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Project TT-nhm:

A record of textile tools in the archives of the Natural History Museum Vienna

The context: the museums' archives

The Natural History Museum Vienna (NHM) was founded at the end of the 19th century to house the rich and extensive collections of the Habsburg imperial family. The building was erected on the newly constructed *Ringstraße* and the objects were presented in what was then a modern, scientific and ambitious way. The NHM was “dedicated to the realm of nature and its research”. It has become the Austrian centre for the study of natural, archaeological, anthropological and ethnographical collections as the official home of objects found within the territory of the Austro-Hungarian Empire (Jovanovic-Kruspel 2015, 13-22).

Up to the 19th century, the archaeological (prehistoric) and ethnographical objects were understood to belong to the realm of *nature*, whereas artefacts of the ancient civilisations, such as those of Egypt, Greece and the Roman Empire, were regarded as works of *art*.

The collections of the Department of Prehistory at NHM hold more than one million objects, the origins of which cover an enormous timespan and a wide geographical range. Most of these objects were found within the former territory of the Habsburg Empire. In its widest geographical extension, it covered a territory from what are now known as the Czech Republic, Slovakia and the southern part of Poland in Central Europe, continued to the southern Balkan regions of Bosnia/Herzegovina and Bulgaria, and stretched from Tyrol and northern Italy in the west to Ukraine and Rumania in the east.

A large number of the objects stored at the Department of Prehistory came from the imperial Habsburg collections. The NHM also carried out its own excavations. Over the years, objects which have

become very famous (Grömer & Kern 2018) have been found; for example, the female figurine *Venus von Willendorf* (29,500 years old), as well as the organic and non-organic artefacts found in Hallstatt, the UNESCO World Heritage Site in Upper Austria. Some objects, found in places which did not belong to the Habsburg Empire, were given to the NHM by scientists from other countries.

The artefacts: textile remains, textile tools

Among the artefacts stored in the archives, there is also a great number of textiles which were preserved in the Hallstatt salt mines (Grömer et al. 2013), mineralised (Bender Jørgensen 2005; Grömer 2014), corroded onto metal objects or as imprints in pottery. In addition, the archives hold more than 4,000 textile tools (fig. 2 and fig. 3) which were found in various circumstances: for example, in graves, settlements, and also in hoards in several different parts of Europe



Fig. 1: Logo (Image: Michaela Almstädter)



Fig. 2: Textile tools from Bad Fischau, 600 BCE, stored at NHM (Image: Alice Schumacher © NHMW)

and across prehistoric eras. The tools used to make woven textiles cover a timespan from the earliest farming societies in the Danube area (5600 BCE, the beginning of Linear Pottery) to the end of the Early Medieval Period (900 CE). Not only spindle whorls and loom weights are kept at the museum but also sewing needles, weaving swords and flax hackles. Some other artefacts may have been involved in textile production but, until now, how they were used has not been confirmed.

The TT-nhm project: key sources and initial work

A study of textile tools has become a scientific requirement in Austria in recent decades. While needles and spindle whorls were given great attention by archaeologists, loom weights are still usually found in publications under the heading “Other Finds”. This marginal position in conventional archaeological research in Austria also led to only sparse discussion about the function of the loom weights, in regard to their geographical distribution and temporal classification. The TT-nhm project aims to overcome this and make data from spindle whorls, loom weights and other textile tools available for future research.

The work to be carried out in the first phase of the project is basic registration: more than 4,000 textile tools stored at the NHM archives are to be described

(fig. 4 and fig. 5). This will include measuring the weight, diameter, height, etc., describing the surface, and the patterns resulting from use (if apparent). Production features and conservation status will also be recorded. Documentation is done with photographs and drawings (in special cases). In contrast to other ways of studying archaeological material, such as writing a scientific monograph on a



Fig. 3: Loom weight prepared for documentation from Katharein (now Kateřinky, Opava, Czech Republic) (Image: Ingrid Schierer)



Fig. 4: Iron Age spindle whorl from Leopoldau prepared for exhibition (the wood and wool are replicas) and the original documentation of the site (Image: Karina Grömer © NHMW)

distinct site or a special topic, this project work will collect the features of objects and make them available to scientists as a digital database.

