



# ANALECTA

---

ARCHAEOLOGICA RESSOVIENSIA

VOLUME 19 RZESZÓW 2024

19

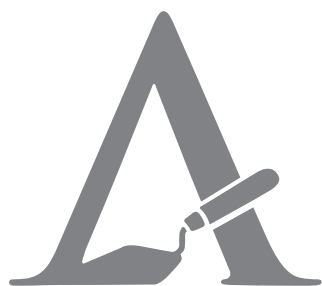


ANALECTA

---

ARCHAEOLOGICA RESSOVIENSIA





# ANALECTA

---

ARCHAEOLOGICA RESSOVIENSIA

VOLUME **19** RZESZÓW 2024



**FUNDACJA**  
RZESZOWSKIEGO OŚRODKA  
ARCHEOLOGICZNEGO



Uniwersytet Rzeszowski  
Kolegium Nauk Humanistycznych  
Instytut Archeologii

WYDAWNICTWO UNIwersYTETU RZESZOWSKIEGO

Editors

SŁAWOMIR KADROW  
slawekkadrow@gmail.com

MACIEJ DEBIEC  
mdebiec@ur.edu.pl

Editorial Secretary

SYLWIA JĘDRZEJEWSKA  
sjedrzejewska@ur.edu.pl

Editorial Council

SYLWESTER CZOPEK (Rzeszów), RAIKO KRAUß (Tübingen),  
ALEXANDRA KRENN-LEEB (Vienna), ZDENĚKA NERUDOVA (Brno),  
MICHAŁ PARCZEWSKI (Rzeszów), ALEKSANDR SYTNIK (Lviv),  
THOMAS TERBERGER (Göttingen)

Proofreading

AEDDAN SHAW

Abstracts of articles from *Analecta Archaeologica Ressoiviensia* are published  
in the Central European Journal of Social Sciences and Humanities  
*Analecta Archaeologica Ressoiviensia* is regularly listed in ERIH PLUS, CEJSH and ICI

Graphic design, typesetting

DOROTA KOCZĄB

Technical editor

EWA KUC

Cover design

JULIA SOŃSKA-LAMPART

© Copyright by  
the Authors and The University of Rzeszów Publishing House  
Rzeszów 2024

**ISSN 2084-4409 DOI:10.15584/anarres**

2150

Editor's Address

INSTITUTE OF ARCHAEOLOGY  
RZESZÓW UNIVERSITY  
ul. Moniuszki 10, 35-015 Rzeszów, Poland  
e-mail: iarch@univ.rzeszow.pl  
Home page: www.archeologia.rzeszow.pl

THE UNIVERSITY OF RZESZÓW  
PUBLISHING HOUSE  
ul. prof. S. Pigoń 6, 35-959 Rzeszów, Poland  
tel. 17 872 13 69, tel./fax 17 872 14 26  
Home page: https://wydawnictwo.ur.edu.pl

RZESZÓW ARCHEOLOGICAL  
CENTRE FUND  
ul. Moniuszki 10, 35-015 Rzeszów, Poland  
email: froa@froa.pl  
Home page: www.froa.pl/

## Contents

### ARTICLES

<b>Katarzyna Tatoń</b>	
Voiced or Silent? The Sound of the Sistrum in Ancient Egypt .....	7
<b>Seweryn Rzepecki, Lucyna Domańska</b>	
On the Edge. Relics of LBK Settlement at the Site of Kruszyn 3, Commune Włocławek (Household A) .....	21
<b>Sławomir Kadrow, Anna Zakościelna</b>	
The Socio-Cultural Background of the Genesis of the Lublin-Volhynia Culture .....	41
<b>Wojciech Pasterkiewicz</b>	
“A House for the Dead” or a Cremation Pyre? The Interpretation of Grave No. 10 Discovered in the Globular Amphora Culture Cemetery in Sadowie in the Sandomierz Upland .....	57
<b>Magdalena Przymorska-Sztuczka</b>	
Hook Pins in the Grave Inventories of the Wielbark Culture. A Case Study Based on the Finds from Cemeteries in Czarnówko, Lubowidz and Wilkowo Nowowiejskie, Łęborg District (PL) .....	93
<b>Andrzej Kokowski</b>	
Jet Beads from Grave 436 from Masłomęcz. A Further Contribution to the Study of Contacts between the Gothic Population of the Masłomęcz Group and the Sarmatians .....	105
<b>Halina Dobrzańska</b>	
The Environmental Context of the Early-Slavic Culture Settlement at Zofipole, Site 1, Kraków District .....	117
<b>Marek Florek</b>	
Military Accessories from the “Tursko Castle” Near Połaniec, Świętokrzyskie Voivodeship. A Contribution to Research on Mongolian and Mongolian-Ruthenian Raids on the Sandomierz Lands in the 13 <sup>th</sup> Century .....	131
<b>Anna B. Kowalska</b>	
Problems of the Continuation of Medieval Manufacturing Traditions in Modern Shoemaking Based on Archaeological Finds in Szczecin .....	143
<b>Małgorzata Grupa, Piotr Pawlak, Waldemar Dryjański, Dawid Grupa, Tomasz Kozłowski, Wiesław Nowosad</b>	
Preliminary Conclusions Following Archaeological-Anthropological Studies in the Crypts of the Church of Saint John the Baptist and the Five Martyred Brothers in Kazimierz Biskupi, Kazimierz Biskupi Commune, Konin County, Greater Poland Province (2022 Season) .....	157

### REVIEW

<b>Marek Kamiń</b>	
(review) Elżbieta Kowalczyk-Heyman. <i>Średniowieczne rękojeści antropomorficzne (próba klasyfikacji i interpretacji)</i> [Medieval anthropomorphic handles (an attempt at classification and interpretation)]. Warszawa 2021: Instytut Historii im. Tadeusza Manteuffla Polskiej Akademii Nauk, Wydział Archeologii Uniwersytetu Warszawskiego, 229 pages, 73 figures, 12 maps, 10 tables. ....	171

Anna B. Kowalska

DOI: 10.15584/anarres.2024.19.9

The National Museum in Szczecin, Staromłyńska 27, 70-561 Szczecin, Poland;  
e-mail: a.kowalska@muzeum.szczecin.pl; ORCID: 0000-0003-2086-0713

## Problems of the Continuation of Medieval Manufacturing Traditions in Modern Shoemaking Based on Archaeological Finds in Szczecin

### Abstract

Kowalska A. B. 2024. Problems of the Continuation of Medieval Manufacturing Traditions in Modern Shoemaking Based on Archaeological Finds in Szczecin. *Analecta Archaeologica Ressoiviensia* 19, 143–156

Research into modern leather footwear has only recently become a part of archaeology. In the case of Szczecin, a town on the Baltic coast in Western Pomerania, no comprehensive study on these types of finds has yet been compiled. This article discusses footwear dating to the period between the 16<sup>th</sup> and 19<sup>th</sup> centuries which has been uncovered during archaeological excavations in the Old Town in Szczecin, the issue of continuation of medieval shoemaking traditions as well as the issues of the methodology of studies and nomenclature used in Polish literature on the subject.

