

### CAT 593: HELMET BAND AND TRAY- KNEELING WARRIORS

K48, K51, K96, K228, K234–K235, K237, K243, K250, K255, K523, K794, K834, K970, K1031, K1432, K1437, K1515, K1529, K1541, K1551, K1556, K1561–K1562, K1574, K1577, K1608, K1627, K1634, K1643, K1650, K1676, K1692, K1734, K1778, K1801, K2000, K2031, K2098, K2131, K2132, K2133, K2134, K2135, K2137

#### Condition Report

**Conservation Started:** April 2015

**Conservation Finished:** April 2015 (RA), February 2016 (KF)

**Conservator:** Kayleigh Fuller, Giovanna Fregni, Rachel Altpeter

**Time Taken:** Unknown but within one month, 6 hours for repacking (KF)

Including digital photography, report, conservation and packing.

**Dimensions:** 120-125mm (L Largest fragment reconstructed) x 17mm (W) + Tray is 4mm (H) and thickness of sheet <0.5mm

The tray and sheet remains together suggest an original length of c. 480–500mm and a die c. L. 55mm; W. 15mm

**Weight before:** Combined weight of sheet and tray =55.44g

**Weight after:** n/a

#### Digital photography:

Taken with a Canon EOS digital camera under daylight bulbs and Photomicrographs taken using Keyence VHX-1000 3D digital microscope with LED and/or fibre optic lights, 20-200x magnification.

**Description:** Visual and microscopic examination using Meiji stereo microscope 7-75x magnification. HELMET-BAND IN CAST SILVER-GILT, INSET WITH A SILVER-GILT SHEET BAND, SHOWING A CONTINUOUS PROCESSION OF KNEELING OR RUNNING WARRIORS. Originally three components, but assembled from 112 fragments. The cast silver band, in thirty-seven fragments, was made in two curved pieces and formed a tray with rounded edges to the decorated sheet band. (CF)

The frieze depicts a repeated series of five warriors with a beaded border on the top and bottom of the die. A slightly diagonal, club-shaped border delineates the vertical edges of the die from which the embossed strip was made. The warriors face proper right while kneeling on one knee and holding a small round shield with a large boss extended before them. A spear is held upright behind the shield. The frieze was contained within a silver tray with organic waxy residues remaining.

#### Label information

**X-ray:** L37, L41, L84, L89–L90, L92, L95, L116

#### Associated material

Part of Helmet

**Pre-Conservation Condition:** Visual and microscopic examination using Meiji stereo microscope 7-75x magnification.

The silver decorated sheet is highly fragmented, distorted and weak due to embrittlement of the silver metal over time. One surface is gilded, however it is highly worn on the surface and brown corrosion products are present on the gilded surface along the band. Some of the die impressed patterned sections have been flattened in the burial environment.

The silver tray is also embrittled due to ageing and the burial environment. Sections are highly fragmented and there are green corrosion products across the surface. There are also accretions of a brown waxy substance on the surface. Some of the sections have a direct imprint of the kneeling warrior sheet die pattern. These have been further analysed and results are in the organics and metals scientific reports from the work carried out at Birmingham Museums Trust 2015 and at the British Museum previously in 2014 by R. J. Stacey and E. S. Blakelock.

**Treatment:** Carried out using a Meiji stereo microscope

**Purpose:** Study

**Aim:** Cleaning/ Reassembly

**Materials:** Soft natural/synthetic brushes, thorn in pin vice/holder, IMS on metals, 50:50 water/IMS on metals, cotton wool swabs, cocktail stick, Paraloid B72

*Treatment at British Museum Prior to treatment at Birmingham Museums Trust  
See 2014 report for further detail.*

The granular soil on the front and back was mechanically removed or reduced where possible using a fine thorn tip secured in a pin vice and a small pure bristle brush. 50:50 IMS/water was used to soften the soil to facilitate removal. Loose particles of soil were then removed with a small swab of IMS.

The corrosion products were left in situ; corrosion was not active and can be further cleaned or stabilised at a later date.

The paper K number was adhered to the back with HMG brand Paraloid B72 (ethyl methacrylate copolymer) from the tube, applied with a cocktail stick.

Sections of the band were backed with nylon gossamer tissue adhered with HMG Paraloid B72 to Corribord

Appropriate packing in Plastazote cut outs and crystals boxes.

**Joined across K numbers:**

**Frieze:**

**(15 frags)** K1556x2+K237x2+K1437x2+K1432x2+K235+K234+K285+K1574x4.

**(15 frags)** K1532x13+K1550+K1628.

**(7 frags)** K1529x6+K1515.

**(4 frags)** K1643+K1625+K1627+K1643.

**(2 frags)** K1593+K1643.

**(9 frags)** K1556x8+K1562.

**Tray:**

**(14 frags)** K235+K234+K1561x2+K1608+K1577+K1634+K794x2+K1627x3+K1650+K1778. Length=18.0cm.

**(3 frags)** K1541+K1615+K282. Length = 3.50cm.

**(2 frags)** K1615+K834.

**(2 frags)** K523+K51.

**(6 frags)** K250+K1615x2+K1577+K1676+K255. Length = 4.50cm.

**Joins within K numbers:** K1574x5, K1, K1550.

**Other possible fragments:** K51, K96, K228, K235, K237, K243, K734, K794, K1395, K1418, K1515, K1529, K1574, K1577, K1596, K1615, K1667.

