A Seventeenth-Century Dutch Cabinet Mounted with Export Lacquer *

• CHRISTINA HAGELSKAMP AND PAUL VAN DUIN •

Lacquer ware artefacts have been highly valued in Europe since their arrival in the sixteenth century. Treated at first as exotic curiosities, the formal look of these objects was soon modified to accord with European tastes, a process that began as early as the production phase of lacquered goods in Asia. Lacquer workshops tailored their production to meet specific orders from western trading companies, to create what we now refer to as export lacquer ware.[1] From the second half of the seventeenth century onwards, Europeans began to quite literally integrate these wares in their interiors, by taking them apart and incorporating their decorative elements into furniture and wall panelling. One of the earliest surviving examples of European furniture that included fragments of imported lacquer work is a cabinet in the Rijksmuseum's collection (fig. 1).

The cabinet-on-stand is of even greater interest since it is the only known example of Dutch furniture from this period with incorporated Asian lacquer work.[2] Stylistically it can be attributed to the Northern Netherlands, where this form originated, with its characteristic stand and an often quite rectangular two-door upper case. But where the more classic Dutch type would have included doors and sides with continuous flat surfaces covered with plain veneer or marquetry (fig. 5), this example includes framed Japanese lacquer panels. In addition, five drawers of different sizes, all with lacquered surfaces, have been fitted into the apron of the stand, while lacquer fragments have also been used on both of its sides (figs. 2-4). The interior of the cabinet is simple in design, as is usually the case with this form. It is divided by two shelves, each with drawers beneath it. The green lacquer panels inserted on the inside of the doors are decidedly uncharacteristic. Finally, the fronts of the interior drawers are inlaid with narrow strips of green-lacquered wood (fig. 4).

Fig. 1
Cabinet, Netherlands, c. 1700-05. Oak and alder, veneered with olive wood, cedar, purple heart and boxwood, combined with Japanese export lacquer, h. 202.5 cm, w. 160 cm, d. 54 cm. Amsterdam, Rijksmuseum, inv. no. BK-1979-21; gift of the Rijksmuseum-Stichting. Front view after treatment.

The cabinet was acquired in 1979 and immediately put on display, where it remained until the start of its recent conservation in 2006. Research and treatment of the cabinet has occurred as part of the Rijksmuseum's ambitious plans for upgrading its permanent displays prior to reopening. Comprehensive examination provided new insights into the manufacturing date of the cabinet and its manner of construction, including the materials and techniques used. This also made it possible to attribute the elements of Japanese furniture used in the cabinet's design and to reconstruct their provenance and original appearance.

Fig. 2
Cabinet (fig. 1), before treatment.

Fig. 3
Cabinet (fig. 1), left side before treatment.

Dendrochronology

Cabinets of this type, known as *kruisvoetkabinet*, were produced during the last third of the seventeenth century and the early eighteenth century. Dendrochronology was carried out to arrive at a more accurate dating for this particular cabinet. This scientific method, also known as tree-ring dating, is based on the analysis of growth patterns of individual arboreal species and makes it possible to establish when tree rings were formed to the exact calendar year. By comparing the tree-ring pattern of an undated sample with reference tree-ring chronologies anchored in time from the same species and the area where the sample originated, an exact calendar year can be assigned to each growth ring. The presence of sapwood in a given sample will lead to the more diagnostic felling date of a tree. A total of eleven elements of the cabinet's secondary wood were examined and dendrochronologically analyzed.[3] Results showed that the oak used to build the cabinet's carcass came from the Rhine-Main region in Germany and from the Baltic region. Two of the five boards from the interior drawer bottoms contained sapwood, the usually lighter coloured 'living' wood forming the outer growth rings on the trunks of most trees. The growth pattern of the two boards is identical, indicating they were cut from the same tree, which grew in the Baltic region, probably north-western

Fig. 4
Cabinet (fig. 1), open, before treatment.

Poland. The youngest of the nine sapwood rings on these boards dates from 1687. As oak trees from that period and region had between ten and twenty-four sapwood rings, it can be concluded that the tree which produced both boards was felled between 1688 and 1702. Lack of sapwood in the other boards analysed meant they only produced 'post quem' (earliest possible) dates, which were spread over a relatively wide time span. The remaining three boards from the cabinet's interior drawers yielded 'post quem' dates after 1696 and 1697. Five other dates lay after the first half of the seventeenth century. The earliest date was calculated to be after 1592. The earlier dates can be explained by the use of old stock, or by a considerable amount of wood missing from those elements, meaning that that element did not come from the outer part of the tree. Since there is no reason to assume any of the sampled material is not original to the cabinet, the most recent felling dates produced should be most relevant to the cabinet's manufacturing date.

Findings from the study of comparable furniture show that the time span between felling date and an object's conception was usually only several years. For instance, the dendrochronological analysis of a cabinet attributed to Jan van Mekeren,[4] dated by art historians between 1695 and 1710, resulted in felling dates between 1693 and 1703 (fig. 5).[5] For Petronella Oortman's dolls' house,[6]

dated between 1686 and 1710, calculated felling dates were between 1682 and 1698.[7] By adding a similar range of years for seasoning, the most recent felling dates determined for the cabinet suggest that it would have been made between 1700 and 1705.[8]

Construction

The cabinet stand consists of six baluster legs on bun feet that are joined by curved intersecting stretchers and topped by an apron with a chamfered moulding. The individual segments of each leg are pegged together with dowels, while the crossbars are covered with veneer. The apron rails are joined to the legs with mortise-and-tenons, which are secured with wooden pegs. The case is fitted with cleats mounted to its bottom board, which register on the insides of the apron's top rails.

As is common for this type of furniture, the rectangular case can be easily disassembled, resulting in two sides, two doors, several back planks, a plinth, and a slender cornice. The frames on either side have been assembled with mortise-and-tenon joints, also secured with wooden pegs. They are mortised into the plinth and cornice, the tenons only being secured by removable pegs.

The cabinet doors are mounted by means of pivot hinges. The door frames, like the frames of the case

Fig. 5
Attributed to JAN VAN MEKEREN, *Cabinet*, Amsterdam, c. 1695-1710. Oak veneered with ebony, rosewood, olive wood, yew, boxwood, barberry, maple and other types of wood, h. 205.5 cm, w. 174 cm, d. 61 cm. Amsterdam, Rijksmuseum, inv. no. BK-1964-12.

Fig. 6
Cabinet (fig. 1), detail of seaweed marquetry on the left door frame. The image on the left shows its present condition. On the right, a digital reconstruction illustrates the original tonal contrast between the boxwood design and purple heart background.

sides, have pegged mortise-and-tenon joints, but are subdivided by two additional horizontal stretchers. The keyhole in the right door is hidden by a sliding bar mounted on the astragal, which is glued onto the door frame.

Mounted beneath the lowest interior shelf are four drawers in separate compartments. What appears to be another set of four drawers underneath the centre shelf is actually one large drawer only visually divided in four sections to correspond with their counterparts below.

Marquetry Techniques

The decoration applied to most of the cabinet's surfaces is a known as seaweed marquetry. The name refers to the delicately coiled pattern resembling the leaves of seaweed. The two wood species chosen for this purpose, purple heart and boxwood, have very distinctive colours: purple heart is a strong shade of violet, while boxwood is yellowy white. In its original state, the marquetry was therefore marked by strong contrasts; today, however, this effect has much diminished, since exposure to light has caused both woods to discolour to more generic brown tones (see fig. 6).

