Metal Object Treatment Report

Site Name: Kiplin Hall			
Conservator: S. Goel		**Date: 25-03-2021**	**Lab no: 3712**
Object: Plate	**Material: Tin-Silver Alloy and Brass**	**Accession no: 1992.787**	

Description:

This plate is 19.8 centimetres in diameter. The plate is made up of three pieces of metal soldered together; an outer ring, a concave central area, and an added medallion at the very centre of the dish. The decoration is cast in relief, with the Twelve Apostles lining the outer rim of the plate and the central medallion depicting Christ with the Holy Banner and four soldiers (Victoria and Albert Museum).

The mould for casting this plate was made in Nuremberg, Germany around 1660 by Paulus Öham the Younger (Art Institute of Chicago). This is shown with the maker's mark on the central medallion (fig. 1) (Metropolitan Museum of Art). However, this mould was used into the 18th century by other metalsmiths (Victoria and Albert Museum).

It was originally assumed that this dish was made of brass (copper and zinc alloy). However, through pXRF analysis, it has been determined that the majority of the plate is a tin and silver alloy (figs. 2 and 3), with the inner concave area made of a copper, zinc, and silver alloy (fig. 4).

Condition:

This object is in good condition. There are some wear marks and scratching on the concave brass section of the plate, as well as on the back, primarily around the edges. There are polish residues that have been trapped in decorated areas and a layer of tarnish has covered the entire plate.

Conservation Treatment:

The goal of treating this plate is to remove the remains of previous polishing, polish the plate and protect it from further deterioration. It was also determined that the accession number should be reapplied to the reverse of the plate.

First, the plate was cleaned using ethanol in order to remove all dust and contaminants. Residues from previous polishing were then removed mechanically using a bamboo skewer, a cocktail stick, and a hard bristle brush.

Following this, the plate was polished using Brasso (Reckitt Benckiser), a commercial abrasive polish designed to remove tarnish from brass, on a microfibre cloth. Once the metal was polished, excess Brasso was removed using acetone, which also removed the accession number on the back of the plate. This process also helps to degrease the object. Following this, the removal of excess polish was ensured using a bamboo cocktail skewer.

The plate was then coated in order to protect it from further deterioration and lengthen the period before it requires cleaning again. Renaissance microcrystalline wax, a chemically inert, moisture resistant mixture of Cosmolloid 80 hard and BASF A waxes was chosen for coating (Museum of Fine Arts Boston, 2020a; c). Wax was selected to coat the plate, as it would spread easily to provide a uniform surface and will not yellow over time. It was decided that cold waxing was the more time efficient option for this object. The wax was left on the surface for 2-3 minutes in order to ensure that it bonded, before being buffed with a clean microfibre cloth.

Finally, the accession number on the reverse of the plate was reapplied. Two layers of 10% Paraloid B67 in toluene were applied to a small area at the centre of the plate and left to dry. The accession number was then written using archival grade India ink, which was left to dry before another layer of 10% Paraloid B67 in toluene was applied on top to protect from smudging.

Storage Recommendations:

The plate should be kept in a stable environment with moderate temperature (10-25˚C with low fluctuation) and relative humidity (40-55% with low fluctuation) (Society for Museum Archaeology, 2020). The maximum illuminance on this piece should be 300 lux, with UV radiation between 0-10 microwatts per lumen (maximum 75 microwatts per lumen) (ibid). Dust on the surface should be limited, as this will cause corrosion of the metal (Barclay et al., 2018).

Handling Requirements:

The object should always be handled with nitrile or latex gloves in order to limit oily residues on its surface (Barclay et al., 2018).

