

# Philadelphia Museum of Art

## Examination and Treatment Report

**Accession #:** 1932.45.101 abc  
**Object:** Chest-on-chest-on-chest  
**Object Date:** 1735-1745  
**Materials:** Wood (cherry, hard pine, white cedar); copper alloy (brass)  
**Dimensions:** 6 feet 1/4 inches × 41 1/8 inches × 22 1/2 inches (183.5 × 104.5 × 57.2 cm)  
**Geography:** Philadelphia, Pennsylvania, United States, North and Central America  
**Curatorial Dept.:** American Art  
**Examined by:** Jonathan Stevens, Graduate Intern  
**Consulted:** Behrooz Salimnejad, Senior Conservator of Furniture, PMA  
Peggy Olley, Associate Conservator of Furniture, PMA  
Jason Wierzbicki, Conservation Photographer  
**Report Date:** February 2021



(Photo by PMA photo studio)

### Description

This chest-on-chest-on-chest consists of three separate chests, with three drawers each. The three chests are stacked on one another. The lowest chest sits on shaped bracket feet. The primary wood is cherry, and the secondary woods are estimated by visual inspection to be hard pine and white cedar.

### *Construction:*

#### **Cases:**

- Dovetailed cases.
- Cherry case sides.
- Hard pine case tops and bottoms.
- Cherry drawer blades; drawer blades are held in grooves in case sides; drawer blades extend across full width of edges of case sides and are mitered at the ends to meet mitered grooves in the edges of the case sides.
- Softwood top and bottom front rails glued to case top and bottom respectively, with applied cherry facing; top and bottom front rails are butted to case sides and do not extend across their edges as the drawer blades do.

- Hard pine full-depth dust boards held in grooves in case sides and rabbeted at front edge to fit into grooves in rear edge of drawer blades; dust boards are thinner than the drawer blades and are flush with them at the bottom.
- Cherry drawer runners glued to tops of dust boards.
- Drawer runners for bottom drawer of each case are glued to softwood packers which bring them up to level with the front rails.
- Softwood glue blocks at the interior of each case's side-to-top joints act as "kickers" to prevent upper drawers from tipping forward excessively when withdrawn.
- Horizontal white cedar tongue-and-groove backboards nailed to rabbet in rear of case.
- Applied cherry mouldings at top and bottom of each case; bottom moulding is integral to baseboards, which are sawn to form bracket feet.
- Bracket feet are supported by shaped softwood glue blocks, vertically oriented softwood corner blocks, and plain-shaped softwood brackets at the rear of the case.
- Cases are registered on each other by dowels in case tops and corresponding holes in case bottoms.

**Drawers:**

- Ovolo-lipped cherry drawer fronts.
- Hard pine drawer sides half-blind dovetailed to drawer fronts and through-dovetailed at rear; each drawer side has a thin cherry strip glued to its top edge.
- Hard pine drawer backs.
- White cedar drawer bottoms, oriented front-to-back, nailed into rabbet in drawer fronts and nailed up to drawer backs and (presumably) drawer sides (i.e. drawer bottoms visible at side of drawer).
- Cherry drawer runners glued to drawer bottoms.
- Copper alloy (brass) post-and-bail drawer pulls with shaped and engraved backplates; similar shaped and engraved keyhole escutcheons.
- Ferrous metal mortise locks; locks do not sit flush with the inside of the drawer fronts and most have softwood packers behind them to fill the resulting void.

**Coatings:**

- Show surfaces finished with a glossy varnish with dull greenish autofluorescence under UV illumination; darker vestiges of an earlier finish around drawer hardware.
- Interiors of drawers are finished with the same glossy varnish as the show surfaces.
- Case back and tops have a darkened coating or stain.

**Inscriptions:**

- Engraved brass plate screwed to back of upper chest reads:

“Chest of Drawers” from “Cedar Grove” Sarah Morris believe [sic] to have belonged to her mother Elizabeth Coates Pashall b. 1702 d. 10.25.1842 John T. and Lydia T. Morris

- Handwritten paper label affixed to interior of PR drawer side, third drawer from top:

Chest of Drawers from our old home “Cedar Grove” Believed to date from about 1748 and that it belonged to our great great grandmother Elizabeth Coates Paschal. John T Morris 12/5/1906

- Button printed with “205” attached to interior of number one drawer, PR drawer side.
- Drawer bottoms numbered in graphite starting from top drawer; some drawer blades also numbered in graphite; dustboards are numbered in graphite; PL side of number two drawer numbered in chalk; other chalk reference markings on many drawer sides and backs.
- Number 2 drawer has a chalked “2” marked on the exterior of the PL drawer side.
- Number 7,8, and 9 drawers have semicircular chalk markings at the top center of the drawer back exteriors. These drawers also have V shaped marks at the exterior of the PL drawer sides toward the back of each drawer.

