

RESTORATION OF A COPPER WINE VESSEL

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INTRODUCTION

The wine vessel was a gift from the Mayor of Qabala the City in the Republic of Azerbaijan to Valdis Dombrovskis the Prime Minister of Latvia during his official visit to Azerbaijan in 2012.

Item then was given to National History Museum of Latvia and for restoration was brought in September 2021.

The wine vessel has been made in craftsmanship village of Lahic. Lahic copper craftsmanship is part of Azerbaijan folk art, which is included on the UNESCO Representative List of the Intangible Cultural Heritage of Humanity.

WINE VESSEL (CVVM 268078 VAD 732):
 DATE: 21st CENTURY.
 MATERIAL: COPPER, BRASS.
 MANUFACTURING TECHNIQUE: CAST, FORGED, ENGRAVED.
 DIMENSIONS: LENGTH - 53 CM;
 HEIGHT - 34 CM



Lahic, Republic of Azerbaijan



Fragment before restoration



Fragment before restoration

RESEARCH

Although made relatively recently, the item had already sustained substantial corrosion damage. Item was handed over to chemists for material research. During the examination it was found that inside the vessel had remained thin layer of lead, which had been used in casting process.

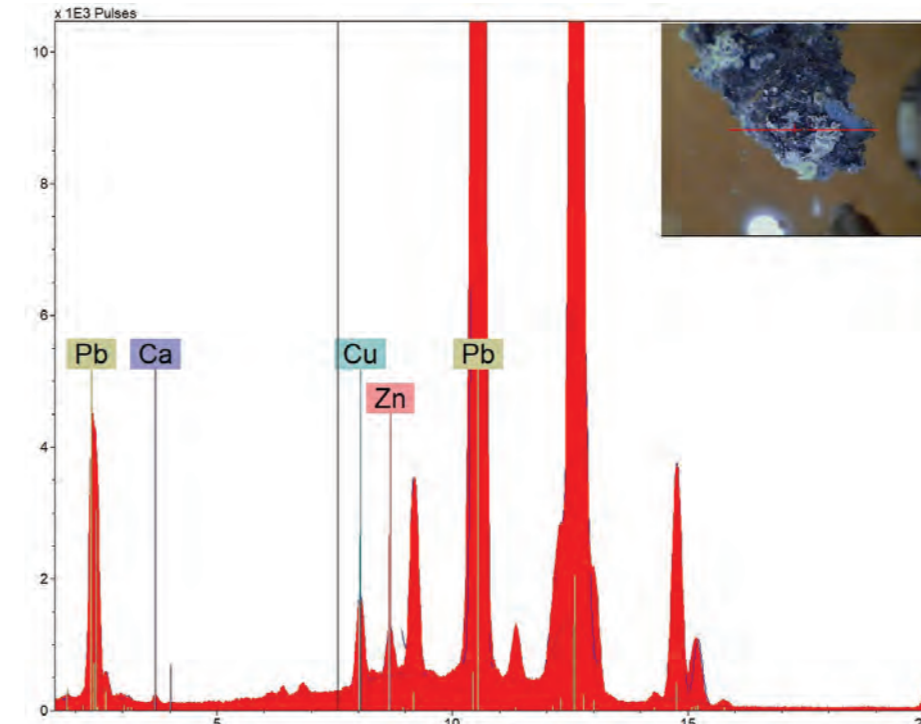
Initially it was considered that the surface coating is patina, but after closer inspection it was determined that it is a mixture of pigments and organic binder, which achieved the decorative effect. This mixture has a low melting temperature and begins to melt even when held in hands for longer period of time.



