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70 YEARS OF POLISH RESEARCH ON ARCHAEOLOGICAL TEXTILES

The article summarizes 70 years of Polish research on archaeological textiles. Their beginning was associated with the discoveries of textiles during the Millennium research of the 1950s and 60s. Textiles were then studied above all by A. Nahlik, but also A. Urbańska, A. Niesiołowska-Wędzka, and J. Stanclik. In the 1970s and 1980s, the author was the only researcher of archaeological textiles in Poland (ones from the Roman period, as well as from the Middle Ages and the Post-Medieval period). Since the 1990s, M. Grupa and A. Drażkowska have dealt with textiles and clothing, mainly from crypts. In the 21st century at the Institute of Archaeology and Ethnology, Polish Academy of Sciences centre in Łódź, a team for research on old textiles (J. Maik, A. Rybarczyk, J. Słomska, Ł. Antosik) was established that cooperates in the study of the structure of textiles with textile industry employees (M. Cybulska), while in the study of dyes with chemists (M. Biesaga). This enables us to fully show the human – the creator, producer, and user of textiles.

KEY WORDS: Poland, archaeological textiles, history of research, conservation, reconstruction

In 1948, during excavations in Gdańsk, an aged piece of textile was found, and its study and publication in 1952 gave rise to Polish research on the earliest textiles (Iwiński 1952). Although textiles had been found during excavations carried out in the present territory of Poland before, they involved work conducted by German archaeologists in areas that were then in Germany. For the record, I will mention only that this concerns textiles from Pomerania and Silesia, studied and published by W. von Stokar (1938), G. Sage (1934; 1936), and I. Fuhrmann (1940).

The aforementioned excavations in Gdańsk were carried out as part of the Millennium research, associated with the one-thousandth anniversary of the formation and baptism of Poland. Most archaeological works were carried out within historic

towns, and mainly early medieval settlement layers were studied. They were usually very wet and therefore various objects made of organic raw materials survived in them. Amongst them were textiles and the remains of tools used to make them – spindles, reels, and weaving looms. This gave an opportunity to learn about commonly cultivated crafts, the products of which are in such widespread and obvious use that they become forgotten, unnoticeable.

Next, the increasingly numerous finds of textiles indicated the need to properly prepare them for study, and above all to find a collaborator who would be able to make their expert description, this to be preceded by specialized analyses, and thereafter – together with archaeologists – draw historical conclusions. It was then that a two-person team consisting of the archaeologist Janina Kamińska, and

the textile technologist Adam Nahlik was formed and started to deal with textiles from Gdańsk. First of all, the team members defined the standards which should be met in research on textiles from excavations, but also – more broadly – on old textiles in the context of archaeological finds. These standards, which correspond to European standards (in practice, global ones), function in principle to this day.

A comprehensive monograph on early medieval Gdańsk textiles was created at that time (Kamińska and Nahlik 1958) and is still used by all textile researchers today, as it is mostly still valid, although some findings required correction (Kościński and Paner 2005; 2005a). As a result, it was necessary to move the dating of the beginnings of treadle looms' use in Poland (from the end of the 10th/beginning of the 11th century to the end of the 11th/beginning of the 12th century). However, the authors' conclusions on the beginnings of textile craft remain valid (Kamińska and Nahlik 1958, 198-206; see also Maik 2003, 63-71).

At the same time, i.e. in the late 1940s and 1950s, further textiles were discovered during excavations carried out in many other towns, including Wolin, Opole, Wrocław, Santok, and Międzyrzecz. The first part of textile finds from Wolin, originating from site 4, was studied and published by A. Nahlik (1959), while other finds related to early medieval textile production were elaborated by Andrzej Kaube (1967). Their research shows a very clear influence of Scandinavian textile production on craft in Wolin. Analogies to many Wolin fabrics are found in Scandinavia and it can be assumed that at least some of them were made there.

The next textiles from Wolin were studied by the author of this article about 20 years after they were found. Preliminary research results were presented at the 'North European Symposium for Archaeological Textiles' in Bergen in 1984, and the final summary of the research was published in 1990 (Maik 1988a; 1990).

Excavations were also carried out in Szczecin (close to Wolin) in the 1950s, revealing a number of textiles from the early Middle Ages. Several of them were deposited in layers of Wzgórze Zamkowe dated to the 9th and 11th centuries (Cnotliwy, Leciejewicz, Łosiński 1983, 279). A larger collection of early medieval textiles comes from Rynek Warzywny. These textiles are the subject of a study carried out by Agnieszka Belcikowska-Bramowicz.