Figure 1: Paulus Öham's maker’s mark

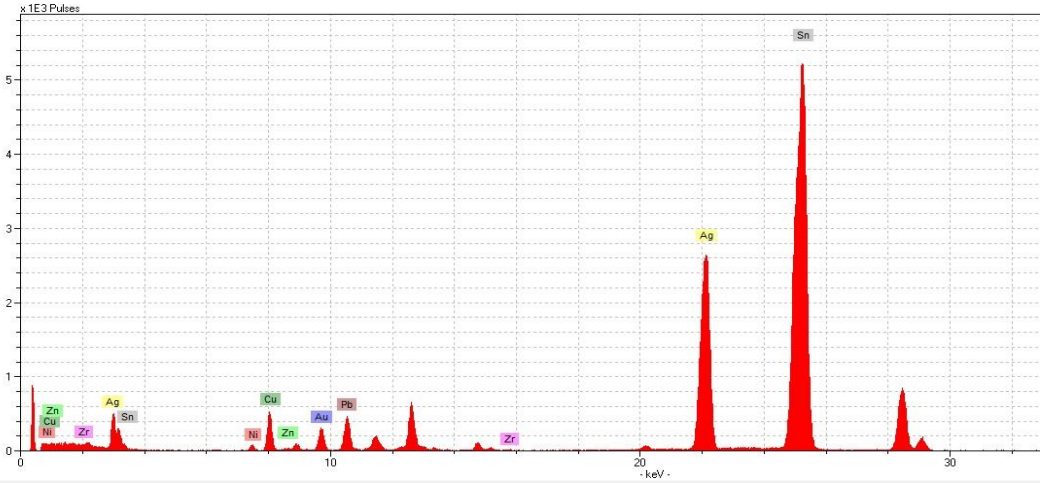


Figure 3: pXRF Spectra for the outer ring of the plate, taken from the reverse.

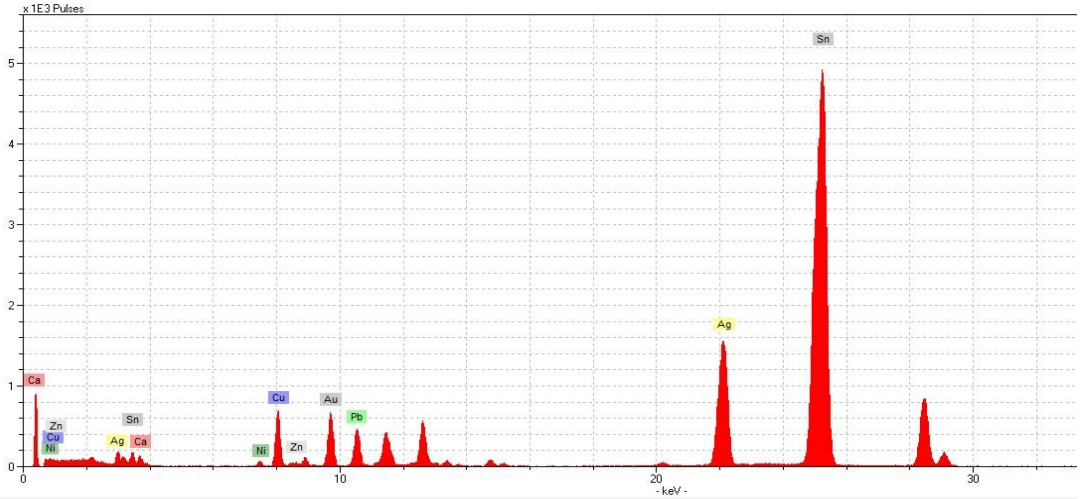


Figure 2: pXRF spectra for the central medallion of the dish, demonstrating comparable composition to fig. 2

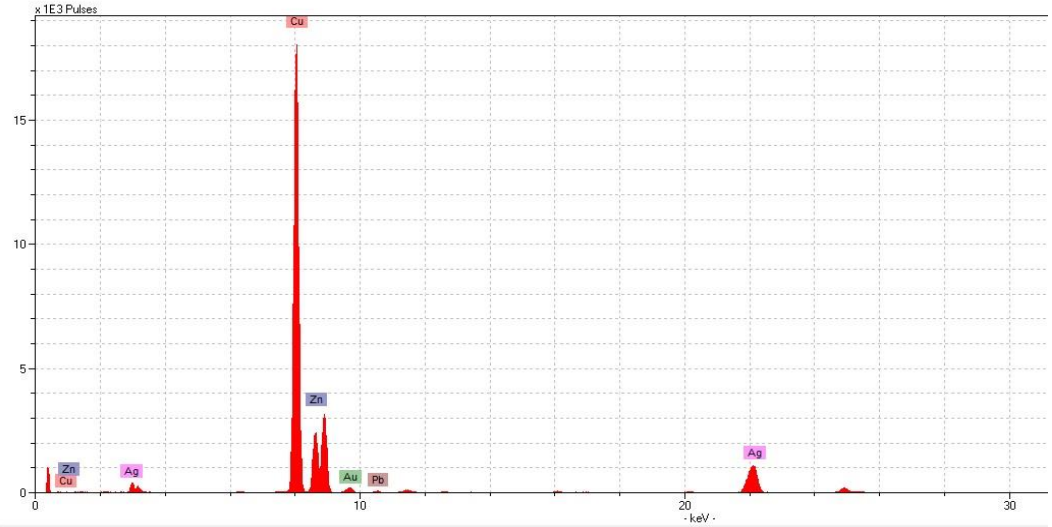


Figure 4: pXRF spectra of the central concave portion of the plate, which differs from that of the outer ring and decorative elements