At the end of the seventeenth century and into the early eighteenth, seaweed marquetry was used chiefly in English furniture. Commodes, cabinets and the then increasingly popular slim longcase clocks were partially or extensively decorated with this motif. Its use in Dutch furniture is relatively rare. A recently discovered cabinet in a private collection, however, decorated with typically Dutch geometric designs, includes large areas of seaweed marquetry as well (fig. 7).[9] Although the seaweed design is executed somewhat more finely, several of the cabinet's features, such as the octagonal baluster legs, suggest that

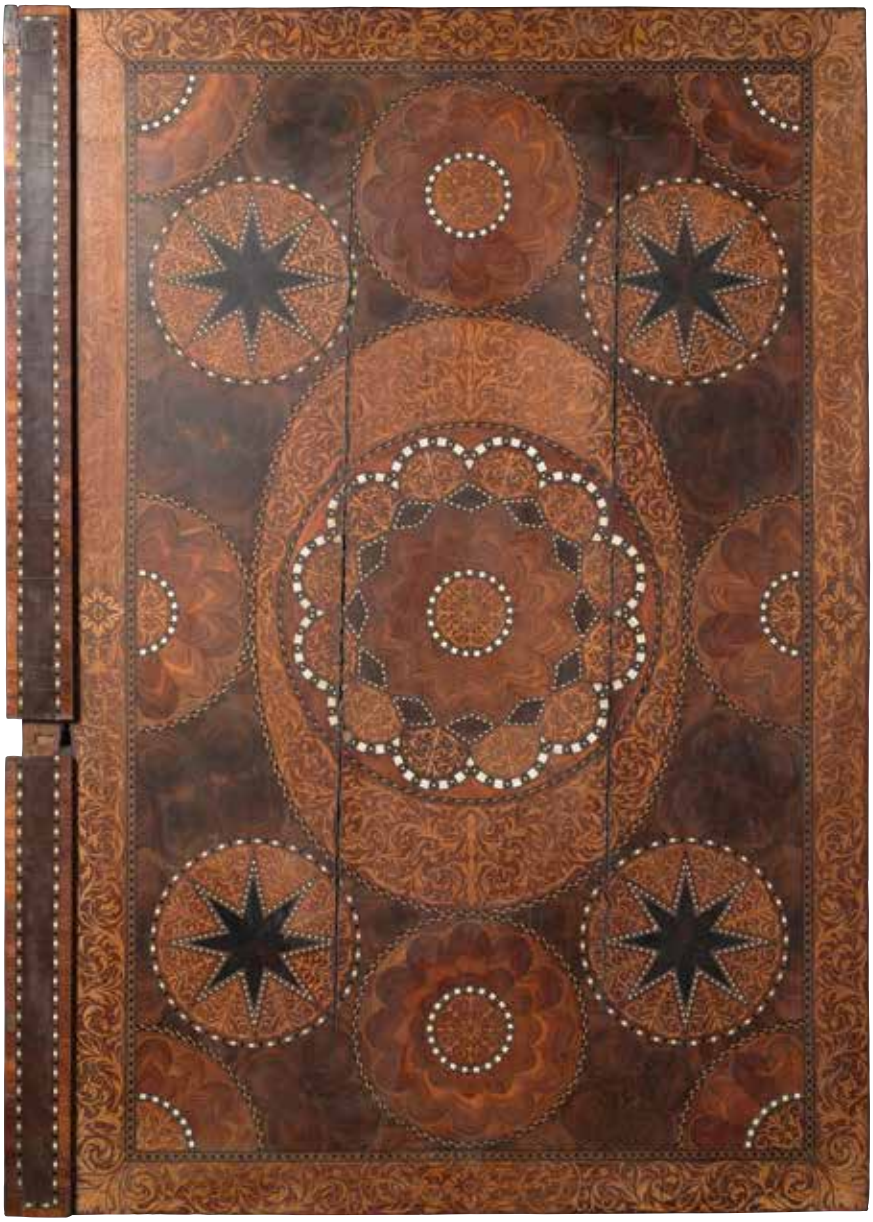

Fig. 7
Right door of a cabinet, Netherlands, c. 1695-1710. Oak veneered with olive wood, kingwood, padauk, holly, purple heart, and bone, h. 122.5 cm, w. 82.5 cm, d. 2.7 cm. Private collection.

the cabinet might have originated from the same workshop as our cabinet with lacquer panels. A second, firmly attributed example of Dutch seaweed marquetry is found on Petronella Oortman's dolls' house. Even though it is executed in pewter and tortoise-shell, in its stylistic features the inlay displays considerable parallels with the lacquer panel cabinet (fig. 8).

Lacquer elements

It was long assumed that the lacquer ware incorporated into the cabinet derived from several different Japanese export objects. It was suggested that the five drawers fitted into the apron of the stand had originally belonged to different Japanese cabinets built for export, while the lacquer panels in the doors and sides of the cabinet could

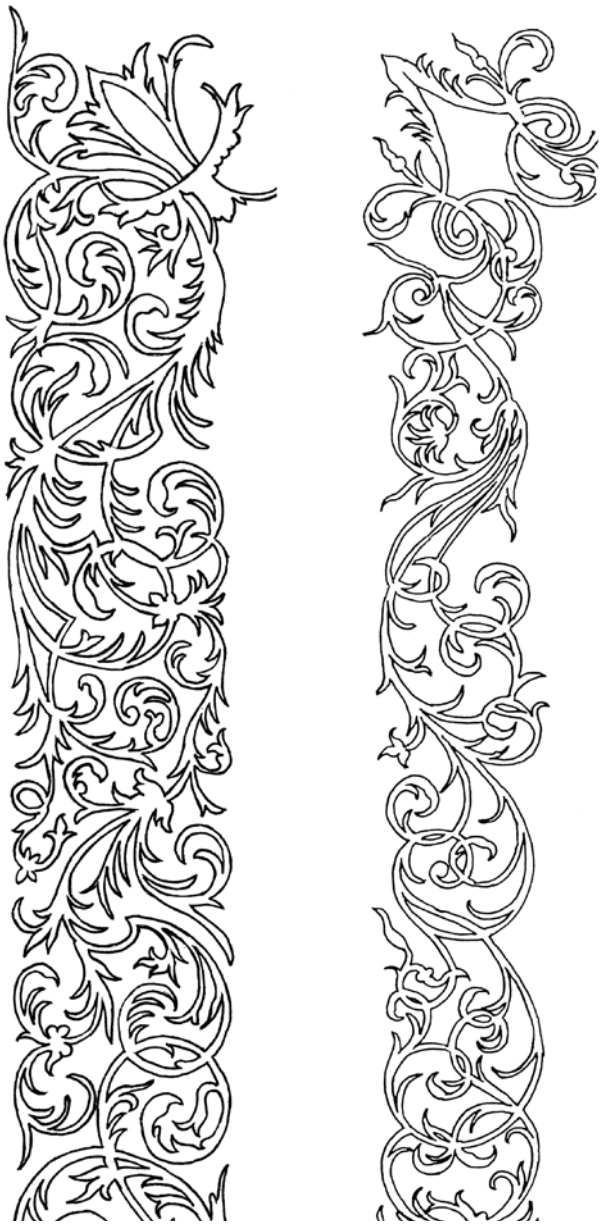

Fig. 8
Traced seaweed designs show the similarities between the marquetry of the cabinet (fig. 1) on the left, and the pewter and tortoiseshell marquetry applied to the Petronella Oortman dolls' house, (Rijksmuseum, inv. no. BK-NM-1010) on the right. The relative scale of the original marquetry of the cabinet (fig. 1) is about twice as large as the Oortman marquetry.