**Key words:** archaeology, footwear, modern times, Szczecin, Pomerania

**Received:** 25.10.2023; **Revised:** 06.08.2024; **Accepted:** 30.10.2024

### Current state of research into modern footwear in Poland

Modern footwear means goods manufactured between the end of the 15<sup>th</sup>/the beginning of the 16<sup>th</sup> century and the end of the 19<sup>th</sup>/beginning of the 20<sup>th</sup> century. The turn of the 16<sup>th</sup> century heralded cultural, political, economic, and ideological changes which clearly marked the transition from the medieval to modern times. In Western Pomerania, the beginning of the new era is connected with the official recognition of Protestantism as a state religion during a parliament session in Trzebiatów in 1534. The modern era, usually seen as spanning a few centuries, is usually divided into periods which are more adequate for describing movements in art rather than historical periods and signifying major political or economic changes: the Renaissance (the 15<sup>th</sup> to 16<sup>th</sup> centuries), the Baroque (from the end of the 16<sup>th</sup> to the beginning of the 18<sup>th</sup> centuries), the Enlightenment (the 18<sup>th</sup> century), and Romanticism (the first half of the 19<sup>th</sup> century). However, the most common terms to

be found in Polish archaeological literature are *epoka wczesnonowoczesna* and *nowoczesna*, which come from English, namely the *post medieval period*, *early modern period* and *modern period*, although no exact chronology can be given.

It is only relatively recently that studies on modern times have become a part of archaeology; in Poland it is still a branch which is in its infancy, albeit one which has been developing quite dynamically in recent years. Of particular interest are ceramics, including ceramic vessels (the set of literature see e.g. Marcinkowski 2019; see also Blažková and Matějková (eds.) 2019; 2021; Blažková *et al.* 2023; <https://www.europapostmed.eu/en>, acces: 28.10.2024) and stove tiles (Majewski 2015) as well as glassware (e.g. Wilgocka 2019). Modern leather goods have perhaps attracted the least interest so far. It is well known that damp, anaerobic cultural layers favour the preservation of objects made of organic matter. In the modern period, such conditions were met primarily by wells-latrines and other “damp” places such as moats or utility rooms which were at the back of brick town houses or workshops.

It is beyond doubt that a study by Lidia Eberle, who was the first to undertake the issue of Renaissance archaeological footwear on the basis of artefacts uncovered in Warsaw, needs to be considered a pioneering one (Eberle 1971; 1979; 1984; 1985). She analysed technical solutions applied in the production process which were clearly different from their late medieval counterparts. However, a wider study required a more extensive database. It has been only in the last decade that more studies on modern footwear have appeared. Studies on collections of leather objects uncovered during archaeological excavations in Warsaw and Gdańsk have been resumed. Karolina Blusiewicz, who continued the outstanding studies which started in the 1970s (Eberle 1971; 1979; Milewska 1977), presented materials uncovered in over 50 digs in the New and Old Town in Warsaw, which were covered by various types of archaeological works, from the so-called supervision over investment works to rescue excavations as well as stationary excavations in the Royal Castle and Castle Square (Blusiewicz 2009a; 2009b; 2017). The collection includes artefacts which date back to the end of the Middle Ages and modernity until the 20<sup>th</sup> century. What needs to be emphasised is the multilateralism of the studies which were undertaken. The author presented elements of footwear in both a visual and descriptive form, tackling separately parts of the bottom and top, platforms and heels, as well as ways of finishing ready-made goods – the production stage of particular importance in the case of modern shoemaking. She separately presented the types of footwear in two groups: finds which date back to the late and the twilight of the Middle Ages (14<sup>th</sup> to the 15<sup>th</sup> centuries) and the modern era (the 16<sup>th</sup> to 18<sup>th</sup> centuries). The whole study is extensively illustrated with drawings of the construction of individual parts of footwear, ways of sewing and reconstructions of finished products. Subject to more extensive studies were also modern products from Gdańsk including, apart from footwear (Ceynowa and Trawicka 2016; Jędrzejczak-Skutnik 2016; 2021; Ceynowa 2018; 2020), Renaissance caf-tans (Ceynowa 2013) and footwear uncovered during excavations in Toruń (Drażkowska 2007a; 2007c). It should be noted that studies on the majority of archaeological finds are still pending and await publication.

Archaeological studies of interments in burial chapels provide specific finds (e.g. Drażkowska 2007b; Kulesz 2019; Kulesz and Grupa 2020). These finds are specific as they were often produced on an *ad hoc* basis for the purpose of the burial. The most precious pieces of footwear from the point of view of the history of footwear are those which were worn by the

buried in their lifetime as they reflected their likes, taste, and how the shoe matched the whole clothing. However, publications in scientific literature are very scarce. Usually, archaeological studies conclude with studies and reports which are kept in the archives of the Voivodeship Cultural Heritage Conservator offices all over Poland.

Modern footwear is rarely found in cultural layers. Of particular interest are pattens made of wood and leather – protective footwear known since the Middle Ages (Ceynowa 2009a). The so called *treppe* [clogs] or *mule* [mules] from Toruń are exceptional finds (Drażkowska 2007a; 2007c). They are interesting for a number of reasons. First, all of them date back to the 16<sup>th</sup> century, a period when major changes in footwear manufacturing process which were relevant to the emergence of new style trends were taking place. Random finds of this type of footwear were also excavated in Wolin (Kowalska 2015). The issue of early modern footwear in the context of economic relationships between centres which were important at the turn of the era was undertaken by Beata Ceynowa based on finds from Lastadia in Gdańsk (Ceynowa 2009b). Considering the number of uncovered pieces, the excavations in Gdańsk are sensational. On Lastadia alone, about 22,000 leather objects were excavated; they survived in such good condition that it is possible to undertake the study of a variety of research problems of the development of crafts, forms of footwear, style, fashion, trade or health, to name but a few.

Interesting leather finds were uncovered during excavations carried out in the wreck of the vessel *General Carleton*, which dates to the second half of the 18<sup>th</sup> century. The excavated and functionally recognised objects included footwear, a glove, belt, wallets, a razor case, sheath, book covers and a spur with leather fastenings as well as characteristic bosun's gloves; a total of 237 various objects (Rodzik and Jakimowicz 2008). The biggest collection was made up of shoes and their pieces: 25 whole and 71 fragments out of which further 9 were successfully reconstructed.

Recently, an attempt has also been made to compile the total body of information that comprises the development of forms and types of leather footwear in the period from the 9<sup>th</sup> until the 19<sup>th</sup> centuries, in which special emphasis was placed on the changeable methods of construction and the co-existence of the same decorative motifs on various elements of clothing and garments (Drażkowska 2011). Archaeological journals are increasingly publishing articles discussing ways of preservation of excavated leathers, both medieval and modern (Drażkowska and Grupa 2009;



Jagielska 2009; Drażkowska *et al.* 2011; Ceynowa 2012), as well as objects made of various raw materials, e.g., leather and wood (Jakimowicz and Rodzik 2009, see also Grupa 2012a; 2012b, 159f.).

Comprehensive and in-depth research has recently been devoted to the question of the lexis of leatherworking crafts. Lexicographical studies have so far been devoted to selected issues only, including names of clothes manufactured in the period between the 14<sup>th</sup> and the 16<sup>th</sup> centuries, which included leather and textile goods lined with fur (Borejszo 1990). Vocabulary relevant to craft manufacture within a broad family of crafts based on leather as a raw material has been presented for the first time in linguistic literature from a historical perspective (Żurawska-Chaszczyńska 2010).

In comparison, surviving guild statutes and post-mortem inventories from the previous period have considerably facilitated studies on modern footwear in Poland. To date, the most comprehensive use of such data in Poland (Turnau 1975; see also 1983) has been made in a study on leather clothing by Irena Turnau. An important achievement of the scholar in the field of the history of footwear is the development of a dictionary of clothes, which also includes the names of modern footwear (Turnau 1999). More comprehensive studies can only be found in works on the history of costumes based on iconographic sources. The oldest, more comprehensive studies date to the first half of the 19<sup>th</sup> century (Gołębiowski 1983). Post-war research which needs to be mentioned include a publication which has been considered a milestone until today: *Historia ubiorów [The History of Clothes]* by Maria Gutkowska-Rychlewska (1968), which is still considered a relevant compendium of knowledge. The scholar devoted a separate article to pattern finds from Pырzyce and presented them against the background of medieval fashion (Gutkowska-Rychlewska 1967). Of equal significance in the field of research into modern clothes is a study by Krystyna Turska (1987). Footwear is often accorded marginal importance and considered complimentary to clothing in studies on the history of costumes (Możdżyńska-Nawotka 2005; Sieradzka 2009; 2013). These questions have recently been given more focus in the second volume of *In gremio – in praxi*, which discusses *inter alia* modern children's shoes (Możdżyńska-Nawotka and Jędrysek-Skotnicka 2015; see also Drażkowska 2007d). A publication by Aleksander Olszewski is also a cross-sectional study of modern footwear; he collected iconography and described types of footwear most characteristic of a given era (Olszewski 1984).