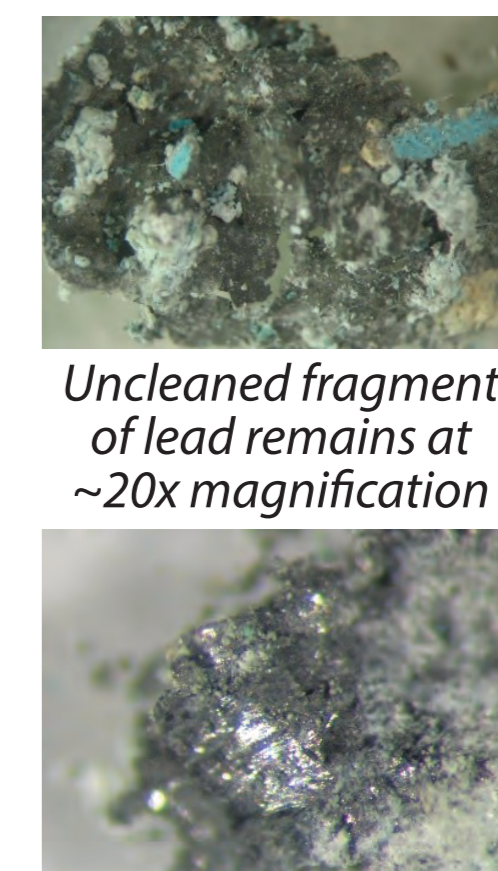
Fragment before restoration



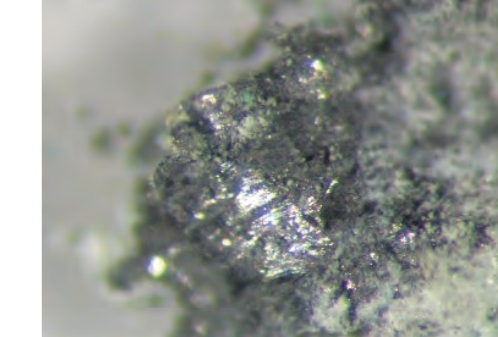
Wine vessel before restoration



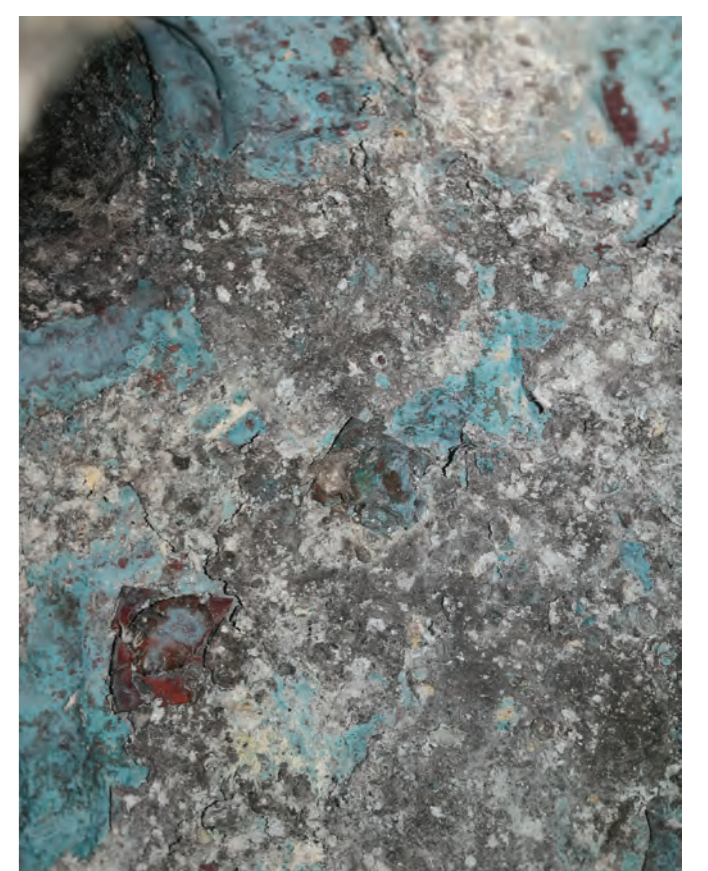
XRF spectrum of sample inside the wine vessel



Uncleaned fragment of lead remains at ~20x magnification



Cleaned fragment of lead remains at ~50x magnification



Interior fragment before restoration



Fragment after restoration



Fragment after restoration

RESTORATION

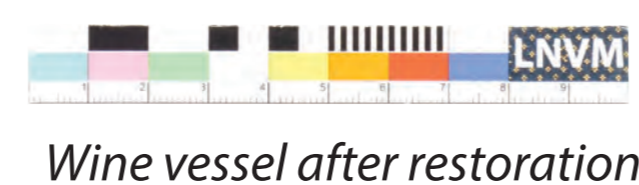
The restoration process was significantly affected by low melting temperature of the surface coating and the difficult access to the interior of the vessel.

