

The University of Pennsylvania Museum of Archaeology and Anthropology  
Conservation Record



**Accession number:** 65-3-5

**Object name:** Furniture Fragment, Inlay

**Section:** Near Eastern

Conservator: **Julia Commander**

Started: **Apr/18/2017** Completed: **Apr/26/2017**

Treatment Proposal

1. Document before treatment condition with digital photography.
2. Clean surfaces with dry cleaning materials, such as cosmetic sponges, to reduce excess dirt.
3. Coating should be removed or reduced in order for surfaces to regain the texture and appearance of ivory. Test methods for reducing coating, such as acetone on cotton swabs.
4. During coating reduction, textile fibers should also be removed.
5. Pigment residues should be reassessed for stability after coating reduction.

Consolidation with materials such as dilute Paraloid B-72 in acetone may be necessary.

Object Description

Object is described as an ivory furniture fragment from the Nimrud site in Iraq, dating to the 8th century BC. The ivory is carved in the shape of a lion paw in the round. Below the top edge, the obverse face has an area of incised pattern with diamond shapes. The recesses of the diamonds have traces of bright red and blue pigment, which appear to alternate in a checkerboard pattern.

The base of the paw has a cylindrical extension, likely a tenon for joining. The top surface has rectangular void, which may also be related to mortise and tenon joining mechanisms. The reverse surface near the top edge has an area of scoring in a cross-hatch pattern.

The top surface of the fragment has small areas of visible Schreger lines. The obtuse angle indicates elephant ivory, which is consistent with the materials available in ancient Assyria.

This object fits in with a group of nine Nimrud ivories in the Penn Museum collection, most of which are documented as furniture inlay. A large collection of comparable carved ivories can be found in the British Museum collection.

Condition before Treatment:

Object is mostly complete and structurally stable. The ivory has extensive longitudinal cracking, extending from top surface to paw. Several large cracks have a surrounding network of smaller cracks. Object appears to have been previously repaired, and adhesive residues are visible in large cracks. On the reverse face, one of the joins has a large step.

The University of Pennsylvania Museum of Archaeology and Anthropology  
Conservation Record



**Accession number:** 65-3-5

**Object name:** Furniture Fragment, Inlay

**Section:** Near Eastern

Crack networks have created areas of chipping and loss. The most notable loss, approximately 2 cm x 4 cm, is below the top edge toward the proper left of the incised pattern.

Surrounding the void in the top of the paw, a two circular stains are present. The larger stain is approximately 3 cm in diameter and dark yellow-orange in color. Stain area also has accretions of dirt.

Object has a thick, glossy coating covering all surfaces. Coating creates a plastic appearance and obscures ivory surfaces. Along the obverse face, green textile fibers are intermittently embedded in the coating, likely from a felt or fabric material that was in contact with the object surface. Moderate surface dirt and grime is present, and the majority of it appears to be under the coating. Faint blue discoloration is visible on obverse and reverse.

The diamond pattern has losses of coloring material, although traces and clumps of pigment remain intermittently. The majority of remaining pigment is covered by the coating.

Accession number is written in black ink on the top surface.

Treatment Description:

4/14/2017- Before treatment photography completed, edited, and uploaded.

4/18/2017- Based on previous treatment reports for comparable Nimrud ivories, acetone and ethanol were tested for coating reduction. Test areas were selected in a discrete area on the reverse of the fragment. Both acetone and ethanol were found to effectively soften the coating and lift grime. Ethanol was selected for coating reduction, and most areas required multiple passes with ethanol on cotton swabs. Acetone on cotton swabs was used in areas where the coating was particularly thick or resistant. Coating over pigments was left partially intact to avoid excessive mechanical action and pigment displacement. Previous adhesive residues surrounding joins were softened with solvent and reduced mechanically with a wooden skewer. Areas of sandy, granular dirt were left undisturbed.

