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The Textile Archive of Hans-Jürgen Hundt in the Römisch-Germanisches Zentralmuseum Mainz

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Abstract

From 1954–1990, archaeologist and director of the Römisch-Germanisches Zentralmuseum Mainz (RGZM) Hans-Jürgen Hundt was one of the few experts in textile archaeology; textile finds were sent to him from all over Germany and Europe, and he conserved and recorded a total of 4800 textiles from 368 sites. Hundt returned the finds to their respective owners and collected his analyses in his “textile archive”, together with photographs of each fragment, along with any drawings, and further chemical analyses. The dating of the finds ranges from the Neolithic to the Middle Ages, with a high proportion of Early Middle Age and Iron Age textiles. Most of the finds were published by Hundt himself, but a great number has remained unpublished thus far. In cooperation with the RGZM, the University of Bonn, Department of Christian Archaeology, is digitizing Hundt’s archive and entering the information into a database. The database will also include information on the finds’ archaeological context and current storage location; it will be published in open access.

Keywords: Textile analysis, history of textile research, Iron Age textiles, Early Medieval textiles, database

28.1. Introduction

Archaeologist Hans-Jürgen Hundt was the director of the Prehistoric Department and of the Conservation Workshops at the Römisch-Germanisches Zentralmuseum (RGZM) – today LEIZA Museum für Archäologie – in Mainz between 1954 and 1974. From 1962 to 1990 he taught as professor for prehistoric archaeology with special consideration of technical aspects at the University of Mainz.

Hundt can rightly be called one of the pioneers of textile archaeology in Germany. In the early 1970s he encouraged archaeologists to carefully observe textile remains in excavations, and Hundt published guidelines for the retrieval and first aid of textile finds (Hundt 1971). Until his death in 1990, Hundt examined a total of about 4800 textile finds from 368 sites. Mainly German institutes, but also those from other European countries, sent their textile finds to the RGZM, as Hundt was one of the few experts in archaeological textile analysis at the time. In most cases the textiles arrived in the RGZM in the same condition they were in just after excavation. Hundt cleaned and stabilized

the fragments and analyzed the textile technical features. Afterwards, the textile finds were returned to their owners, accompanied by an analysis report, and Hundt filed the results of his analyses in his “textile archive”.

This textile archive is an immense pool of archaeological textile data, many of which remain unpublished among textile archaeology’s grey literature. In cooperation with the RGZM, this University of Bonn, Department of Christian Archaeology project has digitized Hundt’s archive and is entering the information into an open access database, in order to make it accessible for research and further evaluation.

28.2. The textile archive

This textile archive is part of the estate of Hans-Jürgen Hundt, today in the possession of the RGZM. The heart of this archive are 37 ring binders (RGZM archive-signature HJH 001-037) with Hundt’s textile analyses in typewritten or handwritten form. Hundt sorted the analyses geographically and by time period. The analyses are supplemented by photographs of each fragment, and often include technical drawings. The drawings were done by Hundt himself, and the high quality photographs were taken in the museum’s photo studio.

A separate stock of about 3000 textile photos, mostly duplicates of the pictures archived with the analyses, is kept in the RGZM’s image archive, where the photos are sorted by time period and geographical region. The negatives of the photographs are currently being digitized for the database.

Hundt recognised the benefit of experimental archaeology and reconstructions; his wife, Margarete Hundt, re-produced early medieval weaves. These are also stored and registered in the Hundt estate at the RGZM (inv. 39748, 39895, 39896). Margarete Hundt combined weft and warp threads of different colours to reveal possible pattern effects of twill variations, as, for example, in a lozenge twill combined with a Rippenköper (barred damask) weave reproduced after an original find from Niederstotzingen, in the south of Germany, Grave 3b (Figure 1). In his publications, Hundt included images of his wife’s replica (Hundt 1996: plate 23).