Before World War II, the oldest medieval fabrics in Polish territory were discovered in Opole (Sage 1936), along with the remains of a treadle loom from the second half of the 12th and early 13th century, items found *in situ*. This is very important for learning about the old weaving workshop, because there are not many such spectacular finds in Europe. The discoveries of the relics of medieval looms in Winterthur (Rast-Eicher and Windler 2006) or in Riga (Zariņa 1992) may well also be recalled.

During the postwar research, further remains of weaving looms were discovered in Opole (Hołubowicz 1956, 206; Bukowska-Gedigowa and Gediga 1986, 332, Plate 11, 337-338, Plate 15, 340, Plate 17) and several hundred fragments of textiles. These fabrics were analyzed at least three times. The first researcher became the textile engineer Jan Stanlik, who performed similar analyses as A. Nahlik in relation to Gdańsk finds. The results of his analyses can be found in the archives of the Centre for Study Into Late Antiquity and Early Medieval Culture Institute of Archaeology and Ethnology, Polish Academy of Sciences in Wrocław (Stanlik –).

A. Nahlik examined the textiles from Opole again in 1958, and in most cases the results of these works coincided with those of J. Stanlik (1958). For the third time fabrics from Opole became the subject of my study in the 1980s, when I received textiles discovered in Opole in the 1960s. I ultimately prepared a monograph for all Opole textiles in which I addressed, amongst other matters, the problems of craft production in Opole and the origin of interesting fabrics, which seem to be the local imitation of carpets (1991).

A large series of fabrics, mainly woolen (Kaźmierczyk 1966, *passim*) was also found in Wrocław in the 1950s. These textiles underwent examination in the Łódź centre of the Institute of Archaeology and Ethnology, Polish Academy of Sciences. Textiles from the pagan temple associated with the pagan rebellion in 1038 (Maik 2007a) were published, while further are the subject of Łukasz Antosik's study preparing a work on early medieval Silesian textiles (Antosik and Siemianowska 2015).

An interesting, though small, group of textiles also comes from research in Santok. They are dated from the turn of the 7th/8th to the first half of the 9th century. They were studied and published

by Anna Niesiołowska-Wędzka (1965). Attention in this set of finds is drawn by the dominance of fabrics woven in a 2/2 herringbone weave, which was rarely used in Polish territory in the early Middle Ages (Cybulska and Maik 2014). The author associates this with developed trade contacts linking Santok with Frisia, as evidenced by numerous Frisian imports (Dymaczewska and Dymaczewski 1967). Fabrics from Santok have been reanalyzed in recent years, during which particular attention was paid to the problem of their origin, computer visualizations of some of them were also made (Cybulska and Maik, in press).

During excavations carried out in 1954-1961 in the stronghold in Międzyrzecz, an interesting collection of fabrics was discovered that survived only in the younger layers, in the mulch deposited in the square dated to the second half of the 13th and the first half of the 14th century.

Dozens of fragments of textile products, mainly woolen fabrics, together with not too numerous remains of textile production tools, gave rise to the preparation of an interesting monograph on the Międzyrzecz textile production in the Middle Ages (Urbańska, Myczkowski, Klichowska 1964), consisting of three autonomous parts by the archaeologist Alina Urbańska (1964), botanists Melania Klichowska (1964) and zoologist Kazimierz Myczkowski (1964). It observed that fabrics are products of professional craftsmanship using advanced production techniques, probably brought from western Europe (Urbańska 1964, 48-54).

In the 1950s and 1960s, mainly early medieval textiles were dealt with in Poland, which was obviously related to the scale of the Millennium excavations. However, at the beginning of the 1960s excavations of the first burial grounds of the Wielbark culture from the Roman period began – namely, in Węsiory, Kościelna Jania and in Odry in Pomerania. Fabrics found in Węsiory and Kościelna Jania were examined by A. Nahlik, but he published only on the textiles from Węsiory (1966). Fabrics from Odry became the subject of my first seminar work during my studies and together with other textiles they were part of my MA thesis on fabrics from the Roman period from Poland, published in 1977.

In the 1960s, the few then-oldest known prehistoric textiles were elaborated by Teresa Łaszczewska in the chapter 'Prehistory of Textiles', which is part of the popular-science, still valued 'Outline of the

history of textiles in Poland until the end of the 18th century' (1966).

