historical importance of the cabinet, and in view of Herter Brothers’s increasing fame, curators in the Museum’s Department of European Sculpture and Decorative Arts decided to display the cabinet again in the permanent galleries and sent it—once again in poor condition—to the Sherman Fairchild Center for Objects Conservation for examination and treatment.¹⁶

It is not possible to judge the extent of Gunold’s and Herter Brothers’s restorations based on documentary evidence discovered to date. More to the point, it is difficult to believe that the cabinet was completely restored twice in the short period between 1882 and 1885. Still, the cabinet speaks for itself, and the technical examination revealed much of the 1880s alterations.

ORIGINAL CONSTRUCTION VERSUS NINETEENTH-CENTURY RESTORATION

The economical use of ebony typical of the seventeenth-century workmanship can be seen in the layering technique that allowed ebony veneers, carved ebony reliefs, and ebony ripple moldings to be applied using a minimum amount of this valuable material. As the first step, relatively thin sheets of veneer, measuring 0.8–1 mm in thickness, were inlaid in recesses cut into the oak substrate, so that the veneers and the exposed oak surfaces were on the same level (fig. 5). The carved reliefs, raised architectural elements, and ripple moldings were then glued to the oak substrate, overlapping the edges of the inlaid veneer.

Cutting marks found on recessed areas in the oak substrate along both sides of the carved cen-

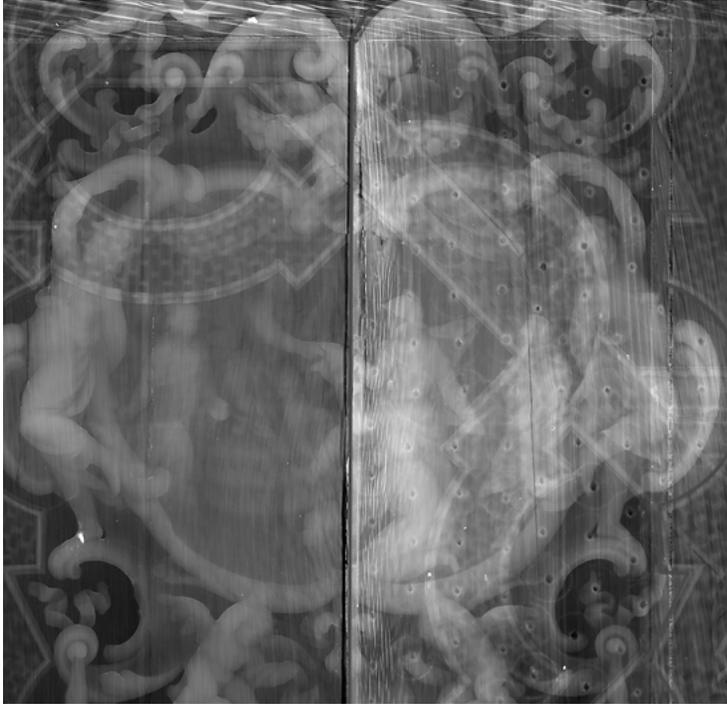


Figure 7. Detail of the radiograph of the proper right door of the ebony cabinet.

ter panel clearly are due to an error in planning. They indicate the original extent of the cavity prepared for the background veneer, which was then enlarged during the actual execution. One logical interpretation is that these cuts reflect an attempt to use as little ebony as possible, and that the alteration was necessary because the veneer would not have provided sufficient background for the applied relief (fig. 6). Also, to further reduce costs, ebony was applied mainly at eye level; the columns on the stand for example, are made of ebonized pear wood.¹⁷

A major restoration on the exterior of the proper right door can be dated to the 1880s, when the proper left half of *The Judgment of Solomon* was entirely replaced. The technique used here is completely different from the original layering technique: both the relief and surrounding background were carved from solid ebony. The radiograph of

the door reveals that during the restoration the oak substrate, which had already been recessed for the ebony veneer, was further cut back to a depth of 7mm in order to insert the solid panel of ebony (fig. 7). This was done with a $\frac{3}{4}$ " drill bit with a center point in a drill press. The use of this technique proves that the restorers did not try to economize on ebony, which was readily available and less expensive during the nineteenth century than in the seventeenth century. When a ripple molding is removed, the edge of the solid ebony panel and a section remaining from the original veneer are visible.

Delamination and loss of ebony elements were surely always a problem, as they are today. On the larger door on the proper left, which consists of a frame with two panels, damages are much a result of the fact that the grain of the oak panels runs perpendicular to the grain of the applied ebony decoration. On the proper right door the grain directions of the single oak panel and the ebony decoration are the same, and it is therefore difficult to imagine why the proper left side of the "Judgment" relief needed to be replaced, especially given that the surviving half of the relief panel is in good



Figure 8. Detail of proper right door showing an original section on the left-hand side and a replaced section on the right-hand side.



Figure 9. Comparison of drawer construction. Rebuilt drawer (left); an original dovetailed drawer from an ebony cabinet in a private collection (center); an original dovetailed drawer with applied front panel from the ebony cabinet in the Victoria and Albert Museum (right).

condition and most of the original ripple moldings are present.

While the framing cartouche could have been easily reconstructed because of the symmetry of the design, the figural scene may be based on an available illustration of *The Judgment of Solomon* or copied from original fragments, if they survived. On first sight, the replaced panel seems to be a good match, but on closer inspection one notes the use of an ebony with an open grain texture and that the carving is more three-dimensional and not as refined as the original (fig. 8). Also the background, while nominally flat, has gouge marks and is not as smooth as the original ebony veneer.