It should be emphasized here that the textile archive does not contain any original textiles or samples, as Hundt returned the finds to their owners after they were conserved and analyzed. Since 1958, Hundt produced 86 publications on the textile finds he investigated (*ATN* 1985: 14–15; Bender Jørgensen 1992: 187–188). Hundt contributed a paper about textile conservation methods to the first NESAT meeting in 1981 (Hundt 1982a). Even today, Hundt’s publications are indispensable



Figure 1. Reproduction of a weave in lozenge twill and Rippenköper by Margarete Hundt, RGZM inv. 39896, after a find in an early medieval grave in Niederstotzingen, Baden-Württemberg. (Photograph: P. Linscheid)

compilations of textile finds, especially for research on Iron Age and early medieval textiles (Peek 2016: 68). Despite this enormous publication output, many of the textiles analyzed by Hundt were never published. Besides digitizing Hundt's textile data, this project also traces and contacts the present owners of the textile finds, usually monuments offices and museums, and asks for the current storage location and state of preservation of the objects. At least in some cases, the documentation and photos in Hundt's archive are the only evidence for a textile find, which has since been lost. More than that, the photographs are important because they show the finds in a more pristine, better state of preservation.

The analyses in Hundt's textile archive cover a timespan from the Neolithic to the Middle Ages, i.e. they contain 6000 years of textile history. The textile finds that Hundt documented comprise single finds as well as large find complexes, consisting of several hundred pieces. The graph in Figure 2 shows the chronological distribution of the textile finds analyzed by Hundt, revealing a quantitative peak in the Early Middle Ages.

The textile analyses of Hundt include the following technical data: raw material, spin direction, thread diameter, weave, thread count, construction or patterning details. Hundt's thread and weave analysis are thorough and reliable. His raw material determinations were based on optical microscopy, since scanning electron microscopy (SEM) was not yet available for textile archaeology. For selected fibre identifications, Hundt commissioned chemical analysis from textile technician Viktor Thorn and archaeo-biologist Maria Hopf. Nevertheless, some of Hundt's silk identifications proved incorrect in light of recent scientific methods (see below). Hundt was generally fond of applying scientific methods, for example selected dye analyses in the laboratories of Helmuth Schweppe at the BASF chemical company.

Hundt collected and sorted his analyses in his textile archive with the aim to make the data available for research and evaluation.

“Man sollte [...] alle Textilbeobachtungen einer Sammelstelle zuleiten, wo sie [...] ausgewertet werden können und wo [...] die Vielzahl der Einzelbeobachtungen, zeitlich und räumlich geordnet, dem interessierten Fachmann zugänglich gehalten werden. Ich würde als Sammelstelle beispielsweise das RGZM in Mainz vorschlagen.” (Hundt 1971).

In this sense, the current project pursues and completes Hans-Jürgen Hundt's own plan.

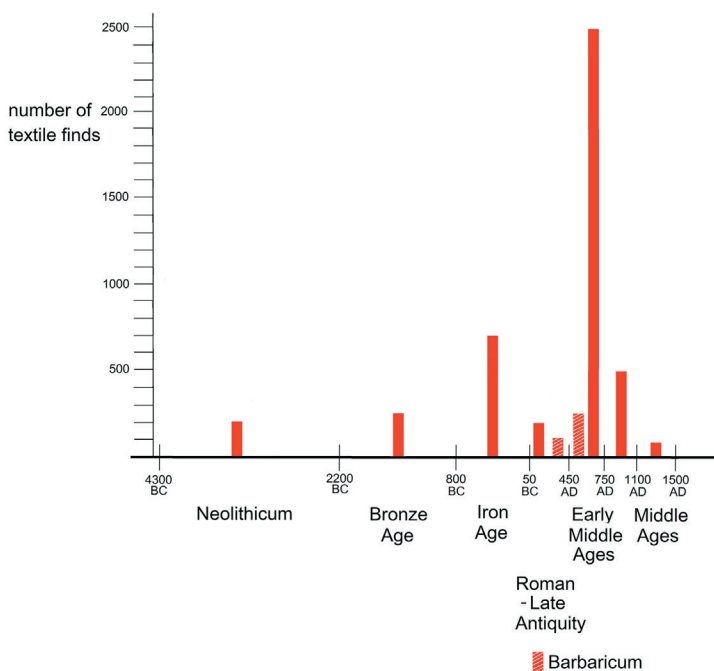


Figure 2. Chronological distribution of the textile finds analyzed by H.-J. Hundt. (Image: P. Linschied)

1 "One should [...] forward all textile observations to a collection point where they [...] can be evaluated and where [...] the multitude of individual observations, ordered chronologically and spatially, are kept accessible to the interested expert. I would suggest, for example, the RGZM in Mainz as a collection point."