## **Historical Context**

According to the inscriptions above, this chest belonged to Elizabeth Coates Paschall and descended at Cedar Grove in the Morris/ Paschall family. Cedar Grove, the Morris/ Paschall summer home, was built in 1748 in northeast Philadelphia by Elizabeth Coates Paschall, a wealthy dry goods merchant and “one of the earliest female practitioners in both homeopathy and botanical sciences,” (Lindsey 1999, 40). The house and contents were donated to the City of Philadelphia in 1926, and the house was taken apart and reconstructed in Fairmount Park, where it was opened in 1928 as a house museum administered by the Philadelphia Museum of Art ([philamuseum.org](http://philamuseum.org)).

The chest’s construction is similar to the construction of English case furniture of the second quarter of the eighteenth century, with thicker drawer blades (front rails) than was typical of late seventeenth/ early eighteenth-century construction. The chest’s bracket feet and ovolo-moulded drawer fronts are both innovations that were adopted c. 1730 by British furniture makers (Bowett 2009, 78-83, 99). The style of shaped and engraved keyhole escutcheons and drawer pull back plates used on the chest was adopted by British cabinetmakers beginning around 1715-1720 (figure 8) and is likely derived from Asian prototypes (Bowett 2009, 304-305). The use of bracket feet was also likely inspired by Asian furniture.

During the course of this examination, chalk marks were noted on the exterior of the drawer backs and PL drawer sides of the bottom three drawers. These marks have a close resemblance to markings thought to have been used by the shop of well-documented eighteenth-century Philadelphia joiner John Head. See *Appendix: Historical Research*, for further discussion.

## **Condition**

The chest is generally structurally stable with normal signs of age and wear, including repairs and refinishing. A roof leak at Cedar Grove has caused water damage to the top, the PR case side, and the PR side of the case front.

- As noted above, a roof leak has caused water damage to the top, the PR case side, and the PR side of the case front. There is also some plaster dust on the top and some staining and salt accretions within the case; water damage on case exterior has resulted in rivulets of finish loss with tidelines.

- Interior of cases are moderately dusty/ dirty.
- Some minor chips, scratches, and dents to primary wood.
- Shrinkage splits and broken glue lines in case sides.
- Shrinkage splits in some drawer bottoms.
- Minor, stable splits in some drawer fronts.
- Wooden patches to ovolo-molded lipping on most drawer fronts.
- Some wooden patches to drawer apertures.
- Wood added to some drawer runners on bottoms of drawers.
- PL drawer runner and packer block of lowest drawer in lowest case detached from bottom of case.
- Upper molding on PR side of middle case detached for most of its length.
- Corner block for PR rear foot is lost.
- Chip to number seven drawer at PL upper corner of drawer front.
- Show wood has been refinished with a glossy varnish; fine crazing to varnish.
- Interior of drawers have been varnished.
- Dark coating applied to exterior of backboards and top.
- Some backboards and one drawer back have random nail holes with iron staining, suggesting that these pieces were reused from some previous construction.
- Scribe lines do not align with current drawer locks, and many drawer locks fit poorly; likely replacements.
- Keyhole escutcheon on eighth drawer from top is made from thicker brass and has sharper detail and a different tone than other hardware; likely replacement.

### **Purpose of Treatment**

The primary purpose of this treatment is to compensate for finish loss and damage caused by a water event.

### **Treatment Proposal**

1. Carry out pre-treatment examination and photo-documentation.
3. Clean case top and case interior of loose dirt and dust using a soft bristle brush and vacuum with HEPA filter.
4. Re-glue loose drawer runner to PL side of lowest drawer opening using animal protein glue.
5. Inpaint/ tone losses to finish caused by water damage using appropriate conservation colors.
6. Carry out post-treatment photo documentation.

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**Conservation Intern**

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**Date**

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**Supervising Conservator**

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**Date**

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**Curator**

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**Date**

## **References**

Bowett, Adam. 2009. *Early Georgian Furniture: 1715-1740*. Suffolk, UK: Antique Collectors Club.

Lindsey, Jack L. 1999. *Worldly Goods: The Arts of Early Pennsylvania, 1680-1758*. Philadelphia, PA: Philadelphia Museum of Art.

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[https://www.philamuseum.org/doc\\_downloads/pressroom/presskits/parkhouses/ph-cedargrove.pdf](https://www.philamuseum.org/doc_downloads/pressroom/presskits/parkhouses/ph-cedargrove.pdf) accessed 10/12/2020

Wallace, Philip B. 1931. *Colonial Houses*. New York: Bonanza.