The difference in the use of ebony in the seventeenth and nineteenth centuries is also visible on some of the moldings. In the original technique the cabinetmaker utilized a maximum of oak and just enough ebony to scrape the molding. On the contrary, a block of solid ebony was used for the replacements. The original ripple moldings differ from their nineteenth-century replacements in scale and in their selection of an ebony with a more open grain texture and the engraving is much stiffer than the original.¹⁸

Another major alteration of the nineteenth century is the replacement of the backs, bottoms, and sides of all of the drawers. Except in two cases, the original oak fronts decorated with carved ebony panels framed by ripple moldings and engraved ebony veneer were preserved.¹⁹ The use of an exotic hardwood, as yet unidentified, but otherwise never seen on seventeenth-century European furniture, and the construction of the drawers indicate their 1880s date. As seen on examples of original drawers from other seventeenth-century Parisian ebony cabinets the original dovetailed drawers may have been made either of oak or of another wood, onto which an oak panel with the ebony decoration was applied (fig. 9).²⁰ The preservation of almost all of the original drawer fronts suggests that the drawers were largely extant, although the bottoms were probably cracked, warped, and detached from the sides so that the drawers did not work properly. The seventeenth-century drawer bottoms would have been glued and nailed to the bottom edges of the sides and not inserted into grooves as seen on the nineteenth-century replacements. The goal of the nineteenth-century restoration in this respect was to insure that the cabinet was functional, but also can be seen as modernization, reflecting improvements in the construction of drawers introduced in intervening centuries.



Figure 10. Back of *caisson*.

The boards of the poplar case were originally joined with dovetails while the vertical interior dividers were connected to the top and bottom with tenons.²¹ The dust boards between the drawers, which in the seventeenth century did not extend to the full depth into the case, were inserted in grooves. The dust boards were later extended to the back of the case, and circular saw marks visible on the back edges indicate that this alteration dates to the nineteenth century. At this time, in fact, the entire carcass was taken apart and wooden strips were set into grooves cut into the inner faces of the side boards, which must have warped due to the one-sided application of the ebony decoration, in an attempt to straighten them.²² The same treatment was also carried out on the backsides of the veneered floor and ceiling of the *caisson*. While the cabinet was dismantled, all interior surfaces were smoothed with a jointer. Strips of wood were inserted into the grooves to make up for the reduced thickness of the boards.

The architectural perspective—the jewel of the cabinet—has been much altered (fig. 3). Whereas the veneered floor and ceilings, most of the cornices with marbled ivory friezes, and the two front ivory columns, stained red to simulate coral, are original, other elements, such as the engraved bone and ebony decoration, the mirrored arcades

and central belvedere, and the two rear wooden columns, showing traces of a fugitive red stain, are nineteenth-century replacements.

A closer look at the techniques used for the staining of the original ivory friezes and the later replacements, demonstrates on one hand the unusual nature of the original technique, and on the other, the degree to which the restorers were able to imitate these effects using simpler

methods and to integrate the restorations with the original. Marbleized ivory, which embellishes the inside of the *caisson* doors and the frieze of the interior, can be found inside many of the surviving Parisian ebony cabinets. Contemporary instructions for marbleizing ivory reveal that a mottled or veined effect was achieved using a wax resist method.²³ The examination of the reverse of lifting ivory and cross sections revealed that both the obverse and reverse were marbleized in the following way. The red stain was applied first. Wax was then used to mask the red-stained areas and to coat surfaces intended to remain white. The ivory was dipped into a blue stain that colored the remaining exposed surfaces. The stains do not penetrate very deeply into the ivory, and for the ceiling of the *caisson*, bone, with its more porous structure, was chosen for elements to be stained green. This assured that the color would still be visible after the marquetry decoration of the ceiling, which includes also ivory, ebony, kingwood, and Brazil wood, was smoothed after it was glued to the wooden substrate.²⁴

Non-destructive analysis with Raman spectroscopy revealed that indigo or woad was the colorant for the blue.²⁵ Energy-dispersive X-ray spectrometry was used to identify copper in the green stain, which is most likely verdigris.²⁶ The red stain was identified with high performance liquid chromatography as a mixture of two different red dyes,

madder (probably *Rubia tinctorum*, L.) and Kermes (*Kermes vermilo* Planchon) as well as a yellow dye, weld (*Reseda luteola* L.).²⁷ In the nineteenth century, painted bone was used for the well-integrated replacements of the marbled frieze. Prussian blue was identified as the blue pigment and the pinkish red is a mixture of vermilion and lead white.²⁸

Major alterations can be seen more easily from the back of the *caisson*. The original dovetailed cornices made of oak, onto which the marbled ivory frieze and a thin strip of ebony were applied, are adjacent to lumber core, screwed and glued together, where it was used as the substrate for the nineteenth-century bone and ebony veneer on the wall panels, the mirrored arcades, and the belvedere (fig. 10). The appearance of the original wall decoration of the *caisson* is unknown, but most likely the restorers approached their reconstruction based on the evidence of surviving material that they found. The use of engraved bone to represent oculi surrounded by balustrades in the center of the original ceiling supports the assumption that originally the wall decoration also contained some engraved bone or ivory panels, as is seen on other *caissons*, where the engraving is filled with a dark paste.²⁹ The position of the reconstructed wall paneling follows the original layout, as delineated by the contours of the original floor and ceiling, with associated cornices.