have derived from a Japanese export lacquer chest with a domed lid.[10]

Extensive examination of the various lacquered elements that have been incorporated and their construction has provided more detailed evidence about their possible sources. The five apron drawers are all the same depth, but they differ in height and width. Their sides are fitted into a rebate into the drawer fronts and fixed to the rear rails using dovetail joints secured with wooden pegs. The drawer bottoms are also fitted into a rebate at the front and have been butt-joined to the side and rear rails, and secured all the way around with wooden pegs. Before being lacquered, all seams were dug out with a small v-shaped chisel, and the approximately four-millimetre-wide grooves were filled with a clay-based ground. Prevalent in Japan, this method lends the construction greater stability and prevents the joints from loosening.

The outside surfaces of the drawers have been lacquered black and their insides red, all fronts are decorated with designs employing *hiramakie* and *nashiji* techniques.[11] The outer and centre drawers are decorated with plant and animal motifs, whereas the two intermediate examples carry identical geometric designs derived from Japanese family crests, so-called *mon*,[12] set against a *shippo-hanabishi* background, a frequently used, stylized blossom motif combined with a pattern of interlocking ellipses. The drawer pulls consist of a star-shaped back

Fig. 9
Export lacquer cabinet, Japan, first half seventeenth century. Wood, black and red lacquer with makie and mother-of-pearl, h. 69.5 cm, w. 81.5 cm, d. 51 cm. Stand, Netherlands, c. 1690. Lime wood and oak, gilded, h. 81.2 cm, w. 101.5 cm, d. 58 cm. Apeldoorn, Paleis Het Loo, inv. no. RL 10. Photo: Tom Haartsen.

plate and a plain ring. On the inside of each drawer front the fixtures are covered by a dome-shaped brass cap (fig. 10, top and fig. 12, bottom). In addition, elaborate locks are incorporated into the two outer drawers, neither of which has a function in the context of the Rijksmuseum's cabinet.

The question as to whether these five drawers were derived from one or several objects was resolved through a comparative study of a Japanese export lacquer cabinet in the collection at Paleis Het Loo in Apeldoorn, Netherlands, which contains very similar elements and features (fig. 9). Its interior drawers are different heights and widths, and the variation in their decoration – floral and animal motifs as well as geometric patterns – is similar (fig. 10). Other parallels can be found in their construction, pulls, and the application of red lacquer to the inside surfaces. Also striking is the position of the locks on the two bottom drawers, as they are placed off-centre. These similarities make it quite likely that all five apron drawers came from a single source much like the Palace cabinet.

As shall be demonstrated, the other lacquered elements in the cabinet were originally part of a large export lacquer chest with a flat lid. The two door frames have each been filled with three horizontally placed

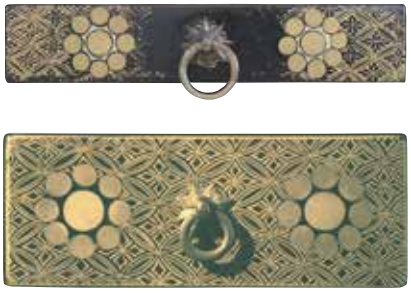

Fig. 10
Top: Apron drawer from the Rijksmuseum cabinet in fig. 1. Bottom: A small interior drawer of the export lacquer cabinet from Paleis Het Loo in fig. 9. The *shippo-hanabishi* decoration that would originally have covered the entire surface of the Rijksmuseum's drawer has worn away around the handle.

panels, while a single vertically oriented lacquer panel has been inserted into either side of the case. Set into rebates, these panels were further secured with nails. When originally constructed, the panels were assembled from several individual planks joined with long, narrow dowels, and secured with metal cramps before any ground layers and lacquer were applied (fig. 11).[13]

On the cabinet's exterior, the central door panels are decorated with cartouches containing pastoral scenes, while the remaining narrower panels bear various heraldic emblems against black, square backgrounds. *Hiramakie* and *nashiji* techniques were used to create both types of design. The fields surrounding the cartouches and flanking the family crests are filled with a striking granular pattern. This textured effect is produced using the dermal scales of ray skins, which have been imbedded in the ground layer, lacquered and sanded.

To even out the varying heights of the apron drawers, suitably sized strips of lacquered wood have been glued to the front rails, above and below the three centre drawers. These filler strips are decorated with black lacquer and *shippo-hanabishi* patterns using *hiramakie* techniques. On both side rails of the apron, several abutting strips of thin lacquered sheets have been glued directly onto the secondary wood. Here, the same *shippo-hanabishi* alternates with bands of lacquered ray skin grain.

On the interior, the large green-lacquered fields consist of three salvaged panels each, which were simply butt-jointed and glued to form a whole. The largest of these panels, both at the top of these fields, include

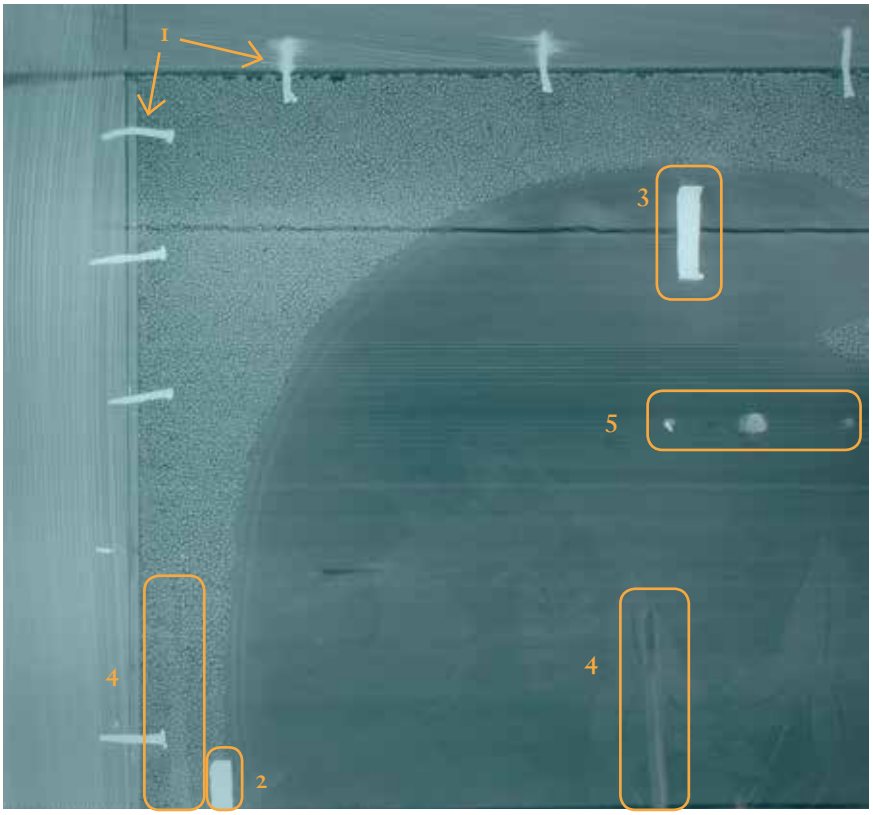

Fig. 11
Cabinet (fig. 1), x-radiograph of a detail from the centre panel of the right door: both the inside and outside lacquer panels are visible. Indicated are nails securing the front panel (1), metal cramps fused in the outer (2) and inner (3) panel, dowels in the outer panel (4) and filled holes relating to former handles (5).