## **Treatment Record**

1. Pre-treatment photo-documentation was carried out by Jason Wierzbicki.
2. Interior and exterior of case were cleaned of loose dirt and dust using a soft bristle brush and vacuum with HEPA filter.
3. Loose drawer runner at PL side of lowest drawer opening was re-glued using cold fish glue and weighted using beanbag snakes. Fish glue was chosen because it can be used readily without heating and is somewhat more reversible than hot hide glue.
4. Staining and accretions of plaster from water event were cleaned from top of chest using de-ionized water and a micro-fiber cloth. The dark finish that had been applied to the top and back had been disrupted by the leak and was partially removed in cleaning, leaving an uneven surface. This finish was likely not an original application; since the top of the chest is not visible in normal display, the disturbance of the surface was not compensated for.
5. Areas of water damage on case sides were gently rinsed using swabs with DI water to reduce any mineral accretions or other foreign material from the leak that could interfere with treatment of the surface. Surface was blotted using Kimwipes to dry. The above rinsing procedure also helped to reduce and blend tidelines and improved appearance of damaged surface.
6. Solvent testing was carried out at lower back edge of PR side of middle case to determine solubility of finish. Solvents were also tested on blanched areas of water damage to determine whether they could reform or re-saturate the finish. Solvents were tested in approximate order of increasing polarity; several solvent mixtures were also tested. Diacetone alcohol was found to be the most effective at reforming blanched areas of varnish without locking up the surface against subsequent interventions.

Solvent Testing:

Stoddard solvent	Insoluble; no effect in permanently saturating blached areas
Shellsol 7EC	Insoluble; no effect in permanently saturating blached areas.
Shellsol A100	Insoluble; no effect in permanently saturating blached areas.
ETOH	Little effect on undamaged varnish; some effect in saturating blached areas, but saturation decreased upon drying and surface became somewhat “locked”—leaving a surface that was dead looking and resistant to further saturation.
Benzyl OH	Little effect on undamaged varnish; little effect in saturating blached areas.
Acetone	Insoluble; little effect in saturating blached areas.
Isopropanol	Little effect on undamaged varnish; some effect in saturating blached areas, but saturation decreased upon drying and surface became somewhat “locked”—leaving a surface that was dead looking and resistant to further saturation.
1:1 ETOH: Stoddard	Insoluble; no effect in permanently saturating blached areas.
Modified Keck 3 (30% Acetone; 30% Diacetone OH; 40% Shellsol 7EC)	Little effect on undamaged varnish; some effect in saturating blached areas.
4:3 Shellsol 7EC: acetone	Insoluble; no effect in permanently saturating blached areas.
Diacetone OH	Somewhat soluble; effective in saturating blached areas without “locking” surface.
Keck 3	Little effect on undamaged varnish; some effect in saturating blached areas.
Lacquer thinner	Insoluble; no effect in permanently saturating blached areas.
1:1:1 Isopropanol: diacetone OH: Stoddard	Insoluble; no effect in permanently saturating blached areas.
2:1:1 Isopropanol: diacetone OH: Stoddard	Insoluble; no effect in permanently saturating blached areas.
9:1 xylene: isopropanol	Insoluble; no effect in permanently saturating blached areas.

7. Blached areas of varnish were reformed using diacetone alcohol on swabs with gentle rolling. Had desired effect of reducing blanching of varnish and reducing contrast with surrounding area. Some unevenness and blanching still remained however.

8. Tested Regalrez 1094 (a low molecular weight hydrocarbon resin—hydrogenated oligomer of styrene and alpha-methyl styrene) 10% in Stoddard solvent by brush on blached areas. Had effect of saturating most areas of blached varnish. Some more severely damaged areas became overly darkened, likely because low molecular weight of Regalrez allowed it to penetrate deeply and produced darker color than surrounding film-forming varnish (estimated to be an aged and cross-linked synthetic, likely nitrocellulose lacquer, based on UV examination and solvent testing above). Introduction of Regalrez was carried out cautiously so that susceptible areas could be avoided. When extreme darkening was encountered, an area was skipped and noted for alternate remediation.

9. Areas that were determined to be susceptible to darkening by Regalrez were varnished using Paraloid B-72 (ethyl methacrylate and methyl acrylate co-polymer) 10% in Shellsol A100, which has a higher molecular weight than Regalrez. Had desired effect of saturating without excessive darkening. A few areas did become darker than the surrounding surface, but most were within the range of natural variation of the surface and were not eye-catching. One area of extreme finish damage did become noticeably dark and required further treatment, detailed below. Varnishing with aromatic solvent was carried out in spray booth; nitrile gloves and respirator were worn.

10. Because the PR side of the triple chest (where the major water damage occurred) had also been sun-damaged and lightened noticeably overall in comparison to the rest of the chest, the entire PR side was given a light application of Regalrez 1094 applied by wiping with Kimwipe. Any excess on the surface was removed by wiping with a clean Kimwipe. This had the effect of saturating the entire surface, bringing it much closer in depth of color to the other show surfaces of the chest. This overall treatment also had the effect of further blending the water damaged areas with the rest of the finish and reduced their prominence noticeably.

