

# ELITES



Czech Academy of Sciences  
Institute of Archaeology, Brno

Great Moravian Elites From Mikulčice  
Lumír Poláček et al.



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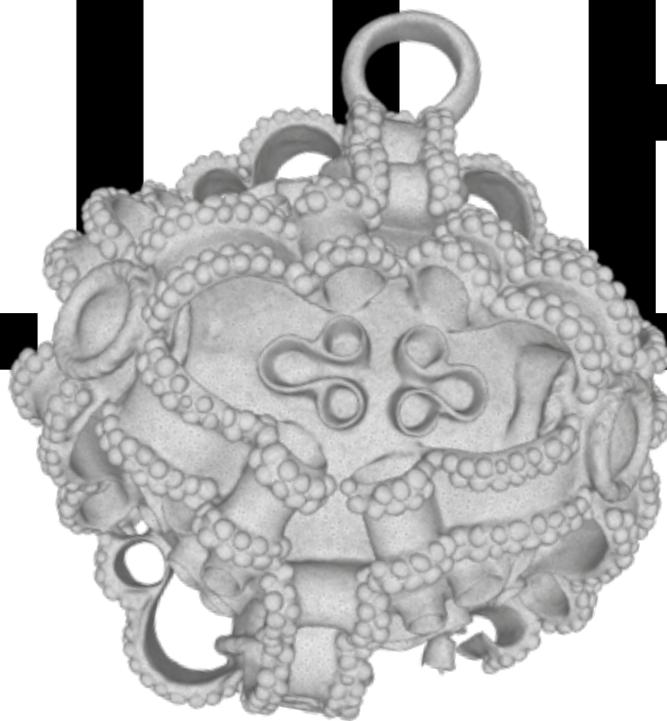
# Great Moravian Elites From Mikulčice

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Institute of Archaeology  
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Main author: Lumír Poláček

Co-authors in alphabetical order: Peter Baxa, Šárka Bejdová, Lucie Bigoni, Helena Březinová,  
Petra Brukner Havelková, Jaroslav Brůžek, Hana Brzobohatá, Sylva Drtikolová Kaupová,  
Luděk Galuška, Matej Harvát, Marek Hladík, Michal Hlavica, Jiří Hošek, Alexandra Ibrová,  
David Kalhous, Jiří Košta, Pavel Kouřil, Lenka Kovačiková, Šárka Krupičková, Jakub Langr,  
Michaela Látková, Jiří Macháček, Marian Mazuch, Estelle Ottenwelter, Rudolf Procházka,  
Dana Rohanová, Hedvika Sedláčková, Vladimír Sládek, Petra Stránská, Šimon Ungerman,  
Lucie Valášková, Jana Velemínská, Petr Velemínský, Eliška Zavzonilová

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# Preface

– Lumír Poláček

Mikulčice, the leading centre of Mojmirid Moravia and a place with a remarkable concentration of power, wealth and faith, captivates us to seek the evidence of the highest elites. The search for answers is influenced by one major advantage and one major disadvantage. The former is that 9th-century Great Moravian society was at a stage where it was important to demonstrate its wealth, power and social status through its material culture. However, of greater importance to us is that they placed those objects of material culture (to a degree that we can only assume) in the graves of the deceased. The archaeological, socially-oriented research into the 9th-century Great Moravian population can thus be based on the study and interpretation of grave goods. While we may doubt how this archaeological context accurately reflects the reality of the past, we commonly believe its testimony. In contrast, the main weakness of our research is the lack of historical written sources, both in general and in the case of particular power centres, which would identify and name the highest social strata of society. It is a paradox that although the graves of the prominent individuals of Great Moravia and its most important burial grounds have been excavated at this point in time, we are unable to identify from the grave material the particular social groups of the aristocracy of that time. Even though we examined hundreds of elite graves, the findings have not yet enabled us to distinguish with certainty the ruler and his family from princes and magnates or church dignitaries and court officials from members of the military retinue, merchants, important artisans or members of the clergy. One way is to define clear parameters for “qualitative groups” according to the repetitive characteristic composition of the grave goods, and then try to associate these groups with different social classes, similar to the *Qualitätsgruppen* of Merovingian cemeteries.<sup>1</sup>

The archaeological interpretation is complicated because the grave goods and the burial rite cannot directly and unambiguously reflect the social relations within their society as they are, in principle, expressions projected on the deceased from those left alive with regard to the importance of the dead and their social ambitions.<sup>2</sup> The corresponding data indirectly informs us about the ideology and values of the society of that time as well as the symbolism, where the true meaning is often not understood. Thus, information about the grave goods and the funerary rite has the character of intentionally generated data, which we must work with carefully, critically and with knowledge of the cultural background of the period. Therefore, the anthropology, respectively the bioarchaeology, is irreplaceable in understanding the social structure of past populations by aiming to study the skeletal remains. Unlike the “intentional” archaeological data, anthropology

and the related disciplines generate “functional” data, which is objective and unaffected by the ideology and values of the society of that time.<sup>3</sup>

Unquestionably, the picture of the social structure needs to be consistently composed with the two above-mentioned sets of data, their combination and comprehensive analysis of all available sources.<sup>4</sup> This also encapsulates the project which was at the beginning of the book. The *Lifestyle and Identity of the Great Moravian Nobility: Archaeological and Bioarchaeological Analysis of the Evidence of Mikulčice’s Uppermost Elites* project, supported from 2017 to 2019 by the Czech Science Foundation, aimed at presenting a new image of the Mikulčice elites and consisting of a holistic view of their identity and lifestyle, including nutrition. This interdisciplinary approach involved specialists from the fields of archaeology, history, anthropology, biology, archaeobotany and archaeozoology, etc. The project consisted of a team from the Institute of Archaeology, Czech Academy of Sciences, Brno, together with anthropologists from the National Museum in Prague and the Department of Anthropology and Human Genetics, Faculty of Science, Charles University. The work schedule was planned to create a database of nearly 500 elite graves from Mikulčice, conduct an archaeological analysis of selected features of the burial rite and grave goods, and carry out broad-based anthropological research using stable C and N isotopes for monitoring nutrition, 3D imaging methods and geometric morphometry tools for obtaining bioarchaeological data. This process was complemented by a series of contributions reflecting the sources of settlement nature from Mikulčice and other Great Moravian central agglomerations. The historical context also forms the first part of the book in a well-founded and, to some extent, a novel manner contributed by a team of historians and archaeologists. All the participants joined the project believing that the “Mikulčice material” still offers significant information potential, opening up completely unexpected possibilities of knowledge within a complex approach and with the contribution of new scientific methods.

Despite its limitations, the Mikulčice collection is a phenomenon that is of fundamental importance to the knowledge of the lifestyle and identity of the highest classes of society in Mojmirid Moravia. No other 9th-century site in the north of the Middle Danube provides such concentrated evidence of power, wealth and Christian faith as Mikulčice. This reflects the basic function of the Mikulčice agglomeration as a power centre, optimally expressed by the German term *Herrschaft*. Undoubtedly, there was a close secular and ecclesiastical link between Mikulčice and the ruling family of the Mojmirids, their court and the central offices. Although

1 Christlein 1973.

2 Brather 2009; Härke 2014.

3 Härke 1993.

4 Härke 2014.

the absence of written reports means that Mikulčice's particular function in the political, administration and economic structure of the realm cannot be determined, we can assume that Mikulčice was a crucial point in the administration of the whole polity. This does not diminish the importance of the other Moravian central agglomerations of Staré Město – Uherské Hradiště and Pohansko near Břeclav, which, like Mikulčice, may have served as the ruler's residences following the Carolingian palace (*Pfalz*) model and “rule from horseback”. A model example of the transfer of Frankish patterns to Moravia is the magnate court at Pohansko. The adoption of models in the spirit of *imitatio imperii* is a characteristic feature of Great Moravia's material culture, at least in terms of prestigious warrior and equestrian equipment, some of the clothing and other types of products. It is often difficult to decide which “Carolingian” items came to Moravia as imports, gifts or booty and which were imitated in the local workshops according to foreign models, possibly with additions and the use of recycling. The Moravians took from the cultures of their richer and more powerful neighbours – especially the Franks and the Byzantines – not only items of material culture but also ideas, know-how, lifestyle and fashion, etc. However, all these are much more difficult to prove in the archaeological material. Instead, they can be found in the evidence of a higher living standard, for instance in the archaeobotanical material, which shows a richer composition of foodstuffs. We can expect the genetics and isotope analyses to help answer questions concerning mutual contacts between Moravia and its wider neighbourhood in the future.

The study of Great Moravian central agglomerations and their material culture has an almost seventy-year tradition. The second half of the last century is considered the “classical” age of discoveries in the field of “Slavic archaeology”. This is when a previously scarcely known culture that was full of lustre emerged, and because it was “domestic”, i.e. Slavic, its research (quite naturally in the post-war years) enjoyed major financial support from official circles and great interest from the public. Annual discoveries of churches and rich graves with weapons and jewellery stimulated more and more fieldwork, attracting attention both domestically and abroad. The whole campaign culminated in a readily prepared and generous presentation of the results of the post-war research of Great Moravian sites in both Moravia and Slovakia in a series of international exhibitions named Great Moravia, which were successfully presented in many metropolises of Western Europe from 1963 to 1968. This surge in domestic research was part of the reform atmosphere of the 1960s and also ended with it: life – including archaeological life – returned to the rut of “normalisation” in the 1970s and 1980s. New archaeological impulses and opportunities only opened up again with the political and social changes of 1989. Annual fieldwork of non-endangered sites stopped in the early 1990s and attention focused on the processing and publication of archaeological collections obtained so far, gradually opening up a wide spectrum of research questions concerning the life and material culture of 9th-century Moravian society. Over the past three decades, this has brought about considerable factual and methodological progress in the research of the three central agglomerations of Great Moravia.

We can now describe the last steps on the path towards a complex study of the Mikulčice and, in general, the early medieval elites. The beginnings of intensive interest in these issues roughly overlap with the new millennium. In 2004, the year of the 50th anniversary of research in Mikulčice, the international conference

*Die frühmittelalterliche Elite bei den Völkern des östlichen Mitteleuropas mit einem speziellen Blick auf die großmährische Problematik* was held there, resulting in the proceedings of the same name.<sup>5</sup> The project for processing the cemetery near Mikulčice Church 3 started in 2005 and ended with a critical catalogue.<sup>6</sup> The 1150th anniversary of the arrival of Cyril and Methodius in Moravia in 2013 was also commemorated by an international conference and the subsequent lavish exhibition *Great Moravia and the Beginnings of Christianity*, which was successfully presented in four Central European museums, accompanied by an exquisite catalogue.<sup>7</sup>

A further development in recent years has been a natural shift in the perception of Great Moravian material culture. The time of fascination with luxury finds is over, and attention is now fully focused on the information potential of the archaeological material. This has opened up the phase of critical processing of the individual categories of material culture and the individual topics of the life of 9th-century Moravian society. A fundamental change has occurred in recent years through interaction with the natural-science and technical disciplines, which shines a new light on the historical testimony of the archaeological material. The European dimension of the area of interest of this research has become a matter of course. Hopefully gone is the time when the King of Sweden Gustaf VI Adolf, himself an archaeologist, said during the opening ceremony of one of the last stands of the Great Moravia exhibition in Stockholm in 1967: “You have beautiful artefacts, but you tell us little about them.”<sup>8</sup>

The book *Great Moravian Elites from Mikulčice (GME)* is a collective monograph intended for the professional and the general public and is aimed at acquainting the reader with the phenomenon of the court milieu of Great Moravian Mikulčice within the widest possible interdisciplinary context. All necessary steps have been taken to present this particular historical narrative by drawing on sources of information from various academic disciplines such as history, archaeology and anthropology. The interdisciplinary character of the monograph appeals to readers with varying interests on a national and international level. The main areas of knowledge about the form and function of this important early medieval centre and the life of the elites are gradually introduced over four thematic sections and twenty-four chapters. The first section provides the historical background focusing on the written sources, particularly the relationship of the Moravians and the ruling Mojmirid dynasty with the Frankish Empire. In the second section, Mikulčice is presented as an island stronghold, a proto-urban agglomeration, a princely, ecclesiastical and economic centre, including its agricultural background and daily activities. The third section examines selected categories of the material culture of the Great Moravian elites, especially the luxury products, which range from weapons and equestrian equipment through to jewellery, textiles and tableware. The final section is focused on the bioarchaeological research of the skeletal remains of the inhabitants of the Mikulčice agglomeration, primarily on their health condition and socioeconomic reality. To achieve a greater variety of the submitted texts, each chapter is formally composed of an introductory essay supplemented with excursuses.

5 Kouřil 2005.

6 Klanica et al. 2019.

7 Kouřil ed. 2014; Kouřil et al. 2014.

8 Staňa 1996b, 37.

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Martin Fořt and Michal Chovanec cleaned, re-conserved and perfectly prepared the artefacts, while Jaroslav Škojec and Petr Čáp assisted with the processing of the illustration part of the field documentation from Mikulčice. Zdeňka Pavková, always helpful, assumed the task of finalising their material and many other

necessary editorial works. Photographers Matouš Bárta and Jiří Foltýn, geoinformatics expert and 3D modeller Jiří Šindelář and draughtsman Rostislav Skopal were the authors of the rich illustration apparatus, with ample organisational help from Martina Kudlíková and technical assistance from Markéta Košařová and Lenka Zahradníková. We also thank the employees of the Institute of Archaeology in Brno archives and library for their helpfulness and cooperation, especially Hedvika Břínková for compiling nearly the thirty-page list of literature and citations. The graphic artists' imprint is the most visible in the book: Zdeněk Tuka filled it with original spirit, while the imaginary body was incredibly rapidly set in type by Milena Havlíčková. David Židlický and Robert Helbich showed much managerial responsiveness and patience (not only) in the finalisation of the book.

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I thank from my heart all devoted co-workers who have lived intensively with the book for days, weeks and months and who can be credited for its publication.



# Mojmirid Moravia in the 9th Century

1



Golden solidus of the Emperor Michael III (842–867) was found in Mikulčice, Grave 480 near Church 3, the three-nave basilica.

# 1.1

## Moravia Under the Mojmirid Dynasty in the 9th Century<sup>1</sup>

– David Kalhous

The first reference in the written sources to the region ruled by the Mojmirid dynasty during the 9th century – a territory in present-day East Central Europe spanning South Moravia, Western Slovakia and areas north of the Danube in Lower Austria<sup>2</sup> – appears relatively late at the end of the 8th and beginning of the 9th century (Fig. 1). There are two reasons for this. One is that the local population may not have possessed a written culture (if they did, certainly no accounts have been preserved). Another factor is that the historians of the Frankish Empire – the key documenters of events in the region during the 9th century – started to pay attention on that region as late as around 800. After all, it took more than 100 years to consolidate the power of the Carolingian dynasty in the central and western regions of the empire, starting in about 700. Further, efforts to integrate regions around the eastern border (present-day Saxony, Thuringia, Swabia and Bavaria) proceeded slowly during the 8th century.

However, the integration of Bavaria (see Excursus 1.1.2) had a more serious consequence than merely attracting the interest of Frankish chroniclers in the regions of Bohemia and Moravia. Several Frankish military campaigns were directed against the existing hegemony in the area, the Avar Khaganate. Occupying a central swathe of what we know today as East Central Europe and extending to parts of the Balkans, this semi-nomadic empire had a far-reaching political and cultural influence on the elites beyond its borders.<sup>3</sup> The disintegration of the Khaganate that soon followed threw the region into chaos, coinciding with the first references to the Moravians in the third decade of the 9th century<sup>4</sup> along with simultaneous reports documenting the Christianisation of the region (for comparison, see Essays 1.2 and 1.3).

The formation, existence and duration of the power units on the peripheries of the empire must be seen from two perspectives: the empire's view of itself and the view of it from the outside. The following analysis will explore the evolvement of both viewpoints over time. The clashes between the Franks, the Moravians and the inhabitants of Bohemia make up a substantial part of the *Annales Fuldenses*, the most comprehensive contemporary chronicle of East Francia (for details, see Excursus 1.1.3). The history is notable for how its authors envisage an ideal relationship between the two factions, and all the more remarkable given that none of the other texts written in Moravia during the period address these relations, including, surprisingly, the biographies of the lives of the two influential Byzantine missionaries Constantine and Methodius (see Excursus 1.3.2).

Building power structures beyond the borders of an empire (or on its peripheries) has logistical aspects. The groups of people residing in these areas under political pressure would not only have required protection and their basic needs to be met in order to survive. This also contributed to the establishment of their new identity. At the same time, the construction of new power structures in these areas would have been dependent on assistance from the local elites. Being limited in number, they may not necessarily have posed a disadvantage in a struggle with their more powerful neighbour – serving as protection – but an unstructured space could hardly have been dominated without the necessary elements being put in place to funnel power from central locations to border areas. Moreover, it would have been very costly and resulted in frequent clashes.

Let us now discuss these factors in more detail. For Moravian society to develop, it must have been able to defend itself. In practical terms, this would have required the mobilisation of a mass workforce to build fortifications and deliver the necessary materials for their construction. In the case of Great Moravia, we know that massive oak trunks and stones were assembled to construct the foundations for their defences.<sup>5</sup> Since the wood and earth forts typical of East Central Europe would have degraded quickly, mortared stone constructions would have been required to make them operational over a long period of time. Evidence of such fortifications points to the existence of a hierarchical society powerful enough to persuade or force others to sacrifice manpower – of which there was little to spare in the Early Middle Ages – on a regular basis. Similarly, there is a common trend in the types of materials and construction methods employed in the territory, indicating an overarching organisational unity. Unsurprisingly, numerous contemporary documents from throughout Europe during the period contain provisions stipulating subjects be employed in the construction or maintenance of fortifications and roads.<sup>6</sup>

Based on archaeological evidence assembled since the 1950s, we know that massive wood and earth fortifications existed in Great Moravia. We also know that some of the Moravian agglomerations that developed during the 9th century were established before 800. However, recent scientific findings have cast doubt on the dating of fortifications around key strongholds, the distinguishing landmarks of Moravian territory under the Mojmirid dynasty. For instance, fortifications at Pohansko near Břeclav<sup>7</sup> are now understood to date to the 870s, while the dating of structures at Mikulčice and Staré Město near Uherské Hradiště previously believed to have existed before the reign of Svatopluk or at least

1 I would like to thank Rudolf Procházka, Hana Chorvátová-Vlašičová and Josef Šrámek for their insights.

2 For the Slavs in Austria, see Havlík 1963; to localisation recently Bowlus 2009, Curta 2009; Kalhous 2009; Macháček 2009; Profantová 2009.

3 Pohl 2018a.

4 Třeštík 2001a.

5 Cf. Procházka 2009; Dresler 2011.

6 Kalhous 2012.

7 Cf. Macháček – Dresler – Rybniček 2013.

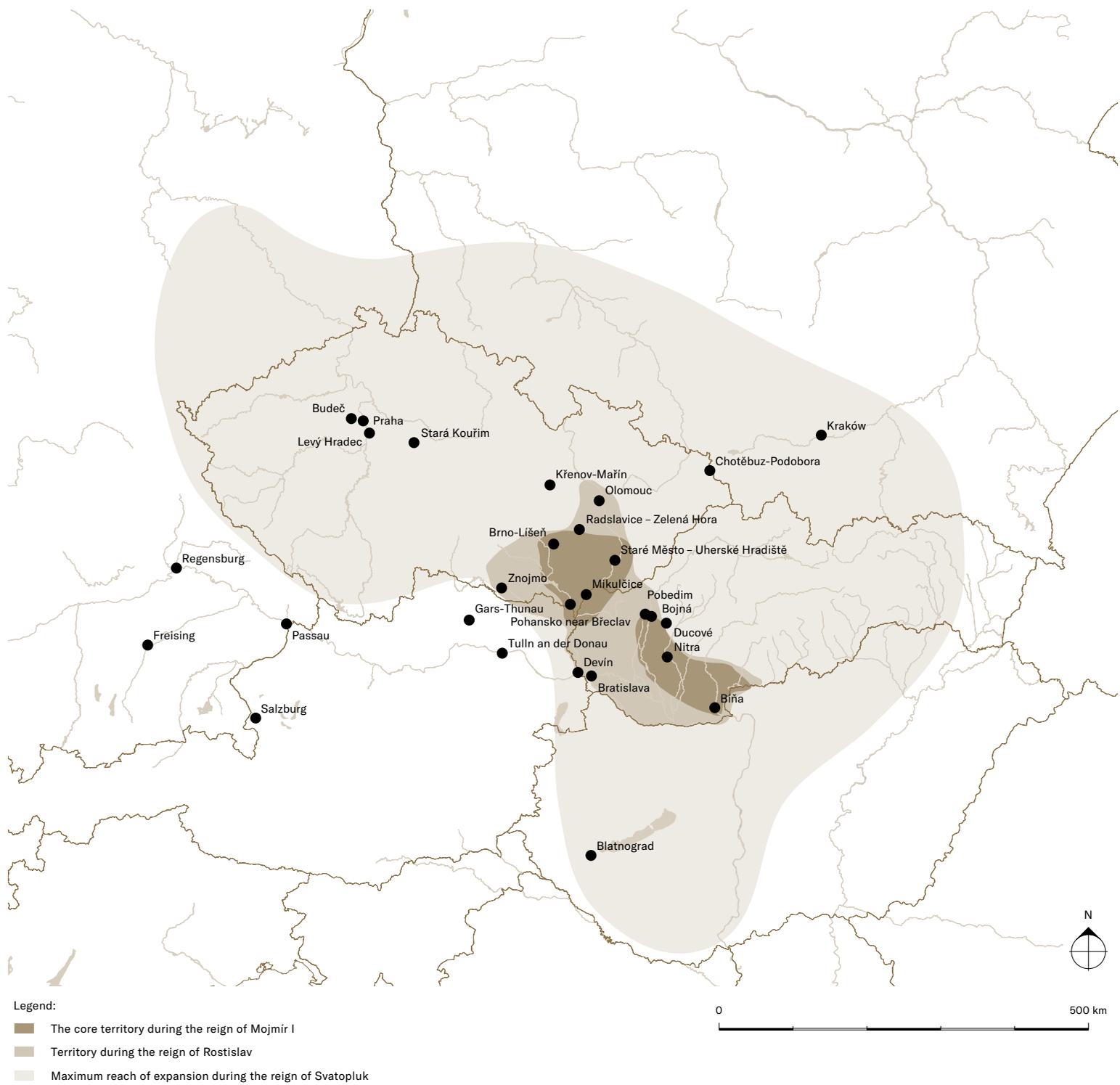


Fig. 1 Central places of the Mojmirid Moravia and in its neighbourhood.

before 860, respectively, have now been cast in doubt. After all, it is not that surprising, as fortifying a territory was an expensive business and only countenanced in the face of imminent threat.<sup>8</sup> With the passing of danger, however, maintenance of these fortifications tended to be neglected. The fortifications built in Wessex to repel the Danes during the period of Alfred the Great (871–900), for example, were not maintained once they had fulfilled their purpose, falling into disrepair over time.<sup>9</sup>

One of the objectives of establishing mutual connections was to accumulate resources. One of several ways of doing this<sup>10</sup> was through the collection of taxes, levies and tributes, a system requiring superregional communication and coordination. Although nothing is known about taxes in Great Moravia, a letter from Aribio, Margrave of Pannonia (891), to Arnulf, King of East Francia, gives us some idea about how tributes were collected on behalf of the Frankish Empire.<sup>11</sup> It would appear the Moravians themselves were charged with their collection, occasionally extending to the importing of cattle, with herds probably gathered into enclosures and then driven en masse over the border. Although there is no evidence of the involvement of princes in collecting tributes, the likelihood is they had some role. Of course, the obligation to pay the tribute served to define the roles of the parties in the transaction. It also played an important symbolic role, helping to “materialise” the bond between the ruler and the ruled while reinforcing a sense of social hierarchy.

Given the basic nature of their economies, early medieval principalities did not have the luxury of installing large bureaucratic apparatuses. Instead, there was a reliance on the collective exercising of local power, allowing persons of ambition to climb the social ladder and gain positions of authority over time. The strength of this system undoubtedly lay in its close interconnectedness and cohesion among contacts that went beyond the boundaries of local communities.<sup>12</sup> Based on analogous situations in other societies, this social mobility would have been enabled by a combination of material possessions, individual charisma and inherited entitlements. Once a member of elites gained unfettered access to resources or symbolic capital, a hierarchy between members could then be established and a leader appointed. Although the person at the top would have had access to military power in the form of small, armed retinues, he would still not have been able to exert dominance over the community through force alone, needing to diplomatically intervene in local disputes and curry favour among his followers with gifts, titles and posts, much like the papacy on the European scale.<sup>13</sup> The ruler’s status would have been confirmed with the appropriation of titles and posts from culturally more advanced centres, commanding the respect of the local community<sup>14</sup> and legitimising their bearers by providing them with titles their local rivals could not. The final step in the process would have entailed the prince a legal system long-controlled by family ties through the creation of a fictional ancestry.<sup>15</sup> In this respect, the ruler’s rise to power can be more considered the product of symbolic violence and cultural revolution, and less the consequence of discord and confrontation.

Although we do have evidence of violence used for political ends, only one mass grave connected to a coup within the Přemyslid Principality (found in Budeč)<sup>16</sup> has been discovered. That the find has only one direct archaeological parallel (in Anglo-Saxon Wessex) throughout all of early medieval Europe weakens the perception that it was a society beset by boundless violence.<sup>17</sup> Written references to violent changeovers of local and regional elites are equally rare, with accounts of death sentences and murders the exception rather than the rule. Even the most notable of these – the culling of the Anglo-Saxon elites by William the Conqueror after 1066 – came as a consequence of several uprisings that took place over the course of William’s reign as opposed to one swift decimation (William initially only confiscated property from those who fought against him at Hastings).<sup>18</sup> Recent research has also cast doubt on the assumption that the gathering of the Alemannic nobility by Carloman, the Mayor of the Palace, at Cannstatt in 746 turned into a “bloodbath”. Therefore, the rudiments of establishing princely power – although theoretically quite easy to grasp – are made more complicated by the dearth of historical sources, both written and material.

Only with the recent re-evaluations of various small “rural” burial grounds – often comprising several graves containing weapons<sup>19</sup> (for contemporary depictions of Carolingian society representatives, e.g. Fig. 2; 3) – have we come closer to better understanding the nature of Moravian elites during this period. The people buried in these graves very likely belonged to a social class connected with prominent centres through key contacts in their community. Known as “free Moravians”<sup>20</sup> or “members of the local elites”<sup>21</sup> – terms that reflect different aspects of the one social group – they would have been a basis of an ethnically defined group, having a certain social status and originating in a specific place.

Above these stood a higher class consisting of a select number of superregional elite members, who were either constituents of the Mojmirid Principality or inhabitants of nearby centres. However, this prestige group has only been reliably identified based on grave goods. And even then, the dating of these finds has been the subject of intense debate over the last decade, with many objects dated to later periods<sup>22</sup> or completely revised based on new chronological evidence.<sup>23</sup> Complicating matters further, the theory of the Blatnica-Mikulčice horizon – which postulates that a syncretic, yet independent Moravian identity consisting of elements of Avar and Frankish cultures began to form around 800 – has now been rejected.<sup>24</sup> Both issues have led to much confusion regarding the situation in Moravia during the first half of the 9th century. It also seems that this group of people were the most affected by the Magyar invasion, being either deliberately removed as instigators of the resistance or compelled to cooperate with the new power.<sup>25</sup>

There is a similar lack of clarity about the administrative structure of Moravia in the 9th century. An author referred to as “the Bavarian Geographer” from the end of the 9th century provides

8 For early medieval fortifications, cf. the seminal monograph by Procházka 2009.

9 Cf. Williams 2013, 131–135.

10 For tributes and taxes, see Havlík 1987a.

11 Schwarzmaier 1972.

12 Cf. modern parallels for social coercion in Elias – Scotson 1994.

13 Cf. Heidecker 2010.

14 For similarities of ancient ranks and titles in the “barbarian kingdoms”, see Wolfram ed. 1967; 1973; Wood 1985.

15 Modzelewski 2015.

16 Štefan – Stránská – Vondrová 2016.

17 For a comparison of the Czech milieu, see Luňáková 2017; Krejsová-Mazáčková – Vachůt – Hejhal 2008.

18 Bates 2016.

19 Štefan 2019; Kalhous 2014b. For the general context, see Steuer 1982.

20 Štefan 2019.

21 Kalhous 2014b.

22 Recently Ungerman 2018a.

23 Chorvátová 2007; 2015.

24 Robak 2017.

25 Recently Kouřil 2019b.

a description of the regions east of the Frankish Empire.<sup>26</sup> The document is a list of the various ethnic groups in the region and the number of *civitates* (probably local communities concentrated in settlement agglomerations) each group held. Another contemporary account, Ibn Rustah's geographical compendium "Book of Precious Records", refers to a high-ranking official as "Subanj", probably an equivalent term for a vizier or chief minister.<sup>27</sup> In all likelihood, such a position would have been closer to that occupied by a Frankish count, a local deputy to the prince charged with overseeing mustering army, taxes and justice. Unfortunately, there are no further reliable reports. However, we can draw inspiration from the contemporaneous political structure in Brittany. Here, the princely court and its deputies worked in tandem from a centre of power that strove to operate as an administrative and interdependent body, with jurisdiction over regional assemblies controlled by the local elites (for comparison, see Excursus 1.1.2).

The rise to power of the Moravian dynasty is difficult to chart. The first two references to Mojmir, the founding ruler of the Moravians, appear in the written sources around 830; however, both are problematic. The first reliable record entitled "The History of the Bishops of Passau" refers to the mass baptism of the Moravians in 831, although it was written in the 13th century (for more on Christianisation, see Essay 1.3).

The second report, a Latin history probably composed in the 870s by the Archbishopric of Salzburg (see Excursus 1.3.2) – the propagandistic *Conversio Bagoarioum et Carantanorum* – tells of Mojmir's exiling of the Slavic prince, Pribina (cf. Excursus 1.1.3). In the three manuscripts of the *Conversio*, Pribina is referred to as the founder of a church "on his own land" in Nitra. Pribina's role is also unclear: he is either thought to have been a relative of Mojmir that governed the Nitra region or, in stark contrast, a representative of a separate community residing in the territory of present-day Western Slovakia that was later integrated as part of Mojmir's existing territory.<sup>28</sup> Establishing a connection between Nitra and Pribina as its ruler is also difficult, given the mention of his consecration of the church there is probably a late interpolation. There is also the odd allusion to the location of the church being *in sua proprietate*, "in his own property", when the term "principality" would have been more suitable for describing a ruler or governor. In any event, Pribina ultimately did become the ruler of another region after seeking asylum with Louis the German.

Concerning Mojmir's position, it is difficult to determine if he succeeded previous rulers and how he ascended to power. With their relatively detailed descriptions of Frankish campaigns, the late records of Frankish annalists are the only sources that hint at the locality of the principality governed by Mojmir and his successors. They tell of an army led by Louis the German (843–876) invading Moravia in August 846 and the proclamation of Mojmir's relative Rostislav as their new leader.<sup>29</sup> The next reference to Rostislav comes around 855 (but no later), once again in connection to a conflict between Moravia and East Francia.

It seems that at least some of the Frankish elites perceived Moravia as a region beyond the direct control of the king and the Church. There is an account from 852 of the Council of Mainz adding

26 Rossignol 2011, 85–89; Kalhous 2008.

27 MMFH III 1969, 347.

28 Lysý 2014, 220–221.

29 Ann. Fuld. 1891, AD 846, 36; Annals of Fulda 1992, 25; see, for example, Goldberg 2006; Treštk 2001a.



Fig. 2 Stuttgart Psalter.

According to Bernhard Bischoff, it was copied between 820 and 830 at the scriptorium of St Germain-des-Prés in Paris, in the royal monastery, which enjoyed the personal patronage of Charlemagne. It includes 316 colour illuminations illustrating the daily life of the Carolingian society.

Fig. 3 Utrecht psalter.

Written in rustic capitals in the neighbourhood of Rheims between 816 and 835 allegedly sponsored by the Archbishop Ebbo, it includes 166 pen illustrations, which comment on each psalm and provide us with valuable visualisations of different activities in the Carolingian era. For the rest of the 9th century, it was probably used in Metz and in the court of Charles the Bald.



**XCIII PSALMUS DO-**

**D**ULTIONUM DOMNI  
 DOMINUS LIBEREGIT  
**E**XALTARE QUI IUDICASTERRA  
 REDDERIT TRIBUTIONEM  
 SUPERBIS  
**U**SQUE QUO PECCATORES DOMNI  
 USQUE QUO PECCATORES CLO  
 RABUNTUR  
**E**FFABUNTUR ET LOQUENTUR  
 INIQUITATEM LOQUENTUR  
 OMNES QUI OPERANTUR  
 IN INIUSTITIAM  
**P**OPULUM TUUM DOMNI HUMILI  
 AVERUNT ET HEREDITATE  
 TUAM AUERUNT  
**U**IDUAM ET ADUENAM INTER  
 FECERUNT ET PUPILLOS OC

**QUARTASABBATI**

CIDERUNT  
**E**T DIXERUNT NON UIDEBIT  
 DOMINUS NEC INTELLIGET DOMINUS  
 IACOB  
**I**NTELLEGITE INSIPIENTES  
 IN POPULO ET STULTIALI  
 QUANDO SAPITE  
**Q**UI PLANTAUIT AUREM  
 NON AUDIET AUT QUI IN  
 XIT OCULUM NON CON  
 SIDERAT  
**Q**UI CORRIPIT CENTES NON  
 ARCUET QUID OCETHOMI  
 NEM SCIENTIAM  
**D**ISSCIT COGITATIONES HO  
 MINUM QUI UANESUNT  
**B**EATUS HOMO QUI EMIT UERU

DIERIS DOMNI ET DELECTUA  
 DOCUERIS EUM  
**U**T MITTICES EL ADIEBUS MALIS  
 DONEC SODEATUR PECCA  
 TORI SOUER  
**Q**UIA NON REPELLET DOMINUS  
 PLEBEM SUAM ET HEREDITA  
 TEM SUAM NON DERELIN  
 QUET  
**Q**UID USQUE IN IUSTITIA CON  
 UERTETUR IN IUDICIUM  
 ET QUI IN IUSTITIA OMNES  
 QUI RECTOS UNTECORDE  
**DIAPSALMA**  
**Q**UI CONSURGIT MIHI AD  
 UERSUS MALICIANTES  
 AUT QUI STABIT MECUM

to the punishment of a certain Albigis, who allegedly kidnapped the wife of a man called Patricius, and fled to Moravia. In addition to imposing a life of repentance and celibacy, the synod reportedly divested him of his “military belt”. Intriguingly, reference is made to the fugitive escaping “to the very borders of the kingdom inhabited by the uncultivated Christian peoples of Moravia”.<sup>30</sup> This suggests an ambivalent attitude to the position held by Rostislav and his Moravian Principality. Theoretically, at least, the region seems to have been considered (just like Bohemia) part of Louis’ kingdom.<sup>31</sup> In a narrative reflection of the low esteem in which the Frankish annalists held the Moravian princes and their people, terms such as “perfidious” and “treacherous” are used to describe their tactics in resolving disputes with the East Francia’s kings. Confirmation of such beliefs comes in a letter written around 900 by Theotmar, Archbishop of Salzburg, on behalf of the Bavarian bishops. In it, he cites a certain tribute payment as exemplifying the inferiority of the Moravians to the Franks.<sup>32</sup> The collection of these tributes was probably crucial to the Frankish hegemony retaining control over the regions of East Central Europe, especially considering no Frankish counts operated in these territories.<sup>33</sup> The letter from Margrave Aribio mentioned previously in this chapter delves into the specifics of these tribute payments in more detail.

The events of the 860s provide, however, also confirmation of the interconnectedness of the Moravian and East Francia’s elites. The late Frankish annals, the *Annales Bertiniani*, claim that Rostislav found an ally in the son of Louis II, Carloman, who ruled Carinthia.<sup>34</sup> Rostislav sought to take advantage of the conflict between father and son. In 863, the East Francia’s king managed to quell the rebellion of his disobedient heir. Louis invaded Moravia a year later, having previously secured the neutrality of the Bulgarian Khanate. Following his defeat, Rostislav was forced to release a number of high-ranking hostages and swear loyalty to the king in front of his noblemen.<sup>35</sup>

Of all the Moravian princes to rule during the 9th century, Svatopluk I (871-894) was undoubtedly the most successful. His early reign was marked by a series of treacheries.<sup>36</sup> Svatopluk first entrapped Rostislav after pre-empting an initial attack by his uncle. After handing his uncle over to Louis the German, Svatopluk was then himself betrayed and taken captive. Unlike Rostislav, however, he kept his sight, only having to contend with the ignominy of imprisonment. With the rebellion of the Moravians against the Frankish counts of the Wilhelm family (appointed as governors of Moravia), Svatopluk was dispatched along with the Frankish army as its counsellor. But his subsequent desertion to the Moravians precipitated the defeat of the Frankish troops.

In the years to come, Svatopluk would profit from the death of Louis, capitalising on the disputes between his sons while also perhaps involving himself with Charles III (876-887, †888) in the west. If his hateful obituary in the *Annales Fuldenses* is anything to go by, he was evidently a figure of considerable renown, if not infamy, in the Frankish kingdoms:

30 “...ad extremos fines regni duxit in rudem adhuc christianitatem gentis Maraensium...” Capit. II 1897, n. 249, 189.

31 For similar conclusions, see Třeštík 2001a, 161.

32 *Conversio* 1997; see also *Excursus* 1.1.3.

33 For tributes in general, see Havlík 1987a; cf. Reitingier 2012.

34 *Annales de Saint-Bertin* 1964, AD 862, 95; *Annals of St. Bertin* 1991, 104.

35 Cf. *Ann. Fuld.* 1891, AD 864, 62; *Annals of Fulda* 1992, 51-52; for example, see Goldberg 2006; Třeštík 2001a.

36 *Ann. Fuld.* 1891, AD 870-871, 70-73; see also the following footnote.

“Zwentibald, the *dux* of the Moravians and the source of all treachery, who had disturbed all the lands around him with tricks and cunning and circled around thirsting for human blood, made an unhappy end, exhorting his men at the last that they should not be lovers of peace but rather continue in enmity with their neighbours”.<sup>37</sup>

Other indications of his leverage are the locations selected for his meetings with two Frankish rulers – Charles the Fat in Monte Comiano<sup>38</sup> and, later, Arnulf in Omuntesperch – both situated on the borderlands.<sup>39</sup> This would have had great symbolic significance, since Svatopluk no longer had to ride out to the Frankish king, only meet halfway.<sup>40</sup> Perhaps the best illustration of the respect he commanded is the fact that he was made godfather to his namesake, Arnulf’s son, Zwentibald, who would go on to become King of Lotharingia.<sup>41</sup>

Svatopluk’s expansionist policy was impressive. He undoubtedly interfered in disputes between the Bavarian elites<sup>42</sup> (for its extent, cf. Fig. 2) and skilfully engineered a claim to the territory of present-day Bohemia entrusted to him by Arnulf.<sup>43</sup> Some researchers have discussed the influence of Great Moravia in present-day South-Eastern Poland. According to the author of one legend, Methodius reportedly sent his messengers to urge a “mighty prince” by the River Vistula to consent to baptism lest he will be coerced into doing so. The advice was evidently not heeded, as the Vislan ruler was soon defeated.<sup>44</sup> Regrettably, the archaeological evidence pointing to the possible Moravian impact in the territory is rather limited, with the only significant find a treasure hoard from Krakow.<sup>45</sup> One of the contributors to the *Annales Fuldenses* claims Svatopluk made an unsuccessful attempt to persuade Arnulf to journey to Rome to help the Pope,<sup>46</sup> which suggests that the preserved papal letters do not tell the full story of the relations between Rome and Moravia.

Svatopluk is also notable for being the first Moravian ruler to bestow the throne to his son, Mojmir II. However, his successor’s reign was beset by a number of political difficulties. Based on indirect sources from Bohemia, tributes paid by satellite territories to Svatopluk during at least some years of his reign began to dry up. Accompanied by a man named Vitizlav, Svytihněv of the Přemyslid dynasty is, however, reported to have arrived at the Diet of Regensburg as a Bohemian representative soon after Svatopluk’s death. Magyar warriors began to encroach west of the Carpathians in the 860s, with various groups, including the Moravians, seeking

37 *Ann. Fuld.* 1891, AD 894, 125; *Annals of Fulda* 1992, 129.

38 *Ann. Fuld.* 1891, AD 884, 113: “Imperator per Baiowariam ad Orientem proficiscitur veniensque prope flumen Tullinam Monte Comiano colloquium habuit. Ibi inter alia veniens Zwentibaldus dux cum principibus suis, homo, sicut mos est, per manus imperatoris efficitur, contestatus illi fidelitatem iuramento et, usque dum Karolus vixisset, numquam in regnum suum hostili exercitu esset venturus.” Cf. *Annals of Fulda* 1992, 110-111; *MMFH* I 1966, 111; according to the Mainz-version, *Ann. Fuld.* 1891, AD 884, 101: “Imperator in terminis Noricorum et Sclavorum cum Zwentibaldo colloquium habuit [...]” Towards its localisation, cf. Měřínský 2011, 522-523, summaries of the possible localisations, where the most popular solution is to identify *Mons Comianus* with a region, not with a certain place. Cf. MacLean 2003, 140-142; to its interpretation, see Lysý 2014, 210-221.

39 *Ann. Fuld.* 1891, AD 890, 118: “Mediante vero quadagesima rex Pannoniam proficiscens generale conventum cum Zwentibaldo duce loco, quem vulgo appellatur Omuntesperch, habuit,” cf. *Annals of Fulda* 1992, 119. Omuntesperch was situated near Wienerwald; cf. Bretholz 1896, 50, and Cumeoberg (Comianus) in the Alpine foothills between Wienerwald and Rosaliengebirge; see Koller 1963.

40 For the symbolism of the meeting places chosen, see Voss 1987.

41 *Reginonis Chronicon* 1890, AD 890, 134; MacLean 2009.

42 See in particular Mitterauer 1963; Stieldorf 2012.

43 *Reginonis Chronicon* 1890, AD 890, 134.

44 ŽM 1967, 156; *Life of Methodius* 1983, 119-120.

45 Poleski 1999; for Silesia see Wachowski ed. 1997. For the Moravian impact on today’s Upper Silesia, cf. stronghold in Chotěbuz-Podobora or the graveyard in Stěbořice.

46 *Ann. Fuld.* 1891, AD 890, 118; *Annals of Fulda* 1992, 119-120.

their help.<sup>47</sup> As their numbers grew, they became a considerable power, significantly impacting on events throughout Europe for the next fifty years.<sup>48</sup> Svatopluk was outlived not only by his older son Mojmir, but also his second-born Svatopluk II. Dissatisfied with his position, the younger Svatopluk would engage in a long-lasting dispute with his older brother. The newly established bishoprics had already been abandoned during his father's reign after Methodius's death, with his successor Wiching made chancellor to King Arnulf and elevated to the see of Passau. Mojmir ultimately decided to reopen negotiations with the papacy and renew the Moravian archbishopric.

Despite the reinstatement of the archbishopric, the Moravian principality ultimately fell. The fraught relations between the brothers probably led to a schism in the Moravian elites, spawning various conflicts of loyalty.<sup>49</sup> The unsuccessful Bavarian attempt to save Moravia in 906 resulted in the folding of the main centres of resistance and ultimately sealed the Moravian fate.<sup>50</sup> Although not all members of the Moravian elites perished on the battlefields,<sup>51</sup> the Moravian principality ceased to exist as an organised political unit, with the region of present-day Moravia disappearing from historical sources for the next hundred years.

47 Kristó 1996, 175–203; on the ethnogenesis of the Hungarians, see Kosztolnyik 2002, 1–12; Vajay 1968.

48 Biró – Langó 2013.

49 Cf. Kalhous 2014a.

50 For Mikulčice, see Kouřil 2019b.

51 Recently Wihoda 2019.

## 1.1.1 excursus

# Europe in the 9th Century

– David Kalhous

These days, we usually think of Europe as a socio-cultural, primarily Christian space extending as far as the Urals and the foothills of the Caucasus. However – although the term Europe is very old and originated in ancient Greece – in this context, Europe is the result of a long historical process. This can hardly be considered complete, as, for example, the inhabitants of the eastern part of Central Europe see their placement “in the east” as an insult and strive to avoid this.<sup>1</sup> In the past, however, the area that now forms Europe was even less unified in cultural terms and in it “civilisation” blended with “barbarism”. These categories were definitely far from absolute and the “civilised” Roman or Frankish Empire were often considered “barbarian” by their eastern neighbours to the same degree as the Romans or Franks viewed their neighbours in Britain, in the north of continental Europe or in the inhabitants of the desert parts of Africa with contempt. The Roman Empire was once a powerful means of spreading a uniform cultural foundation and, after its disintegration into many various successor kingdoms, Christianity and the church (or merely many different local churches) continued to be a basis for the cultural foundation of Europe.<sup>2</sup> Unlike modern Europe, during medieval times this region lacked certain important characteristics, e.g. separation of the church from the state, at least at the theoretical level; in fact, the church had already developed a hierarchical organisational structure, where an important role was played by written canon law, and both above-mentioned factors separated Christianity from the family of other world religions.

While there was a rhetorical emphasis on the difference between “barbarism” and “civilisation”, the Roman and “barbarian” elites gradually merged. Roman law still applied, albeit in a simplified form, and many Roman institutions continued to operate (roads and elements of infrastructure such as aqueducts, the postal network, the duty to assist in their maintenance and in the construction of fortifications and so on).<sup>3</sup> Roman elites gave their children Germanic names and particularly reverted to presenting themselves as warriors.<sup>4</sup> The barbarian elites, on the other hand, did not hesitate to adopt certain Roman forms of representation and the kings of the successor states took up Roman titles,<sup>5</sup> took over Roman offices and rituals of power.<sup>6</sup> They continued to mint



Fig. 4 Golden solidus.

Here of the Byzantine Emperor Michael III (842–867), was a heavy golden coin (4.5 g), ø 21.1 mm, introduced in 309 by the Emperor Constantine I, which remained in use until the end of the Byzantine Empire (1453), though start losing on its weight and purity. For a long time, they were also imitated by the rulers of the barbarian kingdoms and by the caliphs. Mikulčice, Grave 480 near Church 3, Inv. No. 594-1000/57.



Fig. 5 Aachen silver penny.

The “consequence” of the monetary reform of Charlemagne at the end of the 8th century (793/794) was a change from golden standard to silver, where the silver penny was established as a main coin. C. 2 g, 240 pennies = 20 shillings (former *solidi*) = 1 pound. Avers and revers. Cach 123, Staré zámky near Líšeň site, ø 20 mm. Bohemia, Boleslav II. Mint: Praha, first half of the 90s of the 10th century; found at the unspecified place on the acropolis before 2013.

1 For more on the problematic concept of Central Europe in the Middle Ages, see Rychterová et al. eds. 2019, conversation with J. M. Bak.

2 Brown 2003.

3 Esders 2009; 2010. Cf. Codex Iustinianus 1892, 11.75.4, 452: „Absit, ut nos instructionem viae publicae et pontium stratarumque opera titulis magnorum principum dedicata inter sortida mumerum numeremus. Igitur ad instructiones reparationesque itinerum pontiumque nullum genus hominum nulliusque dignitatis aut venerationis meritis cessare oportet. Domos etiam divinas tam laudabili titulo libenter adscribimus.” Cf. Kuchenbuch ed. 1991, I II. 7, 2 12; CDB I 1904–1907, no. 79, 83; Tavèrnoles 1995, no. 2; Kalhous 2012, 17.

4 James 1997.

5 Wolfram ed. 1967; 1973.

6 Wood 1985; McCormick 1986.

Roman/Byzantine gold coins, the *solidi*, with the image of the emperor only to change it in the 570s and not before the 650s was gold exchanged for silver (e.g. for early medieval types of coins found in the context of Great Moravian strongholds, see Fig. 4; 5).<sup>7</sup> In those regions of Europe once ruled by Rome, the Roman population lived on, and with it, urban civilisation. They were headed by the local assemblies and particularly the bishop, who gradually also came to exert an influence in rural areas. Traces of this can be found not only in the relatively developed regions of Gaul and Hispania, but also in what is now Bavaria (see Excursus 1.1.2).

In around the year 800, the only remaining “barbarian” kingdom from the Ostrogoths, Burgundians, Visigoths, Lombards and Franks was the Frankish Empire. However, it was no longer ruled by the original Merovingian dynasty that built that kingdom, but the dynasty of the Carolingians, which gradually took over the reins of government from the late 7th century, in order to enforce the election of Pepin III (741–768) as king in 751.<sup>8</sup> While the first generation of Carolingians had their hands full consolidating their power in the empire, Charlemagne (768–814), Pepin’s son, began a massive expansion and at the time of his death in 814 controlled the territories of what is now France, the Benelux states, Germany, Switzerland, Austria, Catalonia, Northern Italy, the territories of the former Yugoslavia and part of what is now Hungary (Fig. 6). However, the Frankish Empire survived in this form only until 840, when Charlemagne’s son Louis the Pious (814–840) died. His sons Lothar, Louis and Charles divided the empire up amongst themselves. The following decades were thus characterised not only by attempts at further expansion, and the defence of gains at least on the original borders, but also by conflicts amongst the competing branches of the Carolingian dynasty. They still saw the empire as being a single unit (Fig. 7; 8),<sup>9</sup> at least in formal terms, although the very fact that the originally unified *Annales regni Francorum* were composed separately in the west (*Annales Bertiniani*) and in the east (*Annales Fuldenses*), suggests that this was the case only in theory.<sup>10</sup> Moreover, by the last third of the 9th century the Carolingian power over the empire had begun to threaten other noble dynasties, which often used second-degree relational ties by blood or by marriage with the ruling family to enforce their hegemony in a certain area. The appeal of “*stirps regia*”, the royal dynasty, was waning – this is characterised by the fact that after the Carolingians died out in the east upon the death of Louis the Child (900–911), the eastern Frankish elites did not turn to the west, at that time ruled by the Carolingian Charles III the Simple (898–922), but looked to members of their own aristocracy. The first person they chose as their king was Conrad I (911–918), a member of a local prominent family, followed by Henry I (919–936), the duke of Saxony and a member of the Liudolfing family. As in the west, in 987, i.e. just three generations later, the Carolingians were replaced by the Capetian dynasty, the descendants of Count Robert the Strong (830–866), as well as king Odo I (888–898), one of the rising stars of the late 9th century, although in Lorraine there was a potential heir from the Carolingian dynasty, Charles (953–993), the Duke of Lower Lorraine (977–991). Despite this dynastic discontinuity, which clashed with the desire to maintain the apparent

continuation of the empire, we owe a lot to the allegedly “dark” 10th century<sup>11</sup> for the fact that the scribes of the time helped to preserve texts written during the Carolingian period.

While by around 800 Frankish warriors had successfully conquered a large part of Europe, under Emperor Louis, the Franks themselves started to feel the first signs of the expansive ambitions of their neighbours. Under the reign of Charles the Bald (840–877) (Fig. 9), the western parts of the empire in particular became the target of numerous Viking raids, which resulted in the establishment of Duke Rollo’s Norman Duchy in 911 (Fig. 10).<sup>12</sup> The Kingdom of Italy, the Lombard duchies, the regions under Byzantine rule in the Apennine Peninsula and in Sicily again had to face pressure from Muslim pirates who were not content with mere robbery (the raid against Rome in 846),<sup>13</sup> but also started to settle in the Apennine Peninsula.<sup>14</sup> In the last third of the 9th century they were joined by the Hungarians in the east.<sup>15</sup> However, it would be wrong to see this pressure from various sides as a coordinated effort to overthrow the Frankish Empire. It is more likely that the raiders became part of the conflicts and plotting amongst the Franks. The external threat was, without doubt, a very real one and mobilisations against the invaders, images of rampaging barbarians and “scourge of God” became an important part of contemporary discourse and was deeply anchored in the rivalries amongst various groups within the empire.<sup>16</sup> Nevertheless, during the 10th century groups of Vikings-Normans, and later Hungarians, tried to become fully integrated into Carolingian structures.<sup>17</sup> The Carolingian cultural and political traditions, together with the ecclesiastical structures, became the intermediary between the new “barbarians” and the distant Roman heritage. It was no different in the territories beyond the Elbe, inhabited by Slavic-speaking peoples, and in the territory of what is now Bohemia and the Austrian lands.

During the Carolingian era, the empire was divided up into counties. Although the borders of these districts changed, they were probably clearly defined at any given moment.<sup>18</sup> The county was headed by a count, who was appointed by the king, although the count was usually chosen from influential local men. He was responsible for exercising the law, was the head of the military forces mustered in the county and was most likely responsible for the enforcing of free men’s duties towards their ruler. The count also headed local assemblies, which had administrative and judicial functions. The system survived the transformation of the Frankish Empire into a number of smaller kingdoms and was also adopted beyond its borders, although kings could have referred to their local representatives in different ways (e.g. *castellani* in Bohemia; *sheere reeves* in England). Marches appeared in border regions, managed by people who usually administered larger territories and had more extensive powers compared to the counts so as to be better able to face any potential threats.<sup>19</sup> A specific role was played by *missi dominici*, i.e. special agents of the ruler, tasked

7 For Merovingian Frankish Kingdom, cf. Grierson – Blackburn 1986, 81–154; Schiesser 2017; Metcalf 2006.

8 For later memory on it, cf. Diesenberger – Reimitz 2005.

9 Erkens 1996.

10 McKitterick 2004, 84–119.

11 Baronius 1869, 182.

12 Cf. Bauduin 2004.

13 Lankila 2013.

14 How random or coordinated these raids were is a topic that is again subject to intense discussion at present. Cf. Kreutz 1996.

15 Kristó 1996; Vajay 1968.

16 Diesenberger 2008.

17 Dudo of St-Quentin 1998; Dudo de Saint-Quentin 1865; for its interpretation and for the “Frankish dimension” of Norman early historiography, cf. Shopkow 1997; for impact of capitularies on Hungarian royal legislation, see Bak 2019, 18–51.

18 Schulze 1973; 1990; for summary from Anglo-Saxon perspective, see Stone 2012, 146–159; Borgolte 1984; Davis 2015.

19 Most recently Stieldorf 2012.

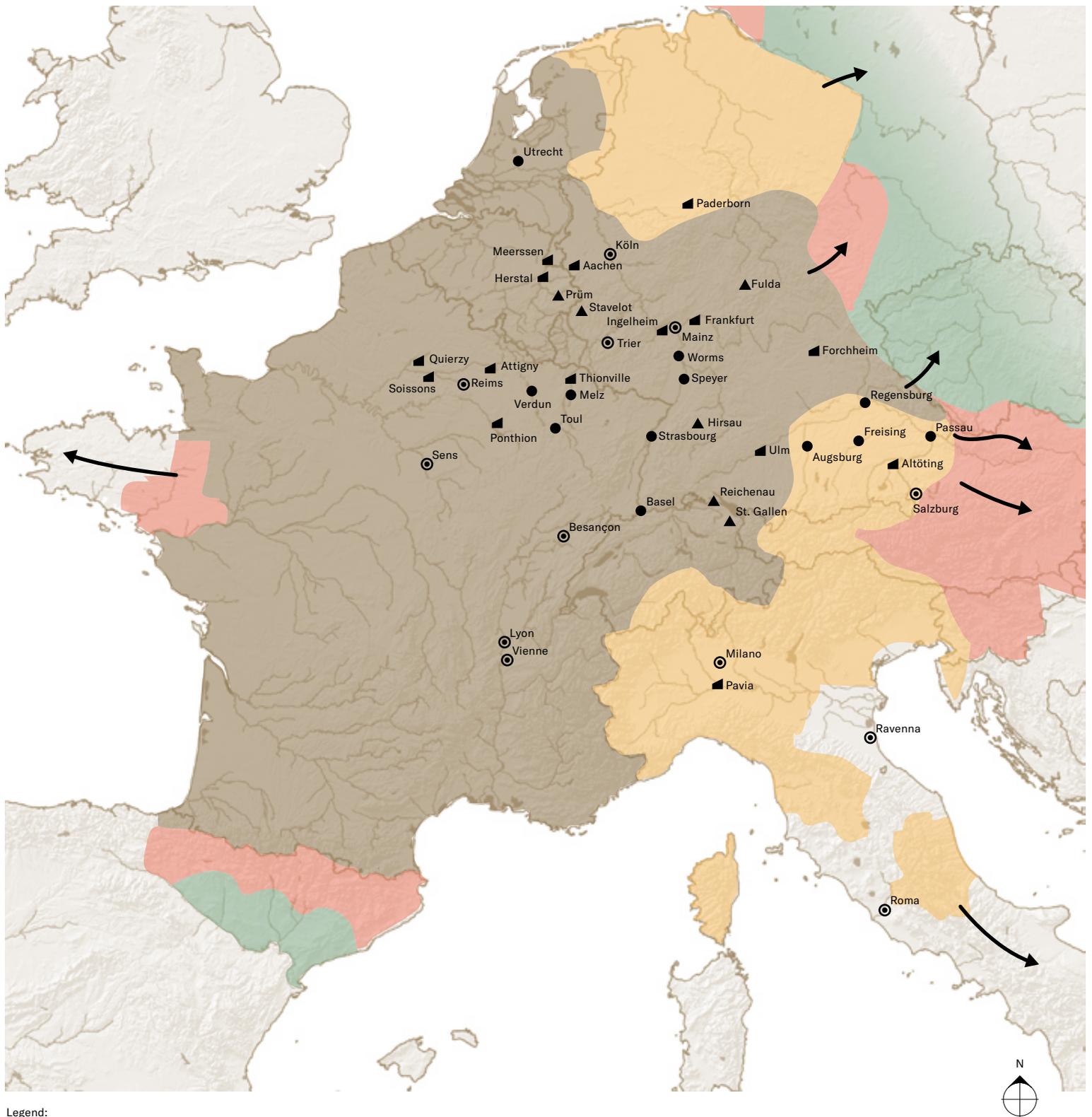
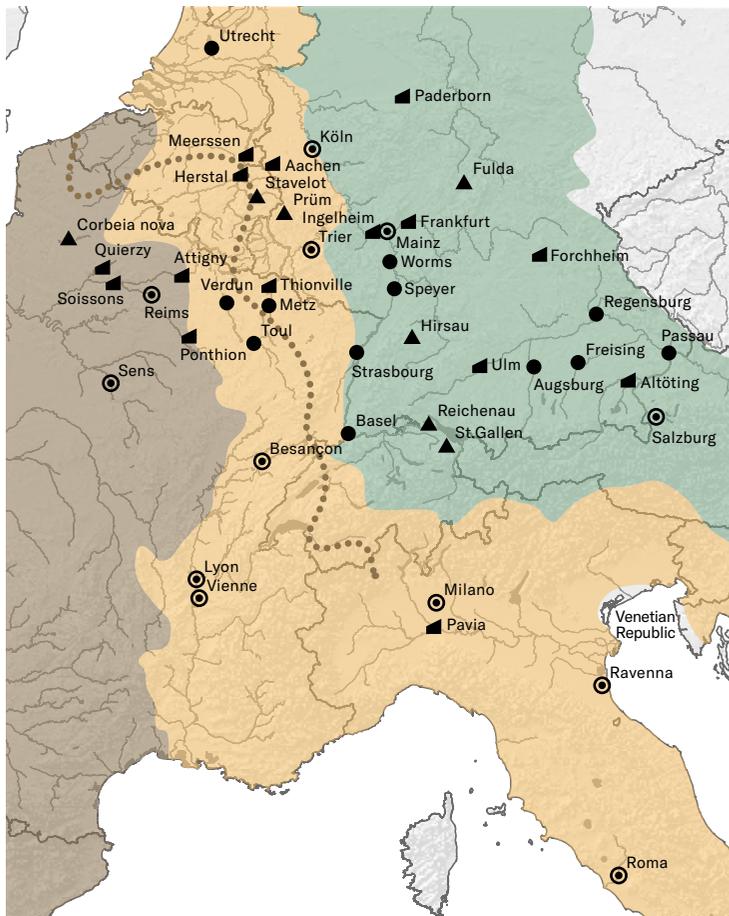


Fig. 6 Europe around 800.

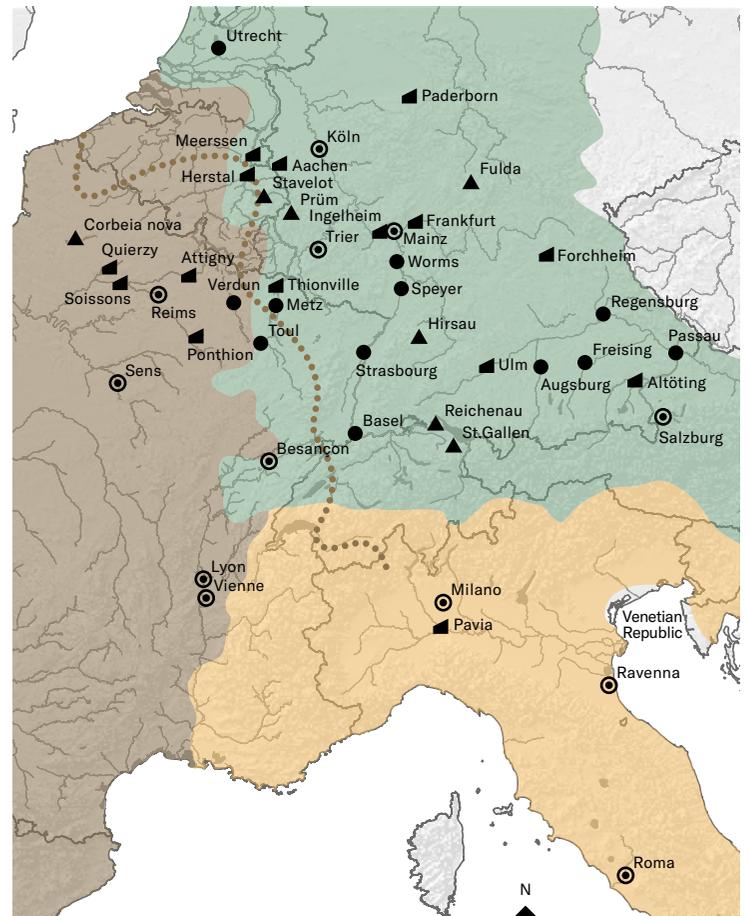


Legend:

- ⊙ Archbishopric
- Bishopric
- ▲ Monastery
- ▀ Palace (Pfalzen)
- West Francia (Charles the Bald)
- Middle Kingdom (Lotharingia and the Kingdom of Italy, Lothar)
- East Francia (Louis the German)
- ⋯ Linguistic frontier between Romance and Germanic languages

Fig. 7 Europe in 843.

Division of the Carolingian Empire after the death of Louis the Pious (814–840) between his sons – Emperor Lothar I (~855), Louis II the German (~876) and Charles II the Bald (~877) after the Treaty of Verdun; Lothar’s Middle Kingdom was later split in three kingdoms after the Treaty of Prüm in 855.



Legend:

- West Francia (Charles the Bald)
- Kingdom of Italy (Emperor Louis II)
- East Francia (Louis the German)
- ⋯ Linguistic frontier between Romance and Germanic languages

Fig. 8 Europe in 870.

Division of the Kingdom of Lotharingia between Louis II the German and Charles the Bald after the death of their nephew Lothar II (855–869) based on the Treaty of Meerssen.

with controlling the other officials that administered the land, either on an ad hoc basis or continuously.<sup>20</sup> The royal estates were administered separately.<sup>21</sup>

Through what are referred to as capitularies, which were a series of legislative acts, something between law books and sermons,<sup>22</sup> the ruler not only ordered his subjects, but also strove to advocate a programme of “*correctio*”, in other words a general renewal that reflected the idea of the mutual conditionality of the prosperity of the empire and general morality, for which the imperial elites had made themselves responsible. This affected the role of the bishops,<sup>23</sup> who, following their ruler’s example and publishing their own capitularies with some certain degree of success, sent them out to their priests.<sup>24</sup> The priests then copied them into their handbooks and used them as their guides in pastoral care.<sup>25</sup> Bishops, who were generally recruited from prominent families all over the empire, also strove to control as many churches as possible in their dioceses, and either took their possession themselves or received them as gifts from the local elites.<sup>26</sup> These efforts are eventually linked to another important discussion about who really was the bearer of the imperial identity and who was a Frank. This occurred after the overly universalistic idea of Franks being all inhabitants of the Frankish Empire from the beginning of the reign of Charlemagne was abandoned. The new binding force was to be Christianity, and the reform programme.<sup>27</sup>

The Carolingians assigned monasteries a crucial role in their “*correctio*” programme. Like the episcopal chapters, these were centres of education and provided powerful economic support to the ruling power. However, they also played the role of fighters for salvation through constant masses held for the king and the land.<sup>28</sup> Their economic power was also undoubtedly far from negligible, as was their role as the centres of gravitation for the local elites,<sup>29</sup> whose property they helped to concentrate within their walls. They also served them as archivists, a font of ancestral memory and the mediator of dynastic alliances.<sup>30</sup> Moreover, gifts to the monasteries and bishoprics disrupted the broader family’s older ties to common property and led to numerous court cases, but also to the gradual constitution of categories of private ownership.<sup>31</sup> To keep those powerful centres “healthy” was another reason for the many regulations dedicated to monasteries. The beginning of Louis the Pious’ reign saw an attempt to bring about a certain standardisation of monastic life through the universal application of the Rule of Saint Benedict (e.g. Fig. 11).

For the commoners who bore the costs of this expansion, these were probably not easy times even while the empire was at the peak of its power.<sup>32</sup> Although the capitularies carefully measured the duty of participating in military expeditions relative to the degree of threat posed by the given region,<sup>33</sup> nevertheless, these expeditions



Fig. 9 The First Bible of Charles the Bald (also known as the Vivian Bible).

The Vivian Bible put great emphasis on the continuation of his grandfather Charlemagne’s tradition in supporting the production of richly decorated manuscripts. The Vivian Bible is one of those. It was commissioned by Count Vivian of Tours in 845, the lay abbot of Saint Martin de Tours, and presented to Charles the Bald in 846 – the scene is illustrated in presented picture.

20 Hannig 1984.

21 Metz 1960.

22 Buck 1997.

23 For their role, see Patzold 2008.

24 Capit. episc. I–IV 1984–2005.

25 Van Rhijn 2007; Patzold – van Rhijn eds. 2016.

26 Cf. e.g. Brown 2001.

27 For details, see Reimitz 2015.

28 Ewig 1982; for *laudis regiae*, cf. Kantorowicz 1958.

29 Innes 2000; Hummer 2006.

30 McKitterick 1989, 77–134; Zeller 2011; Oexle 2011.

31 For impact of the Carolingian legislation and of the establishment of the episcopal power on Bavarian elites, cf. Brown 2001.

32 Müller-Mertens 1963.

33 Memoratorium 1883, 134–135, §2; Div. Caus. 1883, 136, §2–3.



Fig. 10 Map of raiders threatening the Carolingian Empire.

were repeated every year, and the duty to arm oneself and secure the necessary provisions must have been a heavy burden, even for better off individuals. This, together with pressure from their surroundings, probably led to auto-traditions, i.e. giving oneself to the church, which, coupled with “burdensome freedom”, also allowed one to be exempted from this duty.<sup>34</sup> The gradual process of the transformation of informal client relationships into clear legally-defined serfdom also started around that time.<sup>35</sup> Research conducted in the 19th century claimed that these farmers did not own their land and farmed common land within the march. Whatever doubts might exist about this theory, in general, tenure within an individual settlement was usually extremely fragmented and the farming communities of the pre-modern era were forced to coordinate field work intensively so as to make efficient use of manpower. If we consider the low workforce mobility and the considerable impact the microclimate had on revenues, even within the cadastre of a single village, this was a very rational solution.

In the region comprising what is now North-Western France, monasteries and bishoprics managed large tracts of land covering many thousands of hectares and, in addition to dependent payers,

also possessed a large estate capable of supplying the market for their own benefit, especially using waterways.<sup>36</sup> However, this was not the only economic model at the level of such large landowners.

Goods could be carried considerable distances thanks to extensive boat transport. The gateways to this trade were known as emporia, selected centres which served as the focal point for the long-distance trade of regions, from where goods, primarily luxury ones, were then redistributed as a means of enabling power networks to build social ties, and also led to the promotion of local trade.

Although the popes themselves did not control any territory, or only to a very limited extent,<sup>37</sup> they evidently made continual efforts to assert their primacy within the church, not only in theory but also in practice. While in the east the local patriarchs of Constantinople, Alexandria, Antioch and Jerusalem defended their idea of a community of patriarchs on an equal footing, in the west the dominance of Rome was fully established.<sup>38</sup> Nevertheless, for a long period the pope remained merely a formal authority. He strengthened his position partly through his limited missionary policy, and partly becoming involved in local conflicts as a last

34 Cap. Olonn. Mund. 1883, 330, §2.

35 West 2013; for complexities and dynamics of lower classes and regional diversities, cf. Kuchenbuch 1978; Rio 2017. Cf. also Devroey 2006, 40; Kuchenbuch 2017.

36 Verhulst 2002; Devroey 2003. Cf. also Kuchenbuch 2004.

37 On the origins of the “*patrimonium sancti Petri*”, see Noble 1984.

38 Kalhous 2009.

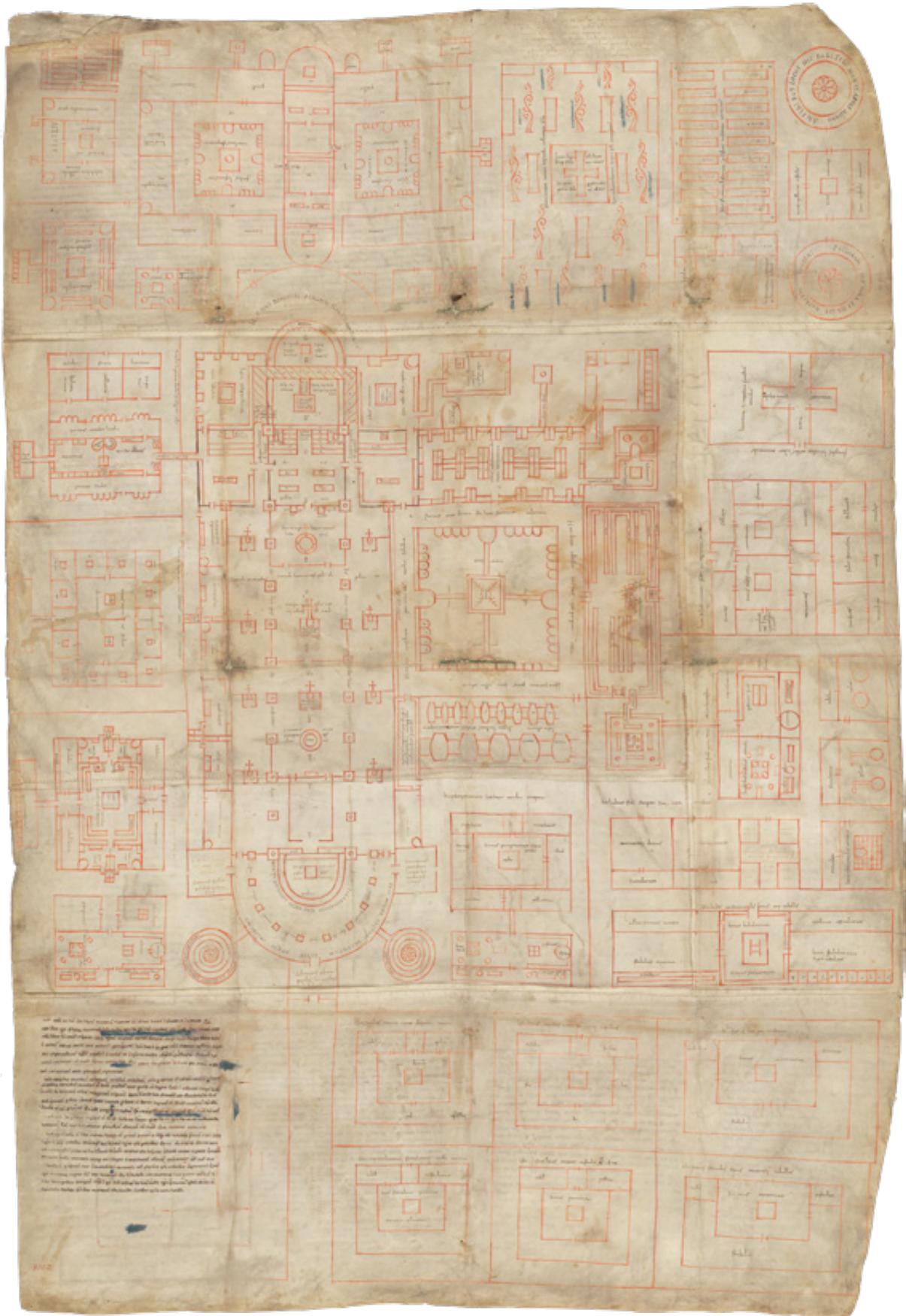


Fig. 11 Plan of Saint Gall that was one of the chief Benedictine abbeys in Europe. Drawn in 820s or 830s, depicts, however, the model monastery rather than real monastic complex.

resort, if invited to participate by the parties concerned.<sup>39</sup> The papacy then defended its role continually, and it was this continuity that gave it a considerable advantage over all other opponents. Therefore, during the 10th century, which is traditionally seen as a time of waning papal power, the pope's position actually strengthened.<sup>40</sup> It is no coincidence, for example, that in France the number of counterfeit papal documents increased at the expense of counterfeit royal documents during that century.

