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### Investigation of a High Chest and Dressing Table, *en suite*

In the fall of 2004, a matching high chest and dressing table were given to Winterthur (*Figs. 1 and 2*). The suite was donated to the museum after they failed to meet their reserve at auction.

They share unique design characteristics, most notably in the shape of their legs and feet. Many questions surrounded

them at auction and when they arrived at Winterthur, including: what period are they from; are they original or have elements, like the legs, been replaced; and are they truly a pair, or have they been made to appear *en suite*.



*Figure 1. Dressing Table*  
*Figure 2. High Chest*



When the objects arrived in the furniture laboratory, they were closely examined by Wendy Cooper, Lois F. and Henry S. McNeil Senior Curator of Furniture; Michael Podmaniczky, head of furniture conservation and my advisor; Mark Anderson, furniture and upholstery conservator; and myself. Building on information we developed as a team, I was given the opportunity to spend more time investigating the high chest and dressing table in an effort to answer some of the nagging questions more conclusively, as well as to learn as much as I could about the pair for scholarship and possible conservation treatments. To guide my analysis of this high chest and dressing table, I looked at the concept of connoisseurship.

In the mid-twentieth century, Charles Montgomery, furniture scholar and Winterthur curator, detailed 14 points of connoisseurship in lectures and in his publications on furniture. His 14 points of connoisseurship include: overall appearance, form, ornament, color, analysis of materials, techniques employed by the craftsman, trade practices, function, style, date, attribution, provenance, condition and evaluation.<sup>1</sup> Montgomery's scholarship suggests that connoisseurship is not merely a subjective judgment, but is

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<sup>1</sup> Montgomery, Charles. "Some Remarks on the Science and Principles of Connoisseurship." Reprint from the 1961 Walpole Society *Note Book*, 9-20.

based on analytical and material evidence and contextualization. Importantly, as later furniture historian Benno Forman highlights in his book *American Seating Furniture, 1630-1730*, the Latin root of the word connoisseurship means, “to know.” This concept seems central to many of a conservators goals in researching an object, whether it be a piece of furniture or some other art form. As conservators with backgrounds in art history, studio art and chemistry we are able to discern substantial information from an object through visual and analytical examination. The points outlined by Montgomery provided the outline I followed in my visual and scientific investigation of the high chest and dressing table. After carefully inspecting the visual evidence found on each piece, I used x-radiography, cross-sectional microscopy, x-ray fluorescence, scanning electron microscopy-energy dispersive spectroscopy, to provide a more informed and definitive understanding of the history of the high chest and dressing table.

The high chest and dressing table were examined in the furniture studio individually and in relation to each other. Their overall appearance is influenced by the dark muddiness of their finish and distinct legs. The extreme curve of the cabriole legs on both pieces is the most dramatic and unique feature of their form. They look exceptionally shapely compared to most American examples of the 18<sup>th</sup> century. Stylistically, they bridge the transition between the William and Mary period of the early 18<sup>th</sup> century and the Queen Anne period in the second quarter of the 18<sup>th</sup> century. Similarities between the two range from leg, skirt and molding profiles, finish color, texture and brass hardware. Structurally, both pieces are in good condition, there are no signs of significant alterations to the forms. The legs appear original. Wood identification, done by eye, reveals that both pieces are made from a combination of maple and pine. The drawer fronts and legs of the high chest and dressing table are maple, while the case sides and interior elements are pine. This is an unusual combination for furniture that has a transparent finish and suggests that originally they had an opaque surface treatment.

I examined the interiors of the high chest and dressing table and found perfect consistency in their construction details. They share similar drawer guides, diagonally cut dividers, drawer runners and stops, tool marks and joinery. Additionally, an x-radiograph of the joinery was taken from both pieces highlighting the commonality of tool marks made during the execution of the mortise and tenon joinery in each piece (*Figs. 3 and 4*).

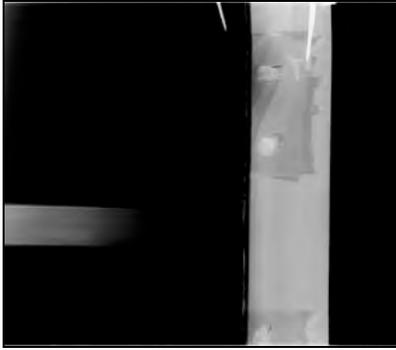


Figure 3. Dressing Table

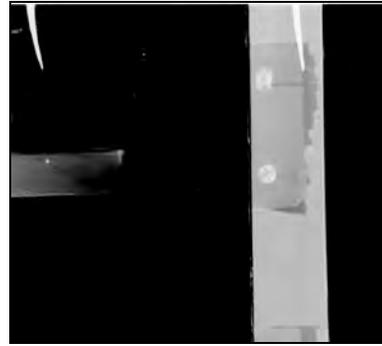


Figure 4. High Chest

While initially evaluating both pieces, we removed two pins from an escutcheon plate that was loose on the high chest. Underneath the plate we found evidence of a black surface coating. I took a cross-section sample from this area. At 500x magnification, in visible and uv examination of the cross-sections several layers of finish are visible. The bottom layer appears to be a red pigment in a resin binder. On top of that is a selectively applied black-pigmented layer. Then a thick oil-resin coating followed by an oil containing layer, a coating of shellac and an oil-containing layer on the surface. A sample from the dressing table was also taken. The bottom layer appears to be a resin. Followed by a red-pigmented layer, a coating of shellac and an oil containing layer on the surface.

