

RESTORATION OF AN ITALIAN “CASSONE” FROM 17TH CENTURY

Ion Valeriu OLARU

CNM ASTRA Sibiu- Centre for Cultural Heritage
Piața Mică, nr. 11, 550182, Sibiu, România
E-mail: valeriuolaru.astra@yahoo.com

Maria Cristina TIMAR

Transilvania University of Brasov, Faculty of Wood Engineering
Str. Universitatii nr. 1, 500068 Brasov, Romania
E-mail: cristinatimar@unitbv.ro

Anca Maria VARODI

Transilvania University of Brasov, Faculty of Wood Engineering
Str. Universitatii nr. 1, 500068 Brasov, Romania
E-mail: anca.varodi@unitbv.ro

Daniela Adela VĂCARIU

CNM ASTRA Sibiu- Centre for Cultural Heritage
Piața Mică, nr. 11, 550182, Sibiu, România
E-mail: dana_canura@yahoo.com

Ileana CHIRTEA

CNM ASTRA Sibiu- Centre for Cultural Heritage
Piața Mică, nr. 11, 550182, Sibiu, România

Abstract:

This paper presents the conservation - restoration process of a Cassone from the 17th century, a valuable piece of furniture, classified as thesaurus of Romanian Cultural Heritage. This is part of the George Călinescu collection, belonging currently to the Romanian Academy. George Călinescu (1899-1965) was a Romanian novelist, journalist, literature historian and critic, academician, representing an important peer of Romanian culture. Cassone defines an Italian type of highly decorated large chests, usually commissioned by rich merchants and aristocrats families from Italian culture at the occasion of their daughters' marriage. The restoration process of this object was part of an important restoration project undertaken in 2016 at the ASTRA Centre for Patrimony, the Polychrome Restoration Laboratory, from the ASTRA Museum Sibiu. The complex conservation - restoration of this valuable piece of historic furniture, which was in a precarious state of conservation, required specific scientific investigations and appropriate interventions, which are detailed in the paper.

Key words: conservation – restoration; cultural heritage; Cassone; investigations; FTIR; microscopy.

INTRODUCTION

Almost disappeared today from the modern life and house, dowry chests, also called marriage chests, are furniture items with a long history and international representation, with particular features for different cultures and historic periods. The surviving artefacts of this kind, coming from past generations, often inherited within families or collected, are bringing to nowadays stories and memories from another time, about other people and another world. Like a mystery box, placed in the most beautiful place in the house, the old dowry chests are revealing the social and economic status of their owners and also valuable information on the period they were manufactured, including materials and techniques alongside elements of life philosophy (Pripon 2012, Ionescu 2013).

To these outcomes contributes, with a great deal, the special and meaningful decoration, characteristic to the very different dowry chests. The craftsmen who manufactured these cherished objects were struggling to carve or paint these chests in a very special way, combining aesthetical features with symbols. Wooden chests, from all over the world, have been carved, painted or inlaid with colourful woods and other materials (e.g. mother-of-pearl) for centuries (Stone 2015).

A very special type of dowry chests is represented by the *Cassoni*. Cassone is the specific name given to an Italian type of highly decorated dowry chests, usually commissioned by rich merchants and aristocrats' families at the occasion of their daughters' marriage. The name originates from a small locality in northern Italy. Cassoni were employed between 14th and 18th centuries as ceremonial and representational objects in the wedding procession (Schubring 1915). The cassone ("large chest") was the most important

piece of furniture of Italian Renaissance, which represented the bride's parents' contribution to the wedding, being at that times one of the trophy furnishings of rich merchants and aristocrats in Italian culture (Cionca 2004 a,b, Ajmar-Wollheim and Dennis 2006).