28.3. Neolithic textile finds in Hundt's textile archive

In the following I will give an overview of the textile finds in Hundt's archive in chronological order. As this project is still ongoing, some observations are preliminary.

From the Neolithic period (4300–2200 BC), the Hundt textile archive documents 215 textile finds (RGZM archive-signature HJH 023), consisting of twined fabrics, tabbies, spools, cords, ropes, and nets. Most of them come from the pile dwellings of lakeside settlements in the Alpine region, others from the area around lake Neuchâtel in Switzerland. Hundt published woven and twined fabrics, yarn balls, and nets from the settlement of Niederwil in Switzerland (Hundt 1991a). The textile archive furthermore documents Neolithic textiles from lake sites in the French Jura (Hundt 1986a). From the pile dwellings near Lake Constance, Hundt recorded textiles in twining weave, tabby weave, and nets, then held in the Badisches Landesmuseum Karlsruhe's collection.

Neolithic finds from eastern Europe are represented by several rope fragments from a Neolithic well at Mohelnice, Czech Republic, and by woven textiles from graves in Bratei, Romania. Evidence for Neolithic textiles or mats in central and northern Germany is provided by pottery imprints found at Neolithic settlements in the federal states of Lower Saxony and Hessen.

Tracing how many of the Neolithic finds in Hundt's archive have been published or else remained unpublished remains a work in progress; one of the presumably unpublished finds are two 4000-year-old yarn spools from Yverdon in Switzerland, excavated by the University of Freiburg, Institut für Vor- und Frühgeschichte and kept in their study collection (Figure 3).

28.4. Bronze Age textile finds

From the Bronze Age (2200–800 BC) the Hundt textile archive documents about 240 finds (RGZM HJH 024). Hundt analyzed textile remains from various burial mounds in Schleswig-Holstein and Lower Saxony in the north of Germany. Textile finds from a tree trunk coffin at Hüsby in Schleswig-Flensburg, conserved and analyzed by Hundt, probably remained unpublished. From Ripdorf near



Figure 3. Neolithic yarn spool from Yverdon in Switzerland, University of Freiburg, Institut für Vor- und Frühgeschichte inv. 72/237. (Photograph: Bildarchiv Römisch-Germanisches Zentralmuseum Mainz T 78/17, R. Müller; with permission of the Institut für Vor- und Frühgeschichte, University of Freiburg)

Uelzen, Hundt documented textile remains adhering to metal parts of a headdress (Figure 4) and to a tutulus, which also remain unpublished (Geschwinde 2000: 155–159, 198–201) The headdress is now housed in the Landesmuseum Hannover. More single finds from graves in Lower Saxony can be added here.

From central Germany, Hundt investigated and published textile finds from Bronze Age burials in Gevelinghausen, North Rhine-Westphalia (Hundt 1974a). Bronze Age sites in Bavaria are also represented in the textile archive. While some funeral fabric remains are published (Hundt 1977), other textile finds from a tomb along with textile imprints in clay from a settlement remained unpublished.

From Austria, Hundt investigated textile fragments and clay textile imprints which were recently re-investigated by Karina Grömer (2012); one imprint remains unpublished. Several fragments of a tabby from a grave in Sion, Petit chasseur, in Switzerland, also remained unpublished. A depot find in Sublaines, France yielded a textile find, which Hundt cleaned, flattened, analyzed, and published (Hundt 1988).

From the wetland settlements at Lago di Ledro, province Trento in Italy, Hundt conserved and analyzed textiles and net fragments. Hundt's data remained unpublished, but the material was re-investigated recently (Bazzanella and Mayr 2009).