11. After overall saturation, evidence of the most prominent drips from water damage could still be seen, with some areas appearing as lighter vertical lines. These areas were toned using earth pigments in Paraloid B-72 10% in Shellsol A100 applied by brush in the spray booth. Once dry, these areas were varnished with Regalrez 1094 applied by brush to saturate the surface; following application, Regalrez was re-brushed as it dried to reduce the surface sheen.

12. Toning with Paraloid B-72 had the effect of reducing the prominence of light areas caused by water damage, but it had a paint-like, somewhat opaque appearance, especially when viewed at an angle. I was unsatisfied by the result and decided to remove the toning using A100 solvent applied and wiped using Kimwipes.

13. PR case side was re-saturated overall with another light application of Regalrez 1094 applied by wiping with Kimwipes, because removal of toning with A100 also removed some of the Regalrez varnish on the case side.

14. Light areas related to water damage were toned using Gamblin conservation colors in 4:1 ethanol: diacetone OH. I was able to blend the surface much more sympathetically using the Gamblin colors, and I found the transparent earth colors especially effective. Colors were applied in small vertical strokes by brush. Once dry, these areas were varnished with Regalrez 1094 applied by brush to saturate the surface; following application, Regalrez was re-brushed as it dried to reduce the surface sheen.

15. On one area of the lower moulding of the upper chest on the PR case side and on an area of the case side above this, the finish had been almost completely removed down to bare wood, and there was a significant and noticeable dimensional difference between this area and the surrounding finish. The bare wood also darkened significantly compared with the surrounding surface, even with application of the higher molecular weight B-72 acrylic resin. The area was sized with several coats of B-72 10% in A100 as a barrier layer, then the finish was built up with successive coats of orange shellac in ethanol. Although shellac can crosslink over time, I hope that if it does become insoluble in the future that it can still be undercut by acetone or aromatics to activate the B-72 barrier layer below. I also felt more comfortable using shellac in this instance because the area was a site of nearly complete finish loss and also because the entire piece has been previously stripped and refinished with a synthetic varnish. I would be more hesitant about using shellac over an original or historic surface. Once the surface had been built up, the area was carefully polished and smoothed using micromesh paper until it was close in texture and sheen to the surrounding area. Because this area had darkened significantly, I inpainted using Gamblin colors to lighten the tone. By following the existing wood grain and using brighter opaque colors and then toning using transparent applications, I was able to arrive at an appearance that was close to the appearance of the surrounding surface. The area was then varnished using Regalrez and re-brushed to control sheen as described above.

16. The entire triple chest was waxed using Black Bison Georgian Mahogany paste wax (proprietary blend of carnauba and other waxes in aliphatic solvent) and buffed once dry using a lint free cloth. The PR side of case that had been toned using Gamblin colors and varnished with Regalrez required special application of wax, because both Gamblin colors and Regalrez are soluble in the aliphatic hydrocarbon solvent that the wax is dissolved in. On PR side, Behrooz suggested applying the

wax quickly in several thin coats without excessive rubbing of the surface. Surface was buffed with a lint free cloth after all solvent had sufficient time to evaporate. Areas of toning with Gamblin colors took wax slightly differently compared to the rest of the surface and had a slightly glossier sheen after buffing with cloth. These areas were buffed using Liberon 0000 steel wool to reduce sheen of waxed surface. While this treatment provided a reversible and visually sympathetic compensation for the water damage to the surface, the main drawback of this method is that the toning layers could be removed inadvertently in the future if the triple chest is waxed. Care is recommended in any future wax application to avoid disturbing the finish on the PR side.

17. Post-treatment photo documentation was carried out by Jason Wierzbicki.

**Images**

*Before Treatment:*



**Figure 1.** Upper case: front, top, and PL, before treatment. (Photo by Jason Wierzbicki)



**Figure 2.** Upper case: back, top, and PR, before treatment. (Photo by Jason Wierzbicki)



**Figure 3.** Middle and lower cases: front and PL, before treatment. (Photo by Jason Wierzbicki)



**Figure 4.** Middle and lower cases: back and PR, before treatment. (Photo by Jason Wierzbicki)

Historical Context:



Figure 5. Cedar Grove, photographed c. 1931. (Wallace 1931, 131)



Figure 6. Label from number three drawer (left), and plaque from back of top case (right), from 1932.45.101abc.



**Figure 7.** Escutcheon and drawer pull from 1932.45.101abc. (PMA photo studio)



**Figure 8.** English escutcheon and drawer pull of similar pattern to 1932.45.101abc. (Bowett 2009, 305)

*After Treatment:*



**Figure 9.** Front and PL side, after treatment. (Photo by Jason Wierzbicki)



**Figure 10.** Back and PR side, after treatment. (Photo by Jason Wierzbicki)