MAURITSHUIS RESTAURATIE ATELIER
EXAMINATION AND TREATMENT REPORT

JEAN BAPTISTE SIMÉON CHARDIN
STILLEVEN MET KOPEREN KETEL, KAAS EN EIEREN
(STILL LIFE WITH COPPER POT, CHEESE AND EGGS)
0656



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Fulbright-American Friends of the Mauritshuis Fellow
September 2024 – September 2025

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I. GENERAL INFORMATION

Inventory number: 0656
Artist: Jean-Baptiste Siméon Chardin (1699-1779, French, born and died in Paris)
Title: *Stilleven met Koperen Ketel, Kaas en Eieren (Still Life with Copper Pot, Cheese and Eggs)* (Fig. 1)
Medium: Oil
Support: Canvas
Present measurements: 33 x 41 cm (H x W)
Signature: Chardin (brown and white paint, lower left corner, 1 cm. in from the left and 5½ cm. up from the bottom)
Date: c. 1730-35 (Bredius 1991 catalog dates work to ca. 1733)



Figure 1. Stilleven met koperen ketel, kaas en eieren. Front (left) and back (right) before treatment in normal illumination.

Marks and Inscriptions: (back of stretcher, top member, left end, in red paint) inverted equilateral red triangle; (back of stretcher, vertical crossbar, top end, in blue ink) 656; (back of stretcher, horizontal crossbar, right end, in graphite) Chardin 656

II. PROVENANCE

Abraham Bredius, former director of the Mauritshuis, purchased the painting in London in 1901. The painting was on long-term loan to the Mauritshuis starting from 23 April 1901, and was bequeathed to the museum in 1946.

Bredius catalog: purchased in London in 1901. Royal Cabinet of Paintings Mauritshuis, 23-4-1901 (on loan from Bredius), bequeathed in 1946.

Annual Report 1901-02: Recorded as on loan from the director.

Annual Report 1946-47: Recorded as bequeathed by the director.

Inventory book entry: “Open skeenen aanrecht bank of dergeljke start een hopereake vijrel een stale aangesneder kaas waaririjr wat prijen eenige nieuw liggen.”
English translation by Sabrina Meloni: “On a stone countertop stands a copper kettle, green earthenware pot, mortar, a piece of cut cheese, in front of which are eggs and some onions.

On canvas, dimensions 33 by 41 cm, lined, in a gold frame. Given on loan from Mr. Bredius. See also letter of his excellence minister of internal affairs, letter from 23 April 1901, no. 239. Signed lower left on stone: Chardin."

III. ART HISTORICAL CONTEXT

Jean Baptiste Siméon Chardin was a French 18th century artist who spent his entire life in Paris, where he was born in 1699 and died in 1779 (Fig. 2). Chardin began as an apprentice to history painter Pierre Jacques Cazes (1676-1754) and then moved to the studio of Noel Nicolas Coypel (1690-1734) (Rosenberg 1979, 63). Under Coypel, Chardin studied 17th-century Dutch and Flemish painting, the influence of which is apparent in his early still lifes (Thyssen-Bornemisza Museo Nacional, n.d.). In 1724, he was admitted to the Académie de Saint-Luc. He exhibited his works for the first time in 1728, the same year he gained admission to the Académie Royal de Peinture et de Sculpture as a "painter in the talent of animals and fruits" (Rosenberg 1979, 63). Chardin enjoyed great success, exhibiting regularly at the Paris Salon and holding positions within the Académie until the end of his career (Rosenberg 2011, 234-239).



Figure 2. Self-portrait of Chardin at an easel from the Louvre collection.

Chardin primarily painted still lifes until around the mid-1730s, then transitioned to painting genre scenes until the 1750s before returning to still lifes. From around 1728-1730 until 1735, Chardin turned his focus to producing medium-sized and small-format kitchen still lifes of modest utensils, foodstuffs, pantry staples, and other household objects (Ludke 1999, 49). A 2011 exhibition catalog on Chardin published by the Museu Nacional del Prado describes his embracing of everyday utensils and household objects: "…he liked their shapes, their regular curves, the variety of materials, baked clay, copper wood, tinned metal… and also the changing colours and reflections of light" (Rosenberg 2011, 99). Mar Borobia's entries on Chardin's paintings on the Museo Nacional Thyssen-Bornemisza website describe how the artist's early still lifes generally assumed a similar format, utilizing a "thick, heavy, stone tabletop, on which he arranged everyday kitchen objects in a practical manner," and "…arranged with objects that belonged to him and which he repeatedly used in his compositions." Chardin's early work was directly influenced by Dutch still lifes and painting methods (Ludke 1999, 41-54). For example, a common device found in Dutch and Flemish still lifes is the inclusion of a knife handle projecting over a table edge and toward the viewer in order to generate spatial depth; in place of a knife, Chardin uses leeks or spring onions to achieve the same result (Borobia, n.d.).

The Mauritshuis painting, *Stilleven met Koperen Ketel, Kaas en Eiren* (*Still Life with Copper Pot, Cheese, and Eggs)*, is one such example of Chardin's early kitchen still lifes. The painting depicts an arrangement of the following items: a round, hard cheese with a cool white, bloomy rind and a section cut out; three white eggs; a large red copper cooking pot or cauldron; a wooden mortar and pestle; two stalks of spring onions; two small white onions

with red-brown outer skin; and a Parisian, green-glazed earthenware casserole pan (*poêlon*) (see Appendix I). The subjects sit near the edge of a stone counter top against a dark, shaded background and are illuminated by light coming from the left side. Chardin repeatedly painted the same subjects in many variations of kitchen still lifes produced between 1730-1735; visual comparisons place the Mauritshuis painting within this time frame (see Appendix II).

Upon acquiring the painting, the Mauritshuis became the first Dutch museum to own a work by Chardin (de Boer and Leistra 1991, 58). If the painting were not part of Abraham Bredius' bequest, the museum would never have acquired a French old master as it fell outside of the Mauritshuis' collecting policy; however, Bredius felt that it belonged in the Mauritshuis as something "Dutch" was seen in Chardin's still lifes (de Boer and Leistra 1991, 58). Although de Boer and Leistra also write that a Chardin in the Louvre, *Marmite de cuivre, écumoire, cruche et tranche de saumon* (inventory number MNR 716), is dated to 1733 and considered a pendant to the Mauritshuis still life, the Louvre online collections database now lists their painting as dated to around 1750-1760.

IV. CONSERVATION HISTORY

Conservation records in the Mauritshuis state that restoration of the painting was performed in June 1989 by Pauline J. Marchand, a private paintings restorer based in Rotterdam. The following treatment was performed (translated to English): "surface dirt removed with neutral soap produced in central laboratory and cleared with demineralized water; thinly varnished with dammar." This treatment was completed to prepare the painting for a "Bredius exhibition" (as noted in correspondence with P. Marchand dated to 8 June 1989). All other restoration campaigns evident on the painting were performed prior to its acquisition.

The frame was restored in June 1989 by Camille Marchand, a private restorer based in Dordrecht (noted in correspondence with C. L. Marchand dated to 13 June 1989).

V. TECHNICAL DESCRIPTION

Prior examination, technical research, and documentation were performed by paintings conservator Marya Albrecht in 2022 for the Mauritshuis' ongoing still life catalog project. Albrecht completed photodocumentation of the painting before treatment, photomicrography, infrared reflectography of the front of the painting, automated thread counting, and cross-section sampling and microscopy. From 2024 to 2025, additional examination, documentation, data interpretation, and research were performed including X-radiography and cross-section analysis.

AUXILIARY SUPPORT

The painting is secured via metal nails to a six-member wooden stretcher with one vertical crossbar and one horizontal crossbar. The nails may be hand-wrought based on their uneven, inconsistent shapes. All twelve out of twelve keys are present and tied to the stretcher with plastic string (possibly fishing line). The stretcher may be original, as it appears closely aligned with the composition format. On the reverse of the top stretcher member and in the proper right is a triangle in red paint; this symbol was applied by the museum in advance of the second world war to prepare for the collection's evacuation in the case of disaster (Buvelot 2025, 100-101). The collection was categorized into three groups and color-coded with

triangles in the colors of the Dutch flag. Artworks with red triangles were “irreplaceable masterpieces,” making them top priority at the time (Buvelot 2025, 100-101).

PRIMARY SUPPORT

The painting was executed on a medium-weight, plain woven canvas with a relatively even, closed weave. The canvas is likely linen. The ground layer extends over all of the foldover edges and to the cut edges of the canvas, indicating that the canvas was pre-primed. The cut edges of the canvas are aligned with the widths of the stretcher members; it is unclear whether this was done by the artist or by a later intervention. The painting has been re-stretched at least once as a result of the prior lining treatment; this intervention is also evidenced by a separate set of tack holes in the tacking margins. Based upon the cusping and weave patterns revealed through X-radiography, the canvas was stretched slightly askew to the stretcher. Automated thread counting analysis of the original canvas was performed by Marya Albrecht using software developed by Dr. Don H. Johnson and resulted in a thread count of 13.7 by 11.7 threads per centimeter (see Appendix III).

PREPARATORY LAYERS

The painting was prepared on a double ground consisting of a lower warm red layer and an upper cool grey layer which appears optically blue. This finding is consistent with Chardin’s technique, as his paintings commonly contain a double ground with a red underlayer and grey upper layer (see publications by Merrill, Jaskierny, Webster-Cook et. al., and Fronek). The ground extends fully to the cut edges of the canvas on all four sides, indicating that it was cut out of a larger piece of primed canvas. X-radiography reveals a long slash in the ground layer, as if made with the end of a brush, located in the lower section of the painting along the stone ledge. The slash runs horizontally and slightly diagonally, and extends from the cheese to the right edge. This slash is also visible through the paint layer when viewed in raking light. The ground appears to be applied with a painter’s knife, as indicated by vertically sweeping, triangular forms visible in the X-radiograph (Fig. 3).

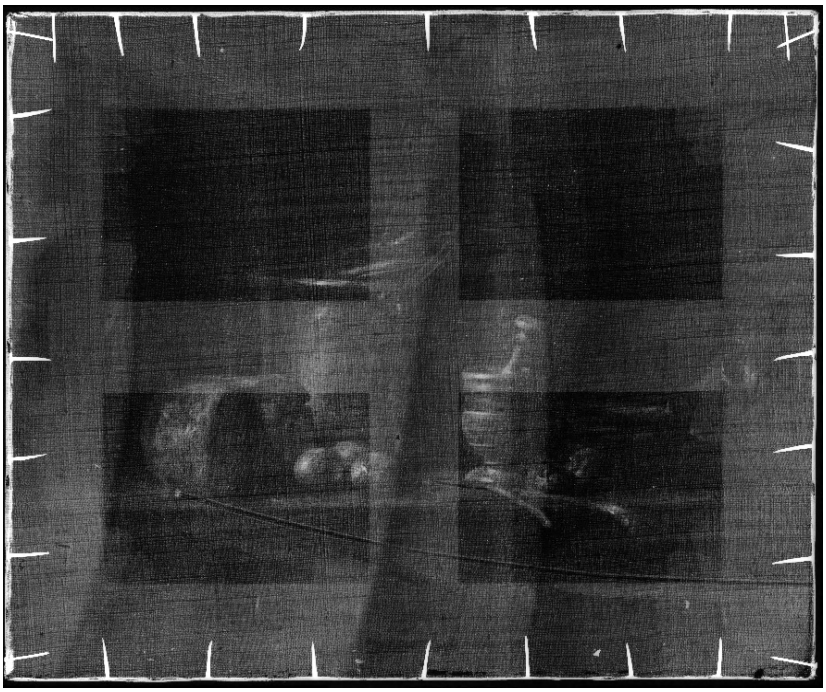


Figure 3. X-radiograph.