However, the church's growing impact on everyday life was not limited to the papacy's intervention in the routines of the European bishoprics. Donations to the church had a substantial influence on the change in the perception of categories of ownership, as mentioned above. However, the church also had ambitions to gradually control the various transition rituals of contemporary society, which were linked with birth, death and changing social status. While baptism caught on quickly, as it was a new and necessary prerequisite for joining the Christian community,<sup>41</sup> the Christianisation of other transition rituals was a very slow process. The first royal anointments are documented from the Visigoth realm at the end of the 7th century,<sup>42</sup> though from the Frankish kingdom the alleged anointing of Pippin III (751) is only attested at the end of the 8th century.<sup>43</sup> Nevertheless, this ritual was still only practised sporadically in the 9th century, even in the Frankish Empire (generally in cases where the legitimacy of the candidate was somehow weakened) and was not established as a constitutive element of the promotion of the monarch until the 10th and 11th century.<sup>44</sup> This can clearly be traced in the changing perspective of the narrative sources, if they were written during the 11th century and take account of the previous periods. Likewise, the church's attempt to control marriages was also a gradual process – a wedding between a man and a woman was only rarely held in a church, and so the church's control was primarily limited to preventing marriages between relatives, including “artificial” kinship (godparenthood, kinship through marriage, see Essay 1.3). It even took time for death to come under the protection of the church. One clear indication of this is the gradual abandonment of burial grounds with objects placed into the graves, which became Christian cemeteries by churches (on the process, cf. 1.3).<sup>45, 46</sup>

Although the vicinity of the Franks was decisive for the fate of Central Europe, we should not forget the other important power centres in Europe at that time. On the Apennine Peninsula, in addition to the papal state in the centre of the peninsula and the Carolingian-controlled Lombard Kingdom in the north, there were also the distinctive Lombard duchies with their centres in Spoleto and Benevento (since 850 divided into the principalities of Benevent, Salerno and Capua).<sup>47</sup> These regions competed with one another for power, defended themselves against the influence of the Franks, dealt with pressure from the Byzantines and saw off raids by Muslim pirates, only to fall victim to the Normans

during the 11th century.<sup>48</sup> Even back then, we can also see the beginnings of city-states – paradoxically more to the south than to the north of the peninsula (Naples, Amalfi). The expansion of the African Aghlabids after 826 slowly carved out more and more of the Byzantine domain above Sicily – although Rometta, the last Byzantine fortress, was conquered in 965, Byzantine Empire had lost most of Sicily back in 902 with the fall of Taormina. However, by the end of the 9th century, Byzantine power had succeeded in gradually penetrating to the south of the Apennine Peninsula – in 871 they conquered Bari, in 880 they took Tarento and gradually came to control Calabria, Apulia and Basilicata.<sup>49</sup>

In 711, the Arabs and the Berbers settled near the Franks on the other side of the Pyrenees, and managed to quickly overthrow the Kingdom of Visigoth, and then penetrate beyond the Pyrenees. Two generations later the original Caliph dynasty of the Umayyads settled there for several centuries after Abd al-Rahman I (731–788, the emir of Córdoba from 756), managed to flee from Damascus after the Abasian coup. Its only rivals were small Christian principalities on the Atlantic coast on the northern border of the emirate (the future Castile, Aragon and Navarra), and later also territories conquered by Charlemagne and his son Louis, which later became Catalonia.<sup>50</sup>

To the north-west of the Frankish Empire, separated by the channel, the balance between the Anglo-Saxon, Welsh, Celtic and Scottish kingdoms was changing. During the reign of Charlemagne, the south of the British Isles was still dominated by Mercia in the centre of the island.<sup>51</sup> At the end of the 9th century, thanks to Alfred the Great,<sup>52</sup> Wessex, in the south-west, became the decisive power. Over the course of half a century or so, Wessex, by fighting the Danes settled in the east, became the hegemon and basis of the Kingdom of England.<sup>53</sup> Of particular interest to the history of Moravia are the measures adopted by Alfred in an effort to reverse the superiority of the Vikings. Alfred initiated an extensive system of defences with centres varying in size and type, intended to serve as bases for garrisons, gathering grounds for armies and support points, but there were also a variety of watchtowers and beacons.<sup>54</sup> He used fortifications the same as his successors, or the contemporary Franks or the Romans before them, not only as a means of strengthening the defence of the territory, but also as a fixed base for attacking armies.<sup>55</sup> In the centre of the largest part of the British Isles, the Anglo-Saxon sub-kingdoms gradually consolidated into a single whole. Numerous Welsh principalities still held out for a long time against Mercian pressure (among others: Powys, Gwynedd, Deheubarth),<sup>56</sup> as did the Celtic Kingdom of Cornwall (Dumnonia).<sup>57</sup> Donyarth, the last known king of Dumnonia, died in 875,<sup>58</sup> although this region was Wessex during the 9th century. In Scotland, the powerful Kingdom of Alba was established thanks to Cináed mac Ailpin, who unified various Gaelic and Pict territories under single rule in 848.<sup>59</sup> Despite the rivalries between the individual kingdoms in the British Isles, they shared the Christian

39 Heidecker 2010; Betti 2014a.

40 Herbers 2007.

41 Phelan 2010.

42 *Historia Wambae regis* 1910, c. 4, 503–504. Cf. Dartmann 2010.

43 *Ann. Fuld.* 1891, AD 751, 5–6. Cf. Semmler 2003.

44 Brühl 1982, 15, 17–18; Nelson 1986a; 1986b.

45 Effros 2002.

46 As a side note, we should add that the church itself did not ban items being placed into graves. On the other hand, it strongly disagreed with burials in churches, and efforts to later “baptise” deceased ancestors by having them buried on Christian soil.

47 Kreutz 1996.

48 *Ibid.*

49 *Ibid.*

50 Jarrett 2010; Chandler 2019; Zimmermann 2003.

51 Zaluckyj 2011.

52 Abels 1998, 181–188.

53 Cf. n. 51 and for further development, see Molyneux 2015.

54 Brookes 2013; for reflection, see Procházka 2009, 28–30.

55 For basic summary, cf. Kalhous 2018a, 17–23; for general context, see Squatriti 2002.

56 Davies 1982.

57 Pearce 1978.

58 Preston-Jones – Rose 1986; Pearce 1978.

59 The information is, however, based primarily on later genealogies and Chronicle of the Kings of Alba, cf. Duncan 2002.

faith, which they had adopted relatively early, or in some cases, such as in regions controlled by the Celts, Christianity had survived from Roman times.<sup>60</sup> The fact that the dominance of the individual Anglo-Saxon kingdoms lasted for only a very limited time before the definitive rise of Wessex, coupled with the fact that Christianity came to the islands from many different sources, contributed to the fact that the building of the church organisation became only a very limited means of controlling neighbours compared to the situation on the continent.<sup>61</sup>

In the north too, in what is now Scandinavia and the Jutland Peninsula, we can also see the very beginnings of unification processes. These were sometimes reflected in the landscape – the *Danevirke*, like the castles in Moravia, from the 730s demonstrated the coercive strength of royal power and symbolised the border of controlled territory under the ruler's protection (Offa's Dyke, between England and Wales can be seen in a similar light).<sup>62</sup> By the middle of the 8th century, the written sources contain fewer details of these processes – apart from the scarce notes in the Frankish annals and several runic inscriptions and later sagas. Although they originated so early, it took until the end of the 11th century for the three monarchies to form, and the adoption of Christianity, which was closely linked to this, was also the result of a very lengthy process.<sup>63</sup>

By this time in the east, the amalgamation of the Slavic foundation and Viking invaders was starting to result in the formation of what would later become Kievan Rus'. Reports in the *Primary Chronicle* transform an older tradition in the form given by the monks of the Pechersk Lavra at the beginning of the 12th century.<sup>64</sup> This makes the chronology of events highly problematic and inconsistent. However, new information is being provided particularly by archaeology, which may lead to a clearer picture.

The Byzantine Empire, the direct heir to Rome, continued to play a crucial role. While at the end of the 8th century, it was weakened by clashes with Bulgaria, which was increasing in strength and ongoing internal religious conflicts (iconoclasm),

by the mid-9th century it was again a fully consolidated political power. From 820, it was headed by the Amorion or Phrygian dynasty, which, in 867, was replaced by the new Macedonian dynasty. Emperors from those dynasties benefited from the fact that during the 8th century the Isaurian dynasty had succeeded in fending off the expansion of the caliphate and consolidating imperial power on new, albeit modest, foundations. This was due to a considerable decline in the population in the 6th–7th century as well as significant territorial losses in Asia and Africa.<sup>65</sup> This laid the foundation for the future rise of the new empire in the 9th and 10th centuries. The armies of the Byzantine emperors were unable to stand up to the increasing power of Bulgaria – in the Battle of Vărbitza Pass in 811 Emperor Nikephoros Phokas (802–811) lost his life<sup>66</sup> – but this demonstrates an intensive effort to succeed there, at least in cultural and ecclesiastical terms. Also, owing to strong political interests, the Byzantine patriarchate probably overcame its own general lack of interest in missions beyond the empire's borders,<sup>67</sup> and through concessions regarding the establishment of a bishopric, it succeeded in standing up to both the competition with Rome and the Frankish bishops.<sup>68</sup> One other consequence of this temporary effort was Cyril and Methodius's mission, which, however, later sought the patronage of the Bishop of Rome, the Pope.

Although the 9th century saw the gradual decline of Carolingian power, it also brought a sharp surge in culture and the transformation of the political map of the region we now think of as Europe. In addition to the two empires, the peripheral regions also became a more distinctive part of it, including Mojmirid Moravia. The 10th- and 11th-century manuscripts also enable us to trace how its cultural legacy successfully survived from the Carolingian world<sup>69</sup> – even though this link to the past has not always been openly reflected.<sup>70</sup> The importance of the Carolingian cultural foundation beyond the original boundaries of the Carolingian Empire is only demonstrated by the successful integration of these peripheral areas and regions beyond its direct control into a single cultural entity.

60 For Britons in general, cf. Higham ed. 2007; for continuity of Christianity, cf. polemical Grimmer 2005.

61 For Anglo-Saxon conversion, see Higham 1997.

62 Ray – Bapty 2016; Fehring – Andersen 1992, 56; Maluck 2014.

63 Berend ed. 2007, 73–213.

64 Tolochko 2007.

65 Haldon 1990. For the 9th century, cf. Haldon – Brubaker 2011.

66 Ziemann 2007, 241–267.

67 Ivanov 2015.

68 Ziemann 2007, 345–412; Mayr-Harting 1993.

69 Patzold 2019.

70 Geary 1994a.

# Frankish Integration of Other Peripheral Regions

– David Kalhous

## Bavaria

A number of papal letters on the subject of Moravia were addressed to Bavarian bishops, a group adept at cautiously balancing their own political interests with those of the Frankish Empire (see Excursus 1.1.3 and Essay 1.3). These sources reveal the Bavarian episcopate to be a supporter of the royal's reign in East Francia. Similarly, the events of the 9th century illustrate the interconnectedness of the Bavarian elites (despite their internal disputes) with the fates of the Frankish Empire and of Great Moravia. The relationship dates as far back as the 6th century with the establishment of the Duchy of Bavaria by the Merovingians around 535, which consolidated the Roman province of *Raetia Secunda*, as a protective buffer for the south-eastern border.<sup>1</sup> However, this should not obscure the fact that the link between the Frankish Empire and Bavaria up until the end of the 8th century was tenuous at best. The politics of the Bavarian dukes of the 7th and 8th centuries were more or less expansionist and closely tied to events in Alamannia and Northern Italy (Fig. 12). As well as becoming a significant part of the Lombard dynasty through the wedding of the Bavarian princess Theodelinda, they also nurtured close relationships with other princely families in Europe including the Carolingians: Swanachild, daughter of the Duke of Bavaria Tassilo II, was wed to Charles Martel, while Odilo of Bavaria later married Charles' daughter Hiltrud.<sup>2</sup>

Differences between Moravia and Bavaria can be detected in the partial continuity of the Roman population and infrastructure, notably the establishment of the duchy's first centre in Augsburg.<sup>3</sup> Roman influences are found in the *Lex Baiuvariorum*, a collection of laws penned by an unknown clergyman.<sup>4</sup> It is a significant text in that it confirms the duke's leading position, protecting his office from *lèse-majesté* and conspiracy, ensuring inheritance of his title within the Agilolfing dynasty, and stipulating dependence on the Merovingian king.<sup>5</sup> It also assigns special status to five other groups understood to have been noble families.<sup>6</sup> With the exception of the re-use of Roman bricks, we have no direct traces of Roman influence in the territory of Moravia during the 9th century. However, there are at least some parallels to be drawn between the efforts of the compiler of the Bavarian Code and the first Slavic secular legal text *Zakón Súdnyi Liúdem* (Court Law for the People). Based on the Byzantine Ecloga issued by Leo III the Isaurian (717–741), the collection echoes the *Lex Baiuvariorum* in the way it addresses the role of the prince and the organisation of military matters.<sup>7</sup>

Yet, whereas thousands of deeds from early medieval Bavaria have been preserved, fuelling speculation as to what extent the *Lex Baiuvariorum* was used and accepted, no such document from 9th-century Moravia has survived.

The desire to secure power and increase stability in conquered territories probably led Duke Hugbert (724–736) to entreat the “Apostle of the Germans” Saint Boniface (c. 675–754) to contact Rome on his behalf. Even though the planned establishment of a metropolis failed, the subsequent establishment of bishoprics in Regensburg, Salzburg, Passau and Freising laid solid foundations for the Bavarian Church for many years to come (Fig. 13). Bavaria is in fact understood to have fallen under Christian influence even before the official founding of the Church in 739,<sup>8</sup> possibly predated by a connection between the local Bavarian population and the survival of the bishopric in Augsburg.<sup>9</sup> At the end of the 780s, relations between the Bavarian Duke Tassilo III and his relative Charlemagne took a turn for the worse:

*“The Lord King Charles convoked an assembly at the villa of Ingelheim. Tassilo came there as well as his other vassals on the order of the Lord King. Loyal Bavarians began to say that Tassilo, egged on by his wife, was breaking his fealty and showing himself as downright treacherous, after he had surrendered his son with the other hostages and taken oaths. Tassilo could not deny it, but confessed later that he had made overtures to the Avars, had ordered the vassals of the Lord King to come to him, and had made an attempt on their lives. When his people took oaths, he told them to make mental reservations and swear falsely. What is worse, he confessed to having said that even if he had ten sons, he would rather have them all perish than keep the agreements what he had sworn. He also said that he would rather be dead than live like this. After all this had been proved against him, Franks, Bavarians, Lombards, and Saxons, and whoever else had come from every province to this assembly, condemned him to death, since they remembered his previous evil deeds and his desertion of the Lord King Pepin on a campaign, which is called harisliz in German.”<sup>10</sup>*

Excerpted from the Royal Frankish Annals, this skilfully written narrative depicts Tassilo – bound by obedience and loyalty to the king – as an unscrupulous man willing to sacrifice even his own family to further his political ends. Interestingly, according to the annalist, it is the assembly that sentence Tassilo to death, not the king. In an act of mercy by Charlemagne, as the Annals later reveal, Tassilo avoids capital punishment and is instead removed from office and expelled to a monastery.<sup>11</sup> Thankfully, the legacy

1 Esders 2016, 6–9; Rettner 2002; for early Bavaria, see also Hardt 2003; Wolfram 1995a.

2 Cf. Wolfram 1995a; Jahn 1991; Hammer 2007.

3 Rettner 2002.

4 *Lex Baiuvariorum* 1926; see also Esders 2016; Landau 2004.

5 *Lex Baiuvariorum* 1926.

6 *Ibid.*

7 For more on the subject, see MMFH IV 1971, 147–198; Maksimovich 2004.

8 Couser 2010; Wolfram 1995a.

9 Rettner 2002.

10 Royal Frankish Annals 1972, 66; cf. Ann. Reg. Fran. 1895, AD 788, 80.

11 For formation of the narrative, see Becher 1993.

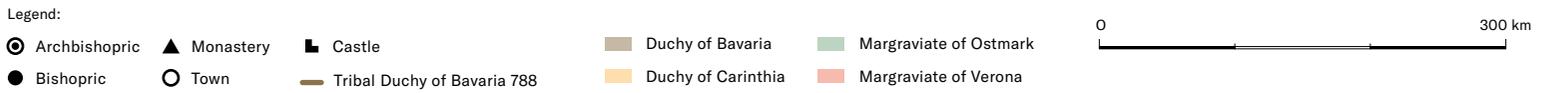


Fig. 12 Bavaria in the 8th century.  
Probably during the 6th century it kept its semi-independent position until 788.

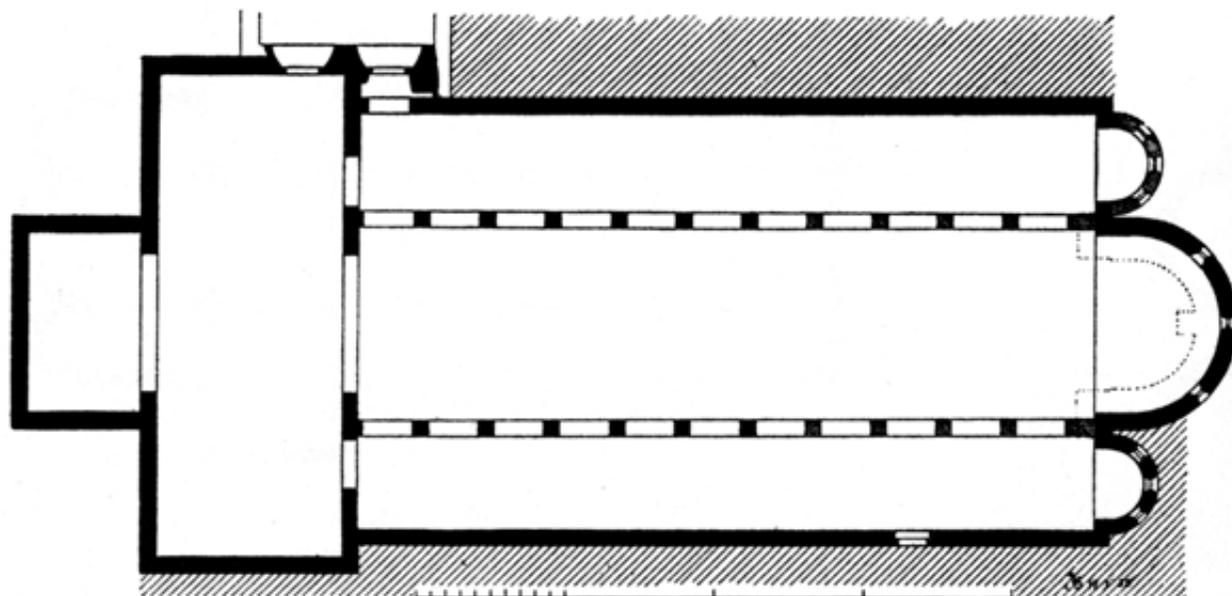


Fig. 13 Monastery of St Emmeram, Regensburg.

Built in 780s on earlier Church of St George where the relics of St Emmeram (bishop-martyr of Regensburg) have been kept. The Monastery became soon one of the most important centres of the ecclesiastical and intellectual life in Bavaria and it was closely related to the bishopric of Regensburg, patron of which was buried there. The figure shows the floor plan of the church, on the east side, the ring-crypt is visible with a place for a martyr grave.

of the Agilolfing dynasty was not lost to posterity, with many ecclesiastical institutions keeping records of their noble patrons over subsequent decades.

The Church and, particularly, Arno of Salzburg proved key allies in ensuring the continuity of Charlemagne's power.<sup>12</sup> Born into the Fagana - one of the five eminent Bavarian noble families assigned special status in the *Lex Baiuvariorum* - Arno was educated at the Episcopal Church in Freising. In 782, he became abbot of the Benedictine Elnon Abbey in today's Flanders. Three years later, with the support of Tassilo, he was made bishop of Salzburg. He maintained loyalty to the Bavarian duke for many years, even trying, albeit unsuccessfully, to rally support for Tassilo from the Pope in his dispute with Charlemagne. We know a register of land grants approved by Charlemagne, the *Notitia Arnonis*, was drawn up for Arno to provide for the protection of the estates of his diocese during turbulent times.<sup>13</sup> Indeed, Charlemagne evidently grew fond of Arno, appointing him his special representative, *missus*, in 791. As a result, Arno gained considerable power, which grew even greater after his appointment as archbishop of Salzburg, newly established as a metropolitan see, in 798. Arno is a revealing figure in that his career mirrors the integration of Bavaria into the structures of the Frankish Empire. Of aristocratic blood and highly experienced in local politics, the archbishop was savvy enough to

change tack in desperate situations, align himself to new regimes, and successfully protect the interests of the institutions he represented. He also took advantage of an extensive list of contacts amassed through family connections and liaisons outside Bavaria, notably the relationship he established with Alcuin of York, leading advisor of Charlemagne. As an experienced, well-established and influential administrator with local roots, Arno proved a perfect mediator for Charlemagne in his ambitions to pacify new territories. Just as significant in integrating Bavaria within the Carolingian expansion was Gerold, an Alamannian nobleman appointed Prefect of Bavaria by Charlemagne in 788. Frankish rule, then, was just as reliant on the workings of its central court at Aachen as it was on the regional perspectives provided by its key representatives.

Thanks to a number of memorial records kept by the Bavarian bishoprics, we have a wealth of insights into the activities of the Church in the years following 788 (e.g. Fig. 14). Offering details about how Bavarian society was run, these series of records illustrate how the consolidation of episcopal power and the exertion of Carolingian control over the region often went hand in hand.<sup>14</sup> It seems that the desire of the Church to set clear and fixed rules of ownership (toward establishing a hierarchical society) led to a differentiation in property and the emergence of private tenure unrestricted by family ties.<sup>15</sup> An extensive collection of homilies

12 For Arno, see Niederkorn-Bruck - Scharer eds. 2004.  
13 *Notitia Arnonis* 2006; Wolfram 1977.

14 Kohl 2010; Hammer 2007.  
15 For similar processes in Silesia, cf. Górecki 1993; 2007.

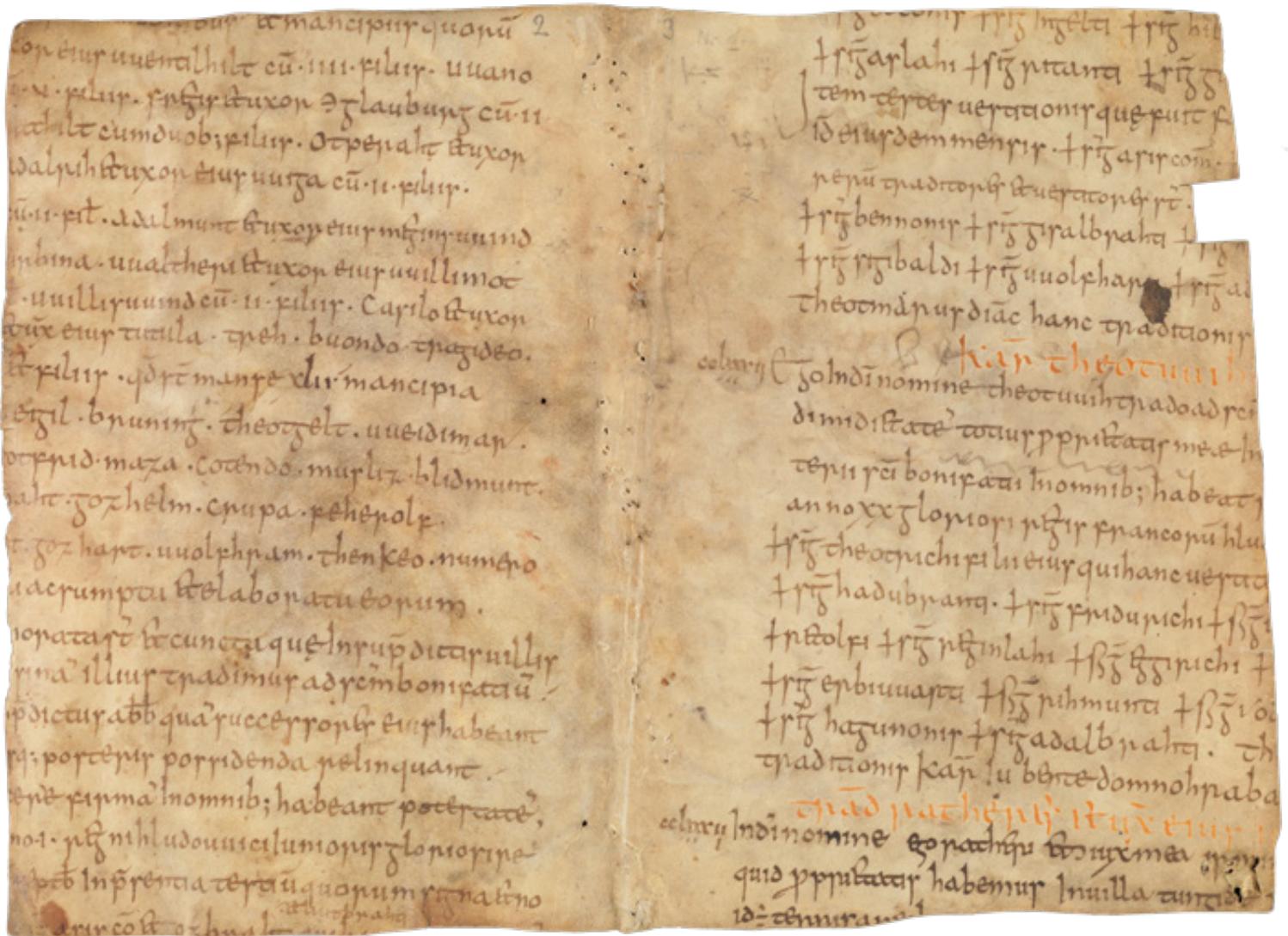


Fig. 14 *Liber traditionum fuldensis* – Book of deeds, Freising (9th century).

Since the end of the 8th century in Bavaria – probably due to political upheavals – the deeds (originally recorded on single sheets) started to be copied in books to protect the territorial and property claims of monasteries and bishoprics, tens of which luckily survived until now and provide us with detailed insight into the early and high medieval Bavarian society. One of the most important ones was also compiled in Freising (824) by episcopal notary Cozroh.



Legend:

- Franco-Breton borders
- Borders of the Breton principalities
- Dumnonia
- Cornouaille
- Ancient forest
- le Bro-Waroc or Vannetais Breton
- FRANCO-BRETON MARCH

Fig. 15 Duchy of Brittany during the 9th century.  
 Duchy of Brittany existed also "on the edge" between autonomy and integration depending on contemporaneous politics of the local and Frankish elites.

written by members of the Archbishopric of Salzburg around 800 chart how the ideals of Carolingian “correctio” spread to peripheral regions of the empire.<sup>16</sup> They depict Bavaria as a strongly integrated region that, despite different political interests, shared values and norms similar to those espoused in territories as far as the Pyrenees.

## Brittany

Early medieval Brittany is another remarkable region on the periphery of Frankish influence (Fig. 15). Its history is narrated in the late Frankish *Annales Bertiniani* as well as in a large number of local texts. Comprising both chartularies<sup>17</sup> and hagiographies,<sup>18</sup> most of them connected with Redon Abbey, these texts allow us to gauge the Frankish perception of the region, the way in which various local communities worked, and how the ruling elites presented itself. The political situation had much in common with that of Moravia, with the Breton princely dynasty and other eminent families becoming part of the Frankish aristocracy (including the ruling Carolingian dynasty) without ever abandoning their Breton identity. And although their claims to strategic independence were tolerated by the Franks, the region was nevertheless considered a vassal state and the Breton rulers dependent tributaries. There are striking parallels between a letter from Theotmar Archbishop of Salzburg to Pope John IX written around 900 and a Frankish synodal letter addressed to the clergy in Brittany. The contents of the letters reveal almost identical Frankish attitudes to Moravia and Brittany, respectively (cf. Essay 1.3).<sup>19</sup> Adapting in response to

the emergence of a ruling hegemony, the Breton identity survived by retaining links to the “small worlds” dominated by its regional power groups.

Breton rule was predicated upon the successful co-alignment of three power structures: the first comprised the princely’s court, which actively intervened in power clashes with the West Francia’s elites while co-opting elements of their traditions and models of administration.<sup>20</sup> The second consisted of the clergy, whose integration into the Frankish world was no less determined. The third was made up of local elite rulers known as *machtierns*, who played a key role in their communities. Evidence of the influence of these *machtierns* can be traced to various donations to Redon Abbey (Fig. 16) attributed to them.<sup>21</sup> They had a major influence at local assemblies on decisions relating to border matters, hereditary disputes and other crucial issues affecting the day-to-day business of their perspective respective communities. This organisational layout is understood to have approximated the development of rule in Great Moravia, despite the scarcity of evidence on its inner workings and interactions with central sites.<sup>22</sup> In contrast, the “Redon documents” and their precise dating help to create a much more complete picture of what efforts the Breton rulers undertook to increase their political reach.<sup>23</sup>

It seems that the ruling Breton dynasty managed to enforce a hereditary right to rule. Nevertheless, the numerous conflicts between its members closely parallel the bitter nature of the relations between members of the Carolingian dynasty and the Frankish nobility in Moravia.<sup>24</sup>

16 Diesenberger 2015.

17 Cartulaire 1863.

18 Brett 1989.

19 Concilia 3 1984, 47, 460–461, §9: “Ad episcopos siquidem Brittonum, qui se contra auctoritatem a metropoli sua moluntur discindere, synodus litteras secundum auctoritatem sacram direxit, quatenus ad suam metropolim redeant eique debito iure se sub dant nec a canonica et episcopali communione se segregent. Excommunicatis etiam, sicut sacrae decernunt regulae, nequaquam communicent, et Salomonem commoneant, ut promissam fidem glorioso regi Karolo observet et ipse et Brittones excommunicatis a communicantes ipsi se sacra communione non privent.” Cf. Synodal letter of the bishops from Brittany, *ibid.* 481: “Ut consideret, quanto animae suae periculo Britanorum dominationem invaserit, cum domino nostro regi Karolo fidelitatem prius iuraverit. Ut recordetur gentem Britanorum Francis ab initio fuisse subiectam et statutum dependisse tributum; ac per hoc non dedignetur ad nuper omissam reverti consuetudinem.” *Epistolae VI* 1925, 619–622.

20 Smith 1992.

21 Davies 1988.

22 Cf. Dresler 2016; Hladik 2014.

23 Davies 1981; for different representatives such as royal counts and local *machtierns*, cf. *ibid.* 103–104.

24 For more detailed information, see Smith 1992.

Quentenholam. ē. Bouuoret. ē. Haellifois. ē. Lomus. ē. Rumata. ē. Gurmha. ē.  
 Conata cleric. ē. Budicā. ē. factum. ē. hoc in fronte ecclae Rufiac indie sabb  
 de uerbo ratiuli & Carloiant & Iarnuuocon regnante Karolo rege hominoe  
 possidente britanniā susanno epō uenetis. Et p̄ hoc factū dedit carantear  
 .ii. sol. argenti & .vii. dr̄. Admāenuuocon & haelluuecon ante tēpus redēptionis  
 ipsius t̄rae cū atear. p̄. ē. Linit uueten. p̄. ē. hiauuud abb. ē. font. ē. Reituualart. ē.  
 & Quab. ē. dilufidos in .xii. solid. & .vii. dr̄. Et uenit hiruualart machiem  
 causare carantear de illa t̄ra p̄ hoc factū & carantear dr̄. .v. sol. argenti  
 ad hiruualart sine causa ueritatis t̄ra carantear nisi causā m̄dati de t̄ra  
 t̄ra moeni. ē. Miot. ē. hiauid. ē. Lom. ē. haellifois. ē. factū est hoc die uentis;

**H**aec cartula indicat  
 quom̄ petiuit Keuric abbatē bernādo suscipe suū filiū in sua congre-  
 gatione & postremo iussit eū cū sua matre fratreq; suo ad castellū reus qm̄  
 abbas inibi erant atq; alano fauente c̄sensit abb̄ suscipere puerulū coram  
 nobilib; iuris Bili ep̄. ē. Alan. dux. ē. filiū el̄ <sup>guteroc</sup> uuoce. ē. Laruueten. ē. Budicō.  
 Salomon filius euuen. ē. Dronuualoe. ē. Hartuuuin. ē. Blentuuuet. ē. post hoc  
 puenit mat̄ pueruli mortuuuet cū eo & frāc̄ el̄ ad uocōnensē monasterium &  
 obtuler̄ eū altari sc̄o saluatoris & parte unā de sua hereditate cū eo uidelicet  
 rancornou que sita. ē. in uilla que uocat̄ priel implebr̄ marsin & serūū quent  
 sup̄ eū Gleumonoc & sem̄ el̄ p̄ se & hoc. ē. qd̄ debet̄ de ipsa parte unō quoq; anno  
 portū ualentē dr̄. .vi. et porcellū. .ii. dr̄ ualentē & metē. .iiii. dr̄ ualentē p̄m̄  
 .xv. dr̄ .xx. de uena mod. .ii. sext̄i calcatos def̄m̄ in totū mod. .i. sext̄i. .i.  
 de sigla. .viii. sext̄i facta. ē. donatio .xxiii. k̄ fr̄b. in. .iii. ff̄ luna .xx. Alano  
 regnante in britanniā

Fig. 16 Cartulary of the of Redon Abbey.

Cartulary of Redon Abbey includes 391 deeds from the end of the 8th until the beginning of the 12th century. It has been written by several scribes-monks on 147 parchment leaves (375 mm x 275 mm) mainly during the abbacy of Aumond (1062-1083).

# Written Sources

– Matej Harvát, David Kalhous

## The expulsion of Pribina according to the *Conversio Bagoariorum et Carantanorum*

Sometime around 833, a historical event occurred that is generally believed to have given rise to a political unit called Great Moravia. Variations of the story about the expulsion of Pribina and the conquest of his domain in Nitra by the Moravian prince Mojmir have been discussed by historians and archaeologists for decades. The accumulation of this territory in South-Western Slovakia (the Nitra region) in the early 830s helped Mojmir to significantly enlarge his existing empire, effectively turning “old” Moravia into “Great” Moravia.<sup>1</sup> Yet, there are some discrepancies with regard to how this event has been interpreted by Czech and Slovakian researchers and, more specifically, Pribina’s position. While Slovak historiography confirms him the first Prince of Nitra as documented in written sources,<sup>2</sup> researchers west of the Morava prefer to view him as a nobleman subordinate to Mojmir and, perhaps, one of the members of the Mojmirid dynasty from Moravia.<sup>3</sup> As to the thorny and much-discussed topic of the “birth” of Great Moravia, the recent significant increase in archaeological findings calls for challenging questions to be asked.

The consensus among archaeologists and historians on the dating of key events in the Early Middle Ages is much less unanimous than in later periods. For many years, the archaeological dating of a destruction horizon – comprising a number of wood-and-earth strongholds discovered in the territory of Slovakia – was thought to have supported the theory that Mojmir’s troops infiltrated areas east of the Morava. Similarly, the chronological dating of the violent downfall of Povedim, Majcichov, Bojná and other power centres in Moravia was initially understood to have dovetailed with Pribina’s expulsion by Mojmir based on written sources from the 830s.<sup>4</sup> However, with the recent use of more reliable methods from the natural sciences, particularly dendrochronology, we now know the destruction of these Slovakian fortifications occurred as late as at the end of the 9th century.<sup>5</sup> This tallies neatly with the absence of any evidence pointing to a military attack and subsequent occupation of territories by the River Váh and in the Nitra region. The hypothesis is made all the more compelling given the only written source describing Pribina’s expulsion makes no mention of Moravian expansion or, indeed, the principality of Nitra itself.

This single contemporary report – describing the expatriation of a certain Pribina to an unspecified region on the northern bank of the Danube – appears in the *Conversio Bagoariorum et Carantanorum* (abbreviated *Conversio*) or “The Conversion

of the Bavarians and the Carantanians”.<sup>6</sup> Written in 870 – possibly by Adalwin, the then archbishop of Salzburg – this important Latin history is notable for, among other things, its denunciation of the work of the Byzantine missionary Methodius in Pannonia. The Chapter 10 begins with a brief narrative recounting the exploits of Pribina, who is understood to have served as a Bavarian governor at Blatnohrad (Moosburg) in Pannonia. The only indirect reference to his direction of travel – that “some Pribina expelled by Mojmir, the Prince of the Moravians, came through Danube to Ratbod”<sup>7</sup> – gives us reason to believe Pribina operated in one of the territories in South-Western Slovakia prior to his expulsion. But do we know enough to deduce that Pribina in fact ruled Nitra or a tribal principality similar to that presided over by the *dux Maravorum* Mojmir?<sup>8</sup>

Nowhere in the *Conversio* is the expansion of the Moravians or the subsequent expatriation of a rival ruler inferred. What it does, however, explicitly mention is the casting of an important leader with his retinue (*cum suis*) into exile (*exulatus*). Given the relative reliability of the Salzburg source, we can perhaps speculate that Pribina was, in some shape or form, subordinate to the Moravian Prince prior to his expulsion.<sup>8</sup>

If we are to pursue the tenuous premise that Pribina’s domain was Nitra, we must examine an indirect reference to the principality in Chapter 11. But before we do, it must be noted that no other contemporary text alludes to a connection between Pribina and the principality. In fact, in all the other available sources, there is almost complete silence on even Pribina himself. The three exceptions are an entry in a donation deed connecting him with Louis the German from 846,<sup>9</sup> another confirmation of a donation by Pribina from 860,<sup>10</sup> and an entry specifying his name in the codex known as the Cividale Evangeliary (Fig. 17).<sup>11</sup> And then there is the further matter of the credibility of the reference itself, that “Archbishop Adalram consecrated a church on his [Pribina’s] property above the Danube, on a place called Nitrava”.<sup>12</sup> Based on an analysis of both form and content, the uncharacteristic nature of the sentence points to it being a later insertion. Local historians were first alerted to the suspicion as early as the first half of the 20th century.<sup>13</sup> According to their observations, the sentence was originally an unimportant note written on the edge of the extant

1 Cf. Třeštík 2001a, 124–126, 200–201.

2 Steinhübel 2016, 111–137.

3 Bláhová – Frolík – Profantová 1999, 196–197.

4 Štefanovičová 1989, 76–77; Pieta – Ruttkay, A. – Ruttkay M. eds. 2006, 21–70.

5 Henning et al. 2015.

6 Written in Salzburg around the time when Methodius was in Pannonia, *Conversio* defends the interests of the Archbishopric of Salzburg and its suffragans in missionary areas in the border regions of the empire.

7 MMFH III 2011, 271.

8 Diettrich 1962, 67–72; Sieklicki 1967; Vlasto 1970, 24.

9 MMFH III 2011, 24.

10 MMFH III 2011, 35–37.

11 MMFH III 2011, 292.

12 MMFH III 2011, 273.

13 Weingart 1933, 135; *Conversio* 1936, 74.



manuscript, but was then later incorporated into the main text by the copyist.<sup>14</sup> Further research has supported this assumption, meaning that, as a late interpolation, it cannot be regarded as an authentic record validating the consecration of the church at Nitra in the first third of the 9th century.<sup>15</sup> Adding to our overall uncertainty, historians have yet to provide a convincing answer to the question whom the church at Nitra was intended to serve, since, according to the *Conversio*, Pribina was not even a Christian at the time of its consecration; it claims he was baptised in Traismauer after his expulsion by order of Louis the German. The hypothesis developed by Daniel Rapant and Herwig Wolfram that the church was intended for Pribina's wife (a member of the Bavarian Wilhelminer family) and her Christian retinue still seems to be the most persuasive explanation.<sup>16</sup> But this can only be countenanced provided we accept that Adalram, the primate of the ecclesiastical province of Bavaria, would have travelled to distant, pagan Nitra to consecrate its Christian temple without even managing to convert the local ruler.

The oldest manuscript containing the *Conversio* (*W<sub>1</sub>; Codex Vindobonensis Palatinus 596*), stored in the Austrian National Library in Vienna, is not preserved in its entirety and does not contain the sentence in question. However, a textual comparison with later copies, including the redacted version, indicates the sentence mentioning the church in Nitra was a late insertion either from the 10th or 12th century. As to the reason for the forged interpolation in the first instance, exploring a possible connection between it and later claims of the Salzburg clergy to missionary activity within Great Moravia might bear fruit. For the moment, however, the one thing we can conclude with certainty is that the true background to this historical event has yet to be resolved.

### *Annales Fuldenses*

The East Frankish chronicles, the *Annales Fuldenses* (Annals of Fulda, Fig. 18), provide us with probably the most comprehensive contemporary, albeit outsider, account of the fate of Great Moravia. Although it is generally agreed that the histories were written by several authors, the exact numbers involved and the nature of their engagement are still unclear. The historians to have presented the most considered debate of the evidence thus far are Friedrich Kurze and Siegmund Hellmann.<sup>17</sup> Kurze's thesis is primarily based on marginal notes found in one of the crucial manuscripts<sup>18</sup> from the 11th century, which may have originated in Worms. These notes suggest a Frankish scholar called Einhard composed the manuscript up until 838, with a Benedictine monk known as "Rudolf of Fulda" assuming authorship thereafter until 864. The remaining records up until 882 are attributed to Rudolf's pupil Meginhard. However, it must be noted that not only is the manuscript on which Kurze bases his argument not an original, none of the other manuscripts contain such information. In fact, Rudolf's authorship is the only seriously substantiated claim.

The Annals recount events from 714 to 887, a period of authorship known as the Mainz continuation. Heinz Löwe discusses several other continuations (838–863, 864–870–882, 882–887), including a so-called "Bavarian continuation" written between the years 714 and 901.<sup>19</sup> The manuscript is consistent up until 882, at which point authorship diverges. The passages from the Bavarian continuation describing events between 882 and 897 were written in Regensburg, while the remaining records up until 901 were written at Niederalteich Abbey in Bavaria. Archbishop Liutbert of Mainz is believed to have been the continuator of the Mainz records documenting the years 882 to 887. Hagen Keller dates their composition prior to the death of Charles the Fat in January 888,<sup>20</sup> their critical tone pointing to Liutbert's considerable loss of influence at court. As for the attitudes of the author of the Bavarian continuation, no agreement has been reached. While Simon MacLean contends its writer, an anonymous chronicler from Regensburg, kept a critical distance from the king,<sup>21</sup> Löwe speculates that the Regensburg continuation may have been written at the royal court, preferring to view the authorial shift in perspective as reflecting changes in royal personnel. With the passing of time, the connection between the Annals and the court weakened – if the erroneous dating of Arnulf's death is anything to go by – and the continuation further digressed under the influence of Archbishop Theotmar of Salzburg. While the *Annales Laureshamenses* and *Annales regni Francorum* served as sources for the older records up until 829, the later records seem to have been the product of the authors' personal experiences.

Kurze identifies three continuations of the text, numbering eleven manuscripts in total, all dating to the Middle Ages and early modern period: the first is housed in the Humanist Library of Sélestat (MS 11) in Alsace; the second, written in the 12th century, is stored at the Austrian National Library (Cod 615) in Vienna; and the third, the Bavarian continuation – originally written at Niederalteich Abbey in Bavaria – is held at Leipzig University Library (MS Rep. II 4° 129a).

A copy of the third continuation was made at the beginning of the 16th century for the Bavarian antiquary Johannes Aventinus,<sup>22</sup> while another manuscript from the 15th century was recently discovered by the historian Timothy Reuter.<sup>23</sup> However, the Niederalteich manuscript – written as early as around 900 – is by far the oldest and, given its description of events from 897 to 901, probably an autograph.

The *Annales Fuldenses* also served as an important source of information for a number of other annals and chronicles, including Adam of Bremen's historical treatise *Gesta Hammaburgensis ecclesiae pontificum*, the chronicle of the *Annalista Saxo*, Marianus Scotus' *Chronicon*, Sigibert of Gembloux's *Chronica sive Chronographia universalis*, the lost Swabian chronicle *Chronicon Suevicum universale*, and Hermann of Reichenau's *Chronicon*, among many other works (see the anthology).

14 *Conversio* 1997, 122; *Conversio* 2012, 116.

15 Bowlus 2009, 327–328.

16 Rapant 1941; Wolfram 1995b, 312.

17 Hellmann 1908; 1909; *Ann. Fuld.* 1891.

18 Sélestat, Bibliothèque humaniste, ms. 11.

19 Löwe – Wattenbach – Levison 1990, 671–687.

20 Keller 1966.

21 MacLean 2003, 23–47.

22 BSB Clm 966.

23 BSB Clm 28511.

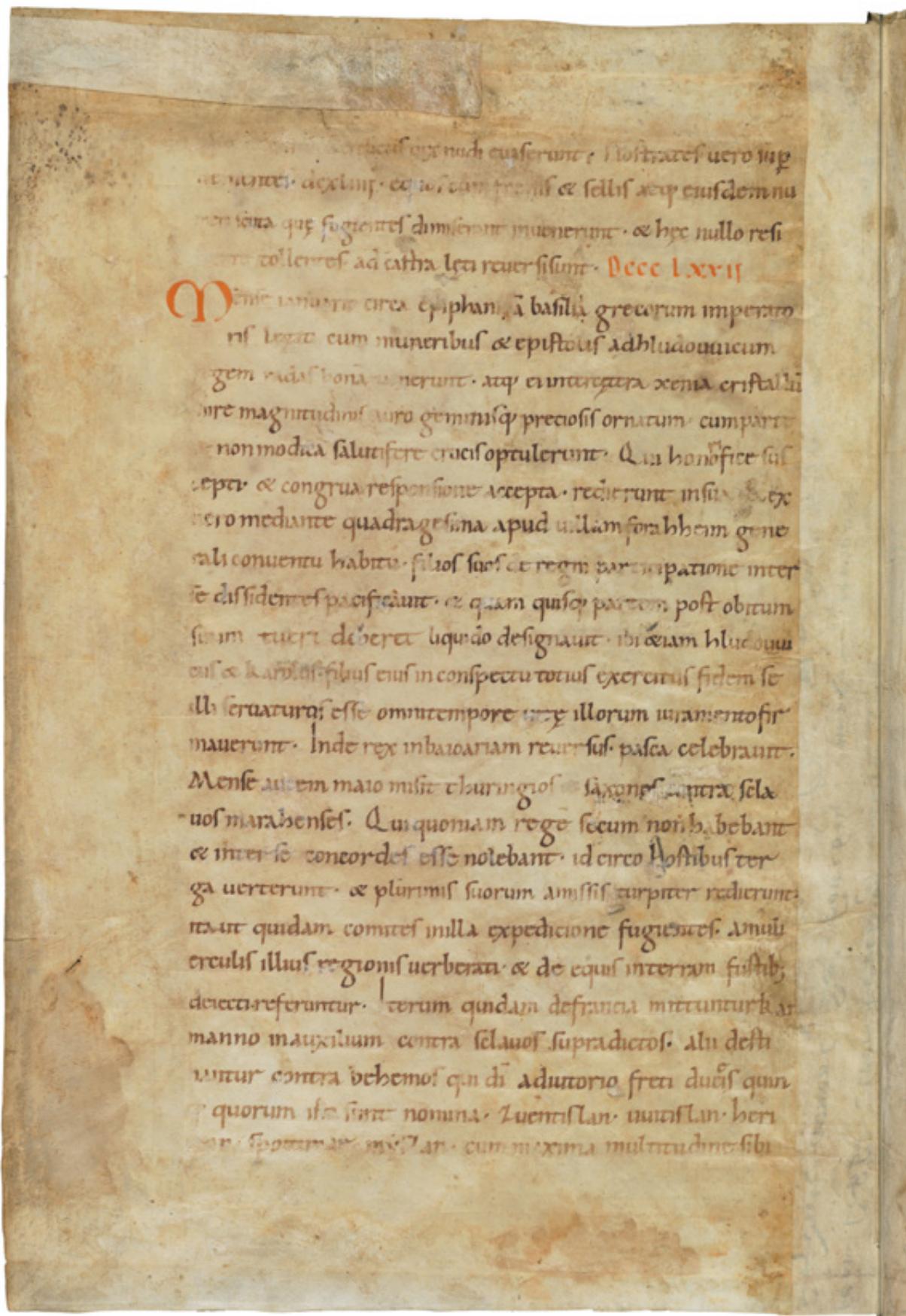


Fig. 18 Annales Fuldenses.  
One of the main narrative sources for the history of Central Europe during  
the 9th century.

# Settlement Terminology in the *Annales Fuldenses*

– David Kalhous

The terminology used in historical sources is naturally of interest to historians. Only when we discover the precise meanings of these terms can we gain a more nuanced understanding of the backgrounds to these texts. The lexicon used to describe early medieval settlements and structures – a topic explored in great detail by Marie Bláhová in several of her studies – is no different.<sup>1</sup>

In a departure from Bláhová’s exclusive focus on terminology, this paper instead considers the contexts for the various terms used in order to identify what functions various sites and structures had. To that end, rather than dissecting all of the medieval texts that mention Great Moravia, the main focus here will be on the three key contemporary chronicles of 9th-century Moravia: the *Annales Fuldenses*,<sup>2</sup> their West Frankish counterpart *Annales Bertiniani*,<sup>3</sup> and the *Annales Xantenses*.<sup>4</sup> Together with the chronicle of Regino of Prüm, these are the principle sources to contain first-hand reports. In the following centuries, they would serve as the foundations for all future records concerning 9th-century Moravia written in Western Europe.

In this study, all settlements and fortified strongholds mentioned in the sources, including the entries in *Annales Fuldenses*, have been tabulated and categorised based on the term used (*civitas*, *urbs*, *oppidum*, *locum*, *municio*, *castellum*, *castrum*, *curtis*, *villa*) and the context in which the source records them (captures, conquests, sieges, secular rituals, feasts, celebrations, locations, disasters, offices, assemblies, handovers, envoys, construction, wintering). Double occurrences in the sources appear as double entries in the table, e.g. if an author refers to pillaging in two specific settlements, these events are entered twice. A contingency table shows the frequency with which these diverse situations are recorded and the relations of certain types of actions to the terms used.

The *Annales Fuldenses* contain 440 mentions of 143 different sites: 98 of these are mentioned once in the text, 21 twice, 5 three times, 4 five times, 3 six times and 2 seven times; only 7 sites occur more than 10 times. The most numerous group captured in the table are sites whose names are not mentioned. Overall, as little as one-sixth of the sites represent two-thirds of all entries.

The chart listing sites mentioned more than twice clearly indicates a certain level of inconsistency in the terminology used. For instance, Worms and Regensburg are categorised as *palatium*, *civitas* and *urbs*, but mostly assigned no denomination at all (Fig. 19). Drawing a distinction between *palatium* and *urbs/civitas* for a single site may have represented an attempt to clarify locations, i.e. a royal palace from an entire settlement. However, the apparent randomness with which the above terms were used is more likely the result

of stylistic considerations, with no great difference in meaning.<sup>5</sup> This is evident in the attempts of chroniclers to vary between terms in cases where a site is mentioned twice in a sentence, and also in the use ratio of the terms (Regensburg: 6× *civitas*, 13× *urbs*, 10× no designation; Mainz: 5× *civitas*, 6× *urbs*, 20× no designation). In 192 cases out of 440, a site is defined only by its name. However, this perspective is partly distorted since sites described indirectly in the text have been excluded, the reason for the lack of designation being, again, primarily stylistic.

The contexts in which sites are mentioned reveal other “clusters”. The most frequent of these (149×) relate to references to locations, often phrased as “he was near” or “he arrived in” such and such a place. The second most frequent cluster involves cases where settlement structures are given certain functions, e.g. places for assemblies or synods (109×). The third most frequent are references to places in relation to military action (59×), an office such as a bishop or a count (30×), a monarch’s celebration of a religious feast (20×), the dispatching of envoys (20×), various types of disaster (16×), rituals such as inunctions and ceremonial royal arrivals (*adventus regis/imperatoris*) (15×)<sup>6</sup> or construction activities (11×). Only in exceptional cases are towns presented as enterprising or proactive in some way;<sup>7</sup> in most instances, they are mentioned in connection with being exploited, whether through wintering (4×) or as the subject of a handover (3×).

Just as these sets reveal exponential development – categorised by site name or designation – so do their subsets. Examining the locations where various synods took place, for example, six out of a total of forty sites (Forchheim, Tribur, Mainz, Nuremberg, Worms and Frankfurt) dominate the 59 reports of these assemblies. Similarly, one-third of disasters occurred in Mainz, while the most frequent destinations for political business were Regensburg, Frankfurt, Mainz, Worms, Rome and Aachen. In total, almost half of the celebrations of Easter or Christmas are linked to Frankfurt (4/20) and Regensburg (5/20), with a similar pattern observed for the cities to which envoys were dispatched (4× Regensburg, 3× Constantinople). In other cases, similar functions are less clear in large part due to the relatively random characteristics of the subsets (conquests, etc.).

Notably, ramparts are mentioned several times in the chronicles. Various described as “very strong,”<sup>8</sup> renewed or constructed,<sup>9</sup> they may have been built to delimit town districts or to serve as reference points.<sup>10</sup>

5 See also Bláhová 1986, 60.

6 Cf. Ann. Fuld. 1891, AD 752, 6; AD 896, 128.

7 For the revolt in Pavia, see Ann. Fuld. 1891, AD 886, 114; for use of the term *adventus imperatoris* in describing the stately welcome for Emperor Arnulf, see Ann. Fuld. 1891, AD 896, 128.

8 Ann. Fuld. 1891, AD 871, 75; AD 880, 96.

9 Ann. Fuld. 1891, AD 883, 100; AD 896, 128.

10 Ann. Fuld. 1891, AD 894, 123.

1 Bílková – Fiala – Karbulová 1967; Bláhová 1978; 1980, 7–47; 1986; cf. Kalhous 2008, 19–26.

2 Ann. Fuld. 1891.

3 Ann. Bert. 1883.

4 Ann. Xant. 1909.

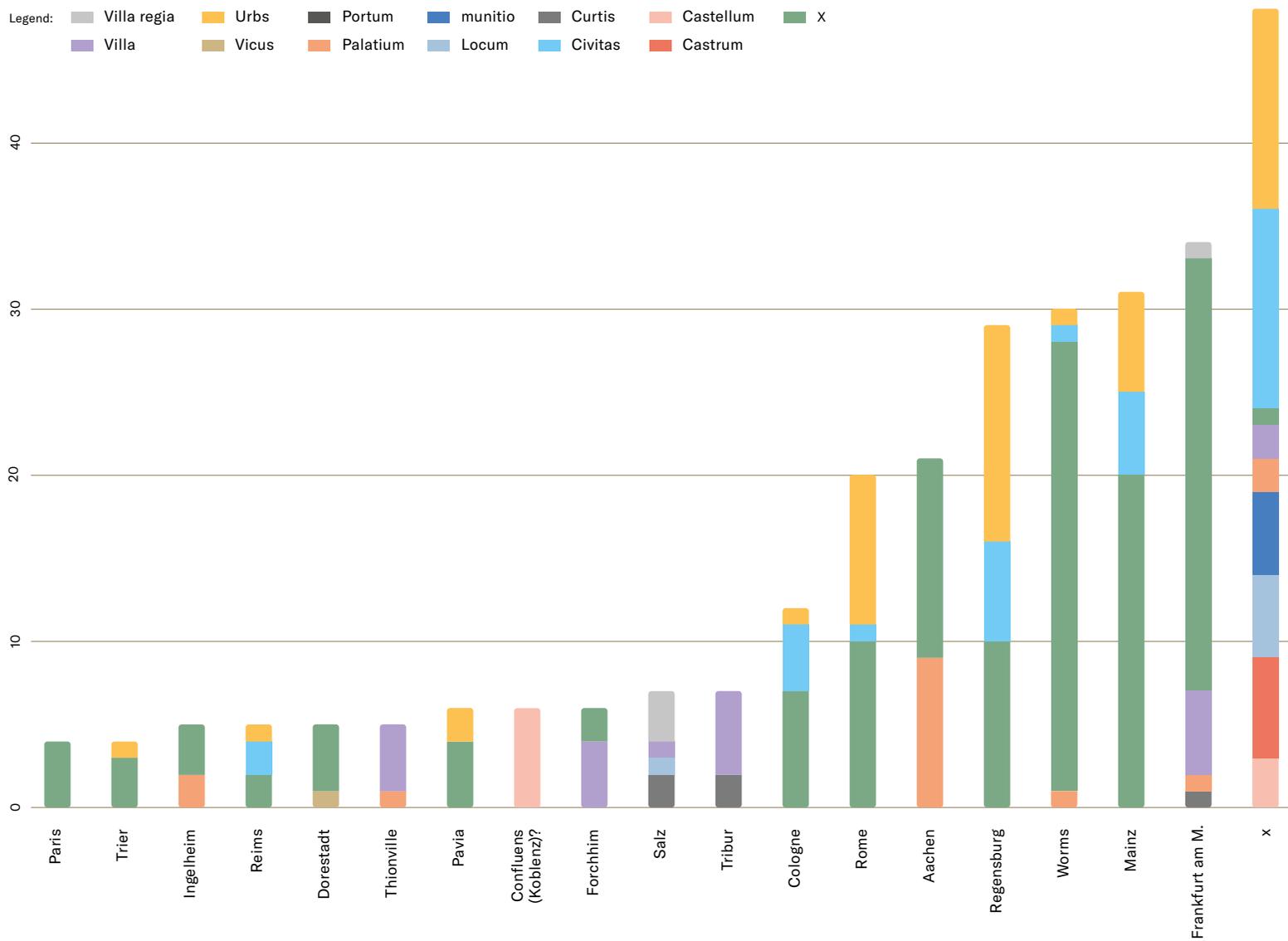


Fig. 19 Settlement Terminology in the *Annales Fuldenses*.

Although less comprehensively scrutinised than the *Annales Fuldenses*, analysis of other narrative sources reveals a predominance of references to sites and their functions, e.g. offices, conquests, plunders, etc. On the contrary, the *Annales Bertiniani* and, to an extent, the *Annales Xantenses* rarely mention synods or places with similar functions.

Let us attend to two other important questions. Did central places give name to districts? And did the boundaries of these settlements extend beyond their walls? Regardless of origin or chronology, central sites would have played an important role in shaping power relations in respective regions and attracting neighbouring elites, whether through trade, legal transactions or – as attested in the *Annales Fuldenses* – participating in assemblies and synods. However, references to districts named after settlements are not very frequent in the *Annales Fuldenses*. Those that were seem to have been recorded during a brief period in which authors borrowed from accounts in the Royal Frankish Annals (*in territorio Cometensi*;<sup>11</sup> *in territorio Tullense*;<sup>12</sup> *in territorio Augustadunense*;<sup>13</sup> *in territorio Mogontiaco*<sup>14</sup>). A directly expressed relationship between a centre and a territory was therefore more the exception than the rule.

Unfortunately, only on three occasions do the *Annales Fuldenses* mention centres of 9th-century Moravia, and even these are just in passing.<sup>15</sup> There is a single mention of a name: a certain Dowina,<sup>16</sup>

traditionally identified as Děvín.<sup>17</sup> As for the other reports, there is nothing that would help locate the sites or determine their importance in the context of 9th-century Moravia.<sup>18</sup> The sources allude to two centres associated with Rostislav, the second ruler of Moravia (846–870). They are clearly, however, two different sites: the first reference compares the novel and unusual construction of a certain large fortification with those at older centres, but the second emphasises the ancientness of the settlement. And as we have seen with the interchangeability of the terms *civitas* and *urbs* in other parts of the Annals, reasons for the variation in terminology in the above instance can also be put down to the stylistic preference of the author.

To summarise, the *Annales Fuldenses* only refer to a limited number of sites. The vast majority of these were recorded as passive in nature. In other words, they were either territorially exploited to divide space or they were subjected to some degree of external control. Curiously, the terminology used across all of the annals is of limited use in helping us gain a fuller appreciation of the sites, as evidenced by the fleeting references to the Great Moravian centres.<sup>19</sup>

11 Ann. Fuld. 1891, AD 823, 23.

12 Ann. Fuld. 1891, AD 824, 23.

13 Ann. Fuld. 1891, AD 824, 23.

14 Ann. Fuld. 1891, AD 849, 39.

15 For a summary of these locations, see Baláz 2013.

16 Ann. Fuld. 1891, AD 864, 62.

17 Most recently in Měřinský 2011, 262–263.

18 Ann. Fuld. 1891, AD 869, 69: “*Qui cum exercitu sibi commisso in illam ineffabilem Rastizi munitionem et omnibus aniquissimis dissimilem venisset, Dei auxilio fretus omnia moenia regionis illius concremavit...*”; Ann. Fuld. 1891, AD 871, 74: “*...nam Zuentibald ceteris castrametantibus urbem antiquam Rastizi ingressus est statimque Sclavisco more fidam mentitus...*”.

19 This study was written as part of the project *Úloha center v přechodové společnosti na příkladech z raně středověké Moravy a Slezska* [The Role of Early Medieval Centres in the Transitional Societies of Moravia and Silesia in the 10th and 11th Centuries], GAČR 15-22658S.





Gilded bronze plaque featuring face of a "nobleman" from Mikulčice-Klášteřísko, Grave 974.

## 1.2

# In Search of Identity: The Mojmirid Dynasty, Moravians and the Nature of Power

– David Kalhous

Sometime around 1200 during the writing of his history of Poland, Wincenty Kadłubek – a courtier, scholar and, later, Bishop of Krakow – faced a dilemma: how to inspire faith in his readers by recounting a story of “ancient times”. After enlisting various means of help, he soon discovered that the key to unlocking the answer was to focus on the continuity of the community whose history he was chronicling. This idea helped him construct a history largely through indirect references to events in neighbouring regions.<sup>1</sup> But the possibility that his community may have originated much more recently was either not considered by Kadłubek or deliberately suppressed. This blind spot also afflicts modern researchers, who often tend to think of the ancient histories of communities without consideration for the common links we continue to share with our forebears today.

Identities, identification strategies, and social cohesion are popular concepts used by contemporary researchers of Antiquity and the Middle Ages. They help us understand how large groups of people stayed together, who helped whom and how, and by what means it became possible for these groups to survive over time as they transformed and in spite of the various challenges faced.<sup>2</sup> To fully understand these phenomena, though, we must glean and interpret information from as diverse a collection of evidence as possible. In some cases, despite the thorough study of sources documenting the peoples of Moravia, there has been an over-reliance on a few key names to guide these explorations. In others, there has been a tendency to extrapolate new phenomena from already exhausted sources. To uncover the identity of a community, several viewpoints need to be compared – how the community was perceived and defined by its neighbours, how it perceived itself and its place in the world, how it shaped its own history and, finally, how that history came to be interpreted by various sub-groups over time.<sup>3</sup>

The problem we encounter when trying to reveal the identity of the Moravians during the 9th century (and beyond) is that the external image we have of them is largely the result of how they were perceived by the Franks. Despite the tireless efforts of Lubomír Havlík,<sup>4</sup> no accounts of Moravia under the Mojmirid dynasty, told from either the perspective of the Moravian people or that of the ruling dynasty, have been preserved. With our picture of Moravian identity therefore incomplete, we must rely on the numerous speculations indirectly attributed to sources from the period.

The term “Moravians” first appears in the sources in reference to envoys connected with an Imperial Diet in Frankfurt in 822.<sup>5</sup> From the perspective of the Franks, at any rate, they were evidently not only a distinguished group but also a political actor. It is less

clear, however, what precise group of people these envoys actually represented, given the term *Bohemi* used in the Frankish sources most probably wrongly attributes them some coherence, although they only had in common the origin from Bohemia.<sup>6</sup> To confuse matters further, the original meaning of “Moravians” is “people of the River Morava”, making it very hard to deduce whether this group of people considered themselves a polity or, indeed, if they were subject to any kind of internal organisation during this period. We must also be alert to the tendency among advanced societies – even though they have no basis to assume so – to look upon their neighbours as more primitive copies of themselves.<sup>7</sup> But what we can be in no doubt about is that the Moravians would go on to form a very much established community in subsequent years.

The Blatnica-Mikulčice horizon – comprising a mixture of artefacts of Avar and Carolingian origin roughly dating to the year 800 – was long-acknowledged to be a specific identifier of early Moravian material culture. However, this idea is now rejected,<sup>8</sup> which complicates any attempt to define not only the material aspects of the era but also the span of the entire Great Moravian period itself. Within contemporary discourse, there is no consensus on the chronological categorisation of Moravian jewellery from the 9th century. Although Šimon Ungerman<sup>9</sup> and Hana Chorvátová<sup>10</sup> both disagree with prevailing chronology of luxurious items, their own chronologies differ from each other. Irrespective of chronology, the occurrence of this type of jewellery begs the question to what extent we can use it (along with spurs, weapons and other luxury goods) to identify an elite social hierarchy or a phenomenon we might call Moravian culture.<sup>11</sup> One thing we do know is that – like their Frankish counterparts – the “warrior ethos” formed an integral part of the identity of the Moravian male elites, with weapons and objects connected to horse riding and fighting representing important symbols of social status.<sup>12</sup>

The most conclusive indications that the community known as the “Moravians” enjoyed some degree of unity are the references to the Mojmirid dynasty. The first known ruler of the Moravians was Mojmir, first appearing in the sources around the year 830. The importance of the Mojmirid dynasty for the unity and self-identification of the Moravians is best documented in the later East Frankish chronicles, the *Annales Fuldenses*. Here, reference is made to the rise of the Moravians against the Franks and the efforts undertaken to appoint a ruler from an established dynasty at all

1 Cf. Vincentii Cronica 1994; Banaszekiewicz, forthcoming.

2 Pohl 2013; 2018b.

3 Reimitz 2015; Pohl 2001.

4 Havlík 1987b.

5 Royal Frankish Annals 1972, 111–112; Ann. Reg. Fran. 1895, AD 821, 159.

6 Kalhous 2018b, 59.

7 Fried 1994, 73–104.

8 Robak 2017.

9 Cf. for example, Ungerman 2018a.

10 Chorvátová 2015.

11 On the issue of material culture as a sign of ethnicity, cf. Curta 2013; Brather 2002. As to its overall significance, I am indebted to the insights of Matej Harvát.

12 On the warrior ethos as an important element of elite identity, see James 1997.



## Frankish kingdom(s)

### Charlemagne

(768/774–814), from 800 emperor

### Louis I the Pious

(814–840), son of Charlemagne, emperor

#### East Francia

##### Louis II (the German)

(805/809–876), son of Louis I, from 817 king of Bavaria, from 843 (Treaty of Verdun) in East Francia

#### Middle Kingdom

##### Lothar I

(795–855), son of Louis I, 814–817 king of Bavaria, from 817/823 emperor (until 840 co-emperor), from 822 king of Lombards, from 843 king of the Middle Kingdom

##### Lothar II

(c. 835–869), son of Lothar I, from 855 king of Lotharingia

##### Louis II

(825–875), son of Lothar I, from 839/840 king of Italy, from 850 emperor (until 855 with his father)

**Carloman**  
(c. 830–880), son of Louis II, from 876 king of Bavaria, 877–879 king of Italy

**Louis III the Younger**  
(835–882), son of Louis II, 876–882 king of Francia, Saxony and Thuringia, from 880 also in Bavaria

**Charles III the Fat** (839–888), son of Louis II, from 876 king of Alemannia, from 879 king of Italy, from 881 emperor, from 882 king of East Francia

870, divided between Louis II and Charles II the Bald (Treaty of Meerssen)

**Charles II the Bald**  
(875–877), see West Francia

**Arnulf of Carinthia**  
(850–899), son of Carloman, from 887 king of East Francia, from 896 emperor

**Karlmann**  
(877–879), see East Francia

**Charles III the Fat**  
(879–888), see East Francia

**Louis IV**  
(893–911), son of Arnulf, king from 900

**Guy III of Spoleto**  
(855–894), from 880 the margrave of Camerino, from 883 duke of Spoleto, from 889 king of Italy, from 891 emperor

**Arnulf of Carinthia**  
(896–899), see East Francia

**Louis III the Blind** (900–905), see Provence and Burgundy

**Berengar I of Friaul**  
(c. 850–924), grandson of Louis I the Pious, in 888–889, 896–901, 905–924, king of Italy, from 915 emperor

Fig. 20 Synoptic table of the important princes of the 9th-century Europe (including popes).



## Byzantine Empire

**Nikephoros I**  
Geniko/the Logothete  
(802-811)

**Michael I**  
Rangabe  
(811-813)

**Leo V**  
the Armenian  
(813-820)

**Michael II**  
the Amorian  
(820-829)

**Theophilos**  
(829-842)

**Michael III**  
the Drunkard  
(842-867)

**Basil I**  
the Macedonian  
(867-886)

**Leo VI**  
the Wise  
(886-912)



## Popes

**Leo III**  
(795-816)

**Stephan IV**  
(816-817)

**Paschal I**  
(817-824)

**Eugene II**  
(824-827)

**Gregory IV**  
(827-844)

**Sergius II**  
(844-847)

**Leo IV**  
(847-855)

**Benedict III**  
(855-858)

**Nicholas I**  
(858-867)

**Adrian II**  
(867-872)

**John VIII**  
(872-882)

**Marinus I**  
(882-884)

**Hadrian III**  
(884-885)

**Stephen V**  
(885-891)

**Formosus**  
(891-896)

**Stephen VI**  
(896-897)

**John IX**  
(898-900)

**Benedict IV**  
(900-903)



## Mojmirid Moravia

**Mojmír I**  
(bef. 830-846)

**Rostislav**  
(846-870)

**Svatopluk I**  
(871-894)

**Mojmír II**  
(894-906)

ANNO  
DOMINI  
800

ANNO  
DOMINI  
900

## West Francia

**Charles II**  
the Bald  
(823-877), son of  
Louis I, from 843 king  
of West Francia, from  
875 king of Italy and  
emperor

**Louis II** the  
Stammerer  
(846-879), son of  
Charles II, from 867  
king of Aquitaine,  
from 877 king of  
West Francia

**Louis III**  
(863/865-882)  
and Carloman II  
(866-884), sons  
of Louis II the  
Stammerer, from 879  
kings of West Francia

**Charles III**  
the Fat  
(884-888),  
see East Francia

**Odo of Paris** (bef.  
866-893/898), from 888  
king of West Francia,  
893-896/7 struggle  
with Charles III  
the Simple

**Charles III**  
the Simple  
(879-929), son  
of Louis II the  
Stammerer,  
893/898-923 king  
of West Francia

**Charles**  
(845/846-863), son of  
Lothar I, from 855  
king of Provence and  
part of Burgundy

863, the kingdom  
divided between his  
brothers Louis II and  
Lothar II

**Boso of Vienne**  
(825/828-887), son-in-  
law of Louis II, from  
879 king of Lower  
Burgundy

**Louis III**  
the Blind  
(881/882-928), son of  
Boso, from 887 king  
of Lower Burgundy,  
900-905 king of Italy,  
901/902-905 emperor

costs;<sup>13</sup> credible claims given the tradition established during the formation of other early principalities of assigning significant positions to members of princely dynasties. Much later, a few centuries after its formation, princely power in the Czech lands would collapse and lead to a crisis of identity.<sup>14</sup> Exemplified by the dynastic transition from Merovingian to Carolingian around 750, overthrowing a dynasty entailed a two-fold strategy of challenging the legitimacy of established rule while cementing the position of a new power to take its place.<sup>15</sup> Maintaining continuity between one dynasty and the next was considered an important part of this handover, and goes some way to explaining the popular practice during this period of devising a “fictitious” royal genealogy to connect rulers from disparate regions – in spite of their having no tangible family relations – down through the generations.<sup>16</sup> Therefore, the formation of princely power went often hand in hand with the establishment of a common identity that would unify large areas.