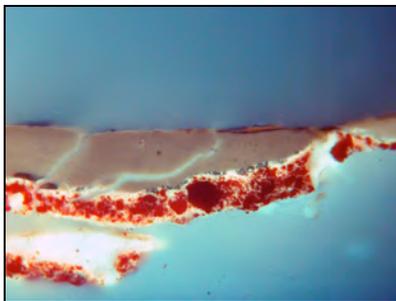


Figure 5. High Chest Sample  
500x, uv light



Figure 6. Dressing Table Sample  
500x, uv light

Both cross-section samples revealed a red-pigmented layer on the bottom, and top coatings of shellac and an oil containing finish. Notably, none of the selectively applied, thin black-pigmented layer, seen on the high chest, was found on the dressing table sample. The results of the cross-sections suggest both pieces originally had a painted surface. These results, in conjunction with the combination of maple and pine being used for the show surfaces of the high chest and dressing table and the stylistic form of the suite, lead me to research a well-documented type of furniture decoration known as japanning. This finish technique was uniquely popular in Boston and was occasionally seen in other parts of New England during the early 18<sup>th</sup> century.

Japanning refers to the European and American tradition of emulating Asian lacquer and in some cases, tortoise shell veneer, by layering paint and applying raised decoration made of gesso that would have been gilded with a variety of metal leaves onto wooden furniture. In the colonies during the 18<sup>th</sup> century, Boston was the epi-center of japanning. Based on period documentation, a cabinet-maker would send a completed piece to a japanner, an artisan who specialized in applying this complicated treatment. It's application is thoroughly outlined, although not always followed to every detail, in John Stalker and George Parkers *A Treatise of Japanning and Varnishing*, published in 1688. In rural areas, unable to economically support specialized trades people such as japanners, the finishes were less sophisticated, but still imitate the same exotic sources.

Examples within Winterthur's collection of 18<sup>th</sup> century japanned furniture share many features with this suite. In almost all cases, the drawer fronts and legs are made of maple and the sides are made of pine, exactly matching the materials found in this suite. I choose to do cross sectional microscopy on two of Winterthur's high chests for comparison in my research. I hoped to determine whether the pieces I was investigating resembled japanning techniques from either an urban or rural area. Additionally, I also explored and sought out furniture that might relate to the high chest and dressing table in form and construction. My advisor and I tracked down three examples that sounded as if they shared the suite's distinct legs. Only one of the three examples has cabriole legs and feet directly relating to Winterthur's new acquisitions. We were able to examine the table and determine that there is a definite link of craftsmanship and design between the tea table and Winterthur's suite but unfortunately, there have been many alterations and no early provenance for the piece exists.

I used an 18<sup>th</sup> century East Windsor, Connecticut high chest for a rural example to examine in comparison to the suite (*Fig. 7*). It has a flat top and extreme cabriole legs, initially reminiscent of the style of this



*Figure 7. Connecticut High Chest*



*Figure 8. Pimm High Chest*

suite. My model of urban japanning was a Boston japanned high chest, made by cabinet-maker John Pimm sometime between 1740-1750 (*Fig. 8*). A direct link stylistically cannot be made between this piece and the high chest and dressing table, but it has a well-documented japanning history providing an excellent basis for comparison of an urban 18<sup>th</sup> century japanned finish.

I took a cross section from a drawer front on the Connecticut chest. It had a straightforward stratigraphy showing a wooden substrate on the bottom followed by a black-pigmented layer, probably in an oil binder. This cross-section looks much simpler than the samples taken from the high chest and dressing table.

A sample taken from the Pimm High Chest shows a red-pigmented layer on the bottom, with a black-pigmented layer on top of this. It appears to relate closely to the sections taken from the high chest and dressing table because of the presence of layering of the red and black pigments. Based on the existing original tortoise shell japanning found on the Pimm high chest, it seems likely this may have also been the surface treatment for both the high chest and dressing table.

Past scientific analysis and japanning instructions published in Stalker and Parker's manual, state that the preferred red pigment japanners used was vermilion.<sup>2</sup> With the help of conservation scientists Dr. Jennifer Mass and Dr. Johanna Bernstein, scanning electron microscopy was conducted on my cross-section samples. The resulting spectrum from the high chest show significant mercury peaks suggesting the presence of vermilion, a mercury sulfide. The major sulfur x-ray line overlaps with the major mercury x-ray line making it difficult to distinguish the sulfur from the mercury, even if it is present in the sample. The spectrum from the dressing table sample did not relate well to the high chest. There are several elements identified, but not one was mercury. Based on this information, it appears that the dressing table has had a different surface treatment than the high chest. The SEM sample taken from the Pimm high chest shows mercury peaks comparable to the high chest, indicating a vermilion pigment was probably used on high chests.