A technical study completed by the Art Gallery of Ontario (AGO) of a 1758 still life by Chardin (Webster-Cook et al. 2013) revealed a similar ground structure. The AGO painting's ground structure contained the following: a lower red layer consisting of red iron oxide, with associated kaolin and quartz, mixed with lead white; an upper grey layer consisting of lead white, chalk, charcoal black, and small amounts of Prussian blue and red iron oxide; and drying oil binding medium in both layers. The reaction between lead white and oil medium produced lead fatty acid salts within both ground layers of the AGO painting. Based upon comparisons of cross-section images, the Mauritshuis painting exhibits a ground layer structure very similar to that of the AGO painting. Cross section analysis of the Maurithuis still life revealed a lower red ground consisting of red earth and an upper grey ground consisting of lead white, chalk, and charcoal black (Fig. 4). The formation of lead soaps in the red ground layer indicates the presence of red lead in addition to red earth (Fig. 5-6). Other technical studies of Chardin's works have also found the use of similar ground structures and pigments (see publications by Merrill, Jaskierny, and Fronek).

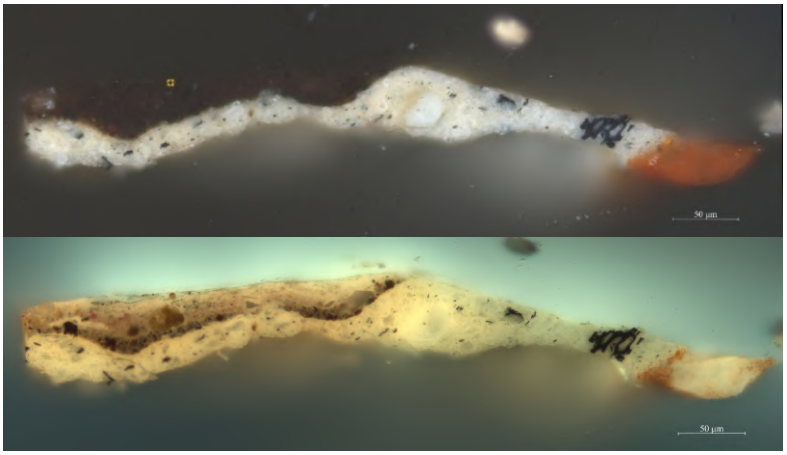


Figure 4. Cross-section from loss in the top left corner edge. Top in bright field illumination and bottom in UV-induced visible fluorescence, both at 400x magnification.

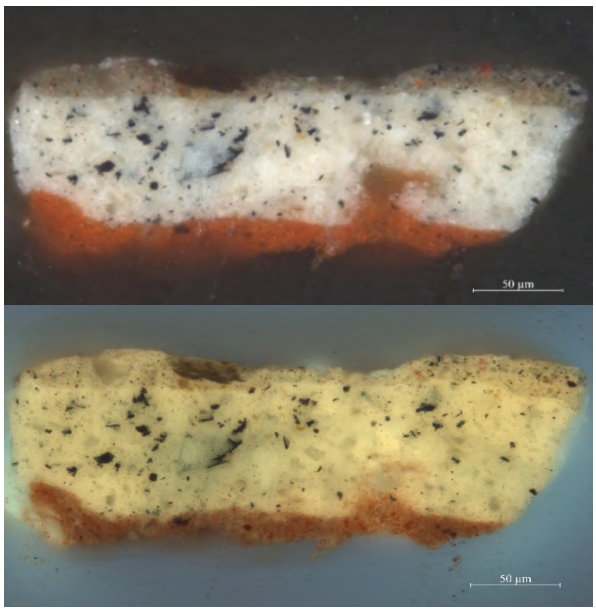


Figure 6. Cross section prepared from disassociated paint flake retrieved from upper right edge, showing lead soap forming in red ground. Top in bright field illumination and bottom in UV-induced visible fluorescence, both at 400x magnification.

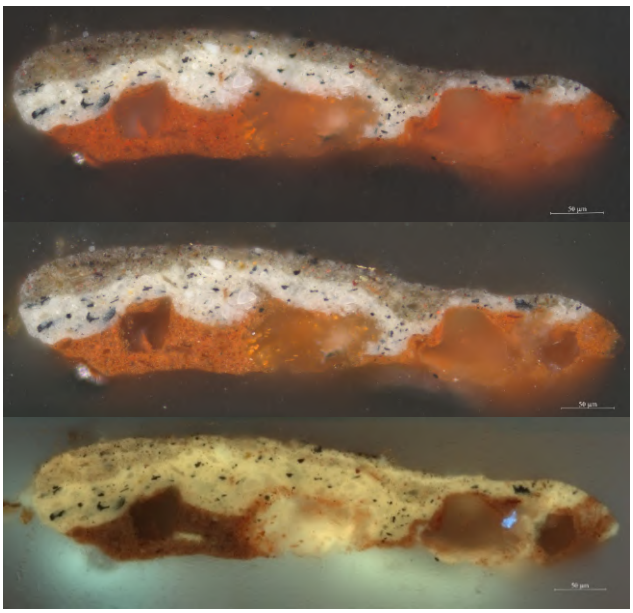


Figure 6. Cross section of disassociated paint flake retrieved from upper right right edge in background, showing one lead soap forming in the red ground (central mass which appears transparent in UV). Top: bright field illumination; middle: dark field illumination; bottom: UV-induced visible fluorescence.

PAINT LAYERS

Overall the paint layers were smoothly and thinly applied and are paste vehicular. The composition appears to be built up from the background to the foreground. There is some slight impasto in the highlights of the subjects, such as in the eggs. The passages were primarily executed in wet-on-wet applications, with paint more finely blended in the initial bodies of the subjects and surrounding areas. Final, bolder brushstrokes of brighter colors were added to create highlights, and were applied using drier, stiffer paint on top of layers that were allowed to dry; this technique aligns with Chardin's reputation as a slow, methodical worker and is observed in many of his paintings. The background contains widespread scumbling and possibly some glazes that were blended out to create even gradations of mid to dark tones—a technique observed in many of his other still lifes. His color palette contains more neutral tones that lean cooler than warm, with variations of browns, greys, white, pinks, blues and greens. In the lower left corner, Chardin's signature is executed in brown paint with white highlights to give dimension to the letters, as if the letters are incised into the stone—a stylistic manner observed in his other early still lifes (Fig. 7) (see Appendix II).

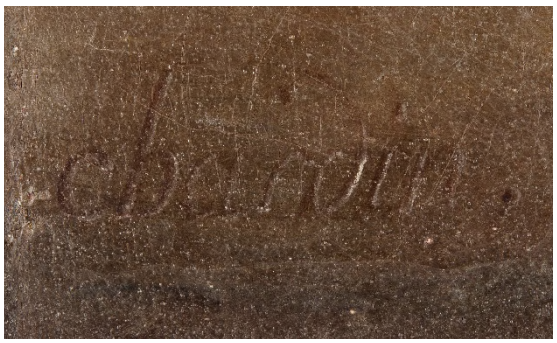


Figure 7. Detail of signature after varnish removal.

Minor compositional changes were found: infrared reflectography revealed a slight re-positioning of the handle of the copper pot lid, and X-radiography revealed the enlargement of the cheese in its left outline. No underdrawing or preparatory sketches are visible in examination with microscopy, infrared reflectography, or X-radiography (Fig. 8). The absence of an underdrawing or preparatory sketch is consistent with Chardin's technique, as very few preparatory drawings, if any, are found in Chardin's paintings. As Mar Borobia states in the Thyssen-Bornemisza online entry for *Still Life with Cat and Fish*: "Very few preparatory drawings are known, a fact that tallies with [Chardin's] unusual working methods."



Figure 8. Infrared reflectogram of the painting after varnish removal.

Large yellow pigment particles are visible under microscope in the green onion; the pigments are transparent, plate-like, and rectangular (Fig. 9). X-ray fluorescence spectroscopy point analysis performed by Albrecht detected the presence of arsenic, confirming that the yellow pigment is orpiment. Point measurements for various green and yellow areas did not indicate a strong presence of arsenic, yet transparent yellow pigment particles were observed under microscopic examination; it is possible that Chardin used another yellow pigment in addition to orpiment to create green, or a different green pigment such as green earth. Other technical studies for Chardin's works have reported the use of orpiment, yellow lakes, and lead tin yellow. A cross section sample of a loose, disassociated paint flake retrieved from an area along the right edge in the upper right corner—likely from the background or foldover edge—shows the possible presence of a lead-tin yellow particle.

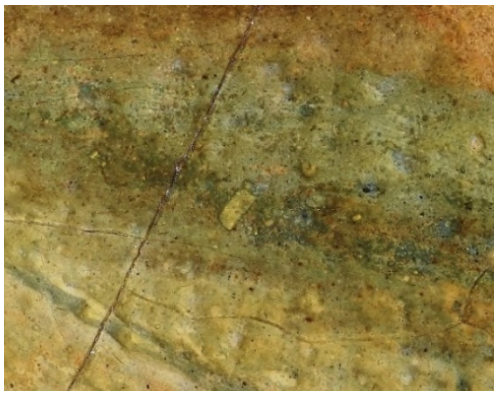


Figure 9. Micrograph showing orpiment particle in green onion.

XRF spectroscopy, cross-section, and microscopy analyses indicated the use of Prussian blue pigment. Microscopic examination revealed finely dispersed, dark, and deep blue particles which are characteristic of Prussian blue. XRF point analyses resulted in the detection of iron plus the absence of cobalt and copper in various blue and blue-green areas, further suggesting that Prussian blue was used. The use of indigo and ultramarine has also been reported in technical studies for Chardin and cannot be entirely ruled out; further chemical analyses would be needed to determine whether these blue pigments are present (see Appendix IV). Two cross section samples from different brown areas within the background each contained a singular particle of smalt in their respective brown paint layers. Although it is unclear whether or not this smalt inclusion was intentional, the pigment does not appear to be used as a colorant or paint modifier. Smalt has been reported in a technical entry for an early Chardin work published by Joseph Fronek at LACMA. XRF analysis also indicated the use of vermilion, lead white, red and brown earth pigments, and red lake. The detection of calcium in various spots may be attributed to the addition of chalk to his paints—as Chardin was known for using admixtures of chalk and pigment to increase paint transparency and thickness—or to the use of chalk in his grounds (see previous section on preparatory layers). A cross section sample of a loose, disassociated paint flake retrieved from an area in the upper right part of the cheese confirmed the presence of red lake (Fig. 10). Cross section analysis also indicated the use of Cassel earth.