Recessed areas in the back of the *caisson*, cut to accommodate the four replacement mirrors so that their bottom edges would not be visible, are nineteenth-century alterations to the original floor. The dovetailed grooves on the sides of the *caisson* no longer have a function. When first made, the *caisson* was fitted with secret compartments, a feature always found in this type of cabinet.³⁰ Placed in the grooves on each side of the *caisson* were three shelves supporting hidden drawers. Access to each of these elaborately decorated secret compartments would have been through a side panel that pivoted on hinges. The holes for the hinge pins are preserved on the undersides of

the original cornice sections. Evidence of a system for locking the side panels can be seen on the side walls of the *caisson*. Two dovetailed grooves in the floor of the *caisson* indicate the original placement of its sides and therefore the size of the secret compartments, which were wider than the openings created by swiveling the side panels. This suggests that originally each shelf housed two secret drawers, placed such that when the first was removed, the second could be found. Such a playful organization of secret compartments can be found in *caissons* of other surviving Parisian ebony cabinets, such as the pieces in Windsor Castle and the Rijksmuseum.³¹ Most of the cabinets examined and studied thus far appear similar in layout, in the decoration of the architectural façades, and in the mode of access to the secret compartments. The Metropolitan Museum's cabinet differs from these examples both in layout and access, and for now we can base our provisional reconstruction of the secret compartments only on the basis of surviving physical evidence.

DISCUSSION

The nineteenth-century restorers appear to have been respectful in their work, following the original design and reusing many of the seventeenth-century elements. The replacements were carefully integrated with the original, demonstrating the sensitivity of the craftsmen to the character of the cabinet. When they replaced lost elements, however, they sometimes invented or simplified them. For example, the use of mother-of-pearl, selected to represent the sky in the belvedere, is not seen on any of the other *caissons*.

A simplification of form in the replacements can be seen in the straight front edges of the lower shelf and top of the stand, the originals of which must have had projecting center and side sections echoing the layout of the cabinet's façade, as is seen on other examples of Parisian ebony cabinets.

Significant parts of the structure, such as the top and back of the cabinet, as well as all sixteen drawers, with the exception of the decorated drawer

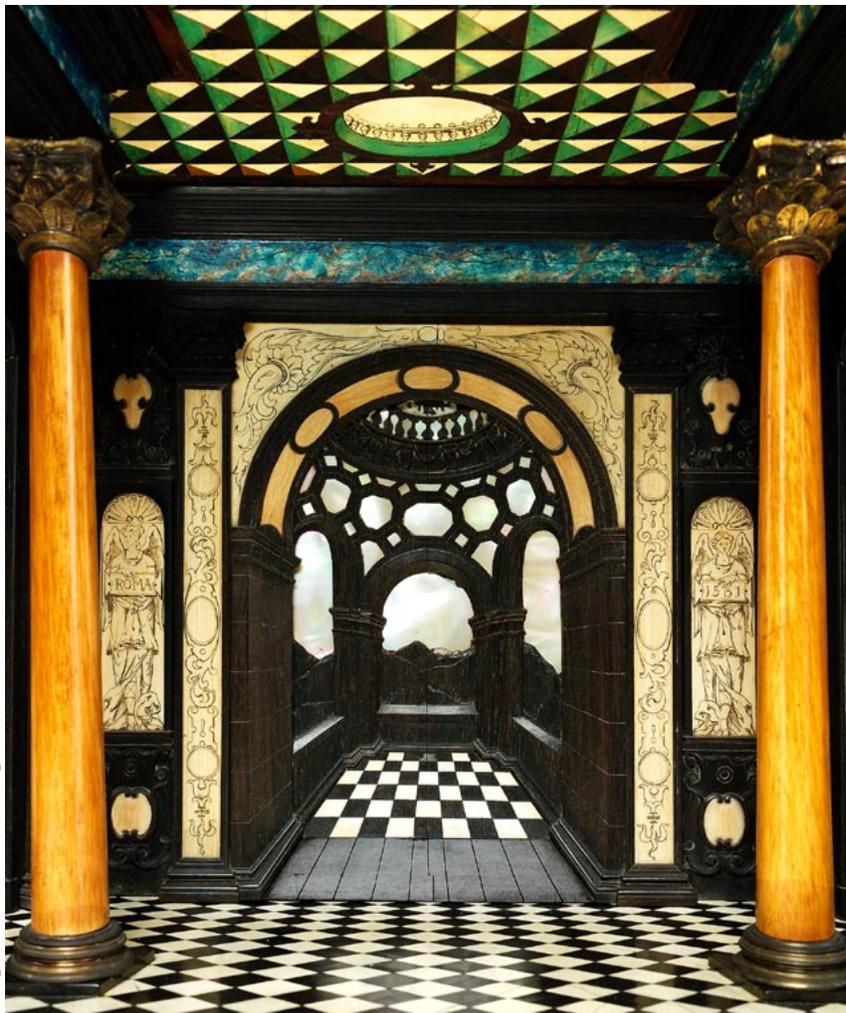


Figure 11. Detail of *caisson* showing nineteenth-century bone replacements engraved with angels holding plaques inscribed “Roma” and “1561.”

fronts, have been replaced showing that design elements but not necessarily the original fabric were respected.