It is all the more remarkable, then, that the term “Moravians” survived a hundred-year-long hiatus in usage from the beginning of the 10th to the 11th century. Although any comparison of the meanings of the term is made redundant given the absence of primary sources, that the name *was* re-used, even as the Mojmir Principality folded under Magyar pressure and the dynasty came to an end, indicates how deeply ingrained it was among the local elites. This of course raises the question who or what kept the Moravian identity alive. Although it was not continuously filled, a bishopric that apparently lasted throughout the 10th century<sup>17</sup> is one possible answer.<sup>18</sup>

Yet, not every party wished to retain the link. Like the Franks before them, the Magyars were intent on breaking Moravian resistance. But this is not to say they dispensed with the elite (or local) population entirely, since it was still very much considered a source

of power and income. Similar to the Pannonian Avars, whose biological survival outlasted their disappearance as a political entity after the fall of the Avar Khaganate,<sup>19</sup> a section of the Moravian elites – especially those inhabiting today’s regions of Slovakia and Hungary – likely also persisted, merging (provided they were willing to submit) with the Magyars to form the new elites of the Kingdom of Hungary. Even the Hungarian king himself Saint Stephen I (997–1038) praised the diversity in his kingdom, considering it critical to his future survival.<sup>20</sup> The most tangible (albeit indirect and chronologically inconclusive) evidence for the integration of the original Moravian elites within the new structures of the Kingdom of Hungary is provided by the *Polish-Hungarian Chronicle*, the anonymous prose history of Dalmatia *Regnum Sclavorum presbyteri Diocleatis*, and the *Gesta Hungarorum* (dated to around 1200), attributed to an anonymous chronicler of King Béla III of Hungary (1172–1196). While the *Polish-Hungarian Chronicle* presents the Hungarian ruler Attila as an avenger of the religious Croatian king Casimir,<sup>21</sup> the chronicler of King Béla III (the self-titled Master P.) refers to frequent battles between the Slavs and Hungarians and the existence of a bond between the daughter of Duke Menemorout (perhaps Moravian) and Zoltán, the son of Árpád.<sup>22</sup>

Elsewhere, the Bohemian chronicler Cosmas of Prague (c. 1055–1125) hints at the survival of the Great Moravian tradition in Hungary via his account of Svatopluk’s retreat to Zobor Abbey after a loss in battle.<sup>23</sup> Intriguingly, it should come as no surprise to learn the patrons of the monastery at Zobor were the Hungarian clan of Hont-Pázmány.<sup>24</sup> In any event, whatever their reliability, the above accounts certainly suggest there was a group within the Hungarian hierarchy with more than a passing interest in the history of Moravian rulers from the 9th century (Fig. 20).

13 Ann. Fuld. 1891, AD 871, 73; Annals of Fulda 1992, 65; Treštík 2001a; Wihoda 2010.

14 Rychterová in press.

15 Cf. Diesenberger – Reimitz 2005.

16 Dumville 1976.

17 Jan 2003; Kalhous 2018b, 176–185.

18 Kalhous 2019.

19 Pohl 2018a.

20 Laws of Hungary 1999.

21 Chronica Hungaro-Polonica 1969; Panic 2000; Homza 2017, 169–210; Grzesik 2003.

22 Anonymus, Gest. Hung. 1937, c. 51, 103–104.

23 For variations on this event, see Kalhous 2018b.

24 DHA I 1992, 382–383; no. 142, 391–396; Lukačka 2010.

## 1.2.1 excursus

# Carolingian Imports in Great Moravia

– Simon Ungerman

There is no doubt that the design of the armaments and equipment of elite Great Moravian warriors was fundamentally influenced by the Carolingian culture. However, so far relatively little attention has been given in the literature to the question of what was the nature of this influence and how it may have happened. Both the written sources and the archaeological record say very little about this phenomenon. The Frankish written sources mostly mention military engagements and diplomatic negotiations between the Franks and the Moravians and similar matters relevant for the chroniclers of that time. The archaeological record reveals the result, i.e. Carolingian-style weaponry in the Great Moravian archaeological contexts, yet says nothing directly about how this occurred. Moreover, it is difficult to differentiate reliably between direct Carolingian imports and their local copies.

It is also unclear when the Moravians began to use Western European weapons and equipment. No graves with skeletal remains from the pre-Great Moravian period (8th century) have yet been found in what is now Moravia, so we have no precise idea of what the weapons of the local inhabitants looked like. The main archaeological evidence of the existence of an elites at that time includes fittings from Avar-style multi-part belts and spurs with hooks, found at pre-Great Moravian settlement sites, as well as elsewhere. These finds of spurs are crucial, as they indicate that, at the very least, the Moravian mounted warriors engaged in a somewhat different style of combat to the Avars, who did not use spurs. In my opinion, the militaria of the Moravian elites could have been similar to those of the Slavic Carantanians in the Eastern Alps. Several rich graves from the 8th century have been found there (e.g. at Grabelsdorf, Krungl and Hohenberg), where Avar belt sets are combined with weapons and equipment of Western European origin, such as a Carolingian-type sword, a *seax* or spurs.<sup>1</sup> The Moravians may also have started using Carolingian armaments and equipment quite a long time before the fall of the Avar Khaganate. Other finds indicating this include the imported fittings decorated in the Anglo-Carolingian animal style (known as the “Tassilo Chalice style”), dated roughly to the second half of the 8th century, although the truth is that these fittings from Moravia have been found in a much smaller amount than findings of late Avar fittings.<sup>2</sup>

The Carolingians undertook a series of military campaigns in Pannonia against the Avars in the late 8th and early 9th centuries. Although the Avar army never suffered any crushing defeats, the Khaganate collapsed like a house of cards. The Frankish Empire, whose eastern border at that time ended at the River Enns, i.e. on the boundary between what is now Bavaria and Upper Austria, subsequently annexed extensive territories along the Middle

Danube as far as Balaton Lake.<sup>3</sup> This put Moravia immediately adjacent to the Frankish Empire. The result of this was certainly the substantial intensification of mutual contacts, which also began to be reflected in the contemporary written sources. The Frankish chroniclers described what was going on in a somewhat biased manner, i.e. from the perspective of the interests of their rulers and ecclesiastical institutions (see Essay 1.1). Sources indicate that the Carolingians regarded Moravia as a peripheral part of their empire and attempted to control it as such.<sup>4</sup> Moravia was not a straightforward march to the border handled by the Carolingians’ margraves or counts and they had to accept that the land was ruled by the Mojmirid dynasty. The Moravians were fiercely opposed to the notion of being ruled by anyone else – this is the usual interpretation of the fact that after the capture of Svatopluk I by the Franks in 871, the Moravians rebelled and chose Svatopluk’s relative, the priest Slavomír, as their ruler.<sup>5</sup> On the other hand, the Carolingians always had a substantial influence on which particular Mojmirid would rule Moravia (see, for example, the deposition of Prince Rostislav and the enthronement of Svatopluk a few years earlier). Rostislav, Svatopluk and Mojmir II all professed loyalty to the Frankish sovereign and pledged to pay him tribute (more detailed information about the reign of Mojmir I is lacking).<sup>6</sup> If any ruler attempted to implement a policy that would be in a fundamental discord with the interests of the Frankish ruler, it resulted in military campaigns that the Moravians could not resist for long. However, it appears that the Moravians – and especially the Mojmirids – did not want to unequivocally and permanently cut themselves off from the Frankish Empire.<sup>7</sup> Particularly in the last third of the 9th century, the Mojmirids were intentionally involved in a struggle between the Bavarian noble family of the Wilhelminers and Arbo, the margrave of the Eastern March. This was connected to the fact that when Arbo allied with Svatopluk, he gave him his son, Isanric, as a hostage. Frankish aristocrats had been coming to the Moravians before although usually as offenders fleeing from justice (the case of Albgis, condemned by the synod of Mainz in 852, is widely quoted).<sup>8</sup>

The issue of the Mojmirids’ property in the territory of the Frankish Empire has been the subject of recent discussions. When a major dispute arose between Mojmir II and Svatopluk II, the sons of powerful Prince Svatopluk, Emperor Arnulf ordered Margrave Arbo and Count Luitpold to intervene in 898. Leading the Bavarian army, they conquered an unnamed seat of the Moravians and took

1 Eichert 2010, esp. 209–211; Nowotny 2007; Breibert 2015.

2 E.g. Himmelová 1993; more broadly Robak 2015.

3 Pohl 1988, 312–328.

4 Treštík 2001a, 161; Wihoda 2014a, 67.

5 E.g. Treštík 2001a, 199; Štefan 2014, 148; Wihoda 2014a, 71.

6 Wihoda 2014b, 50–51; 2014a, 67–69; Kalhous 2014b, 43.

7 Wihoda 2014a, 69.

8 Wihoda 2019, 96, 101–103.

“the boy” Svatopluk, apparently the younger of the two brothers, with them. In the same year, a nobleman named Svatopluk was granted estates in Carinthia by Emperor Arnulf. He later received more estates from his successor, Louis the Child, always through the intercession of the counts in the Archbishop of Salzburg’s circle of supporters. The two Svatopluks were probably the same person. More noblemen named Moimir and Svatopluk are listed as witnesses in deeds by the Archbishop of Salzburg in the 920s, the 930s and later – apparently, a whole aristocratic family of Moravian origin took root in Bavaria. The question is whether the existence of these “Bavarian Mojmirids” dates further back into the 9th century, as J. Macháček recently suggested. At this point, we are regrettably left to mere speculation based on memorial records, e.g. of the monastery of St Peter in Salzburg and other ecclesiastical institutions. However, these cannot be dated precisely, nor can we say under what circumstances they were written – for example, do they document a personal visit to the monastery, the donation of various estates or a political alliance such as with the Archbishop of Salzburg?”

From a broader perspective, we can say that the relationship between the Frankish ruling dynasty and the Moravians did not differ fundamentally from that of other Slavic tribes on the eastern boundary of the Frankish Empire. The Carolingians also sought the annexation of the Carantanians and the Polabian Slavs to the Frankish Empire, but they understood that realistically it could not be accomplished overnight. Meanwhile, it was paramount for the Carolingians to have these tribes ruled by someone who knew their habits and could command the respect of the population. First and foremost, this was due to his origin from among the local aristocracy (people would probably not obey a completely “foreign” ruler imposed from abroad or would rebel against him at the earliest opportunity). A new duke was installed by the Frankish sovereign, who likewise confirmed his successor. Such a duke ruled his *gens* autonomously to a considerable extent but had to respect Frankish sovereignty. Besides paying tribute, he had to demonstrate his loyalty to the Frankish king or emperor by regular visits to the Imperial Diets, for example. In exchange, he received gifts for himself and his supporters. If he put a policy in place that was considered too independent, the Franks tried to “make him see reason” through military campaigns. Naturally, the Carolingians did not rely on one such ruler but endeavoured to have other suitable candidates in place who could replace him in the given territory. This was achieved by taking hostages from the relatives of the installed duke. The hostages lived in the Frankish Empire for many years – they were baptised there, received a Christian education, found friends and wives from among the imperial aristocracy and generally adopted the Carolingian culture and values. Everything else was often merely a “divide and rule” policy: if a Slavic Prince started to show signs of disloyalty, the Frankish sovereign limited his power by granting part of his territory to one of his relatives. If a dispute arose, the Frankish ruler presented himself as an arbiter, settling the controversy and thus increasing his power over the participants.<sup>9</sup> It is hard to find an element of the Franks’ power practices towards their Slavic neighbours that the Carolingians did not also use against the Moravians.

Briefly leaving the Mojmirids aside, the relationship between the Moravians and the Frankish Empire must have been somewhat ambivalent, as was the case with other tribes or smaller pre-state units in the neighbourhood or the sphere of influence of a powerful realm. The Frankish Empire was precisely such a mighty neighbour whose military strength was much greater and who entered into direct armed conflict with the Moravians many times. However, for the Moravians the Franks were certainly not solely a rival or even a hated enemy. The Frankish ruler and aristocracy must have instilled respect and admiration in the Moravians – not only due to the size of the Frankish army and the quality of its weapons. There may be no doubt that when emissaries of the Moravians set off to see the Frankish ruler in Aachen, Frankfurt or another major centre, it must have been an overwhelming experience – the great stone buildings of the palaces and richly decorated churches, the splendour of the ruler’s court, where they saw countless luxury objects made from valuable materials, the exquisite clothing and weapons of the Frankish aristocracy.<sup>11</sup> It was definitely not just because of the material wealth, but also the generally higher level of culture and education, as the Franks were able to write books as well as read them, which to illiterate people must have seemed like “mystery” or, at the very least, “great art”.

Given the fact that Great Moravia was so geographically close to the Frankish Empire, it was more or less inevitable that Western Christianity would gradually come to predominate in Moravia. This formed a fundamental cultural bond with the Frankish Empire from the time of the “baptism of the Moravians” in around 830. By renouncing paganism and becoming Christians, the Moravians became part of the “civilised world”, and so members of the Great Moravian elites were able to engage with their Frankish counterparts “on an equal footing”.<sup>12</sup> In this respect, it was most natural for the Moravians to establish contact with the Bavarian aristocracy in what is today Upper and Lower Austria.<sup>13</sup> Unfortunately, the written sources rarely mention such peacetime contacts between the elites of the two countries and more as an incidental digression. Historians, for instance, assume that before leaving Nitra, Pribina married a woman from the house of Count Wilhelm I, which managed the county in Traungau (between Linz and Mautern). However, we learn this merely on the basis of the fact that Pribina’s son Kocel gave Saint Emmeram’s Abbey in Regensburg the land he had inherited in Traungau, probably from his mother, who came from that county family.<sup>14</sup> Of course, there may have been more of these “cross-border” marriages without them being mentioned in the written sources.<sup>15</sup> What is more, such a marriage would not have been a one-off event, as it assumed previous contact between the families and the negotiation of the terms under which the wedding would take place. Such contacts would also probably not have ended with the wedding, as the two aristocratic families – Bavarian and Moravian – could have kept in touch, helped one another out, visited each other, exchanged gifts, etc.

In these contexts, at least in my opinion, it is necessary to also consider that parts of Carolingian armaments and equipment were adopted in the Great Moravia. Wartime clashes between the Franks and the Moravians certainly played an important role. To have

11 Cf. Riché 1976; Fichtenau 1984, 100–110; Lübke 1996, 105–107; Cubitt 2003, 13.

12 Třeštík 1997, 93, 300–302, 335; cf. Reuter 1985, 91–93; Lübke 2014, 88–89.

13 Cf. Zehetmayer 2007; 2008.

14 Třeštík 2001a, 121–126.

15 Cf. Třeštík 2001a, 158.

9 Wihoda 2019, 103–108; Macháček 2015b, 483–485 incl. ref.

10 Lübke 2014; Štíh 2014.



Fig. 21 Belt fittings from Great Moravian graves, identified as Carolingian imports.

1 – Strap-end decorated by enamel, Grave 253 near the first church in Pohansko near Břeclav; 2, 3 – buckle and strap-end, Grave 323 in Rajhradice.

a chance to resist such a powerful enemy, the Moravians had to acquire the same weaponry and generally adapt to the Frankish way of fighting. However, this was not enough for the Moravians. Here we can see comparisons with the Viking warriors, who held Carolingian swords in great esteem and learned to make high quality copies of them. Although it should be noted that they showed discernible limits in their adoption of Carolingian militaria – e.g. the silver fittings from sword belts collected by the Vikings as war booty from the Frankish Empire, were no longer used for their original purpose, but were made into pendants or brooches for the Viking women or were melted down.<sup>16</sup> The Moravians evidently went further in their use of the Carolingian elements. In terms of militaria and equestrian equipment, they adopted not only Carolingian swords and spurs, but also equipment not immediately necessary for battle – e.g. they wore their swords on belts with the same fittings as worn by the Franks (see Fig. 217; 218 in Essay 3.6). As well they wore the same straps that fastened with buckles, slide-straps and strap-ends wound around the calves of their leggings as those worn by the Franks (see Essay 3.7). This all implies that the Moravian elite warriors were striving to keep up with the Franks not only on the battlefield, but also wanted to become closer to them at a representative level, to actually appear like them – unlike the Vikings, who had no desire to do so. One fundamental factor in this must have been the peacetime contacts between the Frankish and Moravian aristocracy, through which the Moravians gradually got to know other elements of the Frankish lifestyle. It is certain that only a fraction of these are reflected in the archaeological record, or the given archaeological phenomenon might not be unanimously considered by researchers to be a manifestation of Frankish cultural influence. One question that may be raised as an example is whether the Great Moravian elites somehow showed a gradual reduction in funerary equipment, i.e. whether certain members of the elites were buried with a few, purely symbolic items or with no grave goods at all, and whether this process may be associated with funerary customs copied from the Frankish aristocracy. However, we should bear in mind that Great Moravia only lasted for a relatively short period of time, so it would be no surprise if Carolingian influences were manifested initially in the adoption of “external” elements (militaria, clothing, etc.), while the situation could have been far more complex with standards of behaviour, depth of Christian faith and so on.

We come to the question of which specific artefacts from the Great Moravian sites can be identified as Carolingian imports. This is obvious in the case of fittings made and decorated using technologies not known to the people of Great Moravia. One good example is the oblong strap-end from Pohansko near Břeclav, from Grave 253 by the first church, made of lead and gilded bronze. Its face is bordered by two transverse ribs, semicircular in cross-section, between which there is an oblong decorative field filled with enamel (Fig. 21: 1). This is what is known as cloisonné enamel, where flattened wires soldered to the base mark out a roughly rhombic decorative motif; the spaces between the wires are filled with red, green and blue glass.<sup>17</sup> The enamel decoration must have been made somewhere within the Frankish Empire. Proof of this – besides the actual technology – lies in that rhombic motif, which is actually a cross (reduced here on the sides for reasons of space), as it appears on the enamelled Carolingian and Ottonian disc-shaped

<sup>16</sup> Capelle 1974; Wamers 1981; Wamers – Brandt eds. 2005, 129–138, 142, 173.

<sup>17</sup> Kalousek 1971, 148, Fig. 253: 1; Kouřil ed. 2014, 444, Cat. No. 388.

brooches.<sup>18</sup> The strap-end found in Pohansko near Břeclav may originally have been part of a Marsum-type Carolingian sword-belt, which is characterised by the ribs of the half-cylindrical profile on the shorter sides of the fitting.<sup>19</sup> The fitting was removed from the original set and got into Grave 253 as a lone, albeit undoubtedly attractive, artefact. It was used secondarily as part of a belt, where it was combined with a simple iron buckle of local provenance.

Another way of distinguishing clear Carolingian imports is the elaborate iconography of the decoration, which comes across as isolated and foreign in the Great Moravian milieu. The ideal example here is the bronze belt buckle and strap-end from Grave 323 in Rajhradice. The buckle has an oblong undecorated frame, a prong and a sheet metal plate with two rivets (Fig. 21: 2). The face of the oblong strap-end features relief decoration: the moulded shape that rises from the surface can be best described as a column with a cross-shaped shaft and two adjacent arcade arches. This architectural feature is bordered by three decorative fields situated lower down, which are completely filled with leaves and are gilded all over (Fig. 21: 3).<sup>20</sup> The entire image can probably be interpreted as Heavenly Jerusalem with the Tree of Life inside. In stylistic terms it belongs to the group of advanced Carolingian plant ornaments with Christian overtones.<sup>21</sup>

Some Carolingian imports must appear in the numerous sets of militaria from the Great Moravian burial grounds. It is highly unlikely that these sets would consist solely of items made in Great Moravia. If the Frankish influence on the Great Moravian armaments and equipment was really as massive as we assume, it is hard to imagine that the local craftsmen would have made spurs, strap fittings, etc., solely based on the descriptions given by warriors or emissaries who had seen them in the Frankish Empire. However, in the Czech scientific literature it is hard to find works that would convincingly justify the Carolingian provenance of specific artefacts and thus provide clear criteria to enable us to distinguish between them.

In my opinion, in the case of military equipment – as with jewellery (see Excursus 3.3.2) – we may also start by assessing which designs and decorative elements (and combinations thereof) appear most frequently in artefacts from Great Moravian cemeteries and which appear only sporadically. Particularly in the case of artefacts with a unique yet precise design and craftsmanship, it is highly likely that they are imports. This may be illustrated by two unique and well documented pairs of spurs found in Mikulčice, in Grave 50 by Church 6 and in Grave 44 by Church 2. Both pairs were cast (the material is gilded bronze) and decorated with the same pattern. What is important is that in both graves the spurs were accompanied by fastening straps with sets that always consisted of a buckle, a strap-slide and a strap-end, while these fittings were decorated with the same or similar motifs as those used on the spurs themselves. The actual technique of casting from bronze appears very rarely in spurs from the Great Moravian burial grounds (the vast majority are iron spurs). Just as unusual is the design of the chip-carved decoration on both pairs of spurs. On the spurs from Grave 50 (Fig. 22: 1; see also Essay 3.2, Fig. 159) the outer surface of each arm is divided up into seven sections, six of which are decorated while one (the second from the plate) is not, probably



1



2

Fig. 22 Details of the two unique cast pairs of spurs decorated with the same pattern, found in Mikulčice.

1 – Spur with stylised plant decoration, Grave 50 near Church 6, Mikulčice, Inv. No. 594-579/60; 2 – spur with depictions of a human head, Grave 44 near Church 2, Inv. No. 594-4438/57.

18 Capelle 1968, 229–231; Wamers 1998–1999, 103; Later 2009, 201–204, Fig. 1: 4, incl. ref.

19 Ungerman 2011a, 588–592; 2015, 267–272; Robak 2013, esp. 146–147.

20 Staňa 2006, 162, Fig. 68: 323/1, 2.

21 Ungerman 2001a; cf. e.g. Lennartsson 1997–1998.

for some kind of functional reason (perhaps the fastening strap wrapped around this section). Each section contains two decorative fields, separated from one another by a double rib with notched surface, which is probably an imitation of a double filigree wire. Each decorative field is then completely filled with a stylised plant motif known as a half-palmette. The plates of these spurs have an unusual shape, in the form of two connected ovals with a row of four rivets running across in the middle.<sup>22</sup> The decoration of the spurs from Grave 44 (Fig. 22: 2; see also Essay 3.2, Fig. 157) follows the same principle as the previous pair, the only difference being that the decorative fields are smoothly framed and inside contain depictions of a human head *en face* (the “mask” motif).<sup>23</sup>

It is no secret that equally ostentatious Carolingian spurs found in Western Europe have numerous features in common with the two Mikulčice pairs, from the material used (gilded bronze) and the technology (casting). What is crucial for us in this respect is particularly the decorative pattern of these spurs, where the entire outer surface of the arms is divided up into discernibly bordered decorative fields, each of which contains the same (or very similar) decoration. This is true, for instance, of the pair of spurs apparently fished out of the Rhine near Mainz, where the decorative motifs inside the fields are quadrupeds depicted in the Anglo-Carolingian animal style (“Tassilo Chalice style”).<sup>24</sup> Similarly, the pair of spurs from Welbsleben and the spur from Hambacher Wald near Jülich have arms covered in decoration featuring the same animal style; the arms narrow towards the plate, while the narrowest part by the plate is decorated in a different style, i.e. with interlace (not undecorated like the narrowed section on the two Mikulčice pairs).<sup>25</sup> Given the decoration used, all these spurs from Germany may be dated to the second half of the 8th century. The relatively early dating reflects the archaic method of fastening the spurs to the straps using eyelets on the reverse side of the arm-ends. Both the above pairs of spurs from Mikulčice are later, broadly datable to the 9th century. They therefore feature the “more modern” plates with a transverse row of rivets, nevertheless, the basic design of the decoration still retains the decorative pattern of spurs in the Anglo-Carolingian animal style. It is therefore thought possible that both pairs came to Mikulčice as imports from the Frankish Empire<sup>26</sup> (cf. Essay 3.2). They were apparently so difficult to make that no copies were produced in Great Moravia using the same technology (i.e. casting and chip-carved decoration); Moravian craftsmen preferred to make spurs from iron. This is also the reason for the different technology used to decorate them, i.e. mainly inlaying. However while doing so, they no longer used the decorative principle of separate decorative fields, each having the same motif.<sup>27</sup> Neither of the two above-mentioned pairs of spurs from Mikulčice can be described as local products merely because no precise analogies have yet been found in the territory of the Frankish Empire. This argument, often presented in the older literature, takes no account of the highly fragmented nature of the archaeological record in Western Europe, where people ceased to be buried with militaria in the 7th or 8th century (with the exception of peripheral regions).

The Czechoslovak researchers of the latter half of the 20th century were apparently aware of comparative material from Germany, although they interpreted both the above-mentioned pairs of Mikulčice spurs in different ways from my current view.<sup>28</sup> Back then, these spurs formed a key part of what was known as the Blatnica-Mikulčice horizon (dated roughly to the first third of the 9th century), relics of which were supposedly local products and which allegedly combined Carolingian, Late Avar and other elements into a peculiar syncretic style. Whatever the case, both pairs of spurs played a fundamental role in the creation of this concept, on the basis of the technology used (cast bronze), the decorative technique (chip-carving), or decorative motifs (mask). In accordance with given arguments, these spurs were dated to the beginning of the Great Moravian period, although this – as is the case with many other related relics – has never been convincingly proven.<sup>29</sup> In the last two decades of research, there has been increasing criticism of the method used to mark out the Blatnica-Mikulčice horizon, so the entire concept was eventually rejected as an unprovable hypothesis, which also brought serious errors in the Great Moravian chronology.<sup>30</sup> This opens up the possibility of re-evaluating, in a fresh and unbiased manner, the dating and provenance of artefacts formerly attributed to this “horizon”.

If we accept the assumption that the spurs from Grave 50 by Church 6 and Grave 44 by Church 2 in Mikulčice are Carolingian imports, the same should also be true of the strap fittings used to fasten those spurs to the legs, as thanks to their decoration those fittings and the spurs make up a complete set. This allows us to see how the decorative patterns and motifs used on spurs were reflected in the decoration on the fittings, although these are obviously shaped differently to the extended arms of the spurs. Let’s start with the fittings from Grave 50. The tongue-shaped strap-ends (Fig. 23: 2) have the same four rivets on the attachment edge as the spur plates. The faces of the strap-ends are divided up – again using double rib with notched surface – into four decorative fields, each of which contains a plant motif, although different to that on the spurs. The plate of the strap-slide (Fig. 23: 1) is also tongue-shaped and features the same decoration as the face of the strap-end, except that the four rivets are replaced by a double wavy line. Many of these elements are very unusual on spur fittings from the Great Moravian burial grounds, particularly the tongue-shape of the plate of the strap-slide and its decoration, which is reminiscent of the decoration on the strap-end from Rajhradice (Fig. 21: 3); this also includes use of the wavy line motif.

On the spur fittings from Grave 44, mask motifs including the frames also cover the entire surface of the buckle frame (Fig. 23: 3). The face of the tongue-shaped strap-end is divided up into an edge zone – with masks – and a central zone, decorated with a larger saltire and a smaller Greek cross (Fig. 23: 4). The same decoration also appears on the face of the tongue-shaped plates of both strap-slides (Fig. 23: 3). However, there is a small difference, as while both crosses rise above the surface, the larger cross is full, while the smaller has two grooves at the top, so is less pronounced. Although this is a simple decorative motif, it did not become popular in the Great Moravian milieu. This could be a further indication that the entire set is of western provenance.

22 Profantová 2003, 21–22, Fig. 36: 7/50, 8/50; Kouřil ed. 2014, 356.

23 Poulik 1957, 366–367, Fig. 75–77; Kouřil ed. 2014, 352.

24 Haseloff 1951, 36, Fig. 20, Pl. 12; Wamers – Brandt eds. 2005, 60–61, Cat. No. 16.

25 Haseloff 1951, 36–37, Fig. 21–22, Pl. 13: 1, 2; 14.

26 Schulze-Dörlamm 2009b, 750.

27 Cf. Kouřil ed. 2014, 353, 354, 357, Cat. No. 165, 166, 170.

28 E.g. Kavanová 1976, esp. 24–27; Profantová 2003, 61.

29 Cf. Košta 2008, 288.

30 Ungerman 2011b; Robak 2017.



Fig. 23 Strap fittings used to fasten spurs to the legs make up a complete set with spurs.

1, 2 – Buckle (with strap-slide) and strap-end from Mikulčice, Grave 50 near Church 6, Inv. Nos. 594-581/60 and 594-582/60; 3, 4 – buckle (with strap-slide) and strap-end from Mikulčice, Grave 44 near Church 2, Inv. Nos. 594-4437/57 and 594-4432/57.

The only strap-end to feature the same decoration as on the two spur strap-ends from Grave 44 by Church 2 is that from Grave 295 by the Mikulčice Church 3 (basilica), Fig. 24. This strap-end was discovered by the left calf of the buried individual, which would imply that it was part of a strap wound around the calf. The three bird-shaped clasps found in the same place, on the other hand, tend to imply that all the fittings were part of a belt (a prongless buckle, which could have clearly confirmed this, was unfortunately not found in the grave).<sup>31</sup> The unusual position of the fittings does not exclude this interpretation – this would not be the first case where a belt was not worn around the buried individual's waist, but was placed elsewhere near the body by those who buried him. We thus have another case where an originally Frankish fitting was later made part of a typical Great Moravian lavish belt with a bird-shaped clasps (cf. Essay 3.6). The strap-end must have originated in the same workshop as the spurs from Grave 44 by Church 2. The minor differences between the decoration on this strap-end and of those from Grave 44 may be put down to the fact that the fitting from Grave 295 is somewhat larger (measuring  $3.5 \times 2.4$  cm), which

is why it also features four rivets on the attachment edge, unlike the spur strap-ends from Grave 44, which are smaller ( $2.8 \times 2.2$  cm) and have only three rivets (Fig. 23: 4).

Other belt sets, which are most probably of Frankish provenance, are mentioned in the Essay 3.6: the fittings from Grave 50 (Fig. 214: 7, 8) and Grave 70 by Church 6 (Fig. 215: 1, 2). These were also identified on the basis of features that are unique in the Great Moravian milieu, but have precise analogies within the Frankish Empire or in neighbouring regions, strongly influenced by the Carolingian culture. In other words, exclusive products came to Great Moravia from Western Europe, some of which had no immediate influence on the products made by local craftsmen. There are other cases in which an imported Carolingian element was adopted by local craftsmen, one example being the division of the face of the strap-end into an edge and a central zone, as can be seen on the strap-ends from Grave 44 by Church 2 (Fig. 23: 4) and from Grave 295 by Church 3 (Fig. 24). I consider it likely that the composition of the decoration on the face of these and similar strap-ends inspired the makers of the lavish Mikulčice belt sets (see Essay 3.6), the decoration of which I have given the working name of the “Mikulčice pattern” (Fig. 214: 1, 4, 6). In a similar way, the craftsmen

<sup>31</sup> Kouřil ed. 2014, 371, Cat. No. 188; Klanica et al. 2019, 34, Fig. 26: 1, 3–5.



Fig. 24 Strap-end, probably from a belt, from Grave 295 near Church 3 (basilica), Mikulčice, Inv. No. 7a/57.

also adopted the principle that the decorative motif from the edge zone of the strap-end is repeated on the buckle frame (Fig. 214: 2, 5). After adopting this basic concept, the Mikulčice craftsmen came up with their own styles as the decoration on each belt set is highly individual. There are also a fair number of strap-ends that also feature engravings of human figures (Fig. 214: 1, 4, 10) on the flat reverse side which do not appear on contemporary Carolingian strap-ends (see Excursus 3.6.2).

Identifying Carolingian imports and specifying the criteria for distinguishing them remains an important task for future research. It will be difficult to determine the provenance of certain products as we can speak only in terms of higher or lower probability. It is quite possible that a certain feature or group of features of Carolingian origin became domesticated in the Great Moravia and were used widely by the local craftsmen, leading to the original Carolingian imports “being lost” in that group of products. In such cases, it will be advisable to use more precise methods to analyse both the decorative motifs and the technologies used to produce the artefacts that made up military equipment. It has to be said that research into such technologies is still in the very early stages in Moravia.

# The Frankish Aristocracy and Its Representation

– Šimon Ungerman

It is difficult, in just a few paragraphs, to describe the characteristics of the Frankish aristocracy in the 8th–10th century and explain how it presented itself in public, as this is a broad topic that is covered by numerous written sources and extensive secondary literature. Even so, we can try – albeit with a certain degree of simplification and abstraction. Who actually was an aristocrat or noble in the Carolingian and post-Carolingian era? At that time in Western Europe a fully constituted nobility as we know it from the High and Late Middle Ages did not exist. In the Early Middle Ages, noble titles with a fixed meaning and precisely defined hierarchy were not used. However, even then it was clear that the lay elites of the time comprised a far less homogeneous social group.<sup>1</sup> There was a world of difference between a member of the highest-ranking imperial aristocracy, in whose hands enormous power was concentrated, and a lowly vassal, who lived off the proceeds of a few farms. In the following text, I concentrate on the highest-ranking aristocracy, to which the written sources refer most often.

To put it briefly, it may be said that a noble in the Frankish Empire was a person who other members of society deemed to be a noble, someone who looked and acted as a noble. It was crucial that such a person be high born, i.e. came from a generally well-known family with a long and famous history. Material wealth was also important, and the potential for representation that this brought. However, there was also a general awareness of the personal traits that should be possessed by an ideal noble: a well-built figure with good looks, an elegant posture, coupled with a friendly, courteous and pleasant nature when dealing with other people. If we focus mainly on male aristocrats, the essential traits they needed were bravery and valour in combat, discipline and sangfroid, both on and off the battlefield. Equally important characteristics were the wisdom and prudence with which they made all their decisions. The period literature – written, with very few exceptions, by members of the elites – shows that aristocrats’ appearance, noble character, way of speaking etc. is so different from the lower class of population that they basically could not hide their differences even if they tried.<sup>2</sup>

Outwardly, a noble was clearly distinguishable at first glance thanks to his clothes, made from precious fabrics, and also his fine and lavishly decorated weapons, which he always carried with him. The most important weapon was obviously the sword, hung from a belt decorated – if the accounts given in the written sources are to be believed – with pure gold fittings and set with precious stones. In addition to this, highborn men also wore massive gold

jewellery, such as bracelets. They all had fast, thoroughbred horses, with a saddle and harness that were richly decorated. Important aristocrats had several of these horses, just as they owned an entire range of swords or several sets of armour.<sup>3</sup>

However, a magnate’s appearance was only one aspect of how he was represented; equally important factors were how many courtiers, armed men and servants made up his retinue, and how those people were dressed and equipped. An aristocrat with a small or poorly equipped retinue, or one who was completely alone, would not have been seen as particularly important in the eyes of the people of that time. Just the appropriate clothing and equipment for himself and his guide would have required the nobleman to possess a considerable amount of wealth. His influence was measured according to, amongst other things, how much farmed land he owned and especially how many peasants worked that land. It was seen as “right” for a nobleman to inherit much of his land from his ancestors, and then to expand on that through his own efforts. The income from his farmed land then enabled him to build himself a suitably grand residence, which, together with the quality of its interior furnishings and objects made from precious metals, displayed his wealth and power.<sup>4</sup>

It must be emphasised that amassing wealth was not a goal for the early medieval aristocrat, but rather a means. By ostentatious display of luxury, he built up his social capital in order to attract lower-ranking men who were willing to serve him. The more of these vassals he gained, the better he was able to defend or expand his wealth and domain. Alternatively, he could offer his “private army” to his ruler and in the event of a successful military campaign, reaped rewards in the form of spoils, more land or offices, which the aristocrat could use to further increase the number of his vassals. In this context, it is easy to see why a crucial trait for a nobleman was generosity, which he demonstrated by giving his men gold, weapons, horses, clothing, etc. His actions may have been inspired by the generous ruler who distributed gifts to all his loyal followers, from imperial magnates to servants at his court (depending on their status and merit). However, aristocrats also showed generosity to one another – they gave each other valuable gifts, invited them to go hunting, to attend opulent banquets etc. In this manner, they strengthened their existing friendships and alliances or formed new ones. The principle amongst aristocrats of equal status was one of reciprocity so that the giving of a lavish gift required a gift of similar value in return.<sup>5</sup>

1 Devroey 2006, 208–212; Bougard – Bühner-Thierry – Le Jan 2013, esp. 1079–1084.

2 Fichtenau 1984, 185–191, 200–201; Depreux 2002, 115; Reuter 2002, 89–95; Devroey 2006, 104–106, 249–252; Fray 2011, 756–767, 821–823.

3 Fichtenau 1984, 92–95; Leyser 1994b, 55; Härke 2000, 385; La Rocca – Provero 2000, 251–255; Ziolkowski 2008.

4 Fichtenau 1984, 78–82, 194–197; Devroey 2006, 258; Bourgeois 2013.

5 Gurevič 1972, esp. 538–547; Fichtenau 1984, 60–63, 83–90, 96, 194–197; Reuter 1985, 81–83; Althoff 1991; Curta 2006, esp. 684–690; cf. Schmauder 2002, 208–220.

One way in which a nobleman could demonstrate his wealth was to donate some of this property to church institutions. However, in doing so they were generally not driven by selfless motives. The nobleman expected to receive something of exclusive value in return: that he and members of his family would be buried in the designated place in the church or monastery to which he had donated the property, and that the priests or monks there would pray for the salvation of their souls (*memoria*). Associated with this was the expectation that, thanks to these memorial ceremonies, their names would “always” remain alive in the collective memory, while the names of the mass of unprivileged people would soon be forgotten.<sup>6</sup>

From the above it should be clear that the main endeavour of Western European aristocrats was to achieve as much military power as possible and that their greatest virtue was bravery in battle. Their social status, which was expressed in ways such as the bestowal of offices, gifts from the ruler or the general respect shown by lower-ranking people, was heavily dependent on their success during wartime; a nobleman who did not succeed in battle for any length of time could never rise very high in the aristocratic ranks. Aristocrats thus spent a considerable part of their lives as active – de facto “professional” – warriors. The only real alternative (for those unable or unwilling to fight) was to enter a monastery as an ordinary monk. However, if an aristocrat made a career in the higher echelons of the ecclesiastical hierarchy (and such titles were reserved for members of the aristocracy), even there it was often impossible to avoid going to war. This was because archbishops, bishops and abbots of important monasteries wielded considerable military power – and if the ruler called upon them, they had to lead their vassals into battle, with all the trimmings. And also with the risk that if they were defeated on the battlefield, they could be killed or that all their equipment, including their weapons, horses, items made from precious metals, liturgical clothing and implements (chalices, reliquaries, etc.) could fall into the hands of the enemy.<sup>7</sup>

The preparations for an aristocrat’s lifelong “military career” began in childhood. At the age of around six, they started to learn to ride a horse, use a bow and arrow, fence with a sword etc. When the boy was a little older, it was customary for his parents to entrust him to be brought up in a friendly aristocratic family or at the ruler’s court. There, he would grow up under the supervision of his noble patron, or the ruler and his dignitaries, and, together with his other noble-born peers, he learnt all the skills he would need in the future. There are accounts of how young aristocrats were brought up in the court of the Carolingian dynasty in the 9th century. There, youngsters improved on their skills in horse riding and fighting with various types of weapons, and went on deer hunts, which were seen as a way of preparing them for war and killing. They learned to endure exhaustion, hunger and bad weather. They prepared themselves for life in the court and for official functions, i.e. they were taught to read and write, they mastered the basics of official correspondence, etc. Their education was generally not formal, but they mostly learned by taking part in everything that went on at the royal court (imperial congresses, audiences, banquets, celebrations of important religious holidays, etc.). This gave them the chance to meet the ruler in person, as well as aristocrats from all over the empire and, last but not least, the

most important intellectuals of their time working at the Carolingian court. These people instilled all the young nobles with the notion that they were predestined to become those who would rule over the lower classes, but also protect them, and taught them what moral and character traits a true noble needed in order to be able to accomplish this. The ruler and court dignitaries themselves tried to forge the closest possible personal ties with them; ones that would last into the future. It was clear that these youngsters would later become prominent magnates, lay and church dignitaries, whose loyalty was indispensable to the sovereign. Equally important were the friendships between the young nobles themselves, which were forged during the years they spent together at court.<sup>8</sup>

Besides the strong ties with relatives, friends and allies, rivalry was just as common amongst the aristocracy of early medieval times. As well as the warlike, even “predatory” nature of this social class, their rivalry was also caused by the fact that the position of these nobles was not guaranteed permanently as with each death of the head of a family, marriage, acquisition of high office, etc., the position of that particular family changed somewhat. The ruler also kept nobles at court busy in that people regularly fell in and out of favour. This compelled the nobles to strive constantly to keep and, if possible, to strengthen their position – partly in the eyes of the lower classes, and partly by competing amongst themselves. This rivalry came in many forms. Merely bragging about one’s qualities and merit could easily escalate to insults and even a duel. If one of the participants was killed, that often led to a repeated and long-lasting vendetta. The Early Middle Ages were rife with these and similar conflicts, involving local clashes in battle, looting the adversary’s possessions, taking hostages and demanding ransom, etc. If aristocrats who were enemies formed part of the same army with their troops, they sometimes feared one another more than the hostile warriors on the other side of the battlefield. Situations like these were then settled with the participants swearing an oath not to take advantage of the turmoil of battle to settle the score with rivals amongst their ranks and not to leave them unassisted at the mercy of the enemy. However, even if the animosities within a single army were not very strong, there were still nobles, especially young and ambitious ones, who longed to win honour and to claim all the merit for the victory for themselves. For instance, they and their troops might attack the enemy on their own, even though such a lack of discipline could put the other units and the outcome of the entire campaign at risk. This problem was also exacerbated by the fact that, amongst other things, the Frankish army consisted of many different sections under the command of the individual lay aristocrats, bishops, etc., with no precise hierarchy or chain of command between them, as is the case with modern armies.<sup>9</sup>

However, rivalry amongst aristocrats was not only associated with fighting. All the forms of noble representation described above – fine clothing, weapons, a large retinue, horses, etc. – were also means of competing and comparing oneself with others. Likewise, aristocrats were regularly trying to outdo one another in who gave the most valuable gift, held the biggest banquet, and so on. In this respect, the less wealthy eventually became unable to compete with the highest-ranking aristocrats, which clearly demonstrated their position in the imaginary aristocratic hierarchy.

6 E.g. Oexle 1983; Geary 1994a, 77–92; Treffort 1996, esp. 99–110; Hassenpflug 1999, esp. 72–75; Effros 2002; Geuenich 2003; Barbier 2005; Devroey 2006, 107–113; Neiske 2008.  
7 Fichtenau 1984, 277–282; Leyser 1994a, 34–35; 1994b, 54, 67; La Rocca – Provero 2000, 252; Sot 2010; Fray 2011, 774–781, 821–824.

8 Le Jan-Hennebicque 1993; Dette 1994; Le Jan 2000; Nelson 2003; Innes 2003; Devroey 2006, 70–72, 253–260; Bachrach 2012, esp. 112–148.

9 Fichtenau 1984, 39–42, 46, 74; Leyser 1994a, 36–37; Nelson 1998, 93–95; 2003, 53–54; Fray 2011, 808–812.

Г ТЫ ИШЕ ВЕЛИКЪ И СЪ НЕ МЪ. З И ВЪ ИИ КЕ  
И ГРА ДЪ БЪ. ВИ ФА ИИ С ТЪ И. ПРИ ЦРИ КОСТА  
И ТИ ИЪ ИРИ ИИ И МЪ РИ ИГО С ТЪ ХЪ Ѡ ЦЪ  
ТЪ З ИЪ НА УА ЛЪ ИИ ЦИ ЖЕСКО РА ТОГО БЪ ША  
ТА РАС ИИ КОСТ А И ТИ И А ГРА ДА. А ПОЛИ И АРИ  
КЪ А ЛЕКСАН ДРИ И ФЕ Ѡ ДОР И ТЪ ВЪ А И ТИ Ѡ РИ  
И И И С А ВЪ И Е Р Л И И А И Д Р И И А И ТЪ И Р И И А И  
СЪ ВЪ СЕ ВЕ МЪ СТО ПОУ СТИ ПЕТРА. ПРЕЗ ВЪ Ц Т Е РА  
РИ МЪ С КЪ И А ЦР К ВЕ. И Д РОУ ГА ГО ПЕТРА ПРЕЗ ВЪ Ц  
ТЕ РА РИ У Б С К А М А И А С ТЪ И Р А. С Т А Г О С А ВЪ  
Г ТЪ У ЖЕ З ВСЕ ЛЕ НЪ И ТЪ СБО РЪ БЪ И ВТО РЫ  
ВЪ ЛЪ З З И И Д И К Т А ВЪ. А И Ц Р Т В О Ц Ю Ш А  
М А Д О Б Р О У Т Ы И Т Ы И А И Д О Л Ю Б Ы И Т Ы М А. К О  
С Т А И Т И И О Ц И Ѡ Д Е И ТЪ М Т Р И И Г О. У И. СБО РЪ С КЪ.

## 1.3

# Church Organisation as a Bearer of New Culture and Innovations and Potential Support of Central Power

– David Kalhous

Christianity was the cultural foundation of society in the Early Middle Ages, exerting a strong influence on the belief systems and livelihoods of a variety of social groups (cf. M. Harvát in 1.1.3). In providing an organisational framework, the Church effected a major transformation in the mindset of people during this period. In this respect, any exploration of Moravia under the Mojmirid dynasty must give these impacts due consideration. By examining various sources that document the teaching of Christianity in Moravia and the ways in which the religion manifested in the material culture, we will assess both the positive and negative consequences of its introduction in the region. We will also focus on the activities of the Byzantine missionaries Constantine (latterly, Cyril) and Methodius, their writings and translations, their efforts to gain a bishopric for Moravia, and their enduring influence on the administration of the Church.

The first mention of the Moravians was recorded in the Royal Frankish Annals in the year 822. Subsequent accounts – attributed to a group of missionaries from the Diocese of Passau charged with instituting the Church in Moravia – report the baptism of the first Moravian ruler and the Christianisation of the population in 831. Both sources are considered plausible. Christianity represented a substantial boon to the newly established power units in Moravia; not simply because of the structure organised religion offered, but also in terms of its status as an institution of legitimacy recognised throughout Europe. Additionally, it led to a clearer structuring of territorial space and, where required, provision for the legal defence of its integrity as a kingdom.<sup>1</sup> As such, it proved an essential ally for the princely elites, assisting in their long-term ambitions to stabilise and build upon their existing power.

But if history is anything to go by, the decision to yield to the Christian faith has never been free of consequence (with some paying the ultimate price); nor has it ever been taken lightly. Before agreeing to be baptised, Edwin, King of Deira,<sup>2</sup> sought to gauge support from among his elite clan members, while Radbod, Prince of Frisia, drew back at the last moment upon discovering he would meet none of his ancestors after death.<sup>3</sup> In some regions, paganism either returned temporarily after a short period of Christian influence (notably in Poland in the 1030s<sup>4</sup> and Hungary in the 1040s<sup>5</sup>) or on a more permanent basis (for more than a century in the case of the Polabian and Baltic Slavs after the defeat of Otto II in 982<sup>6</sup>).

In all likelihood, the Moravians would have encountered Christianity even before the first recording of their collective baptism. Although there are no reliable sources to prove otherwise – the only exception being a vague reference in the 8th-century text *Vita Sancti Amandi* (†675)<sup>7</sup> – the proximity of Moravia to the Carolingian Empire and, previously, to Christian Bavaria (integrated as part of the empire in 788) would suggest this to be the case.

Adding to the overall uncertainty, although the elites east of the Carolingian Empire, being neighbours of Christian Bavaria, would probably have known of Christianity's rise, we have no concrete evidence of any missionary activity occurring before the incorporation of Bavaria as part of the Carolingian Empire and the fall of the Avar Khaganate. The situation in the Pannonian region and its surrounding areas would, however, change dramatically after the military successes of Charlemagne (King of Francia from 768–814) and his military leaders. Following a decree by Charlemagne, bishops from the borderlands of the Carolingian Empire began mounting missions on its peripheries. Under his orders, members of the Diocese of Passau and the Archbishopric of Salzburg were dispatched to regions delimited by the River Danube.<sup>8</sup> Written in Salzburg in the 870s, the Latin history *Conversio Bagoariorum et Carantanorum* (see Excursus 1.1.3) contains reference to attempts at defending Charlemagne's claims to the southern and eastern borders of the Frankish Empire.<sup>9</sup> Subsequent accounts of work carried out by Christian priests in Moravia come from the two biographies recounting the lives of the Byzantine missionaries Constantine and Methodius (see Excursus 1.3.2), and indirectly from other Old Church Slavonic texts. One of these biographies, *Vita Methodii*, refers to work by priests hailing “from among the Italians, Greeks and Germans”.<sup>10</sup> Further indirect references to priests from the Frankish Empire are contained in an extant translation of the Lord's Prayer, whose use of the word “daily” points to syntax typical of Old High German.<sup>11</sup> At a synod of bishops in 796 following the defeat of the Avars, Paulinus II (Patriarch of Aquileia from 787–802/804) and Arno (Bishop of Salzburg from 785–821), agreed to mount a conciliatory missionary programme based on the recommendations of Alcuin of York, a chief advisor to Charlemagne.<sup>12</sup> Cognisant of Charlemagne's several failed attempts to subjugate the Saxons and impose Christianity by force, Alcuin was keen to adopt a more diplomatic approach when subduing

1 Higham 1997; Kalhous 2019.

2 Baedae 1896, II.13, 111–113.

3 Vita Vulframni 1910, c. 9, 668. Cf. Geary 1994b, 35–36.

4 Cf. Borawska 2013.

5 Cf. Kalhous 2018b, 42–45.

6 Fritze 1984; Althoff 1999.

7 Vita Amandi 1910, c. 16, 439–440.

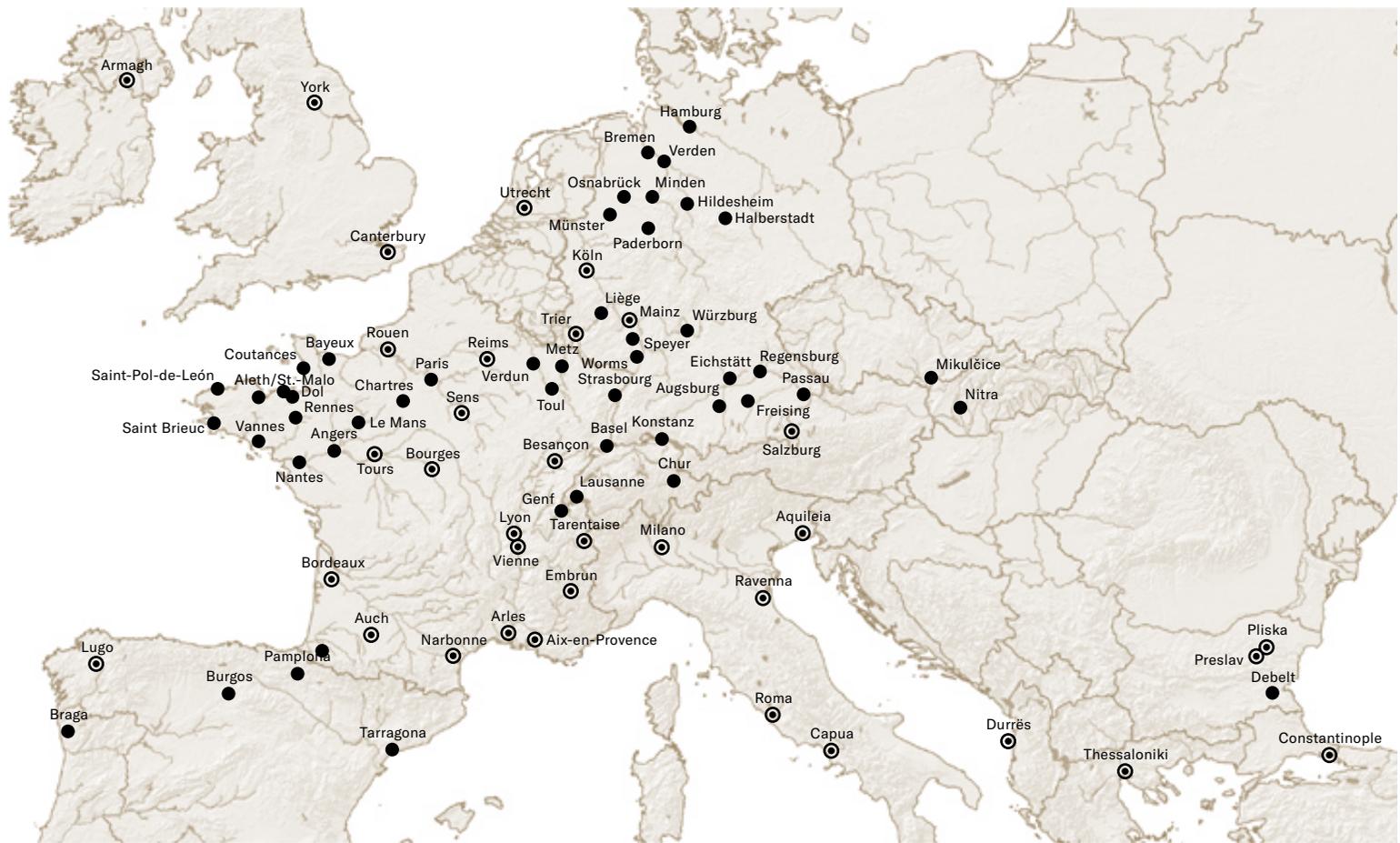
8 Concilia 2,1 1906a, n. 20, 172; Conversio 1997, c. 6, 108–113.

9 For more details, cf. Wolfram 1995b.

10 ŽM 1967, c. 5, 144; Life of Methodius 1983, 111.

11 Vašica 2014, 30; cf. Isačenko 1948, 56, 66.

12 Concilia 2,1 1906a, n. 20, 172–176.



Legend:  
 ● Archbishopric   ● Bishopric

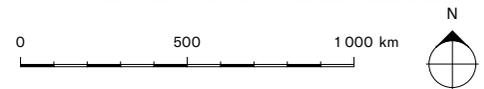


Fig. 25 Archbishoprics and bishoprics of the 9th-century Europe (with partial focus on the Central Europe).

the Avars and Slavs. The non-violent tactics employed involved loosening the restrictions placed on the newly christened through reduced tithes and other material requirements of the Church (for network of bishoprics, cf. Fig. 25).<sup>13</sup>

Following contemporary canon law, the missionary handbook *Ratio de catechizandis rudibus*<sup>14</sup> discloses the vested interests of the Church. A guide for the uncatechised, it advocates the regulation of key moments in people’s lives (birth to death), family ties (especially through marriage) and social mobility. The Church was also, however, attuned to the reality of implementing these teachings, preferring to gradually infiltrate local areas and allowing for a certain tolerance of neophytes. But by the time the second and third generations of Moravian Christians came along, the weight of religious pressure had begun to be felt. Like the Frankish bishops in the west, Methodius attempted to apply the rules of canon law for determining the legitimacy of a marriage. One such instance is presented in Chapter 11 of *Vita Methodii*:

*“A certain very wealthy friend and councillor of the Prince married his fellow godparent, that is, his brother’s wife. After much explaining, instructing and comforting, Methodius was unable to separate them; for others, pretending to be God’s servants, secretly corrupted them, deceiving the couple for their property and, in the end, separated them from the Church. And Methodius said: “There will come a time when deceivers will not be able to help you; and you will recall my words, but there will be nothing to do.” Suddenly, after God abandoned them, calamity befell them, and their place was not to be found. But as the whirlwind raises the dust, they were scattered.”<sup>15</sup>*

Unfortunately, there is a scarcity of evidence with regard to how the Church actually operated in Moravia. Although archaeological sources continue to emerge, we are still unable to chart with any degree of certainty the way Christianity spread during the period. The only reliable indications we have are from the traces of church buildings at a few of the Great Moravian central sites. And even then, there is no way of determining in every instance if these buildings

13 Epistolae IV 1895, 110, 156–159.  
 14 Heer 1911; cf. Phelan 2010.

15 ŽM 1967, c. 11, 156–157; Life of Methodius 1983, 121; cf. MMFH IV 1971, 147.

were churches or sacral places less public in function, such as mausoleums or private chapels.<sup>16</sup> There are about ten documented structures in Mikulčice that we can almost conclusively state were church buildings. To this list we can add the only surviving Great Moravian church in Kopčany (located in present-day Slovakia), divided from the area of the contemporary Mikulčice by a river.<sup>17</sup> Several church buildings have also been identified at the former Staré Město agglomeration (see Excursus 1.3.1). Not far from here at Modrá near Velehrad, a 9th-century church is also believed to have stood. Although not categorical in each case, we have further evidence of two churches at Pohansko near Břeclav,<sup>18</sup> one in Bratislava,<sup>19</sup> and another at the site of the Slavic court in Ducové.<sup>20</sup> Elsewhere, the possible existence of a church at Nitra has been the subject of much recent dispute, while what was once considered a church building at Znojmo<sup>21</sup> has now been widely rejected. We have no evidence of churches in rural settings and we can only speculate that these might have been wooden and did not left any traces. The only evidence of using wood for building churches in the 9th-century Moravia is recently discovered church in Pohansko. Although it is covered by stones, its construction was wooden.<sup>22</sup>

The burial traditions of the Moravians are another important, albeit unreliable, source of evidence. We know the approach of the Church to permitting grave goods was, initially at least, quite liberal.<sup>23</sup> In all probability, other burial rituals such as cremations and inhumations were carried out independently of accepting “the new faith”. The discovery of the placement of various Christian-related objects in graves must also be met with scepticism, as the practice may have been more indicative of a desire to exhibit social status and family connections rather than a reflection of the Christian faith per se. In reality, social status and Christianity were most likely closely related, given the Christian faith was one of the defining features of the upper echelons of Frankish society and considering the huge influence of the Church on the social and political mores of the time. A more important and reliable indicator of the Christianisation of Moravia can be gleaned from the reconfiguration of its burial grounds. We have unambiguous evidence of church cemeteries in the larger settlement agglomerations. We also know a practice existed of reorienting burial grounds to face church buildings and that cemeteries gradually superseded other types of burials. However, this transition was a long-term process that lasted centuries. In neighbouring Bohemia, for example, such a reconfiguration began in the 9th century but only concluded as late as in the 12th century.<sup>24</sup> For these reasons, it is very hard to assess the precise nature and extent of the Christianisation of Moravia under the Mojmirid dynasty. We also have to contend with some discontinuities. For instance, based on the dating of the demolition and reconstruction of local churches in localities like Děvín and Bratislava (occupying the present-day regions of Moravia and Slovakia), the Christianisation of these areas ceased, only to resume at the end of the 10th century.<sup>25</sup>

The archaeological evidence (most of which is circumstantial) tells us very little about the direct impact of Christianity on the contemporary culture, more we know about the attempts to establish the ecclesiastical organisation in the area. However, the written evidence is also complicated. Whereas sources compiled in 880s try to convince us that in 860s Rostislav primarily asked (first the pope, lately Byzantine emperor) for a “teacher” who would have unified the rite in his principality, more probable seems to suppose that the Prince of Moravia was rather interested in an erection of the dioceses or of a metropolitan see, as there were enough “teachers” in his principality already.<sup>26</sup> To dig deeper, however, we must read between the lines of the rather hagiographic account of Constantine’s life. For if, indeed, Rostislav did lobby Constantinople to send a bishop, the arrival of the two brothers – one a priest, the other non-ordained – would have been a disappointment to him. After Rostislav’s petition of Rome fell on deaf ears, he turned to the Byzantine wing of the Church in Constantinople to solicit support from its emperor, Michael III. Notified of Rostislav’s intent, Constantine set about preparing for his impending mission to Moravia, seeking a new alphabet for the Slavic language. His biographer writes:

*“Hearing the prayer of His servants, God soon appeared to him. And immediately Constantine composed letters and began to write the language of the Gospel, that is: “In the beginning was the Word, and the Word was with God, and the Word was God,” and so forth.”*<sup>27</sup>

All in all, Rostislav’s success must be viewed as only partial. Despite the dispatch of Byzantine missionaries of some distinction – Constantine being a reputable scholar of the time and his brother Methodius an excellent administrator – the approach of Constantinople was not unlike that taken by Rome. For Michael and his patriarch Photios were ultimately unwilling to send figures of episcopal rank into unknown territory, a decision that must have rankled.<sup>28</sup> Arriving in 863 or 864, the Byzantine missionaries conducted two years of intensive work in Moravia before setting off with their disciples to Rome. Although Pope Nicholas I (858–867), the extender of their invitation, died before the brothers’ arrival in 868, his successor Pope Adrian II (867–872), according to the unanimous reports in the *Vitae*, deemed their mission to Moravia a success, welcoming the travelling retinue with gratitude and open arms. Having in their possession the relics of Saint Clement, the fourth Pope, would have of course done them no harm in currying favour. Pope Adrian agreed to the brothers mounting a second mission to Moravia, granting them the authority to use Old Church Slavonic in the liturgy. Methodius and five of his Slavic disciples would be later ordained priests. The introduction of the Old Church Slavonic in the liturgy, however, has probably better parallels in the Frankish Empire,<sup>29</sup> but not in Byzantine Empire, and is definitely based on Constantine’s initiative.<sup>30</sup> The mission was, however, impaired by the consequences of a scandal embroiling supporters of both brothers at the papal court,<sup>31</sup> and hampered by the sudden illness of Constantine that would lead to his death in 869. At his brother’s dying request, Methodius was charged with carrying on their work.<sup>32</sup>

16 Cf. with a discussion on the function of the Church of Saint Mary at Prague Castle in Štefan – Wihoda eds. 2018.

17 Maříková-Kubková – Baxa 2017.

18 Dostál 1975; Macháček – Wihoda eds. 2019.

19 Recently Botek 2014.

20 Vančo 2000, 75.

21 Klíma 2001.

22 Macháček – Wihoda eds. 2019.

23 Kalhous 2019.

24 See Štefan – Varadzin 2009.

25 I am indebted to Hana Chorvátová for drawing my attention to this anomaly.

26 For a recent analysis of the brothers’ mission, see Vavřínek 2017.

27 ŽK 1967, c. 14, 100; Life of Constantine 1983, 67.

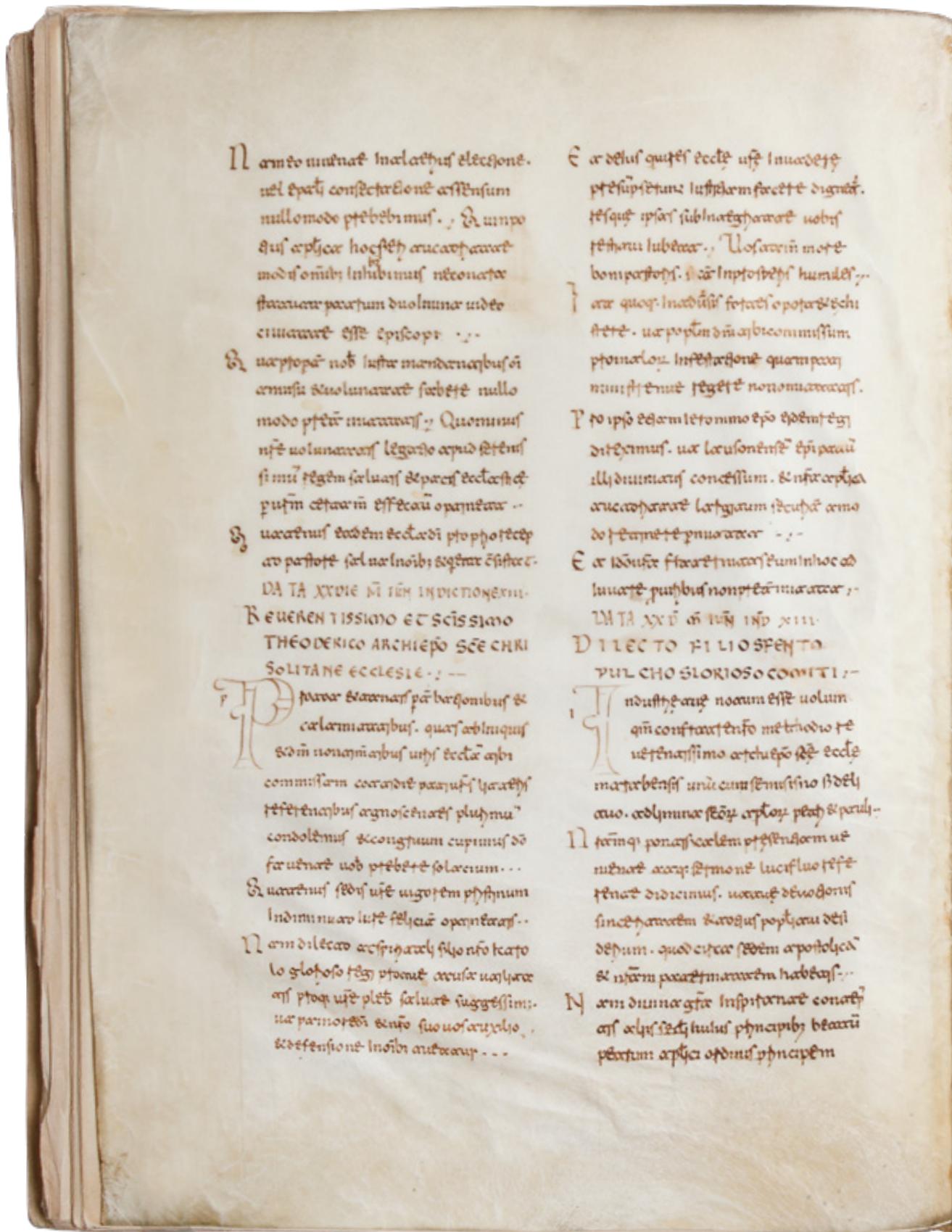
28 Cf. Betti 2014a.

29 Wolff 1973, I. 1. 31; Concilia 2,1 1906b, n. 19, 110.

30 Vavřínek 1978; Ivanov 2015.

31 Vavřínek 2013.

32 ŽM 1967, c. 7, 147; Life of Methodius 1983, 113.



N amto uniuersae ineluctus electione.  
 uel episcopi consecratione assensum  
 nullomodo prebebitur. . . In unpo  
 quis episcopi hoc est cruciaturat  
 modis omni inuoluntate neconat  
 staxuatur paratum duolunna uidet  
 ciuacurte esse episcopi . . .

Quaeritur nobis iustitiam mandataquebus  
 amissu aduoluntate subesse nullo  
 modo poterit inuacurari. . . Quomunus  
 nre uoluntate legatio cepit stentis  
 si mihi regem saluati deparat ecclesiis  
 psum cetarum effecauit opantur . . .

Quaeritur eodem ecclesie prophoset  
 at pastore saluati inoib; sequat existet . . .

DATA XXVIE M̄ IEM INDICTIONE VIII.  
 REUERENTISSIMO ET SCISSIANO  
 THEODERICO ARCHIEPO SEE CHRIS  
 SOLITANE ECCLESIE . . .

**P**ax et benedictio pater baronibus &  
 calarimantibus. quas ad iniquis  
 sed in uoluntate uis ecclesie qbi  
 commissam coaradit paratus hanc  
 pterentibus agnoscentibus plurimum  
 condolemus & congruum cupimus do  
 far uenire uobis prebere solacium . . .

Quaeritur sedis uis uigorem psum  
 indimiuat iustitiam opantur . . .

Nam dilectio ac frigate filio nro beato  
 lo gloriose fess; ptonat acula uoluntate  
 as ptoq; uis plebs saluati suggestimus.  
 ua paritotei deuo suo uoluntate . . .  
 & defensione inoib; autur . . .

Et deus quies ecclesie uis inuacurte  
 pterisidituz iustitiam faceret dignat.  
 fess; ipsos subinatgaurat uobis  
 fess; lubet . . . Uoluntate mot  
 bonipostis. . . in ptoib; humile . . .

Et quoque in aduili fortis opota & schi  
 stete. uat popm dñi apbicommissum  
 ptonatuz. in pterentibus quam pax  
 nuntiat tunc regit nonomacurari . . .

Pro ipso ecclesie in to nro episcopo eodem  
 dicitur. uat locutione episcopi parauit  
 illi diuinitate concessum. & in pterentibus  
 cruciaturat lathgam stentur amo  
 do pterentibus pnuacurari . . .

Et idem fess; ptonatuz in hoc ad  
 luacurte puthus non pterentibus . . .

DATA XXV M̄ IEM INDICTIONE VIII.  
 DIRECTO FILIO SPENTA  
 PULCHO GLORIOSO COMITI . . .

**I**ndustrie ac uis uoluntate  
 qm constatat in fo methodio te  
 uis inoib; archiepo fess; ecclesie  
 in pterentibus uniuersis inoib; fidelibus  
 cau. ad inuacurari fess; ptoq; pterentibus . . .

Nam in ptoq; ptonatuz in pterentibus uis  
 inuacurari acurte pterentibus lucif luo pterentibus  
 pterentibus didicimus. uoluntate deuo bonis  
 sinceritate & caritas poplari deil  
 desum. quod curat sedem apostolica  
 & inoib; ptonatuz in pterentibus . . .

Nam diuina gratia in pterentibus conat  
 as oculis fess; inoib; pterentibus beati  
 pterentibus archiepo pterentibus . . .

Fig. 26 Papal letters.

The letters provide us with the contacts between the papacy and secular and ecclesiastical leaders of Europe (and of complex papacy policy towards them). The best preserved among them are those issued by John VIII (872-882), as the late 11th-century copy of the part of his *registra* exists. Here, it is possible to see the folios with the key letter issued in 880 for Methodius and Svatopluk - *Bulla Industriae tuae* - which confirmed Methodius' position as a head of the Moravian Church, established suffragan bishopric, confirmed the use of the Old Church Slavonic in the liturgy and called Svatopluk as his son.



According to Vladimír Vavřínek,<sup>33</sup> Pope Adrian took a number of strategic steps, including giving Methodius jurisdiction of Pannonia and Moravia, to augment his sphere of influence in the region.<sup>34</sup> With the appointment of Methodius as Archbishop of Sirmium (located in today's Serbia), he also sought to extend the legal continuity of the Roman Church in this strategic province. Certainly, from the perspective of canon law, there was justification for the appointment despite sharp opposition from the Bavarian bishops.<sup>35</sup> Moreover, although the only allusion to the papal letter endorsing Old Church Slavonic as an official liturgical language comes from *Vita Methodii*,<sup>36</sup> its authenticity is generally accepted.

The establishment of the diocese would, however, prove untimely. Stormy relations within the Carolingian dynasty crossed over to Great Moravia, with the disintegration of the relationship between the ruler Rostislav and his nephew Svatopluk contributing to the general discord. Svatopluk's betrayal of his uncle would lead to Rostislav's eventual capture by Louis the German, who commuted a punishment by death to mere blinding and imprisonment. Not even Svatopluk came out well, also ending up in prison. The same fate would befall Methodius, who found himself confined in a Swabian monastery at the behest of the Frankish-Bavarian clergy. Only after Svatopluk became the ruler of Moravia in 871 did the Pope intercede on his behalf (see Essay 1.1). Over the next fourteen years, a period culminating in his death in 885, Archbishop Methodius would resume his missionary and literary endeavours, training his group of disciples and completing translations of important religious and perhaps also legal texts (examined in further detail later). He was also forced to defend himself against attacks from a section of the Moravian clergy, the opposition spearheaded by his suffragan, Wiching, Bishop of Nitra. He instituted a defamation campaign against Methodius at the papal court, claiming him a heretic for his replacement of Latin with Old Church Slavonic as the language of the liturgy. For his part, Methodius repeatedly visited Rome to argue his position before ultimately being exonerated by Pope John VIII (872–882).<sup>37</sup>

According to *Vita Methodii*, Methodius subsequently travelled to meet with the patriarch in Constantinople. His death came at a time when his opponents were repeatedly undermining his position with the then pope, Stephen V (885–891), whose papal bull forbidding the use of the Slavonic liturgy would lead to a schism in the Moravian Church. Some of Methodius' disciples were then sold into slavery or exiled, finding refuge in Bulgaria. However, we must be careful, as the description of these events is based on Bulgarian sources stressing the continuity of the Byzantine mission in the wider context of contemporary Bulgarian Christianity.<sup>38</sup>

Wiching's success was, however, short-lived. In 891 or 892, he also left Moravia before eventually becoming chancellor to Arnulf of Carinthia, King of East Francia (887–899). With the monarch's help, he became the abbot of Mondsee monastery (896). He also made the ill-judged decision to accept an offer to become Bishop of Passau in 898 while continuing as Bishop of Nitra, an act contravening canon law that resulted in his sentencing by the bishops of Bavaria.<sup>39</sup> In any case, Moravia was to lose its hard-won episcopal organisation.

The region's dealings with Rome and, particularly, the papal bull of Pope John VIII, *Industriae Tuae* (Fig. 26) – which cleared Methodius of all charges of heresy (thus proving his “orthodoxy”) and reinstated the Old Slavonic liturgy – provide valuable evidence of the development of the Church in Moravia and its involvement in stabilising the early principedom.<sup>40</sup>

The re-establishment of the Moravian dioceses at the end of the 9th century was rolled out on an even larger scale than during Methodius' episcopacy, a process once again enabled by the papacy. Although we do know Pope John IX dispatched Archbishop John and bishops Benedict and Daniel to Moravia as papal legates (based on a letter on behalf of the Bavarian clergy criticising their consecration),<sup>41</sup> we know nothing about the nature of their work there or how this political move may have contributed to the demise of the region. Sources from the 10th and 11th centuries suggest that at least one diocese in Moravia survived, even though the position of the bishopric was not continuously filled; the Church administration in Moravia was even assigned to the bishop of Prague for some time.<sup>42</sup> We can venture, then, that the establishment of a diocese brought a degree of stability, strengthening the self-identification of the local elites. We can also probably attribute the re-appearance of the term “Moravians” in the written sources at the beginning of the 11th century – a century after it was last used – to the survival of the structures of the Church, however reduced (for further detail, see Essay 1.2).

