

RESTORATION OF 12TH-CENTURY TORTOISE BROOCHES AND CHAIN ORNAMENT FROM SALASPILS LAUKSKOLA BURIAL GROUND

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INTRODUCTION

The Liv tortoise brooches with chain ornaments can be regarded as an unusual and decorative set of jewellery, which reflects the spiritual culture of its time. It should be noted that only the brooches had a functional role, that of fastening the dress, while the chain ornament only had decorative and sacred functions. The Liv woman's jewellery included a heavy chain breast ornament with so-called tortoise brooches, used to fasten the long skirt at the shoulders, and so always occurring in pairs, one on each shoulder. These were connected with bronze chains attached to the lower edges of the brooches. The earliest examples of these brooches came from Scandinavia.

WHERE WAS IT FOUND?

The tortoise brooches with chain-holders and double-ring chains were discovered in 1972 in Grave No. 384 at Salaspils Laukskola burial ground in the course of archaeological excavation headed by Anna Zariņa. Up until 2004, the item was stored in the collection of the Institute of Latvian History of the Latvian Academy of Sciences, but since 2004 it has been in the National History Museum of Latvia collection. Since 2017 it has been in the permanent exhibition of the Daugava Museum.

CONDITION BEFORE RESTORATION

In 2016, when the item was brought for restoration, the metallic cores of the bronze parts were stable. The bronze parts had been covered in lacquer, but there were heterogeneous bronze corrosion products remaining beneath it. (fig. 1, 2.) Fragments of a thin layer of some shiny coating could be discerned among the bronze corrosion products on both of the openwork cupolas of the two-part brooches and on the spherical surface beneath them. (fig. 3, 4, 5, 6.) A seriously corroded small fragment of an iron pin without a metal core was preserved between the loose iron corrosion products on the underside of the tortoise brooch with a non-removable cupola. (fig. 7.)



CHAIN ORNAMENT:
SALASPILS LAUKSKOLA BURIAL,
GRAVE NO 384. 12TH CENTURY,
BRONZE, GOLD, IRON;
BROOCH 10.7 X 6.5 CM,
CHAIN LENGTH 68 CM, INV. NO. VI 128: 4618

RESEARCH

Identification of the remaining shiny metal was undertaken (chemist Indra Tuņa), revealing fragments of gilding. Photographic recording was undertaken through a microscope during the examination. (fig. 8, 9, 10.)