Fig. 12
Cabinet (fig. 1), top: detail of cabinet stand, illustrating the front of one of the incorporated shallow drawers with lacquered wooden strips inserted above and below. Bottom: Rear view of the top rail of the cabinet stand, including the back of the inserted strips above the same shallow drawer showing the green-lacquer surface on its inside surface.

isolated animal and floral motifs along their bottom edges. The large composite green panels are mounted into the door frames and further secured by the slightly protruding cross-grain cedar veneer banding. Thinly planed strips of identical green lacquer have been applied to the fronts of the interior drawers, framed by a slightly thicker layer of cedar veneer (see fig. 4).

One of the most important results of the technical examination of the cabinet relates to the strips that were inserted above and below the three centre drawers in the apron of the stand. As it was not necessary to plane them to the correct thickness, these strips retain both the outer decoration of the *shippo-hanabishi* pattern on black lacquer, and the green-lacquered surface on its reverse (fig. 12). This finding offers key insights into the original configuration of these fragments. First, the presence of original finish layers on both sides establishes the exact thickness of the chest walls: three centimetres. Next, it confirms that the inside of the original chest was lacquered green, and that the panels on the inside of the cabinet doors were obtained from that same interior. In order to use both sides of the chest walls separately, though, they had to be cut in half length-wise. This was an effective and generally used method for generating more material decorated with lacquer, resulting, in this case, in panels or sheets of six to eight millimetres thick. The exterior of the cabinet was fitted with the more decorative material taken from the outside of the dismantled chest, while its green surfaces were used to furnish the inside of both doors and the interior drawers.[14]

Reconstruction

Comprehensive x-radiographic analysis combined with comparative measurements of the lacquered fragments and their decorative motifs made it possible to determine their precise relative positions as part of the export lacquer chest from which they originate. Identical repairs can be recognized on each of the two large panels with cartouches, clear evidence of handles that were once mounted there (figs. 11 and 13). Without a doubt, these panels originate from the two short ends of a chest.

When all six panels with circular crests are compared, the one on the left side of the cabinet stands out because its square fields are larger and the construction is different, consisting as it does of two horizontal boards joined by a cleated end (fig. 14). The purpose of this so-called breadboard construction is usually to prevent wide panels from warping and is, for example, commonly used on table tops, but also to add stability to lids of coffers and chests. Comparison with an export lacquer chest in the collection of the National Museum of

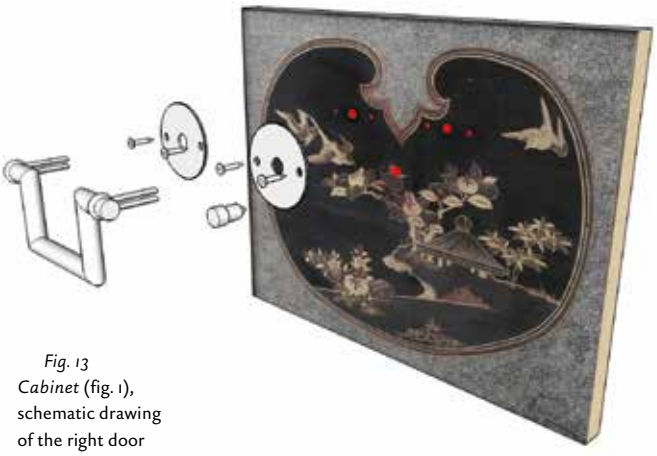

Fig. 13
Cabinet (fig. 1), schematic drawing of the right door centre panel with a projected handle; the original holes related to mounting a side handle, now filled and inpainted, are marked in red.

Denmark in Copenhagen, where the same construction can be observed on the inside of its lid, supports the current assumption that the cabinet's left side panel was originally part of a very similar configuration (fig. 15).

The practice of splitting sections of lacquer panels vertically, as described above, also applies here. While the panel used on the left side of the cabinet likely originates from the top of the lid of a chest, the green lacquer panels on the inside of the cabinet doors were once part of its interior surface. When compared to the inside of the lid on the Copenhagen chest, it can be noted that the gold decorations bear similarities. Also, both green lacquer panels incorporate an original construction seam in much the same location as is found on the panel used on the left side on the cabinet. (figs. 14, 15 and 16).

Fig. 14
Cabinet (fig. 1), schematic drawing illustrating the original position of the left side panel within the construction of a coffer lid.

Fig. 15
Export lacquer chest, Japan, mid-seventeenth century. Wood, black and red lacquer with *makie*, h. 66 cm, w. 152 cm, d. 74 cm. Copenhagen, The National Museum of Denmark, inv. no. AC.104.

Further construction joints and the dimensions of decorative elements were compared by means of tracing. The heraldic panels incorporated into both doors and the right side of the case each consist of two horizontal slats, with the seams consistently located at exactly the same relative height. Since the back panels of export chests were usually decorated differently, this feature strongly suggests that all five panels came from the front of such an object. In addition, it is common for these chests to have a lock mounted in the centre of the front. Since no trace of the earlier placement of a lock was found on the extant fragments it can be inferred that the original design of the front would have incorporated two more columns of three square fields each, one in the centre, with a second one required to maintain the symmetry of the chest's chequerboard pattern.

X-radiographs of the cabinet's lacquer panels also revealed that only those with family crests and ray skin grains were lined with fabric before being finished. To do this, coarse cloth was stretched over the wooden carcase and was then adhered using a priming compound and sealed with ground. This technique lent stability to the construction and helped to prevent shrinkage cracks from transmitting to the decorative surfaces. One reason why this technique was found only below the circular crests might be that increasing stability was deemed necessary only for the long sides of the chest. Whether reducing material expenditure and labour costs in producing export merchandise also played a role is uncertain.

The strips mounted on the stand side rails are all decorated with the *shippo-hanabishi* pattern and straight lines. Fragments of this same decoration can also be found around the borders of the panel inserts on the cabinet, showing that the design originally adorned all edges of the chest. This type of framing pattern is typical of export lacquer ware and can likewise be found on the Copenhagen chest (see fig. 15).

Fig. 16
Digital reconstructions of the export lacquer chest originally containing most fragments incorporated in the Rijksmuseum cabinet. Estimated dimensions: h. 69 cm, w. 168 cm, d. 69 cm.