## Methodological issues

The list of literature on the subject above indicates that the methodology of research into modern footwear is a field which requires much supplementary work, hence the subject of archaeological research is not only footwear which has survived to our times intact and which is sufficient to undertake the issues of production, production techniques or ways of decoration to name but a few. A characteristic feature of the uncovered artefacts is their fragmentation into individual parts. Hence, considering the wealth of mainly iconographic historical sources, the question can be asked whether research into individual elements of often complicated, multi-component objects is necessary. In my opinion, using the same research methods as in the case of medieval footwear is absolutely justified. Of course, the point is to conduct the widest possible research into the methods of construction, a formal and typological study of source material. However, of no lesser importance is the consideration of the social and cultural context in which footwear is found, to which social group a particular find can be related: in other words, undertaking social and topographic problems on the basis of material sources. Supporting the results of these studies with iconography and economic history may contribute to a better understanding of economic and cultural principles governing the area subject to research.

An important element of research into modern footwear in Szczecin is the continual development of crafts since the early Middle Ages until the present day. To date, forms and types of footwear have been recognised since the 8<sup>th</sup> century; changes in production techniques spanning over several centuries of the medieval times have been illustrated with archaeological finds (Kowalska 2010; 2013; 2018; 2023). It has also been possible to observe stylistic changes of goods which resulted from foreign inspirations and under the influence of local preferences and production possibilities. Thereby a solid foundation was created which allows us to observe the changes taking place in local shoemaking. The problem which remains is the selection of relevant research methods.

The application of a statistical method to the so-called ready products will be very difficult due to the fragmentation of footwear into individual components mentioned above. Nevertheless, quantitative analyses can be undertaken in the case of separate components: soles, uppers and complementary elements. However, the fundamental issue is the development of the relevant nomenclature (Kowalska 2021).

Nomenclature issues arise at the very initial stages of studies on footwear. Paradoxically, using expressions from the language which used to be spoken in the past does not always favour comparative studies. Considerable confusion was brought about by the introduction of technical jargon relevant to modern and contemporary footwear to the dictionary of terms relevant to medieval footwear, particularly the early medieval examples. Some elements which are characteristic of modern times were simply non-existent in the Middle Ages, while the use of others was somewhat exaggerated. It seems worthwhile to mention how the perception of individual components of footwear has changed in the context of the nomenclature used in the Polish literature.

#### 1. Soles/bottoms of shoes

The term bottom/sole raises the least controversy. It is the part upon which the foot rests, and which directly touches the ground. However, this definition is only adequate in the case of simple, one-part soles because a two-part sole does not meet this basic condition as it does not touch the ground, but on the other hand it touches a further layer, not the foot, hence the most proper definition would be the bottom, especially in case of modern footwear, the bottoms of which consist of a few elements. In this case, the sole should refer only to the part which directly touches the ground, to which a heel and parts of the bottom which touch the foot can be attached. According to such a definition, the bottom of medieval footwear consists of a sole, in late medieval footwear a sole with a padding appears, in contemporary language called an insole, while in the modern sense the bottom consists of a few elements discussed below.

#### 2. Outer sole (treadsole)

An element of a multi-piece bottom in contact with the ground. It is an element of a bottom on which there is the padding, upon which the foot rests (made of leather or textile). An outer sole has the same shape, but different traces of sewing – stretched holes through which a thread joining the outer sole with a welt passed. Between the edges of the outer sole and the welt there was the edge of the upper. If there is no padding, the foot rests directly on the outer sole.

#### 3. *Podsówka* (a kind of outer sole)

An element of the bottom, the shape of which corresponded to the outer sole. It was cut from quite hard and thick leather. Placed between the inner sole and outer sole, the *Podsówka* was to stiffen and stabilise the bottom. It was not used in medieval footwear.

#### 4. Welt

An element of the bottom of the shoe – a piece of leather joining the outer sole and the upper. The aim of the welt was to ensure the strong integration of the upper with the bottom, which the producer attained by pulling the crossing threads strongly. Due to the pressure of the foot the threads imprinted a characteristic pattern on the inner sole and the *Podsówka*. It seems that the beginnings of this construction element can be seen in the early medieval rand and were placed between the upper and the sole. The oldest rands took on the form of a flat piece of leather. Uncovered most often are their small fragments with characteristic round holes pierced with an awl. Over the course of the 12<sup>th</sup> century, along with the development of tanning techniques, rands started to take the form of a gusset cut from thick leather. Just as in the case of flat pieces, they had large holes pierced with an awl which corresponded to holes on the edge of the upper and the vamp. In time, the rand took on the shape of a welt.

#### 5. *Zelówka*

An element of the bottom, the shape of which corresponded to a part of the sole – the tread or the quarter. It is cut out of stiff and thick leather. Its purpose was to strengthen the parts of the sole most exposed to friction. It is difficult to state when the outsole first appeared as it originates directly from a patch sewn on the outside of worn-out bottom. The difference between them is that the patch was sewn to conceal a hole or wear, thereby lengthening the period during which footwear was used. Outsoles were attached to new soles, often before a heel was nailed. The oldest outsoles can be dated to the late medieval period (Harjula 2008).

#### 6. Heel

The youngest element of a complex bottom. It seems that it originates directly from the *zelówka*. The oldest heels were made of a few layers of leather called multi-layers (*składki*). Such a multi-layer heel was nailed with wooden pins to the outsole; sometimes it was also strengthened with an iron nail. The edges were made after the heel was nailed. In time, multi-layer heels were substituted with wooden ones, which were covered with a lining: either a leather or a textile one.

#### 7. Heel lining and top piece

A leather or textile element wrapped around the wooden heel and attached directly to the top of a shoe. It performed a similar function in the case of platform type bottoms. The tip of the heel was often

finished with a top piece, today often identified with an outsole.

#### 8. Platform sole

The bottom of a shoe made up of a sole, outer sole and padding. A piece of cork or pieces of wood could be used as the *podsuwka*, the whole was covered with a layer. A platform sole could be flat or raised in the heel counter part

#### 9. Upper

There can be no doubt that more problems with terminology arise in the case of shoe uppers. In the history of European footwear in the temperate zone, single pieces attached to the leg with a piece of thong need to be considered as the oldest type of footwear. The sandal: a sole with strings or thongs attached to the leg was the prevailing type of shoe in warm zones of the continent. The development of footwear was at least two-fold: single pieces developed into shoes used in the Middle Ages and modernity in north-western Europe. In south-eastern regions, the original sandals perfected by Greeks and then by the Romans were of no use in the colder regions of Europe. Nevertheless, it cannot be ruled out that direct contacts resulted in mutual influence, taking over and adapting some elements to the needs of local shoemaking. However, without going deeper into the problem of the origin of various forms and types of footwear, it needs to be noted that the basic form, i.e. a shoe consisting of the bottom and upper gradually evolved to the present form.

The upper of a shoe is an element which covered the foot (in time also the calf or even the knee). The only element which raises no doubt is the correct recognition and the name of the one-piece upper, sewn directly to the sole. At the time when additional elements appeared *inter alia* various inserts, researchers are no longer in agreement regarding terms. It seems that the problem arose when attempts were made to define elements of medieval shoemaking with contemporary terms which are used to describe the production of modern and contemporary footwear.