Another important offshoot of the Church in Moravia was the development of a written culture, resulting in a number of translations as well as original texts. Based on certain characteristics in the usage of language in these texts, however, the origins of what we believe constituted the oeuvre of 9th-century Moravia reveal a sophisticated blend of influences from different cultures. For the majority of the extant copies of these works were in fact discovered in Bulgaria and Russia many centuries later. Aside from the known translations of parts of the Bible, various Moravian legal documents appear to have been adapted from other sources. One example is the secular legal text *Zakón Súdnyi Liúdem*. Written in Old Church Slavonic and based on the Byzantine Ecloga issued by Leo III the Isaurian (717–741) in 726, it is notable for its attention to sexual and marital offences,<sup>43</sup> echoing Chapter 11 of *Vita Methodii*. Methodius' Old Church Slavonic *Nomokanonъ* (Fig. 27) represents a substantially reduced version of the *Synagogue* of John Scholasticus (565–577), a Byzantine collection of canon and secular law, while the abstract *Zapovědi světyichъ otъsъ* was probably translated from a Latin penitential. The homily *Vladykam země Božie slovo velitъ* and the *Vitae* celebrating the lives of Constantine and Methodius are completely original. Recalling two sermons by Adalbert of Prague written at the end of the 10th century, the homily reveals the intent of the clergy to disseminate the Word of God among the heathen elites. Through a hagiographic description of their lives, the biographies disclose how the retinue surrounding Constantine and Methodius tried to embed their religious-cultural ideals. Given their message would prove so far-reaching, it naturally begs the question what target audience the authors of these texts had in mind. It is remarkable that they found a readership in places as far flung as Bulgaria and Russia some five hundred years after they were composed. That

33 Vavřínek 2013.

34 Cf. also Betti 2014a.

35 Kalhous 2009.

36 ŽM 1967, c. 8, 147–150; Life of Methodius 1983, 113–117.

37 Betti 2014a; Vavřínek 2013.

38 ŽN 1967, 177–179; cf. Kalhous 2012, 193–208.

39 Ann. Fuld. 1891, AD 899, 133; Annals of Fulda 1992, 139–140.

40 Epistolae VII 1928, n. 255, 222–224; Havlík 1983.

41 Conversio 1997, c. 6, 108–113.

42 Kalhous 2012; Kalhous 2018b.

43 MMFH IV 1971, 147–198; Maksimovich 2004.

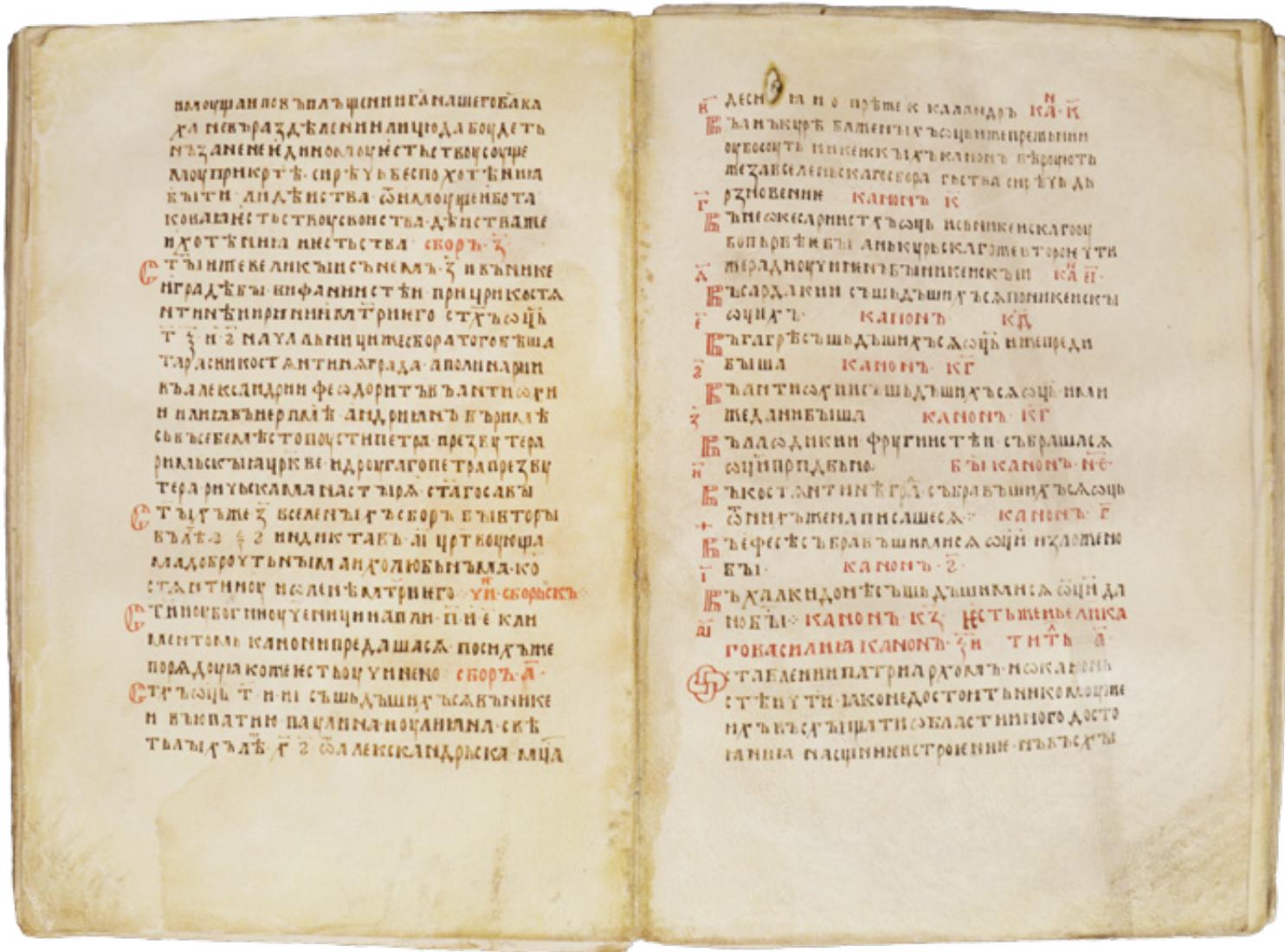


Fig. 27 Nomocanon. Compilation of secular and canon law compiled by St Methodius in 880s, here in the so-called Ustug or Rumjancev transcription from the 13th or 14th century.

they became canonical texts in these lands and their teachings became such a source of inspiration for the chronicles and legends of other cultures attests to the enduring appeal of the two brothers from Thessalonica.<sup>44</sup>

The Christianisation of Moravia can thus be considered part of a wider transformation of cultural, political and social structures that began to take hold during the Early Middle Ages, not just in Moravia, but throughout the world. The organisational structure established by the Church in the region formed the backbone of the Mojmirid dynasty, surviving beyond the fall of the principality. But just as it offered protection for the Moravian principality and its subjects, it also strengthened their position among the contemporary elites. As for Constantine, Methodius and their followers, their seminal translations would only have a limited impact on the literacy of the Přemyslid era in Bohemia. But their ideas would penetrate far beyond the Archbishopric of Moravia, doing much to legitimise the inauguration of the Church in other areas and inform approaches to European historiography.

44 See Kalhous 2012, 193–208; Kalhous 2018b.

### 1.3.1 excursus

## Early Medieval Sacral Area in Uherské Hradiště – Sady

– Luděk Galuška

The important archaeological site of Uherské Hradiště – Sady is inseparably associated with the period of the Early Middle Ages, specifically the era of Great Moravia and the following period from the 10th to early 13th centuries. In 1958, Vilém Hrubý discovered a site located on a hill in the south-east periphery of the town, now called Výšina sv. Metoděje (St Methodius's Height) and he conducted extensive archaeological excavations between 1959 and 1965 there.<sup>1</sup> The site unearthed the remains of a complex of sacral stone architecture consisting of five structures, 958 inhumation graves in a large necropolis, the floors of 14–15 settlement log houses, and the relics of a large, 36 m long, L-shaped wooden structure. There were also settlement pits, which often contained evidence of specialised production related to construction activities. These discoveries were dated to the Great Moravian period and the following, 10th to 13th, centuries.<sup>2</sup>

In the Great Moravian period (9th to mid-10th centuries), during the first construction phase (first third of the 9th century), a church with a cross-shaped ground plan was built of mortar and stones with two parallel wall footings inside, which served as supporting elements for the interior vaults and a massive tower with a square plan (Fig. 28). The walls were plastered and painted both inside and out (Fig. 29), the floor was made of cast mortar applied to stone ballast, and the roof was made of fired tiles of ancient style.<sup>3</sup> The stained glass windows were decorated with gold foil. Later, during the second construction phase (around mid-9th century), a new structure with two side entrances and a semicircular apsidal recess facing west was added to the western wall of the church. Its stone walls were plastered and painted, and the floor was made only of flat stones since this extension served for intensive burial over the next 400 years (see below). The ceiling was probably flat, and the roofing was made of wood, possibly shingle. The extension probably served as a church entrance hall – narthex – even though V. Hrubý long considered it to have been a second church at Sady. It is highly probable that a stand-alone smaller circular building of central character – a rotunda – was constructed during the second construction phase on the axis of the church complex about 6–7 m west of the apsidal recess of the narthex. It had a diameter of 3.3 m and a mortar floor, and it hypothetically could have had a baptismal function. During the last, third, construction phase (last third of the 9th century), a 3.9 m long partition wall made of stone, probably a low one, was built in the interior of the narthex in front of the semicircular apsidal recess. At the same time, a stone tomb chamber with a cross layout was added to the northern wall of the church, followed by a chapel with a semicircular apse connected to the chamber. Both the structures had separate

entrances. The interior of the chapel was plastered and painted, and the floor was probably made of cast mortar. In the chapel nave, there were graves of two important males, based on which it was later made a burial chapel. The third construction phase from the 870s to the 880s gave the sacral stone architecture in Sady its final form. It was 22.5 m long – 33 m including the rotunda – and 16 m wide in its eastern half where the church, burial chamber and chapel were. North of it, separated by walls and a fence, there was a log-house settlement, which took up the entire northern part of this Christian site. The settlement was connected with the church complex by a pavement with a surface of gravel sand. On the opposite side – south of the church complex – there was a 36 m long and 8 m wide wooden structure with two kilns outlined by three lines of massive supporting posts covered with mortar. The structure was probably divided into eight, possibly ten residential units and a single larger space, perhaps a common room. From the north side to the western half of this large hall construction, there was another large extension, again equipped with a stone kiln. The overall appearance of the palace-type dwelling house thus took the shape of “L”. This house was connected with the church complex by a pavement, about 3 m wide, that the inhabitants of the house might have used to walk among the graves all the way to the south side of the church with a cross layout.<sup>4</sup>

At the church burial ground, 87 graves out of 958 were dated to the Great Moravian period (Fig. 28). Of these, 23–24 were located inside of the sacral buildings – the church, narthex, burial chamber and the chapel. Individuals were buried in board coffins with iron-strip fittings. In both cases, such numbers of burials are unparalleled at any other Great Moravian site.<sup>5</sup> The location of the graves inside of the sacral buildings and the very character of the often lavish grave goods suggest that mainly selected members of the highest social class of the Great Moravian society who had converted to Christianity were buried there. Some of the graves are hypothetically linked to the most prominent personalities of Great Moravia – Prince Svatopluk and Archbishop Methodius.<sup>6</sup>

Another period of human activity at the Výšina sv. Metoděje in Uherské Hradiště – Sady dates back to the time after the downfall of Great Moravia and the so-called Late Hillfort period – from the second half of the 10th to the beginning of the 13th centuries. The archaeological context on the site suggests that among the Great Moravian buildings that survived was the church with cross layout, which did not contain a single grave that could be dated to the second period of the use of Výšina. The same is true about the former burial chamber and the stand-alone central building – the rotunda. On the other hand, the area of the western church

1 Hrubý 1965a, 101–103, 202–206.

2 Recently Galuška – Mitáček – Nývtlová-Fišáková 2018, 99–114; Galuška et. al. 2018.

3 Hrubý 1970b, 95–102.

4 Galuška 1996, 30–75, 110–117; 1998a, 161–180.

5 Galuška 2014b, 55–58.

6 Hrubý 1970a, 87–96; Galuška 1996, 118–125; Lutovský 2005, 57–62.

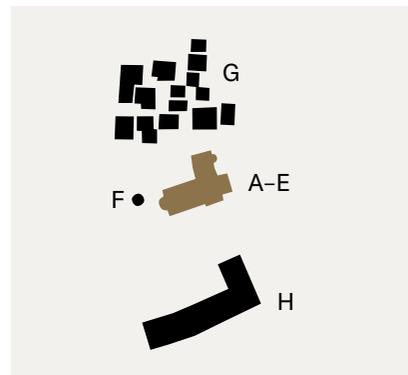
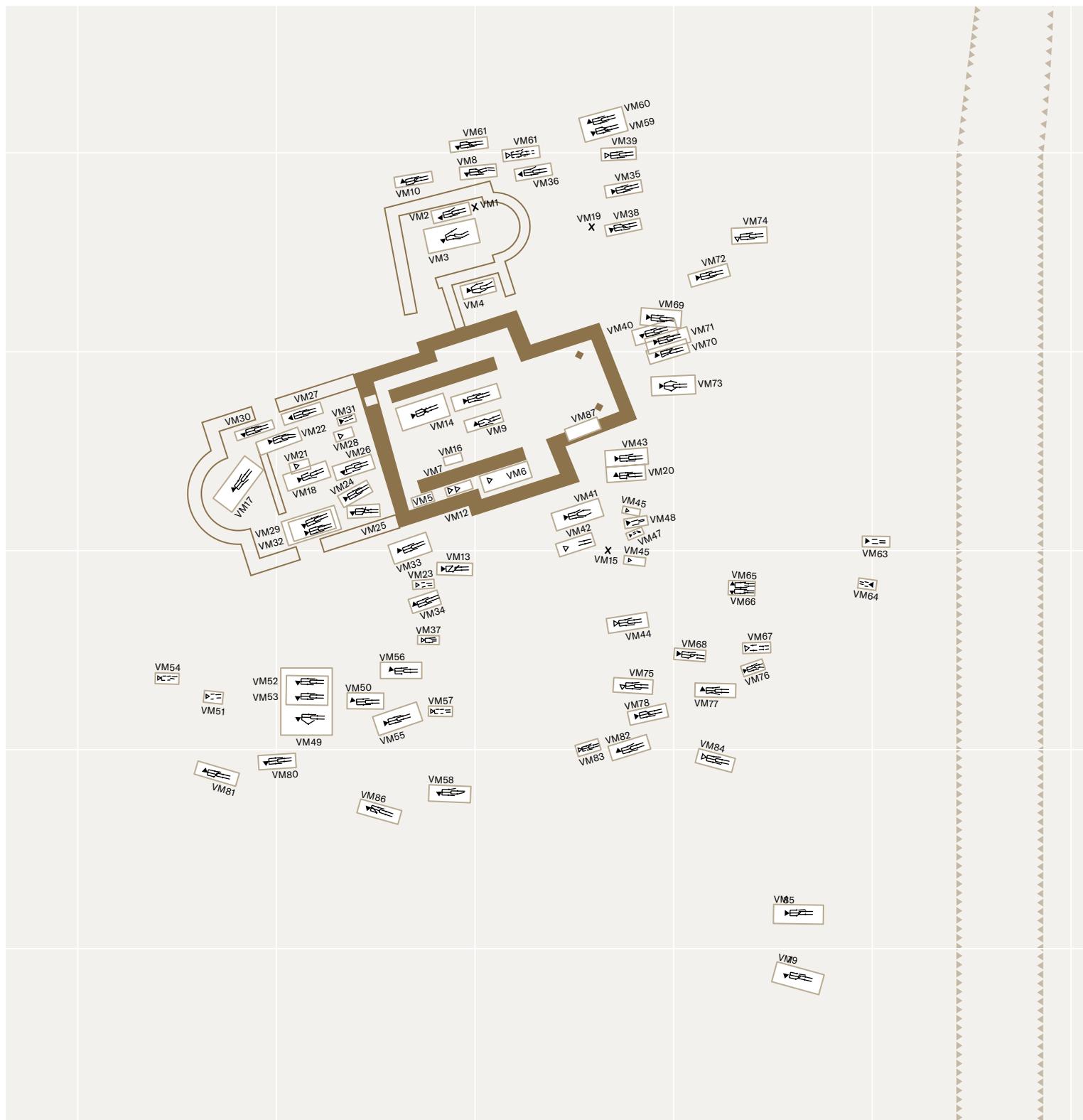


Fig. 28 Uherské Hradiště – Sady. Christian centre at the peak of the Empire in the second half of the 9th century.  
 At the church burial ground, 87 graves are dated to the Great Moravian period, 23-24 of these were located inside of the sacral buildings. The schematic plan (on the right) of the building complex: A-F – church complex; G – log houses; H – wooden hall building.

extension – the narthex – was full of graves later than the Great Moravian period. None of these 26 graves, however, overlaid the foundations of the extension. Another two likely Late Hillfort graves then lay in the place of the former burial chapel on the north side of the church. Questions related to which sacral buildings of the Great Moravian origin – except the church – remained functional even after the end of Great Moravia, can be answered only after completion of the ongoing research.<sup>7</sup> On the contrary, we can almost certainly state that of the original Great Moravian structures of a secular character both the settlement log houses and – perhaps a bit later – the long wooden palace-like structure ceased to exist. This can be derived from the fact that tens of demonstrably Late Hillfort graves were dug into their destruction layer. In two cases, it was possible to identify the settlement structures, one of which is likely to have originally served residential purposes as it contained ceramics typical for the end of the 11th and 12th centuries. Overall, it can be stated that in comparison with the Great Moravian period, the settlement activities at Výšina sv. Metoděje in the Late Hillfort period were greatly reduced, and, on the contrary, it strongly retained and even strengthened its funeral function.

In the period from mid-10th century to the beginning of the 13th century, 871 burials were placed at the former Great Moravian sacral site. Two of them were dug into the floor of the burial chapel and 26 were found in the western extension of the church with the cross layout. Along with the 13 earlier Great Moravian graves, there is a total of 39 graves situated inside the building. The remaining 843 graves, mostly rather shallow, were around the church, forming

an irregular rectangle with sides of approximately 83 m and 73 m oriented in the NNW-SSE direction. Some of them formed rows, others clusters, and there were also vacant places. Many graves were on top of the Great Moravian graves, while others avoided and respected them, which suggests some of these Great Moravian graves used to be visible on the surface. Quite often, the pits were lined with stones, less often with wood. The finds are dominated by objects typical for the 11th and 12th centuries: mainly women’s jewellery (311 graves) and coins (67 graves).<sup>8</sup> The total number of graves suggests that the burial ground near the Sady church was not used only by a single village, but that it was rather a communal necropolis for the deceased from a wider area, especially from nearby Kunovice, Horní and Dolní Popovice, and also Veligrad – Staré Město. As for the number of graves, this burial ground surpasses the contemporary centres of the Moravian Přemyslids, such as Olomouc, Brno and Znojmo. These intense burial activities at the Výšina sv. Metoděje in Uherské Hradiště – Sady site from the 10th to the beginning of the 13th centuries testify either to the presence of a holy relic or an awareness of the significance of the site from the times of Great Moravia. We believe that the Sady sacral area, as part of the Great Moravian Veligrad, i.e. the Staré Město – Uherské Hradiště agglomeration, might have been the seat of Archbishop Methodius in the 870s and 880s, and from 880 also the centre of the “Holy Moravian Church” mentioned in the papal bull *Industriae tuae*. It might as well be the seat of Methodius’s successor, a bishop ordained by papal envoys in Moravia in 900, or even one of his hypothetical followers.<sup>9</sup>

7 A trilogy “*Uherské Hradiště – Sady. 500 let křesťanství ve střední Evropě*” is going to be published soon. The first volume – a catalogue of the burial ground – is in press, the second, which is currently being prepared, will provide an archaeological, historical, anthropological, numismatic, genetic, and scientific evaluation of the finds.

8 For a summary regarding the graves with coins, see Sejbal 1986, 98–183.

9 This study was created with the financial support of the Ministry of Culture of the Czech Republic under the institutional funding of long-term conceptual development of the Moravian Museum research organisation (DKRVO, MK000094862).



Fig. 29 Uherské Hradiště – Sady. Fragment of painted interior plaster with part of the human face.

# Written Sources of Ecclesiastical History

– David Kalhous

## *Vita Constantini-Cyrelli* and *Vita Methodii*

Written in Old Church Slavonic, the biographies of the missionary brothers Constantine (latterly Cyril) and Methodius are considered key texts in documenting the ecclesiastical history of Moravia in the second half of the 9th century (Fig. 30). Representing significant examples of early literature written in “vernacular” languages,<sup>1</sup> they provide telling insights into the efforts of the missionaries and their followers to assert the legitimacy of the Church in the region. The original manuscripts are understood to have been written in Moravia soon after their deaths. However, some researchers have raised the possibility that the *Vita Methodii* was composed in Bulgaria shortly after the arrival of a group of Methodius’s disciples.

There has been extensive debate on the origins of both texts, partly because the earliest surviving copies were written outside Moravia and centuries later. The oldest extant copy of the *Vita Methodii* was written at Dormition Cathedral in Moscow in the 12th century. Fragments of the oldest preserved version of *Vita Constantini-Cyrelli* were written in the 14th century, with other parts no earlier than the 15th century. Despite the considerable number of manuscripts preserved (16 copies of the *Vita Methodii* and around 60 copies of the *Vita Constantini-Cyrelli*), it is generally agreed that all are based on authentic original manuscripts written at the end of the 9th century.<sup>2</sup>

Yet, it would be remiss to regard what are essentially hagiographies as objective reflections of the past. They should rather be viewed as skilfully compiled defences of the brothers’ activities in Moravia that seek to deliberately highlight key events in order to extol the virtues of their protagonists.<sup>3</sup>

The *Vita Constantini-Cyrelli* is the more extensive of the two accounts, presenting its hero as a godly scholar, beloved as much by the high-ranking officials of the Church as he was by the Byzantine Emperor. A considerable portion of the text is devoted to his efforts to win over members of other Abrahamic religions, Islam and Judaism, as well as alleged heretics.<sup>4</sup> Constantine is depicted as a worldly figure committed to installing Old Church Slavonic as the local language of the liturgy in Moravia. In addition to framing Constantine’s creation of the new script as an act divinely inspired by God,<sup>5</sup> the biographer also stresses the role of the papal see in legitimising its introduction within the local church community.

As for the *Vita Methodii*, it places considerable emphasis on Methodius’ management of diocese affairs and the support of the “Apostolic See” in rubber-stamping the orthodoxy of his and his disciples’ mission in Moravia.<sup>6</sup> The following excerpt accentuates the enabling influence of Methodius on secular power and his lasting contribution to the future welfare of the principality:<sup>7</sup>

*“And from that day forth, God’s teachings grew greatly and the clergy multiplied in all the towns. And for that reason the Moravians began to grow and multiply, and the pagans to believe in the true God, casting aside their lies. And the Province of Moravia began to expand much more into all lands and to defeat its enemies successfully, as they themselves are always relating.”*

## Papal letters

The only texts that can be reliably considered “contemporary” are a collection of papal letters mostly addressed to various secular and ecclesiastical dignitaries in East Central Europe between 867 (?) and 900 (Fig. 31).<sup>8</sup>

The majority of the available correspondence consists of letters issued by Pope John VIII (872–882). A number of these letters are preserved in a manuscript originally written at Monte Cassino in the 1070s,<sup>9</sup> consisting of copies of letters from a papal register covering the period 1 September 876 to August 882 (Fig. 26).

A few remaining letters are preserved either in collections of papal decrees – an important source of canon law – or in less trustworthy copies. One example is a letter written in 869 by Pope Adrian II to a Moravian contingent including Rostislav and Svatopluk informing them of his decision to make Methodius papal legate in their realm. Given the letter is exclusively found in Chapter 8 of the *Vita Methodii*<sup>10</sup> – thus preserved only in its Old Church Slavonic translation and not as the Latin original – its authenticity was unsurprisingly the subject of long-standing dispute. However, it is now generally agreed that the text is a translation of an authentic papal letter. Similarly, a letter from Pope Stephen V to Svatopluk from 885, existence of which is only based on a transcription credited to the bishopric of Prague in the late 10th century,<sup>11</sup> is believed to be a counterfeit.<sup>12</sup> Finally, many of these letters are only known from short summaries. For example, a letter requesting the authority of archbishop John and bishops Benedict and Daniel to renew

1 For a critical analysis, see Vavřínek 1963a. For a general background to early medieval vernacular literature, cf. Geary 2013.

2 Dvorník 1933.

3 For a more complete appreciation, see Vavřínek 1963b; Kalhous 2012, 193–208.

4 ŽK 1967, c. 5–6, 68–74; c. 8, 75–94; c. 9–11, 105–110; Life of Constantine 1983, 33–41, 41–45, 45–63, 71–75.

5 ŽK 1967, c. 14, 100; Life of Constantine 1983, 67.

6 ŽM 1967, c. 6–10, 146–154; Life of Methodius 1983, 113–119.

7 ŽM 1967, c. 10, 154; Life of Methodius 1983, 119.

8 On this matter, see Betti 2014a in particular.

9 Now in Città del Vaticano, Archivio Segreto Vaticano, Reg. Vat. 1; Epistolae VII 1928, 1–272. See Lohrmann 1968.

10 ŽM 1967, 147–150; Life of Methodius 1983, 113–117.

11 Havel – Kalhous 2019.

12 Laehr 1928.



Fig. 30 The Life of Methodius.

Written soon after Methodius death in 885 in the Old Church Slavonic language by one of his close friends, defends his and his brother's ecclesiastical and intellectual mission. Until now, it is only preserved in the late manuscripts (here a facsimile from Uspenskiy Sbornik, 12th century).

the Moravian Church issued some years before 900 was most likely written; however, the only foundation for its existence is based on a complaint by Archbishop Theotmar of Salzburg and his bishops.<sup>13</sup>

Although the Pope was, to all intents and purposes, acknowledged as the respected head of the Church, his real influence was in fact limited and his position, thus, rather delicate. Therefore, not all of the official papal letters cannot be just translated. On the contrary, they need to be carefully analysed and compared with similar materials in order to be contextualised in terms of papal policy.<sup>14</sup> There was also a need to balance interests in various areas and engage in compromise, whether through responding to the requests of Frankish rulers in one region or granting concessions in another. In fact, it was only on rare occasions that parties caught up in local conflicts turned to the Pope as an authority figure capable of wielding power.<sup>15</sup>

The careful wording of the letters, designed to reflect the various addressees and political contexts involved, is revealing for a number of small details. One of these is the designation of Methodius's archdiocese as "Pannonian" in the letters to the Bavarian bishops and the Frankish king, deliberately intended to emphasise the continuity with antiquity and the right of the Pope to disregard the Bavarian episcopate. Conversely, the letters addressed to Svatopluk use the term "(Holy) Church of Moravia" to reinforce local associations. Elsewhere, Svatopluk is referred to either as a "barbarian" in the letters sent to the East Frankish authorities or as a "dear son" when Svatopluk himself is the addressee.<sup>16</sup>

13 Conversio 1997, 138–156. In support of its authenticity, see Třeštík 1998, 137–160.

14 Cf. a recent and very instructive analysis in Betti 2014b, 212–215.

15 Cf. Heidecker 2010.

16 See Betti 2014b.

tussum crudelitatis delibetant & ad  
legnam suam pducere. modis omni  
sacrae gratias. Quod haec & secundum istum  
scripturatum suatum peccato quis  
quod illud fuerit nro ceptam scripturatum  
ut si uolumus in aeternam uiam nos & h  
benet accipiamus. & sic cruci aoptat  
at stabili te nono mra caruus. . .

Quae & primu eorum ceptis missis ali  
isq; tuerentur missis episcopi in synodo acri  
nenti. Et post in aeterna magna ecclesiam  
chulominus eorum missis legant. & ad h  
impetrantibus iudicibus de hoc iudica  
rum sua & legant diffiniam. . .

DATA IIII NONI MAR INO XIII

**DE THEODIO ARCHIEPO P FI DE.**

**T**heodorus scilicet audimus quod capere  
quam in lucis animas in de  
lum dno dno & huius appto  
bomati. Et orthodoxi sicut et eulao  
sem strenuum de iustis conatplamati.  
nuntis in eodem dno locundamur. Et  
si in mentis laudes & gratias agere n  
cessamus. Quae magis & magis  
in suis mandatis accendat. Et ad se  
sua ecclesie pferantur ab omnibus adu  
accoribus elemia episcopi. Uetuaudias  
pauas haec actas uasificas sibi uel tibi  
arbitratus. quoniam compassione corbi  
condoluit huius. Et hoc ad ueritate po  
actis. In quo ad eorum nobis positarum  
se tota mentis ecclesie doctrinam luxare  
sed & peccatum ptohabilem actadiho

ne si quae debere monuimus. & eam  
symbolum quam in te eam idem aut  
doctrinam & p dicitur subditus. . .

**N**isi aplice haec actis gloriose pncipi  
spitnao pulcho quas et actis fuisse  
de lauat. hoc ipsum significauimus.  
& neq; alij haec actis uis ad eum dicit  
at sunt. neq; episcopi alij paxla uel stetero  
alud fecerunt dum in uisimus. Et ali  
ude eae pagendum dicit unius. . .

**U**anauimus credendum est. uae se  
epta mram habet eam episcopo schigete  
mus. quem solat mlti uisum me sup  
hoc neq; qo allocua non sumus. . .

**I**deo q; esse istud dubitatis & co ope  
renat sicut euangelice. & aplice se  
habet doctrinae orthodoxi sicut eulao  
sicut huius eam in uel eulao  
cau epta mram dno ihu xpo stucatum  
actis actas abundantiem & gra & stmu  
nteratus. in eadem pncipias conatplamati. . .

**E**t actum de alijs actis hominibus quas diu  
so modo pncipias noli actis. quoniam  
suis hoc secundum ceptis omne gaudium  
ptotus schismati. Quae si dicit  
uano esse peccata conatplamati  
cundo dicit uisus fuisse. que quid  
in hoc mra & ad uisum actis est comissu.  
que qd laudicis episcopi conatplamati sui  
ministerium inat & stetero. . .

**U**atamq; crudelitatem eorum nobis  
discussorem ad luuacnae dno legamo  
sui actis. & illius paxnae

Fig. 31 The papal letter to Methodius from 881. Facsimile on the parchment parchment (24.3 x 33.5 cm). Transcript of the Papal Register for years 876-882. Original made in Monte Cassino Monastery around 1080, Reg. Vat. 1.



Axe-shaped currency bars from Mikulčice.  
These artefacts could serve as a commodity money  
in the Great Moravian area.

# 1.4

## Basic Principles of the Great Moravian Economy

– Michal Hlavica, Rudolf Procházka

When trying to create a picture of the Great Moravian economy, research based solely on written sources is of little use. The range of available written documents is limited to sporadic remarks that only allow us to speculate about how some of the aspects of the Great Moravian economy (especially trade) worked. To provide some examples, long-distance trade is documented by the Raffelsteten custom regulation,<sup>1</sup> which mentions merchants travelling on the river arteries to the “Market of the Moravians”, while domestic trade is documented by Ahmad ibn Rustah Isfahani in his Book of Precious Records.<sup>2</sup> Ibn Rustah mentions a residence of a Great Moravian ruler where a market was held three days of each month. Other sporadic remarks are found in various documents, which attempt to restrict cross-border trade: these include the Diefenhofen Capitulary of 805<sup>3</sup> in which Charles the Great prohibits arms trade, or a mention in *Annales Fuldenses* of 892<sup>4</sup> regarding the attempt of Arnulf of Carinthia to impose a similar embargo on the salt trade.

Useful written sources related to this topic are thus very scarce, and they are limited only to a specific segment of the Great Moravian economy. To gain a complete picture of all the aspects of the Great Moravian economy and the role the local elites played, we are mostly dependent on the evidence of archaeological records. These document the remarkably developing economy (which reached its peak in the second half of the 9th century) by means of dozens of excavations that enabled us to collect extensive archaeological assemblages. They include a range of agricultural and craft tools as well as militaria and a number of other mostly indirect evidence of domestic and specialised production. What is more, there are large sets of ecofacts that reveal a great deal of information about the subsistence possibilities of the individual components of the society.<sup>5</sup>

However, to be able to derive the characteristics of the Great Moravian economy on the basis of these large archaeological assemblages, we must systematise the fragmentary archaeological records into a comprehensive theoretical model that would allow us to infer partial manifestations of the configuration of the Great Moravian economy in various spatial scales. Unfortunately, research on national level has not paid much attention to building such models so far. We are still missing studies focused on a comprehensive understanding of economic relationships on superregional, regional and local scales, as well as on how the phenomena detectable are interconnected between the various scales. We do not have any complex idea about the role played by the elites in creating the Great Moravian economic system, nor the role played by various economic and political strategies (be them cross-border

raids, long-distance trade, levies or tributary payments) in the subsistence of the Great Moravian elites and their institutions. We are not sure about the nature and intensity of economic interactions between the Great Moravian central places, or between the central places and their hinterlands, and we do not know how the long-distance trade was integrated into the Great Moravian market system. However, new knowledge that would represent a step towards creating a diachronic picture of the processes during the development and downfall of the Great Moravian society situated on the edges of two long-distance trade networks,<sup>6</sup> and that would open Great Moravia to a global archaeological discourse can hardly be done without suitable approaches that would make it possible to adequately capture the dynamic processes and, at the same time, to compare them with the processes documented in other complex societies.

In this respect, aspects of key importance include comprehensive mapping of the spatial distribution of goods and commodities that can be carried out by a combination of regional-scale data, artefact provenance studies, and stylistic information about material culture, as well as its distribution across social classes that can be detected on a local level of individual households and settlements.<sup>7</sup> Not even the extensive archaeological collection from the period of Great Moravia lacks several promising groups of archaeological assemblages that are able to help deepen the knowledge as outlined above in the future. These groups include mainly everyday pottery as a subject of local exchange, iron products as strategic regional goods, and finally prestige goods as a subject of long-distance trade and redistribution.

### Everyday pottery – locally exchanged goods

Everyday pottery is an ideal subject of analyses of market mechanisms of pre-industrial societies. The main reason is that its circulation was usually not controlled by political elites, and thus was not subject to permanent redistribution mechanisms. Its spatial distribution was determined by economic and geographical forces rather than political ones.<sup>8</sup> Speaking of everyday pottery (just like other kinds of quotidian goods), we face the issue of equifinality that makes it more difficult to reconstruct the economic background of the spatial distribution of individual types of goods<sup>9</sup> to a much smaller extent as compared to that of goods from scarce resources.

Furthermore, Great Moravian pottery production has several particularities that distinguish it from the pre-Great Moravian as well as the post-Great Moravian periods. Besides a relatively indifferent

1 Inq. Raffelst. 1897, 249–252.  
2 MMFH III 1969, 347; see also 428, 433.  
3 Capit. miss. 1883, 122–126.  
4 Ann. Fuld. 1891, AD 892, 121.  
5 See Měřinský 2014.

6 Cf. Jankowiak 2013.  
7 Stark – Garraty 2010, 42–45; Hirth 1998, 452–456.  
8 Stark – Garraty 2010, 44, 49–50.  
9 See Renfrew 1977, 84.

household production, regional professional production is known for this period, which has been documented thanks to the regionally different ceramic groups<sup>10</sup> in the archaeological record (see Essay 3.10).

The reason for the regionalisation of ceramic groups was widely discussed in the past;<sup>11</sup> however, with regards to our general knowledge of the distribution mechanisms of quotidian goods, it seems most likely that regional ceramic groups defined the market zones, i.e. areas serviced by the same market centre(s) within which communities had access to the same array of goods.<sup>12</sup> If we disregard a theoretical possibility of partial redistribution via ceremonies,<sup>13</sup> spatial distribution of indifferent Great Moravian pottery was determined mainly by self-sufficiency via household production, contrary to professional production determined mostly by market exchange, i.e. by economic transactions where the economic forces of supply and demand are highly visible and where prices or exchange equivalences exist.<sup>14</sup> As Jiří Macháček suggests,<sup>15</sup> ceramic groups illustrate the reach of central market places located in the Great Moravian central places (for details, see Excursus 1.4.1).

Professional pottery production from the Great Moravian period can thus be perceived as a unique tool for grasping the level and regime of market exchange within the nodes of the Great Moravian regional market system. Well evaluated assemblages of pottery will make it possible to take further steps towards the reconstruction of the Great Moravian regional market system, or rather the economic interactions within its individual nodal points, and help us further understand the role of the market system in the lives of the Great Moravian communities and elite members of the society.<sup>16</sup>

### Iron – regionally demanded commodity

The range of iron items among agricultural and craft tools as well as weaponry and equipment from the Great Moravian period illustrates the fact that iron was a key commodity which not only secured primary agricultural production, but was also used for political and military purposes of the Great Moravian elites. As a result, it was in permanent demand from the population in the agricultural hinterlands of the regional centres, as well as from the elites living in these centres.

Elite interest in iron (and namely militaria) is further suggested by a documented localisation of specialists focusing on crafts and metalworking within some of the most important Great Moravian fortified centres, or in their outer bailey.<sup>17</sup> This corresponds to the idea of regional elites exercising a certain level of supervision over the production of the craftsmen working with metal. It can be assumed that blacksmiths who operated in these centres worked in the regime of attached production. In the system of attached production, the elites or political institutions have the authority to directly control some of or all the components of the production system in order to enhance or uphold one social group's privileged access

to resources, labour, power, or wealth.<sup>18</sup> However, the centralised metalworking production was not limited to military items only, but produces also utensils.<sup>19</sup> This centralised craft most probably co-existed with independent rural production, i.e. production on a much lower technological level outside the centres. In this case, the elites did not have direct authority to exercise direct control over the raw materials, craftsmen, organisation of production or its distribution.<sup>20</sup> These local smithies probably relied on recycling scrap iron as a raw material and obtaining iron through exchange. However, the range of their activities included only production and repairs of agricultural equipment and other small iron tools.

Not only the production of military equipment was of key importance to the Great Moravian elites, but also an even distribution of iron between the Great Moravian central places that was balancing an unequal distribution of early medieval iron ore resources in the area (Fig. 32). The regular supply of iron or iron products (as well as other key commodities from scarce resources, such as stone tools or imported salt), was vital for agricultural communities that ensured the subsistence of the Great Moravian centres. The regional flow of iron thus must have taken advantage of a regional market system. This was presumed to be dendritic in nature, i.e. all lower-level centres were tied to a single higher-level centre in a chain that was mainly vertical with weak horizontal ties.<sup>21</sup> As a result, a great part of the regional exchange (i.e. exchange between regional centres) was probably carried out under the economic control of the Great Moravian elites. Nevertheless, the details of such control can only be guessed, but it is possible to assume that iron might have served as a medium of such an exchange (given its undisputed value which is also shown by the widespread phenomenon of its deposition), and that the use of axe-shaped iron ingots that served as “currency bars” known from that time was probably a related phenomenon (see Excursus 1.4.2). The distribution of these currency bars with their prominent occurrence in central places roughly defines the scope of the Great Moravian market system.<sup>22</sup>

### Prestige goods – redistribution of goods from the superregional exchange

During the Great Moravian period, prestige (wealth) goods were undoubtedly subject to non-market exchange, or better redistribution, i.e. a controlled distribution of items via the political elites, typically along socially significant networks.<sup>23</sup> Prestige goods in general are characterised by a relatively high value (material as well as symbolic), durability, easy portability and difficult replicability. As opposed to quotidian goods, these qualities made prestige goods an ideal candidate for achieving political and class-related goals. Prestige goods made it possible to redistribute a relatively high material value via a social exchange network and so manifest the holder's exclusive access to sources that were difficult to obtain, as well as social ties to the elites controlling the redistribution mechanisms.<sup>24</sup> As a result, this type of goods was ideal for establishing

10 A “ceramic group” can be defined as a production-distribution unit created based on distinct similarities between the morphological and stylistic attributes of ceramic types (for more, see Bubeník – Frolík 1995).

11 Mazuch 2013, 31.

12 Minc 2006, 87; see also Hirth 1998, 454–455.

13 See Stark – Garraty 2010, 49–50.

14 Feinman – Garraty 2010, 171.

15 Macháček 2001b, 256.

16 See also Minc 2006, 83–87.

17 Klíma 1985; Galuška 1992; Macháček et al. 2007.

18 Costin 2005, 1070.

19 Galuška 1992.

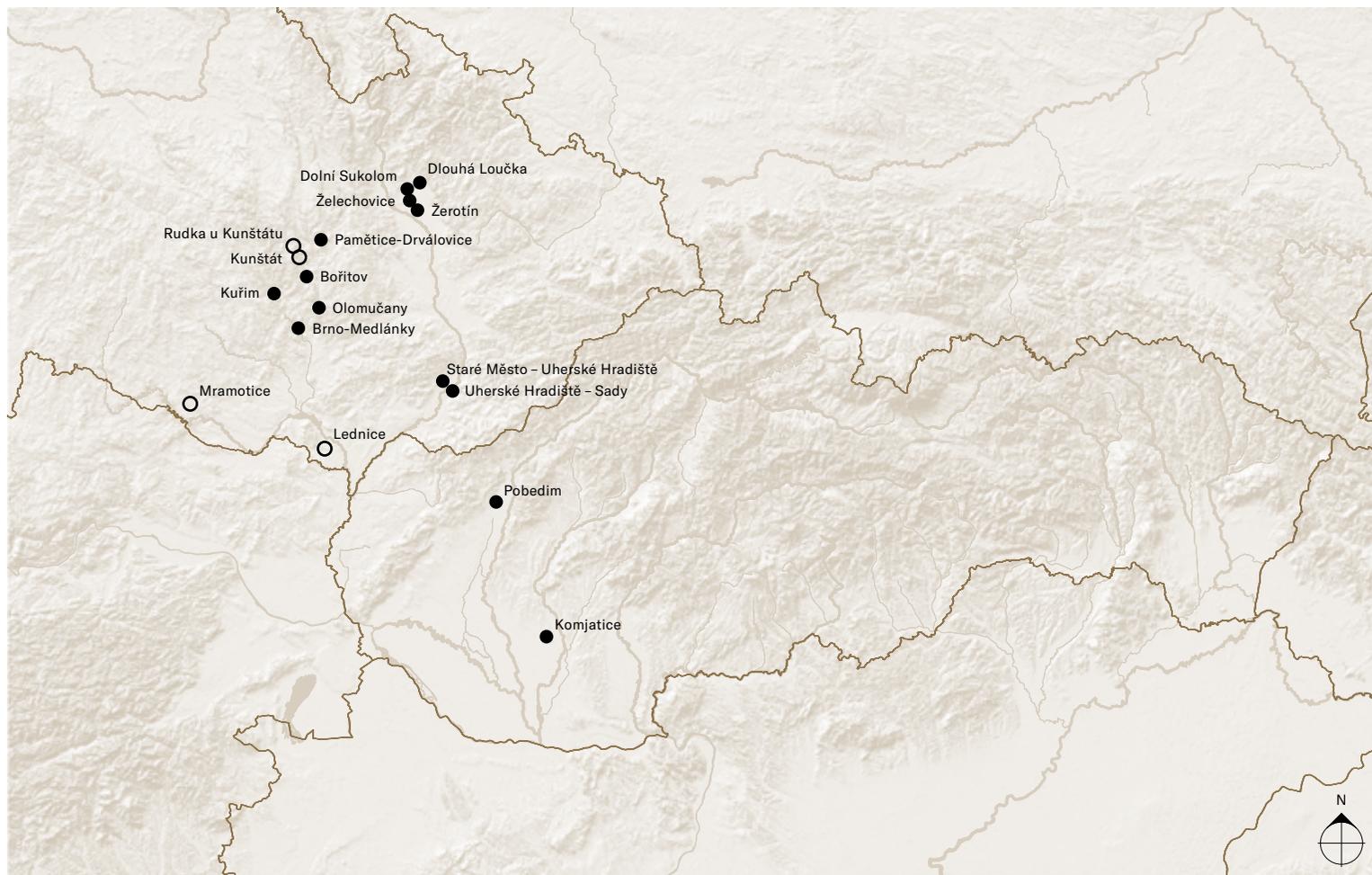
20 Costin 2005, 1070.

21 Smith 1974, 177; see also Minc 2006, 86.

22 Pleiner 1961; Bialeková 1990; Kučerovská 1989; cf. Zaits 1990, 172–173.

23 Ossa 2013, 416.

24 Schortman – Urban 2004, 191–193; Owen 2001, 265.



Legend:

- Middle Hillfort period
- Uncertain dating
- Major rivers
- Contemporary national borders

0 100 km

Fig. 32 The excavated metallurgical sites to date, which were or probably were in use during the time of Great Moravia.

and maintaining positive feedback relationships,<sup>25</sup> and for a gradual transformation of independent agents into dependent clients.<sup>26</sup> Their circulation was thus closely connected to the mechanisms of political centralisation and increasing social inequality (for details, see Excursus 1.4.3).

Evidence of some characteristic prestige goods as far as the area along the River Morava proves their imports into the Great Moravian region via long-distance exchange. A good example of such prestige imports is the occurrence of regionally unavailable silk, which was documented in some of the Great Moravian centres.<sup>27</sup> However, the most characteristic manifestation of prestige goods in contemporary archaeological records is decorated jewellery of domestic origin made from precious metals (the Veligrad-type jewellery).<sup>28</sup> The tradition of non-ferrous metal processing has been documented in some Great Moravian centres as early as the pre-Great Moravian period;<sup>29</sup> what is more, the first evidence

of attempts to transform non-ferrous metals into prestige goods also come from this period.<sup>30</sup> However, more direct evidence of the production of prestige goods from non-ferrous metals appear in the course of the Great Moravian period.<sup>31</sup> This chronologically corresponds to the peak occurrence of the Veligrad-type jewellery in grave goods.<sup>32</sup>

Although the Veligrad-type jewellery belongs to the production from within the Great Moravian centres of power, its raw materials were obtained by a combination of cross-border raids and long-distance trade,<sup>33</sup> i.e. aspects of the Great Moravian economy that were fully or mainly controlled by the ruling elites. The priority access of the highest-ranking Great Moravian elites to the production from precious metals is illustrated by a rich burial ground near Church 3 (basilica) in Mikulčice, the primary centre of the Great Moravian ruling dynasty. Graves with rich grave goods made up more than one fourth of the total; with over 100 gold artefacts

25 See Spencer 1998, 10.  
 26 Schortman - Urban 2004, 192.  
 27 Kostelníková 1973, 8-9.  
 28 Galuška 2014a.  
 29 Klanica 1974, 26-27.

30 Macháček 2010, 455.  
 31 Galuška 1989; see also Galuška 2013, 108-174.  
 32 Ungerman 2017, 20-23.  
 33 Treštitk 2001b, 104-105; Macháček 2012, 12.

found, this collection of gold objects is one of the largest from 9th- and early 10th-century Great Moravia.<sup>34</sup> A similar situation can be seen in another important Great Moravian centre, Staré Město – Uherské Hradiště.<sup>35</sup>

However, the assumed absolute control of the elites over resources (and thus items from precious metals) practically excludes the possibility of the circulation of such metals in the regional market system. This may be why precious metals never serve as a medium of exchange in Great Moravia (unlike Viking-Age Scandinavian polities),<sup>36</sup> and, perhaps, why coins as a universal exchange medium never appeared in the regional economy during that period. Avoiding free circulation, the ruling elites controlled redistribution of the precious metals via socially significant networks towards hierarchically lower elites in the Great Moravian centres, either as raw materials that craftsmen in such centres used for the production of prestige artefacts, or as finished prestige goods, i.e. jewellery (which served as a means of pursuing the political goals of the elites).

With limited access to precious metals in the Great Moravian centres, jewellery-making (as well as metalworking) was given the role of an attached craft, i.e. a highly-specialised production under the direct control of the elites. This control allowed for the monopolisation of the distribution of political valuables (prestige items) by the ruling elites who thereby guaranteed that they alone could control the recipients of such items, and their quantity. Such a surveillance was thus motivated by efforts to retain control over the distribution and consumption of objects that could be used to secure their privileged position and social inequality.<sup>37</sup>

These goals correspond with the wealth of the decoration and technological complexity of the Veligrad-type jewellery, that means its “hypertrophic” quality which stresses the efforts to ensure that political valuables will be difficult to replicate.<sup>38</sup> The Veligrad-type jewellery is thus an example of an article with exclusive non-market redistribution whose spatial distribution within the Great Moravian territory makes it possible to capture socially significant networks spreading from the ruling elites towards regional elites and further to local elites, in other words the power network that kept the Great Moravian polity united.

## Conclusion

The selected examples illustrate that even our existing archaeological record can help us model the basics of the Great Moravian market system, its networks and functioning on the local (within the individual market centres), regional (in the context of the core of Great Moravia), as well as superregional (in the context of economic interaction with other separate polities) levels. Complementing, refining and further testing the model of the Great Moravian market system (as well as studying diachronic processes that helped to shape it) poses a great challenge for local and European medievalists. Such studies can shed more light on how society on the peripheries of vast European trade networks worked in terms of economy and politics,

and help us better understand the interactions between the contemporary political players. However, our current knowledge of the Great Moravian economy leaves a number of important questions unanswered. One of them is the potential existence of more nodal points of the Great Moravian market system, or of central places with market function on lower tiers of the residential hierarchy.<sup>39</sup> The existence (albeit probably rare) of lower-tier centres as manifestations of the centralisation processes controlled by the ruling elites during the last years or decades of Great Moravia is suggested by some evidence in the material culture, e.g. the combination of the Dolní Věstonice ceramic group and the presumed magnate’s court in Strachotín,<sup>40</sup> that may reflect the late existence of one more tier of market and administrative centres.

More attention should also be paid to the research into the economic interactions between individual central places, i.e. the regime and intensity of the circulation of goods between them. Equally sporadic is our knowledge of the regimes of economic interactions between market centres and their agricultural hinterlands. The presence of a bottleneck, i.e. a constriction point in commodity chains,<sup>41</sup> materialised as a superregional trade centre, i.e. very likely the “Market of the Moravians” known from written sources that could possibly be localised as the centre in Pohansko near Břeclav not far from the primary centre of power in Mikulčice, suggests that market centres could have been organised into a dendritic market system characteristic with a well-developed market hierarchy in contrast with a poorly developed market network.<sup>42</sup> Such an administrative control over the flow of goods from long-distance trade, the topographic location of Pohansko between other crucial nodal points of the regional market system, and the presence of richly decorated Great Moravian jewellery as a distinct manifestation of the redistribution network demonstrate the dominant role of long-distance trade in the economic and political strategies of the Great Moravian ruling elites.

However, the presumed dendritic nature of the Great Moravian market system also suggests a certain decline of trade between the market centres during the short peak in the development of the Great Moravian polity. This is because the market system generally tends to falter during periods of strong administrative control, as it is constructed to support mainly the primary centre and the elites living in it.<sup>43</sup> However, this trend should manifest itself on all the studied scales. It could thus explain the characteristic regionalisation of professional pottery production, i.e. the very limited occurrence of ceramic groups outside their broader spatial definition (and the direct reach of the market centres).<sup>44</sup> In this regard, we could also clarify the relatively sudden disappearance of the Great Moravian ceramic groups from the archaeological record, which can be dated to the period of the decline of Great Moravian central power, administrative control over the flow of several key commodities, or rather the subsequent boom and tighter integration of the surviving and newly developing market centres that re-configured the regional market system and foreshadowed the onset of a new period in the history of East Central Europe.

34 Kouřil – Poláček 2013, 410–414, 422.

35 Galuška 2013, 174–179.

36 Skre 2011, 81–83.

37 Costin 2005, 26; Schortman – Urban 2004, 191.

38 Schortman – Urban 2004, 192.

39 See also Flannery 1998, 16.

40 Poulik 1948–1950, 87–50; Procházka 2009, 227.

41 Earle – Spriggs 2015, 517.

42 Minc 2006, 86.

43 Garraty 2010, 29; Minc 2006, 86.

44 Macháček 2001b, 247–248.

# Market System

– Michal Hlavica, Rudolf Procházka

One of the most typical phenomena of the Great Moravian material culture are the ceramic groups, the legacy of the typological phase of archaeological research that put considerable stress on understanding the chronological informative value of pottery and on mapping its broader spatial distribution.<sup>1</sup> In the course of this phase, archaeologists managed to map the manifestations of distinctive production traditions, which were characterised by a relatively sharply defined spatial distribution of representatives of individual ceramic groups surrounding major Great Moravian centres.<sup>2</sup> The background of such a spatial distribution has been the subject of discussions in the past.<sup>3</sup> However, given the fact that pottery served as typical quotidian goods, it is unlikely that mechanisms other than market exchange would prevail in this distribution.<sup>4</sup> Seen through the economic perspective, ceramic groups thus most likely define the Great Moravian market zones, i.e. areas serviced by the same market centre(s) within which communities had access to the same array of goods.<sup>5</sup> They also indicate the presence of marketplaces situated in the Great Moravian centres that served as nodes of its market system.

Unfortunately, direct evidence of the presence of marketplaces in the Great Moravian centres are still missing, so we have to rely on theoretical modelling. Market centrality can be relatively well modelled using the classical normative model derived from the Central Place Theory<sup>6</sup> in the mostly flat and relatively evenly populated region of the core of Great Moravia. The basic hexagonal model of the distribution of central places quite convincingly identifies the triangle of evenly distributed central places in Pohansko near Břeclav, Staré Město - Uherské Hradiště, and Staré Zámky near Líšeň, located 56 km from each other as the crow flies (Fig. 33). This approximately equals to a one-day walk, respectively twice the half-day march, which was a significant administrative limit.<sup>7</sup> The market function as a part of the portfolio of accumulated central functions is further evidenced by the spatial distribution of ceramic groups (i.e. the professionally produced pottery exchanged on the market) which roughly respects the borders of the predicted hexagonal market zones. The Morava River ceramic group is its most significant example. A centre situated in Znojmo could probably be added to the three identified market centres of the regional market system. This centre, however, differs slightly from the normative distribution of central places, perhaps due to its unevenly distributed population in this part of the region.<sup>8</sup> Its market zone is delineated negatively.

So far, we have not identified any distinct ceramic group for this zone, be it either due to the specific character of local pottery,<sup>9</sup> or as a result of its imperfect understanding.<sup>10</sup> Despite the absence of a specific regional ceramic group, the predicted Znojmo market zone is relatively respected by the other defined ceramic group; local communities were thus very likely served by their own central place with a market function.

It is believed that a centre integrated into the regional market system might have existed in Olomouc as well; however, its position in the regional hierarchy is quite specific. The market principle, i.e.  $k=3$  variant of the central place model<sup>11</sup> indicates a possibility of existence of a market centre on the same hierarchical level as is the case of Pohansko near Břeclav where J. Macháček localised the centre of the superregional (long-distance) trade.<sup>12</sup> The specific relationship between the centres in Pohansko near Břeclav or Mikulčice, and the centre in Olomouc, is suggested by a local occurrence of pottery identical to the Mikulčice ceramic group (MCG),<sup>13</sup> which was found there despite the fact that the Olomouc enclave of the Mikulčice ceramic group is located almost 100 km from Pohansko as the crow flies. Therefore, it seems that (in context of the spatial configuration of the central places of the Middle Hillfort period (c. 800–950), or better of the predicted regional market system) Olomouc was geographically predisposed to become the centre of the superregional (long-distance) trade as early as the Middle Hillfort period, although the fragmentary base of archaeological data does not allow us to fully test this hypothesis. It is nevertheless possible that Moravian population took advantage of such predispositions as early as the end of the Middle Hillfort period or at the beginning of the following period (i.e. beginning of the 10th century) when Olomouc may have taken over the role of the dominant centre of the long-distance trade in Moravia. As Z. Měřinský believed,<sup>14</sup> the enclave of the Mikulčice ceramic group could thus illustrate the relocation of some of the population from the economically declining southern part of the Great Moravian territory. The South Moravian population living originally in Mikulčice or Pohansko could take advantage of the favourable geographical location of Olomouc,<sup>15</sup> move the core of its economic activities there, and begin creating a new superregional centre.

1 See also Orton – Hughes 2013, 8.  
2 Macháček 2001b, 246–250, Fig. 186.  
3 Mazuch 2013, 31.  
4 See Stark – Garraty 2010, 44.  
5 Minc 2006, 87; see also Hirth 1998, 454–455.  
6 Christaller 1966, 58–80; Evans 1980, 870–873.  
7 Spencer 2010, 7119–7120.  
8 Měřinský 1989, 113–114.

9 Dostál 1961, 118–119.  
10 Macháček 2001b, 248.  
11 Evans 1980, Fig. 2.  
12 Macháček 2010, 484–506.  
13 Bláha 1980, 30–34, Fig. 1, 2.  
14 Měřinský 1986, 49.  
15 See also Měřinský 2014, 117–121.

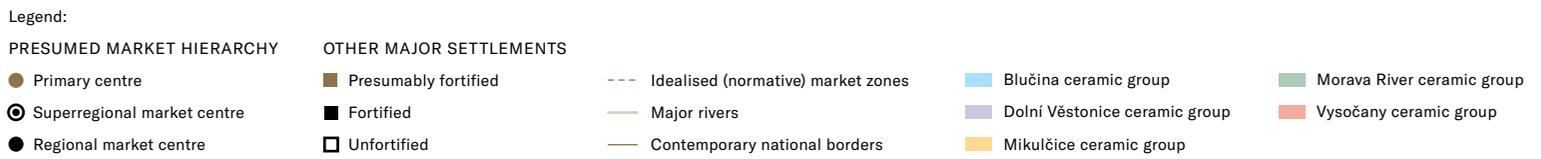
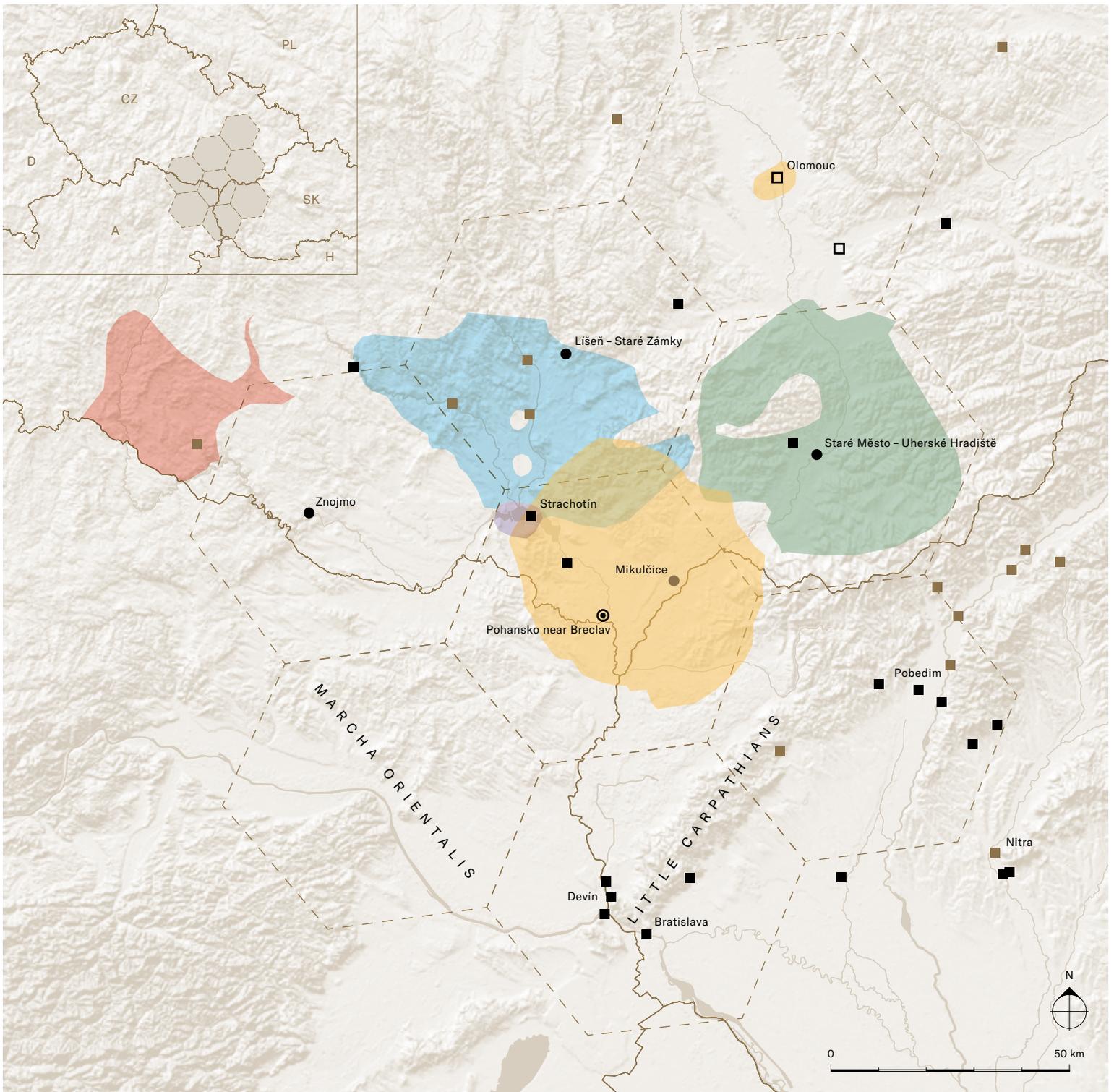


Fig. 33 Map of the most significant settlements in the Great Moravian central region showing the spatial distribution of ceramic groups.

The Little Carpathians as a topographic break deform the spatial distribution of the central places and decrease the predictive potential of the model in the eastern part of Great Moravia situated on the territory of what is now Slovakia. As a result, the continuity of the regional market system predicted for the core of Great Moravia cannot be proven for areas located further east. The degree of economic integration of both the presumed political and economic subunits of Great Moravia (i.e. the former principalities of Moravia and Nitra), or rather their mutual economic autarchy, is still impossible to model satisfactorily. However, our current knowledge suggests that similar market centres could be found east of the Little Carpathians as well. It is at least the Nitra centre that is characterised with similar attributes as the market centres predicted in the core of Great Moravia: Nitra, just like the central places in the Moravian part of Great Moravia, is surrounded by a ceramic group with a radius of approximately 30 km, i.e. a half-day march. It is interesting that even this primary centre of the Nitra Principality has its own enclave of identical ceramic finds in Ipešský Sokolec located about 65 km from Nitra as the crow flies.<sup>16</sup>

It is the primary centre of Mikulčice that seems to have suppressed its hierarchical position in the predicted market centres. Its position indicates that, in the course of the Great Moravian development, this centre had to subordinate its own dominant position in the regional market hierarchy at the expense of centralisation of administrative functions, or it might have externalised the market function to the new centre in Pohansko near Břeclav. This is suggested not only by the relative proximity of both centres, but also by the shared market zone represented by the spatial distribution of the Mikulčice ceramic group which Mikulčice shares with Pohansko.

This illustrates the close interconnection of the economic as well as political aspects of both centres. Externalisation of the regional market function could have been caused by the efforts to optimise the geographical position of the superregional market centre in relation to the spatial distribution of other central places of the predicted regional market system, or rather to locate a more effective “bottleneck”, i.e. a constriction point in commodity chains,<sup>17</sup> in the superregional and regional market system. This hypothesis partly corresponds with the interpretation of J. Macháček who deems Pohansko the Great Moravian “*emporium*”,<sup>18</sup> i.e. the expression of a territory’s involvement in long-distance trade.<sup>19</sup> The bottleneck constricting the flow of goods from the long-distance trade would illustrate the efforts of Mikulčice elites to control such trade and redistribution of prestige goods, and therefore the foundation of the centre in Pohansko could have been one of the steps towards the centralisation of the Great Moravian central power. This was initiated with the onset of the original bottleneck resulting from the immediate proximity of the settlement in Mikulčice to the River Morava where the Mikulčice leaders could control one of the long-distance trade routes leading to the market centre in Staré Město - Uherské Hradiště (long-distance trade is here documented perhaps as early as the pre-Great Moravian period).<sup>20</sup> The original bottleneck applied to the flow of commodities from the long-distance trade along the River Morava could thus have been related to the growth of the Mikulčice centre and its elites, and given these elites’ strategic economic-political advantage over other centres of the future Great Moravia. Eventually, such an advantage may have helped Mikulčice become the primary Great Moravian centre.

16 Vlkolinská 1995, 37; see also Chropovský 1959.

17 Earle – Spriggs 2015, 517.

18 Macháček 2010, 484–506.

19 Hodges 1982, 50.

20 Bartík – Chrástek 2018, 277, Fig. 81.

# Axe-Shaped Currency Bars

– Michal Hlavica, Rudolf Procházka

The Great Moravian material culture is characteristic for the absence of evidence of using coins from precious metals as an exchange medium. But is it possible that the Great Moravian economy could operate solely on the basis of barter, i.e. an informal ad hoc exchange without the presence of an exchange medium, which requires negotiating on the value equivalence of the exchanged goods every time such a transaction is made?<sup>1</sup> The presence of periodical markets in the Great Moravian centres – whose existence is indirectly indicated by archaeological evidence and written sources – excludes this idea. Given the extent of domestic trade, which took place in nodal points of the Great Moravian market system (and perhaps equivalences even on a regional level), the presence of exchange equivalences is inevitable. Agricultural products must have been exchanged there for a wide range of items, be them quotidian goods (pottery) or items made of scarce resources (iron or stone objects, imported salt), since the production of agricultural communities in the hinterland of the Great Moravian centres was heavily dependent on a constant supply of such items.

However, the exchange equivalences of such a wide variety of goods already require a “unit of account” that is materialised into the so-called commodity money, i.e. the actually exchanged commodities in which the value of other commodities is expressed, or commodities that never enter the transaction, but are used to compare the values of the exchanged goods.<sup>2</sup>

It is mainly agricultural products that seem particularly suitable for use as commodity money in rural societies.<sup>3</sup> However, with the increasing complexity of regional market system and a gradual concentration of the population in central places as the centres become nodes of the regional market system, the pressure grows for a more effective conversion of value in market transactions. The role of agricultural products is thus being slowly taken over by a more universal exchange medium whose own scarcity allows for the thesaurisation of a higher value per weight unit, and so it is characteristic with its low transportation costs. One of the desired attributes of such an exchange medium is its durability and interest of long-distance traders as well, as it is suitable for transactions in more general geographical (regional and superregional) contexts. As a result, precious metals seem to be ideal candidates for this exchange medium. They are usually associated with a high level of scarcity, which increases their value per weight unit and lowers the transportation costs. What is more, they are valued by long-distance traders.<sup>4</sup>

While agricultural products as commodity money were superseded by silver in Viking-age Scandinavian polities, it was probably its market unavailability that made such a transformation of a precious metal into money impossible in Great Moravia. The interconnection of precious metals with the elite level of the society illustrates that the flow of precious metals into the regional market system was bottlenecked by the ruling dynasty for the purpose of its redirection to the redistribution network. As a result, precious metals were not so much a means of a market exchange, but – as a part of the portfolio of prestige goods and gift-giving mechanisms – were included in the social exchange, i.e. a form of exchange in which the social and/or political connection is exclusively required for the exchange to take place.<sup>5</sup> The access to precious metals in Great Moravia was thus determined by social ties rather than individual purchasing power.

If a necessary volume of precious metals was not available, iron comes as one of the alternative commodities suitable for the role of commodity money in the Great Moravian context, with a number of indicators pointing to its use. We can give an example of a widespread phenomenon of hoarding iron tools and semi-finished products, which shows that iron was perceived as a thesaurus of value (no matter whether the function of hoarding was ritual or practical). Its status as a valuable metal is further supported by the standardisation of iron semi-finished products into an axe-shaped form (Fig. 34). This form is symbolically derived from an utilitarian object, which is a feature typical for the so-called currency bars usually used for thesaurisation of value as well as for exchange.<sup>6</sup> Material analyses carried out at some of the Great Moravian central sites suggest the axe-shaped currency bars may have not been used as typical semi-finished products used for further processing only. These analyses show that at least some of the local axe-shaped bars were made from several iron pieces of various quality.<sup>7</sup> All in all, then, the main motivation in producing them must have been for their symbolic value. Moreover, empirical data prove that the Great Moravian axe-shaped currency bars were exchanged without greater limitations, which corresponds to the model of market circulation of the commodity.<sup>8</sup> This fact is illustrated by the findings from the Great Moravian centre of Pohansko near Břeclav where fragments of the currency bars were found spread all over the centre;<sup>9</sup> a similar situation can be seen in the nearby primary centre of power in Mikulčice<sup>10</sup> and (in terms of quantity) even more so in the Pobedim centre.<sup>11</sup> However, the fragmentary nature

1 See also Feinman – Garraty 2010, 171; Garraty 2010, 8.

2 Skre 2011, 71.

3 Skre 2013, 78.

4 Skre 2011, 81–82.

5 Ossa 2013, 416; see also Hirth 1998, 455.

6 Lindeberg 2010, 208–211; Pleiner 1961, 436.

7 Pleiner 1961, 422–424, 426; Bialeková et al. 1999, 98.

8 Hirth 1998, 455.

9 Vidlák 2018, 70–74.

10 Poláček 2007b, Fig. 12.

11 Bialeková – Tírpáková 1989, 91–92; Bialeková 1990, 105–106.



Fig. 34 Axe-shaped currency bar from Mikulčice.

of the axe-shaped currency bars along with their concentration near metallurgical objects in the contexts of the Great Moravian centres<sup>12</sup> shows that their practical function (i.e. their withdrawal from the exchange network for the purpose of production of iron tools) might have not been completely suppressed, and occurred not only in rural areas, but at least in some of the centres as well.<sup>13</sup>

Especially the earlier studies accepted that the axe-shaped currency bars were used as a specific form of non-monetary exchange medium.<sup>14</sup> However, some researchers have recently started to question their role as commodity money.<sup>15</sup> Ironically, the main argument against this function concerns their usage for tributary payments. Even in cases when elites would mobilise iron using tributary mechanisms by means of the axe-shaped currency bars, they have to perceive them as a “unit of account”, i.e. they have to be able to express the value of the given tribute by means of the currency bar. Paradoxically, the function of the “unit of account” is one of the key functions of commodity money.<sup>16</sup> As a result, the role of the axe-shaped currency bars as a means of tributary payments and, at the same time, as commodity money do not exclude each other at all; quite the reverse, they correspond very well. Therefore, if the currency bars were really used as the Great Moravian non-monetary currency, the above-mentioned tributary payments were carried out directly by means of commodity money.

However, commodity money in the form of iron currency bars pose a significant disadvantage when compared to that of precious metals. Exchange currency bars are socially and symbolically attached to the society that produces them. As they are rooted in

a specific social and mythological universe, they usually circulate only in the contexts defined by a shared social and symbolic identity.<sup>17</sup> This also corresponds to the spatial distribution of Central European axe-shaped currency bars which is (with the exception of currency bar finds from Lesser Poland) concentrated only within the territory of former Great Moravia (Fig. 35, 36).<sup>18</sup> The most representative documented hoard from the above-mentioned Lesser Poland is the exceptionally extensive find from Krakow, Kanoniczej Street. However, the discoverer of this large treasure interprets its production as a one-time event that resulted from political contacts with Great Moravia, more precisely from Svatopluk’s campaign to the land of the Vistulans.<sup>19</sup> This depository of the axe-shaped currency bars could thus have served only as a means of the aforementioned tributary payments accumulated by local leaders for the purpose of payments to the Great Moravian ruler.<sup>20</sup> If it was proven that other finds from Lesser Poland could have had a similar background, we would be able to bridge even the apparent contradiction between the interpretations of the axe-shaped currency bars as commodity money and as a means of tributary payments. In the milieu of Lesser Poland, this type of currency bars would have been taken away from its original context and would not have brought the local population the function of currency bars nor any deeper economic significance.<sup>21</sup> The situation was thus different from that of the Great Moravian market system where the axe-shaped currency bars comprised an integral part of the local economic mechanisms.