These combined deductions allowed for a reasonably secure reconstruction of the original export lacquer chest from which many of the cabinet's fragments have been obtained (fig. 16). This rendering also made it possible to look for more closely related examples, in an effort to corroborate the findings of this study. One such object displays close similarities in both construction and decoration (fig. 17).[15] The front

Fig. 17
Export lacquer chest, Japan, 1630-50. Wood, black lacquer with *makie*, embedded ray skin grain and mother-of-pearl, h. 68.5 cm, w. 153 cm, d. 74.5 cm. Private collection.

and lid of this export lacquer chest are divided into lozenge-shaped fields alternately decorated with bird motifs on a black ground and areas of lacquered ray skin grains. Here too, cartouches can be seen on the sides, set against a ray-skin-grain background. All the exterior surfaces are edged with a *shippo-hanabishi* pattern. In contrast to the green lacquered interior of the reconstructed chest, the inside of the chest is decorated with black lacquer, but a similarly 'floating' pictorial design has been applied in gold on the underside of the lid.

Dating

The first half of the seventeenth century brought many changes to Japan's trading relations with the European naval powers. With the arrival of Dutch seafarers in Japan during this period and their subsequent establishment of an extensive Asian trade and shipping network, the commercial dominance of the Portuguese and Spanish in this area came to an end. These developments were also reflected in the design of export lacquer. *Namban*-style lacquer ware, created between 1550 and 1620 under the influence of Portugal and Spain, has a number of distinct characteristics.[16] One particularly striking feature is the extensive use of mother-of-pearl inlay. Surfaces were decorated with a combination of closely set imagery and geometric patterns applied in gold lacquer, while the *makie* techniques were rarely used. *Shippo-hanabishi* decoration was employed around the edges of objects and to divide surface areas. A delicate, stylized scrolling vine pattern was also frequently used. The export lacquer cabinet in Paleis Het Loo displays some of these features, such as the vine motif, the use of mother-of-pearl and a dense design on the front, although they are used more sparingly here than on other objects (see fig. 9). In addition, the cabinet has twin doors rather than the fall front that was popular in the heyday of the *Namban* style. On this basis it is classified as late *Namban* style. Given the great similarity between the exterior drawers of the lacquer-panel cabinet in the Rijksmuseum and this piece, the former can be estimated to date from around 1610-40.

Between 1630 and 1660, the new Dutch influence led to the Transitional style.[17] This period was marked by a diminishing use of mother-of-pearl together with a general reduction in overall decoration. Emphasis was placed on more detailed and less dense

ornamentation, created using the *hiramakie* technique and set against a black background. Such designs were frequently enclosed in cartouches, while the delicate scrolling vine decoration around the edges was completely replaced by geometric patterns. The shape of furniture also changed: among other developments, chests became larger, with straight rather than domed lids. For the reconstructed chest, however, the use of ray skin grain is the clearest indication of its date, as this is a key characteristic of the Transition style.[18] The Dutch term for 'ray skin' *(rochevel)*, is first mentioned in the shipping documents of the Dutch East India Company around 1634. One such shipment contained several sets of nested chests, two of which were 'covered with ray skin'.[19] In 1635, a shipment of 416 lacquer objects was sent from Deshima to the trading post in Hirado, including '149 cabinets both large and small, clad with ray skin and lacquered ovals'.[20] At the end of the Transitional style, ray skin grain was no longer used and preference was given to plain black lacquer backgrounds. For this reason, the chest that was partially incorporated into the cabinet undoubtedly belongs to the Transitional style and is therefore somewhat later than the drawers in the stand.

The use of green lacquer on the inner surfaces of the reconstructed chest is even more significant for its dating. Dutch East India Company order forms show that between 1637 and 1643 precise instructions were given to use red and green instead of black lacquer for the interiors of chests and cabinets.[21] A comparable example of export lacquer with green inner surfaces is found in Twickel Castle, near Delden in the Netherlands; the coffer has a domed lid, the inside of which also features a decorative design (fig. 18).[22] A small, privately owned cabinet that is decorated with grains of ray skin also has drawers with green inner surfaces.[23] The current rarity of green export lacquer interiors, combined with the brief period for which related documentation was found, probably push the dating of the lacquer panels on the cabinet towards a narrower time window within the Transitional period, presumably around 1635-45.

Fig. 18
Export lacquer chest, Japan, first half seventeenth century. Wood, black and green lacquer with makie, h. 50 cm, w. 115 cm, d. 46 cm.
Delden, Twickel Castle.
Photo: Menno Fitski.

The Use of Ray Skin

A characteristic feature of ray skin is its mosaic-like covering of granular placoid scales (fig. 19). Also referred to as dermal denticles, like teeth these consist of dentine and a thin outer layer of enamel. If ray skin is soaked in hot water for some time, the granules can be mechanically removed and cleaned. Embedded randomly into a ground layer, the ray skin grains can be lacquered and polished to achieve a flawless, smooth surface.

While polished and lacquered 'whole' ray skin was used on objects for the domestic Japanese market,[24] decorations using only the denticles from ray skin are found predominantly on lacquer objects made for export. Separating the grains from the skin made it possible to cover relatively large continuous surfaces with an

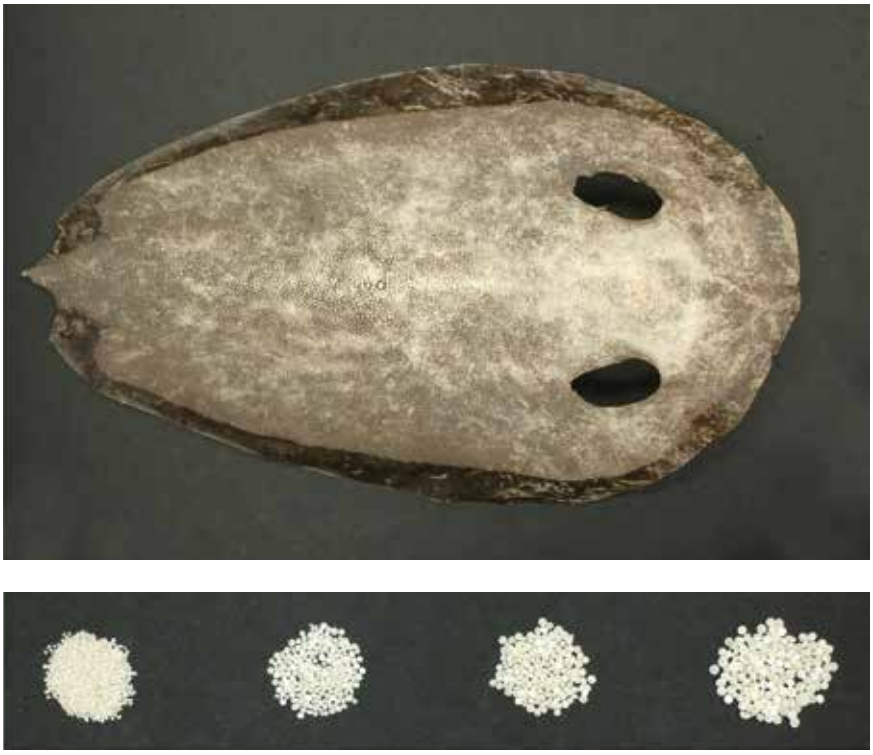

Fig. 19
Skin from the back of a stingray after cleaning and drying (top, approx. 60 cm long) and the extracted and cleaned ray skin grain separated into different sizes, ranging from less than 1 mm to 2 mm in diameter (bottom).

even pattern. This cannot be achieved using whole skins, as these have individual patterns. The technique of using scattered grains also had an economic advantage, as it meant that scraps and damaged skins could also be put to use. A comparison of the patterns resulting from the application of whole ray skin to those of scattered grains makes it quite evident that the latter technique was used for the decoration of the panels from the Rijksmuseum cabinet (fig. 20).