From the restorations it is also possible to judge what the restorers, as well as the local art establishment, did not understand about the cabinet. The 1882 article in the *Philadelphia Inquirer* erroneously describes the furniture as:

An antique sacerdotal cabinet, wrought in ebony and oak by the cunning hand of a medieval wood worker. It was of the kind placed beside the altar in the early days of the church to hold the sacred vessels used in the communion service.³²

A similar attribution was held as doubtless by the writer of the 1885 article in *The Art Amateur Journal*.³³ Furthermore the author, in praising Herter Brothers’ restoration, reveals an important discovery made by the restorers: “in taking it to pieces the date 1561 was found behind one of the columns.” The nineteenth-century angels engraved in bone flanking the belvedere, holding plaques inscribed “Roma” and “1561” presumably reflect this discovery and also the belief at the time that the cabinet was of Italian origin (fig. 11).³⁴ If the report is true, the date probably read 1651 and was incorrectly transcribed by Herter Brothers. In fact, on the basis of this article, it is certain that Herter Brothers is responsible for the restoration of the *caisson* and most likely also for the restoration of the proper right door and the replacements of the carved drawer fronts, as the article states: “The original carving is very fine, and the missing parts have been well restored.”³⁵

Herter Brothers proudly identified its work by stamping the back of the cabinet twice. It remains to be investigated whether or not this was the company’s usual practice or if it reflects the unusual scale of this restoration.³⁶ Certainly furniture restorers in the nineteenth century generally did not sign their work.

A Study of Tothing Plane Marks Found on the Ebony Cabinet

Part two by Stéphanie Rabourdin-Auffret

INTRODUCTION

In order to differentiate original elements from later replacements, and in an attempt to attribute reworked elements and replacements to specific restoration campaigns, a systematic study of tothing plane marks was conducted in different locations on the ebony cabinet, chosen on the basis of accessibility. These sites include back surfaces of ebony veneers, carved elements, ripple and other types of moldings, as well as the side walls and the back panel of the *caisson*, which is known to have been replaced by Herter Brothers. Approximately sixty areas were studied and photographed through a stereomicroscope.

A tothing plane is a plane with its cutting iron grooved on the top surface so that the cutting edge is serrated. Traditionally, this tool was used by cabinetmakers to plane hand-sawn boards or sheets of veneer. In addition, the roughened surfaces resulting from its use are generally considered to improve the adhesion of surfaces when they are glued.

The study of tothing plane marks is important because it can provide valuable information as to the date when a piece of wood was worked. Both André Félibien (1619–1695) and Jacques André Roubo (1739–1791) discuss tothing planes and their use in their technical treatises. Gener-

ally, the number of teeth increases over time—the teeth are wider in the seventeenth century than in the eighteenth and nineteenth centuries—although the number of teeth can vary even within the same period; depending on the needs and the characteristics of the wood, a cabinetmaker might use blades with wider or narrower teeth.³⁷ Also the shape of the teeth is helpful for dating plane marks. Roubo precisely describes the trapezoidal shape of the teeth in the eighteenth century, which became progressively more triangular over time.³⁸ One explanation of this evolution may be found in the mechanization of the wood sawing process: as long as the wood was manually sawn, it was necessary to plane the surfaces afterwards, which became less the case when wood was mechanically sawn. The trapezoidal teeth allowed a rough surface to be easily planed, whereas triangular teeth primarily would scratch the wood. The different tothing plane profiles result in distinctive marks on the wood.

There are essentially two ways to measure tothing plane marks. The first one is to count the number of teeth per unit of measurement. This is the more reliable method but it is only possible when there are sufficient contiguous tooth marks on a specific surface. The second way is to measure the distance between two teeth, or between two adjacent ridges

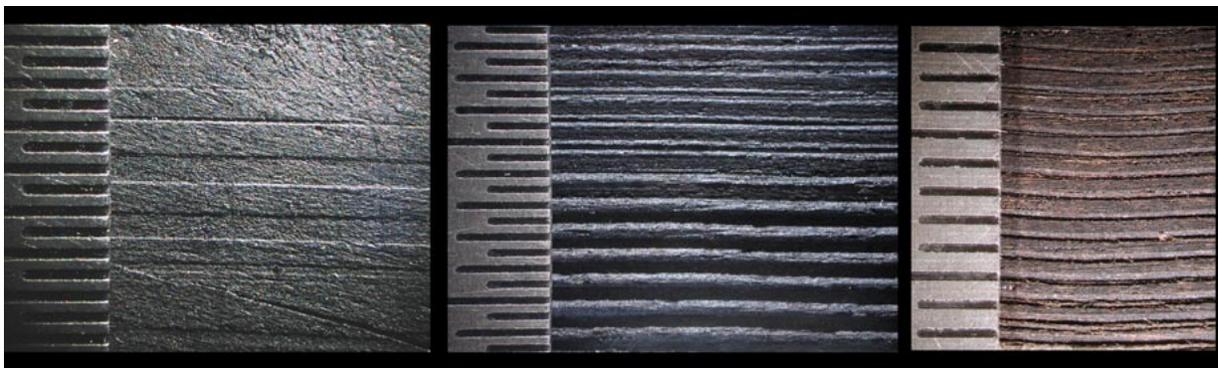


Figure 12. Tothing plane marks found on the ebony cabinet. Original seventeenth-century tothing plane marks (left); first type of nineteenth-century tothing plane marks (center); second type of nineteenth-century tothing plane marks, attributed to Herter Brothers (right).