Areas of surface instability were addressed after coating reduction. Isolated areas of fragmented ivory were consolidated with Paraloid B-72 (ethyl methacrylate and methyl acrylate co-polymer), 5% in acetone. This material was selected for its stability and minimal visual impact. Powdering blue and red pigments were also consolidated with Paraloid B-72. Consolidant was applied with a syringe in order to deliver small, controlled amounts. No visible change in sheen was observed after consolidation.

Dark blue discolorations and yellow-orange stain on the reverse remain as before treatment. The large stain on the reverse will not be visible on display and does not require intervention.

The University of Pennsylvania Museum of Archaeology and Anthropology  
Conservation Record



**Accession number:** 65-3-5

**Object name:** Furniture Fragment, Inlay

**Section:** Near Eastern

Summary of Analysis

**Test for:** Materials identification

**Method:** Ultraviolet examination

Result

Multispectral imaging, including ultraviolet and infrared wavelengths, was used to examine surfaces. Blue pigment exhibits visible-light induced infrared luminescence, which is consistent with Egyptian blue pigment.

Done By: **Mayberger, Evelyn**

**Test Date:** Spring 2016

Multimedia: **Yes**

**Test for:** Manufacturing information

**Method:** X-radiography

Result

X-radiography was completed to assess structure of fragment. Severe longitudinal cracks are apparent throughout.

Done By: **Mayberger, Evelyn**

**Test Date:** Spring 2016

Multimedia: **Yes**

The University of Pennsylvania Museum of Archaeology and Anthropology  
Conservation Record



**Accession number:** 65-3-5  
**Object name:** Furniture Fragment, Inlay  
**Section:** Near Eastern



File: 65-3-5bt1.jpg  
Description: 65-3-5, before treatment



File: 65-3-5bt2.jpg  
Description: 65-3-5, before treatment



File: 65-3-5bt4.jpg  
Description: 65-3-5, before treatment



File: 65-3-5bt3.jpg  
Description: 65-3-5, before treatment

The University of Pennsylvania Museum of Archaeology and Anthropology  
Conservation Record



**Accession number:** 65-3-5  
**Object name:** Furniture Fragment, Inlay  
**Section:** Near Eastern



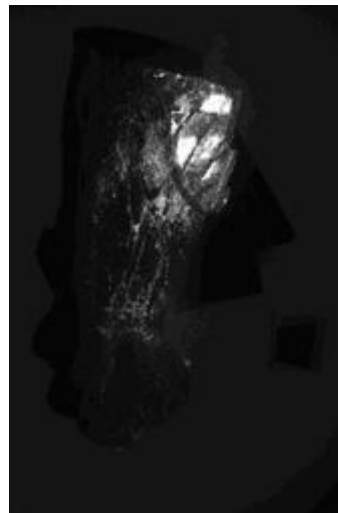
File: 65-3-5bt6.jpg  
Description: 65-3-5, before treatment



File: 65-3-5bt5.jpg  
Description: 65-3-5, before treatment



File: 65-3-5\_x-ray1\_crop.jpg  
Description: 65-3-5, X-radiography



File: 65-3-5\_MSI4.JPG  
Description: 65-3-5, Multi-spectral imaging, visible light induced infrared luminescence

The University of Pennsylvania Museum of Archaeology and Anthropology  
Conservation Record



**Accession number:** 65-3-5  
**Object name:** Furniture Fragment, Inlay  
**Section:** Near Eastern



File: 65-3-5pt1.JPG  
Description: 65-3-5, post treatment



File: 65-3-5pt2.JPG  
Description: 65-3-5, post treatment



File: 37-11-232pt4.JPG  
Description: 65-3-5, post treatment



File: 37-11-232pt3.JPG  
Description: 65-3-5, post treatment

The University of Pennsylvania Museum of Archaeology and Anthropology  
Conservation Record



**Accession number:** 65-3-5  
**Object name:** Furniture Fragment, Inlay  
**Section:** Near Eastern



File: 65-3-5pt6.JPG  
Description: 65-3-5, post treatment



File: 65-3-5pt5.JPG  
Description: 65-3-5, post treatment