The lids were usually decorated with the names and/or the coats of arms of the noble families who were marrying their children. Such artefacts were also given, in the rich families, to the daughters at the occasion of their religious confirmation. Cassoni were richly decorated, usually by modelling and carving in gesso, gilding, painting, carving in wood and polishing with resins. Rich Italian families hired the great artists of the time to decorate these pieces of furniture. Among those artists there were: Apollonia di Giovanni, Paolo Ucello, Donatello, Andrea Mantegna, Filippino Lippi, Francesco di Giorgio Martini, Beccafumi (Robbins 2004, www.britannica.com/topic/cassone, www.brown.edu/Departments/Italian_Studies/dweb/arts/cassoni). These characteristics make cassoni valuable artefacts with artistic and historic importance, part of world cultural heritage, being, therefore, highly appreciated collectible items for both specialised institutions and private owners.

In 2016, the ASTRA Centre for Patrimony, from the ASTRA Museum in Sibiu, restored fourteen pieces of valuable historic furniture, from the George Călinescu collection, currently belonging to the Romanian Academy. Among those pieces there was a cassone, dated from 17th century, listed as treasure in the official list of Romanian National Cultural Heritage.

George Călinescu (1899-1965) was an important Romanian novelist, literature historian and critic, representing a well-recognised peer of Romanian culture, who became member of Romanian Academy in 1949. Educated and refined intellectual, G. Călinescu appreciated and collected during his life various art objects. His literary work actually reveals his taste for art objects by the frequent and detailed description of the interiors, often inspired from autobiographical events. An eloquent example is the novel "Black Chest", inspired by a piece of furniture bought after a war from a flea-market, in which he discovered the archive of an ancient family.

The fourteen restored furniture pieces will recreate at the G. Călinescu Memorial House Museum in Bucharest the inspirational atmosphere from the writer's office. Every piece of furniture has an artistic, historical, technical and sentimental value, eight of which being classified as National Cultural Heritage Treasures. One of these eight pieces is the "Cassone" presented as case study in this paper.

OBJECTIVE

The main objective of the research work presented in this paper was the restoration and conservation of a valuable *Cassone* dowry chest, dated from 17th century, in accordance to the conservation-restoration principles and code of practice. For this purpose adequate documentation and employment of diverse analytical techniques were necessary to understand the object, evaluate the conservation state and select the appropriate intervention methods. This work is part of an important project undertaken in the year 2016 by the ASTRA Centre of Cultural Heritage from Sibiu (Romania), within the Laboratory of polychrome wood restoration

PRESENTATION OF THE OBJECT

The *Cassone* (Fig. 1 – initial state – before restoration) presented as case study in this paper belongs to the Romanian Academy, being part of the patrimony of the George Călinescu Memorial House Museum in Bucharest. This object is included in the official list of cultural heritage artefacts (by CIMEC – code 2739/18.11.2004) in the thesaurus category, as a guild coffin in German Gothic style, made of oak wood, dating from 17th century, though it seems to us to meet rather the characteristics of a dowry chest of cassone type, specific to the occidental area (Italy) during that period.

The object is a large wooden chest with rectangular shape (1630×630×66a mm), supported by short legs, the two from the front being shaped as lion's paws. The plan lid is made from two timber pieces glued together and its width is exceeding the width of the lateral sides, coming a little bit to the front. It seems that the object also served as a bench for sitting (from CIMEC records).

The front of the coffin is decorated by sculpture in wood, with a vegetal motif representing the "tree of life", specific to that period of time. This is largely developed horizontally on this artefact, covering the whole front panel of the coffin as two symmetrical acanthus leaves coming out from a vessel with two ring-shaped handles. The "tree of life" motive, with very different representations, is one of the most important and frequently employed symbols that enrich dowry chests / furniture pieces, by painting, engraving or carving. This symbolizes the life in continuous evolution, from birth to death and regeneration, the universe, the micro- and the macrocosm, as well as immortality. It also represents a connection between earth and sky (Eliade 1994, Olaru 2014). This type of symbolic ornament may include lateral, symmetrically distributed, other ornamental elements, such as flowers and birds.



Fig. 1.

Initial state of "Cassone" dowry chest: a - front view; b - the back of the chest.

A simple metal lock, ornamental lateral handles and two hinges were the metal accessories.

