

The Nanban Cabinet of the Kunsthistorisches Museum Wien

Analyses, Conservation and Restoration



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DATE AND ORIGIN

Japan, 1580-1607/11, Momoyama period (1573-1615)

The cabinet was part of the Kunstkammer collection of Schloss Ambras, Tyrol, but it is NOT mentioned in the 1596 inventory of the heritage of archduke Ferdinand II. of Tyrol, as suggested in most descriptions. However, it could be one of the cabinets listed - although not described in detail - in the Prager Kunstkammerinventar (the inventory of the Kunstkammer in Prague) of emperor Rudolf II. from 1607/11, which probably was transferred from Prague to Ambras via the Viennese Schatzkammer during the baroque period. Today, it belongs to the Kunsthistorisches Museum Wien (KHM, Vienna, Austria), having the inventory number KK 5421.

References:
 Oliver Impey / Christiaan Jörg, Japanese Export Lacquer, 1580-1850, Amsterdam 2005, p. 120-123.
 Johannes Wieninger, Katalog Nr. 218, in: Exotica. Portugals Entdeckungen im Spiegel fürstlicher Kunst- und Wunderkammern der Renaissance, ed. Wilfried Seipel, Wien 2000, p. 284.

DESCRIPTION

The Japanese cabinet is typical Nanban lacquer work made for the European market. Its main characteristic is the combination of flat gold *maki-e* and mother-of-pearl inlay on a black-lacquered ground with designs of plants, flowers and animals that cover the entire surface of the object.

The Ambras cabinet has seven drawers in three rows (the upper row being divided into three drawers only by the outside design). Each drawer, the front and all sides of the cabinet are framed by geometrically patterned borders including mother-of-pearl inlays, except for the backside, which is decorated with the typical „Nanban scroll“ only. Each drawer has a different design, most of them showing plants and flowers such as ivy, bell flower, maple, *tachibana*, and camellia. In contrast, the one in the centre is decorated with a landscape with islands and boats and the drawer placed beneath the centre shows an underwater scene with sea shells and algae. The upper side is designed as a garden with flowers, birds and a fence, the left side shows *tachibana*, the right side morning glory and bell flower, the back side ivy tendrils.



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TECHNIQUE

Dimensions: (H x W x D) 31.0 x 42.5 x 29.0 cm
Wood: The wood has not been analyzed but it emits the typical scent of cypress, probably *hinoki* (*Chamaecyparis obtusa*) or *sugi* (*Cryptomeria japonica*)
Metal fittings: copper, fire gilded; engravings with hammer, chisels and punches
Lacquer technique:
 The mother-of-pearl was glued directly onto the wood with black pigmented putty. Then, the spaces in between were filled with a foundation of powdered claylike material (*tonoko*) and starch (see: analyses).
 The entire surface was then covered two times with black lacquer; after hardening the mother-of-pearl was uncovered by polishing the entire lacquer surface.
 Finally, the *maki-e* design was applied with red lacquer (pigmented with iron oxide, *bengara*), gold and silver powder. The silver parts were covered with a yellow tinted type of lacquer (*nashiji urushi*) and on top further gold lines were applied.