From Early Bronze Age graves at El Argar on the Eastern Iberian Peninsula, Hundt investigated and published 73 textile fragments, then in the collection of the *Musées Royaux d'Art et d'Histoire* in Brussels (Hundt 1991b). Textile remains from Bronze Age tombs in Vače, Slovenia, studied by Hundt, remained unpublished—according to the present state of knowledge.

In the 1970s, Hundt analyzed textile fragments from Keramaikos, Athens (RGZM HJH 012). He published five of these textile finds as early silks, based on the expertise of textile technician Viktor Thorn (Hundt 1969a). A recent re-examination of these fragments by Christina Margariti et al. (2011) proved the silk identification incorrect (Bender Jørgensen 2013: 584–585). Hundt's analysis of Dynastic textiles from excavations in Elefantine, Egypt (RGZM HJH 033), remained unpublished thus far.



Figure 4. Parts of a Bronze Age headdress from Ripdorf, Lower Saxony, with preserved textile remains. (Photograph: Bildarchiv Römisch-Germanisches Zentralmuseum Mainz T 76/502, R. Müller with permission of M. Geschwinde, Niedersächsisches Landesamt für Denkmalpflege)

28.5. Iron Age textile finds

The Iron Age finds (800–50 BC) recorded by Hundt are numerous; they comprise about 700 textile fragments. The prehistoric textile finds from the Austrian salt mines and cemeteries of Hallstatt in Oberösterreich and Dürrnberg in Salzburg were subjects of the earliest studies of H.-J. Hundt in the 1960s and early 1970s (RGZM HJH 021, HJH 026, HJH 028-029, Hundt 1959; 1960; 1961; 1969b; 1974b; 1987a). The ca. 200 finds studied by Hundt are a small part of the large corpus of Hallstatt and Dürrnberg textile finds, together comprising more than 1000 fragments. A part of the Hallstatt textiles dates back to the Bronze Age. Comprehensive and in-depth investigations have been carried out on this material recently, especially by Karina Grömer (Bichler et al. 2005; Grömer et al. 2013).

Most of the Iron Age textiles studied by Hundt come from burial mounds in southern Germany. The best known are the textile finds from the Celtic graves of Hohmichele and Eberdingen-Hochdorf (RGZM HJH 026) both in Baden-Württemberg, presented by Hundt in short publications (Hundt 1962; 1985). In the 1990s, the Hochdorf finds were re-investigated and fully published by Johanna Banck-Burgess (Banck-Burgess 1999). Hundt suspected the use of silk in the patterning threads of fabrics from both Hohmichele and Hochdorf. Johanna Banck-Burgess proved instead, that the fibres in question were not of silk, but of plant material.

From Rhineland-Palatinate, Hundt investigated and published a total of ca. 100 Iron Age textiles, found in graves (RGZM HJH 027, Hundt 1971; 1993a; 2011). The rich grave of a Celtic woman in Reinheim in Saarland, southwest Germany, yielded 28 textile finds, which were treated and analyzed by Hundt (RGZM HJH 012). These finds remained unpublished so far, but they are currently under study by Nicole Reifarth at the Technische Hochschule Köln.

The Iron Age textiles recorded by Hundt also include a complex of 84 textiles from a rich tomb in Altrier, Luxembourg (RGZM HJH 012, HJH 020). For selected pieces, Hundt ordered chemical fibre identification and dye analysis. The textiles remained unpublished and are currently being re-investigated by Antoinette Rast-Eicher (Rast-Eicher and Vanden Berghe 2015; Bender Jørgensen 2013: 582). For current investigations on both the Reinheim and the Altrier textiles, the documents in the Hundt archive serve as important sources, since they document the finds in a better state of preservation 50 years ago.