Initial state of conservation

The initial conservation state of the dowry, illustrated in Fig. 2, was unstable and relatively precarious due to the active insects attack, mostly in the bottom parts of the coffin and the back panel (Fig. 2a,b,g). The presence of sawdust in the numerous flying galleries (50 -120/100cm²), of diameter of 2-3mm, indicated an active attack, most likely by *Xestobium rufovillosum*. The combined biological attack by insects (predominant – Fig. 2a,b,g) and fungi (Fig. 2e) caused wood frailness, ruptures, cracks, loss of material (Fig. 2b,g). The whole artefact was very dirty, with lot of dust deposits; clogged dirt and different spots on both external and inner surfaces. The surface of the object presented functional wear by faulty handling, cracks (Fig. 2d) and advanced structural degradation of wood elements (Fig. 2b).

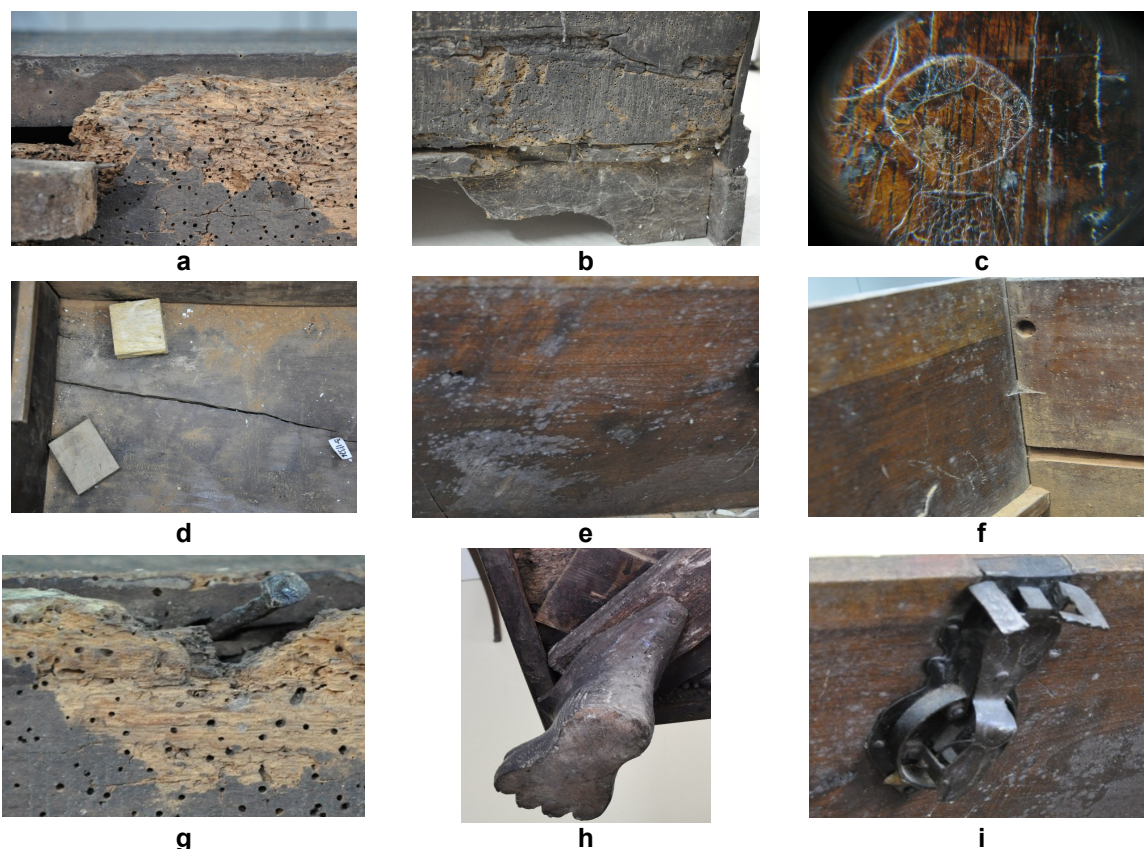


Fig. 2.

Initial state of conservation: a - insects attack; b - degraded wood and erosion of bottom parts of legs with advanced surface texturing; c - aspects of aged finishing protective layer (image by magnifying glass); d - aspect of cracks; e - fungal attack; f - evidence of missing small inner wooden box, dirt, spots; g, h - inadequate previous interventions; i - rusted metal locker, dirt.