The inside was cleaned mechanically and with a 5% Trilon B solution by pouring it in and laying the vessel on each side for some time, so that the solution does not spill out. After that the inside was rinsed under cold running water. After that cleaning process inside was patinated with a 3% liver of Sulphur solution, treated with warm 3% benzotriazole and coated with 10% microcrystalline wax *Cosmoloid - 80* solution.

The exterior was locally cleaned mechanically and patinated with silver oxide. The reaction of the original surface coating with the solvents in the lacquer and wax made it difficult to coat the exterior with the protective coating. This is why the spots processed on the exterior were rubbed with undiluted microcrystalline wax.



Fragment after restoration



Wine vessel after restoration

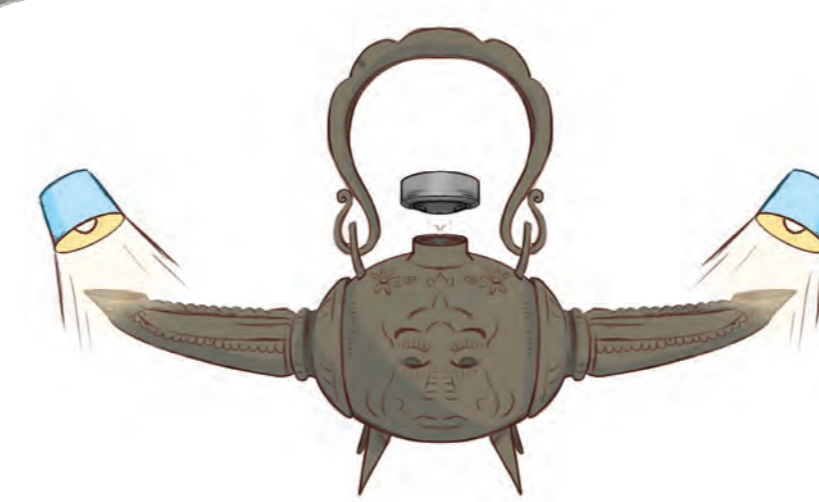
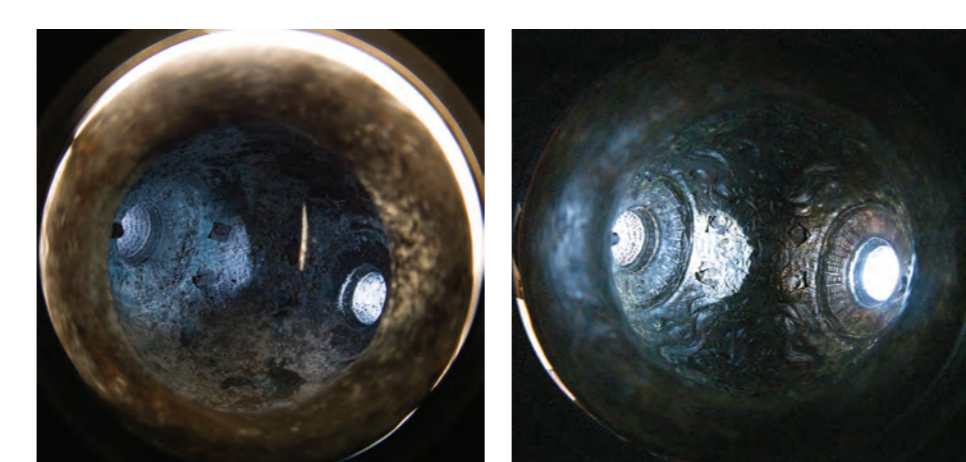


Illustration of photo fixation process with 360° camera



Interior before restoration, taken with 360° camera
 Interior after restoration, taken with 360° camera

INTERIOR PHOTO

The photo fixation of the interior of the vessel was also a challenge. This time it was possible by placing a 360° camera above the vessel's upper opening, setting it on long exposure and shining light from the sides.