### **Chris fern recognised further joins within the fragments in 2015**

#### **Treatment by Rachel Altpeter in 9<sup>th</sup> May 2015**

##### *Pre-conservation condition:*

Several small fragments of the organic deposits and corrosion products were loose in the bottom of the box. Additional fragments that had been associated with the group were found to have direct joins. One of the previous joins along the edges of K1650 had come loose.

##### *Treatment:*

Additional fragments were added so that the large section of the strip now consists of two long sections comprising K96+K1778+K1627(3x)+K1650+K1634+K794(2x)+1561 and K234+K2000(2x)+K235+K1577+K1608+K1561. Previously joined fragments that had become loose were re-joined.

The fragments were joined using Paraloid B72 (ethyl-methacrylate copolymer) 20% w/v in acetone between the joins and a narrow backing strip of non-woven polyester tissue adhered with Paraloid B72 10% w/v in acetone along particularly fragile joins.

Paper K-number labels were added to the two fragments of K2000.

A support was fashioned from Plastazote that follows the curve of the strip to minimize movement in the box and prevent further loss of organic deposits/corrosion through handling or transport. Previously detached material was collected and kept in a sample tube alongside the object. The sections of the die impressed sheet were pinned into place using stainless steel entomology pins.

#### **February 2016 – Kayleigh Fuller**

The mounting box was altered further to adequately support the band and tray in the box. Small inserts for the individual fragments were cut into the plastazote foam. This helped to hold the fragments securely in place inside the box and prevent movement.

##### Order of sequence and joins

###### *Sheet Tray* (Left to right)

K1541, K2135, K2137= 4.51g

K970 =0.46g

K51, K243, K250, K255, K523, K794, K1577, K1676, K1692, K2031, K2137 = 14.56g

K834, K2137 K1734(not joined) =6.28g

K96, K794, K1561, K1627, K1634, K1650, K1778 = 7.13g (10 frags)

K2000, K234-K235, K1561, K1577, K1608, K2098 = 15.65g (9 frags)

*Sheet Band (Left to right)*

K48 =0.17g

K1550, K1628, K2131 (on fragment not joined) =0.60g

K1081 K1801, K2131 = 0.37g

K1551, K1556, K1562, K1801, K2131 = 1.06g (17 frags)

K794 = 0.19g

K1627, K1643, K2134 = 0.07g

K1574 = 0.12g

K2133, 1643 =0.18g + K1515, K1529= 0.76g (7 frags)

K235, K237, K285, K1432, K1437, K1574, K2132 = 3.11g (15 frags)

*Fragments not used but associated*

K1801 (9 frags) =0.06g

K2131 (2 frags) =0.03g

K228 = 0.03g

K48 (2 frags) = weight included in frieze above

K1643 = 0.01g

**Final frieze and Tray**

Both items combined consist of 113 fragments from K numbers

K48, K51, K96, K228, K234–K235, K237, K243, K250, K255, K523, K794, K834, K970, K1031, K1432, K1437, K1515, K1529, K1541, K1551, K1556, K1561–K1562, K1574, K1577, K1608, K1627, K1634, K1643, K1650, K1676, K1692, K1734, K1778, K1801, K2000, K2031, K2098, K2131, K2132, K2133, K2134, K2135, K2137

The sheet band consists of 75 fragments

K48, K228, K237, K794, K1031, K1432, K1437, K1515, K1529, K1551, K1556, K1562, K1574, K1627, K1643, K1801, K2131, K2132, K2133, K2134

The cast silver band is in 37 fragments was made in two curved pieces and formed a tray with rounded edges to the decorated sheet band.

[K51, K96, K234–K235, K243, K250, K255, K523, K794, K834, K970, K1541, K1561, K1577, K1608, K1627, K1634, K1650, K1676, K1692, K1734, K1778, K2000, K2031, K2098, K2135, K2137]

**Post-Conservation Condition/Findings:**

The object is still fragile due to the fragmentary nature and it is probable that more fragments will be found to the joint to the current reassembly. The join between K234 and K235/K2000 keyed in well on one side of the rivet hole and is not in line with the intentional bending mark on the edge, on the other side of the rivet hole the two fragments have abraded edges that could have been present pre-deposition and the break aligns with the bent edge.

**Key features:**

- **Die impressed sheet depicting kneeling warriors**
- **Silver tray**

- **Beeswax residue with imprint of pattern of sheet pattern**

**Samples:**

None – insufficient soil.

**Analysis:**

Organic material in tray and green corrosion products- please see scientific reports for information on these.

**References:**

E.S. Blakelock, XRF analysis of silver foils from the Staffordshire Hoard. British Museum Science Report PR0744-14, British Museum Research Report, (2014) unpublished

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Stacey, R.J. 2014. FTIR, Raman and GC-MS analysis of possible organic pastes within silver trays and associated foils (K234 & K235) from the Staffordshire Hoard. Science Report Envelope No. PR07444-18. Department of Conservation and Scientific Research, British Museum, London

Shearman, F., 2014 'Silver gilt sheet/Frieze 7 Tray and Running/Crouching Warrior Condition Report' British Museum reports

Shearman, F., Camurcuoglu, D., Hockey, M., and McArthur, G. 2014 *Department Of Conservation And Scientific Research: Staffordshire Hoard Die-Impressed Sheetting Conservation Report*. Unpublished report for the British Museum