It was also observed that a constitutive part was missing from inside (Fig. 2f), very likely the small inner box, characteristic to most of the dowry chests. The finishing protective layer was rough, quite thick, aged, crackled, with mirror like areas due to inadequate wetting of the support (at application phase and/or

due to ageing) and low / non uniform adherence (Fig. 2c). All these strongly suggest a refinishing of the artefact.

Wood and structural degradation caused previous, totally inadequate rough "repairs", with negative impact. Previous interventions consisted in structural consolidation with metal nails (Fig. 2g) and reconfiguration of legs assembly (Fig. 2h). Metal elements (metal lock, handles) were rusted and clogged with dirt, losing their functionality (Fig. 2i).

INVESTIGATIONS AND CONSERVATION - RESTORATION

Before any direct intervention relevant photos were taken to document the initial state of conservation and the whole object was meticulously examined. The previous interventions were documented by photos and described, as these were not mentioned in the available conservation records. In the process of conservation - restoration the basic principles of good practice were respected. Authenticity of the object was preserved, interventions were based on scientific investigations, being accomplished with traditional or compatible materials, which ensure also their reversibility.

At the same time, inappropriate interventions, such as consolidation with metallic nails, were amended. So it was decided to dismantle these elements. In the same context, the inadequate reconfiguration of legs assembly and strong fragility of timber elements from the bottom of the *Cassone* justified the decision of dismantling this part for a correct approach in the restoration process and for a better cleaning.

Scientific investigation of wooden species

As first step in the process of restoration, dusting of *Cassone* dowry was made with soft brushes. Thorough examination of cleaned wood surfaces revealed that the chest was actually made two from different wood species. To establish the wooden species, small samples of wood were taken for both type of wood identified by macroscopic view (Fig. 3a,b).

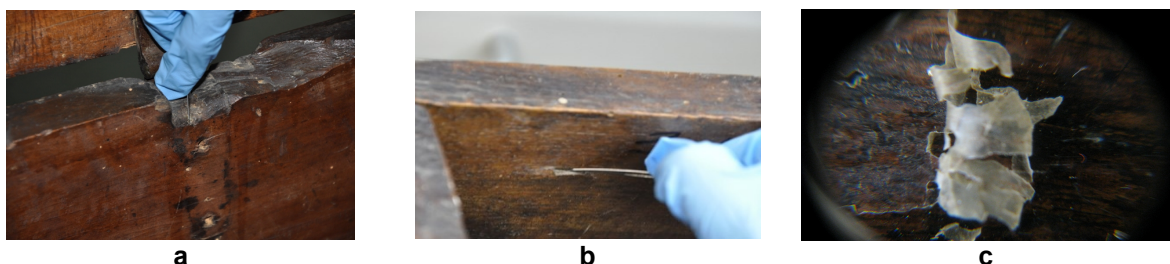


Fig. 3.

Samples extraction: a - wooden sample from the back of the chest; b - wooden sample from the front of the chest; c - coating film sample extracted for investigations (image by magnifying glass).

The wooden samples were prepared as thin transparent microscopic slides and investigated by optical microscopy (at ASTRA Sibiu). This revealed that the back and the bottom of the dowry were made from oak wood (*Quercus cerris*), while the front, the laterals and the lid of the chest were made from walnut wood (*Juglans regia*). The registered micrographs were analysed according to the microscopic identification keys and compared with reference samples from an electronic catalogue (Timar 2008).

Scientific investigation of finishing layer

The protective finishing layer was also investigated. Small film samples were taken (Fig. 3c) in order to be investigated by: optical microscopy, solubility tests and FTIR spectroscopy.

The microscopic images were recorded with Optika SZM type Olympus SZ-CTV microscope provided with imaging software. In Fig. 4 are presented the captured images for the film samples at different magnifications (40X and 90X, general view) and cross section (90X). It can be observed that the protective film, of about 50µm thick, has a pretty homogenous microstructure, with some dark brown inclusions, possibly brown pigments.