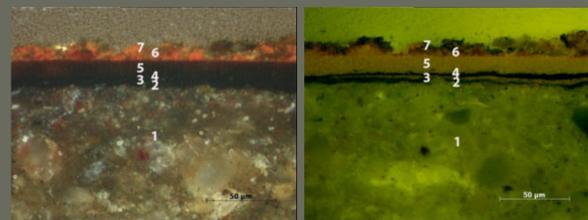


Japanese signs on the backside of the fitting of the middle drawer

ANALYSES

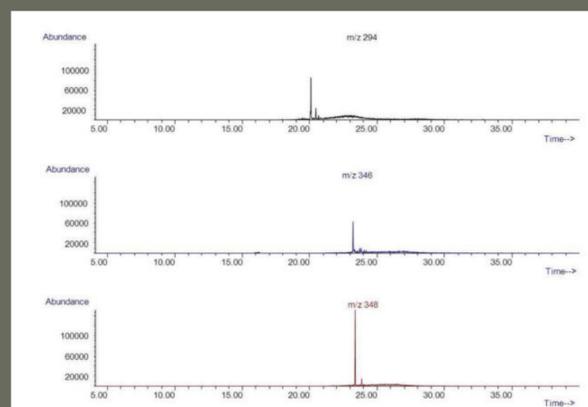
The analyses of the ground and the lacquer layers were executed at the RADICAL workshop held at the Getty Conservation Institute in October 2012 organized by Michael Schilling, Arlen Heginbotham and Nanke Schellmann. The results showed that the lacquer layers contain *urushiol*, a little amount of *thitsiol* and a *drying oil* such as perilla oil; the foundation contains mainly *starch* as well as small amounts of colophony and perilla oil. Cross sections of the coating were prepared beforehand. Very thin black layers situated between the lacquer layers, underneath the ground and beneath the mother-of-pearl could not be identified so far. The metal powders of the *maki-e* decoration were identified by Katharina Uhlir (KHM Wien, Conservation Science Department) using XRF. The golden parts contain **Au**, **Hg** and traces of **Cu** and **Sn**, the brownish silvery parts contain **Ag**, **Hg** and traces of **Cu**. The mercury (**Hg**) is a remnant of the amalgamation process during the extraction of gold and silver.

The red layer underneath the metal powders contains **Ca**, **Fe**, **Ti**, **Si**, **K**, **Al**, **Mn**, **Cu**, **Zn**, **Sr** and no mercury (**Hg**) and can be identified as iron oxide.

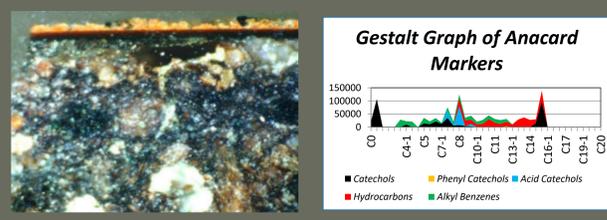


cross-section in polarised light, 500x cross-section in blue light, 500x

Layer	Name	Description
7	gold	layer of gold powder (particles)
6	red size	red layer, dark and brighter red particles, inhomogeneous; iron oxide (XRF)
5	upper lacquer	thin layer, UV-fluorescence like milk coffee
4	black outline	dark thin layer 2, carbonic
3	lower lacquer	thin layer, UV-fluorescence like milk coffee
2	black outline	dark thin layer 1, carbonic
1	ground	thick tan-grey ground layer with coarse particles (white, yellow, red and black), claylike



Ion extracted pyrogram (m/z 294, 346, 348) of the lacquer layers
 Note: pyrolytic products of urushiol: (a) m/z 294: Maaezic acid methyl ester, (b) m/z 346: C15-1 - catechol methylated, (c) m/z 348: C15 - catechol methylated



staining with I₂/KI / positive reaction for starch

Py-GC-MS Graph of the lacquer layers

CONSERVATION MEASURES

Conservation history:
 The cabinet belongs to the Kunstkammer collection since the 17th century, but almost no previous conservation treatments are documented. The oldest photos from around 1900 already show almost the same losses of lacquer as today. In 1983, a varnish that covered the entire surface was removed with acetone and consolidation was done with *Planatol* (adhesive based on polyvinylacetate). The wooden base parts missing their lacquer coating were cleaned with water and ethanol and "an old black staining" was removed. The lacquer surface of the drawers was "polished" with a type of polishing paste, and the missing lacquer areas were covered with a wax-containing furniture polish. The retouching of the split in the wood and lacquer on the backside was improved with shell gold and acrylic colors.