#### 10. Vamp

The upper covering the front and sides of a foot cut out of a single piece of leather is often called the vamp (Blusiewicz 2009b, 29). In most cases, the element of the upper covering the arch up to the waist is called the vamp, in contrast to the back part covering the heel and sides up to the ankles.

#### 11. Quarter/*obłożyna*/shaft

In medieval terminology, the part of the upper covering the back of the foot, the heel counter to

mid-foot (waist), is called the quarter (also in cases of single pieces). In modern Polish shoemaking this element, which is cut separately, is called the *obłożyna* unless the height goes beyond the ankle line, which in this case it is called the shaft. In medieval shoemaking the shaft, regardless of the way it joined other elements of the upper, covers the shin from the ankle upwards, hence it can be low, ankle, or high. In modern shoes, the shaft may also cover the knee. The difference between a medieval shaft and a modern one is that in the Middle Ages it was sewn directly to the sole while in the case of a modern shoe to the *obłożyna*. The *obłożyna* of a modern shoe often consists of two quarters joined along the heel counter. This element has a very old, early medieval origin, but it did not become popular at the early stages of the medieval period due to the discomfort while wearing them. It reappears at the end of the Middle Ages, marking the start of Renaissance shoemaking.

#### 12. Inserts

Cutting the upper out of a single piece of leather was not economical. It was already the early medieval producers who started to apply various solutions to rationalise and optimise the cutting of the whole animal leather and to minimise the amount of waste. The simplest solution was to cut the largest possible piece of upper and to complement the missing parts with a piece of leather, the so-called construction insert, which was also called a connecting element (Blusiewicz 2009b, fig. 5.3). In my opinion, the oldest construction inserts – the connecting elements – were rectangular and were sewn on the inside part joining the edges of uppers – the front part, i.e. the vamp with the back one, i.e. the shaft. In the Szczecin collection I found a whole inside side sewn next to the heel counter, but not symmetrically. Along the perfecting production techniques, construction inserts were reduced to a small triangular insert sewn between the sole and the edges of the upper. This construction method rationalised the cut and offered the possibility to regulate the length of the upper considering that the problem was to make a three-dimensional object out of a flat one. In order to achieve such an effect, small cuts needed to be made, which were thereafter sewn as appropriate. In modern shoemaking, neither construction inserts nor connecting elements are used.

Other types of inserts are supplementary ones. They were sewn in all those places where parts of leather in the basic cut were “missing”, with the upper parts of shafts and quarters supplemented most often. The cut of shoe uppers allowed the total elimination of supplementary inserts.

### 13. Strengthening inserts

The general term “strengthening inserts” defines different types of inserts sewn in various parts of the uppers. The oldest one was an insert strengthening the back of the shoe in the heel counter, which most probably originates from a sole of a specific cut: pointed towards the top, overlapping the back part of the shoe on the outside. This insert, also called the heel stiffener, protected the shoe from misshaping and has survived to our times. The other type of strengthening insert is the welt, strengthening the bottom part of the shoe. This insert has also survived in modern footwear to contemporary times, functioning in a manner akin to lace hole bindings which strengthen places for lacing up or fastening a shoe.

### Excavation material from Szczecin

The collection of leather finds from modern times is characterised by, apart from the varying condition in which it has survived down to our times, a vast time span: from the 15<sup>th</sup> to the 19<sup>th</sup> centuries, which is undoubtedly an advantage in the case of studies on construction and stylistic changes. Considerable interpretational limitations arise from mixing the material in backfills and levelling strata. For that reason I have partly abandoned the principle followed in previous studies on leatherworking in Szczecin (Kowalska 2010; 2013, there set of literature; see also Cnotliwy 2014), namely equal consideration being given to all leather artefacts, regardless of how well preserved they are. I only discuss in detail footwear which has survived to our times as a whole and characteristic parts of footwear. The whole collection was catalogued after basic preservation and conservation work was carried out, with some part of the collection submitted for zoological analyses (Radek 2019), and wooden pins and soles of modern shoes for the analysis of wood species (Cywa 2019). In the catalogue part, I present in detail finds from individual digs and latrine no. 1 (see Uciechowska-Gawron 2019), in which the most chronologically consistent and simultaneously the first collection of modern shoemaking products in Szczecin was uncovered (Fig. 1).

Latrine no. 1, where most of the discussed leather finds come from, was discovered at Kłodna Street, within property no. 30 in the Old Town of Szczecin (quarter I). It was built of trapezoidal bricks laid without mortar in such a way that only the heads were visible in the face of the wall. It was built on four wooden foundations. The diameter of the latrine at the bottom was 2.25 m, and the preserved depth was

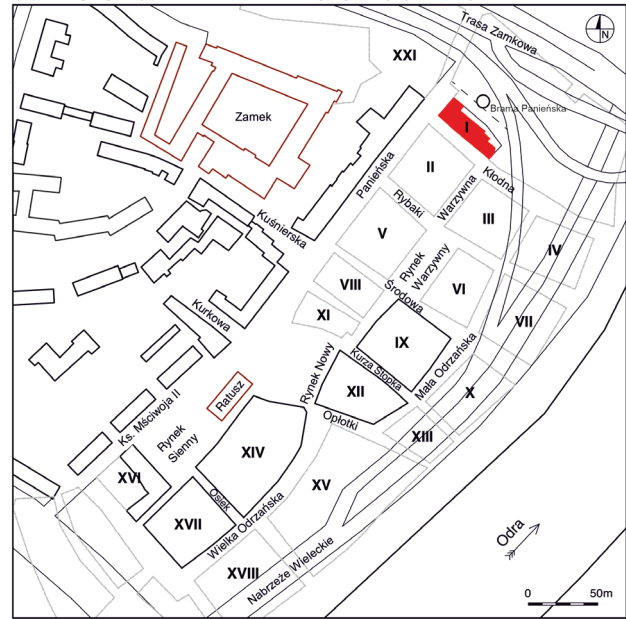


Fig. 1. Szczecin, quarter I within Podzámecze against the modern street grid (prepared by M. Gibczyński) and below latrine no. 1 (photo by A. Uciechowska-Gawron).

3.4 m. Below the foundation there was a conical funnel, probably created during periodic waste removal. There were three layers visible in the fill which, based on mobile sources, can be dated to the period from the end of the 16<sup>th</sup> to 18<sup>th</sup>–19<sup>th</sup> century. In addition to leather items, they included fragments of ceramics, tiles, clay pipes, bowls, turned pails and barrels, fabrics, a turned painted cup, pieces of glass, a glass cup, decorated glasses and glasses, two metal spoons decorated: tin and copper alloy, cover fittings, copper alloy hooks, fragment of a bone figurine, antler comb and grains, ichthyological and osteological remains (Kowalska (ed.) 2019).

### Leather finds from a latrine in quarter I

1. Children's shoe, mule type (Fig. 2; inv. no. 17/1/S). All of the construction elements have survived: symmetrical soles: outer and inner; with a pointed toe; rounded counter and clear two-side waist; a cork gusset between them; a footwear stripe embracing



Fig. 2. Szczecin. Mule shoe (photo by I. Sukiennicka, A. Ryś).

the hole of the bottom, sewn to the outer and inner soles; wooden pins fastening the outer sole and the top; decorated, whole vamp. The decoration covered the upper part of the vamp and consisted of various striped cuts: crosses, three lines, a row of slanted cuts, a further three lines and a row of crosses and a further three lines separating the crosses and forming three small pyramids. The shoe is worn out, but it has not fallen apart, with even the threads punched with an awl surviving down to our times. Under the outer sole, on a cork gusset which consisted of a few elements, a layer of wool or fur leather survived (Radek 2019). The insert between soles which is marked with a question mark could be made of linden bast, one fragment submitted for analysis is not marked. A pin inserted in one fragment of the sole was whittled from the wood of common spindle (Cywa 2019). The 16<sup>th</sup> century?