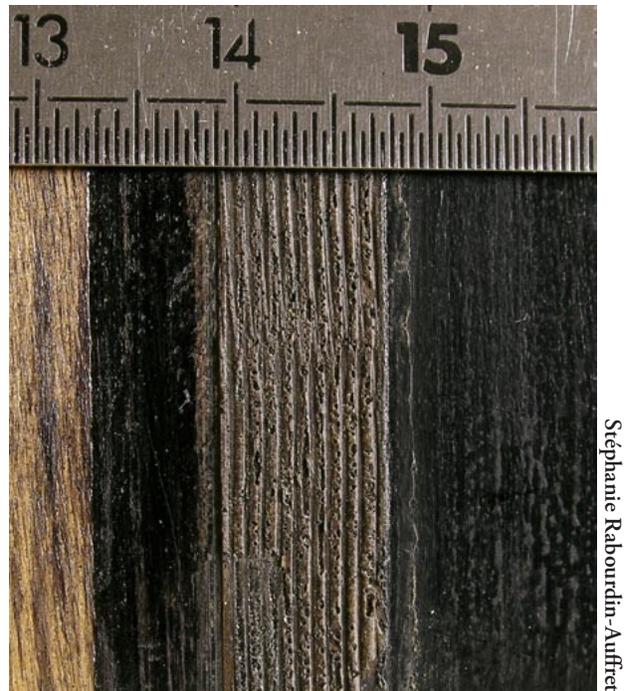
that separate the teeth. Because accuracy depends on the clarity of the marks, the results are not always reliable. The two systems can also be used in combination.

It is important to observe characteristics of the marks other than size: do they go from one end of the piece of wood to the other? Are they straight? Are they deep? These features can indicate if the tothing plane marks were made in the wood at the time the furniture was constructed or during a restoration. In the first case, the marks tend to be deep, straight, and to continue along the entire length of the board. Often when an original element has been reworked, the marks are random, more shallow, or obscured. Indeed, during a restoration, the cutting iron is frequently removed from the plane and used to remove old glue, or to score the wood before gluing.

EXAMINATION

It was expected, as a matter of course, that large, trapezoidal tothing-plane marks such as those usually left by a seventeenth-century tool would be found on the ebony cabinet. But after examination of many of the original elements, it appeared that their back surfaces had been most likely scraped or planed smooth. Specific marks, probably made by a dented scraper or plane blade were found in some areas and, in many cases, there were no marks at all. A very few residual hand saw marks were observed.

Just in one location, on the edge of the back surface of a piece of veneer, the large and trapezoidal tothing plane marks expected to be seen everywhere were observed (fig. 12, left). In that case, the bottoms of the grooves are large and flat, indicating that the teeth were trapezoidal, such as described by Roubo. Also the space between adjacent teeth is large. Because no more than three teeth were ever found together, it was not possible to get a count per centimeter, although by measuring their width and the spaces between adjacent teeth, it was possible to calculate that the plane could not have had more than seven teeth per centimeter.



Stephanie Rabourdin-Auffret

Figure 13. First type of nineteenth-century tothing plane marks, impressed into the glue, found on both side walls of the *caisson*.

Two other types of tothing plane marks were found as well, most likely made by two different nineteenth-century planes. Both have triangular shaped teeth but are easily distinguished by their size and other features.

Marks of the first type (fig. 12, center) were observed on the back surfaces of a few areas studied, including three different kinds of straight moldings, an element of the base, and two ripple moldings, the latter being obvious replacements. They were also found on the back of some ripple moldings of the drawers surrounding the *caisson*. Between twelve and thirteen teeth per cm were counted. The marks are deep and straight and run from one end of the piece of wood to the other, which indicates that the pieces were planed before they were cut or, in the case of a large element, while the piece was held in a vice. In many instances, the ebony itself has different features than ebony used on the rest of the cabinet, in particular a longer and more open grain, and the frequent occurrence of brown streaks in the wood. The combination of these observations and characteristics of the tooth-

ing plane marks support the conclusion that these elements are replacements, whereas a few others are most likely reworked originals.

Identical tothing plane marks were also found on both side walls of the *caisson* (fig. 13). In this case, they were not cut into the wood itself but impressed into the glue where an adjacent element, no longer extant, was attached. This clearly indicates that something else was glued here before Herter Brothers restored the cabinet, because the wall paneling of the *caisson*, which was replaced in its entirety by Herter Brothers, now covers this area and is screwed, not glued.

The marks left by the second nineteenth-century tothing plane measure about fifteen teeth per centimeter (fig. 12, right) and are not as deep as the marks left by the tool described previously. They were first observed on the back part of the *caisson* made by Herter Brothers. In this case, it is clear that the wood was planed prior to being cut because the marks run the entire length of the board. The backsides of some veneers and ripple moldings that were judged as original, exhibit similar marks, but here, the tothing plane was certainly used in connection of a restoration. This conclusion is supported by the curvature of some of these marks, which clearly indicate that the blade used had been removed from the plane.

Deep, random scratches were also observed on other ebony elements and in some areas on the oak substrate. In one instance, these scratches were found in association with a filler exposed during the treatment currently in progress. This filler, present under a piece of ebony on the proper left door, consists mainly of fine saw dust in a cellulose nitrate medium, which indicates that this restoration took place during the twentieth century, when the cabinet already had entered the Museum's collection.³⁹

DISCUSSION

This study provides further information regarding the different campaigns of restoration carried out on the cabinet. Based on the observations described above, it can be stated that at the time of manufacture, the back surfaces of the ebony elements were planed first with a tothing plane in order to remove the hand-saw marks, and then scraped or planed to reach the desired thickness. Although the absence of original tothing plane marks at first seemed surprising, it can be explained: if the tothing plane marks were still on the reverse side of the veneer, there would have been considerable risk of cutting through the veneer in the deeper parts of the engraving. In the case of the carved elements or ripple moldings, the grooves left by the teeth would have been visible at the edges.