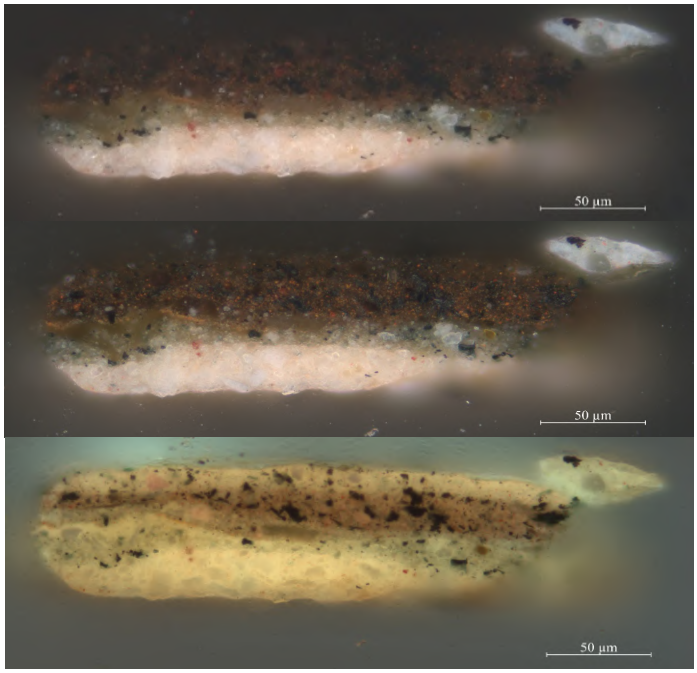


Figure 10. Cross section of disassociated paint flake retrieved from the cheese, showing red lake pigments in the upper dark brown layer in UV. Top: bright field illumination; middle: dark field illumination; bottom: UV-induced visible fluorescence.

SURFACE COATINGS

Conservation records state that an overall dammar varnish was most recently applied in 1989 by restorer Pauline Marchand. Examination under ultraviolet induced visible fluorescence reveals the presence of multiple varnish layers (Fig. 11). There is an overall coating that fluoresces in a yellow-green color, indicating a natural resin varnish. Another layer fluoresces in a pale blue-green color, possibly indicating an older synthetic resin varnish. The pale blue layer does not extend all the way to outer edges in the top, right, and bottom. The yellow green layer extends past the outer edges and onto the tacking margins. Examination of the pictorial layer and tacking margins under UV irradiation suggests the possible presence of a third, older natural resin varnish that fluoresces in a green color.

Based upon the thickness of the varnish and its thick, slightly uneven appearance under UV radiation, one or more of the coatings were possibly applied by brush. UV irradiation reveals that the pale blue layer does not extend all the way to the outer edges and appears slightly thicker or pooled along its outer boundaries, indicating application of the varnish while the painting was framed. Examination with optical microscopy reveals that there are red, black, and brown pigments and metallic gold flakes suspended throughout one of the overall varnish layers, indicating that it is a tinted varnish—likely to impart a warm tone (Fig. 12-13). This tinted layer is likely associated with an older varnish.



Figure 11. UVA-induced visible fluorescence, before treatment.



Figure 12. Micrograph in an area in one of the eggs before treatment, showing fine red, black, and brown pigments dispersed throughout the varnish.

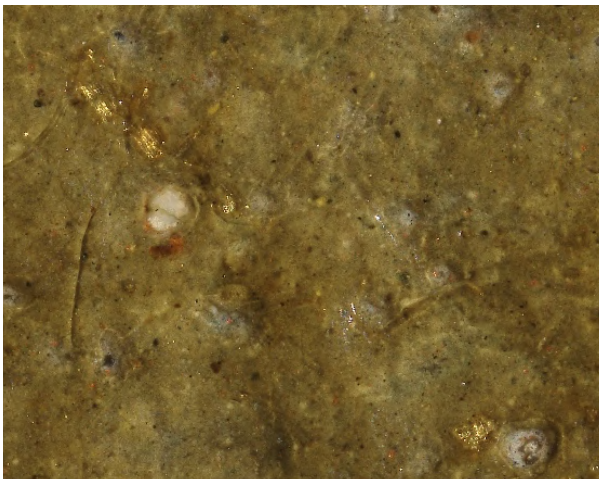


Figure 13. Micrograph in the background before treatment, showing flecks of metallic gold in the varnish.

VI. CONDITION REPORT

CONDITION SUMMARY

The painting is structurally stable and in poor aesthetic condition. The canvas support is adequately secured to its stretcher; both are structurally sound. The canvas is glue-paste lined, planar, and taut. The lining is stable and well-adhered to the canvas. The preparatory and paint layers are stable and exhibit good adhesion. Widespread formation of lead soap aggregates and protrusions has occurred throughout the ground layers, resulting in an overall highly-textured, bumpy paint surface and disrupting the paint layer in many areas. A variegated cracking network is present. The current varnish is thick, even, and glossy. The varnish is severely discolored and yellowed, and is disfiguring to the readability and intended appearance of the original composition. Several spots of discolored retouching are scattered throughout the background.

AUXILIARY SUPPORT

The stretcher is structurally stable and in good condition. Several small nail holes are in the back of the stretcher, likely from previous framing interventions. On the back there are a few minor scratches and marks in the surface, as well as adhered fragments of an old, discolored paper tape.

PRIMARY AND SECONDARY SUPPORTS

The primary canvas support is structurally stable and in good condition. The canvas is fully adhered to a lining canvas with a glue paste adhesive, and is securely attached to the lining. The support is planar, very taut, and adequately secured to the stretcher. All original tacking margins are present and in good, stable condition. Some uneven cusping is visible through the paint layer in the upper half of the right edge.

The lining canvas is stable and well-adhered. From the reverse, the lining appears dry and evenly coated and not much adhesive is visible throughout. Some light surface scratches are present. A layer of dust and dirt is present. Along the tacking margins, there are varying

amounts of restoration and possibly framing material adhered. There appears to be remaining fragments of paper attached to the margins, and some of these remnants are saturated with discolored resin or possibly wax.

PREPARATORY AND PAINT LAYERS

The ground layers are stable and exhibit good adhesion to the canvas support and paint layer. Some cracks, splits, and small losses in the ground layers are present along the creases of the fold-over edges, notably along most of the bottom and left edges. The ground layers extend off of the foldover edges to the cut ends of the tacking margins and remains in good, stable condition.

Extensive, widespread formation of lead soap protrusions has caused overall disturbance and physical alterations throughout the media layers on a microscopic level. Lead soap aggregates in various stages of formation and migration have occurred at a uniform level throughout the entire paint matrix. The migration of the soaps through the media layers have caused deformations and ruptures, altering the overall texture of the paint surface and making it appear bumpy. This bumpy texture is discernable when the painting is viewed up close and with raking light (Fig. 14). Some aggregates appear as large, translucent particles. In other areas, the aggregates have fully ruptured through and out of the surface, leaving behind minute craters or “pock marks” (Fig. 15). These larger aggregates and craters visually appear like tiny white dots throughout the paint surface; this effect is visible without the aid of magnification, yet is not immediately noticeable or distracting when the painting is viewed from a distance. The aggregates are present throughout the entire surface, and do not appear to be associated with particular colors or passages of paint.

Cross section analysis and microscopy revealed that the lead soaps are forming in the lower red ground layer, indicating the presence of red lead in the lower ground (see Section V, Preparatory Layers). Other technical studies have reported Chardin’s use of lead white in both of his ground layers. In some soaps that have erupted through the paint surface, both grey and red ground layers are visible along the perimeter (Fig. 16).



Figure 14. Detail of area with cheese and eggs in raking illumination after varnish removal.



Figure 16. Micrograph of a lead soap aggregate that has ruptured through the paint surface.



Figure 15. Micrograph of lead soap protrusion showing both ground layers and minium formation in the center.

The paint layers are stable and exhibit good adhesion. There are a few clusters of several loose, disassociated paint flakes adhered in the varnish along the edges—likely from the turnover edges. An extensive, variegated, and fine cracking pattern is present throughout. Networks of very fine feather cracking appear concentrated along the outer sections of the composition. This pattern consists of mechanical and aging cracks; the extensive soap formation and lining process have likely contributed to the craquelure's development and extent. Some more pronounced cracks are in the earthenware in the right. A couple of cracks reveal the dark-colored underlayer and are more visually noticeable in lighter-colored parts of the composition, appearing as fine dark lines; for example, in the eggs and cheese. In darker areas, such as in the dark brown of the lower right stone ledge, the upper blue-grey ground is visible through cracks and make them appear lighter in color.

The impression of the canvas weave is visible throughout much of the paint layer—particularly throughout the background. There is a small, fine scratch in the paint in the top right quadrant that is around 2 cm in length and located 9 cm from the right and 7 cm from the top; this scratch is relatively superficial and appears dark and black. Another scratch is in the cheese and is similarly fine, superficial, and appears dark: it is 2 cm in length and located 13 cm in from the left and 10 cm up from the bottom. Widespread lead soap formation and migration to the surfaces gives the appearance of tiny white dots or abrasion in multiple areas; this phenomena is especially visible in the dark background. The extensive presence of lead soaps is also visible under UV fluorescence and the X-radiograph, appearing as numerous tiny dark dots throughout the entire media layer.

In some areas, such as throughout the signature, underlying paint appears to be pushed up through cracks in the paint layer, creating the appearance of "worm"-like lines of paint (Fig. 17). Some of the lines of paint appear flattened, while others appear to have pushed out then sunk back into the crack recesses (Fig. 18). This phenomenon is visible under microscopic examination and its causes remain unclear. Theorized causes are the effects of a prior restoration process, such as heat and pressure inflicted from the past lining, or paint saponification. The paint surface may have been cured and drier while the paint below was softer and more plasticized, allowing for it to get pushed up through cracks and forming raised lines. Similar phenomena have been observed in 19th century and other modern paintings, as found through correspondence with other colleagues (in-person communication with Annelies van Loon and Matt Cushman).

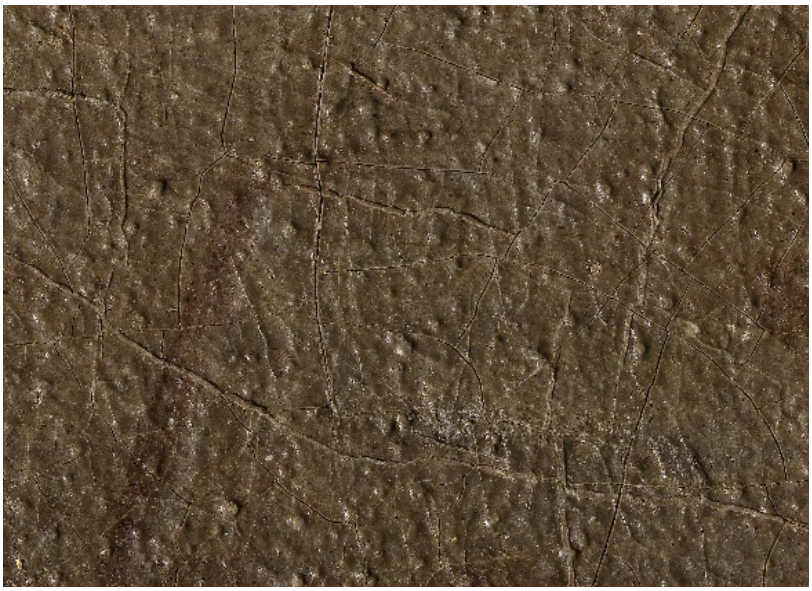


Figure 17. Micrograph in signature showing lines of raised, pushed up paint.