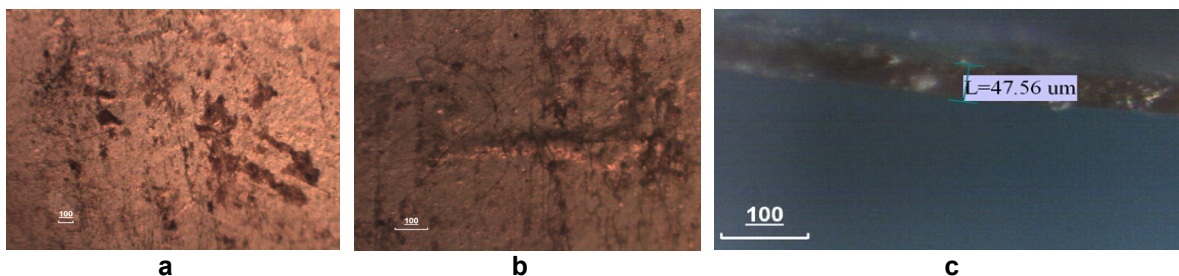


Fig. 4.

Microscopic images of film layer sample: a, b - general view (a - 40X magnification; b - 90X magnification); c - cross section (90X magnification).

To establish the nature of protective layer some dissolving tests with ethylic alcohol were made under microscope (Fig. 5).

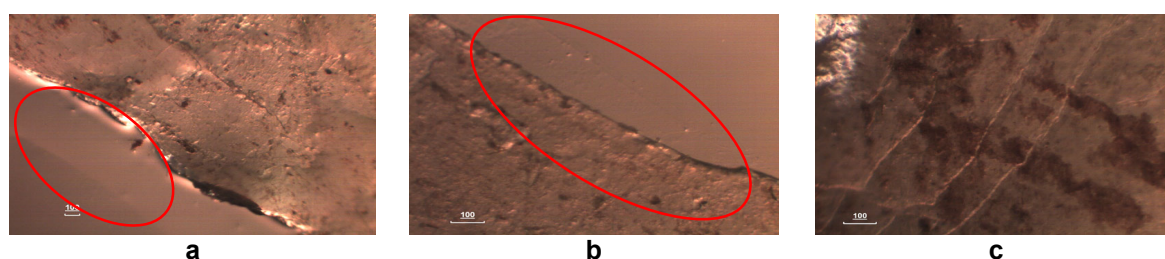


Fig. 5.

Microscopic images registered during solubility test in ethylic alcohol (98%) under the microscope: a - 40X magnification; b, c - 90X magnification; red marks highlight some dissolution of a component with film forming properties.

Analysing the images it can be stated that the sample is not soluble in alcohol, but there is a component slightly soluble in concentrated ethylic alcohol, which migrates from the coating film. This seems to be, apparently, concentrated on the back of the film (the area of low adherence to the original finish). It can be noticed that this soluble component migrates from the sample (Fig. 5c) to the margins of glass lamella (area marked with red in Fig. 5a and 5b), forming a very thin film.

In the same context FTIR spectrometry analysis was performed employing a Bruker Alpha spectrometer equipped with the ATR unit. The spectra resulting from 24 scans were recorded in the range $4000-400\text{cm}^{-1}$ at a resolution of 4cm^{-1} . The processing of registered spectra was carried out with the dedicated OPUS 7.2 software. The spectra shown in figure 6 are the average of three recorded spectra (replicates). This was compared with reference spectra of traditional coating materials, such as shellac, beeswax, linseed oil from the ICDT (Braşov) laboratory collection.