The presence of two different tothing plane marks datable to the nineteenth century might support the documentary evidence for two different campaigns of restoration during the 1880s. Because the first type of marks is present on the side walls of the *caisson*, it can be assumed that a cabinetmaker worked on that area before Herter Brothers replaced the wall paneling. Can this be attributed to Gunold? If so, what was the extent of his work? Does the occurrence of the first type of tothing plane marks on the back surfaces of several ripple moldings on the drawers surrounding the *caisson* indicate that Gunold may be responsible for their construction?

The tothing plane marks observed on the back of the *caisson*, known to have been replaced by Herter Brothers, provides a reference point for identifying other work that the company undertook, such as the regluing of original elements.

Finally, the scratches observed on other elements, including the oak substrates, most likely result from a later restoration carried out in the Museum, when detached elements were reglued.

FUTURE RESEARCH

In order to understand more fully the history of the Museum's ebony cabinet and the restoration campaigns of the nineteenth century, it is necessary to continue the physical investigation of the cabinet itself and to consult further documentary sources. In addition to close study of surviving tool marks, microscopic identification of the various ebony species and other woods present on the cabinet as well as the characterization of surface finishes, should allow more conclusive attributions of the nineteenth-century restorations to Charles Gunold or Herter Brothers. In fact, details of Charles Gunold's activities as a cabinetmaker and furniture restorer are unknown, and contemporary documents describing the condition of the cabinet when it was on display at Memorial Hall might shed some light on the extent of his restoration. Although many publications have been devoted to the work of Herter Brothers in its early years, while under the direction of Gustave and Christian Herter, little attention has been given to the firm's later activities. Entirely neglected by scholars is the role of Herter Brothers in the restoration of contemporary and historic furniture.

Furthermore, while the present publication has focused primarily on the history of the restoration of the Metropolitan Museum's cabinet, the parallel study of its original manufacture should prove highly useful in future research related to the surviving corpus of more than sixty Parisian ebony cabinets dated to the seventeenth century, specifically with the goal of workshop attributions.

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Thornton, J. The history and technology of waveform moldings: reproducing and using Moxon's "waving engine." In *Postprints of the Wooden Artifacts Group presented at the 30th Annual Meeting of the American Institute for Conservation, Miami, Florida*. 43–52. http://www.wag-aic.org/2002/WAG_02_thornton.pdf.

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ENDNOTES

1 The dimensions of the cabinet are: 190 cm (74¾ in.) high, 167.6 cm (66 in.) wide and 57.2 cm (22½ in.) deep. Remington, P. 1931. An ebony cabinet of the seventeenth century. *Bulletin of The Metropolitan Museum of Art* 26(10): 232–236. Kisluk-Grosheide, D., Koeppe, W. and Rieder, B. 2006. *European furniture in the Metropolitan Museum of Art: highlights of the collection*, New York: The Metropolitan Museum of Art; New Haven: Yale University Press. 34–37. Alcouffe, D. 2002. La naissance de l'ébénisterie: les cabinets d'ébène. In *Un temps d'exubérance: les arts décoratifs sous Louis XIII et Anne d'Autriche*, Paris: Exh. cat. Réunion des musées nationaux, Galeries nationales du Grand Palais. 212–247.

2 Lunsingh Scheurleer, Th. H. 2005. *Pierre Gole ébéniste de Louis XIV*. Dijon: Edition Faton. 52.

3 The inventory taken after Pierre Gole's death in 1685 lists the quantity and price of the ebony (# 63 in the inventory) present in his workshop: "premièrement dans la cour s'est trouvé la quantité de six mil cent soixante quatre livres d'esbyne prisee à raison de quinze livres le cent revenant aud. prix à la somme de neuf cent vingt quatre livres douze sols." The amount of 6164 livres equals 3014.20 kg or 6631.2 lbs. In reference to the given value of 924 livres for the ebony, it is interesting that a large ebony cabinet made in Gole's workshop between 1645 and 1650 is listed in the inventory for 150 livres. In 1685 the ebony cabinets had fallen out of fashion, while the material itself was still in high demand for furniture with marquetry decorations. An earlier inventory taken in 1635 after the death of the *menuisier en ébène* Pierre Boulle, nine ebony cabinets ranging in value between 70 and 240 livres are listed. Lunsingh Scheurleer, Th. H. 2005. 223, 267, 52. Viaux-Locquin, J. 1997. *Les bois d'ébénisterie dans le mobilier français*. Paris: Léonce Laget. 88–98.

4 *Herter Brothers, furniture and interiors for a gilded age*. New York / Houston: Exh. cat., Museum of Fine Arts Houston, High Museum of Art, Atlanta, The Metropolitan Museum of Art, New York, 1994.

5 *Herter Brothers, furniture and interiors for a gilded age*. 1994. 84–86. Documentation regarding restoration and repair projects carried out by the firm, which had evolved more into a decorating and furnishings business after 1883, is preserved in the Herter Brothers archive at The Winterthur Library, which covers the activities of the company from 1891–1906, when the company closed. We would like to thank Jeanne Solensky, Librarian at The Winterthur Library, for providing us with information from the Herter Brothers archive.

6 <http://www.virtualology.com/georgemeadel> The entry on George Meade (1741–1808) includes also biographical information on his son Richard Worsam Meade.

