Pride of Place: The conservation and display of a Seventeenth Century Chinese Coromandel lacquer panel within the context of the Acton Collection at Villa La Pietra in Florence

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Abstract
This paper describes the conservation of a seventeenth century Coromandel lacquer panel in the collection of Villa La Pietra, once the residence of the Acton family. Decisions about treatment, appearance and long-term preservation measures require a collaborative decision-making process between administrators, curators, historians, conservators and exhibit case manufacturers. The profound alteration of the original object and application of a wooden cradle exacerbated condition problems of the lacquer, and compromised the structural stability of the panel. Treatment includes the adaptation of traditional Asian methods to set down flaking and detached lacquer, in addition to structural stabilization using an extruded aluminum framework. Methods for addressing stabilization, loss compensation, reintegration and display consider its role as an object expressing the Acton aesthetic, and the related objective of minimizing changes in appearance, avoiding over-restoration. Appropriate and achievable goals were set for the project, with the ultimate goal of display within the context of the historic setting.

Keywords
Coromandel; Chinese; lacquer; urushi; conservation treatment; historic house; display; preservation; Acton
**Historical background**

In the 1460s, the residence, owned by the Sassetti family (bankers for the Medici), acquired its present ‘palazzo-villa’ design, based on Michelozzo’s 1444 Palazzo Medici. Situated on a 57 acre campo amid olive groves and fruit trees, the site features a magnificent garden overlooking the historic centre of Florence [Fig. 1].

In the eighteenth century, the present Baroque appearance of the façade and alterations to the roof and interior of the structure were realized by the Capponi family, who had taken ownership of the villa from the Sassetti in 1545. In 1903, Arthur and Hortense Mitchell Acton moved to Villa La Pietra, subsequently purchasing it in 1908. Arthur, an artist and art dealer, already experienced in furnishing elegant homes in America for Stanford White, set about acquiring works of art for their new home, amassing a diverse collection ranging from great masterpieces by Donatello, Vasari and Sansovino and exquisite textiles, to small Asian curios. Their son, Harold, became an historian and spent some years teaching in China. Upon the death of his parents, he returned to La Pietra to care for the estate and the remarkable collection his parents had amassed. The villa, gardens, and his fortune were bequeathed to New York University (NYU) at his death, with the proviso that the collection be maintained as it was during the family’s lifetime. Today, La Pietra hosts NYU’s undergraduate study abroad program in Florence, and graduate students in conservation. In its day, the villa was a gathering place for the early twentieth century expatriate American and British artistic and literary community in Florence. The dramatic and careful disposition of this eclectic collection of antiquities, artwork and antiques throughout the villa embodies the interests and aesthetic of the Anglo-American community abroad at the beginning of the twentieth century [1].

*Fig. 1: Villa La Pietra © NYU Villa La Pietra, Florence*
The Coromandel panel

In the Camera Verde, a fine seventeenth century Chinese Coromandel lacquer panel depicting a courtly palace with figures, trees and pavilions, hung for at least 60 years [2], [Fig. 2]. The panel was acquired by the Acton family in its present form, either in their exotic travels or, more likely, from a dealer who traded in objects intended to appeal to the British taste of the time, as an appropriate furnishing to adorn the wall of their majestic fifteenth century Italian villa.

The technique of decoratively incising lacquer and adding polychrome to the voids, called kuan cai in Chinese, Coromandel in French, and Bantam work in Britain [3], originated in sixteenth century China and Japan [Burgio et al, 2007]. These objects reached the West primarily through Coromandel, on the south-eastern coast of India.

European fascination with Asian products and motifs dates from contact in the sixteenth century through trade with the Portuguese, Spanish, Dutch and English [Kyoto National Museum, 2008]. While some lacquer objects made for export were exquisitely crafted, (see for example, the renowned Mazarin Chest at the Victoria and Albert Museum) [Rivers 2005], the demand for these became so great that a secondary market soon began producing much more hastily manufactured wares [Rivers and Umney 2003]. The panel is much altered from its original construction, originally a folding screen. The sawn-away front surfaces of four sections were used to create the present panel.