12 Macháček 2005a, 261.

13 But see Lindeberg 2010, 205.

14 Pleiner 1961, 436; Kučerovská 1989, 77.

15 Curta 2011, 312.

16 Skre 2011, 71.

17 Lindeberg 2010, 211–212.

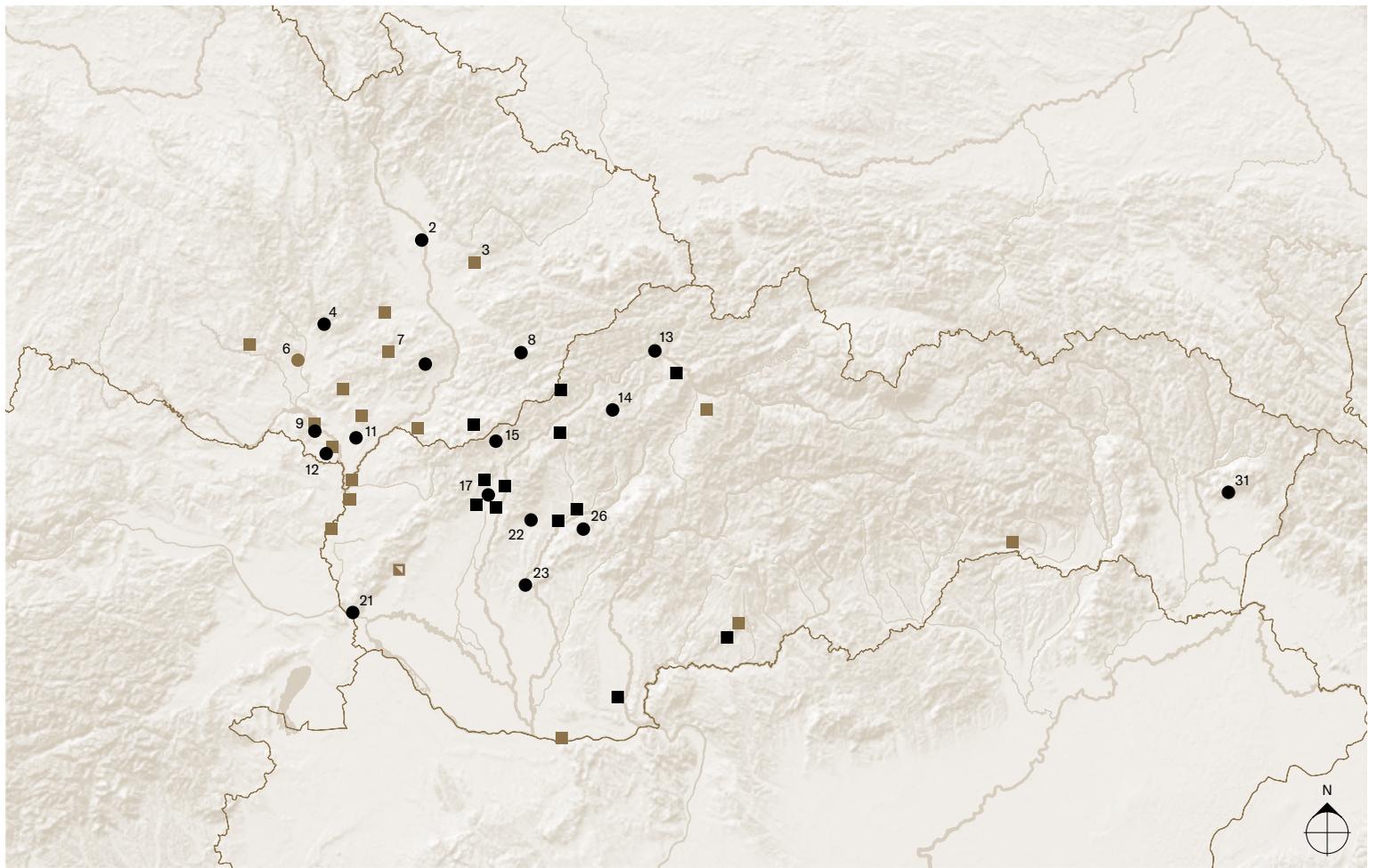
18 Bialeková 1990, Fig. 1.

19 Zaits 1981, 122; Zaits 1990, 172–173.

20 Cf. Buko 2008, 94 n. 36.

21 See also Lindeberg 2010, 212.





Legend:

- |  |   |                |
|--|---|----------------|
| ● Central place – hoard containing currency bars | ■ Rural/solitary – hoard containing currency bars | — Major rivers |
| ● Central place – hoard without currency bars    | ■ Rural/solitary – hoard without currency bars    |                |
|  | ■ Rural/solitary – unavailable/undocumented       |                |

0 100 km

Fig. 36 Spatial distribution of depots with iron artefacts from Great Moravia with and without axe-shaped currency bars.

1 – Chotěbuz-Podobora; 2 – Olomouc; 3 – Přerov; 4 – Lišeň – Staré Zámky;  
 5 – Rajhrad; 6 – Staré Město – Uherské Hradiště; 7 – Klášfov; 8 – Znojmo;  
 9 – Pohansko near Nejdek; 10 – Mikulčice; 11 – Pohansko near Břeclav;  
 12 – Divinka; 13 – Pružina; 14 – Zemianské Podhradie; 15 – Prašník; 16 – Pobedim;  
 17 – Devínska Nová Ves; 18 – Devín; 19 – Svätý Jur; 20 – Bratislava; 21 – Bojná;  
 22 – Nitra; 23 – Vyšný Kubín; 24 – Nitrianske Pravno – Vyšehradné; 25 – Veľký  
 Kľíž; 26 – Tlmače; 27 – Mužla-Čenkov; 28 – Jasenovo; 29 – Šarišské Sokolovce.

### 1.4.3 excursus

## Decentralised Economic and Power Relations in Great Moravia

– Michal Hlavica

According to K. Kristiansen,<sup>1</sup> the concept of decentralised complexity helps understand the functioning of complex power structures in decentralised social and economic milieus that lack many of the attributes of more clear-cut stratified, or complex, societies. While more complex groups usually evolve in milieus where high productivity in nodal areas can be controlled and monopolised, decentralised complexity normally operates in those where productive resources are widespread and difficult to control from a single centre.

Chieftom confederacy is a typical social formation based on decentralised complexity. It can be described as a polity consisting of individual subunits ruled by chiefs. The building blocks of chieftom confederacies are chiefdoms, both genealogically related and unrelated, which are affiliated through a common agreement or coercion. Although chiefdoms associated in a confederacy are close to one another, they do not necessarily have to be neighbours. However, they adopt a corporate identity. In economic terms, chieftom confederacies represent milieus, which on the one hand support a high degree of social stratification, while on the other their foundation in a decentralised economic-political basis is problematic with regard to the efforts to centralise and monopolise power. The elites that rose to prominence in chieftom confederacies as a result of incessant internal conflicts between chiefdoms often possessed exceptional military or diplomatic abilities. Apart from military mastery, their most appreciated qualities included the ability to forge and maintain alliances. However, unlike in state formations, the ruling elites in chieftom confederacies were unable to circumvent the power of the lower elites<sup>2</sup> and thus they had to maintain their loyalty.

A specific case of such social formation is called an imperial confederacy. It emerged as a response to the interaction with the “primary empires” – culturally and politically much more powerful neighbours. The most important function of imperial confederacies was the organisation of military power of the united tribes and a joint exploitation of the primary empire. The foundations of the imperial political organisation lay in its primary aim: to exploit the wealth on the territory of its much more powerful neighbour, mainly through looting raids and institutionalised border trade. Without such revenue the imperial confederacy would collapse.<sup>3</sup> Rather than by a pastoral or sedentary character of a society, the existence of imperial confederacy is therefore determined by the interaction with a larger, richer and much more powerful polity.<sup>4</sup>

Central dynastic elites stood at the top of an imperial confederacy. Unlike states with hierarchic administrative apparatuses,<sup>5</sup> they based their power on traditional tribal organisations with tribal chiefs ruling on the local level and they maintained the imperial power structure through a monopoly for foreign relations and the administration of military matters. The administrative hierarchy of imperial confederacies typically had three management levels. At the top, there was a central power institution controlled by the founding ruling dynasty. The second, administrative, level was directly subordinated to the central power – it was represented by governors appointed to oversee the matters of the tribal leaders. These governors were drawn from collateral relations of the ruler and served as key links between the central authority and the local tribal structures. The third level of the administrative hierarchy was comprised of members of tribal elites, who were relatively autonomous local chiefs.<sup>6</sup>

One of the important economic features of imperial confederacies was the effort to mobilise resources in the form of prestige goods from the territory of their more powerful neighbours. Such goods provided subsistence to the redistributive network that maintained a higher level of socio-political complexity. Imperial confederacies supported their efforts to exploit wealth from the outside of their territory by an effective strategy of magnifying their power. The “terroristic outer frontier strategy” – a term coined by T. J. Barfield – was typical for rapid and sudden strikes of mobile troops into the neighbouring empire. Thanks to their high mobility, the attackers were able to retreat quickly and avoid direct retaliatory action. Apart from looting, this strategy – applied in frontier territories – was a manifestation of military power that was supposed to intimidate the enemy. What is typical for this strategy is the alternation of war and peace as the manifestation of the efforts to increase subsidies and trade privileges for the predatory elites, as well as a voluntary refusal to permanently occupy the conquered territory.<sup>7</sup>

Although imperial confederacies might have occupied substantially larger territories than simple chiefdoms, which were limited by the administrative limit of an internally unspecialised central power institution,<sup>8</sup> they were still very similar to redistribution chiefdoms due to their lack of strong class structure and the role of the central authorities being more organisational than extractive. The original way of securing resources by means of exploitation was gradually transformed into a political strategy with the aim to conclude lucrative contracts. The elites of the imperial confederacies actively supported trade and sought to attract foreign

1 Kristiansen 2010, 169.

2 Gibson 2011, 217–224.

3 Barfield 2001, 15.

4 Gibson 2011, 228.

5 Wright 1977, 383.

6 Barfield 2001, 13.

7 Barfield 2001, 15.

8 Spencer 2010, 7119–7120.

traders to their territory – they considered export trade a source of their own prosperity and a much more stable source of prestige goods the growing demand for which was the result of internal unification processes. Excessive precious commodities in the regional market system attracted more long-distance traders, thus making the territory of the imperial confederacy an important centre of international re-exporting trade.<sup>9</sup>

The Great Moravian society, which experienced growth mainly in the second half of the 9th century, showed a number of traits characteristic of polities that are imperial confederacies. It is a decentralised economic landscape with strong economic and political elites. This is supported by archaeological evidence, most significantly by a distribution of ceramic groups – a category of quotidian goods exchanged in the market in the vicinity of the dominant fortified centres.<sup>10</sup> These ceramic groups disappeared together with the demise of the Great Moravian polity. The picture of economic fragmentariness is further supported by the assumed presence of a superregional marketplace, which was recorded in the written sources.<sup>11</sup> It was controlled by the ruling elites, served long-distance trade and probably existed near the primary centres of Great Moravia.<sup>12</sup> This would reflect the dendritic configuration of the regional market system.<sup>13</sup> Written sources indicate a monopolisation of foreign diplomatic relations by the ruling kin,<sup>14</sup> whereas the evidence of more complex power structures reflected by the settlement hierarchy is lacking.<sup>15</sup> Although such an administrative apparatus would be key for a centralised management

of the extensive territory occupied by the Great Moravian polity in its heyday,<sup>16</sup> the rulers definitely tended to rely on an archaic traditional power and legal order.<sup>17</sup> Another distinctive feature of the Great Moravian polity was a strong military ethos connected with the socially important class of mounted warriors.<sup>18</sup> Mainly rural inhumations associated with this social class indicate their connection with the network redistributing prestige goods,<sup>19</sup> which demonstrates the important role these warriors played in the cross-border looting raids. Combined with long-distance trade, these looting raids enabled the mobilisation of prestige goods that helped to maintain the energetically demanding redistributive network with the nodes in the fortified Great Moravian centres.<sup>20</sup>

Models of polities based on decentralised complexity, chiefdom confederacy, and of imperial confederacy especially, provide a new perspective of the level of the socio-political complexity of Great Moravia. It may help to conceptualise this aspect of the Great Moravian society better than the classical neo-evolutionist categories, such as “chiefdom” and “state”<sup>21</sup> because it is able to integrate the seemingly contradictory attributes of the Great Moravian polity into a single comprehensive model. However, this general model must be further refined, with the core of future research lying in the effort to capture the developmental processes inside of the Great Moravian polity using cross-cultural comparison. A new perspective is needed to see the unique Great Moravian society, which emerged at an intersection of the edges of two vast trade networks, in a new light and understand it more profoundly.

9 Barfield 2001, 17–22.

10 Macháček 2001b, 246–250, Fig. 186.

11 Treštlík 1973.

12 Macháček 2010, 484–506.

13 Hodges 1982, 50; Minc 2006, 86; Garraty 2010, 29.

14 Štefan 2014, 147.

15 Macháček 2012, 18; see also Flannery 1998, 16–20.

16 Spencer 2010, 7119–7120.

17 Profantová – Profant 2014, 135; Steinhübel 2014, 71.

18 Ruttkay 2014; Ruttkay 1982.

19 Štefan 2011, 335–336; see also Ungerman 2005a.

20 Macháček 2012, 15–16.

21 See Macháček 2012; Kalhous 2014a; Profantová – Profant 2014; Štefan 2014; Macháček 2015b.



# Mikulčice as a Princely Residence, Ecclesiastical and Economic Centre

2



Meadow enclave Štěpnice near Mikulčice in between the continuous strip of floodplain forest. The fortified settlement Mikulčice-Valy (before the reconstruction of the museum in 2012) is situated at its end. The regulated watercourse of the River Morava and Kopčany village can be seen behind the forest and the White Carpathians rise in the background.

# 2.1 River Morava and the Central Great Moravian Agglomerations

– Lumír Poláček

The Mikulčice stronghold is situated in the floodplain of the River Morava, which currently forms the state border between the Czech Republic and the Slovak Republic in this area. The Morava, one of the largest left-bank tributaries of the Danube, rises at Králický Sněžník at the present-day Polish-Czech border at an altitude of 1,380 m. After 353 km, having passed through the Upper and Lower Morava Valleys and the Záhohří Lowland, it flows into the Danube near Devín at an altitude of 118 m.<sup>1</sup> A large part of the course of the river flows through the territory where a power-political unit called Great Moravia stretched in the 9th century. The River Morava formed an imaginary axis of this unit. Situated in the area of the Lower Morava Valley in the middle reaches of the river, were the two most important centres of Great Moravia: the agglomerations of Mikulčice – Kopčany and Staré Město – Uherské Hradiště (Fig. 37).<sup>2</sup> In the far south, at the confluence of the Dyje and the Morava, was another prominent stronghold – Pohansko near Břeclav.<sup>3</sup> The three centres and their positions in the river floodplain characterise the chief type of Great Moravian fortifications – a lowland stronghold.<sup>4</sup> Some of the early medieval centres in South-West Slovakia (Majcichov, Pobedim) and Hungary (Zalavár) represent the same type of fortified settlement.<sup>5</sup>

- 1 Vlček ed. 1984, 181–182.
- 2 See Excursus 2.1.2.
- 3 See Excursus 2.1.3.
- 4 Poláček 2001a; 1999b.
- 5 See Excursus 2.1.4.

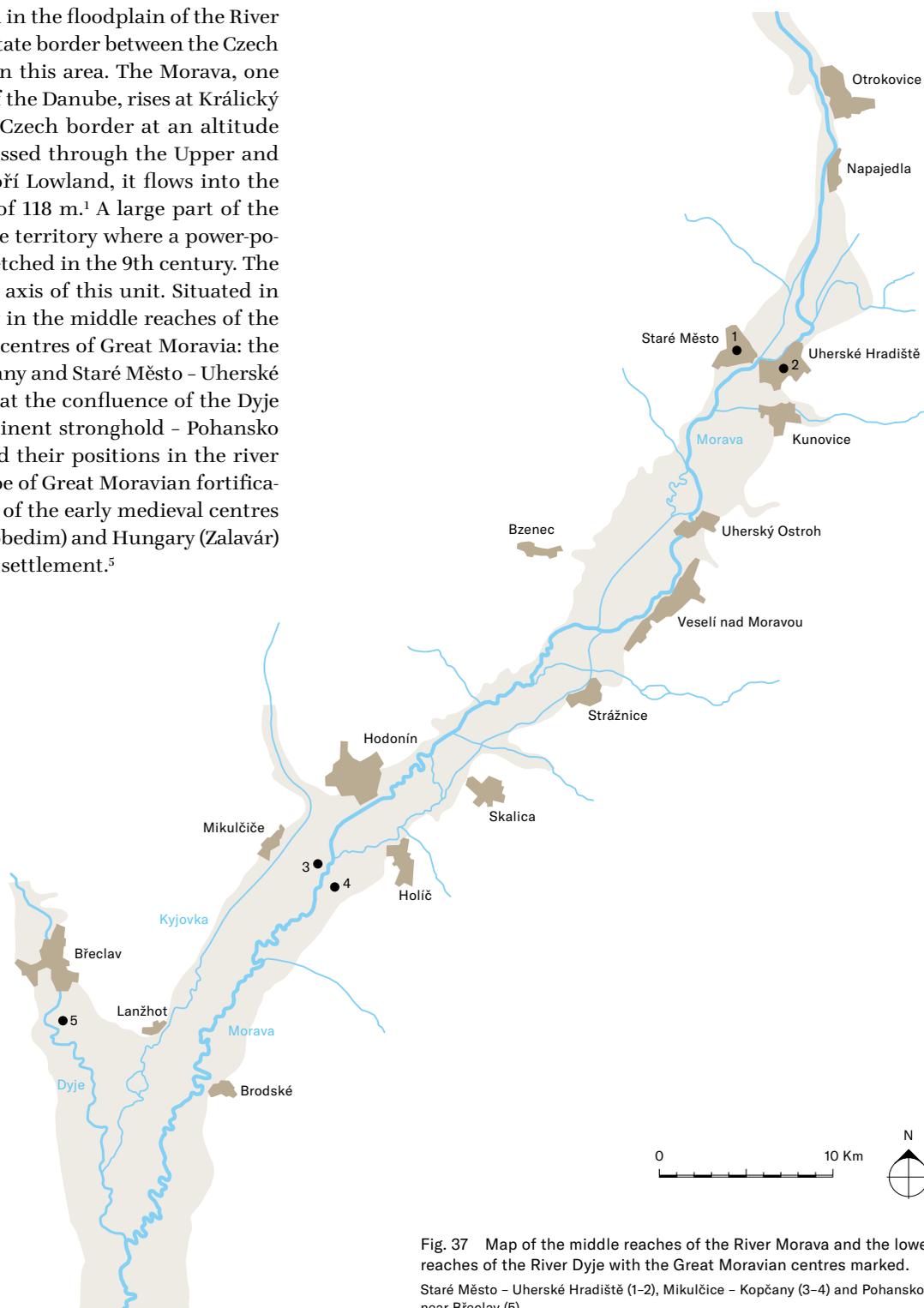


Fig. 37 Map of the middle reaches of the River Morava and the lower reaches of the River Dyje with the Great Moravian centres marked. Staré Město – Uherské Hradiště (1–2), Mikulčice – Kopčany (3–4) and Pohansko near Břeclav (5).

The river was vitally important to these agglomerations and Great Moravia in general. It connected them to the Danube, a crucial European trade route in the 9th century,<sup>6</sup> which was used by merchants, messengers and military campaigners, and which also secured cultural contacts. The River Morava thus served as an important link to the Frankish and Byzantine Empires and as a type of departure area for journeys to the Adriatic regions. An important north-south long-distance route, the so-called Amber Road connecting the Baltic and the Adriatic, passed along the river from prehistory. It was along this route that Moravian delegations might have travelled, and Cyril and Methodius most probably took this path when travelling to Venice, Rome and probably Constantinople.<sup>7</sup>

The settlement agglomerations in the floodplain of the middle reaches of the River Morava and the lower reaches of the River Dyje were located between the multitude of river branches on the bottom of the valley or the slightly elevated banks (terraces) of the floodplain. The choice of river islands and terraces as places to live was influenced by the absence of strategically more advantageous elevated positions near the river and by other factors that we can only assume. Most probably, these were for economic reasons, such as the availability of raw materials, food and sources of energy, and above all, communication reasons in the form of a corridor of long-distance and local roads. The cultural habits of the population, or more precisely the elites, certainly played their part: building a stronghold on an island might have symbolised a hierarchical separation of the power centre from the settlement landscape of that time. Suitable climatic conditions were also a basic precondition – apparently, they were optimal in the 8th and 9th centuries for settling in a floodplain.<sup>8</sup>

### Mikulčice river landscape

From the geographic perspective, the Mikulčice floodplain was an important place in the system of prehistoric and early medieval waterways and land routes alike.<sup>9</sup> The route of the Amber Road was probably crossed somewhere near Mikulčice by another long-distance route, later known as “Bohemia Road”, which connected South Moravia with the River Váh region in Slovakia and the Carpathian Basin.<sup>10</sup> It cannot be excluded that like the present-day motorway from the municipality of Mikulčice, the old road led across the Trapíkov dune towards Valy and, leaving the stronghold, further on to the area of the Church of St Margaret of Antioch near Kopčany, on the present-day Slovak bank of the river.<sup>11</sup> The existence of a ford across the Morava in the wider Mikulčice region is documented in the written sources as late as the early 17th century.<sup>12</sup>

In the 8th and 9th centuries, the neighbourhood of the Mikulčice stronghold was a varied landscape interspersed with river branches, natural pools and numerous islands. The sandy-gravel, partially earthen surface of the floodplain was vertically segmented by distinctive sand dunes and other sand, gravel or earthen elevations. The first soils locally emerged in non-flooded elevated places.<sup>13</sup>

Analyses of vegetal macroremains from Great Moravian strata show that the so-called hardwood forest with oak, elm and ash as the main woody plants were predominant in the 8th and 9th centuries. The forest was much less dense due to felling, forest pasture and the harvesting of leafy fodder. The landscape in the immediate vicinity of the Great Moravian stronghold had a partially park-like character with various sized pastures, meadows and possibly fields.<sup>14</sup> A considerable degree of deforestation and the overall ruderalisation of the landscape in the immediate proximity of the Mikulčice stronghold are also proven by pollen analyses.<sup>15</sup>

The present-day form of the river valley is completely different from the time of Great Moravia. The Morava was most probably an anastomosing river in the area of the Mikulčice agglomeration in the 9th century. This means that instead of having a main stream, it consisted of a multitude of meandering branches. One or more such branches surrounded the stronghold, while others segmented the area of the suburbium. The gradual silting up of the floodplain with flood sediments, starting in the High Middle Ages, changed the river into a meandering watercourse as we knew it before modern regulation.<sup>16</sup> In Comenius’s map from 1627, there are still two main branches of the river forming a large island between Uherský Ostroh and the confluence with the Dyje. However, in the 18th- and 19th-century military maps and later map documents, there is already a single meandering stream (cf. Fig. 38).<sup>17</sup> The river changed fundamentally during the latest regulation in 1971 when the original meanders were cut off and partially levelled, turning the former naturally meandering stream into a water “canal” (Fig. 39).

### “Hrúdy” – sand dunes in the floodplain<sup>18</sup>

An important part of the geomorphological structure of the early medieval Mikulčice landscape were sand dunes, which rise from the level terrain of the floodplain to this day. In contrast to the surrounding terrain modelled by later flood loams, their surface represents an authentic remnant of the original relief or the early medieval agglomeration. “Hrúdy”, as the dunes are called in the local dialect, were sought-after and naturally protected settlement positions in the floodplain. Providing a dry, easily permeable and warm surface and rising above the strongest ground temperature inversions and frequently flooded areas, they were regularly occupied from the Mesolithic period until the end of the Early Middle Ages.<sup>19</sup> The boundaries of the dunes as a “safe zone” for Holocene occupation were not considerably exceeded until the pre-Great Moravian and Great Moravian settlement in the 8th and 9th centuries, which also spread into lower, micro-climatically less favourable positions on flood loams. Taking into account that the 9th-century riverbed level was up to 4 m below the present-day surface of the levelled floodplain, the dunes, which even today rise to 3 m above its level, must have represented distinct elevated formations of strategic importance. These positions were used when founding the individual parts of the stronghold, when building the fortifications

6 Hardt 2007.

7 Poláček 1999b; 2007a.

8 Poláček 2001a; 2007a.

9 Květ 1999.

10 Květ 2011, 34.

11 Květ 1999, 225.

12 Poulík 1975, 162; cf. Kolejka – Svatoňová 2016, 11.

13 For the results of the Quaternary geological research of the Mikulčice stronghold, see Havlíček – Poláček – Vachek 2003.

14 For the results of the archaeobotanical reconstruction of the plant communities of the Mikulčice stronghold, see Opravil 1983, 23–33, 63–65; 2000.

15 For the results of the palynological research of the Mikulčice stronghold, see Jankovská – Kaplan – Poláček 2003; Hladík et al. 2014a, 102–108.

16 Opravil 1983, 18–19, 23–33.

17 For the development of the Mikulčice floodplain from the historical geography point of view, see Kolejka – Svatoňová 2016, 8–14.

18 The sand dunes, which are formed by river sands from the levees and the terraces of the river, are covered by fine wind-blown sands in their upper part.

19 Poláček 1997.



Fig. 38 Mikulčice stronghold in an aerial photograph from 1964. The meandering River Morava in the floodplain forest formed an integral part of the landscape until 1970. The background of the photograph shows the settlement area Za jazerom pri sv. Margite with the buildings of the agricultural cooperative (nowadays removed) on the left and village Kopčany behind them to the right.



Fig. 39 Aerial photograph from 1970 shows the stream regulation of the hitherto meandering course of the River Morava. This construction ended regular floods and improved conditions for excavation.

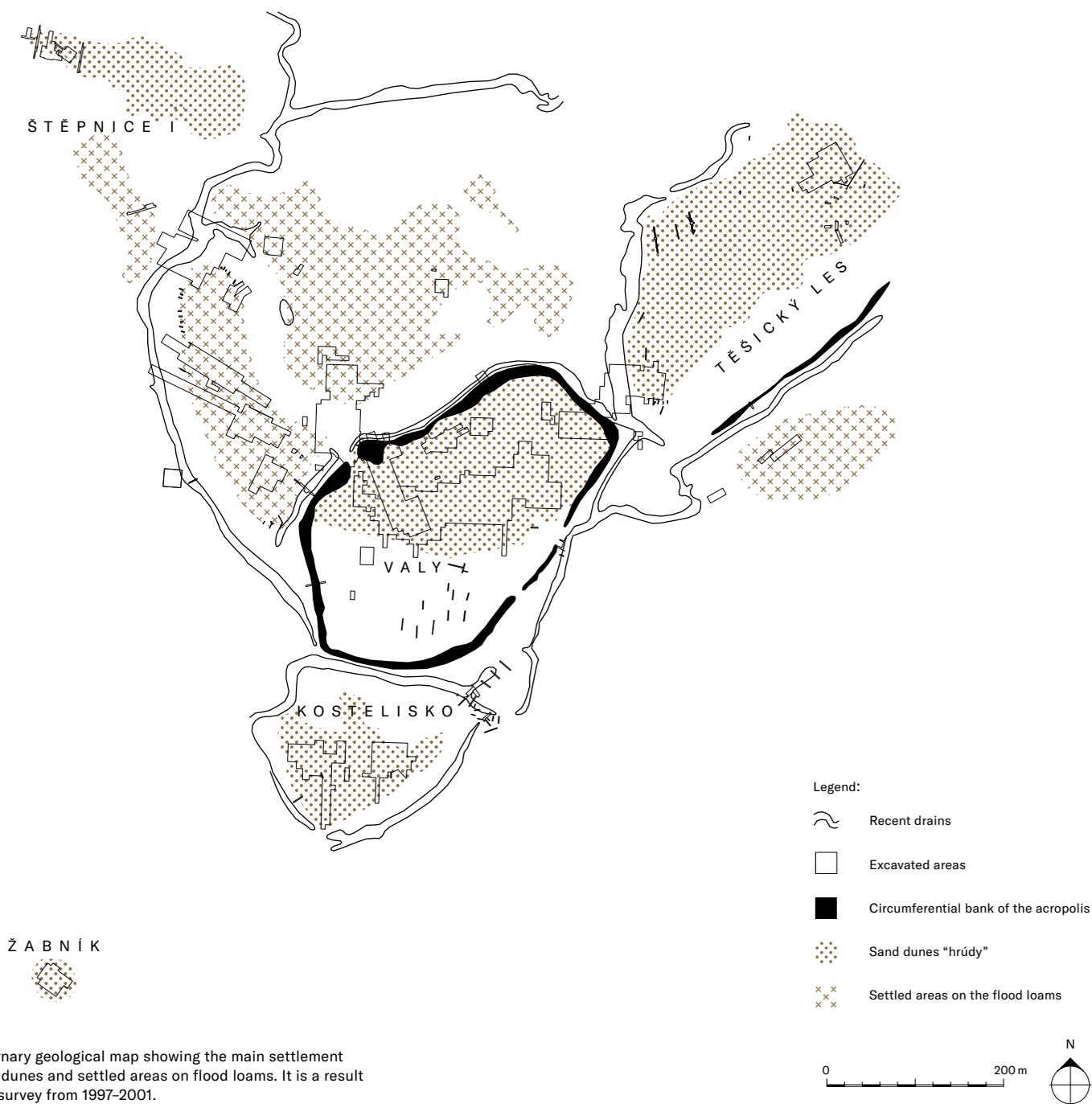


Fig. 40 Quaternary geological map showing the main settlement areas on sandy dunes and settled areas on flood loams. It is a result of a geological survey from 1997-2001.

and to direct roads and locate important structures. Due to their optimal natural conditions, these dunes were places of the greatest concentration and continuity of early medieval occupation. Sandy elevations were also preferred as places for burial sites.<sup>20</sup>

We can find five dunes in the centre of the Mikulčice settlement agglomeration (Fig. 40).<sup>21</sup> The highest dune, called Valy, is occupied by the acropolis of the Great Moravian stronghold. Two more, less elevated but rather extensive dunes in the forest areas called Těšický les and Kostelisko adjacent to the acropolis, are among the most important residential complexes of Mikulčice's extramural

settlement. Smaller dunes were also occupied in the 9th century: Žabník, destroyed by wood harvesting in the 1970s, and Štěpnice I in the meadows north-west of the stronghold where Great Moravian Church 7 used to stand. Other dunes with 9th-century occupation documented within 1-2 km from the acropolis probably belonged to the periphery zone of the Great Moravian agglomeration. They include locations such as Trapíkov, Virgásky and Kněží on the Moravian bank and Za jazerom pri sv. Margite near Kopčany on the Slovak side of the river (Fig. 52).<sup>22</sup>

20 For the topography of the geomorphological units of the Mikulčice stronghold, see Poláček - Marek 2005, 12-17.

21 Havlíček - Poláček - Vachek 2003.

22 Poláček - Škojec - Havlíček 2005, 154-169.

## 2.1.1 excursus

# Large-Scale Excavations of Silted-Up River Branches

– Lumír Poláček

An archaeological investigation of the silted-up river branches in Mikulčice was part of the large-scale excavations in the second half of the 20th century, which represent a unique example of fieldwork in their time as well as today.<sup>1</sup> The excavations conducted on an overall area of 10,000 m<sup>2</sup> provided a valuable insight into the natural environment and everyday life of the Great Moravian settlement agglomeration. They yielded fundamental information on the silted-up river system, transport, defensive and water structures (bridges, walls, palisades, anti-erosion barriers and so on; see Fig. 41–45),<sup>2</sup> the environment of the immediate surroundings of the fortified core of the agglomeration and the material culture of the power centre's inhabitants.<sup>3</sup> They provide information about river navigation in Mikulčice in the 9th century.<sup>4</sup> The dendrochronological data collected from Mikulčice bridges are unique as well.<sup>5</sup>

Fieldwork conducted in the area of the silted-up river branches was technically highly demanding and primarily dependent on the artificial lowering of groundwater.<sup>6</sup> This was achieved by a system of approximately 10 m deep wells drilled around the investigated area. The constant pumping of water out of these wells made it possible to conduct the excavation on “dry land”. Three large-scale excavations in the territory of silted-up river branches were gradually opened in this manner.<sup>7</sup> The documented features and objects, especially those made of wood, include finds that rarely survive in the local climatic conditions.<sup>8</sup> Their preservation within the Mikulčice site is connected to the geology and hydrography

of the floodplain. In view of these findings, the riverbeds (also referred to as a channel) around Mikulčice fortified core can be considered a unique and valuable natural “archive” of wood and other organic material.

The fill of the silted-up river branches has a character that is quite different from the sediments and stratigraphies in the residential areas. The complex gravel, sand and loams strata in the fill of defunct riverbeds reflect a dynamically changing river valley with a continuous shift of the watercourse, a gradual deposition of river and flood sediments and a concurrent erosion of other materials.<sup>9</sup> The reconstruction of these processes and the understanding of the development of the river are difficult. They can only take place in the form of models, with a contribution from natural science disciplines that include geology, sedimentology, archaeobotany, archaeozoology, malacology, dendrochronology and geophysics.<sup>10</sup>

The palaeoecological reconstruction of the river branches in Mikulčice is, above all, based on the archaeobotanical processing of vegetal macroremains.<sup>11</sup> It indicates slowly flowing or even periodically stagnant water in the river branches surrounding the stronghold.<sup>12</sup> At the same time, we can assume that relatively early, still in the late 9th century or during the 10th century, the riverbeds near the stronghold were filled by massive sand strata (Fig. 45).<sup>13</sup> Thus, due to either a natural disaster or intentional human activities aimed at reducing the defensive potential of these natural “ditches”, the riverbeds were separated from the active stream of the river sometime in the early 10th century and doomed to vanish.<sup>14</sup>

1 Poláček 2014a; ed. 2014.

2 Ibid.

3 For the movable wooden finds, see Poláček – Marek – Skopal 2000.

4 For the monoxylon finds from the Mikulčice silted-up river branches, see Poláček – Marek – Skopal 2000, 203–207.

5 Dvorská et al. 1999.

6 Kouřil 1967; Poláček 2014a, 13–14.

7 Poláček 2014a.

8 The wooden finds from Mikulčice come exclusively from silted-up river branches (Poláček – Marek – Skopal 2000).

9 Poláček – Hladík 2014, 49–53.

10 See Poláček ed. 2014.

11 Opravil 1983, 23–33; Látková – Hajnalová 2014.

12 Opravil 1983, 23.

13 Klanica 1972, 38; Opravil 1983, 23–24, 33; Poláček – Hladík 2014, 49–53.

14 Poláček 2014a, 11–12.



Fig. 41 Large-scale excavation of the silted-up Channel 2 in 1972–1975. River sand sediments from the 10th century are being removed.

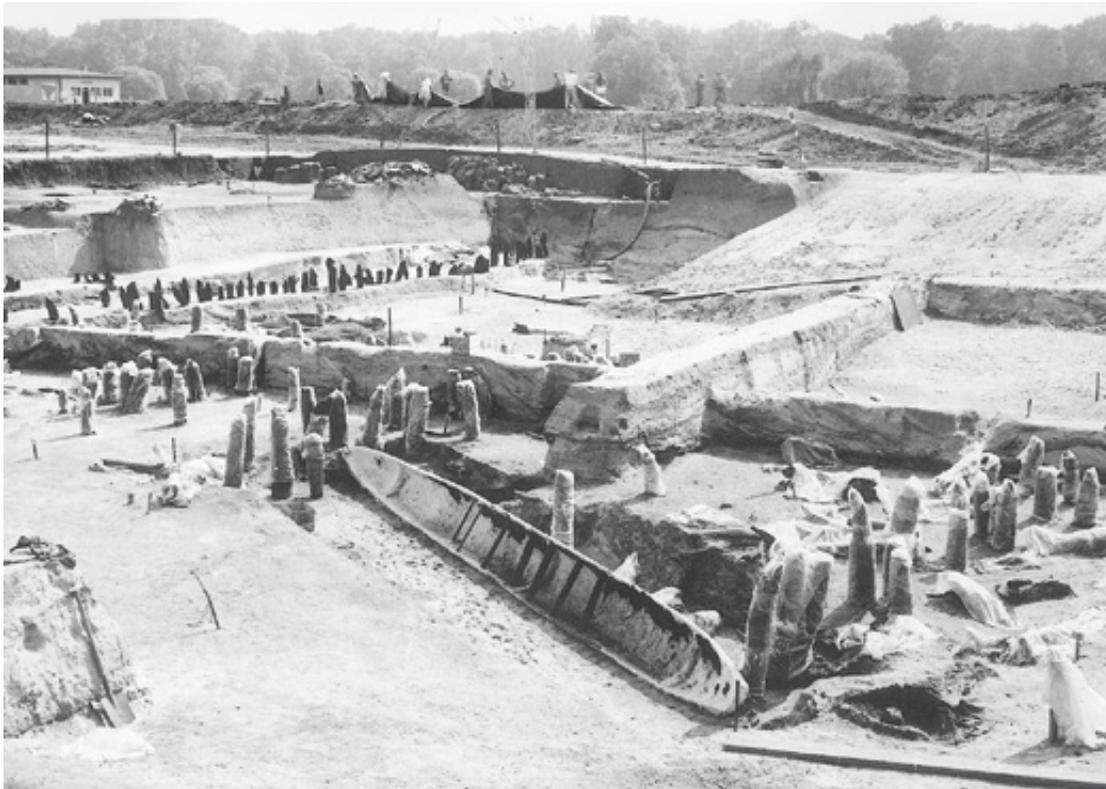


Fig. 42 The 1967 large-scale excavation of the silted-up Channel 1 in front of the north-west gate of the outer bailey. In the foreground is one of two boats leaning against the bridge pilots. Both boats, about 10 m long, testify to river navigation along the Morava in the 9th century.

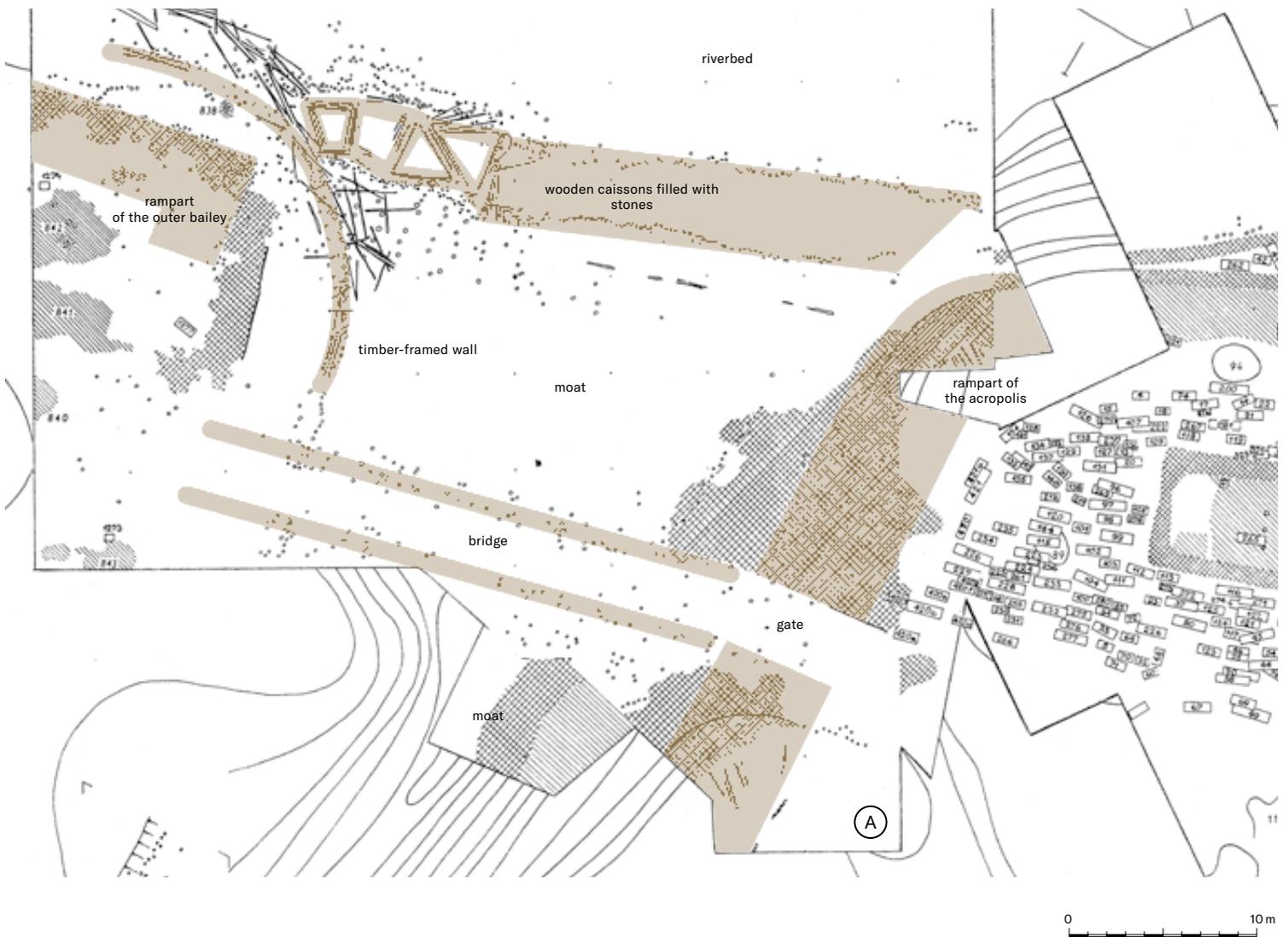


Fig. 43 Plan of the excavated area K 1972-75 in the area of the northern mouth of the moat between the outer bailey and the acropolis (Channel 2).

A barrier of wooden construction filled with stones built at the bottom of the riverbed was closing the access to the moat between the outer bailey and the acropolis from the north. A river harbour is hypothetically sought after in this enclosed area (see Poláček 2019b).



Fig. 44 A barrier at the bottom of the riverbed: a line of wooden caissons filled with stones (Channel 2).

The rows of piles on the right of this construction probably bore a wooden platform that might have served as protected access to water for the stronghold inhabitants and the landing of boats.



Fig. 45 The bottom of the Morava former riverbed was up to 3.5 m under the present-day surface (excavated area K 1972-75; Channel 2). On the profile in the background, we can see how alluvial sands from the 10th century (bottom 2 m of the profile; A) and the later flood loams (upper 1 m of the profile; B) filled the riverbed over several centuries and levelled it with the surrounding terrain. The destroyed stone fortification wall (C) collapsed into the flood loams. The foreground of the picture shows the wooden construction strengthening the bank of the riverbed in front of the fortification. Among the people standing on the profile, you can see Josef Poulík (with point), the discoverer of Mikulčice and long-term head of the Mikulčice research who accompanies the official delegation (1973).

# Settlement Agglomeration Staré Město – Uherské Hradiště

– Lumír Poláček

A Great Moravian centre of similar importance to Mikulčice was the settlement agglomeration in Staré Město – Uherské Hradiště, situated 40 km north of Mikulčice. The complex used to exist on the territory of what are now two neighbouring towns, roughly separated by the River Morava: Staré Město and Uherské Hradiště. The complex was built on the islands in the floodplain of the River Morava (Ostrov sv. Jiří – St George Island – and Rybárny in Uherské Hradiště, Fig. 46: 7, 6), and on the river terraces in Staré Město. The strategic elevation of Uherské Hradiště – Sady, formed by the projections of the Luhačovice Highlands, was occupied by a church complex (Fig. 46: 5). Geographically and historically, the agglomeration was situated where the floodplain of the River Morava was probably the narrowest in the middle reaches of the river – a mere 2.5 km – and thus made an ideal crossing point for both local and long-distance roads.<sup>1</sup>

The settled area of the Great Moravian agglomeration was significantly larger than the one in Mikulčice; on the other hand, it was only partially fortified. In contrast, the Staré Město – Uherské Hradiště settlement was more scattered and less intense. The overall area and nature of the settlements can only be estimated as most of the historical landscape is now under the built-up area of the town. Based on a tradition that linked the nearby village and monastery of Velehrad with the Veligrad of high-medieval written sources, the main centre of Svatopluk's Great Moravia was sought here – especially before the discovery of Mikulčice. Even today, the concept of Velehrad/Veligrad is used by some researchers to describe a Great Moravian agglomeration in the good faith that it is a historical name.<sup>2</sup> Unlike the archaeological research into Mikulčice, the research into Staré Město has a long tradition stretching back over 120 years (research leaders: A. Zelnitius, V. Hrubý and L. Galuška).<sup>3</sup>

The beginnings of the settlement in Staré Město are dated to the 6th/7th century. At the end of the 8th century, it is assumed that the first fortifications were constructed at the site Na Valách on what is now the right river bank (Fig. 46: 1), and hypothetically also on the Ostrov sv. Jiří on what is now the left bank (in the place of the historical town core, Fig. 46: 7).<sup>4</sup> The heyday of the settlement falls within the 9th century when the so-called Christin's Wall fortification was constructed and there were at least five churches,<sup>5</sup> a palace district with a profane masonry building, large burial

grounds with lavish grave goods and several independent production sites with the evidence of a number of specialised crafts, first and foremost jewellery making.<sup>6</sup>

The right-bank Staré Město agglomeration used to be situated in an arch delimited by Christin's Wall and covered about 250 ha. The power core of the settlement was initially at the site Na Valách (Fig. 46: 1), later at Na Dědině (Fig. 46: 3). The latter included the rotunda of St Michael, a spacious palace-type building and other buildings with mortar floors.<sup>7</sup> A fortified centre of the agglomeration was also sought on the Ostrov sv. Jiří in Uherské Hradiště, on the left bank of the Morava (Fig. 46: 7).<sup>8</sup> The justification included the evidence of masonry and the presence of the highest elite. Unfortunately, this site is located under the historical core of Uherské Hradiště so does not enable verification of these fundamental historical questions.

Most evidence of the existence of elites has been found – as in other Great Moravian central agglomerations – at burial grounds. The largest Great Moravian church necropolis – and also the central burial ground for the whole of the Staré Město – Uherské Hradiště agglomeration – was the church cemetery with over 1,800 excavated graves at the site Na Valách in Staré Město (Fig. 46: 1). Other elite burial grounds with graves with luxury grave goods were discovered among the church cemeteries at Špitálky in Staré Město (Fig. 46: 2) and Uherské Hradiště – Sady (Fig. 46: 5).<sup>9</sup>

Part of the agglomeration was the ecclesiastical area in Uherské Hradiště – Sady (for more details, see Excursus 1.3.1). This consisted of a complex of masonry sacral buildings, wooden buildings (large halls and a group of 16 houses arranged in a regular plan) and a well. Importantly, several graves of the members of the Great Moravian ruling class or important religious dignitaries were discovered in the interior of the church complex.<sup>10</sup> Around the church was a burial ground with 87 Great Moravian graves and over 900 burials dated to the 11th and 12th centuries. In many ways, the complex resembles a monastery.<sup>11</sup> This interpretation is supported by the presence of specialised workshops (see Excursus 3.10.2).

The most remote part, a periphery of the Staré Město – Uherské Hradiště agglomeration, is the Great Moravian Church in Modrá. The building is hypothesised to have been part of a great magnate's court; however, this has not been archaeologically proven.<sup>12</sup>

The trait that the Staré Město – Uherské Hradiště agglomeration has in common with the one in Mikulčice is primarily its varied nature: it was a complex of fortified and unfortified sites.

1 For natural conditions and the geological situation of the agglomeration, see Galuška 2001; Havlíček – Galuška – Poláček 2005.

2 The first mention of the Veligrad market settlement in what is now Staré Město comes from 1141. Cf. Galuška 2007, 50–62; 2014a, 81–83; Wihoda 2014c.

3 For the archaeology of the Staré Město – Uherské Hradiště agglomeration in general, see Hrubý 1965b; Galuška 2011b. Both authors represent the main leaders of past and contemporary research in Staré Město – Uherské Hradiště.

4 For fortification, see Galuška 2006; 2008c.

5 For the churches, see Galuška 1996; 1998a; 2011a; Galuška – Poláček 2006, 97–117; Galuška 2010.

6 For production sites, see e.g. Hrubý 1965b, 164–169; Galuška 1989; 1992; 2013; 2014a.

7 Galuška 1990; 2011a, 105–109.

8 Snášil – Procházka 1981; Snášil 1987; cf. Galuška 2008c.

9 Hrubý 1955; Poulik 1955; Galuška 1996; Galuška et al. 2018.

10 Galuška 1996; 1997; Galuška et al. 2018.

11 Galuška 2005b.

12 Cibulka 1958; Galuška 2005a.



Legend:

- |  |  |
|--|--|
|  Floodplain                       |  Fortification                |
|  Territory outside the floodplain |  Church                       |
|  River                            |  Church                       |
|  Built-up area                    |  Great Moravian agglomeration |

This was characteristic with a high concentration of sacral buildings, the presence of a masonry palace-like building and other constructions with mortar floors as well as the presence of large burial grounds with numerous graves with luxurious grave goods. The Staré Město - Uherské Hradiště agglomeration exceeded the Mikulčice agglomeration in terms of the overall settled area and particularly by the evidence of specialised craft production, more precisely by organised production sites. The structure and nature of the settlement of the two cores are close to an urban organism (agglomerations of the proto-urban type).

Fig. 46 Staré Město - Uherské Hradiště Great Moravian agglomeration in the late 9th century. Settlement area with archaeologically proven churches (full) or hypothesised churches (blank).

1 - Staré Město - Na Valách; 2 - Staré Město - Špitálky; 3 - Staré Město - Na Dědině (St Michael); 4 - Staré Město - Na Kostelíku; 5 - Uherské Hradiště - Sady; 6 - Uherské Hradiště - Rybárny; 7 - Uherské Hradiště - Ostrov sv. Jiří (historic town core).

## 2.1.3 excursus

# Settlement Agglomeration Pohansko Near Břeclav

– Lumír Poláček

The stronghold at Pohansko near Břeclav is the best preserved and best researched site among the central agglomerations of Mojmirid Moravia. Systematic multidisciplinary archaeological research has been conducted there since 1958, the results of which have been extensively published.<sup>1</sup>

Like Mikulčice, the stronghold was situated on floodplain river islands, in this case in the River Dyje, just before its confluence with the Morava (Fig. 47).<sup>2</sup> The geography of the site, especially that it is south-facing, predisposed this central place to play an active role in military and economic interactions with the Danube region. Primarily, Pohansko served as the Great Moravian strongpoint against attacks from the south. The research conducted to date indicates the significant economic importance of the centre. This is suggested by the existence of production sites and the evidence of long-distance trade. The power shifts in the Danube region following the mid-10th century led to a further rise of the economic activities in the area; the periphery of the former agglomeration near Kostice (Zadní hrúd) saw the rise of a market and craft-related settlement reflecting the course of the long-distance routes.<sup>3</sup>

An agricultural settlement with a cemetery existed as early as between the 6th and 8th centuries in the area that later became a stronghold.<sup>4</sup> However, archaeological excavations did not yield any evidence of its central function. Unlike Mikulčice, Pohansko lacked a direct pre- or early Great Moravian predecessor. The central place of superregional importance was founded there as late as in the high Great Moravian period – in the second half of the 9th century. The Great Moravian settlement developed in at least two subphases, which is probably reflected by the two construction phases of the “magnate court”.<sup>5</sup> The craft production area was located within the fortified core close by to the court.<sup>6</sup> After the demise of Great Moravia, a power centre of local or regional importance, which was situated in the area of the north-east outer bailey, still remained.<sup>7</sup> Compared to Mikulčice or Staré Město, Pohansko shows a shorter continuity of the central place; on the other hand, the developments in the second half of the 9th century were all the more explosive.<sup>8</sup>

Pohansko is one of the largest fortified units of Great Moravia. As in Mikulčice and other Great Moravian centres, the fortification was in the form of a massive wood-and-earth rampart with a stone front wall. It defined the perimeter of the central part of the stronghold with an area of 28 ha.<sup>9</sup> The areas outside the fortifications were

adjacent to the fortified central part in the south and north-east.<sup>10</sup> These formations resembled the Mikulčice suburbium with their functions and formal traits. However, despite the occasionally mentioned functional parallels to the southern suburb in Pohansko, the Mikulčice outer bailey lacks analogies both locally and in the neighbouring regions. The total settled area of the Pohansko agglomeration was 52 ha (57 ha including its peripheries).<sup>11</sup> That is a vast territory; its total area is roughly comparable to that of the Great Moravian agglomeration of Mikulčice – Kopčany.

The fortified area was built-up with regularly placed “courts”, the function of which was mainly residential and economic, and which shared their orientation with the most important settlement structure in Pohansko – the “magnate court”.<sup>12</sup> This square court with a wooden palisade and an area of approximately 1 ha was situated in the north-west part of the fortified complex (Fig. 48). Three main parts with different functions were identified in the built-up area of the magnate court: a sacral part with a church and a burial ground, a residential part with houses on stone and mortar foundations, and non-residential area with economic function. The magnate court was clearly built based on Frankish models; which, according to the long-time head of the excavations Jiří Macháček, included Carolingian *Pfalzen* (see Excursus 2.4.5).<sup>13</sup>

The view of Pohansko has been changing lately in the wake of the new discoveries in its north-eastern suburb. The discovery of the second church – a rotunda – and the adjacent cemetery and profane area casts a new light on the late and post-Great Moravian development at Pohansko and South Moravia in general; it underpins the theoretical reflections on early medieval nobility in East Central Europe.<sup>14</sup>

The Great Moravian agglomerations of Pohansko near Břeclav and Mikulčice, which were just 15 km away from each other, are not just close geographically. Their material cultures also share many common traits. We assume that in the 9th century, Pohansko was part of the Mikulčice power sphere (cf. Excursus 1.4.1). Although decisive written sources are lacking, both the centres – similar to the Staré Město agglomeration – were likely to support the political, administrative and economic activities of the ruling Mojmirids. They embodied their power and self-presentation ambitions in their representative residential buildings – the “palace” districts in Pohansko, Mikulčice and Staré Město. They were inspired by the Frankish Empire, their long-time rival – and an unachievable model.

1 Macháček 2011.

2 For natural conditions, see Macháček et al. 2007b.

3 Macháček – Balcárková – Dresler 2013; Biermann – Macháček – Schopper 2015, 41–169.

4 Dostál 1982; 1985.

5 Dostál 1975; Dostál – Kalousek – Macháček 2008.

6 Dostál 1993; Macháček 2002; cf. Macháček et al. 2007a.

7 Macháček et al. 2016; Macháček – Wihoda eds. 2019.

8 For dendrochronological dating of this settlement phase in the 880s, see Macháček – Dresler – Rybníček 2016.

9 Dresler 2011.

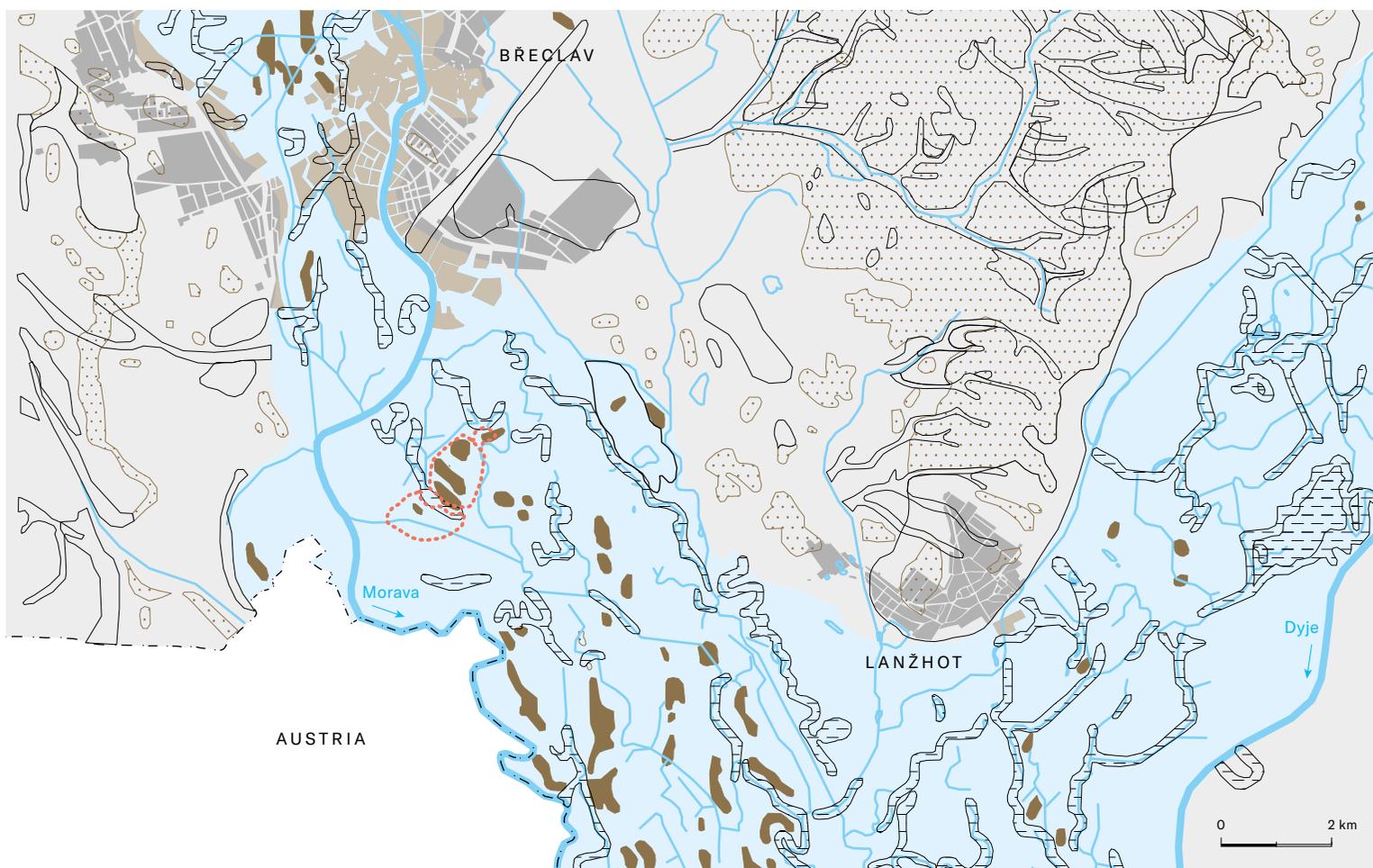
10 Vignatiová 1992; Přichystalová – Kalová – Boberová 2019; Macháček et al. 2014, 2016.

11 Dresler 2016, 46–52.

12 Macháček 2007b.

13 Macháček 2005b; 2007a; 2008.

14 Macháček et al. 2014; 2016.



Legend:

- |                                  |                   |                              |
|----------------------------------|-------------------|------------------------------|
| Floodplain                       | Rivers            | Built-up area                |
| Sand dunes in the floodplain     | Abandoned meander | Great Moravian agglomeration |
| Territory outside the floodplain |                   |                              |

Fig. 47 Quaternary geological map of the area north of the confluence of the Dyje and Morava.

The position of the Pohansko agglomeration in the Dyje floodplain is highlighted.

In Pohansko, the conditions were better for such an undertaking: the agglomeration was, so to speak, a greenfield project. Its founders did not have to deal with older constructions – fortification, sacral structures or roads. They could implement their urban concept in line with modern models and current needs. This is one of the archaeological advantages of Pohansko – its spatial structures are relatively legible and understandable.

Fig. 48 The main fortified formation of the settlement agglomeration at Pohansko near Břeclav.

The inner structure of the built-up area, including what is assumed to have been a magnate court, is highlighted based on archaeological and geophysical research.



## 2.1.4 excursus

# Settlement Agglomeration Mosapurc/Zalavár, Hungary

– Lumír Poláček

The Mosapurc/Zalavár settlement complex with a fortified centre, situated 10 km to the west of Hungarian Lake Balaton in the River Zala region, is similar to the Great Moravian agglomerations in the Middle Morava River valley. Among the analogies are the natural conditions on the “islands” rising above the flat floodplains of the Morava and Dyje and in the marshes of the River Zala.<sup>1</sup> The structure of the settlement in the agglomerations was also similar. Both the Moravian and Hungarian agglomerations are settlement complexes consisting of a fortified centre and other fortified or unfortified settled areas, cemeteries and sacral buildings. The concentration of churches in the fortified core and beyond is also characteristic of both the regions. The finds of the Zalavár material culture partially resemble those from the Moravian centres.

The both groups of strongholds also have a close historical connection. Pribina, a former prince of Nitra, founded his seat there in the mid-9th century after receiving part of Lower Pannonia around the River Zala as a fief from King Louis of East Francia. The territory gradually evolved into a Frankish client under the rule of Pribina, and later his son Kocel (861–876). Pribina, baptised at the behest of the Frankish king before he arrived in Pannonia, founded numerous churches in his principality, which were subject to the Archbishop of Salzburg. Unlike his father, Kocel was an enthusiast of the Slavic script and worship; he received Cyril and Methodius at his Mosapurc seat during their journey from Moravia to Rome in 867. The missionaries founded a church school there, and Kocel entrusted them with fifty students. As Kocel wanted to set up a separate diocese in Pannonia then following Cyril’s death he asked for Methodius, whom the Pope had made an apostolic legate and the Archbishop of Pannonia and Moravia with a seat in Sirmium.<sup>2</sup>

Pribina founded the first churches in the central fortified settlement of Vársziget (Castle Island). He built sixteen more churches outside the island, and during the reign of his son Kocel, twelve more were built. Of the 31 churches, three on Vársiget island have been researched/or found to date: the Church of the Virgin Mary, mostly destroyed by the construction of the Benedictine monastery in the southern part of the island, the Church of St Hadrian and the wooden Church of St John the Baptist. Another church stood on the neighbouring “island” of Récéskút (Fig. 49).<sup>3</sup>

The main centre of the agglomeration was on Castle Island (Vársziget) and was surrounded by both fortified and unfortified settlements, partly built on the “islands” in the waterlogged terrain of the River Zala (Fig. 49). The area of Castle Island was divided into three parts by fortification systems. The southern part is hypothesised to have contained Pribina’s and Kocel’s court. The middle part, which included the Church of St Hadrian, is mainly linked with clergy and church authorities while the third, eastern part, contained a little researched outer bailey (Fig. 50). Among the buildings excavated on the “island” were masonry and wooden sacral buildings, large palace-like wooden houses on pilots and a number of non-residential features, including specialised workshops. Over 1,200 graves were excavated at the largest and richest necropolis, the cemetery near the Church of St Hadrian.<sup>4</sup>

Castle Island was fortified by a wood-and-earth rampart with a stone front wall. Several pieces of wood from the construction of the fortification system yielded by earlier research were dendrochronologically dated to the 880s.<sup>5</sup> The central and southern parts of the “island” were separated by a ditch dated to the times of Pribina.<sup>6</sup> The central part of the castle with the Church of St Hadrian was separated by a palisade from the outer bailey in the east.

Mosapurc/Zalavár has been archaeologically researched since the 1940s, with various intermissions (research leaders: A. Radnóti, G. Fehér, Á. Sós, B. M. Szóke, Á. Ritók). Remarkable structures from the Carolingian period and the remains of a rich material culture have been excavated; the jewellery discovered there has similar traits as Veligrad-type jewellery from the Moravian centres (cf. Excursus 3.6.1, Essay 3.3, Essay 3.9 and its excursuses).<sup>7</sup> Regardless, the elements of the 9th-century Carolingian culture are much more strongly represented in Zalavár than in the Moravian centres.<sup>8</sup> The buildings in Zalavár are a valuable source of analogies and material providing a better understanding of the spatial structure and the historical significance of the Mikulčice stronghold, a Moravian centre that is probably the most similar to Zalavár. However, this does not apply to luxury finds such as hollow and window glass: a quality that at least remotely resembles the one from Zalavár has only been found at Uherské Hradiště – Sady (cf. Excursus 3.9.3).<sup>9</sup>

1 Szóke 2007; Herold 2012, Fig. 7–8.

2 Szóke 2007, 834; 2010a, 563–566; 2014, 51–53, 91–98; Jan 2014.

3 Szóke 2007, 834–840; 2010a, 567–585; 2014, 65–66, 69–70; 82–85.

4 Szóke 2014, 51–105.

5 Gergely 2015, 148; 2016, 363.

6 Gergely 2015; 2016.

7 Szóke 2014.

8 Szóke 2008; 2010b; 2014.

9 Cf. Galuška et al. 2012.

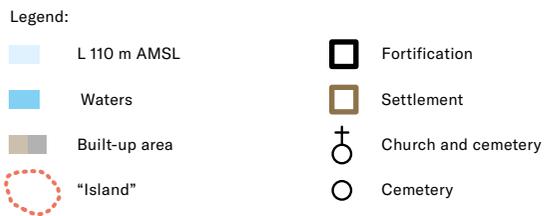
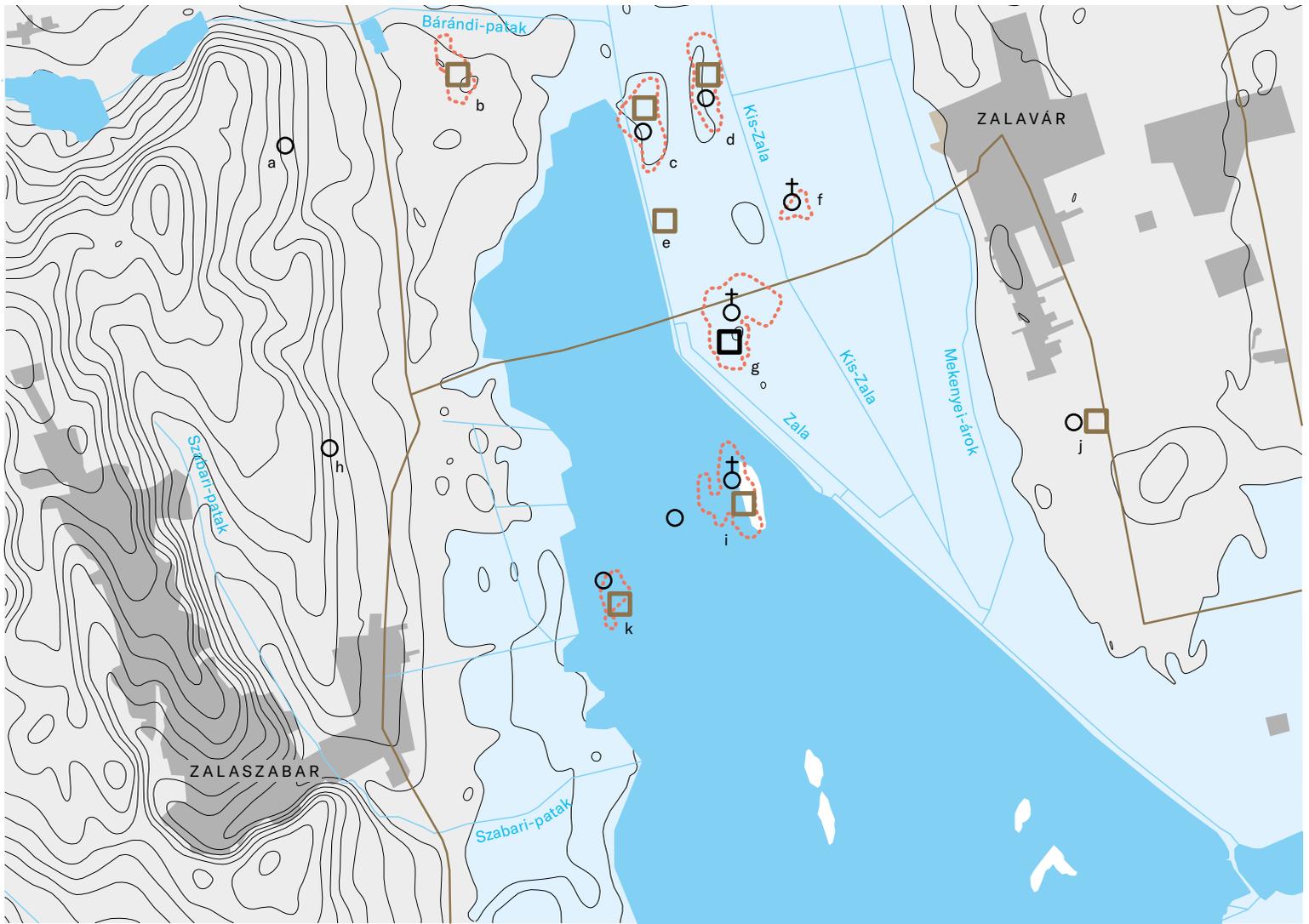


Fig. 49 Masapurc/Zalavár settlement agglomeration.

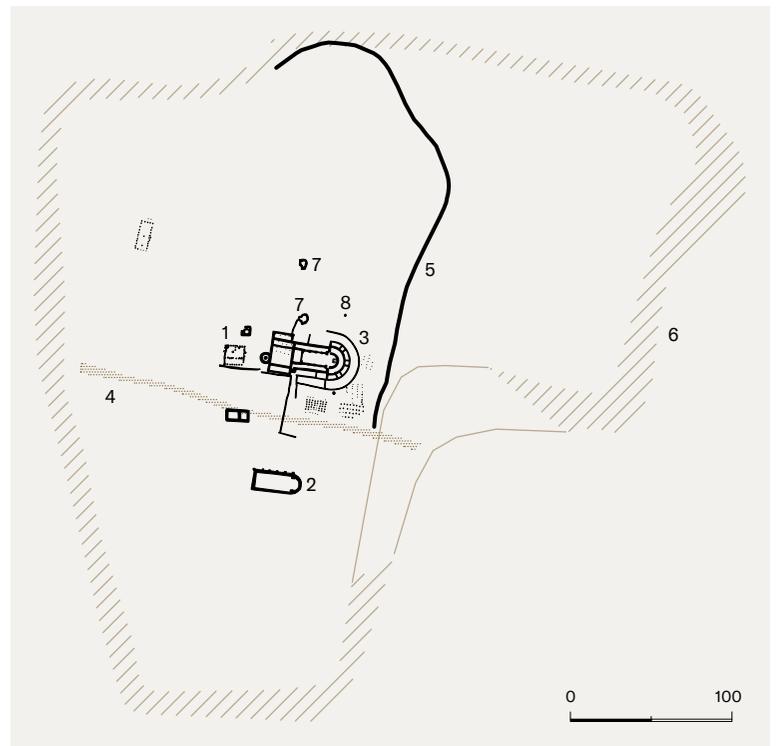
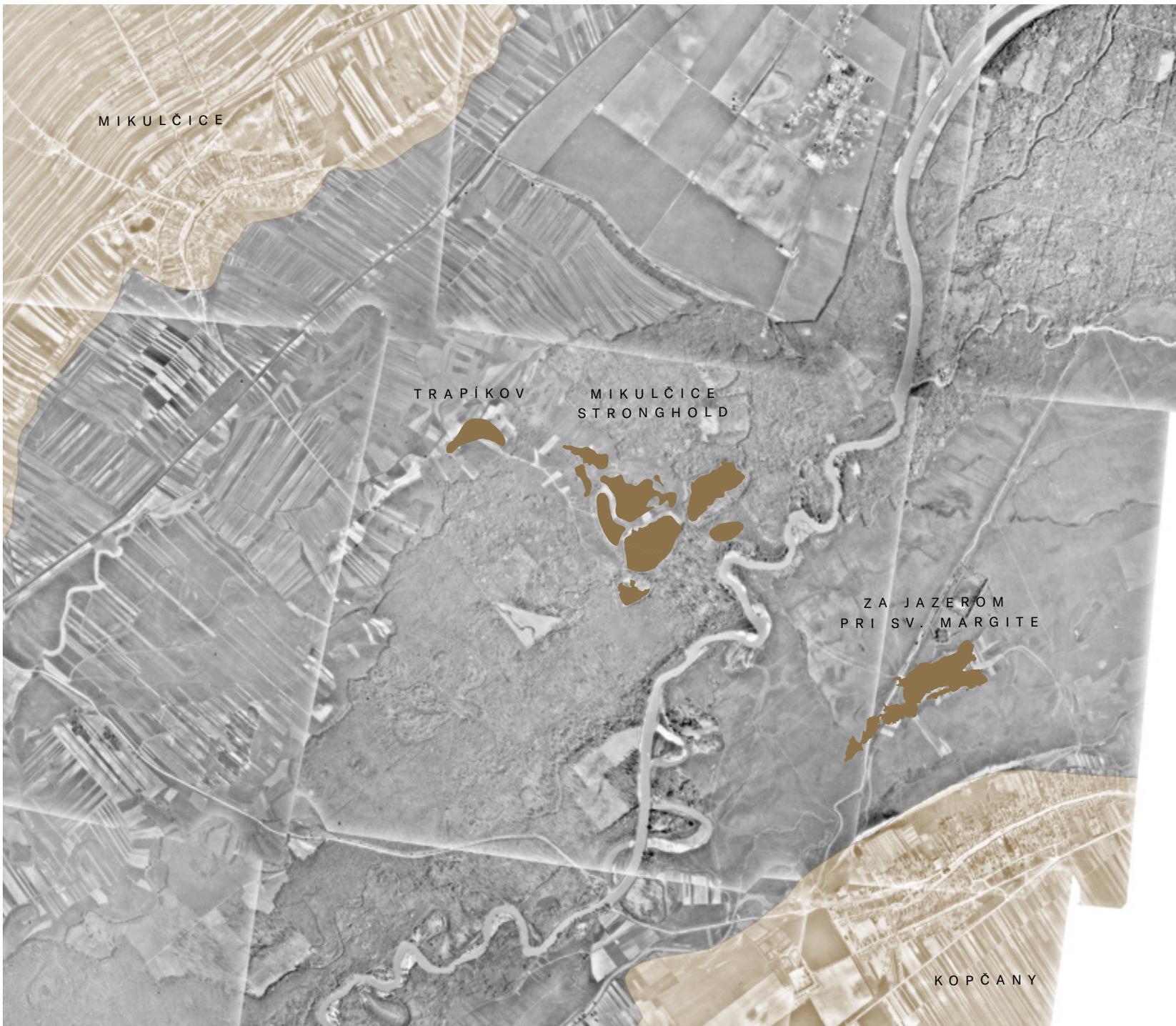


Fig. 50 Zalavár-Vársziget (Castle Island). Carolingian building features.  
 1 - Church of St John; 2 - Church of Virgin Mary; 3 - Church of St Hadrian;  
 4 - fortified moat; 5 - palisade fortification; 6 - defensive earthwork;  
 7 - "breweries"; 8 - well.