How should we evaluate the study of medieval textiles conducted during the Millennium research?¹ First of all, it is important to emphasize the importance of undertaking work on an important, though seemingly ineffective branch of the economy, which is necessary for human life. Dealing with archaeological fabrics required specialized knowledge that could not be obtained during archaeological studies. Hence, it was a very good idea to employ A. Nahlik when studying Gdańsk fabrics and J. Stanlik in the case of Opole ones. A. Nahlik adapted research methods used in the textile industry to the possibilities offered by archaeological fabrics, for example by their state of preservation. For instance, he used older literature, German and Scandinavian, as there research on excavation fabrics had been carried out in a modern way before World War II (amongst others v. Stokar 1938; Schlabow 1937; Sage 1936; Geijer 1938).

The understanding of some issues was facilitated by close contacts with ethnologists with whom A. Nahlik and J. Kamińska closely cooperated, e.g. the issue of making yarn in S-twist on a manual spindle, consulted with ethnologists and folk spinners from Rzeczyca in Łódź Voivodeship (Kamińska and Nahlik 1958, 182). On the other hand, this cooperation created some dangers, e.g. terminology ones, resulting from adopting some terms from folk weaving for products that should rather be called by historical terms. For example, they called silk gallon silk *krajka* (1958, 110-111), and since A. Nahlik was one of my teachers, I also adopted many of his methods, scientific views, and terminology (1988, 92-93).

A. Nahlik's work on textiles from excavations from Gdańsk, Opole, and Wolin had further effects. He joined the discussion about the beginnings of the weaving loom, proving that the vertical loom was the original one in Central Europe (Kostrzewski 1954; Wróblewski 1954; 1958; Nahlik 1958; 1965, 59-88).

Another effect of A. Nahlik's involvement in the study of excavation fabrics was that he was entrusted with the study of medieval fabrics discov-

¹ I devoted separate works to the research of archaeological textiles in the Millennium research (Maik 2017; 2018a).

ered in Veliky Novgorod and at Rus' mound burial grounds (1964; 1965).

In the work on textiles from Veliky Novgorod, A. Nahlik drew very important conclusions about their origin. He proved that western European fabrics were made of different wool, clearly better than eastern European textiles. This was important because in Veliky Novgorod there was a Hanseatic trading post, through which large amounts of Flemish and English cloth flowed. Based on wool studies, A. Nahlik distinguished a large collection of fabrics imported from Western Europe (1964, 94-119).

A. Nahlik's work, still valid today, is poorly known and underappreciated in Polish archaeology, and completely unknown in the West, despite the extensive summary in French it contains.

In the 1970s A. Nahlik became the director of the Textile Museum in Łódź and devoted less time to the study of fabrics. His scientific career was ended by his premature death in 1980 at the age of 51 (Maik 2007, 91-95).

In this situation, in the 1970s and 1980s, I was in fact the only researcher of excavated textiles in Poland and continued the work started by A. Nahlik. First, I dealt with medieval fabrics: I examined textiles from Gdańsk, from sites 2, 4 and Osiek, which A. Nahlik had not previously dealt with, using the results in the work on textiles from Pomerania (1988), and from the castle in Rawa Mazowiecka in Mazovia (Gula and Maik 1980). I have already mentioned the research on fabrics from Opole and Wolin. An important event in my scientific life was participation in the I North European Symposium for Archaeological Textiles (NESAT) in Neumünster in 1981, at which I presented the state of research on medieval textiles in Poland (1982). The most important result, however, was the establishment of close, friendly cooperation with many Western European scientists, amongst whom I will mention only Klaus Tidow, Lise Bender Jørgensen, John Peter Wild, and Frances Pritchard. This cooperation allowed me to exchange professional literature and obtain research experience, and it enabled the embedding of old textile production in Poland in a European context. Meetings of Northern European excavation fabric researchers still take place every 3 years, and in 2002 the NESAT VIII was held in Łódź (Maik, ed. 2004).

At the same time, I studied textile materials discovered at subsequent burial grounds of the

Wielbark culture – in Gronowo (1979; 2013) and in Leśno (2009) and later in Nowy Łowicz (2015), Kamienica Szlachecka (in preparation for printing), and others. The summary of this stage of my work was the book 'Textile products in Pomerania from the Roman period and the Middle Ages', in which – on the example of Pomerania – I presented the changes that had taken place in the textile production between the Roman period and the Middle Ages (1988).