7 *The national cyclopedia of American biography*. 1984. Clifton, New Jersey: James T. White & Co. 4:66. See also the American National Biography online <http://www.anb.org/articles/home.html>.

8 The lawsuit took place from December 16, 1882 to October 12, 1883 in Philadelphia's Court of Common Pleas, No. 4.

9 A curious suit. Litigation over an antique cabinet found in Memorial Hall. *Philadelphia Inquirer*, December 25, 1882. One day later the *New York Times* published the same but slightly shortened article under the headline "Gen. Meade's Antique cabinet." *New York Times*, December 26, 1882.

10 We would like to thank Behrooz Salimnejad, Conservator, Philadelphia Museum of Art, for providing us with a copy of the letter preserved in that Museum's archives.

11 A remarkable cabinet. 1885. *The Art Amateur Journal* 13(1): 1, 17–18.

12 Variations of the spelling of Gunold have been found in different documents as Günold and Gue-nold, suggesting a Germanic origin of the name. If Gunold, who is referred to also as cabinetmaker in George Meade's letter to Dalton Dorr, Director of the Pennsylvania Museum and School of Industrial Art, might have been a furniture dealer as well is speculative at this point, although the 1882 *Gopsill's Philadelphia City Directory* mentions a Gunold Charles, furniture, at 247 S 2nd and 233 Dock Street, implying that he had two workshops or possibly a workshop and salesroom. We would like to thank Jack Hinton, Mellon Fellow, Philadelphia Museum of Art, for providing us with the information from the City Directory.

13 Mr. Robert Hoe was a member of the appointed committee to establish the Metropolitan Museum in 1869 and served on the first executive committee after the Museum was founded in 1870. Howe, W. 1913. *A history of the Metropolitan Museum of Art*. New York. 92, 117, 123. We would like to thank Deborah Schorsch, Conservator in The Sherman Fairchild Center for Objects Conservation, for bringing this information to our attention.

14 Based on the recollections of Mrs. Hoe documented in a letter from February 1932 and preserved in the Metropolitan Museum Archive, Mr. Hoe apparently had come across the cabinet in Philadelphia "in some family attic," but felt at the time it was too expensive for him. He kept an eye on it until purchased by Herter Brothers, who evidently put it in order before selling it to his wife.

15 Sometime after the cabinet had arrived at the Museum in 1931 the following statement attributed to Preston Remington, Curator for Western Art, was entered into the departmental card catalogue: "The entire carcass of the cabinet has been rebuilt, using in part the old wood, planed down to new surfaces, and in part new wood. The bottoms and backs of the drawers, and in some cases, the sides, are new. Occasional moldings have been replaced and the lower shelf and feet seem to be restorations. None of these repairs, however, are important considering the rarity of the piece." It is not known when exactly the cabinet was removed from display, but a photograph taken of the Louis XIV bedroom shows the cabinet in this gallery in 1962. According to Claire Vincent, Associate Curator, European Sculpture and Decorative Arts Department, the cabinet was taken off display in the early 1970s when the gallery was turned into a storeroom.

16 The cabinet is featured in the recent publication: Kisluk-Grosheide, D., Koeppe, W. and Rieder, B. 2006. *European furniture in the Metropolitan Museum of Art: highlights of the collection*, New York: The Metropolitan Museum of Art; New Haven: Yale University Press. 34–37.

17 The microscopic identification of the pear wood (*Pyrus communis* L.) was undertaken by Dorothea von Rotenhan, former conservation intern, and Marijn Manuels, Associate Conservator, The Sherman Fairchild Center for Objects Conservation, The Metropolitan Museum of Art. Meiler, J. and Klein, P. 2002. Holzarten zur Imitation von Ebenholz. *Restauro* (2): 110–115. Michaelsen, H. and Buchholz, R. 2006. *Vom Färben des Holzes, Holzbeizen von der Antike bis in die Gegenwart*. Peters-

berg: Michael Imhof Verlag. 502–504.

18 Jutzi, V. and Ringer, P. 1986. Die Wellenleiste und ihre maschinelle Herstellung. *Maltechnik Restauro* 92(2): 34–62. Thornton, J. 2002. The history and technology of waveform moldings: reproducing and using Moxon’s “waving engine.” In *Postprints of the Wooden Artifacts Group presented at the 30th Annual Meeting of the American Institute for Conservation, Miami, Florida. June 2002*. 43–52. http://www.wag-aic.org/2002/WAG_02_thornton.pdf. Van Soestbergen, C. 1999. The reproduction of a ripple moulding machine by Roubo. In *Fourth international symposium on wood and furniture conservation. Amsterdam, The Netherlands, 10 December 1998*. 65–81.

19 An exception is the two upper proper right drawers where the ebony, sculpture and engraving are slightly different than on the other drawers, indicating their nineteenth century date.

20 Interesting is the reversed placement of the dovetails seen in the center drawer in fig. 9.

21 The microscopic identification of the poplar (*Populus tremula* L.) was undertaken by Dorothea von Rotenhan, former conservation intern, and Marijn Manuels, Associate Conservator, The Sherman Fairchild Center for Objects Conservation, The Metropolitan Museum of Art.

22 The technique of inserting wooden strips into grooves cut along the grain on the reverse of warped panel paintings was also a common technique used in paintings restoration in an effort to keep the panel straight after flattening the panel by applying water to its backside. Schiessl, U. 1999. History of structural panel paintings conservation in Austria, Germany, and Switzerland. In *The structural conservation of panel paintings*. Los Angeles: The Getty Conservation Institute. 200–236.