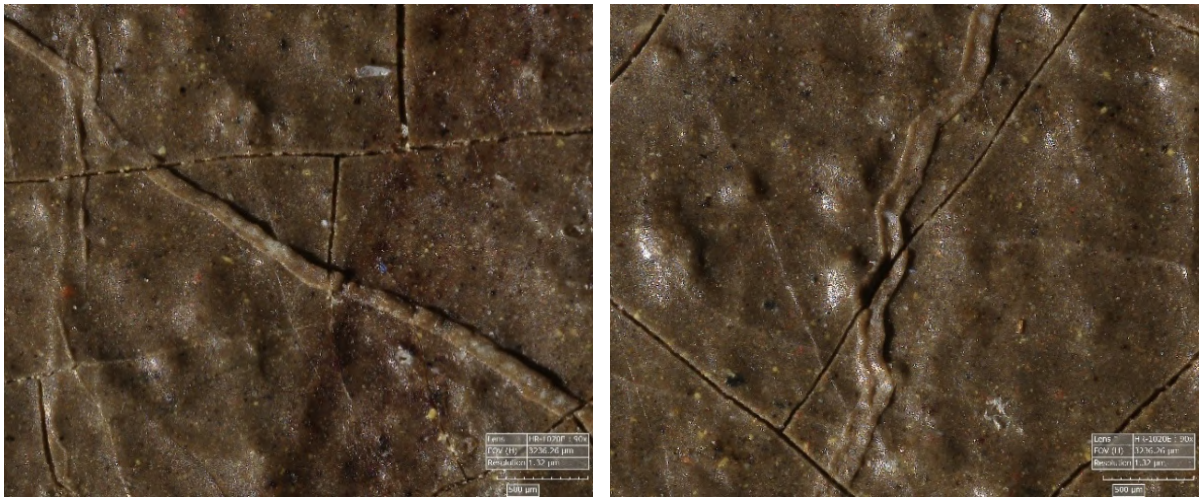


Figure 18. Micrographs showing different variations of paint pushed up through cracks. On the right, the paint appears to have sunken back into the crack, creating the appearance of a channel.

SURFACE COATINGS

The varnish is of moderate thickness and has a mostly even, moderate to high gloss with some matte areas throughout. The fine cracking network visually disturbs this glossiness. The varnish is highly discolored and yellowed due to age and deterioration, and is visually disfiguring to the composition (Fig. 19). Rabbet rub along the edges has disturbed the varnish in these areas, resulting in a matte, hazy appearance.

Small spots and areas of discolored retouching are present in the background. Examination under the microscope indicates the presence of a dark brown

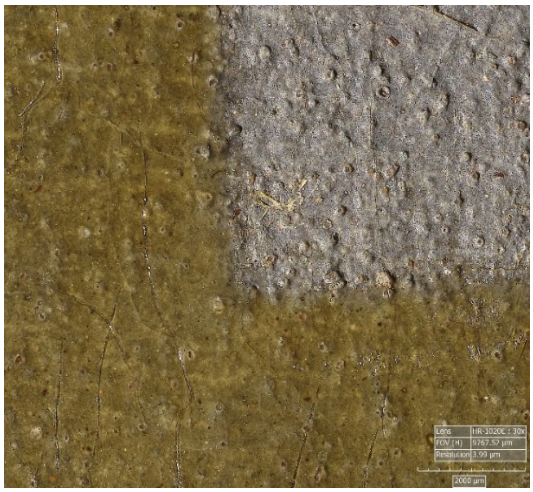


Figure 19. Micrograph of varnish removal test.

overpaint in the underlining and shadow of the cheese, as this layer of paint runs across a crater left from a lead soap that has fully migrated out of the paint film (Fig. 20). A scratch is in the lower right section of the cheese and appears dark in color; examination with microscopy indicates that this scratch is primarily in the varnish and has collected some dark pigment in part of it. A few tiny spots of dark brown accretions are present in the coating. Some flecks of gold-colored paint are along the outer edges, likely from the gold frame. There are very thick areas of severely discolored, yellowed resinous coating along the tacking margins; these areas are possibly accumulations of varnish which dripped off of the foldover edges during varnish application. There is a light layer of dust.

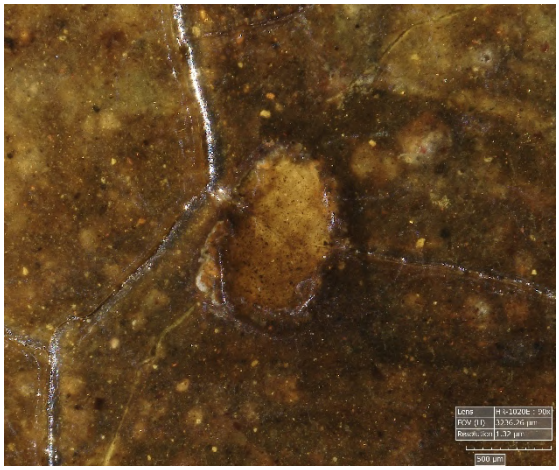


Figure 20. Brown overpaint on top of a crater left from a lead soap.

After varnish removal, an uneven overall sheen remained present throughout the paint surface. The sheen does not appear to correspond to specific passages of paint or any other material, and does not have a clearly distinguishable fluorescence under UV irradiation. In cleaning test areas that were masked by Melinex during varnish removal, outlines of the initially uncleaned areas retain this sheen. The sheen appears to be insoluble in solvents. Aqueous chelating solutions appear to have some effect on the sheen and will remove some sort of grime layer left on the surface; however, results are inconsistent. Varnish removal also revealed an overall, uneven, residual layer or film of solid material that was left behind on the surface (Fig. 21). In some areas, there are fibrous and resinous bits that are insoluble in solvents and do not fluoresce under UV. Examination under the microscope reveals that some bits of material appear fibrous, while in broader, thinner areas the material appears like a cloudy, translucent, and flaky film—possibly some sort of adhesive (Fig. 22-23). The sheen and the film may be a residual coating or material left from previous restoration interventions, such as an old facing. There are also spots of white, beige, and yellowed crust-like accretions present. After removing all varnish layers with solvents, this insoluble material layer gives the paint surface a blanched appearance. Consultation with Dr. Annelies van Loon suggested that the sheen and the residual material layer may be associated with the formation of a crust; however, based upon microscopic examination the material appeared more similar to residues from an old restoration instead of a crust. Sabrina Meloni also suggested that some of the yellower, resin-like bits may be insoluble impurities from the processing and refinement of dammar varnish.

FRAME

The painting is displayed in a gilded, empire-style wooden frame. The frame is stable and in good condition overall. The gilding exhibits some minor wear scattered throughout, revealing the red bole underneath. On the proper left edge and in the lower end are three pyramid-shaped metal pieces attached to the frame; these were applied by the museum in advance of the second world war to prepare for the collection's evacuation in the case of disaster (Buvelot 2025, 100-101).

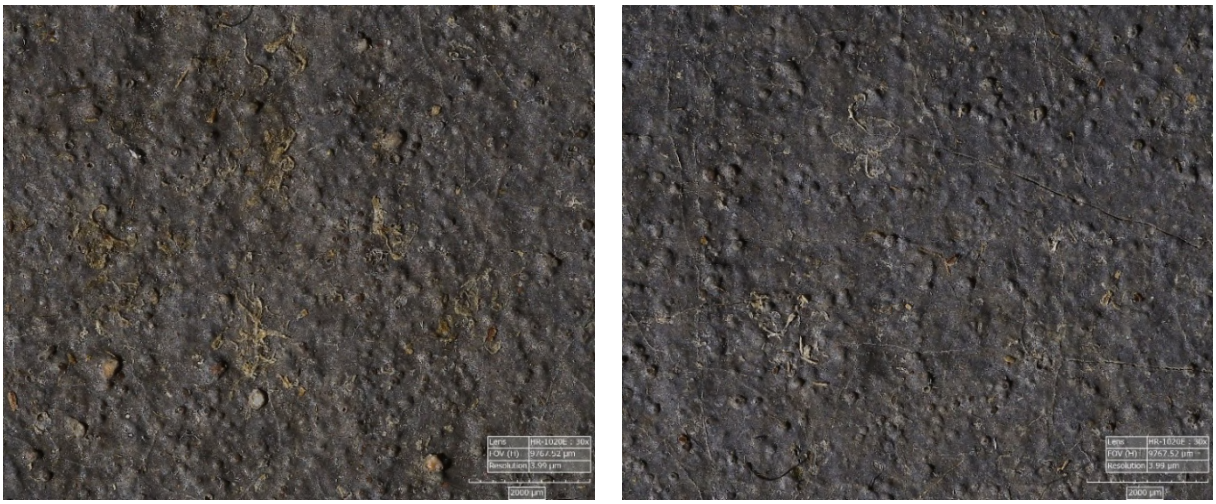


Figure 22. Micrographs of area in upper right background showing residual material.

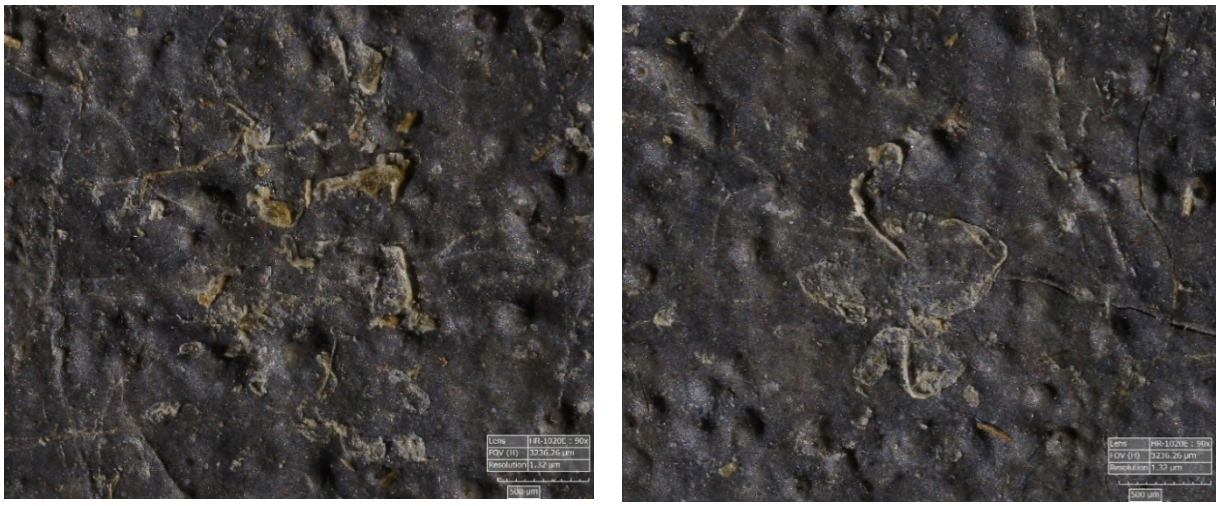


Figure 21. Micrographs of same areas in Figure 18 at a higher magnification, showing residual material layer.