Although its state of preservation upon acquisition is not known, it is likely that condition problems characteristic of Coromandel lacquer panels were present, such as cupping and detachment of lacquer surfaces from the substrate. The cradle applied to the back of the panels constricted movement, creating stresses resulting in significant splits in the wood substrate. Until the implementation of climate control at the Villa in 1998, condition problems were likely exacerbated by an unstable environment, provided by open terrace doors, winter central heating, and high light levels.

Philosophical approach

The approach to the conservation treatment and ongoing discussion of display methods are informed by an understanding of the overall aesthetic of the Villa, and the importance of preserving the intent with
which the panel was acquired and displayed by the Actons. Aesthetic decisions and treatment choices required careful consideration in light of the present altered state of the object, its compromised condition and the sitting of the Coromandel panel. The use of altered Coromandel and other lacquer elements in the fabrication of new objects is not unusual. They were cut, reshaped or skived down from their original forms and inserted into furniture or used for other decorative purposes from the eighteenth century onward [Kyoto National Museum, 2008] The practice underscores the continued Western infatuation with exotic objects from the East. Although the present conservation treatment is directed at the preservation of the panel as a physical entity, the nature of treatment and display choices also reflect the effort to preserve the aesthetic intent and spirit of the collection as a whole.

Fig. 3: Overall view of Coromandel panel © NYU Villa La Pietra, Florence
The use of traditional materials such as urushi for treatment was not considered an option in this case for several reasons, including its irreversibility, and the difficulty of working with the material; the profoundly altered structure of the object, and its severely compromised physical condition. Furthermore, animal glue was used as a binder in the substrate, rather than urushi. In such instances, consolidation with urushi is not recommended [Webb, 2000]. Materials and methods used for export did not always strive for the high standards of indigenous production, although the quality of carving and painting are often, as here, exquisite. Severe shrinkage and cupping of the lacquer typical of Coromandel products reveal some of these inherent problems notwithstanding the later dramatic alteration of the physical structure of the object. Here, the alteration of the original object has become an integral part of its identity, and the present form of the object, while it no longer reflects its original structure and purpose, becomes an example of Western fascination with decorative Asian surfaces and their adaptation.

**Construction, materials and condition:**

Lacquer objects made for the export market were shipped to Europe from China through the Coromandel Coast of India to serve the European taste for Chinoiserie, particularly in the seventeenth–eighteenth centuries. Although true urushi, made from an exudate of the Rhus genus of the Anacardiaceae family, is considered extremely durable, examination of objects made for export show that fewer layers of materials were used, that the substrate was not sized with urushi, and that the ground layers contained cheaper binding media such as animal glue, oils or persimmon juice, rather than true urushi. These factors appear to have a profound effect on the long term stability of the final product, and seem to be evidenced here [Schellmann 2008].

Although the object entered the Acton collection as a flat panel intended to hang on a wall, [Fig. 3] its original form would have been a folding screen [4]. Four of the original panels were sliced in half longitudinally, reducing their thickness to only 7 mm, the top and bottom borders also removed. Saw marks are visible in the wood, and original dowels securing sections of wood are split unevenly in half lengthwise. The raw, untreated surface of the wood remains exposed, promoting transmission of rapid changes in moisture content under conditions of unstable relative humidity. The peculiarities of the present assemblage produced misalignment of the design along...
vertical joins. These were compensated with rather extensive zones of now discoloured overpaint [Fig. 4].

These sections were glued to a wooden cradle-like structure on the reverse with animal glue, the whole supported by a black-painted narrow wooden frame [Fig. 5]. The frame and cradle are insufficient to prevent movement and torque in the large structure when it is handled. Vertical splits are present both in areas of original joins, and other areas, due to the constraint of the cradle.