2. Children's shoe, mule type (Fig. 3; inv. no. 46/1/S). Almost all of the construction elements have survived to our times: an outer sole with outsole; inner sole with extremely narrow waist and rounded seat (made of sheep skin and probably hide); shoe stripe probably of hide; gusset between soles made of poplar; pegs for fastening heel made of common spindle; and vamp made of hide, all of the surface was decorated. Starting with a decoratively cut edge, the following were also made: a strand of evenly spaced punched-through round holes; a motif embroidered using

straight stitches (thread of plant origin); a strand of round holes (punched through); a strand of two wavy crossing lines in between two straight lines; a strand of slanted, crossing lines; a strand of semi-circles with lines crossing inside; and zig-zags encircling semi-circles – these motifs were made by cutting leather approximately down to half its thickness. The toe of the vamp is clearly worn-out, damaged, just like the whole outer sole to which the outsole and heel (which did not survive to our times) were nailed. The 16<sup>th</sup> century?

3. Large size slip-on shoe (Fig. 4; inv. no. 47/1/S) with a leather, multi-layer heel, with a multi-layer sole fastened with a shoe stripe and a very worn-out, whole vamp without decoration. The outer sole is finished with a square toe, with outsole, reaching the heel and “wrapped” on it. The outer sole is also finished with a straight toe. Metal and wooden (common spindle) pins used to fasten the layers of the sole and the heel have survived to our times. Fragments of a wooden gusset between the soles have also survived. The vamp was completely destroyed, finished with an outer toe sewn on the outside, without decoration.

4. Shallow and low slip-on shoe (Fig. 5; inv. no. 210/1/S) with a wooden heel, all components have survived: an outer sole of very thick leather; inner sole of soft



Fig. 3. Szczecin. Mule shoe (photo by I. Sukiennicka, A. Ryś).



Fig. 4. Szczecin. Modern footwear (photo and drawing by I. Sukiennicka, A. Ryś).



Fig. 5. Szczecin. Modern low-cut slip-on shoes (photo and drawing by I. Sukiennicka, A. Ryś).

leather; wooden gusset between soles which survived up to the point where the heel begins; wooden, narrowing down beechen heel; and a decorated vamp. Both soles with pointed toes with a small point. The outer sole “wrapped” on the inside of the wooden heel. Very shallow vamp, decoratively cut-out, with the edge originally sewn (with colourful threads?). There are remains of embroidery (holes) about 1 cm from the edge. The vamp with a profiled throat reached approximately halfway along the instep. The 17<sup>th</sup>–18<sup>th</sup> centuries.

5. Children’s shoe (Fig. 6; inv. no. 211/1/S) slip-on, mule type with a wooden heel, made of outer and inner soles, a heel and vamp. The heel is made of a few layers mounted directly on the outer sole, nailed with dogwood and beech pins. Both soles have rounded toes. The vamp had been mended – there are traces of outer toe and the welt on the inside of the shoe. The vamp reached quite high to the instep. Undecorated and dating to the 18<sup>th</sup> century?

6. Vamp of a small size shoe, mule type (50/1/S), richly decorated, most probably makes up a pair with a shoe catalogue number 46/1/S due to identically distributed ornaments and size. The 16<sup>th</sup>–18<sup>th</sup> centuries.

7. Three soles survived in whole:

a) a two-part sole, symmetrical, survived in two fragments (Fig. 7; inv. no. 48/1/S) large size, outer, finished with a rounded seat with a part of a heel of alder and a square toe, slightly bilaterally narrowing at the waist. Cut from hide. Metal studs and pins of common spindle used to nail a missing heel have survived. Together with the sole, a rounded part of a stripe was found, probably the back part of the shoe;

b) a two-part sole, symmetrical, cut out of hide, survived together with inner sole (seat), seat rounded and finished with a blunt, square toe, slightly narrowing at waist. In the seat part wooden studs used to nail the heel survive (50/1/S);

c) one-part outer sole, symmetrical, with a rounded toe and seat, without narrowing at the waist, with a heel made of several layers of leather held together with metal and wooden studs. This has survived in two pieces. The heel is nailed directly to the outer sole with pins of common spindle. It survived together with the sole remains of a shoe strap and a piece of the inner sole (212/1/S).

8. Four pieces of the front part of soles – treads:

a) tread of a one-part sole, outer, symmetrical, finished with a slightly rounded toe, with an outsole in the toe part with wooden studs, with a clear bilateral



Fig. 6. Szczecin. Children's shoe (photo and drawing by I. Sukiennicka, A. Ryś).



Fig. 7. Szczecin. Two-part sole of modern footwear with fragments of a rand (photo and drawing by I. Sukiennicka, A. Ryś).

- narrowing at waist (50/1/S) The sole is cut out of hide, most probably the outsole was well;
- b) tread of the inner sole made of hide or calf skin, finished with a slightly rounded toe (50/1/S);
- c) part of the tread of an outer sole finished with a slightly rounded toe, with crossing imprints of twine, as a result of stretching the shoe strap (54/1/S);
- d) tread of damaged inner sole finished with a rounded toe, most probably of hide.



Fig. 8. Szczecin. Fragments of modern footwear soles (photo and drawing by I. Sukiennicka, A. Ryś).

#### 9. Three pieces of soles without seat:

- a) a piece of a single-piece sole, inner, asymmetrical, finished with a rounded toe, with a slight bilateral narrowing. The sole survived in two pieces. It was probably cut out of goat or sheep skin or a young animal (a kid or lamb) (55/1/S);
- b) a piece of a single-piece sole, inner, symmetrical, finished with a clearly pointed toe, with slight bilateral narrowing. Cut out of goat or sheep skin. Crossing imprints on the sole made by stretching the shoe strap twine (50/1/S);
- c) two pieces of an outer sole with a sharp toe "wrapped" on the heel (55/1/S). Cut out of tough hide.

#### 10. Remains of a multi-layer heel with a piece of sole (54/1/S).

#### 11. Pieces of the seat parts of soles:

- a) seat of a one-piece outer sole with a slightly rounded seat and bilateral, slight narrowing at the waist. Together with the sole, a heel made of several layers of hide nailed to the sole with wooden studs and a piece of a shoe strap have survived (Fig. 8; inv. no. 52/1/S);
- b) a piece of a shoe strap;
- c) fragments of an outsole made of hide;
- d) a seat of a single-piece inner sole, symmetrical, finished with a rounded seat and extremely narrow waist. Seat with traces of pegs (53/1/S). Cut out of hide, probably cut vertically into two layers;
- e) a seat and tread of a single-piece inner sole with a slightly rounded seat and bilateral, slight narrowing at waist, with imprints of stretching the shoe strap. A heel survived together with the sole made

- of several layers nailed to the sole with wooden studs (54/1/S);
- f) a seat of damaged sole, rounded with traces of wooden pegs fastening the heel (54/1/S);
  - g) a seat of damaged sole with remains of a leather heel (54/1/S);
  - h) seat of damaged sole with remains of a leather heel (212/1/S);
  - i) a piece of sole and remains of a leather shoe strap (212/1/S).
12. Damaged pieces of soles (53/1/S; 55/1/S), scraps of soles (50/1/S; 45/1/S).
13. Pieces of footwear (48/1/S; 50/1/S; 52/1/S; 54/1/S).