In the 1980s, an important event for Polish research on archaeological fabrics took place – namely, the creation of an artefacts conservation laboratory at the Institute of Archaeology of the Nicolaus Copernicus University in Toruń headed by Małgorzata Grupa. Anna Drażkowska later joined her. One of the categories of archaeological finds they dealt with were textiles found primarily in crypts of churches in Toruń, Lublin, Kwidzyn, and other sites. Both researchers not only conserve textiles and clothing found in crypts, but also reconstruct them. Indeed, research on attire and clothing has become their main scientific specialty (Grupa 1998; 2005a-b; 2009b; 2010; Drażkowska 2004a-c; 2006; 2007a; Drażkowska and Grupa 2014; Drażkowska, Niedźwiadek, Matuzevičiūtė, Grupa 2015). They also deal with other textile finds from excavations (Grupa 2004; 2005c; 2007; 2009a; 2018a-b; Drażkowska 2005; 2007b; 2008; 2010a; 2017), and M. Grupa recently has published an important book on the woolen fabrics of the poorer population of Gdańsk in the late Middle Ages and in the early post-Medieval period (2012). An important episode in their scientific life was the participation in research of mass graves of Polish officers murdered in the East, as well as the conservation and study of finds from graves, including fabrics and uniforms (Drażkowska 2010b). It should be added that lately the team of researchers in Toruń has grown, including Dawid Grupa (2015), Magdalena Przymorska-Sztuczka (2018) and Magdalena Majorek, who has recently been working at the Institute of Archaeology of the University of Łódź (2016).

A little later, at the Institute of Archaeology of the Adam Mickiewicz University in Poznań, Andrzej Sikorski took up the study of archaeological fabrics, mainly from the excavations of the Poznań archaeological centre. He studied, amongst others, important fabric assemblages from Kowalewko and Walkowice – the Wielbark culture burial grounds in Greater Poland (2001; 2006).

At the same time, at the museum/archaeological reserve in Biskupin, experimental archaeology started. Based here is a team led by Anna Grossman, dealing with old textiles. It experimentally examines dependence of the type of thread on spindle whorl used, but also reconstructs vertical looms and makes various types of fabric.

In the 1990s and in the first years of the 21st century, I continued to study medieval and late prehistory textiles, i.e. those originating from the Wielbark culture burial grounds.

Initially, I focused on late medieval textiles, including ones from Kraków, Kołobrzeg and Elbląg. The study of textiles from Kraków, discovered during excavations on the Main Market Square, has so far remained in the form of a manuscript prepared for publication. Fabrics from Kołobrzeg, examined as they were discovered, were published in six subsequent volumes of the publication 'Archeologia średniowiecznego Kołobrzegu', along with a separate article summarizing the state of research on textiles in Kołobrzeg (1996; 1997a; 1998a; 1999; 2000a; 2016a). The studied fabrics, almost exclusively woolen, were found in the medieval incorporated town (13th-15th centuries), but most of them come from the quarter inhabited by the Slavic population (*platea Slavorum*), which resulted in most of them being made in a 2/1 twill weave, and not in the plain weave, as was the case, for example, in Elbląg and Gdańsk. It seems that the Slavic population preferred traditional, older techniques of fabric production – unlike the population from other quarters (1996, 316-320).

The situation was different in the case of fabrics (also mainly woolen), which were found in Elbląg – one of the most important cities of the Teutonic Order, founded and inhabited by people of German origin. They were also examined for many years, as they were found during excavations, and these works resulted in several publications, including a book monograph on cloth making in medieval Elbląg (1997b-d; 1998b-c; 2004). It should be added here that subsequent finds of textiles from Elbląg, primarily post-Medieval ones, are still being studied (2013b).

An important element of my work on prehistoric and medieval textiles in time became cooperation with the Center for Textile Research and the Saxo Institute in Copenhagen. Its result was the co-authorship of the book *Textiles and Textile Production in Europe: From Prehistory to AD 400*

(2012) and participation in symposia 'The Medieval Broadcloth. Changing Trends in Fashion' (2009b) 'Textiles and Military' (Kurasieński, Maik, Świątosławski 2010) and 'Textiles in the Medieval Economy. Production, Trade and Consumption of Textiles, 8-16 centuries' (2015b), as well as in the symposium 'Medieval Urban Textiles in Northern Europe' organized by the University of Tartu in 2009 (2012b).

The most important research problems also included the issue of the origin of archaeological fabrics and the possibility of distinguishing imported material, but also the beginnings of professional craft and its confirmation in archaeological material (Maik 1998b-c; 2003; 2011c). The summary of this stage of research will be the cloth production in medieval Poland monograph currently being prepared for printing.