Damage and Analysis

Following initial examinations and treatment testing on the left side of the stand in summer 2006, extensive

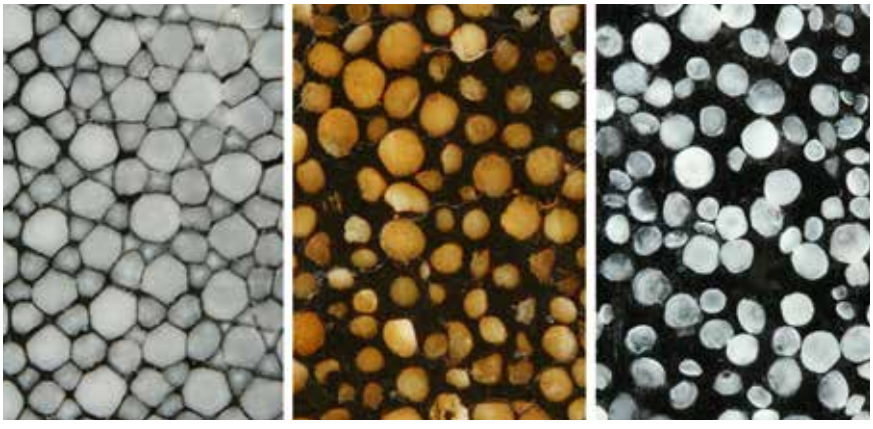

Fig. 20
Comparison of the lacquered surface with sprinkled ray skin grain from the left centre door panel of the cabinet (fig. 1) (centre) with details from sample boards made with whole ray skin (left) and loose ray skin grains (right).

Fig. 21
Cabinet (fig. 1), drip marks on the inside of the right door from the shellac coatings that were applied later.

analysis and conservation work was carried out on the cabinet between 2007 and 2009.[25] As far as the condition was concerned, what stood out most of all were the discoloured surfaces; in several places, the finish consisted of thickly applied layers with visible runs (fig. 21). In addition, the secondary wood had warped on both sides of the case, and much veneer had lifted from the substrate. The legs and feet of the cabinet were weakened by insect damage. Both wood and lacquer surfaces showed many traces of mechanical damage.

Once the drawer fittings had been removed, it became apparent just how much the impressive appearance of the *nashiji* decoration had diminished. Over time, exposure to light caused microcracks in the lacquer surfaces, causing the embedded silver particles to oxidize through exposure to oxygen, and as a result the colour of the decoration had changed from golden-orange to a greyish black. Only in areas where the surface was protected from light was it still possible to appreciate the original beauty of this technique (fig. 22).

Previous restoration efforts had resulted in changes to the cabinet and even caused additional damage. Additions had been made to the front feet, while the bottom edges of both doors had been planed towards the middle, whereby part of the marquetry was lost. The astragal had been reattached with wooden pegs and white glue, the sliding cover plate had been replaced, and numerous losses in the veneer and secondary wood had been poorly supplemented or filled. Parts of the veneered surface had been sanded so that the original surface coating and the mellowed tones of the boxwood and purple heart veneer were locally lost. The lacquer surfaces of the cabinet had also been reworked. Local losses had been filled and retouched, but all the lacquer surfaces had been treated with different coatings. In some sections of the lacquer decoration an attempt had been made to remove the latter, causing further damage (fig. 23).

To obtain information about the composition of the coatings present and to help decide upon suitable treatment methods, the various surfaces were examined under ultraviolet

Fig. 22
Cabinet (fig. 1), detail of the right drawer of the stand with *hiramakie* and *nashiji* decoration showing both light-damaged and intact areas, protected by the lock-plate.

light and sampled for the purpose of preparing cross-sections. Under UV light, surface coatings fluoresce in different colours, depending on their composition, and this characteristic can be used to make changes to the surfaces visible. Previous restoration work thus became evident; several restorations could be made out, above all on the lacquer panels. As the lustrous sheen of the lacquer was held in particularly high esteem, multiple attempts had probably been made to restore the saturation of these surfaces, which had diminished as a result of ageing processes or earlier applications of varnishes. For example, black varnish had been used in the endeavour to refresh the background of the central panels of both doors. The circular

Fig. 23
Cabinet (fig. 1), damage to the decoration on the inside of the left door due to attempts to mechanically remove later coatings.

Fig. 24
Cabinet (fig. 1), centre panel of the left door under ultraviolet light, making the various surface treatments visible.

tracks of a polishing pad were particularly visible under UV light (fig. 24). In addition, on the round crests it could be seen that the discoloured coating on the gold decorations had been mechanically removed and the whole surface subsequently revarnished (fig. 25).

These findings raised questions as to how often the cabinet had been treated and in what way, how much, if any, of the original finish still remained on the wooden surfaces, and what the condition of the lacquer surfaces beneath the European coatings would be. In order to obtain more reliable answers, samples were taken from representative areas for scientific analysis. Microscopic examination of the cross-sections under normal and UV light made it possible to determine that two different coatings had been applied on the original surfaces of both wood and lacquer: a whitish fluorescing layer and subsequent orange fluorescing film (fig. 26). The latter was probably applied in two stages. Apart from some microcracks, lacquer surfaces visible in cross-sections seemed to be in a relatively good state of preservation.

Pyrolysis gas chromatography-mass spectrometry (Py-GC-MS) was performed on several samples to obtain more information about the material composition of the two surface coatings. Analysis of the white-fluorescing varnish revealed linseed oil and probably amber as components. The orange-fluorescing coating on top was identified as shellac.[26]

Fig. 25
Cabinet (fig. 1), composite image of the bottom crest of the right side panel. The left half shows the surface in visible light, the right half under UV light.

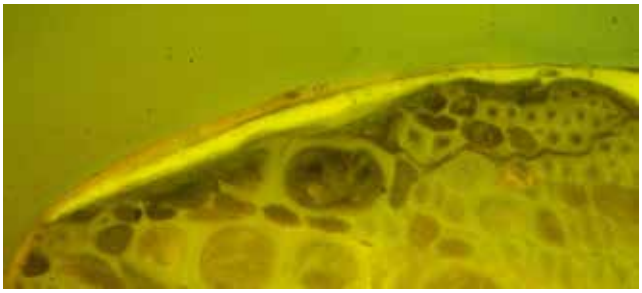

Fig. 26
Cross-section of a wood sample from the cabinet (fig. 1) with a brightly fluorescing layer of oil varnish covered with an orange-fluorescing layer of shellac.

Over the course of the conservation treatment, an earlier layer was partially revealed, which had not been identified in the cross-sections of extracted samples. Py-GC-MS analysis of a scrape sample from this material revealed that its main component was beeswax.[27] It remains uncertain whether or not this relates to the original finish of the cabinet.