### Finals remarks

From the point of view of archaeology, studies on leatherworking in the modern period remain in a considerable disproportion to medieval ones. At the beginning of the 16<sup>th</sup> century, transformations were taking place in the territory of Poland which resulted from following foreign fashion trends from both Western and Eastern Europe. Moreover, a strongly conservative approach can be noted as regards the choice of foreign elements, which in the future resulted in the appearance of a traditional national dress. These processes should also be seen in the context of changes in the construction of shoes, which were becoming a part of a dress matching its other elements (Drażkowska 2011, 156f.). It can be assumed with a large degree of probability that shoemaking in Szczecin in the Renaissance period, as well as in later periods, evolved just like other European trends.

What is particularly noteworthy while studying finds of modern footwear is the shape of soles which, other than the shape of medieval soles, is not aligned with the curves of a foot. Regardless of the shape of the toe and the seat and the thickness, they are symmetrical, sometimes very narrow at the waist. They can be clearly divided into inner and outer as well as single- and two-piece ones, while each one is only one element of the bottom consisting of a few layers, including a wooden or cork gusset. Particularly characteristic are soles of very thick and very hard leather, which were fastened to the inner part of wooden heels; the heel itself was in such cases nailed to quite a thick inner leather padding placed between the inner and outer sole and which reached approximately half of the length of the shoe.

The shape of the sole, mainly the ending of the tread, is very different from the one known from the

Middle Ages. Firstly, there are no pointed soles and most of them are characterised by slightly rounded front parts, while some of the inner soles have pointed toes. Some of them, only the remains of which have survived, display very vivid imprints left by shoe strap twine. One tread of an inner sole cut from thick leather shows traces of an outsole.

Soles and their parts correspond well to finds excavated in Warsaw (Blusiewicz 2009a; 2009b). Shapes noted in the excavation material from Szczecin are easy to find. Bottoms with gentle lines date to the 16<sup>th</sup> and the first half of the 17<sup>th</sup> centuries; occasionally, there were also soles with pointed toes. The author is quite right to note that they are just remains of the Gothic style which was passing away (Blusiewicz 2009b, 36). Soles presented by Olaf Goubitz (Goubitz *et al* 2001, fig. 1–2, 82) as well as Dmitrij Osipov and Valentina Sobol are categorised in precisely the same way (Osipov and Sobol 2013, pl. 4–5).

Among finds uncovered in latrine 1 there were no soles with widening toes which were so characteristic of the Renaissance fashion (Możdżyńska-Nawotka 2005, 38–39). All of the soles discussed here have approximately the same proportions i.e. the biggest protuberance is the tread. Differentiating between men's and women's shoes by the shapes of the bottoms is simply impossible. Only finds of small sizes can be safely associated with children. It seems that in the transition period between Gothic and Renaissance fashion, a period when new construction solutions were introduced into shoemaking, the forms of shoes did not change much. Low, ankle and high shoes were still used, although it seems that the dominating form was the ankle shoe.

Mules, also called leather pattens, were protective shoes replaced wooden and leather pattens during the Renaissance period. In contrast to pattens, mules had vamps which covered the whole instep or reached the halfway point of the instep. They quite quickly gained the status of home footwear which were worn independently inside or placed over more refined leather shoes. The construction of mules was special. The bottom was always a multi-layer one, which consisted of an outer sole cut from thick leather, wooden, or cork pad, as well as an outer sole and inner sole on which the foot rested directly. All of these layers were wrapped in the so-called rand which was also called a shoe strap. A wooden or cork padding, either flat or in a form of a gusset, consisted of a few elements connected with wooden pegs.

Finds from Szczecin represent an early type of mule, one that preceded the elegant, heeled wom-



en's shoes worn inside in the 18<sup>th</sup> century. The small sizes of the Szczecin mules allow us to conclude that they were also worn by children, while the species of wood used for the insoles support the conclusion that at least some of them were made in local shoemaking workshops. It is possible that the cork oak which was used to make the insoles was brought from southern Europe, but xylogenetic analyses are inconclusive due to a lack of comparative data.

Women's shoes, very low and shallow, on a wooden, profiled heel seem to be the youngest ones in this collection. Their outer sole is placed under the tread and waist creating in the back part the inner wall of the heel. Both the way in which the parts of the shoes were assembled and the heel was cut allow us to conclude this is an example of 18<sup>th</sup> century shoemaking.

Two slip-on, small size shoes were uncovered in the backfill of the latrine: children's, made of a multi-piece, wooden and leather bottom and a single-piece vamp covering the whole tread up to the talocalcaneonavicular joint. The heel counter is open. This type of a shoe, of various sizes, was known under a popular name of French origin: *mule* (Ceynowa 2007, 437f.; Blusiewicz 2009b, 70–72). In Polish literature on the subject, at least three other names were used, namely *trep* (Eberle 1985, 200), *pantofel* (Turnau 1991, 27) or *mulet* (Możdżyńska-Nawotka 2005, 155) or *muł* (Gutkowska-Rychlewska 1968, 870). This type of shoe is considered a protective one, just like medieval wooden and leather pattens.

The oldest shoes uncovered during archaeological excavations discussed here come from the period when there were guilds: associations of craftsmen from specific trades. The shoemakers' guild, one of the oldest in Szczecin, existed as early as at the end of the 13<sup>th</sup> century. In comparison to objects made of other raw materials, objects made of leather are relatively scarce. It seems that the overwhelming majority are craftsmen's products copying foreign forms and elements of decoration. It is best discerned in ceramics and products made of glass as well as some shoemaking objects, especially mules which were produced following West European fashion, but made of local wood. In the case of Szczecin, the series of late medieval and early modern objects which were uncovered during archaeological excavations are too limited to undertake a detailed analysis of the products of local craftsmen. This gap will undoubtedly be bridged by the results of archaeological excavations carried out in other parts of the town.

## References

- Blažková G. and Matějková K. (eds.) 2019. *Europa Postmediaevalis 2018: Post-medieval pottery between (its) borders*. Gloucester: Archaeopress. DOI: 10.2307/j.ctvndv5gp
- Blažková G. and Matějková K. (eds.) 2021. *Europa Postmediaevalis 2020: Post-medieval pottery in the spare time*. Gloucester: Archaeopress. DOI: 10.2307/j.ctv1jk0jjp
- Blažková G., Matějková K., Casimiro T. M. and Silva R. 2023. *Europa Postmediaevalis 2022: Connections and networking*. Gloucester: Archeopress. DOI: 10.32028/9781803274898
- Blusiewicz K. 2009a. Obuwie warszawskie w XIV–XVII wieku. Przemiany w technice szewskiej. *Archaeologia Historica Polona* 18, 121–139.
- Blusiewicz K. 2009b. *Obuwie warszawskie z XIV–XVIII wieku. Ze zbiorów archeologicznych Muzeum Historycznego m. st. Warszawy / Warsaw footwear in the 14<sup>th</sup>–18<sup>th</sup> century. From the archaeological collection in the Historical Museum of the city of Warsaw (= Archeologia Dawnej Warszawy 1)*. Warszawa: Muzeum Historyczne m.st. Warszawy.
- Blusiewicz K. 2017. Wyroby ze skóry. In K. Meyza and Z. Polak (eds.), *Między miastem a dworem. Badania archeologiczne placu Zamkowego w Warszawie w latach 1977–1983 (= Archeologia Dawnej Warszawy 4)*. Warszawa: Muzeum Warszawy, 341–364.
- Borejszo M. 1990. *Nazwy ubiorów w języku polskim do roku 1600 (= Filologia Polska – Uniwersytet im. Adama Mickiewicza w Poznaniu 41)*. Poznań: Wydawnictwo Naukowe Uniwersytetu im. Adama Mickiewicza w Poznaniu.
- Ceynowa B. 2007. Patynki skórzane ze stanowiska Lastadia w Gdańsku. In M. Fudziński and H. Paner (eds.), *XIV Sesja Pomorzoznawcza, 2: Od wczesnego średniowiecza do czasów nowożytnych*. Gdańsk: Muzeum Archeologiczne w Gdańsku, 437–446.
- Ceynowa B. 2009a. Obuwie ochronne znalezione w Gdańsku – problematyka i metody badawcze. In A. B. Kowalska and B. Wywrot-Wyszkowska (eds.), *In gremio – in praxi. Studia nad średniowiecznym skórnictwem*. Szczecin: Instytut Archeologii i Etnologii Polskiej Akademii Nauk. Oddział w Szczecinie, 95–112.
- Ceynowa B. 2009b. Problem importu obuwia w Gdańsku w 1. połowie XVI w. na przykładzie znalezisk części butów ze stanowiska Lastadia. In H. Paner, M. Fudziński and Z. Borowski (eds.), *Stan badań archeologicznych miast w Polsce*. Gdańsk: Muzeum Archeologiczne w Gdańsku, 389–401.
- Ceynowa B. 2012. Conservation and restoration of leatherwork recovered from excavations in Gdańsk. In E. Ja-