Legend:

-  Mikulčice - Kopčany agglomeration (settlement areas)
-  Territory outside the floodplain

0 2000 m



The 1938 aerial photograph documenting the Mikulčice stronghold prior to the archaeological excavations.

## 2.2 Settlement Agglomeration Mikulčice – Kopčany: Research, Topography and Settlement Development

– Lumír Poláček

The Mikulčice stronghold was the leading power, ecclesiastical and economic centre of Mojmirid Moravia in the 9th century. Together with the settlement agglomerations in Staré Město – Uherské Hradiště and Pohansko near Břeclav, it was one of the three most important central agglomerations of the power-political unit known as Great Moravia. As there are no reliable written sources relating to these places, the main source of knowledge is the archaeological record. With financial support from the government, extensive areas were uncovered and investigated during the second half of the 20th century. These excavations yielded archaeological material consisting of hundreds of thousands, if not millions, of objects. It was an exciting time with amazing archaeological discoveries made every year at the famous Slavic strongholds and cemeteries. The change in the political regime and social climate in 1989 brought to light new paradigms for the further research of these sites and Great Moravia in general. It put an end to uncontrolled large-scale excavations and created conditions for critical processing of the gathered archaeological material as well as new systematic or rescue

fieldwork. The orientation to theoretical research and critical publication of the results has considerably advanced our knowledge over the past three decades, resulting in a new, more sober and objective image of Great Moravia and its central agglomerations.

The image of Great Moravian Mikulčice, discovered in 1954 (Fig. 51) and continually investigated archaeologically up to the present day, has developed due to the knowledge of the site and changes in the fieldwork management (see Excursus 2.2.1).<sup>1</sup> The years 1964, 1975, 1990 and 2004 can be identified as major milestones in the process. In 1964, the excavation of the last provable (tenth) church was the last find of masonry structures with rich cemeteries, which were the source of the most attractive discoveries. As a result, the research focused on a wide range of questions concerning the settlement development of the site. This meant that the gradually complemented settlement-archaeological image of the agglomeration could be progressively placed in context due to the extensive excavation of the stronghold's hinterland conducted in 1975.<sup>2</sup> A temporary interruption of the fieldwork in 1990 enabled the research team to focus on the basic processing and systematic publication of the previous (almost forty years long) continuous fieldwork in Mikulčice. Finally, the partial return “to the field” in 2004 took place under completely new conditions. The phase of “processing the source material and verifying the old research” was established to make fundamental progress with the assessment of the field documentation of selected features and areas excavated in the previous decades through critical processing of the material as well as new detailed (revision) fieldwork. This programme is still in effect to this day and also serves as a strategic plan for the near future.

The “Mikulčice – Kopčany agglomeration” is a relatively new term,<sup>3</sup> as the whole large-scale archaeological excavation in the second half of the last century was focused on investigating the Mikulčice stronghold itself, i.e. the fortified core of the settlement situated on the Czech side of the River Morava. Although some fieldwork around the duck farm building (Kačenáreň) and the Church of St Margaret of Antioch near Kopčany on the Slovak side of the river had already taken place in the 1960s, the uncovered Great Moravian structures were rarely put into context with the fortified core in Mikulčice. The exclusive centre of interest was the “Slavic stronghold in Mikulčice”. It was only the new excavations conducted in Kopčany at the very end of the last century and the important discoveries made there after 2004 that sparked interest in a complex solution of the issues within the framework of the entire agglomeration (see Excursus 2.2.3). This trend was strengthened



Fig. 51 Excavation of Church 2 in 1955.

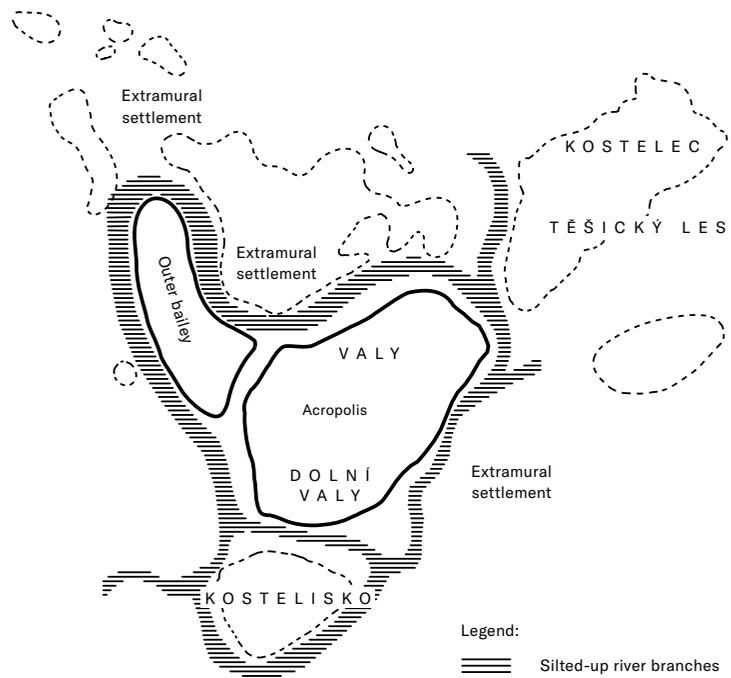
The photo captures the atmosphere of beginnings of discoveries in Mikulčice (from left: J. Pouлік, P. Ondráček, B. Novotný).

- 1 For the stages, processes and methods of the Mikulčice research, see Poláček – Marek 1995; Poláček 1996, 215–225; Poláček et al. 2014, 192–198.
- 2 Klanica 1987.
- 3 See Poláček – Mazuch – Baxa 2006.



Legend:

- Early medieval agglomeration
- Residential areas in Mikulčice and Kopčany
- Bodies of water and watercourses
- Territory outside the floodplain
- Riparian forest
- Notional border between the extramural settlement and the peripheral zone of the agglomeration



Legend:

- Silted-up river branches
- Fortification
- Settled areas in the extramural settlement

Fig. 52 Great Moravian agglomeration Mikulčice – Kopčany.

The fortified core of the agglomeration, the external boundary of the suburbium (circle 700 m around the centre of the agglomeration) and the natural external boundary of the periphery (floodplain delimitation) are marked. Schema of the stronghold settlement areas is included as well.

by the effort to establish the “Mikulčice – Kopčany Archaeopark” as the infrastructure for coordinating historic preservation and visitor presentation throughout the cross-border complex. The preparation of two (unsuccessful) serial nominations for the inclusion of the Slavic stronghold of Mikulčice and the Church of St Margaret of Antioch near Kopčany in the UNESCO World Heritage List in 2007 and 2013 also played a positive role in this effort.

The notion of the Great Moravian *Agglomeration Mikulčice – Kopčany* as part of the convention of present-day Mikulčice research incorporates three main settlement areas (Fig. 52):<sup>4</sup> (1) the fortified core of the agglomeration (the acropolis and the outer bailey), (2) the suburbium (“areas beneath the walls”; the neighbourhood of the stronghold at a distance of up to approximately 700 m from the centre of the agglomeration), and (3) the peripheral zone of the agglomeration (settled areas within the floodplain, i.e. a circle of up to approximately 3 km). The whole agglomeration was surrounded by the “economic hinterland”, which from the perspective of present-day research, represents occupation outside the floodplain, with its outer boundary formed by an imaginary circle of 10 km around the centre of the agglomeration.

The *Mikulčice-Valy Stronghold* is understood to be the fortified core and the suburbium (Fig. 53), i.e. the agglomeration zones situated on the Czech side of the River Morava. Significant characteristics of the power centre included fortification, finds of weapons and equestrian equipment, the presence of representation and sacral buildings, specialised craft workshops and the evidence of trade and general affluence. These are all of quality and in quantities exceeding the level of the material culture of most contemporary Moravian settlements.

The occupation was situated on several river islands separated by river branches. The individual parts of the agglomeration were connected by the main road that continued from a long-distance route that crossed the River Morava valley at this point.<sup>5</sup> The road crossed the floodplain at elevated places consisting of sand dunes, old levees and the remnants of terraces, while the river branches were crossed using fords or bridges. It entered the fortified core along wooden bridges leading into gates in the fortification wall of the outer bailey and the acropolis. From there, it ran through the inner areas of both fortified units, passing the most important buildings and cemeteries (see Essay 2.4 and its excursuses). No details are known concerning the road design; presumably, it took the form of a corduroy road in waterlogged places or was reinforced with stones and settlement waste.

Elevated areas were highly valued by the inhabitants of the stronghold, which was situated in a river valley with a high level of groundwater and endangered by floods and ground inversions. Sand dunes rising above the nearby river landscape provided the best living conditions (see Essay 2.1). This is where the most prestigious residential and representational complexes were founded. Sacral buildings and funeral complexes were intentionally situated in these “top” areas.<sup>6</sup> The most extensive and highest dune in the agglomeration complex – Valy (translated as ramparts) – gave its name to the whole stronghold: Mikulčice-Valy.

## Acropolis

The acropolis, the central fortified unit of the agglomeration with an area of 7.7 ha, is delimited today by a visible rampart, the remnant of a massive fortification wall. Well-documented 9th-century masonry structures are situated in the northern elevated part of the acropolis referred to as Valy. This part of the acropolis, covering an area of 4.8 ha, consists of a sand dune rising approximately 2 m above the present-day levelled landscape of the Mikulčice floodplain. In contrast, the lower-situated southern part of the acropolis named Dolní Valy is one of the lowest-lying complexes of the whole agglomeration and occupies an area of 2.9 ha. Both parts are together delimited by a still visible rampart enclosing the area, the remnant of the original Great Moravian fortification wall.

The most important masonry structures – the palace and at least four churches – were situated on the acropolis (sometimes referred to as a “princely castle”). Ditches, palisades or fences inside the acropolis delimited smaller units, especially the sacral complexes of churches and cemeteries, courts and other units whose extent and exact function cannot be determined. The acropolis was primarily the seat of members of the contemporary elite – the princely and magnate families, the clergy, servants, members of the warrior retinue or artisans working for the ruler such as fine-metal workers, jewellers, blacksmiths and possibly glassmakers and other professional workshops. The basic type of dwelling was a wooden log house with earthen floors, and in some cases, mortar floors.

The basic urbanistic element of the acropolis was the west-east main road, which connected its two main gates – the western and north-eastern. The most important structures were arranged along this road – churches and their sacral areas with cemeteries, the palace district, residential and other important buildings.

## Outer bailey

The elongated tongue-shaped outer bailey was connected to the acropolis on the western side and occupied an area of 2.4 ha. Its fortification, much more subtle compared to the wall of the acropolis, did not leave any visible traces in the terrain. The existence of the fortification was proven only by excavations. The outer bailey was situated on a gentle terrain wave from older flood loams and in the 9th century, it was surrounded by a meander of the river.

The outer bailey was a regularly and densely built-up residential area with high intensity of occupation. It lacked churches or cemeteries, and there is no evidence of more intensive craft production. Such a distinct form of a “residential” area has no comparable parallels among early medieval settlements in this country and the neighbourhood to date. The question is who resided at the outer bailey and what was the primary purpose of this complex. One possible interpretation, introduced by Josef Pouлік as long as half a century ago, is the seat of the prince’s warrior retinue.<sup>7</sup> Other hypotheses have appeared since although none have been convincing. Recent fieldwork in the central part of the outer bailey has shown that the archaeological record is not unified throughout the area – there might have been districts serving various groups of inhabitants for various purposes.

4 For the topography of the settlement areas of the Mikulčice stronghold and the agglomeration Mikulčice – Kopčany, see Poláček – Marek 1995, 14–19; 2005, 34–36; Baxa 2010; Poláček 2019a, 10–14.

5 Květ 1999, 224–225.

6 Poláček 2010, 35–42.

7 Pouлік 1975, 130–131.

What the entire outer bailey area has in common is a regular and dense building pattern of log houses built on sand-clay floor backfills (see Excursus 2.4.2). These regular - square or rectangular - floor backfills identify the layout of the original wooden houses; with rare exceptions, nothing has survived of their above-ground structures. The development of the outer bailey occupation was unusually dynamic: multiple stratifications of the floor backfills testify to repeated renovation and rebuilding of houses within a relatively short time (Fig. 81).

### Suburbium (extramural settlement)

The term suburbium denotes the settlement zone immediately surrounding the fortified core of the agglomeration.<sup>8</sup> The notional outer boundary of the suburbium is defined by conventional Mikulčice research as a circle with a diameter of 700 m around

8 For the new evaluation of the suburbium settlement, see Poláček et al. 2019.

the centre of the agglomeration (Fig. 52).<sup>9</sup> It was not a continuously inhabited area but rather eight independent settlement units scattered across the immediate vicinity of the acropolis and the outer bailey. The natural conditions of the particular place, the distance to it from the fortified centre and the main access roads evidently all influenced the selection of positions for these settlement areas. Elevated sand dunes (mainly Těšický les to the north-east and Kostelisko in the south) and the positions immediately adjacent to the fortified centre (the northern and south-western extramural settlements) were settled preferentially and to a large extent. Smaller residential areas along the access roads (the Štěpnice I dune and the eastern extramural settlement) also played their specific parts.

9 The main criterion when defining this boundary was the occurrence of the basic forms of dwelling as a manifestation of social differentiation of the population. Surface log houses are typical of the suburbium (as well as the acropolis and the outer bailey), whereas sunken dwellings - pithouses - represent the characteristic type of residential buildings beyond the boundary, in the peripheral zone of the agglomeration and in the economic hinterland (Poláček - Marek 2005, 34; Poláček 2019a, 10-12).



Fig. 53 Orthophotomap of the Mikulčice stronghold with a plan of the settlement areas.

Only two areas remain outside these structures: Church 10 west of the outer bailey, which lacks more distinct evidence of settlement, and the Žabník dune situated 500 m south-west of the presumed south-western gate of the acropolis.<sup>10</sup>

The earliest and longest-lasting occupation is documented on the two large sand dunes – Těšický les and Kostelisko. In contrast, settlements in less favourable positions, on flood loams in lower-lying parts of the suburbium, were only founded in the high and late phases of the Great Moravian occupation in the second half of the 9th and the early 10th centuries. The most extensive settlement of this type was situated on an area of about 5 ha in the northern suburbium. The conspicuous growth of occupation in the suburbium in the second half of the 9th century is connected with the flourishing and demographic growth of the whole agglomeration and that the ordinary settlement was being pushed out of the acropolis as large parts of it were occupied by newly founded churches with extensive cemeteries. The overall extent of occupation in the suburbium is estimated at 15 ha.<sup>11</sup>

The dwellings of craftsmen, farmers and other inhabitants ensuring the economic operation of the centre can be sought in the suburbium. Most evidence of specialised – smithery and fine-metalwork – production can be found in the northern extramural settlement (see Excursus 2.6.1); two more closely delimited districts of fine-metal production are documented in the upper parts of the sand dunes at Těšický les (the Kostelec area) and Kostelisko.<sup>12</sup> As for agricultural production, there is a remarkable concentration of grass scythe finds in the northern extramural settlement.<sup>13</sup> The area also differs from the others in the composition of animal bones, or more precisely, the meat consumption of its inhabitants.<sup>14</sup>

Five sacral buildings denoted as Churches 6–10 were situated in the suburbium. These are often regarded as parts of courts, representation, residential and economic units founded by the magnates close to the acropolis;<sup>15</sup> however, no such profane unit has been archaeologically evidenced yet. A definite opportunity for this was presented in recent years during the excavations in the areas of Štěpnice I and Těšický les (Churches 7 and 6; see Excursuses 2.4.3 and 2.4.4). Burials were widespread in the extramural settlements – especially on elevated dunes. There were churchyards and simple burial grounds, necropolis with luxuriously equipped graves as well as “poor” cemeteries. Numerous elite graves can be found on the cemeteries in the extramural settlements. However, the question that persists is where these privileged groups of society resided (on the acropolis, in the outer bailey, in the suburbium?) and how their residential buildings looked like.

### Peripheral zone of the agglomeration (periphery)

The peripheral zone of the agglomeration is an independent topographical (and probably also functional) component of the Mikulčice – Kopčany agglomeration newly defined in connection with the analysis of occupation in the wider neighbourhood of the stronghold. This represents a transition zone between the suburbium

and the economic hinterland.<sup>16</sup> Spatially, it is defined as a circle beyond the outer boundary of the suburbium up to the edge of the floodplain, i.e. to the first houses of the built-up parts of present-day Mikulčice and Kopčany (Fig. 52). While its characteristic buildings – sunken dwellings (pithouses) – already categorise this territory as the economic hinterland, the absence of grain pits, the presence of a church building in the case of Kopčany, and other features characterise it as part of the Great Moravian agglomeration. Besides several smaller dunes with evidence of occupation, it includes two large residential complexes: Mikulčice-Trapíkov on the Czech side (approximately 1 km from the fortified centre; see Excursus 2.9.1) and Kopčany – Za jazerom pri sv. Margite on the Slovak side of the agglomeration (approximately 2 km from the fortified core; see Excursus 2.2.3). As in the case of the suburbium, the main function of these settlements is thought to have been to ensure the economic operation of the centre including the redistribution of materials, food and trade commodities towards the centre. With certainty, this zone increasingly participated in the production of foodstuffs for the centre. Compared to Trapíkov, the occupation in Kopčany is more complex, with a marked representation of higher elites including the ecclesiastics, while the occupation also took longer. The evidence of economic activities is also more varied there, especially regarding the evidence of specialised production. Moreover, the Kopčany complex presumably played an important part in the distribution of building stone from quarries near Holíč and Skalica to Mikulčice and other sites. In this context, new hypotheses are proposed for the interpretation of the newly discovered economic court near the Church of St Margaret of Antioch: in Kopčany (see Excursus 2.2.3).

### Late 9th-century topography of the Great Moravian agglomeration

The above-mentioned topographic segmentation of the agglomeration and the corresponding settlement hierarchy into the fortified core, the suburbium and the periphery is a scheme based on the current level of research. We need to be aware of two facts: (1) this image does not have to correspond to the functional structuring of the agglomeration as it was understood within 9th-century living culture; (2) the segmentation concerns the state of the agglomeration in its peak phase, i.e. in the late 9th century. This phase was preceded by a long development of the continuous occupation of the place, which started in the late 8th century at the latest. The extent of the occupation was much smaller in the pre-Great Moravian phase, and the central settlement was only lightly – if at all – fortified. According to the latest research results, the construction of the massive fortification – the wall, which to a certain extent, characterises the Great Moravian power centre – did not take place until the second half of the 9th century. Therefore, a different pattern of occupation must be presumed, at least for the late 8th and the first half of the 9th centuries. Regrettably, its reliable mapping is limited by the absence of precise dating and the lack of solid chronological criteria in the material culture (see Excursus 2.2.2).

10 South-western gate of the acropolis has been documented by the geophysical survey (unpublished).

11 Poláček et al. 2019, 462.

12 Poláček 2008c, 280–282.

13 Poláček 2003, 614–618.

14 Chrzanowska – Krupska 2003, 110.

15 Poulik 1975, 129–130.

16 Hladík – Mazuch – Látková in press.

# Mikulčice Research Phases

– Lumír Poláček

The research in Mikulčice has been conducted continuously since 1954 by the Institute of Archaeology of the Czech/Czechoslovak Academy of Sciences in Brno when the site was discovered for the science and for the public by Josef Poulík. It includes not only fieldwork but also the post-excavation processes and further theoretical research. From the perspective of the share of the fieldwork, the 66 years can be divided into three phases (Fig. 54).<sup>1</sup>

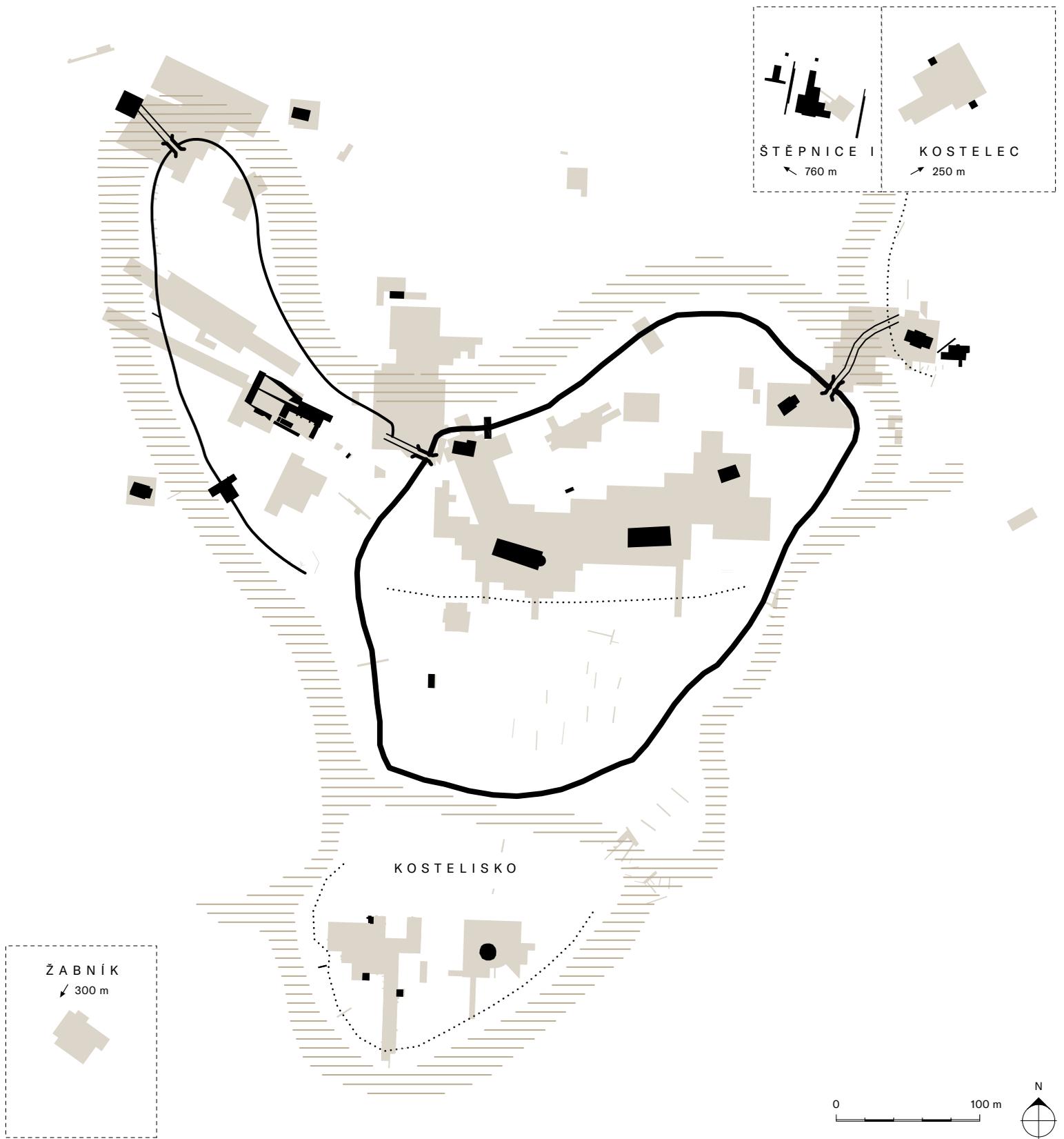
1. The “large-scale excavation phase, 1954–1992” is characterised by extensive fieldwork that took place continually for 38 seasons and uncovered an area of almost 5 ha. Above all, this phase is connected with the names of Josef Poulík and Zdeněk Klanica. The publication of the research results was limited to preliminary reports, theoretical articles and popular-science publications. Systematic processing, the publication of the source material and field documentation were rather exceptional.

2. The “processing phase, 1993–2003” was characterised by a temporary interruption of fieldwork and the inclination towards the systematic processing of the results of previous excavation seasons. New site information systems were built for this purpose, and basic guides to the entire 1954–1992 research phase were prepared.<sup>2</sup> The processing focused on the archaeological collection and selected topics of Mikulčice research. The results of this were published in the newly founded publication series – Studien zum Burgwall von Mikulčice and Internationale Tagungen in Mikulčice, while the Mikulčice-guide series was intended to popularise the research.

3. The “processing of source material and old research verifying phase” began in 2004 and continues today. The main objective of this phase is to considerably advance the processing of the documentation of the fieldwork carried out to date at the site. The outcomes of critical processing are gradually verified and complemented by new rescue and revision fieldwork. This has made it possible to re-examine and excellently document the many important discoveries made in the 1950s and 1960s including almost all the churches, the palace, the fortification of the acropolis and the outer bailey, the outer bailey buildings, etc.

<sup>1</sup> See Poláček – Marek 1995; Poláček 1996, 215–225; Poláček et al. 2014, 192–198.

<sup>2</sup> Poláček – Marek 1995; 2005.



- Fortification of the acropolis
- Fortification of the outer bailey
- Significant terrain boundaries
- Bridges with gates
- Silted-up river branches
- The area uncovered during the large-scale excavations between 1954 and 1992
- Areas excavated during the revision and supplementary excavations since 1993

Fig. 54 The extent of the areas excavated within the research phases 1 and 2 + 3 in Mikulčice.

# Settlement Development and Chronological Criteria

– Lumír Poláček

In its final late 9th century form, the Great Moravian stronghold Mikulčice-Valy represents a residential site that emerged through gradual development from a pre-Great Moravian central settlement. The residential complex changed its form and function during the late 8th century and throughout the 9th century. Sometime in the second half of the 9th century, the acropolis and the outer bailey were fortified by a wood-and-earth rampart with a stone front wall. The gradual construction of masonry buildings on the acropolis – the churches and the palace – is dated to approximately the same period; according to the latest discoveries, mostly in the last third of the 9th century. Some sacral buildings may have stood on the acropolis before it was permanently fortified. Be it as it may, the construction of the palace and the church buildings including their sacral districts in the existing built-up area of the acropolis represented a considerable structural change. The original buildings from this area and their inhabitants were moved to previously undeveloped land – the southern part of the acropolis (Dolní Valy) and the suburbium. It cannot be ruled out that the residential density of the outer bailey also increased, which may explain the unusual intensity of occupation in this secondary fortified unit. This was certainly a long-term and complex development, which today makes the search for potential ideological or construction models for the spatial structures of the Mikulčice stronghold more complicated. In contrast to the structures that emerged “at once” and according to particular models, as presumed for the Pohansko near Břeclav stronghold (see Excursus 2.1.3 and 2.4.5), the form of the Mikulčice agglomeration as a 9th-century urbanistic unit is unique. The Mosapurc/Zalavár site near Lake Balaton, Hungary, seems to be the closest to it in some respects (see Excursus 2.1.4).

The individual districts of the wider area of the stronghold were settled depending on their natural conditions. In this respect, we need to distinguish the elevated areas on the sand dunes (Valy in the northern part of the acropolis, and Těšický les and Kostelisko areas in the suburbium) from the lower-lying areas on flood loams (Dolní Valy in the southern part of the acropolis, the north-western, northern and eastern suburbium). The outer bailey complex situated on a slightly elevated older flood loam elevation held an extraordinary position.

The northern part of the acropolis, Valy, and the outer bailey represented areas with relatively long and very intensive occupation. The continuous occupation lasted there from the late 8th century until the early 10th century. The situation in the suburbium was different. Only elevated dune areas were occupied for longer, whereas lower flood loam positions show only relatively short-term occupation in the second half of the 9th century and early 10th century. The character of the occupation in the lower part of the acropolis, the Dolní Valy area, was also short-term. The intensity of the occupation of the acropolis and the outer bailey,

as documented in a simplified way by the quantity of the finds, for instance, is unparalleled to other Moravian early medieval sites.

The outer bailey and the northern part of the acropolis (Valy) formed an elevated crescent unit divided by a (natural?) moat.<sup>1</sup> This unit determined the layout of the pre-Great Moravian central, possibly slightly fortified settlement (Fig. 55: 1). The occupation did not exceed the extent of this unit until the second half of the 9th century when the new wall also fortified the lower position of Dolní Valy and when the occupation considerably spread into the neighbourhood of the acropolis in the suburbium. Some elite residential buildings and workshops probably moved to the Dolní Valy fortified area during the second half of the 9th century from areas in Valy that were newly occupied by sacral districts. Regular built-up areas discovered by geophysical surveys in the western part of Dolní Valy in 2011–2012 and evidence of production found during detector surveys in the eastern part of this complex in 2010–2011 testify to this process.<sup>2</sup> New residential units, the north-western, northern and eastern extramural settlements, were founded in the suburbium at that time, as was the residential unit linked to Church 7 on the Štěpnice I dune (see Excursus 2.4.3). This development resulted in the most extensive, peak form of the Great Moravian stronghold Mikulčice-Valy (Fig. 55: 2).

The occupation was reduced considerably after the downfall of the power centre in the early 10th century. For a brief period, it withdrew into the north-eastern part of the acropolis and smaller districts in the former suburbium (Fig. 55: 3).<sup>3</sup> This occupation, as well as the more fragmented and scattered 10th–13th-century occupation, was situated exclusively on elevated dunes (Fig. 55: 4).<sup>4</sup> After the Mikulčice floodplain began to be regularly flooded sometime in the 13th century, further human activities appeared repeatedly in the same elevated positions. Except for a minor 14th to 15th-century fortification resulting from the rebuilding of the Great Moravian Church 9 in Kostelisko, these occupations were of short-term character.<sup>5</sup>

The chronology of the Mikulčice agglomeration is based on a large number of finds that are traditionally considered relatively well-datable although this is significantly limited by the lack of exact chronological evidence. There are no reliable historical records concerning the site. Four coins dating to the second half of the 9th to the early 10th centuries found so far are of limited use to detailed chronology, as their links to the settlement’s stratigraphy is problematic.<sup>6</sup>

1 Klanica 1984, 145–146.

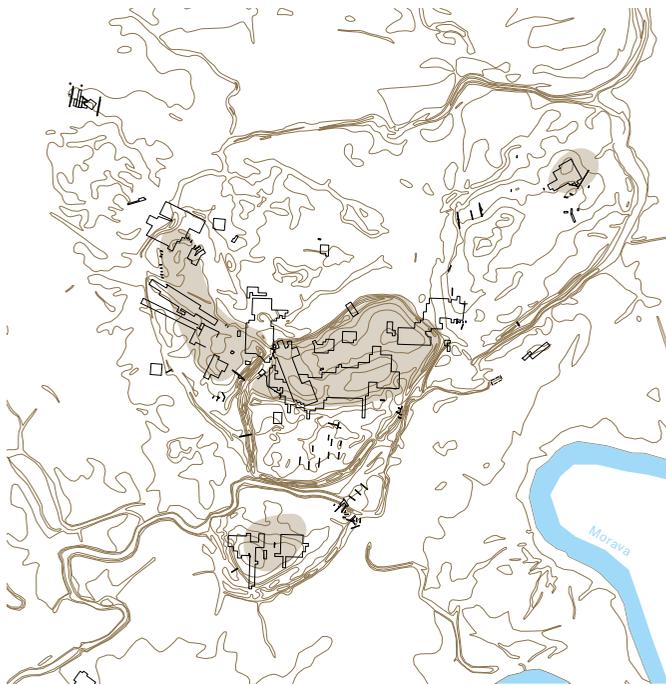
2 Unpublished.

3 Poláček 1999a; Poláček 2018c, 90–91.

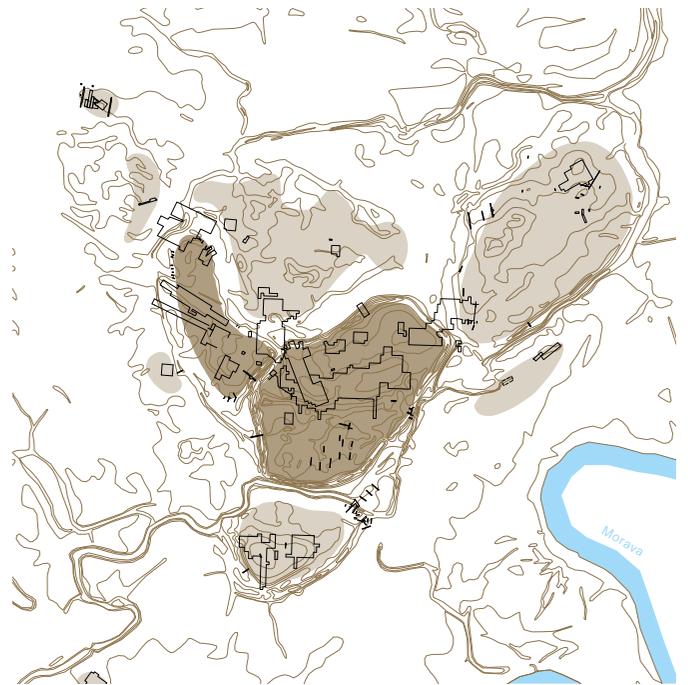
4 Poláček 1998, 153–154.

5 Poulik 1975, 114; Měřinský 1980, 58–59.

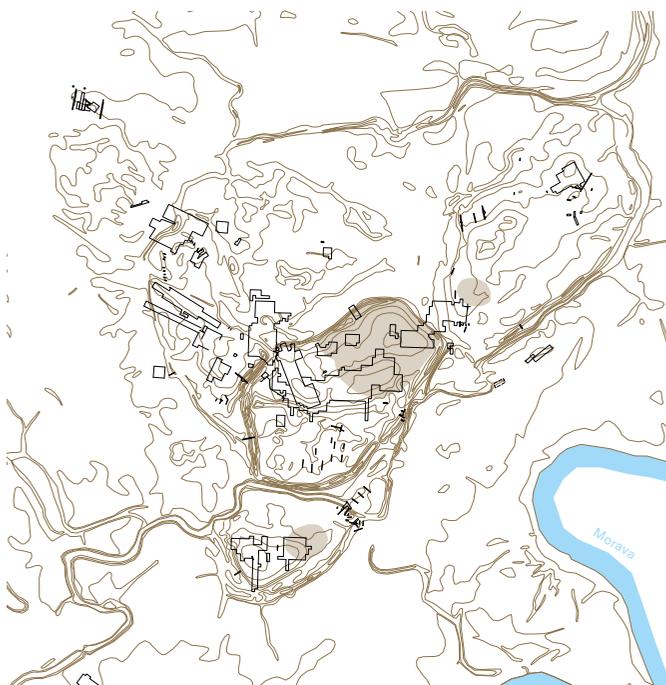
6 Kučerovská 1998; Poláček 1996, 247–250.



1



2



3



4

Fig. 55 Schematic map showing the settlement development in the area of the Mikulčice-Valy between the 8th and 13th centuries (hypothetical state).

1 – Late 8th and early 9th centuries; 2 – second half of the 9th and the beginning of the 10th century; 3 – late 10th century and the beginning (the first half) of the 11th century; 4 – mid-11th century to mid-13th century.

The much needed dendrochronological data has become more numerous in recent decades but, regrettably, only concerns wooden structures in former river branches around the stronghold. Moreover, this is mostly post quem data, since most of the dated pieces of wood lack outermost tree-rings (*Waldkante*).<sup>7</sup> No exact data has yet been obtained from the fortification or the stronghold's inner areas. An issue regarding the existing stratigraphy and chronology of Mikulčice is the insufficient distinguishing between settlement horizons represented by particular site contexts and the so-called find horizons, typologically defined horizons of material culture.

7 Dvorská et al. 1999; Rybníček – Kolář – Škojec 2014.

The most distinctive of the material culture horizons is the pre-Great Moravian horizon, which roughly corresponds to the earliest stratified settlement horizon on the unmade ground. This is primarily characterised by Avar bronzes and spurs with hooks (Fig. 56).<sup>8</sup> The late Great Moravian horizon is relatively unified in the archaeological material (Fig. 57) and is characterised by MCG pottery with typical grooved rim ends. This is “type 3” according to the old classification system of ceramics; more recently denoted as the “Mikulčice ceramic group” (see Excursus 3.10.1).<sup>9</sup> This pottery

is the most distinctive in the latest settlement horizon, comprising the dominant material content of the cultural layer across the stronghold. This late horizon of the second half of the 9th century is best perceptible in its “clear” form in areas that were occupied for a short time - the northern and eastern extramural settlements and the lower-lying, southern part of the acropolis.

Certain helplessness concerning the chronological specification of the material culture from the first half of the 9th century has manifested itself recently. A seemingly empty space remains after

8 Klanica 1995; Zábajník 2005; Poláček 2008e.  
9 Mazuch 2013; cf. Poláček 1995.

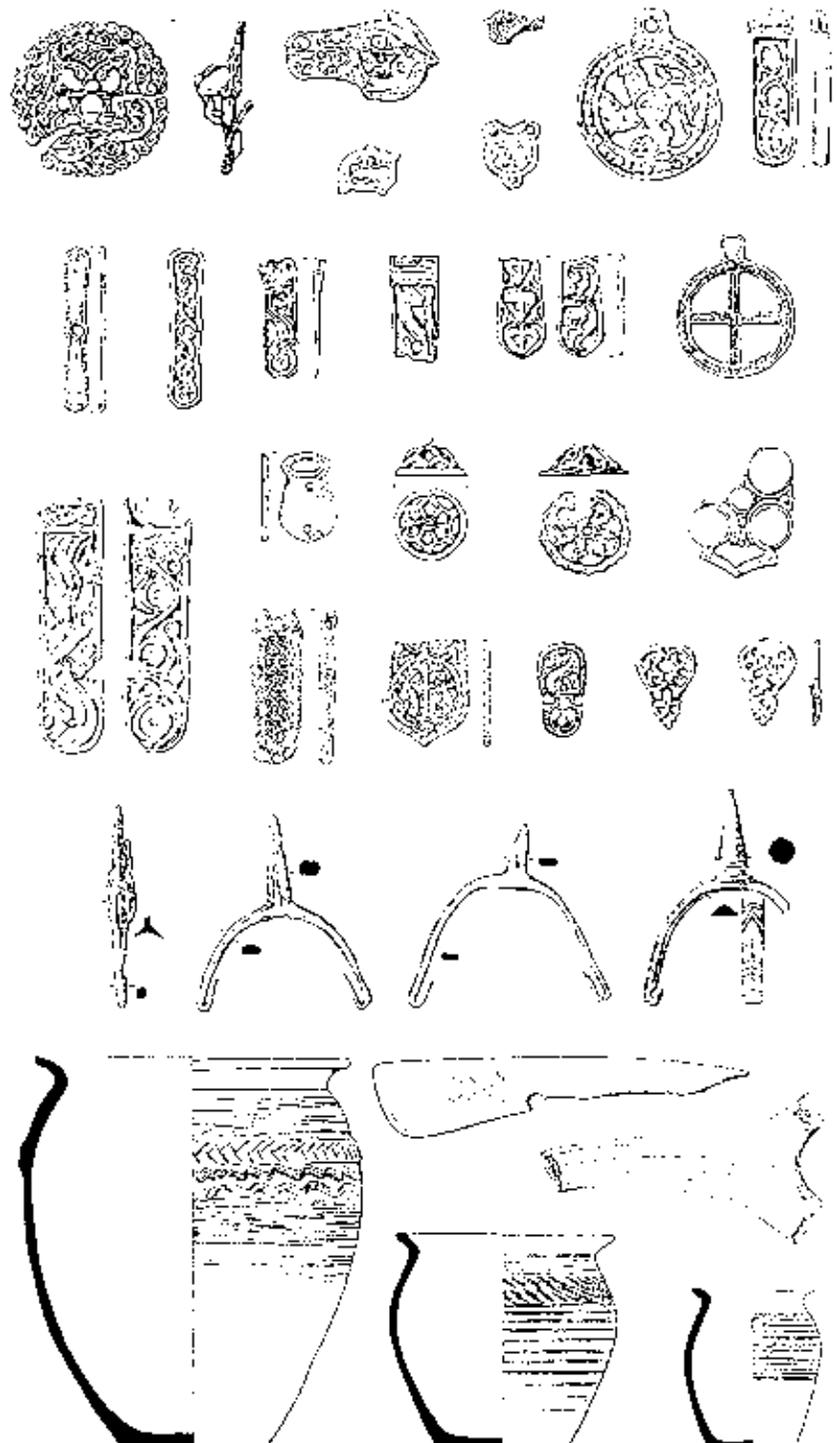


Fig. 56 Selection of characteristic finds from the pre-Great Moravian period.

the majority of scholars rejected the construct of the Mikulčice-Blatnica style (horizon),<sup>10</sup> which had precisely “filled” this period at Mikulčice and other sites. We lack clear chronological evidence in archaeological material in the form known for the pre-Great Moravian or high Great Moravian periods. Sometimes - unjustly - it gives the impression that there is no reliable evidence of occupation from the first half of the 9th century. In reality, we are only lacking distinctive material culture horizons for this period. In this situation, we need to emphasise that the most important

evidence of an uninterrupted development from the late 8th at least to the early 10th century is the archaeological situation of the Mikulčice-Valy site with a continuous stratigraphy in which later phases of occupation immediately follow earlier ones. There is no evidence of any occupational hiatus in Mikulčice. Naturally, we must reckon with the fact that part of the material content linked to the pre-Great Moravian period might still have been involved in the living culture in the first decades of the 9th century. However, this can hardly be reliably proven without exact dating evidence.<sup>11</sup>

10 Ungerman 2011b, 144.

11 Poláček 2018b, 308.

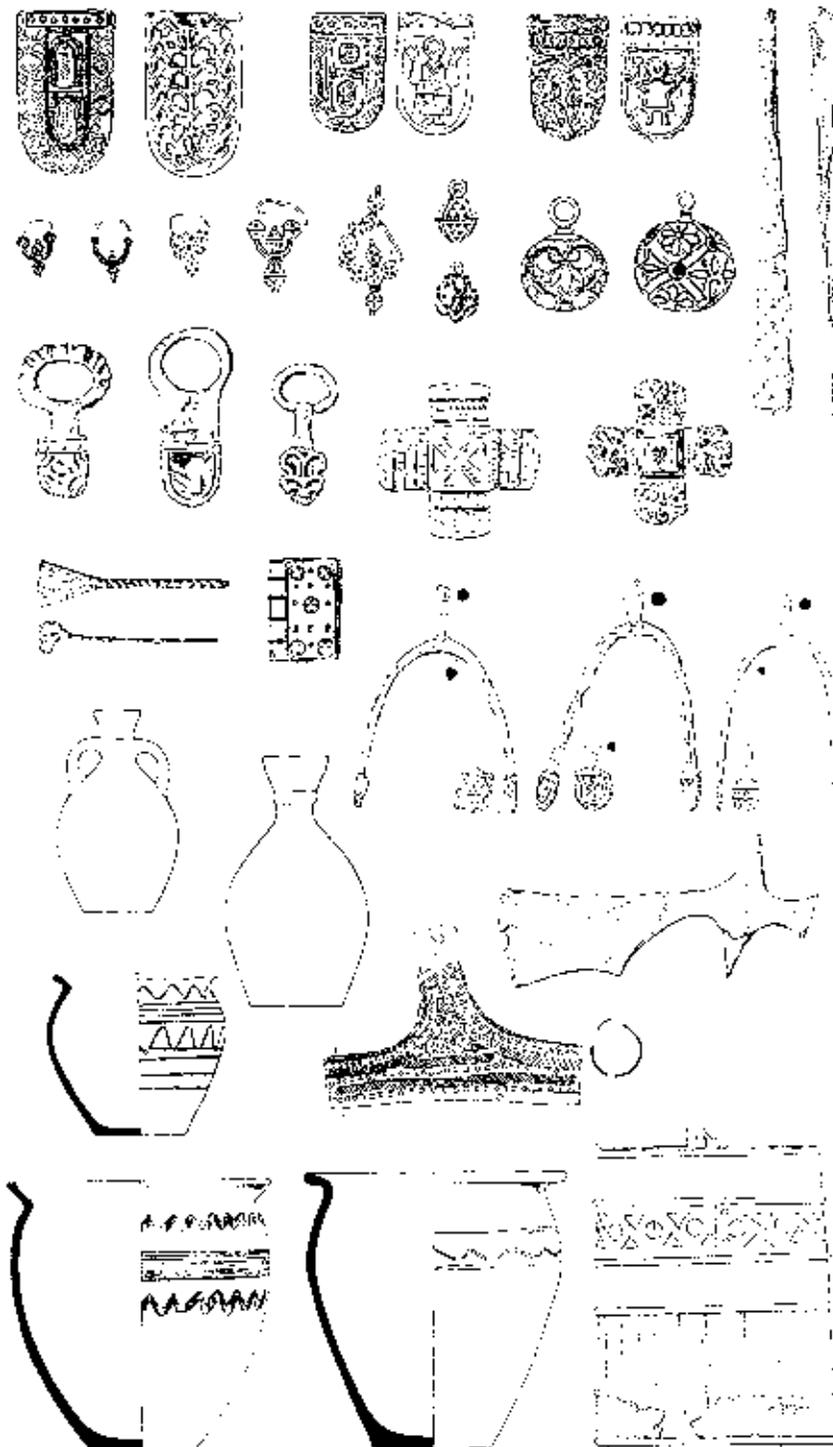


Fig. 57 Selection of characteristic finds from the Great Moravian period.

## 2.2.3 excursus

# Settlement Complex Za Jazerom pri Sv. Margite in Kopčany, Slovakia

— Peter Baxa

The main settlement complex on the present-day Slovak side, included in the 9th- to 10th-century agglomeration of Mikulčice – Kopčany, was the area called Za jazerom pri sv. Margite (Fig. 58).<sup>1</sup> This was a settlement stretching over the remains of the River Morava levees with an overall area of almost 13 ha. A road heading towards the north-eastern gate of the acropolis of the Mikulčice stronghold passed through it in the 9th century.

The first stage of archaeological excavations led by Ľudmila Kraskovská and Viera Vrábliková in the 1960s and 1970s focused primarily on the area near the Baroque duck farm building (Kačenáreň), and marginally on the immediate surroundings of the Church of St Margaret of Antioch.<sup>2</sup> The second stage of the research, implemented by the Monument Board of the Slovak Republic in Bratislava and led by Peter Baxa, took place in 1998–2014 and focused

1 Poláček – Mazuch – Baxa 2006.

2 Kraskovská 1965; 1969; Vrábliková 1969; 1970.

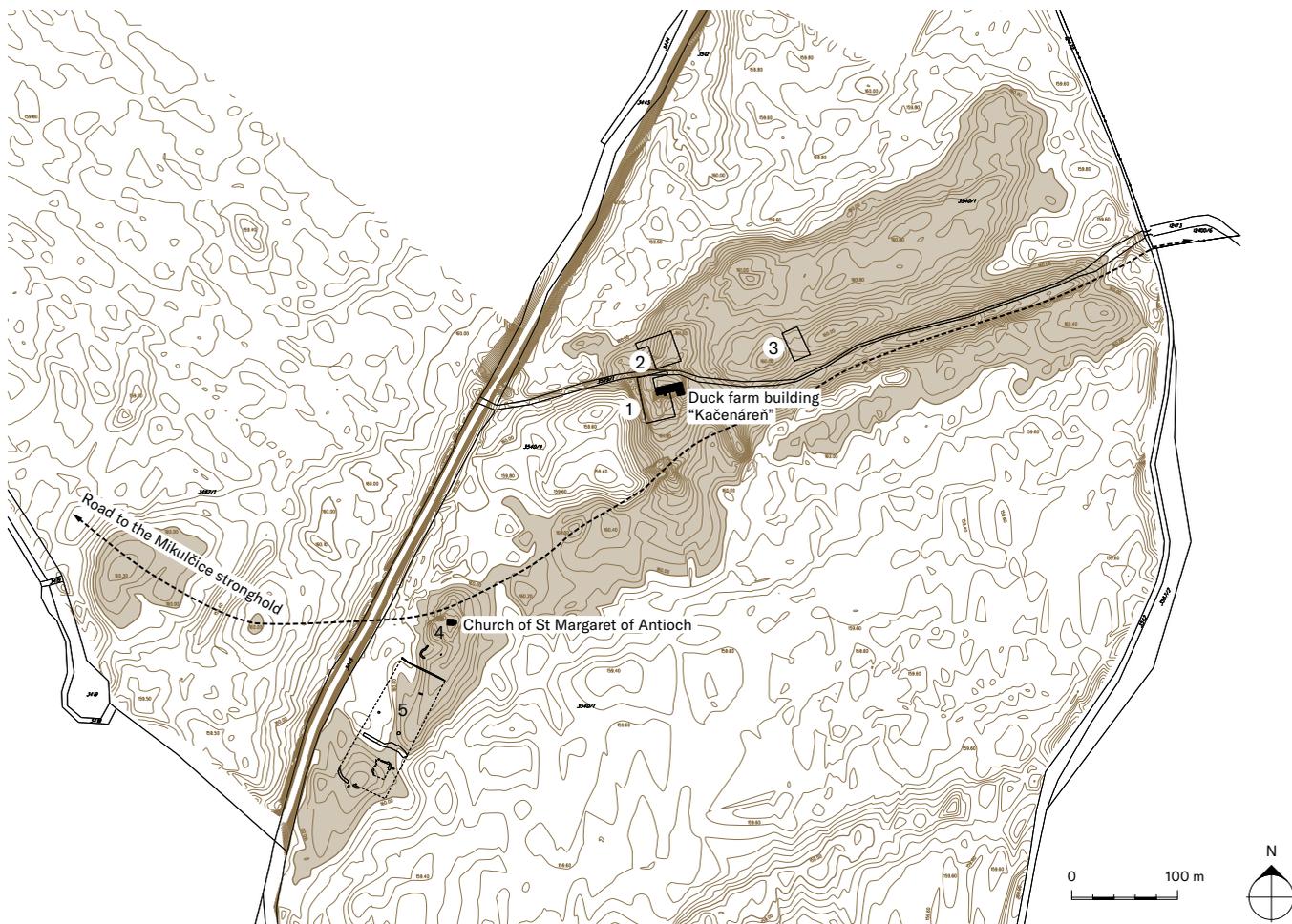


Fig. 58 Settlement complex Za jazerom pri sv. Margite in Kopčany.

1 – Kačenáreň (duck farm building), cemetery, 1961 excavation by L. Kraskovská;  
2 – Kačenáreň, part of the settlement with small cemeteries;  
3 – Kačenáreň, part of the settlement with a small cemetery; 4 – Church of St Margaret of Antioch with a cemetery; 5 – court. Areas situated over 160 m AMSL are marked in brown.

on a complex archaeological and historical building investigation of the Church of St Margaret of Antioch with an adjacent former cemetery and a court situated south of the church (Fig. 59)<sup>3</sup>.

Based on the archaeological record, we can now only roughly outline the development of occupation in the area of the sand levee called *Za jazerom pri sv. Margite*.<sup>4</sup> A cemetery and several earlier settlement features west of the *Kačenáreň* building were excavated in 1961. The area investigated in 1964 and 1969–1970 north of the duck farm building revealed a settlement with graves both contemporary with the settlement and from the final horizon of its existence. This suggests that there was a settlement just next to the early 9th-century cemetery, which was also partially used for burials in the second half of the 9th century. Moreover, part of the burials were placed in the settlement pits in a non-ritual manner.

A sacral district with the Church of St Margaret of Antioch is situated 300 m south-west of the *Kačenáreň* building. A comprehensive investigation of the still-standing church structure conducted in 1998–2008 proved the pre-Romanesque age of its oldest construction phase with likely dating to the second half of the 9th century.<sup>5</sup> We could say this is another “*Mikulčice*” church – the thirteenth one. Its layout indicates that it belongs to the group of churches with a rectangular presbytery, along with Churches 2, 5, 8 and 10 in *Mikulčice*. However, one feature is substantially different: there is a west narthex with a masonry tomb under the floor (regrettably, recently disturbed – without evidence of the burial). We can assume that it was the grave of an important person of a secular or ecclesiastical origin (the founder of the church?). Sixty-six more burials from the 11th to 17th/18th centuries were excavated in the interior of the nave. The church was also surrounded by the cemetery used from the 9th to 17th/18th century. The earliest graves were so heavily damaged by later burials that only one completely preserved earlier grave is available to this day with the remaining six being mere torsos.<sup>6</sup> The graves were arranged in rows next to each other, evidently respecting the church building. The earliest phase of burying in this cemetery probably falls into the second half of the 9th century.

3 Baxa et al. 2004; 2005.  
 4 Baxa 2010.  
 5 Baxa et al. 2004.  
 6 Baxa et al. 2005.

The occupation near the Church of St Margaret of Antioch is primarily known from surface artefact surveys and the results of non-destructive research. In 2007, an aerial survey identified an enclosed two-part complex south of the church. Test trenching in 2014 proved its dating to the 9th–10th century and interpreted the complex as a court, which was most probably inspired by economic courts – the so-called *curtis* – of the Carolingian milieu.<sup>7</sup> The study of the occupational development of the *Za jazerom pri sv. Margite* area at this point only provides a preliminary image: a guard settlement with the cemetery was founded in the upper part of the area sometime during the 9th century. Later, a church with another cemetery and a related two-part economic complex – a magnate’s court – located south of the church was built in a lower, peripheral part. The existence of the church in the 9th and first half of the 10th century is primarily evidenced by burials outside the church – near the south wall of the nave and the narthex. Their grave goods demonstrate close relations to the elite milieu of the fortified centre of *Mikulčice-Valy*. Due to its position and function, the entire *Za jazerom pri sv. Margite* area belongs to the “peripheral zone” of the *Mikulčice – Kopčany* agglomeration. From the other known peripheral settlements of the agglomeration, this area differs by the parallel existence of the earlier community area and a new urban concept with building technologies and art originating in the Christian Carolingian milieu.

7 Baxa – Maříková-Kubková 2017.

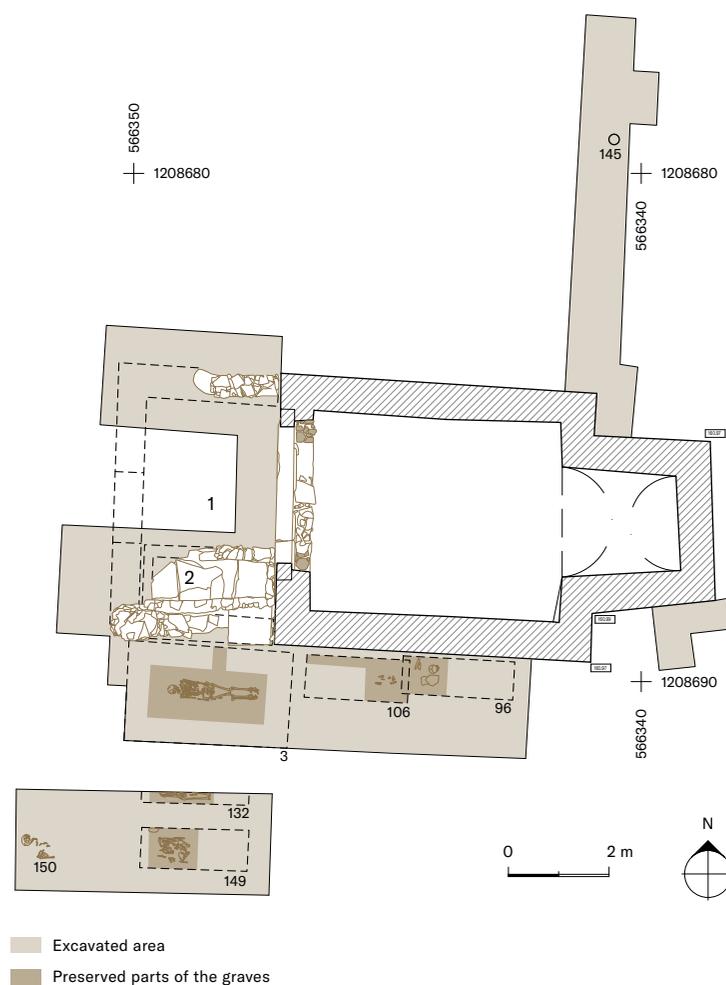


Fig. 59 Church of St Margaret of Antioch near Kopčany with excavated part of the cemetery and earlier graves marked (9th to the first half of the 10th century).

1 – Archaeologically documented narthex; 2 – remains of masonry tomb.



Rescue excavation of the outer bailey fortification in the area R 2018. The control profiles are oriented perpendicular to the course of the fortification. Right: the rear of the rampart with the settlement behind; middle: the remains of stone construction in the front of the rampart, left: a silted-up riverbed.

## 2.3

# Island Stronghold

– Marian Mazuch, Marek Hladik

The fortified power centres of Great Moravia are a unique phenomenon within contemporary Europe understood to have existed as part of a network of similar settlements established by the Western Slavs during the 9th century.<sup>1</sup> However, the political structure that led to their creation is unclear. It is perhaps most useful to think of these sites as representing a kind of early state system, one that, due to historical circumstances resulting in its relatively abrupt end, failed to transition into a polity we might categorise a medieval state, principality or kingdom.

The Czech terms used to denote an enclosed space – *hradisko* or *hrad*, meaning “hillfort” or “castle” – originate from the Old Slavic word *grad*, still widely used in an almost unchanged form in many Slavic languages. This age-old term for an enclosed settlement is an identifiable feature common to the very beginnings of the Slavic tradition, not unlike the majority of historical ethnic groups. What is interesting is that, initially, following the Slavic migration to Central Europe, the region of Great Moravia came to be characterised by the absence of any fortified settlements. They were rather the result of a longer process of social and political development, a period of consolidation necessitating the construction of large-scale and demanding fortifications. Their construction was likely motivated by a military threat, either from the Franks or the Old Hungarians (Magyars). Unfortunately, precisely dating the transition of the earlier “simple” settlements to their more advanced fortified power centres has proved problematic. What we do know for certain is that these centres did exist in the 9th and early 10th century. In relation to the more detailed circumstances of how they came to be built, no specific written sources are available. All we have to go on are the traces of human activity provided by the archaeological record. We will use this data as the basis for our following theories in order to better understand how and why the people of the time thought and acted.

### Fortifications as a military and political inevitability

The construction of fortified settlements is a practice dating to prehistoric and ancient times. But why were they built? Primarily, in response to the need to create a border to prevent enemy attacks, thus protecting members of the community, their homes and the general area in which they lived, as well as safeguarding material valuables and possessions. Various forms and types of fortified centres can be found in almost every period throughout history. The Celtic *oppida* are probably most similar to the specific form of Slavic fortified settlement, characterised by massive and relatively extensive fortifications functioning as a main centre.

Within the core territory of Great Moravia alone, dozens of fortified settlements have been identified. Of those to have undergone small-scale excavations, such as trial trenching, we are unable to precisely determine their inner structure or purpose.<sup>2</sup> In general, though, the Great Moravian fortified settlements are highly diverse, differing in size, shape and position in the landscape. In addition to the so-called “highland hillforts”, which were situated on hills and thus naturally well protected, a distinct group of fortified centres were built on river floodplains. These lowland (floodplain) strongholds occupied slightly elevated positions on islands between river branches, a feature observed at the three most important Great Moravian agglomerations of Mikulčice, Staré Město – Uherské Hradiště and Pohansko near Břeclav. These are the most well known of the central agglomerations, where archaeological excavations have been carried out continuously since the 1950s.

Archaeology is the only means we have of understanding the background to the fortifications of the Great Moravian centres. The written sources from the period – attributed to authors representing the Frankish Empire, the then enemy and rival of Great Moravia – offer scant mention of any fortified settlements. And even then, the few references we do have are largely figurative, mainly noting the unusual or “ineffable” character of the fortifications.<sup>3</sup>

The two most comprehensively excavated Great Moravian fortified settlements – Mikulčice and Pohansko near Břeclav – are characterised by a central area completely surrounded by a massive defensive wall (also referred to as a rampart). Both sites share a common layout and construction, pointing to the use of similar techniques and building materials (see Excursus 2.3.4). While Pohansko comprised a very large fortified settlement (28 ha), Mikulčice was a complex consisting of two fortified parts – an acropolis (6 ha) and outer bailey (3 ha). Covering the largest area, the agglomeration at Staré Město – Uherské Hradiště was made up of settlements positioned far apart from each other. However, despite some exceptions, no archaeological evidence of fortifications resembling the traditional Great Moravian-type rampart has been found there.<sup>4</sup> It seems that ambitious plans had been put in place to make it the principle stronghold of Great Moravia. But any such designs were thwarted from the very start following the sudden end of the entire political unit, with only the first part of the fortification ever constructed.<sup>5</sup>

1 For a general overview, see e.g. Brachmann 1987; 1993; Procházka 2009, 19–85, incl. ref.

2 For a general overview, see e.g. Staňa 1985; Procházka 2009, incl. ref.

3 “...in illam ineffabilem Rastizi munitionem et omnibus antiquissimis dissimilem”, Ann Fuld. 1891, AD 869, 69; Annals of Fulda 1992, AD 869, 60.

4 Galuška 2006.

5 Cf. a “geographic model” charting the development of the primary Great Moravian centres in the Middle Morava River valley, see Poláček 2001a, 320–321.

We do not know exactly how the functions of the primary centres differed. However, archaeological and historical indications suggest that these fortified settlements served not only as centres for the strategic defence of their respective territories, but also offered protection for the people living there by providing a so-called *refugium* (i.e. a place of refuge) in the event of an attack. They also operated as important economic centres, provided food and other services for privileged members of society, and served as key nodes along local and long-distance trade routes. The characteristic defensive wall particularly protected members of the elites, the bearers of political and administrative power, demarcating their physical residences. Last but not least, the fortified settlements were also used as centres for ecclesiastical organisations, the main pillars of the newly spreading religion – Christianity.

In the case of Mikulčice, we know that the settlement there played an important central role even before its fortifications were built. But again, it is difficult to precisely specify why and when plans were made to build a strong defensive wall to fortify the centre. Nevertheless, it must have represented an important political decision, the prerogative of the ruler of the time, and likely approved by the highest-ranking elites in the country. According to the written sources, this “assembly” would have played a part in major decisions of this kind, constituting either a kind of predecessor of an executive government or a council of advisors made up of the most prominent nobles, something like a precursor of the medieval high nobility.

#### From the early discoveries to modern research in Mikulčice

Were it not for the archaeological park located within its ancient grounds, nowadays the casual visitor would hardly guess that more than thousand years ago between the meadows of Štěpnice and the edge of the riparian forest at the site known as Valy (translated as ramparts), there used to stand an impressive stronghold protected by river branches and surrounded by a densely built-up extramural settlement (i.e. suburbium). The channels of the River Morava gradually silted up after the centre ceased to exist, while recurrent flooding during the Late Middle Ages and in modern times levelled the terrain almost to a plain. The entire landscape was gradually enveloped by meadows and riparian forest, leaving no traces of the former wooden and stone buildings on the surface area of the site. The only remaining visible evidence of the existing Great Moravian stronghold is a 2–3 m elevation of terrain representing the former rampart, a relic of the destroyed defensive wall that would have surrounded the main fortified area, the acropolis.

Despite the extensive and ongoing excavations at Mikulčice, only three locations in the defensive wall of the acropolis have been researched in sufficient detail (Fig. 60). At the very outset of the initial excavations carried out between the years 1955 and 1959, the foundations of Church 2 and an adjacent burial ground were discovered (Fig. 61). The inner part of the defensive wall was found essentially by accident at the edge of the cemetery, which ends immediately behind the rear of the wall. Between the years 1963 and 1964, trial trenching was employed for a second time to survey the defensive wall in the northern part of the acropolis. In this area, researchers managed to identify what is probably one of the best-preserved sections of the defensive wall. In the late 1970s and early 1980s, a large-scale excavation was conducted of the north-eastern gate of the acropolis adjacent to the fortification.

Work on the first of these “old”<sup>6</sup> excavations – the fortification by Church 2 – resumed recently, leading to the revision of previous findings (Fig. 61).<sup>7</sup> Based on the results of this revision excavation (R 2012-I and II), we can now reliably reconstruct the manner in which the acropolis fortification was built and what it may have looked like (see Excursus 2.3.2).

The excavations of the outer bailey fortification followed a similar course (Fig. 60). Unlike at the acropolis, no distinctive visible terrain relics of the fortification have been preserved. The sole clues to its development lie in the subtle configuration of the terrain, and thus the aim of the first phase of trial trenching in the early 1960s was to chart the likely scope of the fortification. To gain a more detailed understanding of the structure and chronology of the defensive wall, the first phase of fieldwork was followed up by further, more thorough excavations. The most extensive part of the fortification was uncovered during large-scale excavations of the former river channel at the site of Bridge 1 in front of the outer bailey’s north-western gate. Revision excavations of the same sites carried out in 2012 (R 2012-III) have now prompted us to re-evaluate initial hypotheses about how the defensive wall was constructed.<sup>8</sup> The most recent excavation was carried out in 2018 at the south-western part of the outer bailey fortification (R 2018; see Excursus 2.3.3). Both revision excavations deliver new important findings on the construction and development of the bailey fortification, revealing differences at various points around the perimeter, particularly between the northern (R 2012-III) and south-western sections of the defensive wall (R 2018).

#### The Mikulčice fortification as the major construction and social project of the era

##### *Defensive wall (rampart)*

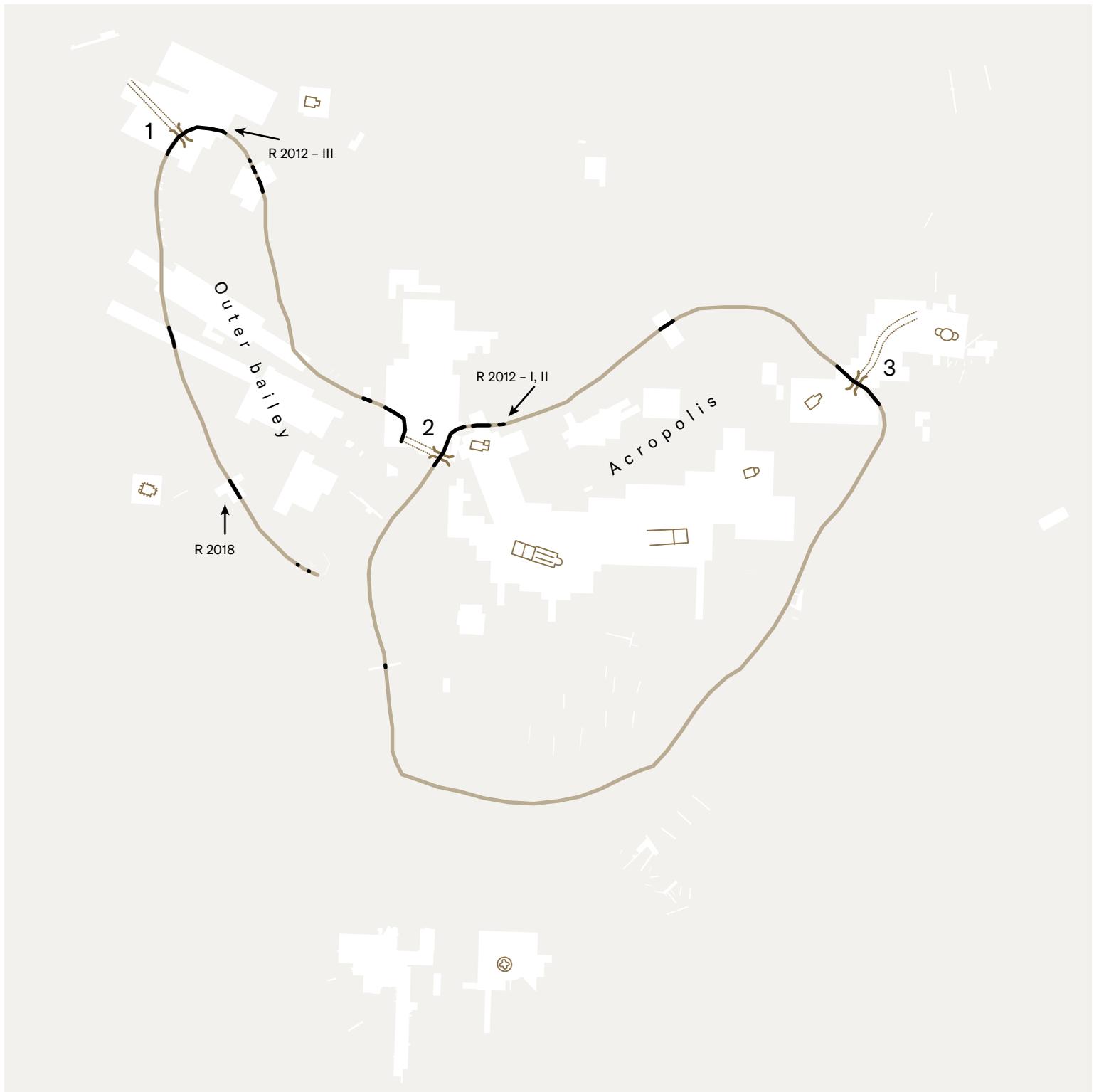
The Great Moravian defensive wall at Mikulčice is a typical Slavic rampart. Consisting of a front stone wall, it was supported by a massive wood-and-earth core comprising a several metres high clay embankment interspersed with wood. The wooden wall securing the rear of the structure from the settlement side was supported by thick slanting posts. These posts helped to hold the wall together and reduce pressure, thus preventing the core from collapsing inside the stronghold. The wooden sections of the wood-and-earth core of the rampart were attached both to the front stone wall and to the rear wooden wall, functioning as a type of “self-locking” structure (see Excursus 2.3.1).

The defensive wall at Mikulčice is notable for a signature element, a stone substructure situated both in front of and below the front stone wall. This would have served as a kind of “underpinning wall” reinforced from the front side by multiple rows of wooden stakes driven into the ground in close proximity to each other, much like a palisade. Built during the first part of the fortification, this structure would have formed a solid foundation together with the clay embankment, helping to level the ground for the construction of the defensive wall itself. We also know the defensive wall was placed not on the very edge of the raised plateau of the river island,

6 Referring to the first phase of “large-scale excavations” in Mikulčice between 1954–1992, see Excursus 2.2.1.

7 Mazuch 2014; cf. Poulik 1957, 250–252.

8 Hladík et al. 2014a; cf. Klanica 1986a, 184–186, Fig. 61.



Legend:

- Fortification of the acropolis and the outer bailey
- Excavated parts of the fortification

- Bridges with gates
- Excavated areas 1954–2020

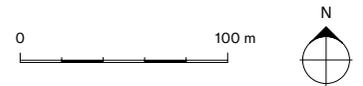


Fig. 60 Plan of Mikulčice stronghold; excavated areas in 1954–2020.  
 All excavations of the fortification (R 2012-I and II; R 2012-III; R 2018), bridges and gates (Nos. 1–3) mentioned in the text are marked.