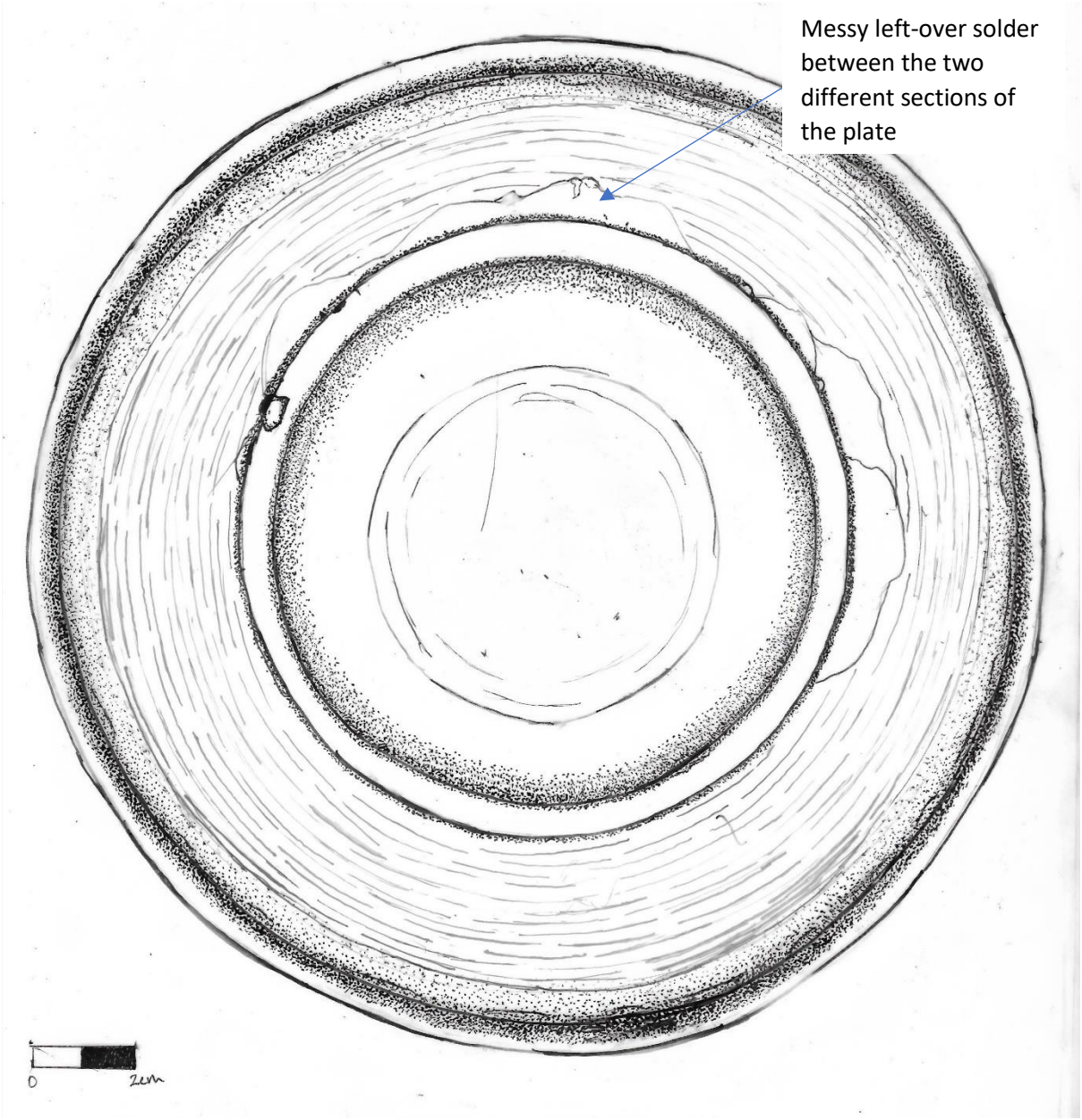
Before Treatment:

After Treatment:


1992.787
0M/M 10 20 30 40 50

Drawing

*Areas circled in red are repeated around the circumference of the plate, but are only drawn once for clarity


Messy left-over solder between the two different sections of the plate
0
2cm