I also dealt with fabrics from the Roman period and the Migration period. I studied new finds from burial grounds in Pomerania (e.g. Grzybnica (2001a), Ulkowy (2005), Weklice (2011), Czarnówko (2015c; 2018b), Nowinka (2011)), Mazovia (including Jartytory (2012c, 47-48)), Belarus (Piotrowicze (2012c, 50-51)) and Lublin Land (Masłomęcz and Gródek nad Bugiem (2012; 52-54)).

These works confirmed the previous opinion of researchers on the subject of very high quality textiles from the Roman period, including woolen raw material. This quality was probably due to the generally high level of civilization and economy at the time, but also to close contacts with the Roman Empire (Biesaga *et al.* 2004; 2006; Maik 2001b; 2010). These works were summarized in the monograph on the textile production of the Wielbark culture (2012).

At the beginning of the 21st century, a team researching old textiles was established in the Łódź centre of the Institute of Archaeology and Ethnology, Polish Academy of Sciences. Its composition underwent changes – today, apart from the author, it includes: Anna Rybarczyk, Joanna Słomska and Łukasz Antosik, and for several years Agata Ulanowska from the Institute of Archaeology of the University of Warsaw, who carrying on a postdoctoral internship in Łódź, cooperated closely with our team. Interest in medieval and post-medieval textile production continues. Amongst others A. Rybarczyk has prepared a PhD dissertation on clothing and accessories of attire in medieval Elbląg (in press). Currently, she is working on medieval tex-

tile production, with particular emphasis on silk and silk fabrics in medieval Poland (Rybarczyk 2010; 2014; 2016). Ł. Antosik deals with textiles in medieval Poland, soon his PhD thesis on textiles in Silesia in the early Middle Ages should be completed (Antosik and Ginter 2015; Antosik and Iwanowska 2015; Antosik and Kurasiński 2018; Antosik and Rybarczyk 2016; Antosik and Siemianowska 2015). It should be added here that the team has published an extensive study of late medieval fabrics from excavations at Nowy Targ Square in Wrocław (Antosik *et al.* 2018).

Among the tasks carried out by the Łódź team, the issue of the weaving loom in prehistory and the Middle Ages occupies an important place. We devoted several works to it (Maik 1991b; 2000b; 2016b; Słomska 2015; Antosik and Maik 2017; Antosik and Słomska 2018; Słomska 2019).

Textiles from the Bronze Age and the early Iron Age in Poland are a new subject which we study. A. Rybarczyk and I have studied very interesting fabrics from the Hallstatt culture burial ground in Domasław in Lower Silesia. These fabrics show clear influence from the Alpine circle, but also from Italy (Maik and Rybarczyk 2015; 2016). In addition, J. Słomska and Ł. Antosik study fabrics from the Lusatian culture burial grounds in Świbie and Łabędy in Upper Silesia (Słomska and Antosik 2017; 2018), and J. Słomska is preparing her PhD thesis on the weaving loom in the Bronze Age and the early Iron Age.

It seems that the picture of the Bronze Age and early Iron Age textiles in Poland, which I outlined in my book 'Textiles and Textile Production in Europe: From Prehistory to AD 400' published by the Center for Textile Research, will at least be supplemented and partly also changed in the near future (2012a).

A. Ulanowska organized in 2017, at the end of her Łódź internship, held as part of the FUGA 2 program, the international conference 'Dynamics and Organization of Textile Production in Past Societies in Europe and the Mediterranean', and materials from it were published a year later (Ulanowska, Siennicka, Grupa eds. 2018). The conference turned into a cyclical one, the second one took place in June 2019 in Toruń, the next one is planned in 2021 in Vienna.

After returning to work at the Institute of Archaeology of the University of Warsaw A. Ulanowska continues to deal with Aegean archeology,

and especially the Bronze Age textile production in this area. Without the original fabrics, which in the natural conditions of Greece do not survive, she uses textile production tools – spindle whorls and loom-weights, as well as paintings showing fabrics, and she successfully reconstructs weaving techniques and types of fabrics used in ancient Greece (2017; 2018a-c). It is worth emphasizing that A. Ulanowska cooperates closely with the Copenhagen CTR (A. Ulanowska and M. Siennicka eds. (2018); Siennicka, Rahmstorf, Ulanowska (eds.) 2018), and that a research team to deal with similar issues is forming around her at the Institute (Żebrowska 2018).