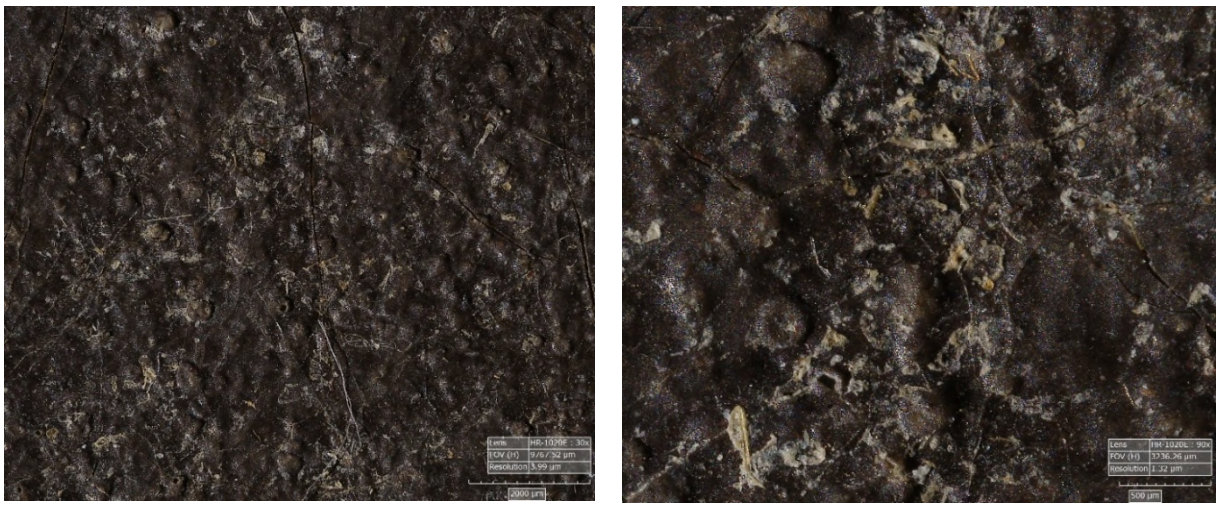


Figure 23. Micrographs of area in upper left background showing residual material and film layer.

VII. TREATMENT PROPOSAL

The goal of this treatment is to improve legibility and re-establish visual unity of the composition while ensuring long-term physical stability. This treatment aims to remove or reduce the severely discolored varnish, discolored retouching, and overpaint. Any losses will be stabilized and visually reintegrated. A new reversible, stable varnish will be applied to re-saturate and protect the surface.

1. Complete written and photographic documentation before, during, and after treatment. Conservation imaging for documentation and examination will include techniques using visible illumination, raking illumination, ultraviolet-induced visible fluorescence, infrared imaging, and photomicrography.
2. Dust all surfaces with a soft haired brush. Perform other dry surface-cleaning methods as needed.
3. Conduct initial aqueous solubility test to determine if a grime layer is present. If grime is present, conduct additional aqueous solubility tests.
4. Remove surface grime using mild enzymatic solution or aqueous solution if needed. The presence of surface grime decreases legibility of the surface and might hinder solubility of the varnish layer, making the varnish removal more difficult.
5. Perform solvent solubility tests to determine a system for varnish removal that is controllable and safe for the painting. Methods to be tested may include use of free solvent mixtures, absorbent carriers such as Evolon CR, and gelling and thickening agents as needed.
6. Remove varnish layer(s) in an even manner to re-establish legibility and intended appearance of the paint layer. Removal of coating residues along the tacking margins may also be considered.
7. Perform tests to determine a method for removing any old overpaint and retouching that did not solubilize with the varnish layer. Methods may include additional solubility tests, different cleaning systems, and mechanical removal techniques.
8. Perform varnishing tests to select resin(s) and an application system that will provide even gloss and saturation of the paint layer.
9. Apply an isolating varnish layer using a stable, reversible, conservation-grade resin to re-saturate the paint layer and provide a barrier layer for retouching.
10. Fill any losses as needed using a conservation-grade material with similar properties to the ground layers.
11. Inpaint areas of loss, abrasion, and old retouching that could not be removed using dry stable pigments in a reversible, conservation-grade resin or pre-mixed conservation paints.
12. Apply final varnish layer(s) to level and even out overall surface gloss.

VIII. TREATMENT REPORT

TREATMENT SUMMARY

Discolored varnish layers and retouchings were removed using one overall sheet of Evolon CR loaded overnight at 60.5% capacity with a solvent mixture of 2:1 acetone to ethanol and applied for a contact time of 1 minute and 30 seconds. Residual varnish was removed by rolling swabs and 1:1 ethyl acetate to isopropanol through small pieces of Evolon CR. Insoluble residues and non-original surface materials were removed mechanically. The painting was varnished with 20% weight to volume Paraloid B-72 to protect and saturate the surface for retouching. A small loss was filled with Flugger and areas of loss, abrasion, and scratches were inpainted using Lascaux Mowilith 20 polyvinyl acetate resin mixed with dry, stable pigments and a diluent of ethanol. A final spray varnish of 20% weight to volume Laropal A81 in a fast-evaporating solvent mixture was applied to even out and mattify the highly textured paint surface.

TREATMENT REPORT

1. Dusted front of painting using a soft haired brush. Surface-cleaned and vacuumed back of painting with a cosmetic polyurethane sponge and feather.
2. Performed aqueous solubility test with mild enzymatic solution to determine if there is grime present. No grime layer was present.
3. Performed solvent solubility tests to determine a system for varnish removal (Fig. 24).



Figure 24. Varnish removal tests in visible light (left) and UVA-induced visible fluorescence (right).

4. Removed varnish layers using one overall sheet of Evolon CR (referred to in rest of the report as ‘Evolon’) loaded at around 60.5% capacity with a solvent mixture of 2:1 acetone to ethanol and a contact time of 1 minute and 30 seconds (Fig. 25). Due to the extensive presence of lead soap protrusions, Evolon was selected in order to reduce mechanical action against the surface and prevent further disruption of the soaps.
    A. One sheet of Evolon was cut to a size slightly larger than the painting (weighing at 14.1 grams).
    B. The Evolon was pre-washed twice with acetone to remove unwanted free fatty acids.

C. The Evolon was pre-loaded overnight with 34.1 grams (~43 mL) of 2:1 acetone:ethanol (around 60.5% loading). The Evolon was loosely rolled up and placed into a large graduated cylinder. Using a large pipette, the solvent was transferred into the cylinder and distributed throughout the rolled-up Evolon. The cylinder opening was plugged up with a plastic lid from a urine sample container, which was pushed into the opening with the top of the lid facing inside the cylinder. The opening was then covered and sealed up with pieces of Parafilm and a rubber band secured around the perimeter. The cylinder package was laid down horizontally and propped up at a slight angle on pieces of foam to prevent the Evolon from crumpling down on itself and the formation of creases. This package was left in the fume hood overnight.
D. Areas of cleaning tests were masked with pieces of Melinex to protect these areas from being over-cleaned during varnish removal. The signature was also masked off since signatures in paintings tend to be more sensitive areas due to past manipulations and/or over-cleaning; the signature would later be cleaned using swabs under the microscope. The Melinex pieces were cut slightly larger than the areas to be masked off. In the borders of these masked areas, tiny dots of the varnish were solubilized with isopropanol to adhere the Melinex pieces and keep them in place during the Evolon varnish removal process.
E. The solvent-loaded Evolon sheet was placed over the painting surface and covered with a larger sheet of Melinex. The covered painting was brushed with a wallpaper smoothing brush to establish contact between the solvent-loaded Evolon and the paint surface. A wad of balled-up cotton gloves with a smooth outer surface was gently and continuously massaged against the painting to apply light, even pressure and encourage full contact between the Evolon and paint surface. The rate and amount of varnish absorption was visually monitored during this process; additional pressure was applied to areas which appeared less yellow. The total contact time was 1 minute and 30 seconds.

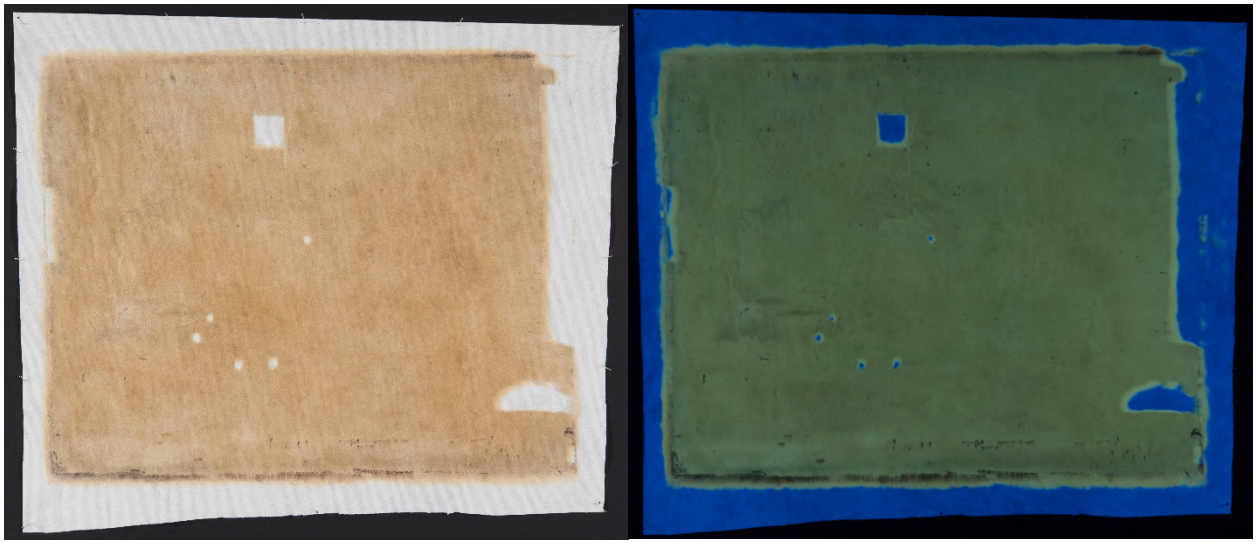


Figure 25. Evolon CR sheet used for varnish removal, in visible light (left) and UV-induced visible fluorescence (right).

5. Conducted additional tests for solvent and aqueous cleaning systems for the removal of remaining residues of non-original coatings and materials. Solutions tested include Pemulen emulsions, chelating agents, surfactants, pH-adjusted water mixtures,

Xanthan gum emulsions, aromatic and polar solvents, and Evolon applications. See "General Notes" document on server for more information on tests performed.