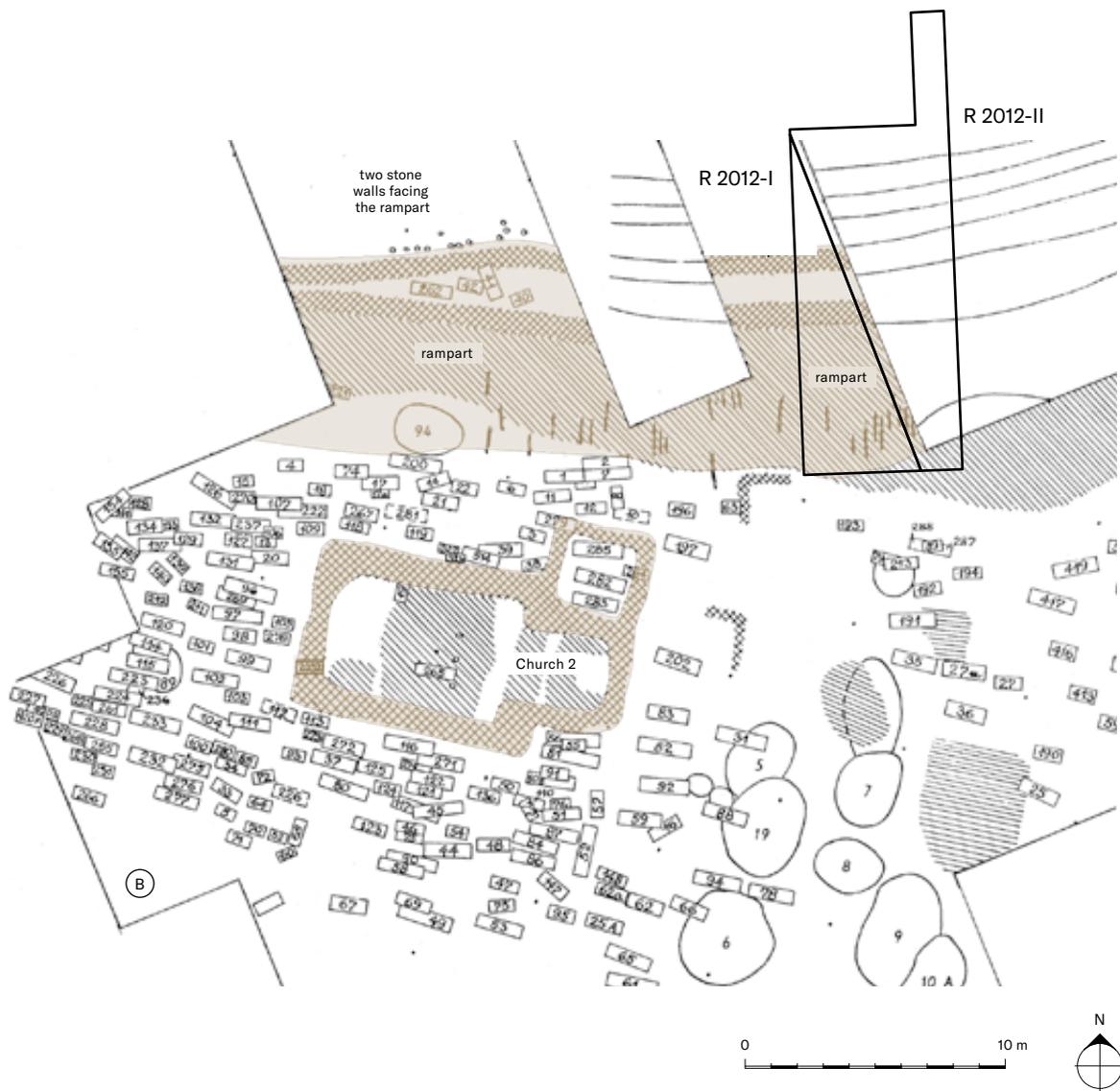


Fig. 61 Detailed location of the excavation R 2012-I and II in relation to the excavated area of Church 2 (1955-1959). For the eastern profile of area R 2012-II, see Fig. 65.

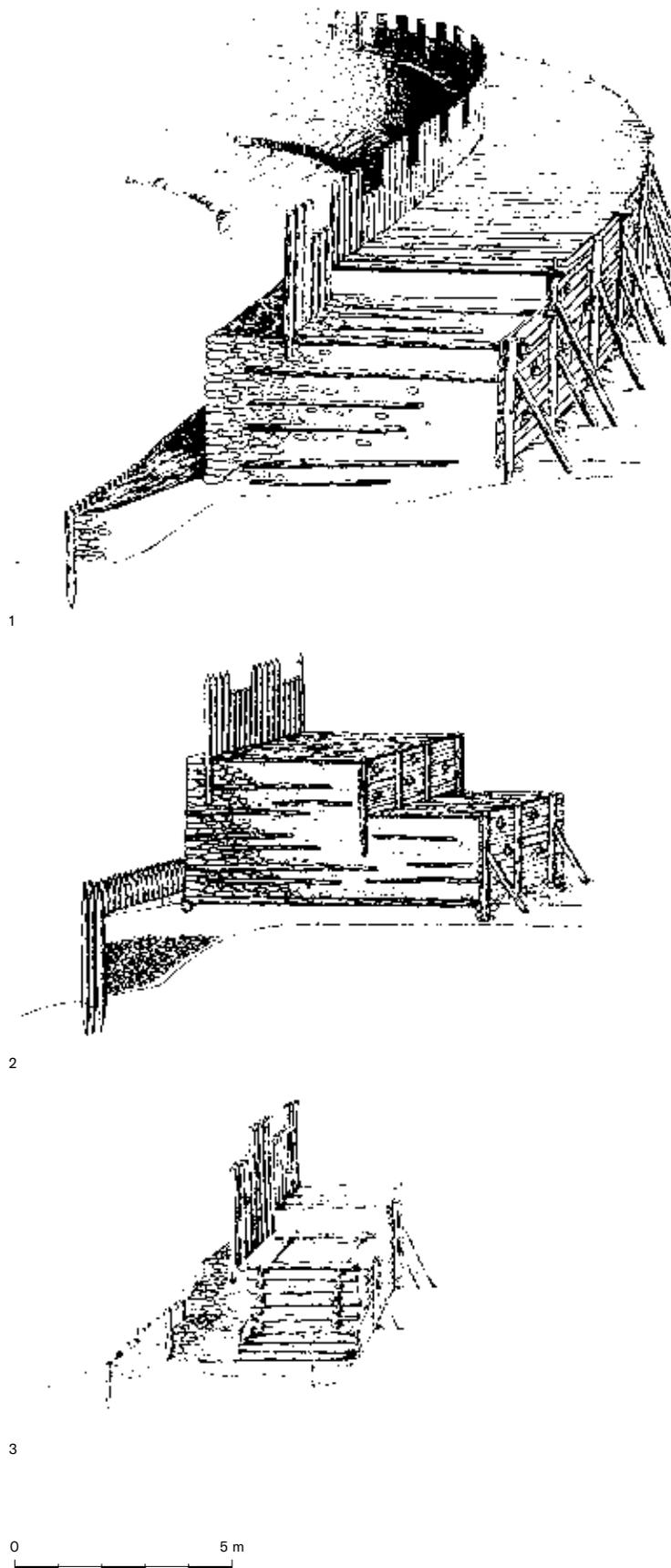


Fig. 62 Ideal reconstructions of the Mikulčice fortification. Different variants of rampart reconstruction of acropolis (1, 2) and outer bailey (3).

1 – According to R. Procházka and R. Skopal; 2 – according to L. Poláček and R. Skopal; 3 – according to M. Hladík.

but on the slope of the riverbank. Only after the terrain had been levelled in this way would the first wooden beams/panels together with the first row of the future stone wall have been laid.

Due to natural erosion of the structure as well intentional dismantling of the stone wall, it is now very difficult to reconstruct what the fortification wall originally looked like. It is also possible that the rampart was not built in the same manner all along its length, with construction work near the gates evidently of a higher quality than at other sections. Complicating matters further, although we have a relatively reliable estimate of the width of the defensive wall, we can only speculate as to its original height. This has led to a number of variant reconstructions of the fortifications (Fig. 62). It has also been proven that the defensive wall of the outer bailey was a considerably more subtle construction than that of the acropolis.

The archaeological research indicates that, on average, the typical Great Moravian defensive wall would have been 4–7 m wide (including the front wall, which was some 1 m thick) and probably around 3–4 m high.<sup>9</sup> Based on these measurements, the acropolis fortification at Mikulčice with its total width of approximately 7 m (2–3 m of which comprised the front stone wall) may be considered above the average, and the outer bailey fortification with its total width of between 3.5 and a maximum of 4 m (with a front stone wall no more than 1 m in width) below the average.

At any rate, even an average wall would have presented a massive barrier to invaders in the 9th century. But the enormous dimensions of the Mikulčice wall reflect not only strategic considerations; in practical terms, such a large structure would need to have been stabilised in order to support itself and remain a compact unit for as long as possible. It is also tempting to conjecture that these “outsized” dimensions were one of the reasons Great Moravia’s westerly neighbours, the Franks, an empire boasting a far more developed culture, considered the fortification “ineffable”.<sup>10</sup>

### Gates and bridges

While gates were an essential and important element of every fortification, they were also the weakest. Technically speaking, a gateway breaks the integrity of a defensive wall by creating a passage through it. As was the practice in later centuries, a stone gate would have been subsequently fitted into the passage. In the case of Great Moravia, however, gates were made entirely out of wood.

At three locations in Mikulčice, the main route to the settlement agglomeration passed through the fortifications, making the passages necessary; however, we assume there were, in all likelihood, more gates. Based on the most recent research, relics of the gates in all three cases have been poorly preserved. Not only that, old excavations were hampered by certain methodological and technical failings. Although the gates were definitely protected and guarded, serving as a point of entry where people would have been checked passing through (especially persons entering the enclosed space), they undoubtedly represented exposed points on the route throughout their existence and afterwards. At the very least, these disruptions in the circuit of the defences provided the easiest way

<sup>9</sup> Procházka 2009, 281.

<sup>10</sup> See Footnote 3.

of accessing the complex long after the end of the former fortified centre, perhaps explaining the scarcity of archaeological traces in gate areas.

Practically the only gate in Mikulčice whose construction we are able to describe in detail is the north-eastern gate of the acropolis in front of Bridge 3. Both sides of the passageway through the gate, arranged perpendicular to the defensive wall, were lined with a flush stone wall. The width of this gap in the fortification, into which a wooden gate was fitted, i.e. from one flush stone wall to the other, was 5.6 to 5.7 m. The postholes in which the columns supporting the wooden structure were originally placed indicate that the gate was shorter than the total depth of the passage demarcated by the facing walls. Its outer façade was positioned around 2.6 m inwards compared to the front of the defensive wall. From the other side, the gate would have faced the rear of the fortification. This meant that the gate was roughly square-shaped, the passage being around 4.5 m wide and some 4 m deep (longitudinally to the passage axis). The gate was evidently a simple frontal-type structure with a wooden tower built onto it. A wooden bridge directly connected the passage through the fortification approached from the front side.<sup>11</sup>

At Mikulčice, the wooden bridges together with the gates functioned as a single communication and defensive element. Passages through the walls at all three gates opened out onto bridges.<sup>12</sup> From our archaeological analysis of the preserved remnants of pillars driven into the riverbed, in all three cases the bridges were wooden structures, with the length of each bridge ranging from 30 to 50 m. Based on the layout of the preserved wooden pillars and the clearance of the gate passages, we assume the bridges to have been around 3–5 m wide. The state in which the bridges have been preserved unfortunately does not allow us to definitively reconstruct the details of their construction. But judging from their arched structure, the bridges at Mikulčice seem to be a continuation of the building traditions of the Celts and Romans. Based on dendrochronological dating of the bridge pillars, we know they were constructed around the middle of the 9th century and rebuilt several times during the course of their existence.

### The formation and demise of the Mikulčice fortification: key events in the development of the power centre

Both early and more recent excavations attest to one undeniable fact: a major settlement existed in Mikulčice before the construction of its fortification, a massive wood-and-earth defensive wall comprising a front stone wall and rear wooden wall typical of Great Moravian fortified settlements. At a number of excavation sites, a layer below the core of the defensive wall was found, confirming the activities of a settled population that precede the construction of the fortification. Interestingly, certain parts of the clay embankment in the core of the defensive wall were found to contain secondary waste from an earlier settlement understood to have existed in the immediate vicinity. We also have to allow for the possibility, despite the absence of reliable proof, that this massive wall was predated by a different, perhaps smaller or simpler fortification structure, such as a wooden palisade. Nor can we completely rule out the idea that the construction of the new defensive wall erased all traces

of that simple structure. On top of that, there may potentially be undiscovered evidence of a previous, less complex fortification in certain areas of the site yet to be excavated.

A revealing sentence from the Frankish chronicles, the *Annales Fuldenses*, alluding to the indescribable and incomparable stronghold of Rostislav, “quite unlike any built in older times”,<sup>13</sup> suggests it was not until the end of the 860s that, while laying siege to perhaps the Mikulčice fortification itself, the Frankish army was confronted with such a massive wall for the very first time, at least on a Slavic territory in the Danube region.<sup>14</sup>

Our theories of how fortifications like those at Mikulčice were built are far from perfect. However, it is clear that the building work must have been organised at the instigation of the ruler or the very highest-ranking social elites of the time. It was definitely a highly demanding task requiring organisation, equipment and skilled labour, and likely overseen by a supervisor charged with planning, measuring and managing the entire project. Some of the workers must have been deployed to assemble materials (see Excursus 2.3.4), leaving others to work on the construction site itself. Quite aside from that, all of those employed would need to have been fed and housed.

It is difficult to estimate the number of people involved in the construction of the defensive wall, or the time taken to build such a fortification. To ascertain some idea of how many people were needed to build, maintain and defend it, we must consult a wholly unique historical Anglo-Saxon source written in the early 10th century, the *Burghal Hidage*, a document that explicitly mentions corresponding details for 35 castles built by Alfred the Great.<sup>15</sup>

Based on newer considerations, however, it seems that earlier ideas of the amount of time needed to complete construction projects of this kind might not necessarily be correct.<sup>16</sup> It is likely that hard work and considerable technical and organisational know-how enabled the wall to be built in a matter of months, or in something close to one year.<sup>17</sup> Moreover, the circuit of the fortification at Mikulčice was somewhat smaller than that at Pohansko near Břeclav: the length of the defensive wall of the acropolis together with the outer bailey was approximately 1.6 km.

The sheer size of the Great Moravian fortification raises the question why it was built in such proportions, especially since it was essentially impregnable using weapons of the time. To reiterate, the motivation for erecting such an imposing structure was not merely strategic, but also a matter of construction and technical common sense. For the wood-and-earth structure needed to be massive upon reaching a certain height, simply to prevent the defensive wall from naturally collapsing after a short period of time. In fact, a copy of an early medieval defensive wall (constructed as part of an archaeological experiment) shows that a great deal of energy must have been invested in maintaining such a fortification, if only to keep it functional and in good condition. With no maintenance, the wall would naturally have fallen apart relatively quickly.

So when did the fortification cease to exist and what led to its demise? It is clear that the wall shared the fate of the stronghold as a whole. Yet, in the case of Mikulčice and a number of other Great

13 See Footnote 3.

14 Mazuch 2014, 64; for settlement terminology in written sources, see Excursus 1.1.4.

15 Stenton 1967.

16 See Jeremy Haslam's assessment of the Cricklade stronghold in Britain (Haslam 2005); for estimations and calculations of Great Moravian strongholds, see Dresler 2011.

17 For an appraisal of the fortified settlement at Pohansko near Břeclav, see Dresler 2011, 125–126.

11 For details of this gate, see Mazuch 2012a; 2014, 35–36.

12 For details of the bridges, see Poláček 2011; 2012; Poláček – Hladík 2014, 37–43.

Moravian fortified settlements, it is very difficult to determine the reasons for the end of the centres themselves. This is because the written sources tell us nothing at all about the fates of the individual settlements, nor do they clearly explain how the entire political unit of Great Moravia met its end.

Archaeological traces pointing to the deliberate destruction of the wood-and-earth early medieval defensive wall are difficult to verify, not least due to the absence of any military equipment or powerful firearms (such as canons, which were not introduced until the Late Middle Ages) capable of causing such damage. Nonetheless, there are clear indications that the fortification in Mikulčice did meet a violent end.<sup>18</sup> There is evidence of burning on the wooden structures of the defensive wall in the form of charred wood and burn marks, probably due to a lack of access to air inside the wall. Even some of the stones from the front stone wall show burn marks. Theoretically, the worst of the fire damage would likely have affected wooden superstructures built on, or inside, the defensive wall such as palisades, wall-walks or gates; however, owing to the building material used, they have not been preserved to the present day.

The greatest pressure during a potential attack would naturally have been exerted on the gates, the weakest points in the fortification. At the time, breaking down the gates was the easiest way of penetrating the structure. Wooden bridges led to the Mikulčice gates across channels of the River Morava. Therefore, attackers may have reached the gates by either crossing these bridges or the river itself, approaching alongside the walls from a blind spot. In addition to evidence of burn layers by the gates, a concentration of axes were found in the river channels below the bridges in front of the gates to the acropolis and bailey, all of which potentially point to a particular attack, one that perhaps served a final devastating blow to the Great Moravian centre in Mikulčice.<sup>19</sup>

Whatever the end of the power centre, violent or otherwise, the fortification naturally succumbed to the test of time. The wooden parts of the structure degraded first, followed by the disintegration of the front stone wall, which was either built without mortar or simply bonded with clay. In the case of Mikulčice, some of the stones from the wall fell straight down into the river channel. In other cases, the wood-and-earth core gradually eroded, slumping down on both sides to the surrounding ground. Over time, this formed the rampart so characteristic of most old fortified settlements. This rampart, the only visible remnant of the power centre, a mute witness to its former glory, led to the discovery of the stronghold at Mikulčice in 1954.

To the eternal dismay of archaeologists, material from the collapsed defensive wall at Mikulčice was stripped away over the centuries. People from the surrounding area, where building stone was rare, gradually dismantled the masonry of the defensive walls and churches, using it to build their own houses or farm buildings. Archaeological evidence proves that stone was completely removed from certain sections of the defensive wall in the mid-17th century, making it extremely difficult to reconstruct the original appearance of the fortification and, particularly, to determine its height.

## Fortifications as a symbol of the Great Moravian elites

Fortified agglomerations represented the pinnacle of power for the social hierarchy in Great Moravia. Among other things, the construction of a fortification was a key indicator of the social status and power of the elites. Many activities were concentrated within the fortified agglomerations. Here, a variety of functions were performed, from the management of the region's economic and military affairs to the organisation of religious life. Likewise, the physical fortifications also served a number of purposes. One of the most important was to delineate a space for the elite members of society, thus separating them from the regular population, a phenomenon documented in both archaeological research and historical sources.

Archaeological records comparing areas of the Mikulčice agglomeration inside the fortifications (the acropolis and outer bailey) with those outside (the northern suburbium and Těšický les) reveal a number of important differences. The most obvious of these relate to the diet and quality of life enjoyed by the people residing in the two spheres. At Mikulčice, the fortified areas of the acropolis and bailey also differ. For while both are very similar in terms of construction, their different "thicknesses" clearly reflect the level of importance and specific function of the complexes they protected.

Central agglomerations were structured, hierarchically arranged spaces, with each individual area serving its own specific purpose. The defensive wall divided up the entire agglomeration and, to a certain extent, formed a border between the privileged elites and the regular population. Written accounts from the period refer to fortified complexes as *urbs*, *civitas* or *castellum* (terms generally used synonymously), while settled complexes outside fortified castle areas are often described as *suburbia*. However, the latter term is not used exclusively for settlements situated in the immediate vicinity of the fortifications, but also for more distant settlements.<sup>20</sup> It is highly likely that, in the case of Mikulčice, the defensive wall was built not only to demarcate a physical border in the landscape, but a symbolic one, too.

18 Mazuch 2012a, incl. ref.; 2014, 64.

19 For the finds of axes in the Mikulčice river channels, see Poláček 2018b, 77, Fig. 4.

20 Kalhous 2008.

## 2.3.1 excursus

# Design of the Great Moravian Rampart in Mikulčice

— Marian Mazuch, Marek Hladík

The Mikulčice fortifications represent a typical Great Moravian rampart: a wood-and-earth core, a stone wall at the front, and a wooden wall at the back. The whole rampart structure was joined together by a wooden grid or, in exceptional cases, a chamber. Unlike other Great Moravian sites, the Mikulčice fortifications are characterised by one specific feature: a stone substructure. This element formed a solid base for the construction of the front wall of the rampart and projected above the sloping terrain of the riverbank (Fig. 63).

### Stone substructure as reinforcement for the slope below the rampart

All excavated sections of the acropolis rampart and south-western part of the outer bailey fortifications (R 2018) revealed the presence of a supporting structure projecting outward from the front wall of the fortifications at the bottom. Situated on the slope in front of, and partly beneath, the rampart, this structure consists of a stone embankment (Fig. 63: 3) sustained at the front by one or more rows of stakes (Fig. 63: 2). Resembling a palisade, these stakes are driven into the ground immediately next to each other. The entire structure is underneath the base of the rampart's front wall (Fig. 63: 5), extending out in front of it. We noted certain differences between excavated sections of the fortification, particularly with regard to the distance of the structure from the front wall and the proportions of the stone embankment. By Church 2, the width of the stone substructure at the bottom is around 3 m, with a height of approximately 80 cm (1 m at most). At the outer bailey, it is less wide, with a maximum width of 2.3 m and a maximum height of 50 cm. However, the original height of the wooden palisade that supported the stone substructure is debatable. We cannot rule out the possibility that the stakes stuck out significantly above the substructure, meaning they would have had defensive as well as supporting functions.

### Wood-and-earth core of the rampart

The core of the rampart consisted of a clay embankment interspersed with wooden beams (Fig. 63: 6). The structure combined beams placed lengthwise, particularly at the point directly below the front of the wall (Fig. 63: 5), with wooden planks placed crosswise in close proximity to each other, thus forming a fairly regular structure resembling a grid.<sup>1</sup> The base of this grid, and probably other wooden layers placed above it, lay across the entire width of the rampart all the way to its reverse side (Fig. 63: 8). This enabled the front wall to be attached to the reverse side at several places,

keeping the entire rampart stable. Thick layers of clay were used as infill between individual layers of wood, from which the term “wood-and-earth” is derived.

The maximum height of the preserved core of the acropolis' undestroyed rampart is 1.75 m. Based on statistical calculations, the original height of the rampart is estimated to have been 3–4 m. Although generally assumed to be a prismatic rampart, there are indications the core of the rampart was modified in some kind of stepped design (Fig. 62). This would have made it much easier for defenders or watchmen to reach the *chemin de ronde* (also called a wall-walk), not to mention considerably reducing the construction work required while maintaining the stability of the rampart.

### Front stone wall of the rampart

The front stone wall of the acropolis rampart was built on a wooden foundation grid placed perpendicular to the rampart. Below it, precisely in line with the outer face of the wall, beams were placed lengthwise, each one connecting with the next. The wall (Fig. 63: 5) itself was built from stones of various size bound together with clay: large stones were specifically chosen for the flush wall, with smaller stones mostly used for inner parts of the rampart. The width of the front stone wall ranged from 1.5 to 2.5 m and even, in certain cases – as discovered during the R 2012 excavation – to as much as 3 m. It should be noted, however, that this represents the width measured only at the base of the wall, as its upper sections have not been preserved (based on our knowledge of excavated sections of the site to date). We can only assume it became slightly narrower toward the upper parts on both sides. To ensure the wall was fastened to the wood-and-earth structure, the stones of the front wall were placed on the individual slats of the wooden grids. Very little of the outer face of the front wall at Mikulčice has been preserved, with only a few rows of stones remaining.<sup>2</sup>

### Rear of the rampart

The rear of the Great Moravian rampart was also reconstructed. It is thought to have comprised an upright wooden retaining wall made of vertically aligned stakes supported by slanting struts (Fig. 62). The spaces between these stakes (in places where archaeologists were able to take measurements) were found to be relatively regular, ranging on average between 2.4 and 2.6 and no more than 2.8 m. Spacing at the outer bailey was revealed to be less regular, ranging between 1.5 and 2.5 m. Using the beams of a wooden grid, the rear wall would likely have been fastened to the embankment in the core or to the outer-facing stone wall.

<sup>1</sup> Based on the rampart by Church 2; see Mazuch 2014.

<sup>2</sup> Cf. the site at Pohansko near Břeclav in Dresler 2011, 112–115.

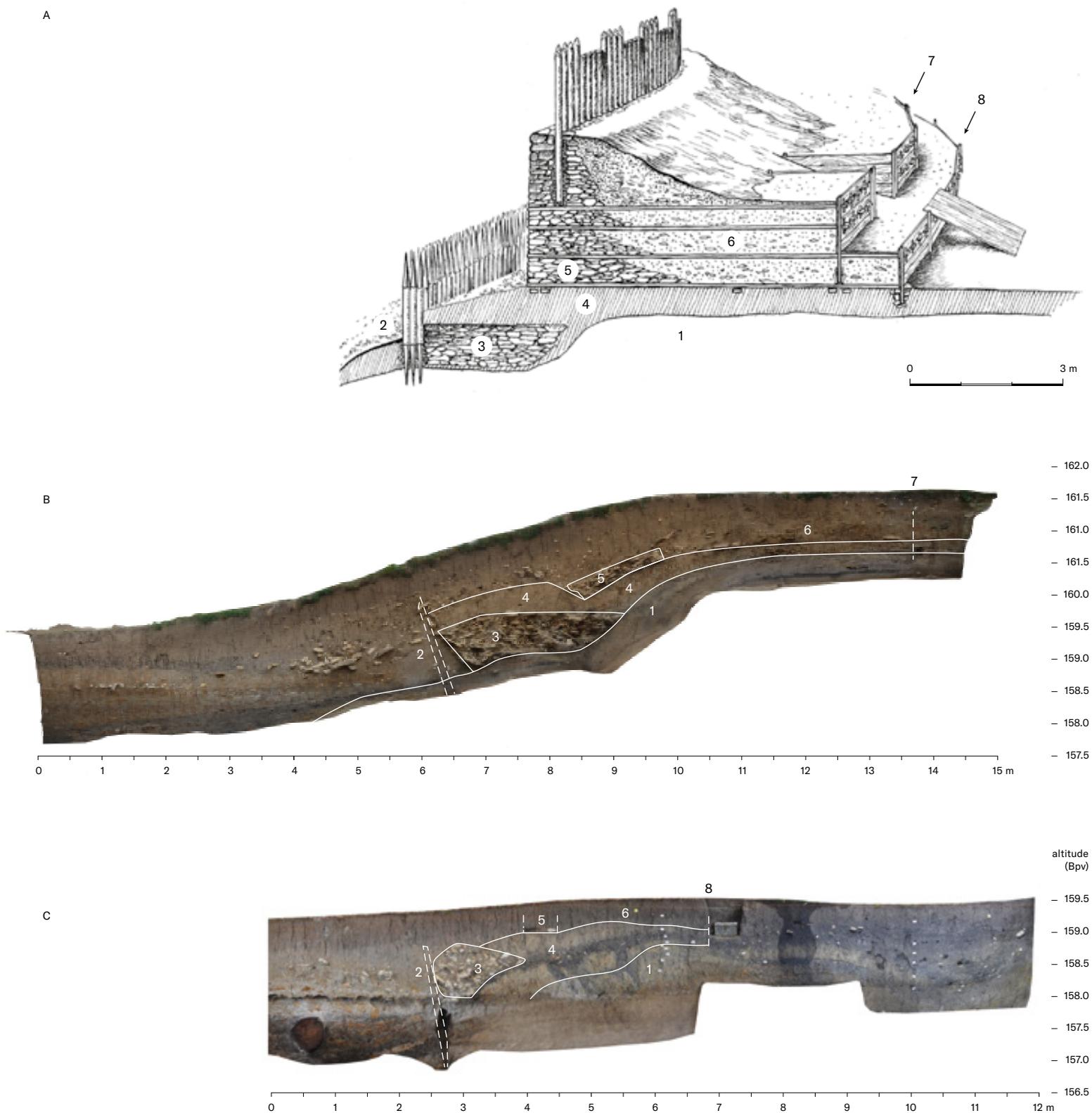


Fig. 63 Main design elements of the rampart of the acropolis and the south-western part of the outer bailey.

A - Ideal reconstruction of the rampart based on archaeological context in the excavation area R 2012-II, eastern main section; B - orthophoto of the eastern main section in the excavation area R 2012-II; C - orthophoto of the north-western main section in the excavation R 2018.

Legend: 1 - original terrain; 2 - three rows of stakes; 3 - stone substructure in the slope below the rampart; 4 - clay backfill levelling layer; 5 - stone front wall of the rampart; 6 - wood-and-earth core of the rampart; 7 - rear of the step; 8 - reverse wooden wall of the rampart.

## 2.3.2 excursus

# Acropolis Rampart (Excavation R 2012-I and II)

– Marian Mazuch, Marek Hladík

In 2012, revision excavations were carried out to update findings from the original 1954–1959 excavations of the fortifications by Church 2. This new research, which also involved a rescue excavation of previous construction work on the pavilion by Church 2, confirms that the fortification consisted of a classic Great Moravian rampart with a front stone wall, a rear wooden wall, a wood-and-earth core with a wooden grid structure (Fig. 64), and a stone substructure at the bottom supported by rows of posts. These recent efforts help to explain certain ambiguities in the two almost parallel ramparts, originally considered to represent two phases of the Great Moravian fortification (see Fig. 61). We also now know that the unusually large front rampart was supported by a special substructure used to reinforce the slope below it.

The total width of the fortification (without the substructure) ranged from 7 to 7.3 m. The whole northern part of the acropolis rampart made use of the natural elevation formed by the edge of a sand dune. Except for its front (the stone wall), the rampart was built on an earlier settlement layer lying on top of that elevation. The entire width of the stone wall along with parts of the wood-and-earth core were built into the slope itself, not on the upper plateau of the natural elevation. During the first phase of construction, the slope below the rampart was reinforced and levelled using the bottom structure mentioned above. Yet, this solution seems highly unsuitable both in terms of construction and logistics.<sup>1</sup>

The nagging question remains: What led the builders of the rampart to implement such a technically demanding solution? And why did they build a bottom stone substructure held in front by a wooden palisade only to later add a considerable amount of clay to level a base for the construction of the rampart? We believe the purposes of the structure were to strengthen the slope below the rampart, to prevent it from eroding, and to distribute pressure on the front stone wall (Fig. 65). This would have applied to the entire circuit of the acropolis fortifications and to the south-western part of the outer bailey (see Excursus 2.3.3). But why was the reinforcement of the slope so massive to the north of Church 2 and why did it project so far forward in front of the elevated plateau of the acropolis? The most likely explanations are that the rampart had to respect the dimensions of the already-existing Church 2 with its surrounding burial ground, and that the inner space of the acropolis needed to be as large as possible.

Fig. 64 Detail of the base of the Mikulčice fortification front wall from the north, excavation R 2012-I and II.

Legend: 1 – front wall (on the right in section: base of the stone wall, on the left: underlying beam); 2 – base wooden grate of the rampart; 3 – upper part of the stone substructure in the beginning of the dig – extension of this structure under the rampart is apparent here.

Fig. 65 Excavation area R 2012-I and II with the main eastern section and the terrain edge of sand dune.

<sup>1</sup> Cf. Procházka 2009, 174.



## 2.3.3 excursus

# Outer Bailey Rampart (Excavation R 2012-III and R 2018)

– Marian Mazuch, Marek Hladík

The construction of the outer bailey fortifications was similar to that of the acropolis rampart, albeit different in certain aspects and certainly less prominent (Fig. 63: C). With the exception of the newly excavated south-western section of the outer bailey circuit, this forward-projecting rampart was simpler in structure: instead of a stone embankment supported by stakes, here the slope in front of the rampart was reinforced by nothing more than one or two separate rows of stakes (Fig. 62: 3). Additionally, in the northern section near the gate, the rampart consisted of wooden chambers as opposed to a grid structure. These differences are clearly documented in the most recently excavated areas north (R 2012-III) and south-west of the outer bailey (R 2018), enabling us to reliably reconstruct excavation findings from the 1960s and 1970s.

### Excavations of the rampart bend by the north-western gate of the outer bailey (R 2012-III)

Our reconstruction of the outer bailey rampart near the bridge leading to Gate 1 is based on both earlier research and the most recent excavations of the fortification R 2012-III (Fig. 66). Again, the main feature of the construction in this area was a wood-and-earth core fronted by a stone wall. The core of the rampart contained a chamber structure made from wooden beams, comprising individual square clay-filled chambers each measuring around 1.5 m. The total width of the rampart at its base was around 4 m. Right in front of the outer-facing stone wall was a palisade made from oak stakes. The stone wall forming the front of the rampart was around 1 m thick. While certain sections of the stone wall were built from large quarry stones, the area of the wall around the gate mostly consisted of smaller stones. During our excavations, we discovered a clay-loam embankment made up of small stones

behind the stone wall. Filling the space between the stone wall and the wood-and-earth structure in the core of the rampart, the embankment may be a remnant of the destroyed and later dismantled (beginning in the Late Middle Ages) front stone wall. Some traces of burnt wood indicate that wooden reinforcements may have been inserted into the core of the rampart between the chambers and stone wall. The wooden wall at the back of the fortification, supported by slanting stakes 1.5–2.5 m apart from each other, closed off the entire rampart structure.

Another element of the construction discovered during our excavations was a second palisade, projecting forward approximately 1.5 m in front of the stone wall. This palisade was only a few tens of centimetres below the bottom stone layer of the front wall on the riverbank. Both palisades were definitely built to strengthen the bank and to prevent it from eroding.<sup>1</sup> However, the projected palisade may also have fulfilled a defensive function in conjunction with a possible wooden wall-walk on the wood-and-earth core of the rampart. Even in certain sections on the earth body of the rampart, we found a burnt layer, possibly traces of wood.

It is difficult to estimate the overall height of the fortification based on the archaeological evidence preserved. The destruction of the fortification – nowadays only visible as a mound running along the site – continued right up until modern times as a result of stone dismantling and ploughing. Thus, the height of the existing wood-and-earth core of the rampart only ranges from 50 to 90 cm. Based on stratigraphic observations, the height of the fortification without the palisade at the top is estimated to have been roughly 1 to 1.5 m.<sup>2</sup>

1 Procházka 2009.

2 Hladík et al. 2014a.

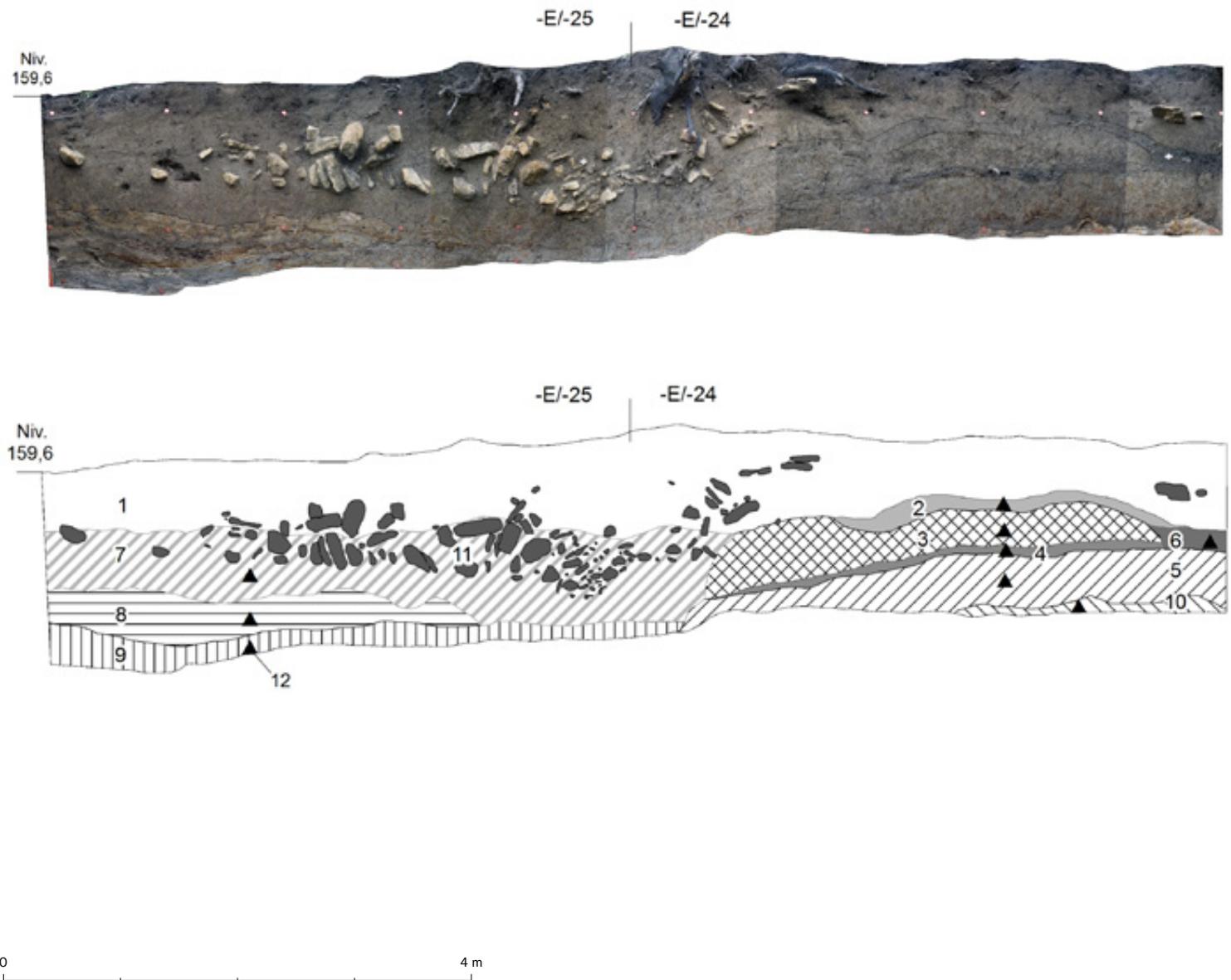


Fig. 66 Orthophoto and vector plan of a section perpendicular to the fortification in the excavation area R 2012-III.

Legend: 1 - black loamy-sandy layer; 2 - greyish-yellow clay-sandy backfill of rampart; 3 - yellow clayey backfill of rampart; 4 - greyish-yellow clayey-sandy layer with distinct admixture of organic material; 5 - brown clayey-sandy layer; 6 - black loamy-sandy layer containing bones, ceramics and small stones; 7 - yellowish-brown sandy-clayey layer (flood sediments); 8 - sandy gravel layer (river sediments); 9 - fine sand layer (river sediments); 10 - rusty-yellow sandy layer; 11 - stones from the destroyed front stone wall of rampart; 12 - places of sampling for environmental analyses in individual contexts.

### Excavations of the south-western perimeter of the outer bailey (R 2018)

This rescue excavation of the outer bailey was carried out in conjunction with the construction of a new bridge over the River Morava, designed to serve as another route to the Mikulčice – Kopčany Archaeopark Visitor Centre. The results of these efforts have been particularly enlightening in terms of understanding the construction of the fortification in this previously unexplored area (the nearest excavated part of the fortification (P 1963–64) was situated approximately 150 m north-west of the R 2018). In an update to earlier findings from the 1960s and 1970s, we were able to reconstruct the way in which the outer bailey fortification was built and how it

might have appeared.<sup>3</sup> Representing a completely new discovery, we found a stone substructure at the outer bailey fortification similar to that previously found at the acropolis (Fig. 63 below).

The rampart consisted of a stone front wall along with a wood-and-earth core around 3 m in width (Fig. 67). The only evidence of wooden components inside the core of the rampart was a number of dark stripes aligned perpendicular to the rampart, closely resembling the grid structure discovered during excavations of the acropolis' rampart area.<sup>4</sup> The rampart was built on the sloping river-bank above the stone substructure, itself supported at the front by

<sup>3</sup> Hladík et al. 2014a; cf. Procházka 2009, 171.

<sup>4</sup> Cf. Mazuch 2014.



A



B

a double palisade. The remaining stakes of the palisade, preserved only at groundwater level, would have reached an approximate height of 80 cm (the original height cannot be precisely determined). From the riverbed just in front of the wall, we managed to obtain a quantity of driftwood, including several metres long oak trunk. Unfortunately, the wooden building material of the rampart was not preserved in a state amenable to accurate dendrochronological analysis, with C14 dating yielding unsatisfactory results. In this respect, our efforts have been unable to improve on earlier attempts to date previously excavated wooden parts of the rampart.

In the settlement just behind the rear of the rampart, parallel to what we assume was the rampart's wooden wall, we discovered the skeleton of a woman lying on what would have been the then

surface level. This, along with other skeletal remains - notably, that of a small child lying on the core of the rampart - add to the other human remains previously found around the Mikulčice fortifications, supporting the likelihood that the deceased were somehow associated with the fortifications' violent end.<sup>5</sup>

5 Cf. e.g. Hladík - Mazuch 2010, 201-202.



C



0 3 m

Fig. 67 General orthophotoplan of the excavated area R 2018. Three phases of the excavation of the outer bailey rampart A-C (see Fig. 4: C with the main north-western section of the excavated area). A - Uncovering of the rampart construction in different levels: 1 - front stone wall, 2 - destruction of the front stone wall, 3 - rest of the base wooden grate of the rampart core, 4 - course/line of the reverse wooden wall; B - documented level of stake rows in front of the stone substructure: 5 - unexcavated river sediments in the silted-up river channel in front of (outside) the rampart, 6 - two rows of stakes in front of the stone substructure; C - uncovered river channel in front of the rows of stakes with the cleaned oak tree (7).

# Building Material of the Great Moravian Rampart

– Marian Mazuch, Marek Hladík

The construction of the fortifications at Mikulčice was clearly the major building project of the period in the Great Moravian territory. It would have represented a highly demanding task; not only in terms of the huge quantity of materials needed to build it, but also in terms of logistics, manpower and the level of organisational know-how and skill required. Three basic raw materials needed to be obtained: earth, wood and stone.

### Earth

The easiest task was undoubtedly to dig out the earth, or more precisely, the clay. Occurring naturally in the area as geological bedrock, clay was used, among other things, to build the floors of the dwellings at the stronghold. Together with material from the settlement layer (including waste from the earlier settlement), clay served as infill for the entire core of the rampart, including its layers of wooden grids. All in all, this would have represented a huge amount of earth. Based on the theoretical height of the acropolis rampart core at around 3 m and the average width approximately at 5 m (without the stone front wall) and length of the acropolis fortification at 1,060 m, it is thought to have been some 16,000 m<sup>3</sup>. If the core had a stepped design, the volume would obviously have been significantly lower. In the outer bailey, the volume was estimated to be more than 3,000 m<sup>3</sup> (counting with the height around 2 m, width - without the stone front wall - around 2.5 m and estimated length of the fortification at 630 m).

### Wood

A large amount of timber needed to be logged, with oak used exclusively for the fortifications and water structures in Mikulčice. Wood was not only used to construct the core of the rampart, but also to build the palisades that formed part of the stone substructures. We assume that during the Great Moravian period, there were no carpentry saws that would otherwise have enabled trunks to be cut into logs, beams or panels. It is more likely that all wooden construction elements were made using axes. The ends of palisade stakes would need to have been carved into points and individual trunks split lengthwise (using iron or wooden wedges), before working these sections into beams or panels. It is understood the rampart would also have had a palisade at the top or some kind of wooden wall-walk.

The wood was probably logged in the immediate vicinity of the agglomeration; however, it is practically impossible to determine the cubic size of this material. Considering the enormous amount of wood needed, trunks may have been transported down the Morava from higher positions along the river. Dendrological analysis indicates that the wood used came from a riparian forest. One of the most technically demanding and time-consuming

tasks was to drive the stakes into the ground, whether for the palisades in front of the rampart, the wooden structure on top of it, or the pilots of the bridge pushed into the riverbed. There is no doubt that simple pile-driving mechanisms must have been used for this.

### Stone

The most technically and logistically demanding task of the entire project involved obtaining stone to build the front wall of the rampart. As building stone does not occur naturally in the immediate vicinity of the Mikulčice stronghold, it must have been gathered and conveyed from somewhere else. Petrographic analysis of the material used to build the fortifications and churches reveal that it was brought either from the White Carpathians near Holíč, some 6 km as the crow flies from the Mikulčice stronghold, or from more distant Skalice, both located in present-day Slovakia (Fig. 68).<sup>1</sup> We know resources from these same locations were also used by the builders of the fortifications at Pohansko near Břeclav.<sup>2</sup> Given its prominence, we cannot discount the possibility that the quarrying and distribution of this “strategic” material was controlled by the Mikulčice stronghold.<sup>3</sup>

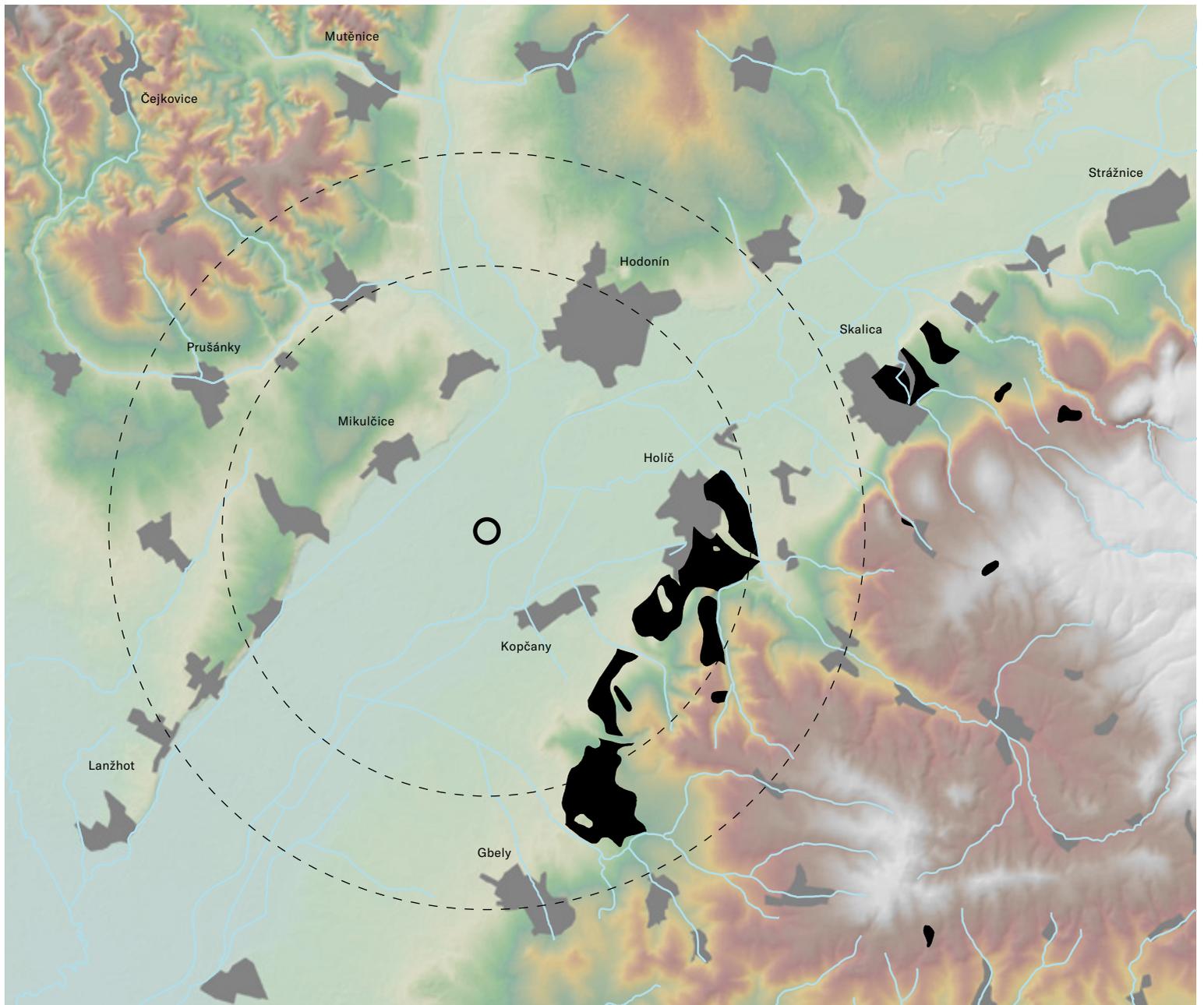
The building material was similar to quarry stone. It would have been quarried using heavy hammers and iron wedges, or by fire before quickly cooling the blocks. However, it is also possible that weathered layers of stone were collected from the ground. Petrographic analysis indicates the stones used to build the Mikulčice rampart comprised either white-grey calcareous sandstone or light lumachelle sandy limestone.

The stone material must have been transported from the quarry site using wagons and, in the floodplain valley, aboard dugout canoes (also known as monoxylons) or rafts. Trial trenching conducted by previous archaeological teams uncovered a large accumulation of stone on the southern side of the acropolis outside the fortifications. It is believed this area may have served as a type of intermediate storage site on the riverbank, from where the stones were then distributed to build or repair the defensive walls and stone buildings. Measuring the length of the acropolis fortification at 1,060 m and average width and height of the front stone wall at around 2.5 and 3 m, respectively, the volume of stone needed to construct the front wall of the Mikulčice acropolis rampart is estimated to have been approximately 8,000 m<sup>3</sup>. In the outer bailey, the volume is estimated to have been more than 1,200 m<sup>3</sup> (height around 2 m, width around 1 m and length of the fortification at 630 m).

1 Štelcl – Tejkal 1963; 1967.

2 Macháček et al. 2007.

3 Staňa 1997, 80–81.



Legend:

-  Mikulčice-Valy stronghold
-  Assumed extent of the economic hinterland of Mikulčice (circles 7 and 10 km define the periphery zone of the hinterland)
-  Watercourses
-  Stone deposits
-  Max: 448 m AMSL
-  Min: 152 m AMSL



Fig. 68 Map of stone deposits exploited for building activity in Mikulčice and Pohansko near Břeclav.



Mikulčice stronghold in 2015 after the first stage of the heritage site revitalisation, reconstruction of the museum and the main road renewal in the acropolis area.

## 2.4

# Princely Residence and Proto-Town

– Lumír Poláček

The early medieval Mikulčice stronghold is today described as a “complex” centre, which combined a princely residence and a military fortress, an administrative and ecclesiastical centre, and was an important place for production and trade.<sup>1</sup> The settlement came into existence by evolving from a pre-Great Moravian power centre whose form changed throughout the 9th century. This resulted in a large and varied settlement agglomeration occupying several islands in the River Morava. The strong influence of natural predispositions and the complicated settlement development make it difficult today to identify an ideological pattern or constructional models for the Mikulčice centre as was the case for other Great Moravian centres, such as Pohansko near Břeclav (see Excursus 2.4.5). Even after decades of archaeological fieldwork, the functional and symbolic significance of these structures is still not fully understood. The form of the Mikulčice agglomeration as a 9th-century urbanistic unit is unique, and it can be said, without exaggeration, that due to its formal attributes and functions, this settlement complex is nearing an urban organism. The term proto-urban agglomeration has become established for such formations.<sup>2</sup>

### The path “towards a town”

Leaving aside the purely legal definition of the so-called fully-institutional high medieval town, the notions of a town, primordial town, proto-town, early urban settlement, *stadtähnliche Ansiedlung*, etc. can theoretically be applied to centres of superregional importance from various periods of prehistory and early history and various geographical areas.<sup>3</sup> This is also true of early medieval centres in the region north of the Middle Danube where the power-political unit denoted as Great Moravia existed in the 9th century. The definition of an early urban medieval settlement is fulfilled by the three above-mentioned central agglomerations situated in the Middle Morava River valley: Mikulčice, Staré Město – Uherské Hradiště and Pohansko near Břeclav. Nitra in Slovakia is sometimes categorised among these central Great Moravian agglomerations, even though recent studies show a somewhat different character there as well as specific geographical conditions with a central elevated site surrounded by lowland settlements.<sup>4</sup> In contrast, Mosapurc/Zalavár, a Pannonian centre of the late Carolingian period founded near Lake Balaton by Pribina (see Excursus 2.1.4), expelled from Nitra by Mojmir I, shows a clear geographical and typological similarity to the Moravian centres.

The Moravian centres are described as *civitas*, *urbs* or *munitio* in period sources. Moreover, it appears that the same centres are denoted differently, see *urbs antiqua Rastizi* and *innefabilis Rastizi munitio*. However, it does not seem that there would be a distinctive regularity in the use of the individual terms; in general, it appears that the frequent term *civitas* corresponds to the usual Frankish milieu customs where major agglomerations based on ancient foundations were mostly denoted as *civitates* (cf. Excursus 1.1.4). It is likely that in the case of Moravian urban centres, they also denoted agglomerations of importance exceeding that of ordinary military or administrative centres.<sup>5</sup> These agglomerations are interpreted:

- primarily, as power centres (*Herrschaftszentren*) of early medieval society, dominated by a closed power group around the ruling dynasty of the Mojmirids (in this context, it would be appropriate to state that discussion is currently under way among domestic archaeologists and historians on whether Great Moravia was a state unit or represented a degree of so-called chiefdom).<sup>6</sup> This highest elite ruled and administered the realm with the help of the military retinue and the officials who surrounded them. Power, representation, self-presentation, residence, faith, memory, etc. were dominant attributes in these centres;
- as important church and Christian faith centres (with more church buildings and significant church institutions);
- as places of international long-distance trade (mainly in precious textiles, arms, art and craft products, salt, etc.);
- as places of specialised craft production of considerable strategic importance so required special protection (in particular, fine metalworking);
- as places of a considerable concentration of the population consisting of central agglomerations fully surrounded by numerous rural settlements (which, according to the traditional image, provided an economic hinterland for the centres).

Undoubtedly, the most important settlement unit of the Mikulčice power centre (Fig. 69) was the acropolis, which is also known as the princely residence (“princely castle”). Protected by a massive wall, the complex incorporated the most important masonry structures – the churches and the palace – and extensive cemeteries, especially near the churches. There is also numerous evidence of specialised production. All this indicates a residential, military, sacral and production function. It is this cumulation of functions, particularly noticeable for the Mikulčice acropolis, that resembles an urban organism. The churches and the palace were situated there – in the northern, elevated part of the fortified complex called Valy. Around them were extensive cemeteries with

1 See Gringmuth-Dallmer 1999; 2011.

2 Cf. “Burgwallstadt” and similar terms by Staňa 1985, 166–167.

3 Hoffmann 1992, 9, 14–30; Měřínský 2001, cf. Dostál 1988a; Brachmann 1995; Štefanovičová 1995a.

4 See Bednár 2001; Bednár – Ruttkay 2014.

5 Bláhová 1987; Macháček 2013, 235.

6 Macháček 2012; cf. Kalhous 2014a; Profantová – Profant 2014; Štefan 2014.

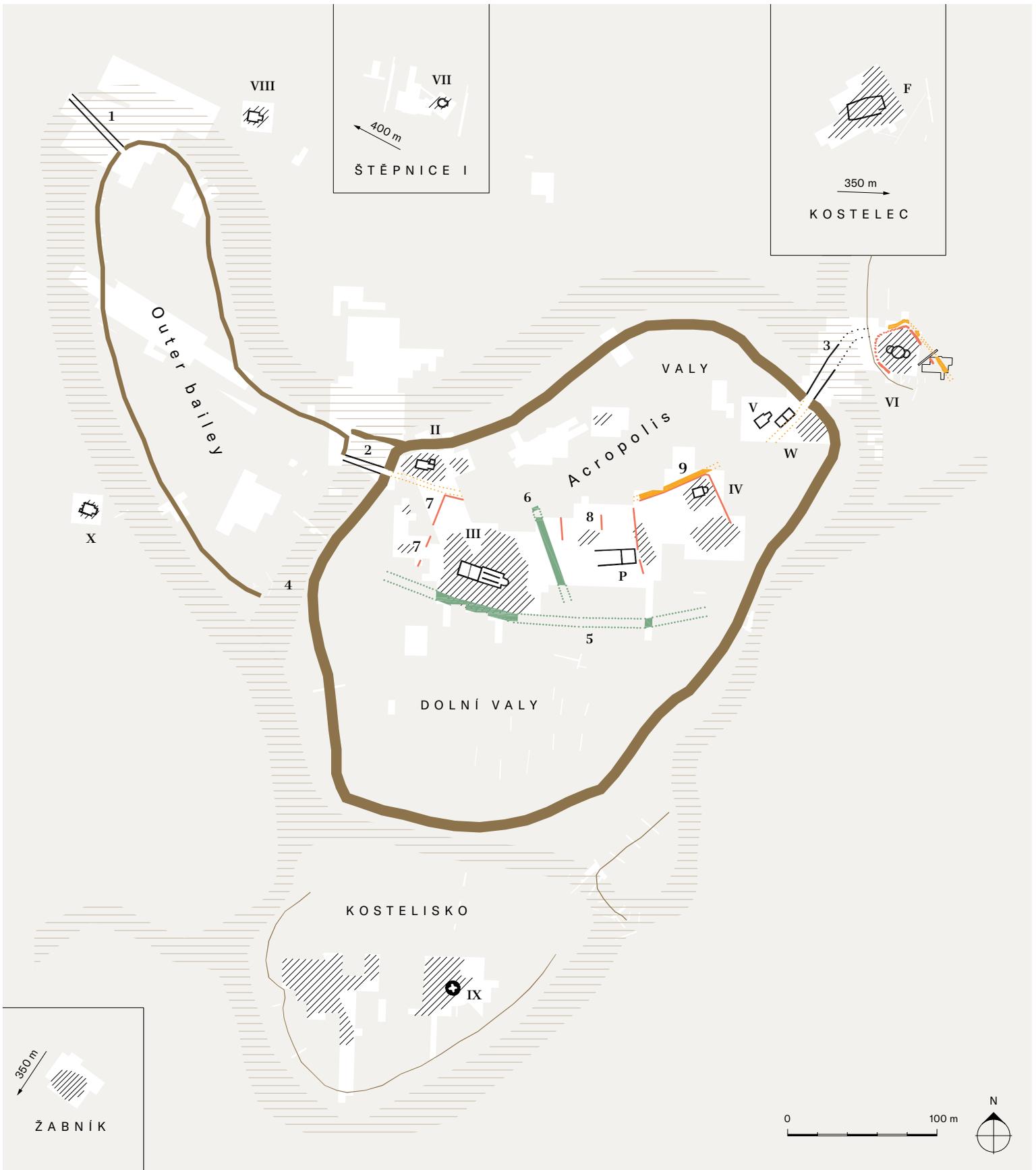


Fig. 69 Plan of the Mikulčice stronghold with marked excavated areas, largest burial grounds and important structures.

1 – Bridge 1; 2 – Bridge 2; 3 – Bridge 3; 4 – water moat; 5 – ditch dividing the acropolis areas Valy and Dolní Valy; 6 – ditch dividing Church 3 and the palace area; 7 – remains of the enclosure of Church 3; 8 – remains of the linear enclosure in the palace area; 9 – two lines of posts delimiting the road corridor and the “court” structure near Church 4.

- |               |                          |                     |
|---------------|--------------------------|---------------------|
| Fortification | Palisade, fence          | Church              |
| Gate          | Burial ground            | Palace              |
| Bridge        | Excavated area           | Wooden feature      |
| Main road     | Terrain boundary         | Fine-metal workshop |
| Ditch         | Silted-up river branches |                     |

numerous magnate graves. Specialised craft workshops, particularly metalworking, are directly or indirectly documented throughout the area of the acropolis. The function of the Mikulčice acropolis as a princely residence is evident.

The appearance and the internal arrangement of the built-up complex are more difficult to reconstruct (cf. Fig. 70). The inner area of the acropolis was segmented into smaller units by ditches, palisade walls and possibly fences. None of these units can be completely reconstructed and more closely dated as yet. Presumably, they delimited churchyards as sacral districts or enclosed courts – residences of the prince or the magnates. The reasoning concerning courts is only tentative, as no such unit has been completely uncovered in Mikulčice yet. The closest to this is the area around Church 4, delimited by a palisade on the north-western and north-eastern sides and hypothetically compared to the magnate court at Pohansko near Břeclav (see Excursus 2.4.5).<sup>7</sup>

Some of the ordinary houses can be considered to be part of the enclosed economic units delimited by fences.<sup>8</sup> An overall reconstruction of the built-up area and the internal arrangement of the acropolis is highly problematic, as the remnants of the wooden structures, which comprised most of the building are lacking. The situation is better in the case of the outer bailey where preserved floor backfills show the original arrangement of the wooden houses (see Excursus 2.4.2).<sup>9</sup> Characteristically, this

complex did not contain any sacral buildings or cemeteries and evidence of specialised production is sporadic. It was primarily a residential, densely and regularly built-up area, which is another attribute typical of an urban organism.

Another characteristic attribute that is not commonly found at Great Moravian sites other than Mikulčice is the presence of buildings (probably a log type) with cast mortar floors. Buildings of such character, situated predominantly near the churches, were used either by clergymen or by the magnate aristocracy. Most have not been preserved intact in Mikulčice but as mere fragments of the original floors or as crushed mortar in the settlement layer. Analogues to this phenomenon can only be found in the closely delimited prestige districts of the most important centres such as the Pohansko near Břeclav stronghold (the magnate court)<sup>10</sup> or Staré Město (Na Dědině area).<sup>11</sup> On the contrary, in Mikulčice they can be considered as a characteristic feature of the built-up area of the acropolis. This circumstance as well as the predominance of surface buildings with clay floors are evidently related to the high social status of the inhabitants of the Mikulčice centre and the specific structure of its early urban development.

Another attribute that Mikulčice has in common with proto-urban agglomerations is a high concentration of the population. The Mikulčice population in the second half of the 9th century is estimated at 1,000–2,000 people.<sup>12</sup>

7 Klanica 1986b, 128.

8 See Poláček 2008b, 32–33, Fig. 4.

9 Poláček 2018a, 67–70; cf. Kavánová 1987.

10 Dostál 1975.

11 Galuška 1990.

12 Stloukal – Vyhnánek 1976, 41.

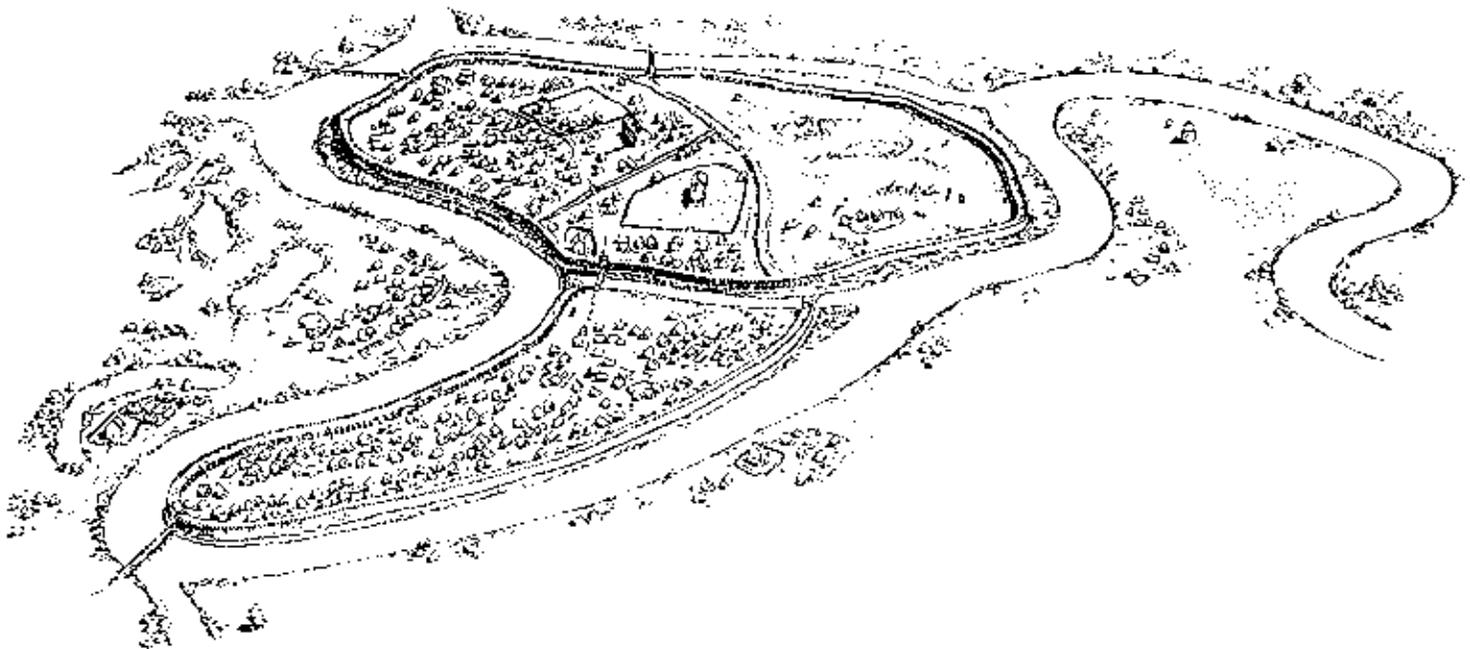


Fig. 70 Hypothetical reconstruction of the Mikulčice stronghold at the end of the 9th century according to Rostislav Skopal in 2000.



Fig. 71 Bridge 1 and the nearby river meander flowing around the fortified outer bailey. The main road leading from the suburbium continued over the bridge and gate to the outer bailey.

### The main road

The most conspicuous urbanistic element of the whole agglomeration is the main “backbone” road (Fig. 94), which passed through the whole stronghold and from there to a long-distance route that connected Southern Moravia and the Váh region in present-day Slovakia.<sup>13</sup> The road interconnected the Vály acropolis with the complex near the Church of St Margaret of Antioch near Kopčany in what is today the Slovak part of the agglomeration. The most distant eastern extension of this road has been newly identified in the wider area of Church 6 in the extramural settlement (see Excursus 2.4.4).

The road passed through the acropolis and the outer bailey, connecting the three main gates. It entered the suburbium on both sides of the fortified core on wooden bridges (Fig. 71; 72). The most important buildings and the most prestigious complexes of the acropolis were situated along the road. These included the churches and their sacral districts, the palace, the jewellery (fine-metal) workshop, etc. The road was an element that influenced the layout of the built-up areas along both its sides.

13 Květ 1999, 224–225; 2011, 34.

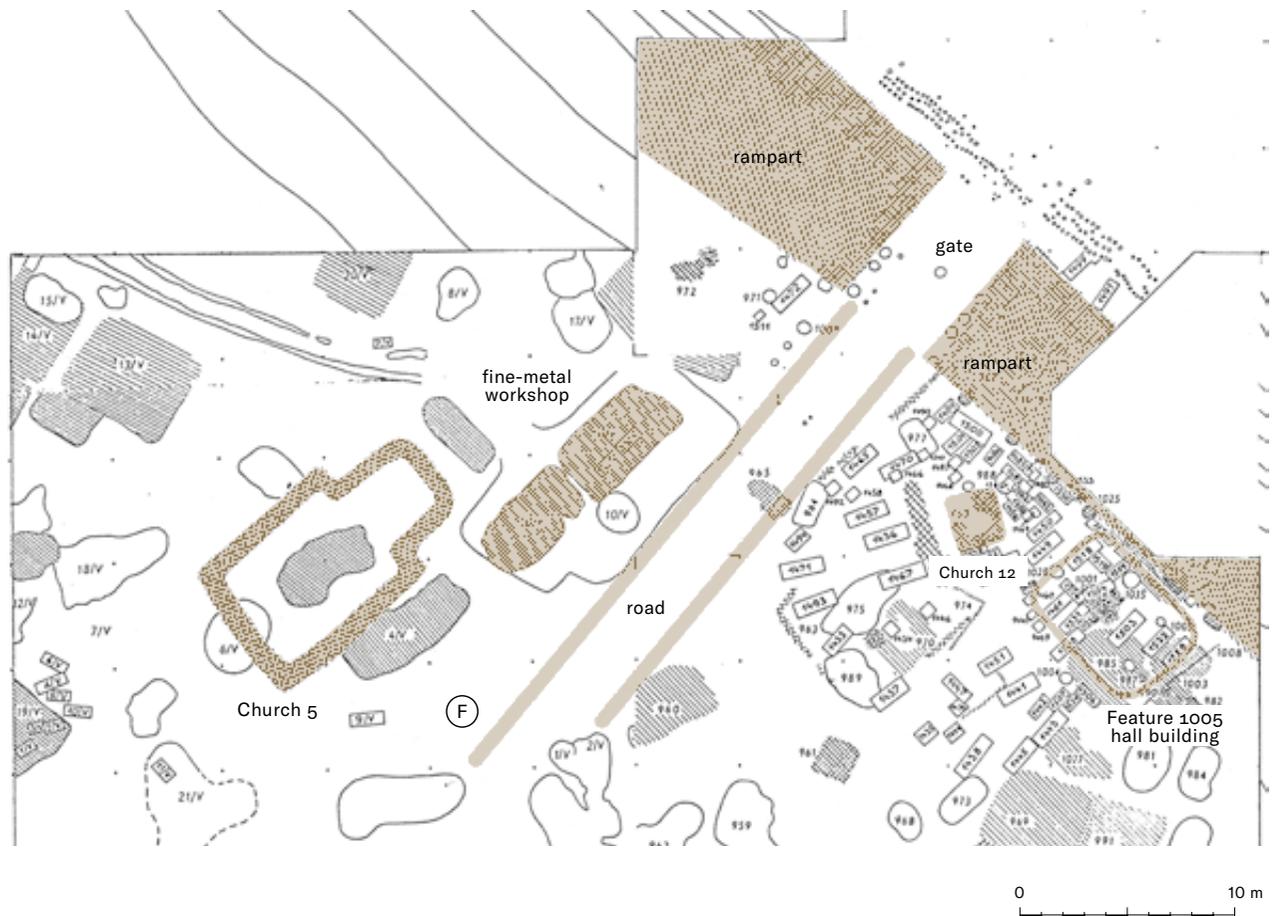


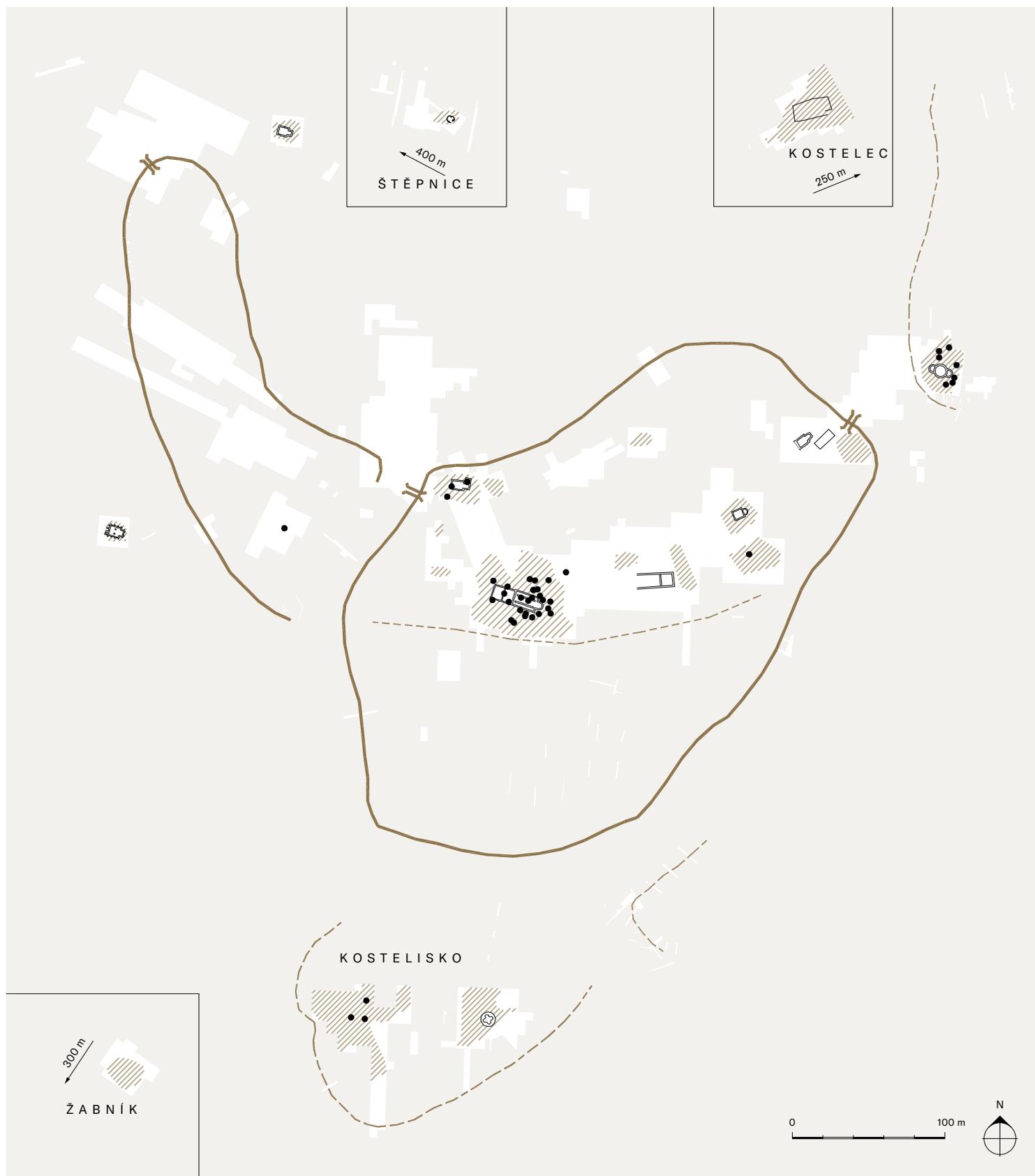
Fig. 72 Plan of the area surrounding Church 5 and the hypothetical Church 12. The main road leading from Church 4 at the acropolis passed by the cemetery of the hypothetical Church 12 on its right and the fine-metal workshop on its left. The road continued further towards the north-east gate of the acropolis, from where it led through the Bridge 3 to Church 6 in the suburbium.