Some Iron Age find complexes recorded by Hundt remain completely unknown, such as the textiles from Odernheim near Bad Kreuznach in Rhineland-Palatinate (Figure 5), today in the collection of

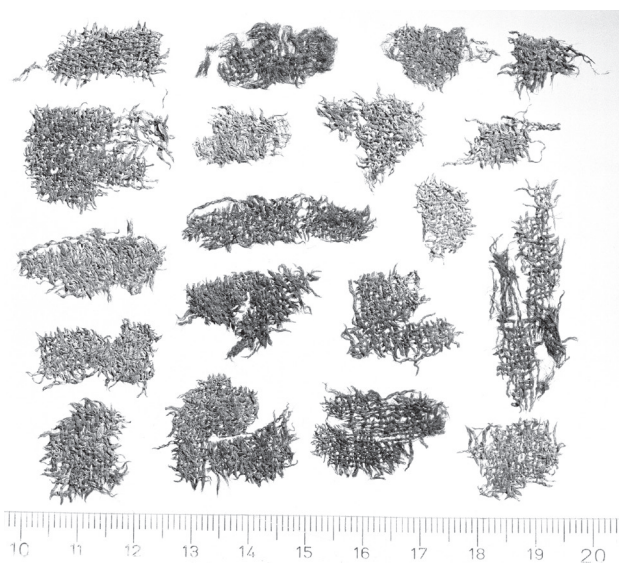


Figure 5. Iron Age textile fragments from Odernheim, Rhineland-Palatinate, Historisches Museum der Pfalz, Speyer. (Photograph: Bildarchiv Römisch-Germanisches Zentralmuseum Mainz T 77/1116, R. Müller, with permission of the Historisches Museum der Pfalz, Speyer)

the Historisches Museum der Pfalz in Speyer, and other finds from Baden-Württemberg and Bavaria (RGZM HJH 027).

Hundt also recorded Austrian Iron Age textile finds (RGZM HJH 029), which were partly re-investigated by Lise Bender-Jørgensen (Bender Jørgensen 2005). Hundt's records for 40 finds from the elite burial in Apremont, France (RGZM HJH 029) remained unpublished; meanwhile, the finds were examined and published by Hubert Masurel (1990).

Hundt published 108 textile finds from the Iron Age cemetery at Cigarralejo in Spain (Hundt 1968a); Hundt's investigations on Iron Age textiles from Slovenia and from Greece, however, remain unpublished (RGZM HJH 027).

28.6. Roman and Late Antique textile finds

Hundt investigated 196 textile finds from the Roman Imperial Era and Late Antiquity (50 BC–450 AD). Among these are numerous single finds from sites in Germany. A few of them are published (RGZM HJH 028; Hundt 1989a), while others remained unpublished, including the textile remains on the back of a Roman plate found at Bad Kreuznach in Rhineland-Palatinate (Figure 6, today in the Museum der Stadt Worms im Andreasstift, inv. F 88), and textiles found in Hessen, in North Rhine-Westphalia, as well as in Bavaria (RGZM HJH 027, HJH 028, HJH 034).

A group of about 100 textile finds from Roman Mainz, dating to the 1st century BC, was found in 1982 and sent to Hundt for cleaning, analysis, documentation, and photographing (RGZM HJH 028). The RGZM was allowed to keep some samples for their own collection. Hundt returned the bulk of the material to the office of monuments and it is held by the Landesmuseum Mainz. This group, together with 270 other Roman textile finds from Mainz, was published very recently by Sylvia Mitschke (2021) in her comprehensive and in-depth study. Hundt's textile archive may add more unpublished finds to this corpus of Roman textiles from Mainz (RGZM HJH 028).

In the 1960s, Hundt preserved, examined and documented a complex of 50 textile finds from three Roman graves at Wehringen in Bavaria for his textile archive (RGZM HJH 012). The only textile published so far from this complex is a presumed silk-fragment (Nuber 2006). The Wehringen textile



Figure 6. Roman plate from Bad Kreuznach, Rhineland-Palatinate, with textile remains on the back, Museum der Stadt Worms im Andreasstift inv. F 88. (Photograph: Bildarchiv Römisch-Germanisches Zentralmuseum Mainz T 67/729-730, R. Müller, with permission of the Museum der Stadt Worms)

finds are currently under study and re-evaluation by the author in collaboration with Bernd Steidl at the Archäologische Staatssammlung München.