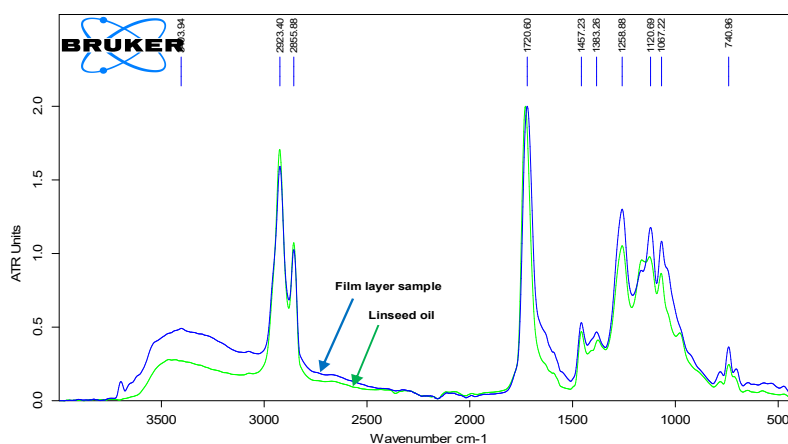


Fig. 6.

FTIR spectra registered for the protective film layer (blue), compared with linseed oil reference spectra (green).

FTIR investigation clearly confirmed that the finishing layer cannot be shellac or another related resin, as a powerful characteristic absorption at around 1153cm^{-1} is missing. On the other hand, the recorded spectra match perfectly with the reference spectra of linseed oil film, suggesting a siccative oil as the main component of the finishing layer. These observations are supported by the dissolving test in ethyl alcohol, as shellac would have been soluble, whilst cured drying oil films are perfectly resistant to alcohols and generally to solvents, making them very difficult to remove from a finished surface.

Moreover, FTIR investigation of the film formed on the glass lamella following dissolution in ethyl alcohol of the soluble component from the coating film, indicated that is most likely beeswax (Fig.7).

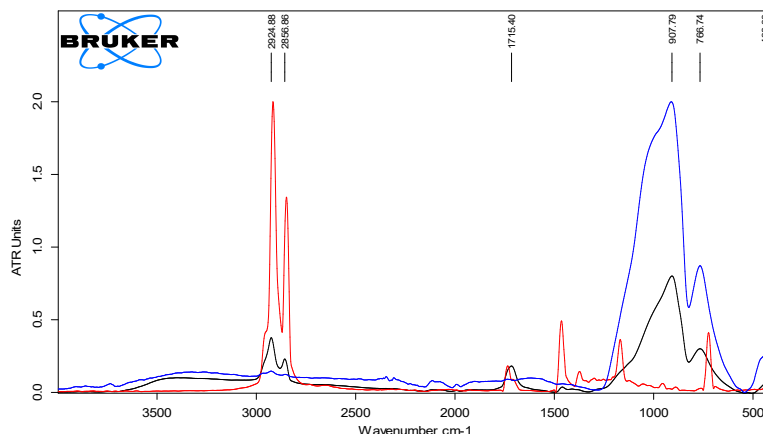


Fig. 7.

FTIR spectra registered for the film (on glass lamella) formed by the component dissolved in ethyl alcohol (black), compared with beeswax reference (red) and glass lamella (blue).

From the corroboration of all these results resulted by: microscopic analysis, solubility tests in ethanol and FTIR, it appears that the non-original finishing layer is very likely a siccative oil that has been applied to a waxed surface. This would also explain the inappropriate adherence, revealed as areas with mirror aspect due to the tendency to exfoliate from the substrate, due to the lack of adherence.

Conservation - restoration process

Tests with different solutions were made in order to establish the most appropriate solutions for cleaning and removing the non-original, aged finishing layer, which were performed directly on the object. These showed that the finishing layer was insoluble in turpentine and had a low solubility in 99.8% methyl alcohol, 93% ethyl alcohol and iso-propyl alcohol. The film was not dissolved in the tested alcohols, but rather softened by their absorption. These tests confirm the results presented above. The areas were solubilisation tests were performed as well their results were recorded and documented by digital photography.

Following these tests, it was decided to remove the thick finishing layer with different types of scalpel, blades, brushes and chemical cleaning. First step consisted in application of compresses with iso-propyl alcohol for 10-15 minutes (Fig. 8a) and after that period the soaked film (Fig. 8b) was removed mechanically with different blades (Fig. 8c).