Fig. 5: Recto of panel showing “cradle” © NYU Villa La Pietra, Florence

The urushi surface is also very unstable, exhibiting extensive flaking, cupping, loss and separation of upper layers from the substrate [Fig. 6]. This phenomenon is associated with some objects intended for
export, particularly when the processes of preparation and application of materials are abbreviated. The use of large quantities of drying oils such as Tung oil [Heginbotham et al. 2008] may result in differential shrinkage of the uppermost layers of the lacquer. Applied in one or two thick layers rather than multiple thinner ones, they exert strong contractile force, separating the lacquer from the substrate at the weakest point – the clay and animal glue ground layer. In products not made for export, ground layers typically included urushi as a component, which would have been more robust, substantially improving bonding with upper lacquer layers. Carved areas are polychromed over a white ground, and are generally more stable than the lacquer. Although degraded by exposure to light and very brittle, the lacquer still retains some durability. At least one modern coating appears on the surface. Applied to lacquer and polychromy after significant damage had already occurred, it fluoresces yellow-orange under ultraviolet light. It is unlikely that this application had either a palliative or detrimental effect on the overall condition of the panel, but rather only a very minor impact on its aesthetic appearance.

Analytical results

A cross-section from the Acton panel analyzed by Fourier Transform Infrared analysis indicated the presence of clay with a protein binder in the substrate, two transparent black layers containing an oil resembling Tung oil, a resinous material - likely urushi - and oxalate salts. No particulates were observed [5]. A white layer containing gypsum (often referred to in the literature as comprising chalk) is present.
below paint layers. Cross-sections examined under polarized light microscopy [6] revealed at least three layers of ground below two layers of lacquer. A thin white ground layer is visible in painted areas, applied with one or two layers of paint [Fig. 7]. Colorants included mercury (II) sulphide (probably vermillion), lead (II, IV) oxide (red lead), lead carbonate (lead white) and basic copper carbonate (malachite), were identified using polarized light microscopy.

**Fig. 7: Cross-section from upper right quadrant, clouds, showing 4 ground layers, 2 lacquer layers and coatings. © Authors**

### Structural issues

The wood cradle and frame adhered to the edges and back of the panel do not provide sufficient support for the lacquer, and have promoted the formation of longitudinal breaks and fissures through previously intact sections of the panels. Joins created during the assembly of its present form are heavily restored. All are positioned over the cradle supports, and are generally securely glued to the supporting members. However, significant amounts of planar distortion and new longitudinal cracks are evident, undoubtedly due to the restrictive conditions imposed by the cradle.

The wooden cradle and the black surround were evaluated by curators and conservators in consultation with Roberto Buda, a Florentine specialist in structural treatment of panel paintings. Although under some circumstances, removal of the cradle and framing might be considered, in this case such drastic treatment was not appropriate both due to the extreme fragility and thinness of the panel, and because of the historical significance of the surround as an aesthetic choice by the Actons. A rigid aluminium frame was fabricated to prevent torquing and to support the panel during treatment. Although this frame was initially considered a temporary measure, it may be incorporated into the ultimate support structure for the panel.
Treatment decisions

Given the altered form, compromised condition of the panel, and its long history in a Western collection, the use of urushi was not considered an appropriate treatment alternative. Nevertheless, methods used in the treatment of Asian lacquer were adapted for use in the treatment of the panel. These included modified shimbari frames which spanned the width of the panel, allowing pressure to be applied with flexible bamboo dowels to softened flakes while curing [7]. Although solvent exposure relaxed the deformed lacquer, delivery to the surface was problematic and it was easily blanched by exposure to water vapor. Isinglass (10%) was initially chosen for use as an adhesive, but did not perform well over the long term and was difficult to remove from the surface of the panel [8]. Considering the strong contractile memory exhibited by the deformed lacquer, a more flexible adhesive was chosen. After relaxing cupping lacquer with radiant heat [9], Acryloid® B-72 10% in acetone and ethanol was introduced by brush under flakes and pressure applied during setting using clear, flexible polyvinyl chloride pads interleaved with stiffer polypropylene sheet stock [11] and bamboo dowels held in place by the shimbari frame. Surface dirt removal was not particularly effective with non-polar solvents. In order to avoid altering the compromised surface, limited amounts of acidified distilled water at pH 3.1 on silk-covered cotton swabs was used to remove surface dirt [12]. This pH was chosen based on the acidity of the degraded lacquer surface. In other testing it was identified as the optimum pH for removing soiling and degradation products without adversely affecting the lacquer surface [Schellmann and Rivers 2005, and Coueignoux 2009].