6. Removed overall remaining varnish and coating residues by rolling solvent-soaked cotton swabs through small pieces of Evolon in order to limit amount of applied solvent and mechanical action against the paint surface. The solvent mixture 1:1 ethyl acetate: isopropanol was used for its slower evaporating time in order to reduce blanching. The cotton swabs were not rolled all the way to the edges of each Evolon piece in order to avoid the appearance of harsh cleaning lines.
7. Small spots of thicker varnish residues, including leftover varnish in paint interstices, were removed by swabbing with 1:1:2 acetone: ethanol: iso-octane and tamping away solvent with pieces of clean Evolon. This work was done under the microscope.
8. Locally reduced thin residual layer of hazy, non-original surface material and accretions in visually noticeable areas using mechanical action. Working under the microscope, surface material was mechanically removed using a wooden skewer with a fine tip or an insect needle tool, then brushed off of the surface. The surface material appeared to be sitting on top of the paint surface, was unevenly distributed throughout the entire painting, and was insoluble in solvents and aqueous solutions. The material layer possibly consists of residues from previous treatments—such as a facing layer—as some of the material appears fibrous or like resinous bits when viewed under magnification. In many areas, the material also appeared like a film on the surface. Salts or some sort of crust formation might have been present; however, microscopic examination with Annelies van Loon indicated that the material appeared less like a crust formation, and more like residues or a film sitting on top of the surface since it was accumulated within the interstices of the paint layer. A few areas also appeared to have spots of white, crusty surface deposits. A sample of the material was collected.
9. Tiny areas of old waxy restoration material which were covering original paint were removed via mechanical action with the insect needle tool and by swabbing with Shellsol A when necessary. In a few areas, tiny losses appeared filled and/or consolidated with wax; the wax appeared discolored and covered original material. In a few areas, tiny dots of white waxy material seemed to be unintentionally deposited on the surface as they were on top of undamaged areas in random spots. A few other small areas contained waxy accretions that appeared white and hazy.
10. Mechanically removed remnants of waxy paper from the paint surface under the microscope. These bits of wax-impregnated thin paper were adhered on top of the paint along the bottom edge of the painting. The waxy paper may be remains from an old facing or consolidation treatment, as the paint and ground layers cracking along the turnover edge appear to be impregnated with wax. Samples of the waxy paper were collected.
11. Cleaning tests with aqueous solutions that contained the chelating agent EDTA and water adjusted to a pH of 6.5 were found to remove some material that appeared a light beige color on swabs in visible light, and fluoresces a pale yellow-green color under UV. Swabs used to clear the area with demineralized water after were also found the fluoresce in the same way under UV. The paint areas cleaned with these solutions exhibited no visible changes in normal light or UV fluorescence. It may be theorized that some residual layer of old grime or animal glue (from a possible facing) is left over and being removed during this aqueous cleaning. However, due to the lack of visible changes in the paint surface and the risk of introducing water to the paint film, aqueous cleaning was not pursued. There is not much to gain from aqueous cleaning if there are no visible changes. Water has been linked to metal soap formation and the possible effects of water exposure to lead soaps are still not fully understood; thus,

water and moisture treatments should be avoided for this painting. Additionally, it is unclear what exactly is being removed from the surface when this aqueous cleaning is performed.

12. Brush-applied varnish tests to select an appropriate isolating varnish. The following varnishes were tested (some recipes were already mixed and in the solvent cabinet):
    A. 80 g. Paraloid B-72 in 400 mL Shellsol A
    B. 15 g. Paraloid in 100 mL Shellsol A
    C. "50 g. Laropal A81 in 100mL Shellsol A + 150 mL Shellsol D(?)"
    D. 20 g. Regalrez 1094 in 100 mL Shellsol D40
    E. "15% w/w Regalrez 1094 in Shellsol D40 + 3% Kraton G 1650"

    Small windows of varnish using the recipes listed above were applied in various select areas within the painting that were blanched, appeared hazier or more matte, or exhibited faint lines from Evolon varnish tests that were slightly visible in specular light and unable to be fully removed (Fig. 26). The varnish tests were applied and left overnight in order to allow the solvents to fully evaporate and for the resin to sink in, providing a more accurate evaluation of the results. Based upon the results, Recipe A provided the most satisfactory levels of evenness, moderate gloss, and saturation of the paint surface in different areas. B-72 also appeared to have the best result in evening and leveling out the gritty, textured surface caused by the extensive presence of lead soaps, as well as areas with uneven sheens and matte spots.



Figure 26. Brush varnish tests in specular light.

13. Applied an isolating varnish layer by brush using a mixture of 80 grams of Paraloid B-72 in 400 milliliters of Shellsol A (Fig. 27).
14. Filled small loss with Flugger acrylic filler.
15. Inpainted areas of loss and abrasion with dry stable pigments bound with Mowilith 20 (Lascaux Medium for Retouching 20-50) polyvinyl acetate (PVA) resin and a diluent of ethanol to re-establish pictorial unity to the composition (Fig. 28). PVA resin was selected to allow for more flexibility with layering options.
16. Spray varnish tests with different varnish recipes and spray applications were carried out on mock-ups in order to determine an appropriate final varnish for the paint surface. The initial isolating layer had already provided an adequate level of saturation and surface gloss; thus, a final varnish coating was to be sprayed rather than brushed. Due to the extensive presence of lead soap protrusions, which has resulted in a highly textured paint surface, the high points of these protrusions reflect light and create a slight "sparkling" effect with a varnish present. This unwanted effect also deters from applying a final varnish by brush, as this would increase the gloss and potentially the sparkling. The following varnish recipes were tested:
    A. 50 g. Laropal in 100 mL Shellsol A + 150 mL Shellsol D40
    B. 100 g. Laropal A81 in 417 mL white spirit (18% aromatics) + 83 mL isopropanol

C. 12 g. Laropal A81 in 60 mL Shellsol A + 1.2 g. Cosmoloid 80H wax
D. 10 g. dammar in 10 g. Shellsol A + 40 g. white spirit + 1 drop isopropanol
E. 5 g. dammar in 15 g. Shellsol A + 5 g. iso-octane + 2.5 g. isopropanol
F. "20% dammar in 1:4 Shellsol A + Terp. D + droppel isopropanol"
G. 5 g. Laropal A81 in 50 mL Shellsol A

Initial mock-ups were created to mimic the textured paint surface: 80 grit sandpaper was painted as uniformly as possible with black gouache then varnished with 20% Paraloid B-72. The sandpaper pieces were adhered to scrap board, half of the piece was masked off, then the piece was sprayed twice with each varnish. The same spray gun settings were used for all sandpaper tests: three full turns for the air knob, slightly past one full turn for the material knob, 2 coats sprayed at a distance of approximately 35 cm. The sandpaper mock-ups were sprayed with varnish recipes A to F. Results indicated that all of the dammar recipes produced a slightly glossier result than all of the Laropal recipes. Adding wax did not result in much difference, and it was preferred not to include additional material. The recipes were narrowed down to recipes A and B, and recipe G was added for testing. Additional tests were conducted with recipes A, B, and G on large black glossy ceramic tiles; for each test tile, two varnish applications were performed where one variable was changed. See powerpoint in object folder on server for information on the tile tests and results, as well as further details on all mock-ups. Based on these tests, varnish recipe B—the "matte" Laropal A81 mixture—provided the best result in terms of mattifying the surface; its mattifying ability is due to its content of faster-evaporating solvents.

17. Applied final spray varnish using a mixture of 100 grams of Laropal A81 resin in 417 milliliters of white spirit (18% aromatic content) and 83 milliliters of isopropanol (Fig. 29). The following spray gun settings were used: three full turns for the air knob, and slightly past one full turn for the material knob. Five spray coats were applied in alternating directions—three horizontally and two vertically—and at a distance of around 40 centimeters from the painting.



Figure 28. Brush varnishing isolating layer with Sabrina Meloni. Image: Camille D. Dullaart.



Figure 27. Inpainting.



Figure 29. Spray varnishing with Sabrina Meloni. Image: Camille D. Dullaart.

TREATMENT OUTCOME

The conservation treatment of *Stilleven met Koperen Ketel, Kaas en Eiren* was successful and transformative to the painting's legibility and visual appearance (Fig. 30-37). The true color palette, tonality, and a sense of spatial depth—previously obscured by the thick, severely discolored, and pigmented varnish—were re-established. Subtle variations in hues were revealed. Minute losses and scratches were finely reintegrated and pictorial unity was achieved. The result of this treatment allows for a more accurate perception of the composition and Chardin's painting technique. The painting remains structurally stable and is now suitable for exhibition.

IX. RECOMMENDATIONS FOR FUTURE CARE

The painting should remain in the following controlled environmental conditions: relative humidity at 52% plus or minus 5%, with fluctuations outside of this percentage at no more than 24-hour intervals; temperature at 19 degrees celsius plus or minue 3 degrees; displayed in lighting conditions at a maximum of 150 lux and a maximum of 75 microwatts/lumen UV. Regular monitoring and gallery maintenance should be performed if the painting is on display. Future treatments involving mechanical action and moisture should be avoided due to the presence of lead soaps, as current research suggests that water and moisture conrtibute to the formation of metal soaps in oil paintings.



Figure 31. Before treatment.



Figure 30. After treatment.



Figure 33. After varnish removal and surface cleaning.



Figure 32. After initial varnish and before inpainting.



Figure 34. Before inpainting, UV-induced visible fluorescence.



Figure 35. After treatment, UV-induced visible fluorescence.



Figure 36. Detail in center right background before (left) and after (right) inpainting.



Figure 37. Detail in cheese before (left) and after (right) inpainting.

X. REFERENCES

Technical Studies:
Technical study of still lifes at Nelson Atkins: Chardin, Still Life with Cat and Fish | French Paintings and Pastels, 1600–1945 (nelson-atkins.org)

AIC Preprints of meeting in Philadelphia, May 1981, article included in conservation history black folder – "A Step toward Revising our Perception of Chardin" by Ross Merrill – study by Cleveland Museum, Research lab of museums of France, MFA Boston, NGA Washington for 1979 exhibition Chardin, 1699-1779.

Technical study by AGO of Chardin still life dated to 1758: AIC Paintings Specialty Group Postprints 26 (2013), "The Research and Conservation Treatment of Jar of Apricots/Le Bocal dábricots, 1758 by Jean-Siméon Chardin", Sandra Webster-Cook, Kate Helwig, and Lloyd de Witt.

Joseph Fronek, "The Materials and Techniques of the Los Angeles *Soap Bubbles*," in *Masterpiece in Focus: Soap Bubbles by Jean-Siméon Chardin* (Los Angeles: Los Angeles County Museum of Art, 1990), 23.

Art History:
Bredius, Rembrandt, en Het Mauritshuis. 1991. Marjolein de Boer and Josefine Leistra. Uitgeverij Waanders b.v., Zwolle. Mauritshuis, Den Haag. Catalog section, pg. 58.

Huis in de Storm: Het Mauritshuis in Oorlogstijd. "Chapter 4: Evacuatie en Bescherming van de Collectie van het Mauritshuis, Quentin Buvelot." Edited by Frank van Vree and Quentin Buvelot. 2025. Waanders Uitgevers, Zwolle/Stichting Koninklijk Kabinet van Schilderijen Mauritshuis, Den Haag.

Jean Simeon Chardin, 1699-1799: Werk, Herkunft, Wirkung. 1999. Staatliche Kunsthalle Karlsruhe. Pg. 49-50. Chapter by Dietmar Lüdke. "Chardin und die niederländische Malerei des 17. Jahrhunderts Dargestellt an Sieben Stilleben" (Chardin and 17th-century Dutch Painting Illustrated by Seven Still Lifes)."

Chardin 1699-1799, 2011 exhibition catalog, Museu nacional del prado. Edited by Pierre Rosenberg

Chardin 1699-1779. 1979. Pierre Rosenberg. Grand Palais.