From Roman Austria, the Hundt archive documents single textiles (RGZM HJH 028; Hundt 1976a), which were recently recorded and published by Karina Grömer (2014). Presumably unpublished thus far is a Late Antique textile find from Carnuntum, and Roman textiles from Kaiseraugst in Switzerland (RGZM HJH 028). Among the few non-European finds in Hundt's textile archive are the analyses and photos of textiles from a 2nd century AD grave in Deba'al, Lebanon, which again are unpublished thus far (RGZM HJH 028).

28.7. Textile finds from the Barbaricum

Hundt analyzed about 350 textiles from the north-eastern region of Germany, which was not occupied by the Romans, the so-called Germania Libera or Barbaricum (0–700 AD). A few textile remains from Germanic cremation graves in Lower Saxony were treated, analyzed and published by Hundt (RGZM HJH 019, Hundt 1972a; 1976b). Hundt's investigations of about 200 textile finds from the Old Saxon burial ground of Liebenau, Lower Saxony, dating to the 4th–7th century, were also published after his death (RGZM HJH 014, Hundt 1994). Recently, the material was re-investigated and supplemented by further finds by Susan Möller-Wiering (2005). From Lower Saxony, Hundt investigated and published finds from a chamber burial in Sievern (RGZM HJH 013, Hundt 1980a).

A large number of textile remains from Germanic graves in Schleswig-Holstein, Lower Saxony and Bavaria, investigated by Hundt, remained—again, according to the present state of knowledge—unpublished (RGZM HJH 013, HJH 019).

28.8. Early medieval textile finds

As mentioned above, the vast majority of the textiles recorded by Hundt (ca. 2500 finds) date from the Early Middle Ages (450–750 AD). This high number of finds is due to the large Merovingian and Alemannic row-grave cemeteries in the south and southwest Germany, which yielded not only many clothing accessories, but also a large number of metal grave goods which preserved a number of textile remains as they corroded. The map (Figure 7) shows the location of the larger cemeteries; the graph (Figure 8) presents the number of finds in relation to the different federal states.



Figure 7. Locations of larger early medieval cemeteries in Germany with textile finds recorded by Hundt. (Map: SIMPLYMAPS.de (CC BY-SA) with additions by P. Linschied)

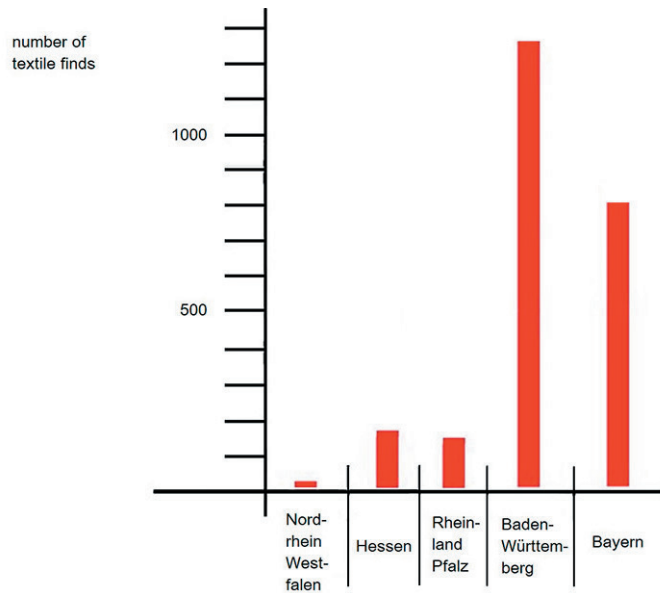


Figure 8. Number of early medieval textile finds recorded by Hundt in relation to the German federal states. (Image: Petra Linscheid)

More than half of the early medieval textiles (1285 finds) come from Baden-Württemberg. Hundt published several of these extensive textile find complexes (RGZM HJH 006, HJH 007, HJH 011, Hundt 1967; 1972b; 1978a; 1986b); however, some early medieval cemetery find complexes in Baden-Württemberg remain unpublished thus far (RGZM HJH 001, HJH 008, HJH 009, Roth and Theune 1995). Hundt also worked on 804 early medieval textile finds from Bavaria; most of these analyses were published in appendices to excavation reports (RGZM HJH 002, HJH 006, HJH 010, Hundt 1966; 1993b; 1996).