The team from Łódź also cooperates closely with other researchers of old textile production in Poland, amongst whom I would like to mention first of all Zofia Kaczmarek from the Institute of European Culture of the Adam Mickiewicz University, the author of a series of works on textiles, their production and clothing in the Roman Empire, among which her PhD thesis on the cultural relations of the Roman Empire and Barbaricum in the light of trade in fabrics is of particular importance (Kaczmarek 2010; 2012; 2014; 2015; 2016) and Joanna Jabłońska-Dyrda from the Archaeological Museum in Gdańsk, studying and publishing new finds of archaeological fabrics from Gdańsk (Jabłońska 2009).

In the summary of my PhD thesis, I included the postulate of establishing cooperation with researchers from other disciplines – textile technologists, chemists, art historians. Only in this way we can look at the subject of our research – archaeological textiles – in an innovative way. And only in this way will we be able to really broaden our knowledge of old textiles (1988b, 182).

This postulate was realized to a certain degree as late as the beginning of the 21st century, when I established cooperation with a group of chemists from the Faculty of Chemistry of the University of Warsaw dealing in natural dyes used in textile production. The effect of this ongoing cooperation is a series of articles about dyes and colours used in archaeological fabrics (Biesaga *et al.* 2004; 2006. Surowiec *et al.* 2007).

A little later, I met and began to cooperate with Maria Cybulska from the Institute of Textile Architecture PŁ and with her colleagues Tomasz Florczak, Sławomir Kuberski, Jan Sielski, and Marcin Barbuski. This cooperation, conducted as part of the agreement between the Institute of Archeology

and Ethnology of the Polish Academy of Sciences and the Institute of Textile Architecture of the Lodz University of Technology, enabled to use the latest research methods used in modern textile production, allowing a thorough analysis of the structure of textiles, which are often in very poor condition and not in their original colour. Computer reconstruction and computer visualization of textiles created a completely new opportunity to learn about fabrics. It should be remembered that the subject of our research is usually preserved in fragments and has undergone changed due to long-lasting deposition in the ground. The result of these works is a long series of articles printed or prepared for printing in various author configurations (Cybulska 2009; 2015; Cybulska and Floreczak 2013; Cybulska and Maik 2007; 2014; in press; Cybulska *et al.* 2010; 2016).

The advantages of interdisciplinary cooperation can be seen very well via the example of research on fragmentarily preserved embroidery from the collegiate church in Tum near Łęczyca. They were examined by a team composed of M. Cybulska and S. Kuberski (textile technologists), A. Kowalska-Pietrzak (medievalist historian), E. Orlińska-Mianowska (art historian) and J. Maik (archaeologist). It was determined that the embroidery came from the praetexta of the 15th century chasuble representing the tree of life (the so-called Tree of Jesse). The founder of the chasuble was most likely the canon of the collegiate church in Tum, Zygmunt Kamieński, whose coat of arms Korzbok was represented on the praetexta. The praetexta was reconstructed by computer and shown at an exhibition in the Łęczyca Museum together with the original embroidery from the collegiate church in Tum. In order to deliver the results of such research to a wide

audience, they were presented at two conferences – the XI North European Symposium for Archaeological Textiles in Esslingen in Germany (Cybulska *et al.* 2013) and at a nationwide scientific session in Łęczyca, organized for the 850th anniversary of the consecration of the Łęczyca Archcollegiate (Cybulska *et al.* 2011).

This cooperation, which has been going on for several years, continues still. Recently, together with M. Cybulska, S. Kuberski, and J. Sielski, as well as with Magdalena Biesaga from the Faculty of Chemistry of the University of Warsaw, we have been working on an interesting textile find from the Wielbark culture burial ground in Czarnówko near Łębork. Already my first microscopic and chemical analyses showed that it is a product made of Chinese silk. Being aware of the historical significance of the sensational find – it seems to be the oldest silk product found in the Barbaricum area – I invited the aforementioned scientists to cooperate.

M. Cybulska, S. Kuberski, and J. Sielski using infrared spectroscopy have clearly confirmed that we are dealing with silk, and M. Biesaga is investigating the fabric's dyes. We plan to publish the results of the entire research along with a properly outlined cultural context after full completion of our work. However, preliminary information was published in the 2nd volume of the publication of the burial ground in Czarnówko (Maik 2018).

I present these two examples of interdisciplinary research instead of writing a closing. For I am convinced that only cooperation such as this enables us to show in the fullest possible way the history of old textile production, and thus the human – the creator and producer of textiles, and also their user. And this is also the future of modern archaeology.

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