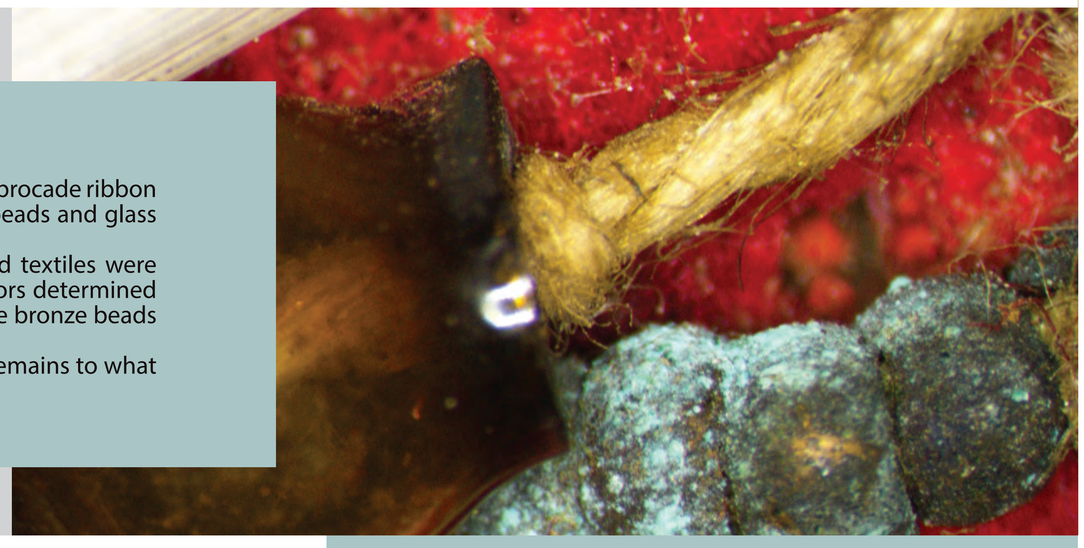
ETHNOGRAPHIC CROWNS: VARIETY OF MATERIALS AND THE IMPORTANCE OF STORAGE CONDITIONS

INDRA SAULESLEJA, Mg. art.
Textile Conservator
indra.saulesleja@gmail.com
National History Museum of Latvia, Pulka st.8, Rīga, LV1007

INDRA TUNA, DI, Mg.sc. chem.
Conservation Scientist
tuna.indra@gmail.com
National History Museum of Latvia, Pulka st.8, Rīga, LV1007



ABSTRACT

The virgin headdresses of Latvian national costumes of the late 19th century are conical with a widened upper part. A silvery brocade ribbon is attached to the lower part of a cardboard which is covered with red wool felt and embroidered with bronze beads, glass beads and glass "straws". The upper part is covered by massive glass beads. The density of the material makes the objects heavy.

These headdresses were handed from one generation to the next. Due to the extensive wear, sometimes the damaged textiles were replaced with new ones. Only the most valuable part, the rich embroidery, has been carefully preserved. Recently, conservators determined that the bronze beads in the embroidery were corroding. The high level of humidity in storage had caused the corrosion of the bronze beads and the destruction of the glass "straws".

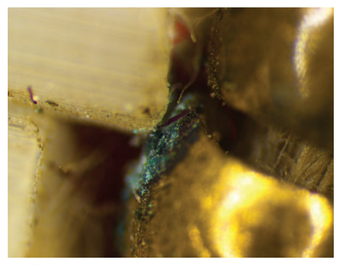
Conservation is complicated due to the variety of materials and limited access to the surface of the crowns. The question remains to what extent should the crowns be dismantled to mitigate damage.

RESEARCH

Throughout the conservation process two crowns from the middle of the 19th century, were researched and restored. They have been preserved but have been repeatedly repaired and are badly worn-out. During research, different methods were used including: x-ray fluorescence (XRF), emission spectral analysis (ESA), scanning electron microscope (SEM) – energy dispersing spectroscopy (EDS), microchemistry. The research showed each material's reaction to the varying humidity in the storage room.

MATERIAL	ALLOWABLE HUMIDITY LEVEL
Glass beads	40 – 50%
Glass "straws"	20 – 25%
Textile	40 – 50%
Paper	40 – 50%
Bronze	10 – 45%

The development process of corrosion products between glass straws and bronze beads (mag.35x). Photo: Indra Saulesleja



The development process of corrosion products between glass straws and bronze beads (mag. 60x). Photo: Indra Saulesleja

The inside of the crown after restoration. Photo: Ilze Stikane

The development process of corrosion products (mag.10x). Photo: Indra Saulesleja

The crown before restoration. Photo: Roberts Kanins

The crown before restoration. Photo: Roberts Kanins

The crown before restoration. Photo: Roberts Kanins

A fragment of embroidery in process the restoration. Photo: Roberts Kanins

The crown after restoration. Photo: Roberts Kanins

A fragment of embroidery after the restoration. Photo: Roberts Kaninss

The crown before restoration. Photo: Laila Dune

The crown after restoration. Photo: Roberts Kanins

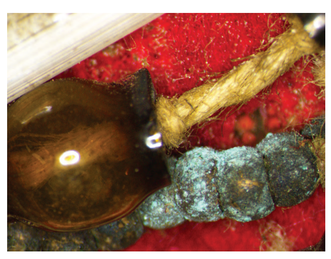
The inside of the crown after restoration. Photo: Ilze Stikane