Conservation aims:
 - cleaning and consolidation
 - improvement of the filling and retouching of the split on the backside
 - aesthetic integration of the big lacquer losses

Conservation methods:
 - consolidation of loose lacquer particles and mother-of-pearl inlays using *mugi-urushi*, using different layers of silicone and acrylic glass sheets as well as lead and steel weights

- cleaning of the surface with ethanol to remove the remnants of the former coating (visible in UV radiation) and partially with distilled water to remove the remnants of previously used consolidants

- fittings: cleaning with ethanol and acetone, without dismantling

- removal of the retouching along the split on the backside with ethanol and acetone; reduction of scratches deriving from former restorations along the crack with *dozuriko* and *migakiko* (Japanese polishing powders) and oil

- crack filling on the backside of the cabinet with traditional Japanese materials (*mugi-urushi*, *kokuso*, *sabi*, *sabigatame* and *roiro-nuri*), without using a humidity chamber *roiro-urushi* was applied two times, grinded with crystal stone #1500 and polished with *dozuriko* and *migakiko* (Japanese polishing powders) and oil. A humidity chamber was not necessary because of the good drying properties of the used lacquer at normal humidity (50% RH).

- retouching of the *maki-e* decoration with Mixtion (gilding size based on linseed oil), gold and silver powder (*keshifun*)
 A three-hour size, mixed with a small amount of red oil paint, was used like *e-urushi* to draw the design. According to the desired gloss, the metal powder was brushed onto the size after 5 to 30 minutes. For the gold areas and lines Japanese *keshifun kin* was used, for the silver parts *keshifun gin*. If necessary, pigments were added. On the silver-retouching a thin glaze of oil paint and mixtion was applied to achieve the yellowish tinge of *nashiji-urushi*.

- cleaning and retouching of the large areas of losses on all sides:
 cleaning with white spirit and ethanol; retouching of the wooden base with gouache and the addition of *tonoko* and *Wajima jinoko* with methyl cellulose to give the impression of a wooden base with remnants of foundation

No *urushigatame* or *suri-urushi* was executed, because:
 - we did not want to expose the cabinet to elevated humidity (60 – 70% RH)
 - there are probably still remnants of old surface coatings left
 - the surface of the lacquer is still rather glossy and shows no severe light damage

DISCUSSION

Despite the different approaches to conservation in Eastern and Western cultures there are some principles in every culture which are considered to be especially important:

Japanese approach:
 The knowledge and the use of the "original" material for the conservation are important.

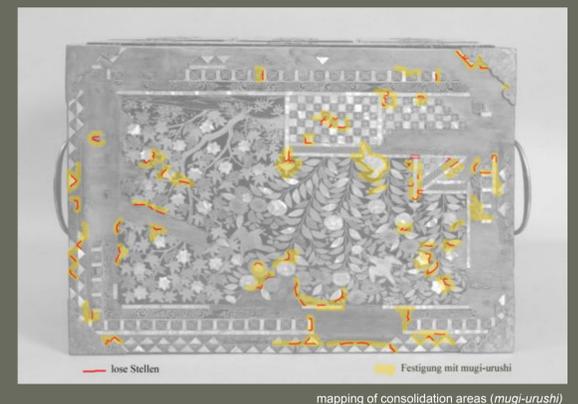
Advantages:
 - same aging properties as the original
 - aging properties are known
 - same aesthetic appearance

Disadvantages, when using urushi:
 - exposure to elevated humidity (60 – 70% RH) is necessary
 - *urushi* is irreversible

Western approach:
 Reversibility is the prime principle.

Advantages:
 - possibility to remove or improve the conservation measure at a later stage
 - use of materials which are specifically designed or adapted for the purpose
 - use of materials which are resistant to aging

Disadvantages:
 - different aging properties than original materials
 - aging properties of new materials are sometimes not sufficiently tested
 - aesthetic incompatibility



mapping of consolidation areas (mugi-urushi)



consolidation



detail: crack on the backside after removing old retouching: kokuso, sabi and roiro-nuri after polishing and retouching with mixtion and goldpowder



after removing old retouching: kokuso, sabi, roiro-nuri and polishing retouching with mixtion and silver powder; glaze of oil paint

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 Museum of King Jan III's Palace at Wilanów, Warsaw, Poland