The project: protocols and essential skills

The textile tools (mainly spindle whorls and loom weights) stored in the NHM were found in old excavations and recorded in handwritten archive material. This will also be studied to understand the find contexts of the textile tools. This valuable archive information will be deciphered and transcribed from labels, letters, diaries, inventories and excavation reports to understand where the tools come from, where exactly and in what position they were found in graves and settlements etc. plus other relevant details (fig. 4). This is part of the

citizen science activities (NHM_Fundakten_2019) to be carried out by historians and other people with the ability to decipher the German *Kurrent* script used until the beginning of the 20th century, which differs considerably from the modern German script used now.

The project structure: co-operation partners and volunteers

The TT-nhm project was initiated to allow scientific access to all the textile tools stored in the archives of the NHM. It began in 2018 and is planned to last to at least 2022 (Schierer 2019). It is based on the standardised recording proposed by the Centre for Textile Research in Copenhagen (Denmark) known as the Tools Database CTR (Andersson Strand 2012;



Fig. 5: Storage of artefacts not on display at NHM and work with textile tools (Image: Karina Grömer)

Andersson Strand & Nosch 2015; Mårtensson et al. 2009; Olofsson et al. 2015).

The project in Vienna is arranged as a student trainee programme and as a citizen science activity. The NHM has integrated citizen science activities into all of its departments. They offer opportunities for those who wish to use their non-academic skills in scientific activities (NHM_Citizen_Science_2019). It puts special emphasis on research and communication with the aim of sharing relevant scientific insights with the public (Ott & Schmid 2019, 38-40).

Co-operation with the University of Vienna is also part of the project. The curriculum for the master studies at the Institute for Prehistory includes training in analytical techniques for archaeological artefacts made from a variety of materials. In the context of their studies, the students can participate in the project.

Another collaboration is with the open-air museum MAMUZ in Asparn/Zaya in Lower Austria (www.mamuz.at). Answers to some of the questions arising from the project can only be found in experimental archaeology. Some of these experiments for observing

functional aspects of the tools will take place at this site. Annual lectures for students to learn textile techniques, such as spinning and weaving, are also part of the curriculum.

Student/researcher exchange networks, such as the EU Erasmus programme which offer the possibility to undertake studies abroad. These students and researchers will share valuable expertise on these subjects. One Erasmus exchange student from *Freie Universität Berlin* (Lau, in preparation) studied finds belonging to the East Hallstatt Culture. Not only did she record tools, she also analysed textiles attached to metal objects from grave finds in Slovenia, studied dress accessories with their placement in graves, and engravings found on bronze vessels (*situlae*) from the same sites. This comprehensive approach to the textile culture and textile production was possible through access to the wide variety of objects stored and recorded in the NHM archives and inventories.

Outlook: open access to datasets for further studies and experiments

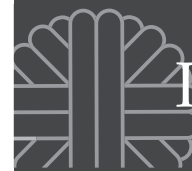
Ever since the spread of the earliest farming cultures, textile production has been an important aspect of the history of humankind. The influence textile production has had on economic, social and technical spheres in the Neolithic period still exists today.

Loom weights are, at first glance, more or less of the same shape (perforated discs and perforated truncated cones) but differ in detail – and there are still finer differences to be found. The form of the holes requires special attention because it will probably permit statements on the details of the weaving technique and/or the construction of the loom to be made.

It is planned that all data will be made available through open access at the end of the project. It will be accessible on the “Textile Research” page on the website of the Department of Prehistory (NHM _ Textilgeraete_2019). One of the outcomes will be a mapping exercise using the characteristics of textile tools in various parts of Europe. This “Big Data” approach to research leads to helpful overviews of chronological and regional trends in textile tools.

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