- blońska and T. Koziolec (eds.), *Parchment and leather heritage. Conservation – Restoration*. Toruń: Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika, 311–320.
- Ceynowa B. 2013. Renesansowe kaftany skórzane z badań przy ul. Toruńskiej w Gdańsku. In M. Fudzińska (ed.), *XVIII Sesja Pomorzoznawcza, 2: Od późnego średniowiecza do czasów nowożytnych*. Malbork: Muzeum Zamkowe w Malborku, 191–197.
- Ceynowa B. 2018. Zabytki skórzane. In A. Pudło, W. Ossowski and E. Trawicka (ed.), *Jatki mięsne w Gdańsku od XIV do XX wieku (= Res Gedanenses. Studia i Materiały Muzeum Gdańska 16)*. Gdańsk: Muzeum Archeologiczne w Gdańsku, 465–498.
- Ceynowa B. 2020. Buty. In B. Kościński (ed.), *Lastadia. Najstarsza stocznia gdańska w świetle badań archeologicznych (= Archeologia Gdańska 7)*. Gdańsk: Muzeum Archeologiczne w Gdańsku, 541–553.
- Ceynowa B. and Trawicka E. 2016. *Every step leaves a trace. Historic footwear from the collection of Archaeological Museum in Gdańsk. Catalogue*. Gdańsk: Muzeum Archeologiczne w Gdańsku.
- Cnotliwy E. 2014. *Archeologia zamku książąt pomorskich w Szczecinie*. Szczecin: Muzeum Narodowe w Szczecinie.
- Cywa K. 2019. Analiza taksonomiczna elementów drewnianych z obuwia skózanego. In A. B. Kowalska (ed.), *Civitas et urbs. Szczecin od średniowiecza do współczesności. Kwartal I*. Szczecin: Muzeum Narodowe w Szczecinie, 151.
- Drażkowska A. 2007a. Obuwie typu mule wydobyte na Starym Mieście w Toruniu. *Materiały do Dziejów Kultury i Sztuki Bydgoszczy i Regionu* 12, 71–76.
- Drażkowska A. 2007b. Obuwie z połowy XVIII wieku wydobyte z krypty w kościele p.w. św. Józefa w Pułtusku. In A. Henrykowska and R. Lolo (eds.), *Pułtuskie osobliwości. Materiały wydane w roku obchodów 750-lecia nadania praw miejskich*. Warszawa: Sarmatia Artistica Maciej Kamil Jabłoński, 37–50.
- Drażkowska A. 2007c. Późnośredniowieczne patynki z badań archeologicznych w Toruniu. *Acta Archaeologica Historica* 17, 423–432.
- Drażkowska A. 2007d. *Odzież dziecięca w Polsce w XVII i XVIII wieku*. Toruń: Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika.
- Drażkowska A. 2011. *Historia obuwia na ziemiach polskich od IX do końca XVIII wieku*. Toruń: Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika.
- Drażkowska A. and Grupa M. 2009. Próba przeprowadzenia konserwacji zabytków skórzanych przy wykorzystaniu techniki suszenia próżniowego w niskich temperaturach. *Sprawozdania Archeologiczne* 61, 407–417.
- Drażkowska A., Grupa M., Płociennik P., Rybka K., Szatkowski J. and Zawadzka A. 2011. Using vacuum freeze-drying for archaeological leather conservation. *Sprawozdania Archeologiczne* 63, 357–385.
- Eberle L. 1971. Polskie rzemiosło skórzane w średniowieczu. Stan i kierunki poszukiwań. In Z. Kamieńska (ed.), *Wyrobry rzemieślnicze w Polsce w XIV–XVIII wieku*. Wrocław: Zakład Narodowy im. Ossolińskich, 9–21.
- Eberle L. 1979. Zabytki skórzane z fosy Zamku Warszawskiego. *Rocznik Warszawski* 15, 113–123.
- Eberle L. 1984. Źródła do poznania technologii kroju i szycia średniowiecznego obuwia warszawskiego. *Kwartalnik Historii Kultury Materialnej* 32(2), 199–209.
- Eberle L. 1985. Źródła do poznania technologii kroju i szycia obuwia warszawskiego z XVI wieku. *Kwartalnik Historii Kultury Materialnej* 33(3), 199–214.
- Gołębiowski Ł. 1983. *Ubiory w Polsce od najdawniejszych czasów aż do chwil obecnych sposobem dykcjonarza ułożone i opisane*. Warszawa: Wydawnictwa Artystyczne i Filmowe [reprint 1830].
- Goubitz O., van Driel-Murray C. and Groenman-van Wateringe W. 2001. *Stepping through the Time. Archaeological Footwear from Prehistoric Times until 1800*. Zwolle: Stichting Promotie Archaeology, Uitgevers.
- Grupa M. 2012a. Conservation methods of archaeological leather applied in the Institute of Archaeology of NCU in Toruń. In E. Jabłońska and T. Koziolec (eds.), *Parchment and leather heritage. Conservation – Restoration*. Toruń: Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika, 321–328.
- Grupa M. 2012b. *Wełniane tekstylia pospółstwa i plebsu gdańskiego (XIV–XVII w.) i ich konserwacja*. Toruń: Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika.
- Gutkowska-Rychlewska M. 1967. Patynki z Pyrzyc na tle mody obuwia średniowiecznego. *Rozprawy i Sprawozdania Muzeum Narodowego w Krakowie* 9, 33–41.
- Gutkowska-Rychlewska M. 1968. *Historia ubiorów*. Wrocław, Warszawa, Kraków: Zakład Narodowy im. Ossolińskich.
- Harjula J. 2008. *Before the heels. Footwear and shoemaking in Turku in the Middle Ages and the beginning of the early modern period (= Archeologia Medii Aevi Finlandiae 15)*. Turku: Suomen keskiajan arkeologian seura – Sällskapet för medeltidsarkeologi i Finland.
- Jagielska I. 2009. Zastosowanie liofilizacji do konserwacji zabytków skórzanych z badań archeologicznych. In A. B. Kowalska and B. Wywrot-Wyszowska (eds.), *In gremio – in praxi. Studia nad średniowiecznym skórnictwem*. Szczecin: Instytut Archeologii i Etnologii Polskiej Akademii Nauk. Oddział w Szczecinie, 157–165.