23 Michaelsen, H., Barthold, J. and Weissmann, R. 2003. “Marmelirtes Helffenbein,” Rekonstruktionsversuche zu einer Imitationstechnik in der Mitte des 17. Jahrhunderts. *Restauro* (3): 194–202. Similar recipes exist also for imitations in ivory of tortoiseshell, which are seen on the front edge of

the ceiling. Kunckel, J. 1992/1689. *Ars Vitraria Experimentalis: oder vollkommene Glasmacher-Kunst*. Hildesheim, New York: G. Olm. Facsimile reproduction of the 1689 Frankfurt/Leipzig edition. 416.

24 We would like to thank Patrick Georges, dealer and expert of fine woods in Paris, for the wood identification of the brazil wood (*Caesalpinia* spp.).

25 It is not possible to distinguish between these quite similar dyes using Raman spectroscopy. The analysis was carried out by Silvia A. Centeno, Research Scientist, Department of Scientific Research, The Metropolitan Museum of Art.

26 Energy-dispersive X-ray spectrometry was carried out by Mark T. Wypyski, Research Scientist, Department of Scientific Research, The Metropolitan Museum of Art. Michaelsen, H. and Bucholz, R. 2006. 735–741.

27 The analysis was conducted by Nobuko Shibayama, Associate Research Scientist, Department of Scientific Research, The Metropolitan Museum of Art.

28 The pigments were analyzed using Raman spectroscopy by Silvia A. Centeno.

29 For example, engraved ivory or bone embellish the *caissons* of the ebony cabinets in the collections of the Nationalmuseum in Stockholm and the Musée Rolin in Autun.

30 For published illustrations showing secret compartments in the ebony cabinet in the Rijksmuseum see Baarsen R. 2000. The triumph of Paris: Pierre Gole. In *seventeenth-century cabinets*, Baarsen. R. Amsterdam: Rijksmuseum. 50–51, or Lunsingh Scheurleer, Th. H. 2005. 67. The secret compartments of the ebony cabinet in the Musée des Beaux-Arts in Troyes, and of the ebony cabinet in the château de Serrant are featured in Castelluccio, St. 2002, *Le Style Louis XIII*. Paris: Les Editions de L’Amateur. 89, 92, 104–105.

31 Baarsen R. 2000. 48–55. Lunsingh Scheurleer, Th. H. 2005. 62–79. Roberts, H. 2002. Collecting

French furniture before George IV. *Apollo* (486): 3–9.

32 A curious suit. Litigation over an antique cabinet found in Memorial Hall. 1882.

33 “It was doubtless designed originally to stand in a church beside the altar, as a receptacle for the sacred vessels and utensils when not in use.” A remarkable cabinet. 1885. 17.

34 The article in *The Art Amateur Journal* describes the cabinet as: “...a marvelous work of Italian art of the latter part of the sixteenth century...” while the 1882 Annual Report of the Pennsylvania Museum and School of Industrial Art refers to the cabinet as Spanish, sixteenth century in the listing of loans of objects to the Museum: “Charles Günold: carved ebony cabinet, Spanish sixteenth century.” A remarkable cabinet. 1885. 1, 17. The Pennsylvania Museum and School of Industrial Art, Philadelphia. 1883. *Seventh annual report of the trustees and a list of members for the fiscal year ending December 30, 1882*. 14.

35 A remarkable cabinet. 1885. 18.

36 It is interesting to note that individual dies with upper case block letters were used for the stamping of Herter Brothers, while on furniture designed and manufactured by the company a continuous stamp reading “Herther Bro’s” is found. It remains to be investigated if after 1883, when the company was under the direction of William Baumgartner and William Gilman Nichols the stamp was changed or if the individual letters were used by the repair workshop. *Herter Brothers, furniture and interior for a gilded age*. 1994. 123, 224.

37 Félibien, A. 1676. *Des principes de l’architecture, de la sculpture, de la peinture, et des autres arts qui en dépendent / Avec un dictionnaire des termes propres à chacun de ces arts*. Paris: J. B. Coignard. Chapter 19: De la menuiserie de placage, p. 186 : “... et lorsque la dureté du bois est excessive, qu’ils craignent de l’éclater, ils se servent de ceux qui ont de petites dents comme des limes, ou truelles bretées, afin de ne faire que comme limer le bois; ce qui sert aussi à le redresser.” Roubo, J. A. 1769–1775. *L’art du*

menuisier. Paris: Académie Royale des Sciences.

38 Roubo, J. A. 1777. *L’art du menuisier*. Paris: L. Laget. P. 809 and plate 281: “Les rayures ou cannelures des fers à dents, sont creusées, du côté de l’acier, d’une forme triangulaire, et entre chacune d’elles il y a un petit filet plat, qui seul est tranchant, vu que le fer étant affûté, chacun de ces filets forme une espèce de dent d’une forme carrée, qui va en s’épaississant sur le fond. Il y a des fers brettés dont la denture est plus ou moins grosse, selon les différents besoins. Voyez la fig. 3, où j’en ai représenté un de grandeur d’exécution, dont les dents sont d’une moyenne grandeur, y en ayant de près de moitié plus petites, et du double plus grosses, dont on fait usage selon les diverses sortes d’ouvrages...”

39 The medium was analyzed with Fourier Transform Infrared Spectroscopy by Silvia A. Centeno.