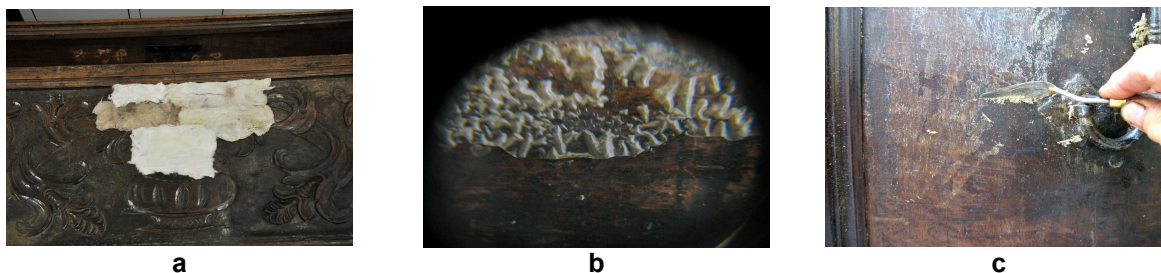


Fig. 8.

Steps undertaken to remove the non-original finishing layer: a - application of compresses with iso-propyl alcohol; b - aspect of the soaked film (image by magnifying glass); c - mechanical removing of the soaked film.

An important step in the process of conservation - restoration was curative protection that was achieved by repeated injections with Per-xil 10 insecticide into the flight galleries (repeated injections at an interval of at least 24h). Strengthening of fragile wood areas was achieved by repeatedly injecting Paraloid B72 solution in ethyl acetate, employing successively solutions with progressive concentration (3%, 5%, 7%).

Detached wood areas were glued with rabbit skin glue (30% solution) and consolidated with wood tenons. The assemblies were kept under pressure for 24 hours. The gaps in the wood structure were filled with remedial elastic putty based on rabbit glue, oak sawdust, mountain chalk and pigments. Acrylic stucco of brown brick colour was also used. The flatness of the remediated areas was restored after drying with fine abrasive paper or cork stopper.

Also, it was necessary to manufacture a new wood small box to complete the missing one. The legs have been assembled with the chest by completing missing elements with new wood material. Chromatic integration was performed differently depending on the area, with water-based colours by fine lines and points. The chest was finally finished with beeswax in white spirit solution, with a concentration of 20%, applied by brushing and then polished (after drying) with fine cotton fabric.

The metal elements (hinges, lock, key) have been mechanically cleaned with appropriate instruments (scalpel, steel wool). Ferton was used to protect them. The final state of the restored cassone can be seen in Fig. 9.



Fig. 9.
Final state of the restored Cassone.

CONCLUSIONS

Following a complex restoration and conservation process the valuable Cassone from the G. Călinescu collection, currently belonging to the Romanian Academy, has regained its integrity and original beauty, while maintaining its authenticity, patina and history.

The official classification of this artefact as treasure of cultural heritage was the outcome of a specialised expertise highlighting its artistic, historical, technical, documentary and sentimental significance. The former owner, George Călinescu, is an important personality of Romanian culture. Moreover, the patrimonial value of this furniture piece results from its very nature of a special type of dowry chest, an Italian Cassone, high value collectible items.

The complexity of the entire conservation-restoration process in terms of materials and technology of interventions was determined by the object itself and the advanced and the diverse degradation phenomena and deterioration. The precarious initial state of conservation was related to the variation of environmental conditions over the time, inappropriate maintenance, the inadequate repair interventions and the functional (miss)-use of this valuable artefact.

The restoration of such objects, containing old materials and technologies, involves thorough documentation /research on the specific materials, technologies, historical period and cultural production areas. This knowledge, complemented by laboratory investigations, is absolutely necessary for a scientific restoration project, specific for each object.

FTIR spectroscopy combined with microscopic technique has provided the basic information on the morphology and possible composition of the non-original finishing layer, supporting and assisting effective restoration interventions. Comparison with reference data allowed materials identification, highlighting the importance of such data-bases in the conservation-restoration practice. However, multiple investigation techniques and corroboration of results is required for reliable conclusions.

Last but not least, cooperation between specialists, laboratories and institutions serve the ultimate desire and outcome: conservation of cultural heritage.

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