Fig. 8: Modified ‘shimbari’ frame using press-stabilizing technique with radiant heat tool to relax lacquer © Authors
Options for display

The panel will be returned to its original location. At minimum, a supporting framework will remain on the back of the panel to minimize structural damage caused by torquing. Due to the instability inherent in the exceedingly thin panel structure as it presently exists, the front applied with lacquer and the back roughly sawn wood, an enclosure is being considered for the reinstallation. The design and construction of such an enclosure would require a minimalist approach consistent with the aesthetic of the object and its impact on the room in which it is displayed. The overall stability of the panel will be evaluated once treatment is completed to evaluate the potential for damage if it is reinstalled without glazing. The aluminium support fabricated for treatment will most likely be adapted to allow for the insertion of conditioning gels behind the panel, and, if enclosed, non-reflective glazing will be used to minimize the visual effect of the case.

Conclusion

Stabilization, re-adhesion and cleaning of lacquer and polychromed surfaces continues. Although the physical imperatives of stabilizing structural and condition issues serve as a baseline for treatment decisions, the original intentions for the incorporation of the panel into the collection by the Actons will guide decisions about the extent of removal of overpaint, approach to filling losses and visual compensation. Administrators, conservators and curators worked together to develop a treatment plan that would reflect an understanding of the condition in which the Coromandel panel was purchased, the intent with which it was collected, and the context in which it was originally installed.

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Endnotes:

1. Background information provided by Francesca Baldry, Collection Manager and Helen Spande, Conservation Coordinator, Villa La Pietra.

2. Coromandel Lacquer Panel, Inv. G. Conti LX.C.5; Scene of a Courtly Palace with Figures, Trees and Pavilions. 194 x 188 cm.

3. Bantam was another export site, home of a Dutch trading station in Malaysia.

4. For example, see Metropolitan Museum of Art 09.6a-l, inscribed and dated to 1609 or slightly before. (Valentiner 1909), or one from the Victoria and Albert Museum, Accession number 130-1885. (Burgio et al 2007: 242) Another with stylistic similarities in the band of decorative lacquer found on the lower third of the screen, is located at the Fundação Calouste Gulbenkian, Avenida de Berna, 1050 Lisbon, Portugal.


6. Hegenbothem et al., note large amounts of fatty acids/oil, perhaps with the addition of conifer resin in Chinese export lacquer, confirmed in historical documents (d’Incarville 1740).
7. This technique, called press-stabilizing, is described in conjunction with the use of \textit{mugi-urushi} as using flexible polyethylene; however, practitioners regularly use thick PVC sheet, which evenly and gently distributes pressure over irregular surfaces. (Anon. 2005)

8. Isinglass (sturgeon bladder glue) 10% in deionized water prepared by soaking, gentle heating and straining. Denatured alcohol applied by brush was used as a wetting agent to facilitate flow before introducing isinglass.

9. Application of radiant heat produced no visible color change and was generated using a Leicester Hot Air Tool and the Engelbrecht WZII ERSA heated spatula and radiant heat tool.

10. Rohm and Haas Acryloid® B72.

11. Translucent polypropylene stiff sheet stock Polimark Policolor “PP”.

12. Acidified water prepared to pH 3.1 using 0.1M solution of acetic acid adjusted with dropwise addition of 6M sodium hydroxide.

References:


**Materials:**

Acryloid® B72; Rohm and Haas, 100 Independence Mall West, Philadelphia, PA 19106, 877-288-5881, www.rohhaaas.com


Policolor “PP” ART 006025 Translucido-neutro, Polimark, Via Talamoni, 6 – 20047, BRUGHERIO (MI), Tel. +39 039/2874512, www.polimarksrl.com

Leister Hot Air Tool with hot spatula tip used for radiant heat, Labor S with blower box, 2008 Assembly Supplies, Co. 1250 Pacific Oaks Place #104 Escondido, CA 92029, Tel (800) 694-1472 - Fax (888) 694-4275, http://www.leister.com

Engelbrecht WZII ERSA heated spatula and radiant heat tool, G. Engelbrecht, Messgerate u. Apparatubau 8195, Thanning, Germany

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