Chardin, Jean Baptiste Simèon. Museo Nacional Thyssen-Bornemisza

Still Life With Cat and Fish - Chardin, Jean Baptiste Simèon. Museo Nacional Thyssen-Bornemisza

Still Life with Pestle and Mortar, Pitcher and Copper Cauldron - Chardin, Jean Baptiste Simèon. Museo Nacional Thyssen-Bornemisza

Chardin X-Rays:
X-radiograph(s) of "Still Life" | Harvard Art Museums

X-radiograph(s) of "Still Life with Teapot, Grapes, Chestnuts, and a Pear" | Harvard Art Museums
X-radiograph(s) of "Le Lievre" | Harvard Art Museums

APPENDIX I: "Utensiles de cuisine" excerpt scanned from *Chardin: 1699-1779* exhibition catalog (1979, Grand Palais) by Pierre Rosenberg

Ustensiles de cuisine

Fontaine de cuivre
«Une fontaine de cuivre rouge garnie de son couvercle et anneaux aussy de cuivre rouge contenant deux voies d'eau avec son robinet de potin» (alliage de cuivre) «posée sur un pied de bois de Chine, prisée vingt cinq livres» (1737). Cette réserve d'eau pour la maisonnée est mentionnée dans les inventaires de 1731 et 1737.
(N°s 53, 55, **57**, 80, 81.)

Chaudron
«Deux moyens et un petit chaudron» (1779). Apparaissent probablement dans les inventaires de 1731 et 1737. On en distingue trois sortes: ceux de cuivre jaune, ceux de cuivre rouge, ceux de cuivre rouge étamé.
(N°s 7, 34, 35, 36, 37, **38**, 39, 40, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 55, 57, 78, 79, 82, 102, 105.)

Écumoire
«Trois écumoires» (1737). Cet ustensile se retrouve dans l'inventaire de 1779.
(N°s 7, 34, 35, 37, 38, 39, 42, **43**, 45, 46, 79, 102.)

Pot à eau (ou pot à l'eau). Poterie plombifère courante
Peut faire partie des «ustensiles de ménage» des inventaires de 1731, 1737, 1779.
(N°s 7, 36, 43, 46, **47**, 48, 49, 50, 51, 102, 105.)

Poêlon (en faïence plombifère, intérieur glaçuré)
Peut faire partie des «ustensiles de ménage» des inventaires de 1731, 1737, 1779.
(N°s 40, 47, 50, **51**, 79, 102.)

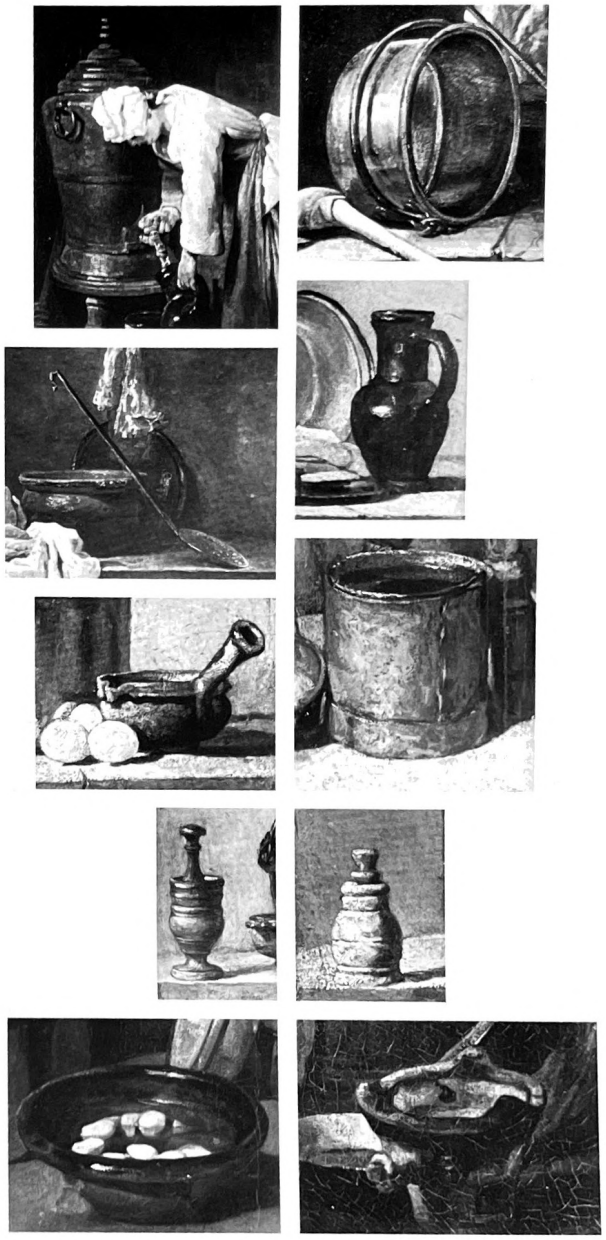
Seau
Peut faire partie des «ustensiles de ménage» des inventaires de 1731, 1737, ou être le «seau ferré» de celui de 1779.
(N^{os} **53**, 55, 57, 80, 81.)

Mortier et son pilon
Cet objet, qui semble en bois, servait à piler le sel ou les épices; appelé aussi **égrugeoir,** il est très fréquent dans l'œuvre du peintre. Dans l'inventaire de 1779, on ne trouve mention que d'un «mortier de pierre», ou d'un «petit mortier de marbre blanc». (N°s 7, 36, 37, 39, 40, **52**, 53, 102).

Boîte à épices en bois
Cet objet se retrouve dans beaucoup de tableaux de Chardin. Cependant, peut-être à cause de sa petite taille et de sa banalité, il n'est pas mentionné dans les inventaires.
(N°s 7, 12, 38, 43, 46, 48, 49, 50, **51**, 102, 105.)

Seille à eau
Cet objet très usuel, servant à l'entretien de la maison, ne figure pas dans les inventaires. (N°s 56, 58, **82**.)

Réchaud à cuire
Cet objet très usuel — une ouverture permettait d'y mettre de la braise, et le plat posé sur les tenons continuait de cuire — ne figure pas dans les inventaires. (N°s 37, 41, 55, **57**.)



APPENDIX II: COMPARABLE CHARDIN STILL LIFE PAINTINGS



Still Life with Kitchen Utensils and Vegetables, ca. 1734, oil on canvas. Source: Nationalmuseum, Stockholm, Sweden. Welcome to our Collections Online (nationalmuseum.se)



Kitchen Utensils with Leeks, Fish, and Eggs, c. 1734, oil on canvas. Source: The Cleveland Museum of Art, Cleveland, USA. Kitchen Utensils with Leeks, Fish, and Eggs | Cleveland Museum of Art



A copper saucepan, a pestle and mortar, a pitcher, a scallion, eggs and an onion on a shelf, ca. 1730, oil on canvas. Source: Christie's; included in monograph *Chardin* (2020) authored by Alexis Merle du Bourg. Jean Siméon Chardin (Paris 1699-1779), A copper saucepan, a pestle and mortar, a pitcher, a scallion, eggs and an onion on a shelf | Christie's



Still Life with Copper Pot, Cabbage, Pestle, and Stove, between 1732 and 1740, oil on canvas. Source: Barnes Foundation, Philadelphia, USA; included in monograph *Chardin* (2020) authored by Alexis Merle du Bourg. Barnes Collection Online — Jean-Siméon Chardin: Still Life with Copper Pot, Cabbage, Pestle, and Stove (Table de cuisine avec marmite de cuivre, chou, égrugeoir et réchaud)



Still Life with Pestle and Mortar, Pitcher and Copper Cauldron, ca. 1728-1732, oil on canvas. Source: Museo Nacional Thyssen-Bornemisza, Madrid, Spain. Still Life with Pestle and Mortar, Pitcher and Copper Cauldron - Chardin, Jean Baptiste Simèon. Museo Nacional Thyssen-Bornemisza



Menu de maigre et ustensiles de cuisine (Lean menu and kitchen utensils), 1731, oil on canvas. Source: Louvre Museum, Paris, France. Menu de maigre et ustensiles de cuisine. - Louvre site des collections. Note: This painting is listed in the Louvre online collection database as by the "École de Jean Baptiste Siméon Chardin," yet is understood by scholars as attributed to Chardin.



Ustensiles de cuisine, chaudron, poêlon et œufs (Cooking utensils, pot, pan and eggs), c. 1733, oil on wood panel. Source: Louvre Museum, Paris, France. Ustensiles de cuisine, chaudron, poêlon et oeufs - Louvre site des collections. Note: This painting is listed in the Louvre online collection database as by the "École de Jean Baptiste Siméon Chardin," yet is understood by scholars as attributed to Chardin.



Still Life, ca. 1732, oil on wood panel. Source: Detroit Institute of Arts, Detroit, USA. Still Life | Detroit Institute of Arts Museum



Still Life with Copper Cauldron, c. 1735, oil on canvas. Source: Musée Cognacq-Jay, Paris, France. Still Life with Copper Cauldron | Musée Cognacq-Jay



Still Life with Fowl, c. 1728-30, oil on canvas. Source: Norton Simon Museum, Pasadena, USA. Still Life with Fowl » Norton Simon Museum



Still Life with Ray, Chicken, and Basket of Onions, c. 1732, oil on canvas. Source: Wadsworth Atheneum, Hartford, USA. Wadsworth Atheneum Collection



X-radiograph for *Still Life with Ray, Chicken, and Basket of Onions,* c. 1732 in the Wadsworth Atheneum. Source: Harvard Art Museums Alan Burroughs Collection of X-Radiographs. X-radiograph(s) of "Still Life" | Harvard Art Museums



The Kitchen Table, 17[55?], oil on canvas. Source: Museum of Fine Arts Boston, Boston, USA. The Kitchen Table – Results – Advanced Search Objects – Museum of Fine Arts, Boston



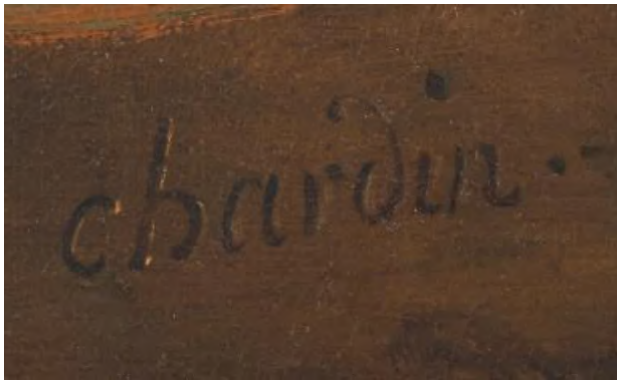
Tranche de saumon (Slice of salmon), ca. 1730, oil on canvas, Musée Granet, Aix-en-Provence, France. Image source: Still life with a copper pot and a piece of salmon — Jean Baptiste Siméon Chardin. Wikimedia link: File:Granet006 Chardin tranche de saumon.jpg - Wikimedia Commons. Pictured in Pierre Rosenberg's 1979 Chardin catalog under a different title, collection, and dating.

Signature in same “incised” style with highlights:





Menu de gras et ustensiles de cuisine (Fat menu and kitchen utensils), 1731, oil on canvas. Source: Louvre Museum, Paris, France. Menu de gras et ustensiles de cuisine. - Louvre site des collections.
Note: This painting is listed in the Louvre online collection database as by the “École de Jean Baptiste Siméon Chardin,” yet is understood by scholars as attributed to Chardin.