For the state monuments office of Hessen, Hundt worked on a total of 167 early medieval textiles, of which only 20 finds were published (RGZM HJH 003, Hundt 1989b). Other textiles from Hessen remained among the grey literature (RGZM HJH 003), for example the finds from Klein-Welzheim (Offenbach district), including diagnostic finds such as a hanging with Rippenköper and Rautenköper attached (Figure 9).



Figure 9. Fragment of hanging with attached textiles from the Early Medieval cemetery at Klein-Welzheim, Hessen. (Photographs: Bildarchiv Römisch-Germanisches Zentralmuseum Mainz T 88/713-715, R. Müller, with permission of G. Weber, Archäologischer Denkmalschutz Dietzenbach)

From Rhineland-Palatinate, Hundt documented 154 early medieval textile finds, which—as far as I know—remained unpublished, and consist of smaller find assemblages from numerous cemeteries (RGZM HJH 004).

From North Rhine-Westphalia, Hundt worked on a few early medieval finds; he published several textiles from the Romano-Frankish graves of Krefeld-Gellep (Hundt 1974c; 1979). Hundts archive contains a detailed documentation of the textile remains from the 6th century boy's grave beneath Cologne Cathedral (RGZM HJH 013), which is particularly known for the tapestry on the helmet's neckguard (Bender Jørgensen 1987; Hundt 1987b).

Hundt also investigated and published early medieval Austrian textile finds (RGZM HJH 030, Hundt 2002), although a number of smaller find assemblages likely remained unpublished. Single early medieval finds from France (RGZM HJH 030) likely remain in the grey literature, as well. From early medieval graves in Säben in Tirol, Italy, Hundt recorded and published 34 textile finds (RGZM HJH 030, Hundt 1980b). Ten textile remains from Visigothic graves in Spain also likely remained unpublished.

28.9. Medieval finds

Hundts textile archive also contains several ring binders with medieval textiles (AD 700–1200) from settlements in northern Germany, constituting a total of 500 finds. The most comprehensive assemblage investigated were the over 400 fragments of the Old Frisian settlement of Elisenhof in Schleswig-Holstein, dating to the 8th–10th centuries and published by Hundt in a monograph in 1981 (RGZM HJH 015-018, Hundt 1981); Hundt also published further Old Frisian textiles from Lower Saxony (Hundt 1982b).

Hundt investigated and published Viking Age textile finds from the settlement and a chamber grave of Hedeby/Haithabu in Schleswig-Holstein, dating to the 9th–11th centuries (Hundt 1968b; 1984). These finds were later included in the books of the Haithabu textiles by Inga Hägg (1991; 2015). Among the youngest textile finds analyzed by Hundt, dating to the 11th–12th century AD, are the fragments from Selçuk Kordlar Tepe in Aserbajdschan (RGZM HJH 034, Hundt 1978b).

28.10. Conclusion

This chapter provides a look in the textile archive of Hans-Jürgen Hundt, containing around 4800 textile analyses, ranging from the Neolithic to the Middle Ages. Most of the finds were published by Hans Jürgen Hundt himself. Hundt's publications remain indispensable compilations in textile research, despite some later revisions. Many of the textiles documented in Hundt's textile archive, around 1200 finds from various periods, have remained in the grey literature of textile research until now.

The project aims to digitalise the archive by entering Hundts analyses—the published as well as the unpublished ones—and the photographs into a database. The database will include further information on the archaeological context, the current storage location, and possible research on the finds outside of Hundt's work. By 2025, the database will be published in open access.

Archives of textile research pioneers like those of Margrete Hald, which has been evaluated at the Centre for Textile Research at Copenhagen (Mokdad et al. 2021), and the textile archive of Hans Jürgen Hundt provides us with a wealth of knowledge, unpublished material, and insight into the

history of our discipline—data which are important to save and to make accessible for current and future research.

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