In an effort to look more closely at the surfaces of the high chest and dressing table without excessive sampling, I brought them into the Scientific Research and Analysis Laboratory for non-destructive x-ray fluorescence testing. Scientists Joseph Weber, Catherine Matsen and Jan Carlson helped me work the machinery and interpret the results. Approximately 10 analogous spots were examined on both the high chest and dressing table. The spectra from the high chest were all very similar (*Fig. 9*). On thick, dark spots of the finish, I was always able to detect a small presence of mercury, but also found elements suggesting the surface was treated with potassium permanganate, which would have darkened the wood. On the underside of the top, I found red paint that appears to be pure vermilion.

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<sup>2</sup> Parker, George and John Stalker. *A Treatise of Japanning and Varnishing*. Oxford: Printed for, and sold by the author, at Mr. Richard Wood's House over against the Theatre in Oxford, in the year 1688.

Unlike the high chest, I was unable to find the presence of mercury on the outer surfaces of the dressing table (Fig. 10). It showed similar evidence to the high chest suggesting the use of a potassium permanganate at one point in its history, but rather than vermilion, an iron oxide was probably used as a red pigment. I tested a reddish paint residue found on one of the drawer sides. The resulting spectrum confirmed the presence of mercury on the dressing table, but not on a show surface. This is the only evidence I was able to find on the dressing table confirming that vermilion had been used. Based on information that the high chest and dressing table lived for many years apart, it is probable that they have experienced different maintenance and restoration treatments. If they were both japanned at one time and it was later removed, the dressing table could have been more thoroughly stripped than the high chest.

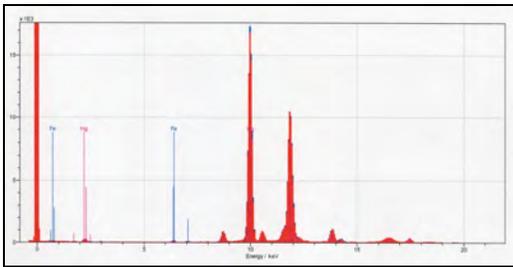


Figure 9. High Chest Spectrum

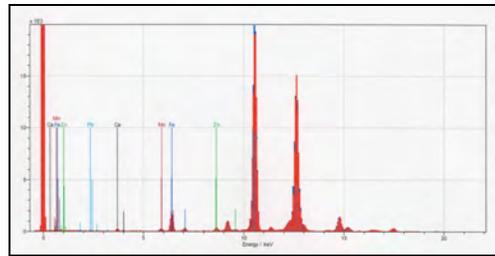


Figure 10. High Chest Spectrum

Further visual examination of the dressing table suggests that the show surface has been mechanically removed. The high chest drawer fronts show a typical thickness of wood being joined by dovetailing, whereas the dressing table drawer fronts are very thin and look as if a quarter inch of wood has been removed from the show surface. If the surface of the dressing table was planed during a restoration treatment, this may explain why the wood is so thin on the drawer fronts and why mercury was only found on the back of a drawer side...there is no original surface left!

This evidence leads to a few questions. Why is there the presence of a red-pigmented layer visible in the cross-sections? Could this be the result of someone trying to tie the two pieces together even though most evidence of japanning on the dressing table has been lost?

There is more evidence indicating that the suite was japanned like the Pimm high chest. The back of the Pimm High chest drawers were signed "Pimm" by the cabinet maker before going to the japanner so that his work would not be confused with other furniture that may also have been getting japanned at the same time. With the aid of infrared light, five drawers in the high chest of this suite were discovered to have been signed either "Hartshorne No 2" or an abbreviated "Hart No 2." This correlation with the Pimm piece is another clue that the high chest might have also been japanned. Of course, since all the drawers

were signed with a No 2, this implies that there was a No 1, yet no evidence to this effect was found. The dressing table did not appear to be signed or numbered. Investigation into the provenance of these pieces and the signature on the back of the high chest drawers may yield information that could give an even clearer picture and understanding of this suite.

The restoration treatments of these pieces do not reflect a sympathetic interpretation of their original appearance. Based on analysis of the high chest and dressing table, using many of the characterizations of connoisseurship detailed by Charles Montgomery including form and style, construction details, hardware, analytical analysis and comparison to 18<sup>th</sup> century American furniture indicate that this suite was made in the 18<sup>th</sup> century, was originally japanned, and clearly examples of high style furniture from an urban area, most likely Boston. An effort has been made to artificially darken the woods and make them appear uniform evidenced by the presence of magnesium in the XRF and SEM-EDS spectra. This may have contributed to the poor reception they received in the marketplace. In place of their current dark brown exterior they would have shared a flamboyant and rich surface decoration popular in 18<sup>th</sup> century Boston. Examples of matching high chests and dressing tables from this period are sparse, and none with the dynamic and elegant characteristics of this suite.

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