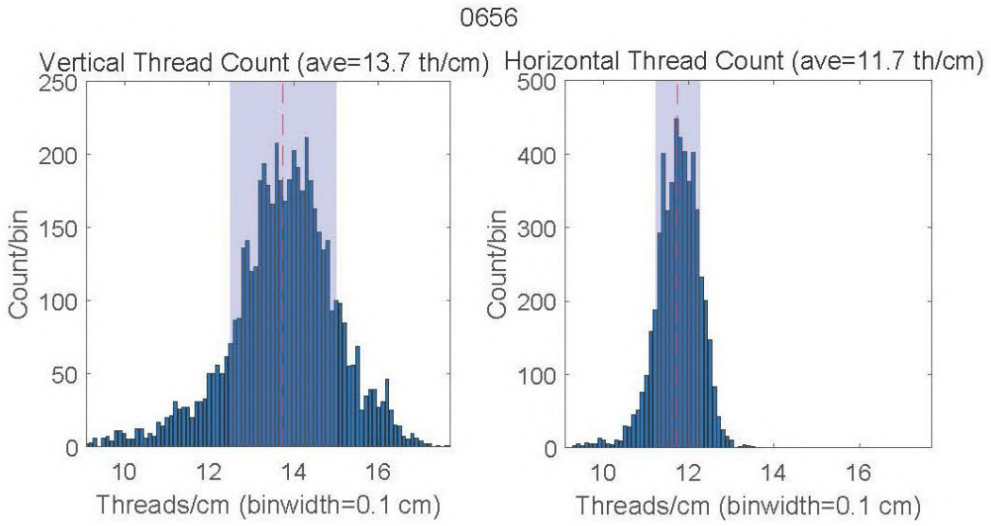
Detail from *Still Life with Plums*, ca. 1730, oil on canvas. Source: The Frick Collection, New York, USA. Still Life with Plums – Works – eMuseum.

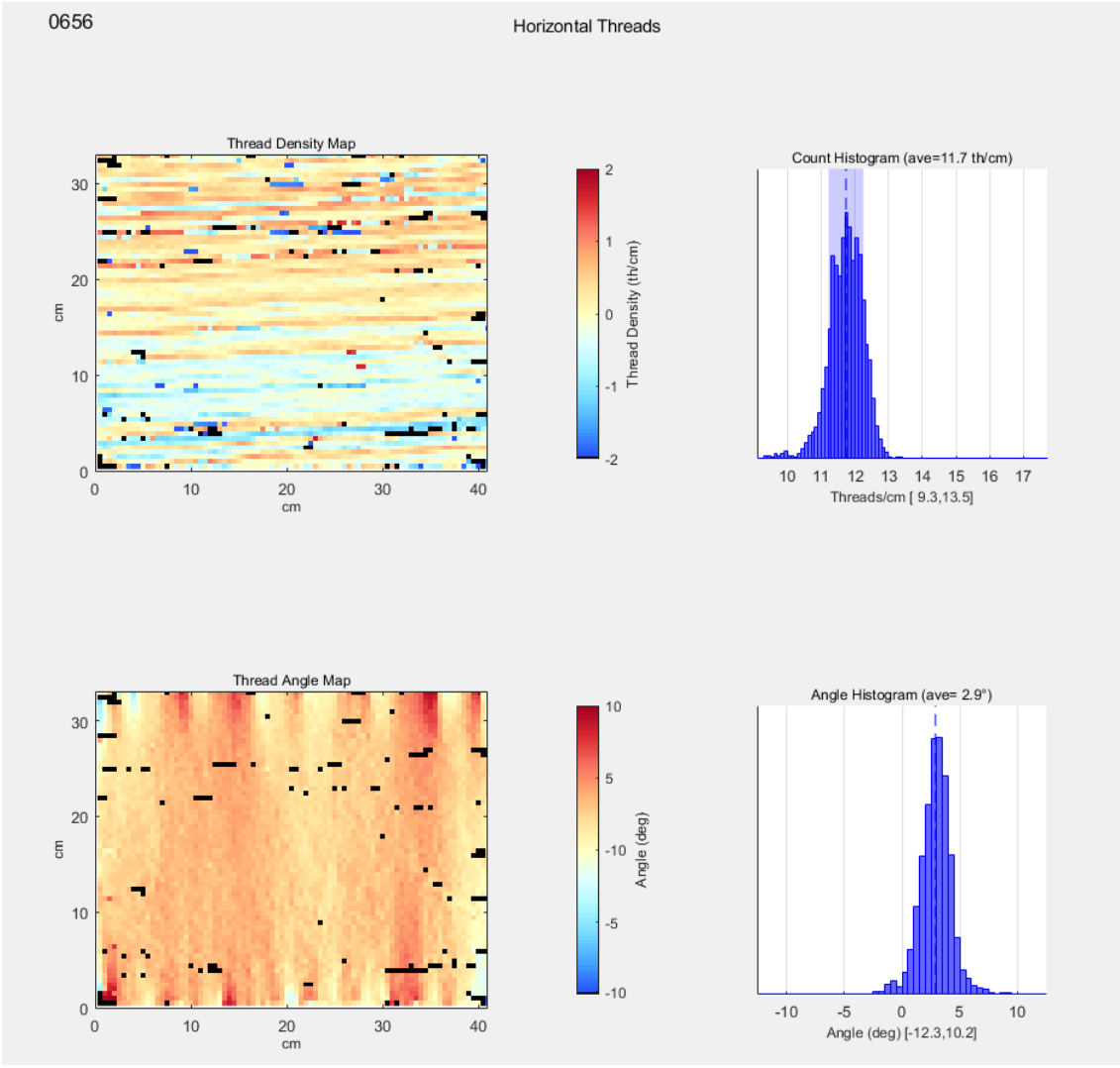
Image found through online search:

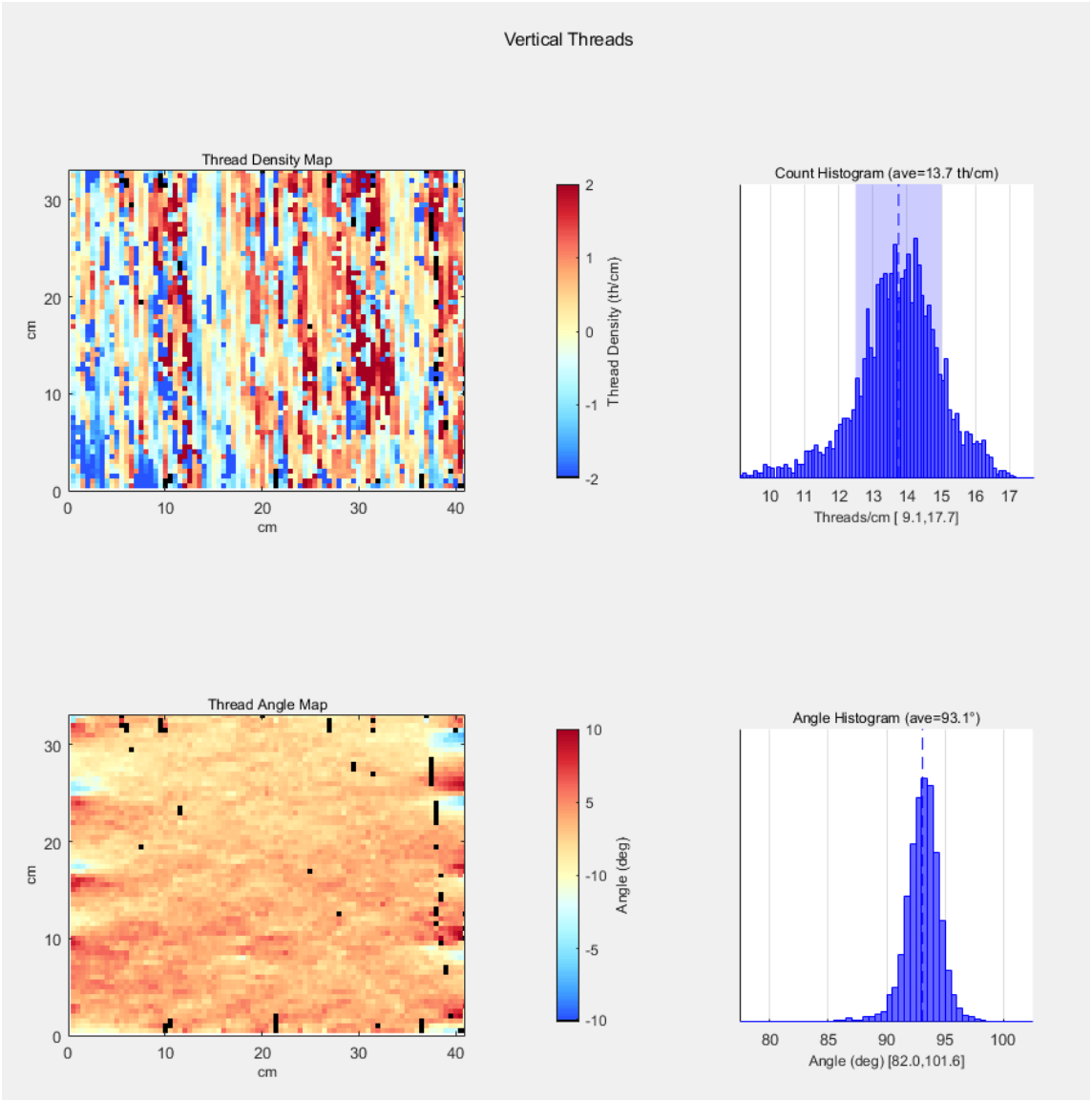


A copper cauldron, a pestle and mortar, a stoneware jug, eggs and a spring onion on a ledge, oil on canvas. Source: Christie's. Appears to be a copy/variant of the Christie's painting on Page 28. Jean-Baptiste-Siméon Chardin (Paris 1699-1779) , A copper cauldron, a pestle and mortar, a stoneware jug, eggs and a spring onion on a ledge | Christie's

APPENDIX III: AUTOMATED THREAD COUNTING RESULTS






Vertical Threads
Thread Density Map
cm
cm
Thread Density (th/cm)
Count Histogram (ave=13.7 th/cm)
Threads/cm [9.1,17.7]
Thread Angle Map
cm
cm
Angle (deg)
Angle Histogram (ave=93.1°)
Angle (deg) [82.0,101.6]

APPENDIX IV: TABLE OF CHARDIN'S PALETTE 1730-1766

Table 1. Jean-Siméon Chardin's Palette 1730–1766 as Identified in Museum Collections

Pigments	Research Laboratory, Paris	Museum of Fine Arts, Boston	National Gallery of Art, Washington	The Cleveland Museum of Art	Art Gallery of Ontario
Kaolin	x				x
White Lead	x	x	x	x	x
Vegetable Carbon Black	x		x	x	x
Chalk		x	x	x	x
Iron Oxide Earth Colours	x	x	x	x	x
Organic Brown Earth				x	
Umber	x				
Lead Tin Yellow	x-?		x-?		x
Naples Yellow	x	x			x
Yellow Lakes	x				
Orpiment		x	x	x	x
Realgar	x	x		x	
Vermillion		x	x	x	x
Red Lakes	x			x	x
Prussian blue		x	x		x
Ultramarine blue				x	x
Ultramarine blue mixed with Prussian blue	x		x		x

AIC Paintings Specialty Group Postprints 26 (2013)

Table from article "The Research and Conservation Treatment of *Jar of Apricots/Le Bocal d' abricots*, 1758 by Jean-Siméon Chardin" by Sandra Webster-Cook, Kate Helwig, and Lloyd de Witt, published in AIC Paintings Specialty Group Postprints 26 (2013).