Metal pin in the brocade ribbon of the crown (mag.15x). Photo: Indra Saulesleja

Metal pins used to fixate the crown's materials (mag.10x). Photo: Indra Saulesleja

A fragment of embroidery after the restoration. Photo: Ilze Stikane

The crown after restoration. Photo: Roberts Kanins

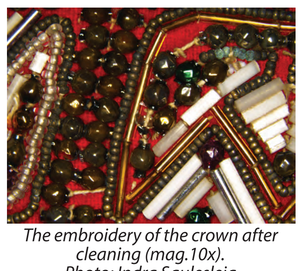


The development process of corrosion products between glass straws and bronze beads (35x magnification). Photo: Indra Saulesleja

STORAGE CONDITIONS

Only by keeping the crowns in appropriate climate conditions can conservators hope to limit further degradation process of the materials. This is challenging, since the crowns are made of many different materials that each have a different capacity for absorbing humidity. The density of the embroidery makes conservators especially cautious in choosing the most appropriate climate conditions.

The embroidery of the crown before cleaning (mag. 10x). Photo: Indra Saulesleja



The embroidery of the crown after cleaning (mag.10x). Photo: Indra Saulesleja

VARIETY OF MATERIALS

Glass "straws" of the rich embroidery are made from sodium glass (Na2O, SiO2, PbO) and are especially sensitive to humidity changes. On one of the crowns, corrosion has developed in the contact points between the glass "straws" and bronze beads due to the changes in the humidity. After continued examination through the microscope, conservators and researchers concluded that the corrosion process doesn't develop only on the contact points between the bronze beads and glass "straws". It's visible throughout the bronze bead embroidery, and in certain areas even the early stages of corrosion are apparent. The porosity of the beads' metal surface and the extensive dirt and dust layer attract extra humidity that affects other parts of the embroidery, decorative materials, and all types of textile fibers. It is a coefficient factor to the corrosion process.

Despite the limitations, it is necessary to clean as many embroidery materials as possible. A layer of corrosion products is also visible on crown's brocaded ribbon. In places where the ribbons have been pinned to the crown's surface with metal pins, rust stains are visible. The metal pins have lost their metal core and have created corrosion products. Microscopic research showed that it is impossible to clean the bronze bead embroideries mechanically due to the bead surface's relief and limited access to the materials.

METAL PINS AND CORROSION

There is little information to confirm when different types of repairs have occurred. However, the initial examination indicates that the crowns were originally stitched, not pinned. Since some of the pins are also used to secure beads and sequins that have fallen off, it seems likely that metal pins were added later for temporary repairs to the crowns. Visible, regular, needle stitch holes on both sides of the brocade ribbon indicate that the crowns were also repaired while the owners were wearing them. In addition, there are other preserved crowns that were repaired with stitches, not pins.

Nowadays the concept of preservation of ethnographic items embraces the idea of preserving items as they arrive in the museum, preserving all the "improvements" gained throughout the wearing period. But in this case a discussion arose between specialists in ethnography and conservation. Taking into consideration the condition of every material used in both items, specialists were left with two choices – either they replace corroding metal pins with new pins, or stitch repairs – it was decided that metal pins should be removed and stitches were used to support the crowns.

DISASSEMBLING OF THE ITEMS

Disassembly of materials is supported only in the case of utter necessity since it means the removal of the original stitching that attaches the beads to the crowns. Both headdresses were disassembled in this case, due to condition issues. On one of the crowns only 5 cm of the string of beads from the original 23 cm of stitching remained due to the damages inflicted by insects to the wool fiber. With time, the damaged wool could no longer hold the heavy weight of the beads. The inside textile of the crown was under too much pressure; it was smaller than it originally should have been. As a result, the textile at the bottom edge of the crown was broken.

The beads of the other crown had been sewn onto the surface recently using polyester thread. The stitching itself was sloppy and incorrect because the sewer did not notice that the beads had to be sewn twice – to the textile and to the cardboard – hence counterbalancing their weight. Since the string of beads was sewn only to the textile, it could have caused new damages to the inside textile of the crown. Dismantling this crown made it possible to clean each material and sew it together properly. The cardboard cone of the crown also needed support because the headdress had been folded in four places; cardboard in the folds was damaged and deformed.

RESEARCH. DILEMMAS. SOLUTIONS.
THE 10TH BALTIC STATES TRIENNIAL CONSERVATORS' MEETING
LATVIJAS RESTAURATORU BIEDRĪBA
VALSTS KULTŪRKAPITĀLA FONDS