Conservation

The concept for the conservation treatment of the cabinet consisted of stabilizing the construction and consolidating all loose veneer and marquetry. Losses would be filled, but only disfiguring replacement material was to be replaced. The discoloured linseed-oil varnish, in particular, had a significant negative impact on the overall appearance of the cabinet and considerably impaired the legibility of the decorative marquetry and lacquer work. Partial mechanical removal of the oil varnish during a previous restoration campaign had produced an uneven surface in numerous places (fig. 27). Although complete elimination of extant finishes is a rigorous intervention into the historical record on any object, in this particular case the overriding factor was that removal would make the original decorative scheme legible again. Without the obscuring, non-original finishes, the finer decorative details as well as the general interplay of marquetry and lacquer could again be fully appreciated. Conversely, the interior surfaces were to be left in their as-found condition, as a record of the cabinet's complete history.

Different approaches for the removal of the disfiguring varnishes were discussed and tested, and in the process it became clear that in certain areas the discoloured varnish showed less adhesion.[28] Caused by the presence of the beeswax layer, this allowed for the mechanical removal of

Fig. 27
Cabinet (fig. 1), detail of decoration on the upper circular crest of the right side panel, illustrating the irregular surface caused by partial removal of discoloured varnishes.

large sections of the opaque coatings. On those wooden surfaces where the discoloured oil varnish had been removed by abrasion in the past, the shellac finish applied subsequently adhered much more strongly to its substrate. After preparing numerous test areas it was decided to first swell these areas of varnish using ethanol compresses and then remove them with cotton swabs and ethanol (fig. 28). All the loose joints and veneer were consolidated using hot animal glue. Losses were filled with veneer of the appropriate wood species, or with a compound material and retouched.[29] During previous restorations, additions had been made to the marquetry and loose parts had been reglued; in some places, however, no attention had been paid to the seaweed marquetry pattern. The more unsightly additions and fills were removed and replaced, and original parts that had been wrongly reattached were put back in their proper position. The legs and feet of the cabinet that had been weakened by insect damage were consolidated with Paraloid™ B-72 in toluene.[30] Some badly damaged areas of the turned sections of the legs had been incompletely filled as part of a previous restoration treatment. These fills were corrected and retouched to give the affected areas a smoother surface in keeping with the overall appearance.

Fig. 28
Cabinet (fig. 1), removal of softened varnish layers on marquetry with a cotton swab.

After weighing the advantages and disadvantages of different methods and preparing various sample boards, it was decided to apply a new finish, consisting of a mixture of beeswax and carnauba wax to the veneer and marquetry of the cabinet. In order to preserve the remaining sections of early or original wax coating, these surfaces were first sealed with a hot-glue size. Larger saw kerfs in the marquetry were filled with tinted glue to create a more continuous surface and to prevent the new application of wax from penetrating under the veneer. The wax polish was applied to the wood in two thin layers, while taking particular care not to contaminate the lacquer work.

Reduction of the European coatings on the lacquer work was also carried out with acetone compresses, swelling the oil varnish, which could then be removed with cotton swabs and acetone. Above all, this treatment revealed the contrast-rich ray skin decoration, while the fine nuances of the *makie* technique also became visible once more (fig. 29). Removal of the varnishes from the centre panels of the doors revealed traces of a previous treatment – mainly around the holes related to the

Fig. 29
Cabinet (fig. 1), centre drawer of the stand with partially removed varnish.

handles on the original export lacquer coffer. These voids must have been filled when the cabinet was constructed and then covered with japanning. Except for a single blossom and some residues in the left cartouche, most japanning[31] has been worn away during a later reworking. Here, only the contours of this original japanning were distinguishable, forming bamboo bushes and birds (fig. 30).

Fig. 30
Cabinet (fig. 1), centre panel of the left door. Indicated in red is the outline of mostly lost japanning original to the cabinet's manufacture. Remaining japanned decoration is marked in blue.

Fig. 31
Cabinet (fig. 1), filling a loss in the left side panel with a mixture of rice flour, cotton fibres and *urushi*.

The final treatment of the lacquer surfaces was carried out by specialist Mariko Nishide.[32] As the lacquer work appeared to be in relatively good condition after the European coatings had been removed, it was decided to treat only a small number of damaged areas and old fills, but to impregnate all lacquer surfaces afterwards. These measures would provide sufficient protection from external influences without creating an as-new appearance. Compensating for partially lost decoration was ruled out, as the overall designs were still clearly legible.

The lacquer surfaces were cleaned once more in order to remove the remaining traces of varnish. Where necessary, old fills were removed and losses reintegrated with traditional Japanese materials and techniques (fig. 31). New fills were retouched with pigmented *urushi*. As a final step, the surfaces were impregnated using a technique called *urushi-gatame*, in which dilute *urushi* is applied to the surface in several stages.[33] The thinned lacquer penetrates the existing microcracks. Meanwhile, the surface is rubbed gently with a cloth that has been dampened with a non-polar solvent. In this way, the damaged surface is re-saturated and the microcracks are filled without creating a new surface.[34]

Conclusion

Close examination of the cabinet made it possible to identify the source of its various incorporated Japanese lacquer elements and provided valuable information about the construction, design and origin of the original lacquer ware products from which they were obtained. Insight was also gained into the techniques employed by Dutch cabinetmakers to dismantle export lacquer objects with the aim of yielding as much of the sought-after

'raw' material as possible. Similarly, much was learned about the way craftsmen integrated these materials into their own designs, both in terms of construction and appearance.

The conservation treatment gave the cabinet a homogeneous surface with a unifying lustre, so that the intended decorative scheme can once again be appreciated (figs. 1 and 32).

Fig. 32
Cabinet (fig. 1), after treatment.

NOTES

* We are most grateful to Reinier Baarsen, Menno Fitski and Jan van Campen, Rijksmuseum Amsterdam, for contributing their expertise to this project and to Mariko Nishide and Katharina von Miller for offering extensive information and advice. We thank Arie Wallert, Henk van Keulen and Luc Megens from Rijksdienst Cultureel Erfgoed, and Marta Domínguez Delmás and Tamara Vernimmen from Stichting RING, for their scientific analysis. Finally, our thanks go to Marijn Manuels and Mecka Baumeister, Metropolitan Museum of Art, for their carefull reading of earlier versions of this text. Photographs figs. 6, 8, 10-14, 16 & 19-31 by Christina Hagelskamp.

1 The concept of export lacquer ware generally describes lacquered objects of both good and poor quality that were produced specifically for the European market from the mid-sixteenth century onwards.

2 R. Baarsen, *Nederlandse meubelen 1600-1800/ Dutch Furniture 1600-1800*, Amsterdam/ Zwolle 1993, pp. 64-65; R. Baarsen, *Wonen in de Gouden Eeuw. 17de-eeuwse Nederlandse meubelen*, Amsterdam 2007, pp. 200-03; C. van Rappard-Boon et al., *Imitatie en Inspiratie. Japanse invloed op Nederlandse kunst van 1650 tot heden*, exh. cat. Amsterdam/ Tokyo (Rijksmuseum/Suntory Museum of Art) 1992, cat. no. 39, fig. 73; M. Kopplin, *Europäische Lackkunst*, Münster 1998, pp. 33-34.

3 Dendrochronological analysis was carried out at the Nederlands Centrum voor Dendrochronologie/Stichting RING by Tamara Vernimmen and Marta Domínguez Delmás. Documentation nos. 2007012 and 2010073 RJL.

4 Rijksmuseum, inv. no. BK-1964-12.

5 Dendrochronological analysis was carried out at the Nederlands Centrum voor Dendrochronologie/Stichting RING by Esther Jansma and Elsemieke Hanraets. Documentation no. 2000009.