- Jakimowicz B. and Rodzik I. 2009. *Konserwacja i rekonstrukcja zabytków skórzanych*. In A. B. Kowalska and B. Wywrot-Wyszowska (eds.), *In gremio – in praxi. Studia nad średniowiecznym skórnictwem*. Szczecin: Instytut Archeologii i Etnologii Polskiej Akademii Nauk. Oddział w Szczecinie, 147–155.
- Jędrzejczak-Skutnik A. 2016. Zabytki skórzane pozyskane podczas badań archeologicznych w Zespole Przedbramia w Gdańsku. In A. Pudło (ed.), *Zespół Przedbramia ul. Długiej w Gdańsku. Studium archeologiczne (= Res Gedanenses. Studia i Materiały Muzeum Historycznego Miasta Gdańska 13)*. Gdańsk: Muzeum Historyczne Miasta Gdańska, 161–182.
- Jędrzejczak-Skutnik A. 2021. *Wyroby skórzane ze stanowiska nr 24 przy ul. Reduta Wysok 4–5 w Gdańsku (= Archeologia Gdańska 8)*. Gdańsk: Muzeum Archeologiczne w Gdańsku, 307–318.
- Kowalska A. B. 2010. *Wytwórczość skórzana we wczesnośredniowiecznym Szczecinie*. Szczecin: Instytut Archeologii i Etnologii Polskiej Akademii Nauk.
- Kowalska A. B. 2013. *Wytwórczość skórzana w późnośredniowiecznej Dzielnicy Chyżyńskiej w Szczecinie*. Szczecin: Muzeum Narodowe w Szczecinie.
- Kowalska A. B. 2015. Przyczynek do znajomości dziecięcego obuwia skózanego wolinian w okresie nowożytnym. *Materiały Zachodniopomorskie* 10, 307–315.
- Kowalska A. B. 2018. Paradne czy codzienne. Rozwój konstrukcyjny i stylistyczny obuwia skózanego we wczesnym średniowieczu. *Materiały Zachodniopomorskie* 14, 167–191.
- Kowalska A. B. 2021. Step by Step: How to Investigate Medieval Footwear. *Archaeologies* 17(1), 217–284. DOI: 10.1007/s11759-021-09427-w
- Kowalska A. B. 2023. Some reflections on the development of early medieval footwear on Polish Pomerania. In M. Rijkelijhuizen and E. de Campenhout (eds.), *Archeologisch en historisch leer. Bundel van het tweede Leercongres van de Lage Landen – 25 oktober Delft 2019 / Archeological and Historical Leather. Proceedings of the second Leather Conference in the Low Countries – October 25<sup>th</sup> Delft 2019 (= Delftse Archeologische Rapporten 552)*. Leiden: Sidestone Press, 7–23.
- Kowalska A. B. (ed.) 2019. *Civitas et urbs. Szczecin od średniowiecza do współczesności. Kwartal I*. Szczecin: Muzeum Narodowe w Szczecinie.
- Kulesz A. 2019. Women's shoes from the crypt of the church of the Name of the Holy Virgin Mary in Szczuczyn, Podlaskie Voivodship. *Analecta Archaeologica Ressorviensia* 14, 155–168. DOI: 10.15584/anarres.2019.14.11
- Kulesz A. and Grupa M. 2020. Open-back shoes from the southern Crypt in Piaseczno, Pomerania Province. *Folia Archaeologica* 35, 137–149.
- Majewski M. 2015. *Renesansowe kafle zachodniopomorskie. Studium z historii ogrzewania wnętrz mieszkalnych*. Stargard: Muzeum Archeologiczno-Historyczne w Stargardzie.
- Marcinkowski M. 2019. Ceramika nowożytna. In A. B. Kowalska (ed.), *Civitas et urbs. Szczecin od średniowiecza do współczesności. Kwartal I*. Szczecin: Muzeum Narodowe w Szczecinie, 91–104.
- Milewska M. 1977. Dokumentacja archeologiczna znalezisk obuwia późnośredniowiecznego. Propozycja metody. *Kwartalnik Historii Kultury Materialnej* 35(4), 529–542.
- Możdżyńska-Nawotka 2005. *O modach i strojach*. Wrocław: Wydawnictwo Dolnośląskie.
- Możdżyńska-Nawotka M. and Jędrysek-Skotnicka D. 2015. Od dworskiego splendoru do inspiracji antykiem. Obuwie dziecięce z XVIII i początku XIX wieku w kolekcji Muzeum Narodowego we Wrocławiu. In A. B. Kowalska (ed.), *In gremio – in praxi. Przedmioty skórzane na co dzień i od święta*. Szczecin: Instytut Archeologii i Etnologii Polskiej Akademii Nauk, Muzeum Narodowe w Szczecinie, 97–130.
- Olszewski A. 1984. *Atlas historycznych i współczesnych form obuwia*. Radom: Szkoła Wyższa Inżynierska w Radomiu.
- Osipov D. O. and Sobol W. E. 2013. Leather footwear from excavations in Smolensk. *Materiały Zachodniopomorskie* 9, 375–405.
- Radek T. 2019. Oznaczenia zoologiczne przedmiotów skórzanych z latryny nr 1. In A. B. Kowalska (ed.), *Civitas et urbs. Szczecin od średniowiecza do współczesności. Kwartal I*. Szczecin: Muzeum Narodowe w Szczecinie, 147–150.
- Rodzik I. and Jakimowicz B. 2008. Zabytki skórzane. In W. Ossowski (ed.), *Wrak statku General Carleton, 1785 (= Badania Archeologiczne Centralnego Muzeum Morskiego 1)*. Gdańsk: Centralne Muzeum Morskie w Gdańsku, 213–222.
- Sieradzka A. 2009. Ikonografia jako źródło do badań nad odzieżą i akcesoriami ze skóry w średniowiecznej Polsce. In A. B. Kowalska and B. Wywrot-Wyszowska (eds.), *In gremio – in praxi. Studia nad średniowiecznym skórnictwem*. Szczecin: Instytut Archeologii i Etnologii Polskiej Akademii Nauk. Oddział w Szczecinie, 21–38.
- Sieradzka A. 2013. *Kostiumologia polska jako nauka pomocnicza historii*. Warszawa: DIG.
- Turnau I. 1975. *Skórnictwo odzieżowe w Polsce XVI–XVIII w*. Wrocław, Warszawa: Zakład Narodowy im. Ossolińskich.
- Turnau I. 1983. *Polskie skórnictwo*. Wrocław, Warszawa, Kraków, Gdańsk, Łódź: Zakład Narodowy im. Ossolińskich.

- Turnau I. 1991. *Ubiór narodowy w dawnej Rzeczypospolitej*. Warszawa: Instytut Historii Kultury Materialnej Polskiej Akademii Nauk.
- Turnau I. 1999. Słownik nazw ubiorów używanych w Polsce od średniowiecza do początku XIX wieku – źródła i koncepcja. *Kwartalnik Historii Kultury Materialnej* 45(1), 67–73.
- Turska K. 1987. *Ubiór dworski w Polsce w dobie pierwszych Jagiellonów*. Wrocław: Instytut Historii Kultury Materialnej Polskiej Akademii Nauk.
- Uciechowska-Gawron A. 2019. Stratygrafia nawarstwień kulturowych. In A. B. Kowalska (ed.), *Civitas et urbs. Szczecin od średniowiecza do współczesności. Kwartal I*. Szczecin: Muzeum Narodowe w Szczecinie, 23–66.
- Wilgocka A. 2019. Przedmioty szklane. In A. B. Kowalska (ed.), *Civitas et urbs. Szczecin od średniowiecza do współczesności. Kwartal I*. Szczecin: Muzeum Narodowe w Szczecinie, 155–178.
- Żurawska-Chaszczevska J. 2010. Słownictwo rzemiosł skórzanych w polszczyźnie historycznej, unpublished manuscript of PhD thesis in the archive of the Adam Mickiewicz University Poznań (<https://repozytorium.amu.edu.pl/items/30659c4a-cabf-48a5-bd2f-7f342cad40d2>, acces: 20.11.2024).
- <https://www.europapostmed.eu/en>, acces: 28.10.2024



Uniwersytet Rzeszowski  
Kolegium Nauk Humanistycznych  
Instytut Archeologii