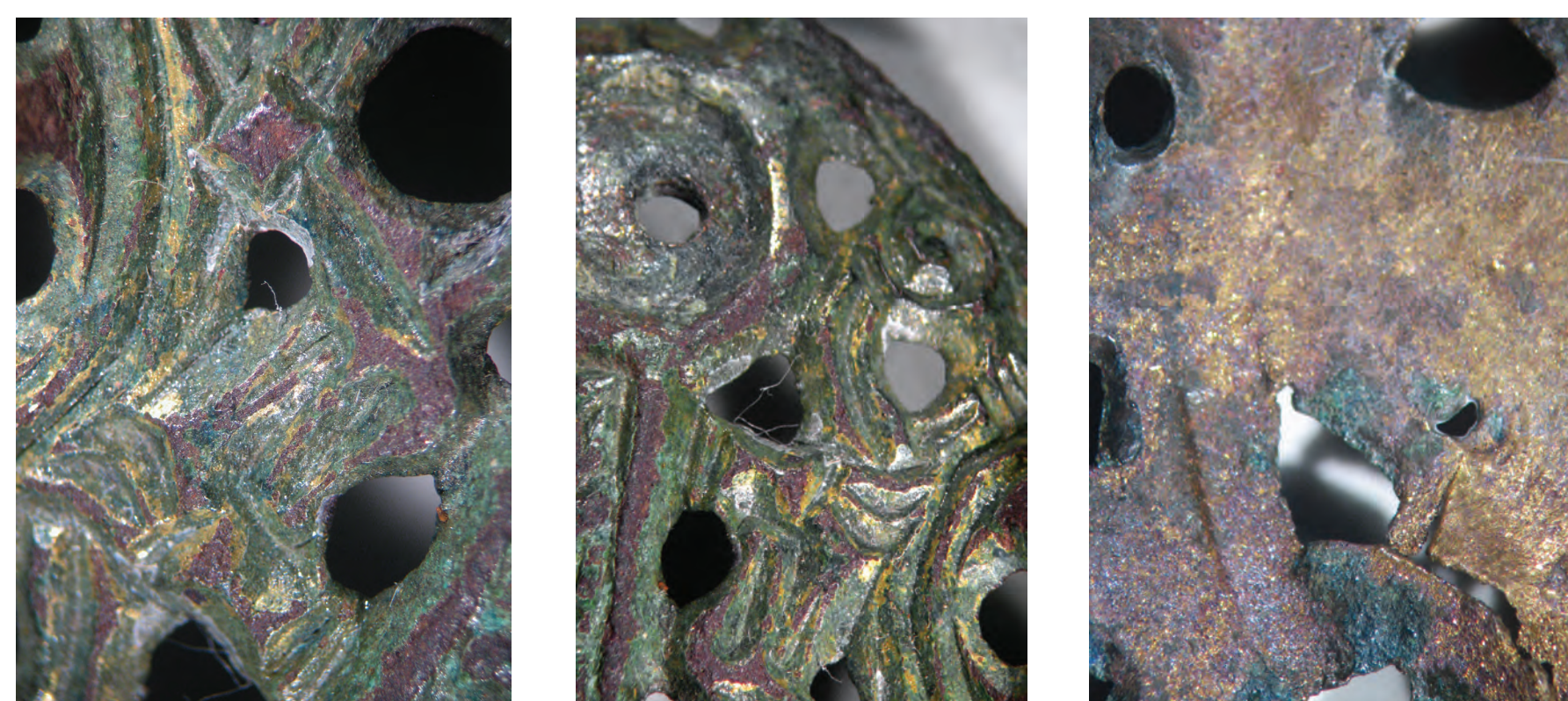


Fig. 8, 9, 10. Openwork cupola fragment before restoration, viewed through microscope

RESTORATION

The previous coating was gradually dissolved and cleaned during the restoration process. The chain-holders and chains were mechanically cleaned, desalted, passivated and covered with a protective layer. (fig. 11, 12.) The process of cleaning the tortoise brooches was problematic. The fragments of gilding were found to be poorly preserved: some parts were thin and some parts adhered poorly to the base, so mechanical cleaning had to be performed using an ultrasonic scaler under a magnifying glass. (fig. 13, 14, 15, 16.) Likewise problematic was cleaning the spherical surface of the tortoise brooch beneath the non-removable openwork cupola and cleaning of the iron pin fragment discovered in the lower part. The brooches were desalted and passivated. A little fragment of the edge which had split off from the spherical surface during processing and a fragment of the iron pin from the underside of the brooch were glued on. The pin fragment was passivated, treating it with a tannin solution. (fig. 17.) Both parts of the tortoise brooches were coated in a protective layer.



Fig. 1. Two-part tortoise brooches with chain-holders and double-ring chains before restoration, viewed from the front

Fig. 11. Two-part tortoise brooches with chain-holders and double-ring chains after restoration, viewed from the front



Fig. 3. Two-part tortoise brooches with removable and non-removable openwork cupola before restoration, viewed from the front



Fig. 13. Two-part tortoise brooches with removable and non-removable openwork cupola after restoration, viewed from the front



Fig. 5. Two-part tortoise brooch with non-removable openwork cupola before restoration, viewed from the front

Fig. 15. Two-part tortoise brooch with non-removable openwork cupola after restoration, viewed from the front



Fig. 7. Tortoise brooch with pin fragment before restoration, viewed from the back



Fig. 17. Tortoise brooch with pin fragment after restoration, viewed from the back



Fig. 2. Two-part tortoise brooches with chain-holders and double-ring chains before restoration, viewed from the back

Fig. 12. Two-part tortoise brooches with chain-holders and double-ring chains after restoration, viewed from the back



Fig. 4. Two-part tortoise brooches with removable and non-removable openwork cupola before restoration, viewed from the back



Fig. 14. Two-part tortoise brooches with removable and non-removable openwork cupola after restoration, viewed from the back



Fig. 6. Two-part tortoise brooch with non-removable openwork cupola before restoration, viewed from the front

Fig. 16. Two-part tortoise brooch with non-removable openwork cupola after restoration, viewed from the front