6 Rijksmuseum, inv. no. BK-NM-1010. See Baarsen 2007, op. cit. (note 1), pp. 12-14; J. Pijzel-Dommisse, *Het Hollandse pronkpoppenhuis. Interieur en huishouden in de 17de en 18de eeuw*, Amsterdam 2000, pp. 247-347; 'Poppenhuissymposium', *Mededelingenblad IIC Nederland* 13, March & July 1996.

7 Dendrochronological analysis was carried out at the Nederlands Centrum voor Dendrochronologie/Stichting RING by Esther Jansma. Documentation no. 1994002.

8 Email correspondence between Marta Domínguez Delmás and Paul van Duin on 23 November 2010.

9 P.H.J.C. van Duin, 'The Construction of Flat Decorated Doors of Dutch Seventeenth-Century Cabinets. Report of a Master Class', in *Restoring Joints, Conserving Structures. Tenth International Symposium on Wood and Furniture Conservation, Amsterdam, 8-9 October 2010*, Amsterdam 2011, pp. 121-43. We are grateful to Stef Berflo for drawing our attention to this cabinet.

10 Correspondence between Reinier Baarsen and Oliver Impey, 1990.

11 *Makie* is an umbrella term for all forms of plain and raised decoration using sprinkled metallic powder. *Hiramakie* involves sprinkling very fine gold and silver powder into lacquer and subsequently applying thin lacquer layers to arrive at a rather flat and even decoration. For *nashiji* decoration, irregular shaped gold or silver particles are sprinkled into a thin coating of lacquer and covered by several layers of translucent lacquer resulting in a lustrous surface decoration with more depth. M. Webb, *Lacquer: Technology and Conservation*, Oxford 2000 (Butterworth-Heinemann Series in Conservation and Museology), pp. 47-50.

12 Heraldry depicted in export lacquer ware is mostly used as ornament without making direct reference to any specific aristocratic family. Whereas the iconography of motifs was extremely important in pieces produced for the Japanese market, as a rule little attention was paid to this aspect where export goods were concerned. Export furniture was characterized by a mixture of traditional Asian motifs and European influences; what mattered was the exotic effect.

13 Metal cramps of this kind have not yet been found elsewhere in export lacquer furniture. It can be assumed, though, that such cramps were generally used in objects of larger proportions. One instance has been documented in a small temple shrine: see National Research Institute for Cultural Properties, *Report on the Project for Conservation of Works in Japanese Art in Foreign Collections*, Tokyo 2000, pp. 29-66, figs. 6 and 112.

14 By means of x-ray spectroscopy and scanning electron microscopy the pigments used in the

green panels were determined to be orpiment and indigo. The analyses were performed at the RCE, Rijksdienst voor Cultureel Erfgoed, by Dr. Arie Wallert and Luc Megens. The green pigmented layer contains *urushi* and as binding medium for the ground layer starch was identified. The analysis of these layers was carried out by Henk van Keulen and Paul van Duin during the RADICAL (Recent Advances in Characterizing Asian Lacquer) workshop of the Getty Conservation Institute, 22-26 October 2012. The sample material was prepared by Christina Hagelskamp, Arie Wallert, Henk van Keulen and Paul van Duin and analyzed with Py-GC-MS and staining of the cross-sections.

15 We thank Jorge Welsh Oriental Porcelain and Works of Art, Lisbon and London, for their generosity in providing images and extensive information about the export lacquer chest.

16 O. Impey and C.J.A. Jörg, *Japanese Export Lacquer 1580-1850*, Amsterdam 2005, pp. 77-81.

17 See Impey/Jörg, op. cit. (note 16), pp. 83-85.

18 See Impey/Jörg, op. cit. (note 16), p. 149; O. Impey, 'Japanese Export Lacquer: The Fine Period', in M. Kühlenthal (ed.), *Ostasiatische und europäische Lacktechniken*, vol. 112, Munich 2000, p. 11.

19 'met rochevellen overtroucken'; M. Boyer, *Japanese Export Lacquers from the Seventeenth Century in the National Museum of Denmark*, Copenhagen (The National Museum Copenhagen) 1959, p. 20; O. Impey, 'Japanisches Exportkunsthandwerk und seine Auswirkungen auf die europäische Kunst des 17. und 18. Jahrhunderts', in D. Croissant and L. Ledderose (eds.), *Japan und Europa 1543-1929*, catalogue to accompany an exhibition at the Martin-Gropius-Bau in Berlin, as part of the 43rd Berliner Festwochen, Berlin 1993, p. 20.

20 '149 STX Cantooren soo groot als cleyn met rochevellen becleet ende verlachte ovaelen.' See Boyer, op. cit. (note 19), p. 20.

21 'Continueren als noch te eyschen eenigen weynige rare schoone Cantooren, en Kistens van binnen met root ende groen verlackt in plaatz van swaart, Item groote Coffers.' See Boyer, op. cit. (note 19), p. 153.

22 Many thanks to Christiaan Jörg and Menno Fitski for drawing our attention to this chest.

23 Our thanks to Pieter Hoogendijk for allowing us to examine the export lacquer cabinet.

24 In Japan, the skin from the backs of stingrays was used above all on hilts and scabbards, as it provides an excellent grip and it is quite resistant to wear. On objects such as *inrô*s and caskets, the ray skin was lacquered and ground to create a smooth surface with an appealing pattern.

25 C. Hagelskamp, *Ein holländischer Kabinettschrank um 1690-1710 kombiniert mit japanischen Exportlackarbeiten. Technologische Untersuchungen und Erstellung eines Restaurierungskonzepts mit exemplarischer Umsetzung*, Potsdam 2007 (unpub. diss. University of Applied Sciences).

26 The analyses were carried out by Henk van Keulen at the Instituut Collectie Nederland (ICN), 13 August 2008, sample nos. 152-44, 152-45.

27 Henk van Keulen, ICN, 19 May 2009, sample nos. 152-47.

28 Comparison of different methods for removing the surface coatings, as well as a subsequent series of tests, was carried out with considerable support from conservator Katharina von Miller. Her expertise in the analysis and treatment of historical surfaces was invaluable in the examination of the later coatings and the treatment of the wooden surfaces; see also K. Walch-von Miller, *Loesemittelgele und Seifen zur Trennung von Überzügen*, Munich 2003.

29 For the adhesive, a 1:1 mixture of hide and bone glue was used. The fill material used to compensate for losses was Modostuc™; fills were retouched with PVA paints.

30 The damaged areas were impregnated with consecutive solutions of 5% and 20% Paraloid™ B-72 in toluene.

31 *Japanning* is a Western decorative technique intended to imitate Asian lacquer work. See Webb, op. cit. (note 11), pp. 99-142.

32 Mariko Nishide trained in Japan and now works in the Netherlands as both a lacquer artist and a restorer. She kindly assisted in the assessment of the lacquer work, and her valuable recommendations meant that some parts of the treatment of the lacquer surfaces could be carried out in advance.

33 National Research Institute for Cultural Properties, *Urushi 2005. International Course on Conservation of Japanese Lacquer*, Tokyo 2005, pp. 120-21.

34 M. Nishide, *Restoration work for BK-1979-21*, Amsterdam 2009 (unpub. documentation of treatment, Rijksmuseum).