### Residence and fortress of Moravian princes

Mikulčice had become a power centre of superregional importance by the 8th century. The elites of the future Great Moravian power-political unit were likely constituted in this and other similar places in Southern and Central Moravia. Frequent finds of hooked spurs, “Avar” belt fittings and horse harnesses, which are generally categorised among pre-Great Moravian artefacts, testify that a local equestrian elite was already in existence in the late 8th century (Fig. 56).<sup>14</sup> It is assumed that in the 9th century, Mikulčice became the centre of the political power of a domestic ruling dynasty – the Mojmirids. Since written sources are uncertain as to what Mikulčice was called in the 9th century or if its role was in the administration of the power-political unit or the economic and ecclesiastical affairs, the investigation of these issues remains largely a task for archaeology, together with general historical research of Great Moravia.

What tools does archaeology have available when attempting to answer these and other similar questions? How does the archaeological image of Mikulčice differ from other proven central Great Moravian agglomerations, such as the settlement complexes of Staré

14 Klanica 1995; Poláček 2008e.



- Gold in grave

Fig. 73 Plan of the Mikulčice stronghold. Graves with finds of gold artefacts are marked.

Město – Uherské Hradiště, Pohansko near Břeclav and Nitra in Slovakia?<sup>15</sup> All these centres share several basic attributes, including a considerable area (in tens of hectares) and a variety of the settlement complexes consisting of several fortified and non-fortified components, the presence of several churches and cemeteries, plentiful evidence of specialised craft production and trade and an overall concentration of the evidence of affluence and power (primarily manifesting itself in the grave goods but also in settlement finds).<sup>16</sup> When comparing the presence of those attributes in the individual centres, Mikulčice stands out in terms of the higher intensity and longer-term continuity of their occurrence. Comparing, for instance, the number of graves with swords (Fig. 138), splendid sets of belt fittings and spurs, gold items (Fig. 73), *gombíky* (spherical buttons; Fig. 195) with chased decoration and richly equipped burials inside the churches then Mikulčice exceeds other centres several times. Only the Staré Město – Uherské Hradiště agglomeration can “rival” Mikulčice in many categories.

Of course, the above-mentioned quantitative attributes are only auxiliary indicators and need to be understood as features undergoing complex analyses and comparisons of 9th-century Moravian centres. The settlement context of a place is another important attribute. Mikulčice stands high above other centres in terms of the intensity of occupation over a relatively long time. This is partially connected, to a limited extent, with the areas suitable for settling. In the case of Mikulčice, the lack of naturally protected places on river islands forced the inhabitants to increase the density of and repeatedly rebuild existing buildings inside the fortified complexes rather than simply expand into the neighbourhood. The opposite tendency can be observed for the right-bank of the Staré Město – Uherské Hradiště agglomeration, where the occupation in the area of Staré Město situated on the edge of the floodplain easily exceeded this natural boundary and spread without major limitations to the elevated terraces further from the edge of the river valley.<sup>17</sup> The Pohansko near Břeclav stronghold, not far from the confluence of the Dyje and Morava, had natural conditions similar to Mikulčice and, therefore, comparable conditions for settlement development. This centre did not fully utilise its potential, based to a considerable extent on the proximity of an intersection of roads, until the late phase of Great Moravia and the following period when it was, most probably due to geopolitical changes in the northern neighbourhood of the Middle Danube region, drawn into broader political and economic interactions.<sup>18</sup> Except for Mikulčice, none of the compared centres can yet document the occurrence of the attributes of a higher living standard of the elites, such as luxury foodstuffs, especially fruits, including grapevines and vegetables.<sup>19</sup>

Even a complex analysis of these attributes of the geopolitical importance of the individual centres does not make it possible to decide which one was the main centre of 9th-century Mojmirid Moravia. Of the other theoretical models to be considered, one is the so-called geographic model, according to which the main centre of the realm was relocated from Mikulčice to the area of Staré Město – Uherské Hradiště in the late 9th century under the influence of the Magyar invasion from the south and because of the

gradual exhaustion of the opportunities for further local (spatial) growth.<sup>20</sup> There is also a school of thought that the individual main centres were the residences of different branches of the Mojmirid dynasty, where the reign is known to have passed from uncle to nephew rather than in direct succession from father to son.<sup>21</sup> Another common belief is that there was no single main centre but several strong points where the ruler had his residences, following the model of the palace (*Pfalz*) in the Carolingian Empire, which he gradually visited in the style of “rule from horseback” (see e.g. Excursus 2.4.5). Regrettably, as there are no particular testimonies concerning these issues in the written sources, no clear answers are expected in the future. Even so, all the above-mentioned central agglomerations represent a distinctive phenomenon that deserves more detailed research.

A remarkable concentration of political power in Mikulčice is documented by a whole complex of evidence denoted as the “court” culture. Apart from masonry buildings and houses with cast mortar floors mentioned above, it includes an extensive assemblage of movable artefacts, mostly from sepulchral complexes (cf. Fig. 73; 74). These include sumptuous local art and craft products as well as numerous foreign artefacts, expensive textiles and other items that document a generally high standard of living (see the corresponding chapters in Chapter 3). The jewellery included bizarrely shaped earrings, finger rings decorated with granulation and typical Great Moravian *gombíky* – spherical hollow buttons with chased decoration. The arms and equestrian equipment, represented by swords, axes, spears, spurs, luxury belts, calf and other fittings were the attributes of a particular social status: the high-ranking elite. A belt fitting in the form of a miniature codex – inspired by the form of religious books – speaks volumes about the cultural level of the court in Great Moravian Mikulčice (see the opening page of Essay 2.6). The richest graves contained finds of silk and other expensive fabrics, most likely imported from the Byzantine Empire. Another significant group of imported artefacts was made from glass. This contains Frankish funnel beakers and other types of glasses, the origin of which is possibly Northern Italy or elsewhere in the Mediterranean. The general picture of the court culture of Great Moravian Mikulčice is complemented by the evidence of a varied diet supplemented by fruit, vegetables, spices, grapes and other delicacies.

The elite graves traditionally referred to as magnate graves are an important phenomenon, which to some extent characterises the privileged milieu of the Mikulčice centre. The phenomenon of “princely graves” is nothing exceptional in the context of the 9th and 10th-century Slavic world although it provides valuable historical testimony concerning the contemporaneous Frankish Empire, where such rich grave goods were never placed in graves due to ecclesiastical interdictions. Although 9th-century Moravia was a periphery of the Frankish Empire, the context provided by the graves in Mikulčice and other Moravian centres enables us to study artefacts that were preserved only exceptionally in the Carolingian milieu. Dozens of magnate graves with rich grave goods discovered at the Mikulčice cemeteries, are a unique phenomenon, which, as a whole, can be rivalled by the grave finds from Staré Město – Uherské Hradiště and by foreign sites in Slavic territories, such as the Old Croatian magnate graves.

15 For Staré Město – Uherské Hradiště, see Excursus 2.1.2, for Pohansko near Břeclav, see Excursus 2.1.3, and for Nitra, see e.g. Bednár 2001; Bednár – Ruttikay 2014.

16 Cf. Staňa 1985, 162–167.

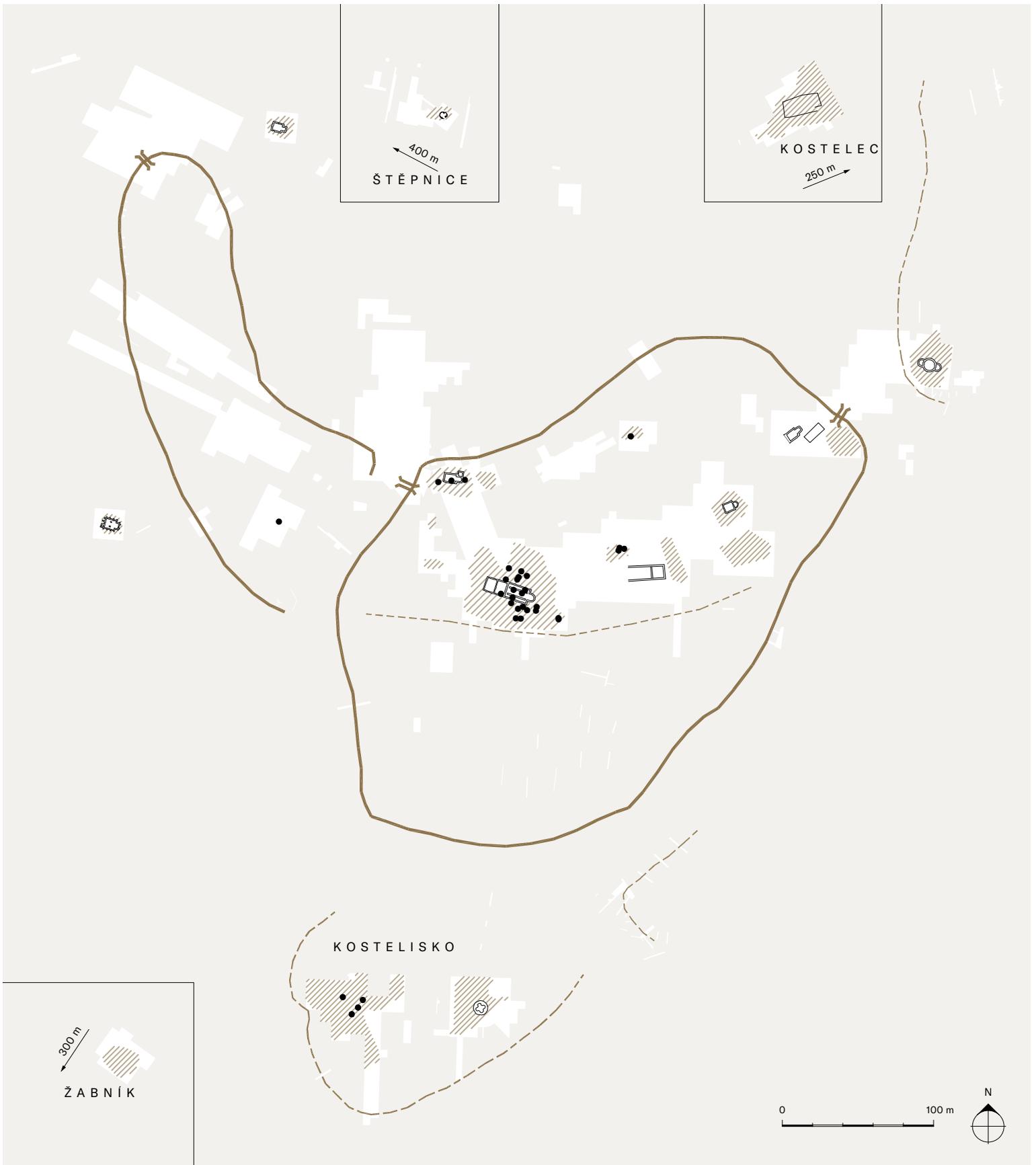
17 For comparison of geographical conditions in Staré Město – Uherské Hradiště and Mikulčice, see e.g. Galuška 2001; Poláček 2001a.

18 Macháček – Balcárková – Dresler 2013; Biermann – Macháček – Schopper 2015, 41–169.

19 See Látková 2017; 2019.

20 Poláček 1999b, 230; 2001a, 320–321.

21 Staňa 1996a, 15.



● Grave with coffin fittings

Fig. 74 Plan of the Mikulčice stronghold. Graves with finds of coffin fittings belonged to the uppermost elites.

Another important element connected with the representation of the ruling princely power is the interior – “dynastic” – graves in churches, mainly tombs in the most important parts of Churches 2, 3 and 4 (see Excursus 2.5.2). Without written sources or epigraphs, we are unable to identify the individual rank of deceased from graves unambiguously. However, based on broader analogies and detailed historical analysis, their connection with the ruling dynasty appears to be highly likely. The grave goods accompanying the burials did not vary significantly from the richest graves at the cemeteries around the churches; their prestige was in their privileged position inside a church. In the Great Moravian milieu, this phenomenon has been paralleled by the finds from the church complex in Uherské Hradiště – Sady. The current level of archaeological research of sacral buildings in Moravia provides a relatively representative picture of church burials. The number of individuals buried in such a way enables us to link them to the historically proven Mojmirid dynasty.<sup>22</sup> The possibility of a genetic analysis of the buried is a matter of further research.

22 Schulze-Dörrlamm 1993; cf. Poláček 2020; Macháček – Wihoda eds. 2019.

An important attribute of the early medieval power centre was its fortification (see Essay 2.3). The historically documented wars with East Francia and Magyars indirectly demonstrate the functionality and resilience of the Great Moravian fortifications. The fortification system of the Mikulčice stronghold consisted of a rampart surrounding the acropolis and outer bailey. The rampart around the acropolis was a wood-and-earth construction with a 1.5-3 m wide front stone wall. The total width of the rampart was about 7 m and the height about 3 m. A low stone construction, which enclosed the rampart on the outside and leaned against a row of stakes at the foot of the slope, was part of an anti-erosion reinforcement of the riverbank in front of the Great Moravian rampart.<sup>23</sup> Great Moravian fortification of the outer bailey consisted of a similarly constructed, only significantly subtle, wood-and-earth rampart with a front stone wall propped up by vertical stakes.<sup>24</sup>

23 Procházka 2009; Mazuch 2014.

24 Procházka 2009; Hladík et al. 2014a.

## 2.4.1 excursus

# Palace: Excavations in 1957 and 2010

– Lumír Poláček



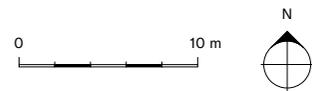
Among the masonry structures of the Great Moravian Mikulčice – Kopčany agglomeration, a special position is held by a building known as the “palace”, which is situated on the acropolis. It is the only large structure in the agglomeration that does not show any visible signs of ecclesiastical architecture. Moreover, it was built in a strategic (approximately in the centre of the acropolis and close to the main road) and elevated (its altitude is one of the highest in the whole agglomeration) position.<sup>1</sup> The structure was discovered by Josef Poulík in 1958 (Fig. 75; 76) and was subjected to a revision excavation in 2010 (Fig. 77; 78).<sup>2</sup> It is traditionally called the princely palace, despite long-standing questions concerning its closer interpretation.<sup>3</sup>

Fig. 75 Discovery of the palace building in 1958. Large-scale excavation of the acropolis with floorplan of the palace.

- 1 Poláček 2010, 39–41.
- 2 Poulík 1975, 90; Poláček – Škojec 2011, 167–168.
- 3 Cf. Klanica 1988 and Konečný 2011.



Fig. 76 Plan of the central part of the acropolis with the palace, numerous pits and elements dividing the settlement area – ditch and palisades.



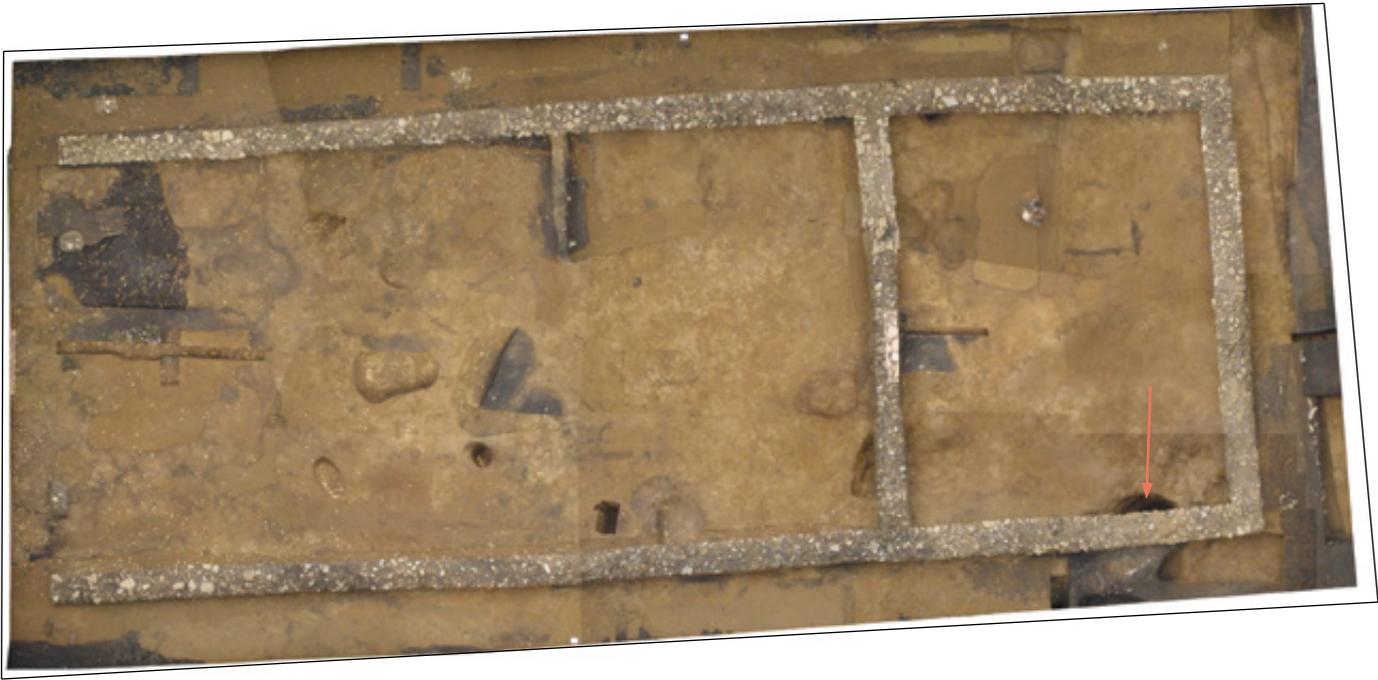


Fig. 77 Floorplan of the palace uncovered during the revision excavation in 2010. Pit No. 345 found under foundations of the palace is marked by an arrow.



Fig. 78 Pit No. 345 found in a superposition with a palace floorplan was containing pottery from the late 9th century.

One of the reasons for the uncertainty concerning its function is its fragmentary preservation. The main remnant is the layout of a rectangular building comprised of two spaces: a smaller eastern one and a larger one in the west. As the western outer wall is missing, the length of the building cannot be precisely determined. The originally stated figure of 26 m is hypothetical; with certainty, it has a minimum length of 20 m.<sup>4</sup> The width, on the other hand, is clear: 10 m. The larger room reportedly contained remnants of a cast mortar floor, along with a stone facing of the load-bearing ceiling structure and remnants of a stone fireplace.<sup>5</sup> Regrettably, none of these construction details could be verified by the revision excavation as they were probably destroyed during the first excavation in the 1950s. Nothing is known of the building's movable equipment either. One of the reasons for this unfavourable state of preservation is the position of the building in the highest – and most eroded – part of the acropolis and the sand dune Valy, which was subjected to both natural removal of soil and erosion due to anthropogenic activities, especially recent ploughing. We estimate that the palace floor was situated on a level close to the surface of the present-day terrain.

The revision excavation in 2010 made it possible to verify the layout of the whole structure and specify some building-construction issues. According to the traditional reconstruction, it was a building with a stone ground floor and a wooden first floor. The existence of a mural structure is primarily indicated by the secondary fill of grooves after the foundation masonry (the so-called negative, *negativ, Ausrißgraben*) in the form of the incomplete layout of the building.<sup>6</sup> The revision excavation of the structure's negative proved a cast mortar bed of the foundation masonry and documented its locally preserved intact fragments. It was quarry stone masonry bound by lime mortar. An upper floor in the form of a wooden log superstructure can only be considered theoretically; any material evidence of its existence or form is missing. A fundamental contribution of the revision excavation is a more precise dating of the origin of the structure. Movable finds from sunken features disturbed by the palace's foundation masonry meant the structure could be dated post quem to the high phase of the Great Moravian period, i.e. most likely to the last third of the 9th century or possibly

the early 10th century (see Fig. 78).<sup>7</sup> This is a later dating than the original one. It is evident that some churches already stood on the acropolis when the palace was under construction.

The prominent position of the palace, its considerable size and the building structure all indicate that this was an extraordinarily important building in its time. A profane function of the palace as a prestige building of the prince or ruler is highly likely. There are doubts concerning a residential function, especially in view of its masonry structure; in the given time and milieu, residential buildings were built primarily of wood, while masonry structures were typical of ecclesiastical buildings.<sup>8</sup> This is why one of the considered hypotheses is a possible combination of a sacral function (even of a pagan cult) with a representation and assembly place, pointing to similar hall structures from the region of North-Western Slavs (e.g. Starigard-Oldenburg).<sup>9</sup> The whole situation is further complicated by the presence of graves near the structure. In particular, a group of graves north-west of the palace represents a small cemetery with elite grave goods.

Although some of the arguments linking the palace to a pre-Christian cult can be ruled out due to the late dating of the structure, the question of the use of this prestigious place in the middle of the acropolis before the construction of the palace remains unanswered. Except for a few earlier pits, the space lacks any traces of a more extensive structure that might have been a predecessor of the palace. Therefore, we cannot rule out a hypothesis that interprets the wider area of the later palace as a possible assembly place combining a cult function with a ceremonial and representation purpose.<sup>10</sup> Such a situation remotely resembles the earliest topography of Prague Castle with the legendary Žiži Hill, on which reportedly stood the enthronement seat of the Přemyslid dukes close to the earliest Christian buildings, the Church of the Virgin Mary and the Rotunda of St Vitus.<sup>11</sup> As for the palace building, the most likely interpretation is that it was a prestige hall structure, a kind of *aula regia*, combining representation, ceremonial and possibly sacral functions.<sup>12</sup>

4 Poláček – Škojec 2011, 167.  
5 Poulík 1975, 90.  
6 Poláček – Škojec 2011.

7 Poláček – Škojec 2011, 167-168.  
8 E.g. Konečný 2011, 295; Baxa – Maříková-Kubková 2017.  
9 Gabriel 1988a, 171-173.  
10 Cf. Klanica 1988, 163.  
11 Poláček 2010, 41.  
12 Cf. Binding 1996, 21-26.

## 2.4.2 excursus

# Floor Backfills as an Evidence of Surface Buildings

– Marian Mazuch

A specific phenomenon of the early medieval agglomeration in Mikulčice is the so-called floor backfills. These are tangible evidence of the existence of houses which, unlike most “Slavic world” dwellings, were not sunken in the form of pithouses but built on the ground. These are situated inside the fortified core of the agglomeration – the acropolis and the outer bailey – and in extramural complexes, such as the northern suburbium.<sup>1</sup>

Floor backfills are indirect evidence of wooden above-ground buildings. These are pre-arranged levelled and packed down areas that roughly correspond to the planned size of the future houses. They have a regular ground plan, usually consisting of sand or possibly clay, spread in a thickness of tens of centimetres (typically 20–30 cm) on the level of contemporary terrain. The material to be spread was extracted from elongated pits along the outer walls of the intended house. These pits were later used by the inhabitants of the house to deposit waste, which makes them an important source of knowledge about the way of life of the population of that time. Later research proved that some floors were partially comprised

of waste left in the place by previous occupants. Its subsequent levelling using non-contaminated material created a flat surface intended for the construction of the house.<sup>2</sup>

The character of the floor backfills indicates that the houses were most probably built using the log technique. There is no evidence that post structures would have been built on a floor backfill. The floors were usually the only thing to survive from the house

1 The phenomenon of the floor backfill in Mikulčice was first described in 1960 in connection with the rescue excavation conducted due to road construction in the Mikulčice outer bailey (Poulik 1961, 83–84) and subsequently documented, for example, see Klanica 1964, 55–59, Pl. 19–21.



Fig. 79 The excavation of an outer bailey settlement in the place of a future car park in 1960.

The clay-sand floor of one of the wooden houses with remnants of the fireplace in the foreground. The lanes between the houses were covered with a “waste” layer with bones, sherds and other finds (see the foreground of the photograph).

2 On heterogeneous floors in detail, see Mazuch 2013, 14–17.



Legend:

- Fortification of the outer bailey
- Silted-up river branches
- Floor backfill of log houses

Fig. 80 House floor backfills as the remnants of a densely built-up area with surface buildings are best preserved in the area of the outer bailey.

structure (not including a heat source – hearths and ovens, see Fig. 79). Only in exceptional cases did the wooden structure of the house leave archaeological traces in the form of the carbonised foundation remains of the log structure lying directly on the surface of the floor. The ground plans of the floors were often negatively delimited by concentrations of pottery sherds and animal bones that filled the space between the houses. Smaller square-shaped floors (4–5 m long) occurred, as did large rectangular floors with an approximate size of up to 10×5 m. Such large houses are completely unknown from the rural milieu of Great Moravia, for instance.<sup>3</sup>

The existence of floor backfills and their relatively good discernibility in the terrain makes it possible to study the structure and development of housebuilding in the individual areas of the stronghold. The light colour of the sand and clay floors differs from the dark sediment of the cultural layer. The Mikulčice outer bailey is exceptional in this respect, as the floors are situated in several layers one on top of the other, often in small intervals (Fig. 80; 81). This testifies to the high intensity of occupation in the relatively

small area of the settlement enclosed by fortification – the cultural layer grew quickly in height, creating layer sequences important for present-day stratigraphical observations and the study of the material culture (Fig. 81). The specific structure of the buildings described in the outer bailey reflects the particular function of this area, which was the residential area for the ruler's warrior retinue, according to various archaeologists.<sup>4</sup>

The floor backfills and log houses are typical attributes of the core territory of the Great Moravian agglomeration of Mikulčice. This phenomenon is linked to the social status of the inhabitants of the stronghold, different from the rural milieu. The situation changes just 1 km from the middle of the fortified centre, where sunken huts – pithouses – become the main type of dwellings (see the settlements Mikulčice-Trapíkov and Kopčany – Za jazerom pri sv. Margite, Excursus 2.9.1 and 2.2.3).<sup>5</sup> This sudden change might suggest the notional boundaries of what was regarded as part of the agglomeration of the Mikulčice power centre.

3 Kavánová 1987.

4 Poulík 1967, 207–211; Poláček 2008c, 282.

5 Poláček 2001b, 365–366.



Fig. 81 The stratigraphy of the outer bailey settlement with sandy floor backfill layers of log houses.

The floors of several houses one on top of the other are separated by dark interjacent layers with finds.

## 2.4.3 excursus

# Residential Area Near Church 7 in the Suburbium and the Question of Courts

– Lumír Poláček

The residential district near Church 7 in Mikulčice is situated on the Štěpnice I sand dune at a distance of approximately 300 m from the north-west gate of the outer bailey. It is a slight elevation in what is today a grassed part of the suburbium, delimited by a shallow ditch-like semicircular depression in the west. The first fieldwork phase took place there in 1961 when Church 7 and the adjacent small cemetery were investigated.<sup>1</sup> An investigation of the whole present-day grassed part of the extramural settlement was carried out in the same year using a mechanical excavator for linear trial trenching, which documented 3-4 isolated residential districts on the Štěpnice I dune.<sup>2</sup> The last, most extensive excavation,

B 2004-I-IV, focused on the most distinctive of these districts located in the north-west corner of the low promontory and included the area of Church 7.<sup>3</sup> The main motive for the latest research was to answer the question of whether the churches in the suburbium were parts of hypothetical courts and residential and economic units of the elites. Church 7 with its adjacent, evidently areally delimited occupation, provided a definite opportunity to find out more about these issues.

The 2004 fieldwork proved a one-phase, not very intensive occupation of an area north-west of Church 7 (Fig. 82). Regrettably, the pedological and stratigraphical conditions in the area, influenced

1 Poulík 1963, 76–87.

2 Poláček 1996, 219, Fig. 4.

3 Poláček et al. 2019, 448–450.

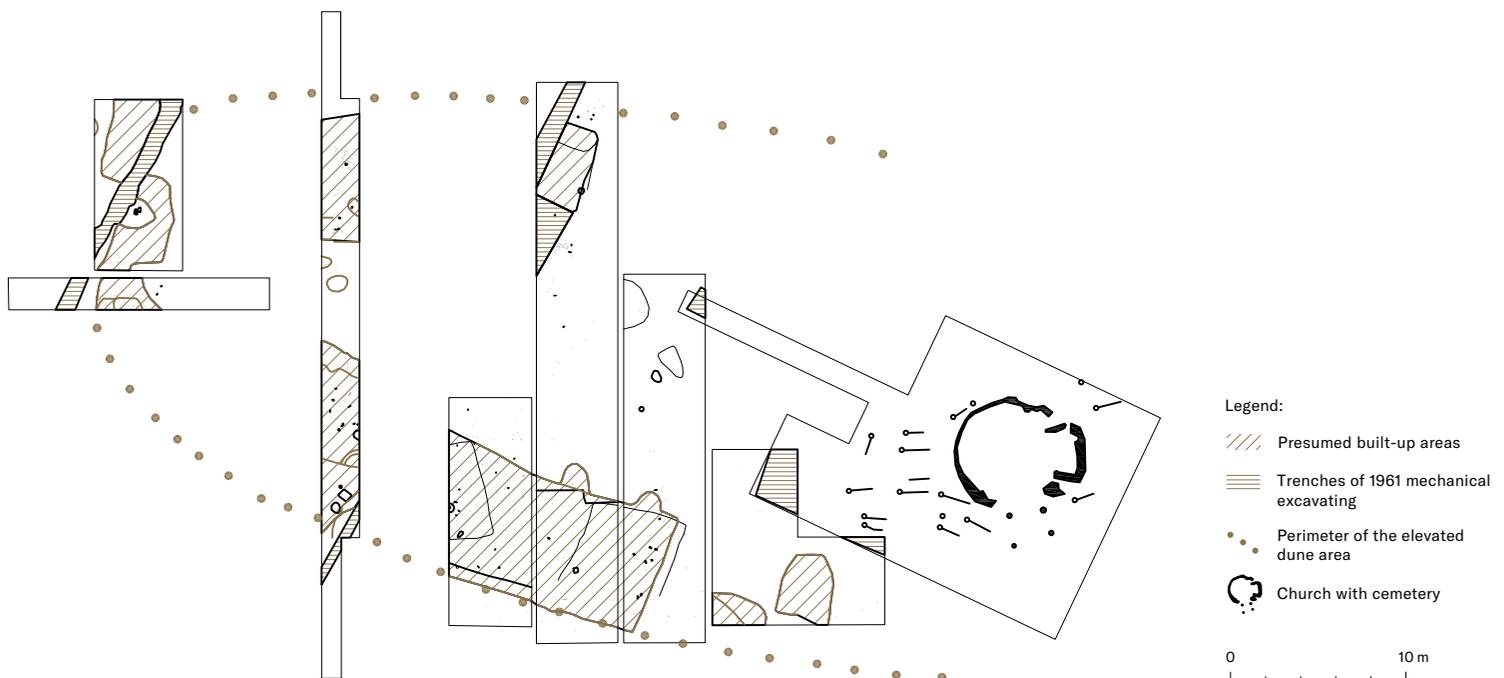


Fig. 82 The residential area on the Štěpnice I dune in the suburbium of the Mikulčice centre.

The built-up area lined the edge of an elevated dune, forming an elongated, horseshoe-shaped unit (dotted) whose "open" eastern side was enclosed by Church 7 with a cemetery.



Fig. 83 B 2004-I excavated area, view from the north. The most distinctive sunken feature is in the foreground, areas indicating surface buildings in the background, non-built-up area of the dune is in the middle.



Fig. 84 One of a pair of identical large silver *gombíky* with chased palmette decoration found in Grave 11 near Church 7.

by strong erosion, were not favourable to a detailed understanding of the original buildings. The soil profile, which smoothly passed from the terrain surface to underlying sand, did not always enable unambiguous identification of settlement features. Regular, slightly sunken structures filled by humic soil with a concentration of coarse components (stone, pottery and other settlement waste) indicated surface wooden buildings (Fig. 82). In two cases, smaller rectangular units – probably layouts of surface houses – could be discerned within these “darker” areas. Remnants of heating devices – reliable evidence of residential buildings – were generally lacking. Most settlement pits were shallow with undistinctive fills; only a smaller group of pits on the northern side of the complex represented classical deeper pits, probably with an economic function (Fig. 83). The built-up area lined the edge of an elevated dune, forming an elongated, horseshoe-shaped unit whose “open” eastern side was enclosed by Church 7 with a cemetery (Fig. 82). In contrast to most residential areas in the suburbium, no “settlement” grave was discovered there.

The settlement was situated next to Church 7 and its cemetery. The modest construction remains of the simple cylindrical sacral building with a 6.5 m external diameter of the nave were excavated in 1961. The walls of the rotunda were constructed using wattles daubed with mortar on both sides. The church is the simplest of the Mikulčice churches in terms of both layout and construction.<sup>4</sup> Half of the 16 graves found near the church were without any finds; the others contained simple grave goods corresponding to

the second half of the 9th or early 10th century.<sup>5</sup> Three elite graves stand out from this average – two with spurs and one with large silver *gombíky* (Fig. 84).

The excavations conducted to date have proved that a smaller residential area existed in the Štěpnice I area in the second half of the 9th or the early 10th century, related by its layout, and probably functionally, to the church and its cemetery. The few finds primarily included items for daily use and common household equipment (pottery vessels, grinding stones, whetstones, nails, scissors, buckets, etc.). The scarce evidence of the presence of the elites is the spur and stirrup fragments and an iron strap-end. The only items that might have exceeded the framework of home production are a disc-shaped whetstone, undistinctive fragments of several crucibles and a woodworking turning knife. The property situation of the local community – as reflected in the composition of the archaeological finds – was not very different from the rural population. As regards construction features, there is no fortification and not even an enclosure to the court. The only distinct indicator of an elite milieu is the presence of a church, albeit in the simplest form. The sixteen discovered graves may correspond to a small family cemetery. Presumably, the residential area on Štěpnice I dune near Church 7 in Mikulčice’s extramural settlement was a residential and economic unit of the elites. This would have been situated close to the lower end of the range of courts that have been archaeologically examined so far, topped by the magnate court at Pohansko near Břeclav (see Excursus 2.4.5).<sup>6</sup>

4 Poulik 1963, 82–83; cf. Klanica 1986b, 146 and Galuška – Poláček 2006, 135–136.

5 Poulik 1963, 83–87.

6 Poláček et al. 2019, 448–450.

## 2.4.4 excursus

# Evidence of the Main Road in the Vicinity of Church 6 in Těšický Les

– Lumír Poláček

Church 6 in Mikulčice and its cemetery were situated on a type of low promontory projecting from the Těšický les sand dune on the southern side of the suburbium and delimited from two sides by what is today a silted-up riverbed. Church 6 – a double-apse rotunda – stands out in many aspects both from Mikulčice's churches and from the whole of Great Moravian sacral architecture (see Essay 2.5).<sup>1</sup> The Church 6 cemetery represents a specific necropolis in terms of the grave goods. Its most distinctive features include a high percentage of graves with gold jewellery, a high concentration of graves with spurs but a lack of weapons and vessels.<sup>2</sup> The whole sacral complex has long been the subject of debate concerning the function of the churches in the extramural settlements of the

Mikulčice centre. They are most often interpreted as a part of the magnate courts whose existence has not yet been archaeologically proven in Mikulčice (see Excursus 2.4.3).<sup>3</sup> Fieldwork carried out in 2017 east of the sacral district of Church 6 to verify the presence of the residential or other profane features of a prospective magnate court was unsuccessful but contributed to the understanding of another important question in Mikulčice research: the course of the agglomeration's main road.<sup>4</sup>

After passing through the outer bailey and the acropolis complex, the main road crossed the riverbed on a wooden bridge connecting the south-eastern gate of the acropolis and the complex near Church 6 in the suburbium (Fig. 85). It returned to the mainland

1 Poulík 1963, 27-28; Galuška – Poláček 2006, 135, incl. ref.

2 Poulík 1963, 39-67; Klanica 1986b, 142-146; Profantová 2003, 55-88; Košta 2008.

3 Poulík 1975, 129-130.

4 Preliminarily Poláček et al. 2019, 456.

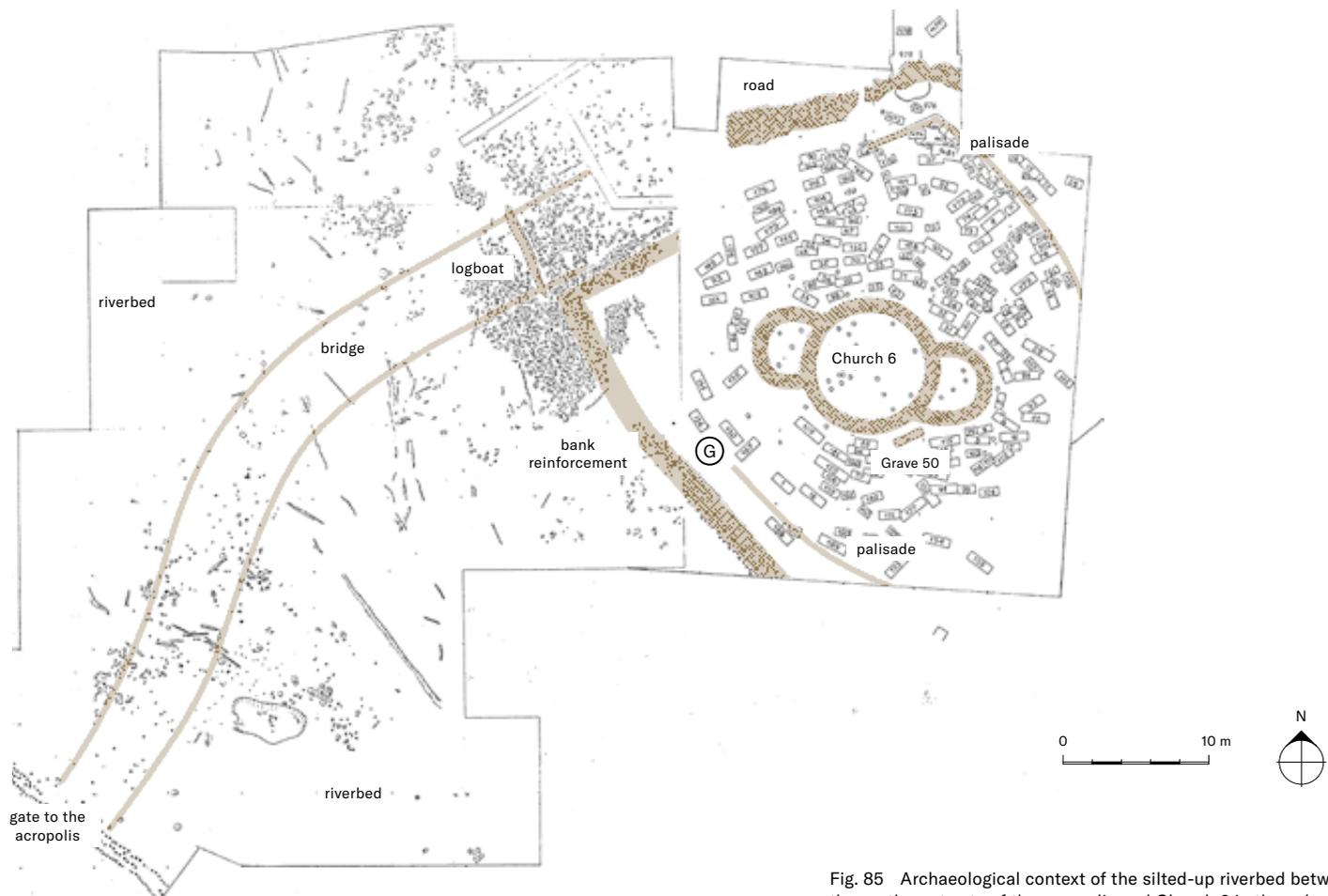


Fig. 85 Archaeological context of the silted-up riverbed between the north-east gate of the acropolis and Church 6 in the suburbium.

close to the north-western outer corner of the Church 6 cemetery and continued east along its enclosure. Like the churchyard enclosure, the road then bent towards the south-east.<sup>5</sup> The road was strengthened by stone ballast in this section, as is visible in the overall plan of the area investigated in 1960 and 1978–1979 (Fig. 85). A further course of the road was discovered in the newly examined area T 2017, which ran along the cemetery enclosure and after it ended, continued south-east (in the direction of the *Za jazerom pri sv. Margite* area near *Kopčany*; cf. Excursus 2.2.3). However, immediately after bypassing the Church 6 cemetery, the road had to cross the riverbed again. The question of whether it used another (as yet undiscovered) bridge or a ford remains unanswered. Two lines of posts delimiting the road corridor in this area are most likely the remains of a wooden (possibly corduroy) structure that strengthened the road in the terrain sloping down towards the former riverbed. Another important discovery is that the road was lined with graves, or more precisely, the skeletons of individuals, in the whole section bypassing the Church 6 cemetery. Some were deposited in a non-ritual manner and might be hypothetically linked to the presumed violent events accompanying the demise of the power centre in the early 10th century.<sup>6</sup>

Returning to the search for profane buildings belonging to Church 6, we must state that based on the excavation of the T 2017 area, the remaining part of the promontory south-east of the cemetery does not show any demonstrable traces of residential or other profane features contemporary with the church. It appears that the area was enclosed by a wooden wall together with the cemetery, perhaps as a reserve for the growing burial ground. The excavation did not detect any evidence of intensive occupation, especially that of an elite character, as might be presumed. Evidence of dwellings in the form of floor backfills can only be found beyond the road, which definitively separates the sacral district of the church and its cemetery from the residential complex on the *Těšický les* dune (Fig. 86). A similar situation can be observed at *Pohansko* near *Břeclav*, where the second church and its cemetery are separated from a residential area (a presumed court) by a road.<sup>7</sup> Likewise, in the case of *Mikulčice's Church 6*, it cannot be ruled out that the court that was sought was situated separately from the sacral district, in the area of the currently forested *Těšický les* dune. After all, the newly discovered court in *Kopčany* also stands separately; the Church of *St Margaret of Antioch* near *Kopčany* is not part of it, although they were probably functionally interlinked (see Excursus 2.2.3).

5 Poláček 2008b, 14–15, Fig. 9.

6 Cf. Hladík – Mazuch 2010; Poláček 2018c, 77–82.

7 Macháček et al. 2016, 203–205, Fig. 142.

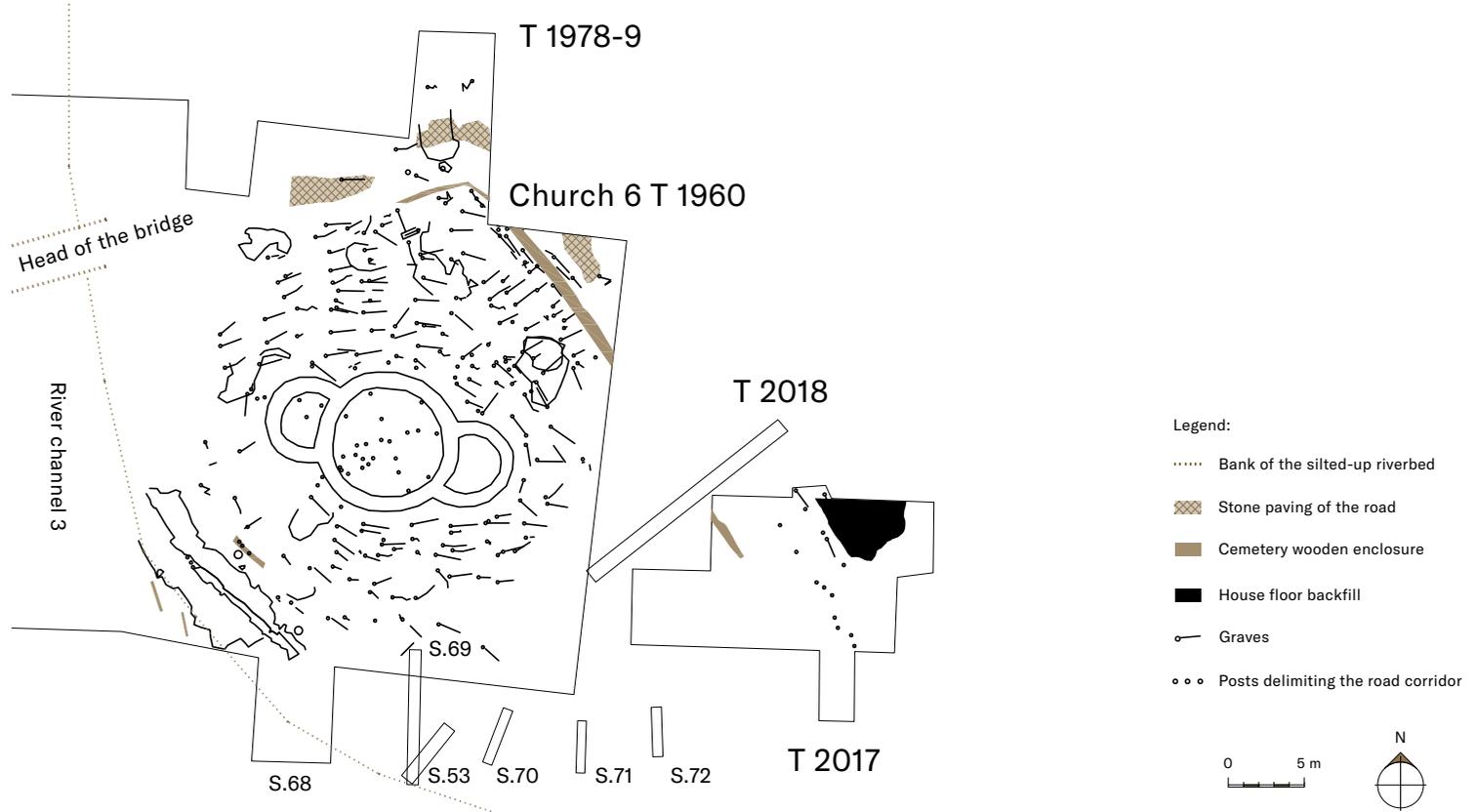


Fig. 86 Church 6 in Těšický les area in the suburbium with the cemetery and the main road.

# Magnate Court at Pohansko Near Břeclav

– Jiří Macháček

After Mikulčice and Staré Město, Pohansko, in the district of Břeclav, is one of the most well researched agglomerations of Great Moravia. All three sites are characterised by their large settlement area covering tens of hectares. Each site is divided up into multiple fortified and unfortified areas serving a variety of different practical functions and of varying social importance. These power, administrative, economic, military and cultic centres of Great Moravia were surrounded by hinterland and were at the top of the settlement hierarchy of the time. However, there are not only similarities between them, but also differences. As one of the principal Great Moravian settlements, it is believed that Pohansko was built in the 9th century according to a definite plan in a comparatively short period of time. Although it was built on the site of an older settlement from the 6th–8th century, there is no evidence of centrality from the pre-Great Moravian period as has been found at Mikulčice and Uherské Hradiště agglomeration. Pohansko lies in a unique strategic position; the most southerly of the main Moravian centres and a place, where foreign armies and merchant caravans entered the core of Great Moravia. The role of Pohansko was to provide military protection for the Great Moravian territory and manage long-distance trade. Professional crafts were also concentrated here. A site of this type could only have been built on a greenfield area by the person holding the highest authority in the land, i.e. the ruler. One of his residences was also situated here, which he had built in the style of the Carolingian *Pfalz* (palace).<sup>1</sup>

We assume that the ruler of Great Moravia, like the Frankish kings, had more than just one seat, the capital of the country, but ruled “from the saddle” – meaning he travelled all over the country with his retinue and court and asserted his power in person. If this assumption is correct, he must have had residences scattered around his realm that would have been similar to *Pfalzen* – the seats of the Frankish kings. The royal residence we have identified at Pohansko is a settlement structure that was excavated back in the 1950s and 1960s and was then referred to as a “magnate court” (Fig. 87).

Covering an area of approximately 1 ha, this was surrounded by a massive square palisade, built in at least two stages, which undoubtedly served as a fortification.<sup>2</sup> More than 50 settlement features have been surveyed inside. Several functional districts can be identified within this settlement structure:<sup>3</sup> a sacral district with a church and cemetery, a residential part with houses with one or more rooms on stone and mortar foundations, a farm with

enclosures for animals, stables, barns, granaries, etc., and some large above-ground post structures, which could have been used for meetings.<sup>4</sup> The production, craft buildings and workshops were mostly situated outside the palisade enclosure.<sup>5</sup>

Built in a separate enclosure by the court was a church,<sup>6</sup> which, according to the available sources, was a single-nave building (18.65 m long, 7.2 m wide) with an offset semicircular apse and an almost square narthex; a small annex adjoining the nave on the south-east side. The church was built from quarry stone, bonded with lime mortar. The walls were plastered and whitewashed and decorated with colourful paintwork inside. The foundation of the church tends to be associated with the early phase of the court.

The cemetery established by the church in the 9th century was used by the community that resided in the court. A total of 407 inhumation graves have been uncovered here. Swords were found in 4 graves, axes in 8, spurs in 32 and Byzantine-Oriental gold and silver jewellery in 46 of the graves.<sup>7</sup> The great majority of the adults buried there were men, indicating the unusual composition of the court inhabitants,<sup>8</sup> where part of the ruler’s retinue could also have lived. This is corroborated by the relatively high proportion of graves containing weapons and equestrian equipment (23% of the 145 adult males). The lives of these men is also illustrated by frequent fractures in the splanchnocranial area (18 individuals) – fractures of nasal bones (*ossa nasalia*), which could have been the result of an accidental injury, although more often tend to be associated with human violence. According to radiocarbon dating, the skeletons from the graves containing swords were elite warriors buried at the magnate court sometime between 789 calAD (Grave H68, confidence interval 68.2%) and 966 calAD (Grave H26, confidence interval 68.2%).<sup>9</sup>

The magnate court was situated at the highest part of the flat inundation of the River Dyje and was undoubtedly the central point of the early medieval agglomeration at Pohansko. Its interpretation as the seat of the ruler is based on its formal similarity to the Carolingian-Ottonian *Pfalzen* and courts (*curtis*).<sup>10</sup> Analogies can be found in the central part of the *Pfalz*, which we call the *palatium*. This is a group of buildings that included the royal residence (*caminata*), a hall building (*aula*) and a chapel. This residential part of the palatinate had great symbolic and practical significance.<sup>11</sup> It was usually situated in the *Pfalz* on a relatively large, specially walled-off or fortified area, the dimensions of which are similar to

1 Macháček 2008, 107–125.

2 Dostál 1969.

3 Dostál 1988b, 283.

4 Dostál 1975, 80.

5 Dostál 1975, 49–50, 56–57.

6 Dostál 1992; Dostál – Kalousek – Macháček 2008; Kalousek 1961.

7 Kalousek 1971.

8 Drozdová 2005.

9 Košta et al. 2019.

10 Dostál 1975; 1988b; Macháček 2010; Třešník 2001b, 36.

11 Binding 1996, 64; Renoux 2001, 37.

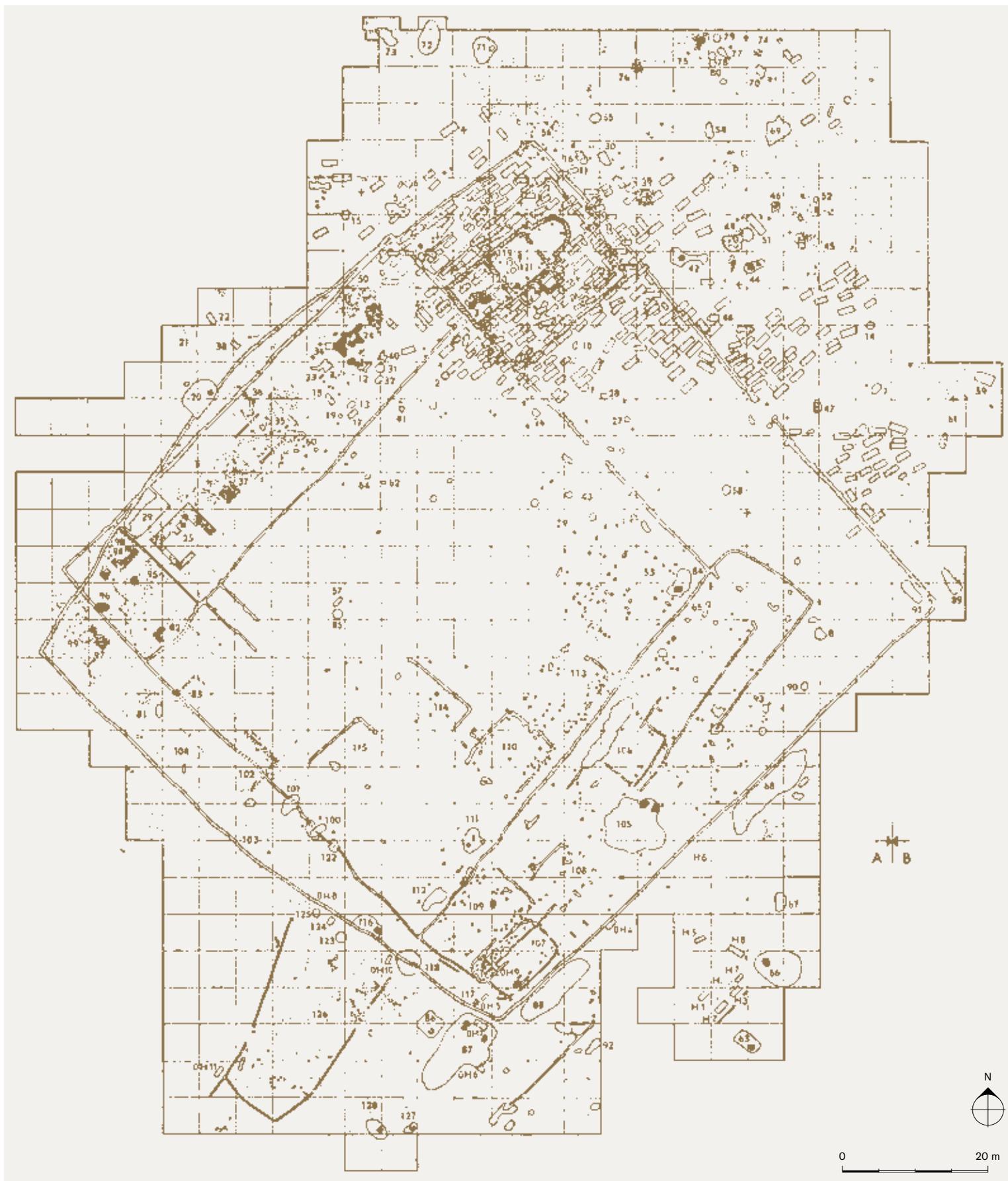


Fig. 87 The magnate court at Pohansko near Břeclav. Overall plan of the excavated area in 1959-1965.

the court at Pohansko (e.g. Nimwegen 115 × 100 m, Werla 150 × 140 m, Tilleda 100 × 100 m, Ingelheim 99.5 × 91.5 m; cf. Pohansko – the magnate court: earlier phase 64 × 70 m, later phase 80 × 100 m).

The *palatium* at Pohansko, if we keep the terminology used by German researchers, shows significant similarities to the buildings of the older phases of the Ottonian *Pfalzen* at Tilleda and Grone, as well as sites very close to the *Pfalzen* at Elten<sup>12</sup> and in Gebesee.<sup>13</sup> The decisive factor is the relative position of the individual elements of the *palatium*. The royal residential dwellings (*caminata, camera, casa, domus*) are adjacent to the church, which is usually situated near the entrance, as is the case with Carolingian and Ottonian *Pfalzen* and Pohansko. These dwellings of the above-mentioned sites have a very similar character – they are generally small, isolated houses very close to one another standing in a single row behind the church. What is particularly important is their close connection to the church. At certain *Pfalzen* the palace is even connected to the chapel by a passageway.<sup>14</sup>

Another important part of the palatinate is the hall (*aula*). This was used primarily for gatherings to mark notable events (e.g. imperial assembly). At Pohansko, as well as at Tilleda, Grone and Gebesee, the large above-ground assembly buildings in the *palatium* are situated on the side opposite the church and the dwellings. As can be seen at many other *Pfalzen*, between the two groups of buildings there was a large empty space with no construction – the courtyard. Based on research conducted at German sites we know that the smaller variants of the large assembly buildings were around 9 m wide and more than 20 m long, which corresponds to more recent reconstructions of the hall buildings found at the magnate court at Pohansko.<sup>15</sup>

The overall shape of the *palatium* at Pohansko, which is bounded by a symmetrical, almost square palisade, does not match the irregular shapes of the Ottonian *Pfalzen* e.g. at Tilleda, Werla, Grone and elsewhere, the layout of which is generally determined by their position on prominent hills, promontories or terraces. The square shape of the palisade at Pohansko, however, is nothing unusual and apparently has its roots in the tradition of the Late Antiquity.<sup>16</sup> A similar layout can be found, for instance, at one of the most important *Pfalzen* of Charlemagne in Ingelheim.<sup>17</sup> This consists of a rectangle, the size of which (99.5 × 91.5 m) is almost identical to the later palisade at Pohansko, and a semicircle with towers (*exedra*), although these do not exist at Pohansko. The size of the *palatium* at Pohansko is wholly adequate for the residential needs of a high-ranking or even the highest-ranking person. The adoption of cultural practices from the Late Antiquity and

Carolingian milieu, referred to as “*imitatio imperii*”, is not unusual and has also been found elsewhere on the periphery of the Frankish Empire, e.g. amongst the Obodrites.<sup>18</sup>

The *palatium* at Pohansko was definitely not the most important ruler’s residence in the land. Evidence of this includes the absence of graves in the nave of the church. The members of the ruler’s family were buried in the more prominent Great Moravian churches. These include Church 3 (the basilica) in Mikulčice – the biggest ecclesiastical building in Great Moravia, with five people buried in masonry tombs and the church complex in Sady near Uherské Hradiště, where Vilém Hrubý uncovered other extraordinary graves in the interior of the church. These finds led the German researcher Mechthild Schulze-Dörrlamm to conclude that “the burials inside the 9th- and 10th-century churches belonged to members of the elites of the political and social hierarchy of Great Moravia and Bohemia” and in Mikulčice these graves “belonged to a small group of selected people, exclusively Moravian princes... and princesses”.<sup>19</sup>

We can now correct her conclusions to some extent, thanks to the most recent discoveries made at Pohansko. In 2006, the second church (rotunda) was discovered in the north-eastern suburb, with five burials in its interior and other 149 burials in its vicinity. The two churches at Pohansko differ significantly from each other. While the first church from the magnate court, which we consider to have been the ruler’s residence, was a grand building, made entirely of stone and decorated with colourful paintwork, the design of the rotunda from the suburb was much simpler, constructed from a mix of wood and stone and lacking any interior decoration. In comparison with the cemetery at the *palatium*, the burial ground by the rotunda was smaller and the graves contained fewer valuable offerings. Based on this comparison, we assume that towards the end of the 9th century as well as the members of the ruler’s family, members of the elites from the lower levels of the social pyramid also began to be buried in churches. In the case of Pohansko, these could have included, for instance, the castle governor – castellan, who represented the ruler’s interests while he was away from Pohansko. We associate the dominant Grave H153 from the interior of the rotunda with this princely official, who apparently founded and owned the small church in the suburb. Near the rotunda, there is a settlement where militaria, jewellery and other exclusive objects have been found. This could have been the residence of the castellan, which can be seen as a counterpart to the royal residence from the central part of the agglomeration at Pohansko.<sup>20</sup>

12 Renoux 2001.

13 Donat 1996.

14 Binding 1996, 65.

15 Binding 1996, 59, 64; Macháček 2001a, 281.

16 Dostál 1988b, 284.

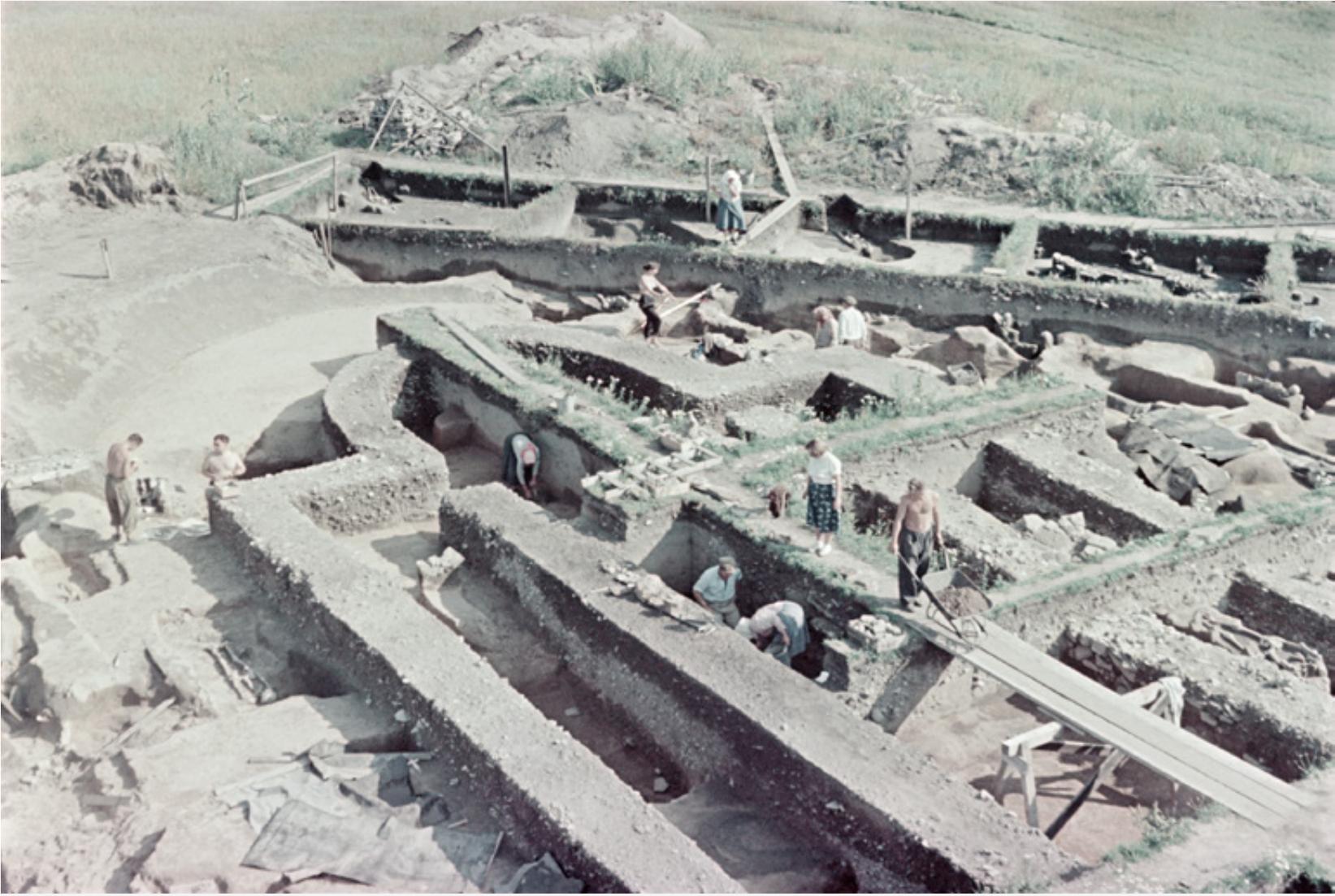
17 Binding 1996, 99–114.

18 Gabriel 1986, 360.

19 Schulze-Dörrlamm 1993.

20 Macháček 2016; Macháček et al. 2014; Macháček et al. 2016; Macháček – Wihoda eds. 2019.





Excavation of the eastern side of Church 3 in 1957.  
Group of four workers in the centre of the picture is  
uncovering Grave 580 in the main nave of the church.

## 2.5

# Ecclesiastical Centre and Place of Worship

– Lumír Poláček

Christianity as the new official ideology, a buttress of power and an integral part of the identity of the Mojmirid dynasty, played a fundamental role in the existence of Great Moravia and its main centres. Written sources only generally inform us about the beginnings of Christianity in Moravia and only later discuss in more detail the missionary activity of two Byzantines, the brothers Constantine/Cyril and Methodius (see Essay 1.3). The beginnings of the Christianisation of Great Moravia was part of the missionary activity of the Bavarian episcopate in Pannonia following the defeat of the Avar Khaganate by Charlemagne's army in 796. Reginhar, the Bishop of Passau, reportedly baptised "all Moravians" in 831 and presumably, the first ecclesiastical organisation in Moravia was formed around that time. The Byzantine or Cyril-Methodius mission thus arrived in 863 to a land that was in essence already Christian. Although the mission did not create a permanent basis for a regional church, it had enormous cultural and diplomatic impact. Constantine created his own alphabet, the Glagolitic script, for the needs of the mission, while Methodius helped Moravian rulers achieve their long-term goal: to form their own ecclesiastical organisation in Moravia under the jurisdiction of Rome and thus strengthen their political independence from the Frankish Empire. The two Byzantines are considered the founders of an independent Slavic culture based on their own ecclesiastical literature, which was later adopted, above all, by the Southern and Eastern Slavs.<sup>1</sup>

Archaeological sources indirectly and ambiguously reflect the course of Christianisation and the existence of an ecclesiastical organisation in 9th-century Moravia with one exception: the church buildings, which represent the only real form of material evidence; approximately 25 are known from Great Moravia's central territory. On the other hand, liturgical objects are found only rarely; they are lacking in graves, with a few exceptions, and are difficult to identify in settlement contexts.<sup>2</sup> Archaeological finds in the form of pectoral or processional crosses occur more often, as do cross-shaped pendants or fittings.<sup>3</sup> On the other hand, the motif of a cross on art and craft products or items for daily use does not necessarily testify to a Christian milieu or identify the producer or user of the given item as a Christian. The influence of Christianity on the burial rite of 9th-century Moravians is a major and open question that exceeds the ambitions of this text. Presumably, its impact was fundamental, but we are unable to define it with sufficient precision within the whole complex of the social and ideological changes in the 9th century.

### Great Moravian sacral architecture

This term is used for the 9th- and early 10th-century church buildings from the presumed central territory of the power-political unit called Great Moravia. The whole set was discovered and made accessible to science almost exclusively due to archaeological research. This happened relatively late, during the so-called "golden age" of discoveries of Great Moravian church buildings in the 1950s and 1960s when almost every excavation season revealed previously unknown structures of the Great Moravian strongholds.<sup>4</sup> Although there was some new data in the following 35 years of research, mainly from the processing of earlier excavations, no new churches were discovered in the field, with a few exceptions. Two more churches appeared in the new millennium by verifying the Great Moravian age of the Church of St Margaret of Antioch near Kopčany on the present-day Slovak side of the Mikulčice agglomeration in 2004 and the discovery of the second church in Pohansko near Břeclav in 2008. An enlivening of and a considerable contribution to this sphere of research came from the revision excavations of church buildings in Mikulčice in 2008–2013. Of course, we must reckon on prospective new discoveries, especially the wooden architecture and buildings in the presently built-up areas of Great Moravian agglomerations, such as the town centre in Uherské Hradiště.

The potential for finding as yet unknown Great Moravian sacral architecture appears to be exhausted today, but the information potential of the whole set is far from exploited and offers prospects of further important discoveries. However, one of the main preconditions is the interdisciplinary processing of the excavations of Great Moravian churches. Many of the buildings still lack critical archaeological processing of the field documentation, an analysis of the archaeological context and an overall theoretical evaluation. Natural-science and technical analyses of construction-technological elements – mortars, plasters, cast mortar floors, etc. – are an example of the so far not fully exploited information value of this material.<sup>5</sup> The latest research in this field is literally changing the image of Great Moravian sacral architecture.<sup>6</sup>

The set of church buildings from the presumed central territory of the power-political unit of Great Moravia comprises 20–25 structures although no more than 20 of them are archaeologically provable.<sup>7</sup> These include five buildings from the territory of the Staré Město – Uherské Hradiště agglomeration, in the areas Na Valách, Špitálky, Na Dědině (St Michael), the church complex in Uherské Hradiště – Sady and Modrá (Fig. 88: 11–15). The

1 On the Christianisation of Great Moravia, see e.g. Dvorník 1970; Vavřínek 1963a; 1963b; 1978; 2013; 2017; Betti 2014b; Jan 2014; Kalhous 2019.

2 See e.g. Kavanová 2003, 272; 2014.

3 Kouřil 2014.

4 On the development of knowledge and state of research into Great Moravian sacral architecture, see e.g. Galuška – Poláček 2006 or Poláček 2008a.

5 See e.g. Pípal – Daim eds. 2008.

6 Preliminarily, Maříková-Kubková 2010.

7 Poláček 2008a, 12–16.



Fig. 88 Ground plans of Great Moravian churches.

1 – Kopčany, Church of St Margaret of Antioch; 2-10 – Mikulčice, Churches 2-10 (numbers correspond to the established denotation of individual buildings); 11 – Staré Město – Na Valách; 12 – Staré Město – Špitálky; 13 – Staré Město – Na Dědině; 14 – Modrá; 15 – Uherské Hradiště – Sady; 16-17 – Pohansko near Břeclav, first and second church; 18 – Ducové; 19 – Bratislava; 20 – Devín.

Mikulčice – Kopčany agglomeration has 10 provable churches – Churches 2 to 10 (Fig. 88: 2–20) and the Church of St Margaret near Kopčany (Fig. 88: 1), not including other hypothetical buildings. Two churches are documented from the Pohansko near Břeclav stronghold – the first and second church (Fig. 88: 16–17). Bratislava, Devín and Ducové are listed among the sites with churches from Slovakia, although the dating of the remains documented there is somewhat less convincing given the long-term occupation of these sites (Fig. 88: 18–20).

The buildings of Great Moravian churches are rather varied although most represent common early medieval church layouts. A longitudinal plan appears most frequently, either with a rectangular presbytery (6 times) or an apse (4 times). Circular-plan buildings – rotundas – are also frequent (6 times), albeit with considerable variability in terms of the layout and the building structure. Basilica-type buildings (2 times), the most prestigious Great Moravian type of church, are relatively rare (Mikulčice – Church 3 and Bratislava). The more complex structure in Uherské Hradiště – Sady and the longitudinal plan ending with a trefoil in Devín (Fig. 88: 20) represents other types. Besides Church 3 in Mikulčice, the most ambitious 9th-century Moravian building is the church complex in Sady. This is indicated by the relatively complex, gradually developed layout and an independent burial chapel, as well as the overall character of the material culture.<sup>8</sup>

Since the 1960s, the ideological sources of Great Moravian sacral architecture have been sought in a wide area stretching from the Byzantine Empire in the east and the Adriatic regions in the south to the Frankish Empire in the west.<sup>9</sup> It has been stated that Great Moravian churches share the most characteristics with Old Croatian architecture of the Adriatic area.<sup>10</sup> In the 9th century, both Moravia and Croatia were situated on the periphery of the Carolingian Empire, which was the source of ideological models and patterns for architecture as well as arts and crafts in the two regions. Of course, there were also Byzantine and other influences. The main difference was that the Adriatic region could follow the Late Antiquity architectural tradition and make use of rich raw resources in the form of local quality stone material, whereas the Slavic milieu in Great Moravia with its traditional “wooden culture” had yet to acquaint itself with the new building techniques. The Moravians found the nearest models in the Danube regions and the eastern part of the Frankish Empire. Besides the existing Roman-provincial architecture, they were inspired by Merovingian and especially new Carolingian sacral and representation architecture (cf. Fig. 89; 90). It was most likely there or in the Northern Adriatic region that the Moravians encountered real architecture for the first time. The first church builders probably came from those areas, either with the missionaries or were invited by the Moravian rulers or magnates. Impulses evidently came from the Byzantine milieu, especially after the arrival of the Cyril-Methodius mission. However, these influences seemingly left no considerable impression in Moravian architecture although the construction of narthexes or possibly tomb chambers/mausoleums is sometimes associated with them.<sup>11</sup>

The building material for Great Moravian churches was quarry stone bound by mortar and supplemented with wooden structures. It appears that quality stone was relatively rare – it might have been replaced by wood in some cases, even in the more important buildings. Lime mortar was mostly high quality, and it was not spared in the construction of the churches. In the form of stucco, it was used to model construction details, apparently substituting worked stone elements. The masonry had a lime plaster finish inside and out; the interior was covered, to a greater or smaller extent, with mural paintings. The rather fragmentary character of the painted plasters makes it impossible as yet to reliably reconstruct the individual motifs or scenes, let alone the whole iconographic programme of Great Moravian churches. However, some researchers are convinced that the inner walls of the churches were covered with figural decoration in regularly arranged panels accompanied by stripes of geometric ornaments or possibly draperies.<sup>12</sup>

All in all, this is a more or less complete set of monuments that represents a permanent source base for the study of Great Moravian and pre-Romanesque architecture in Moravia. This set is interlinked by the similar circumstances of the finds of all the buildings including the time of discovery, the condition of the preservation of the building remains and the methodology of field research and documentation. It is now up to modern research to transform this potential into a critical archaeological, historical and art-history source and to utilise it in complex analyses and a comparative study within the framework of contemporary European sacral architecture.

### Churches of the Mikulčice – Kopčany agglomeration

Under this notion, we understand this to be a group of thirteen 9th- and early 10th-century church buildings from Mikulčice and Kopčany listed in the literature. Of the twelve numbered Mikulčice churches, nine can be considered proven (Churches 2–10), two hypothetically proven (“Churches 11–12”) and one unlikely (“Church 1”) given the current level of knowledge.<sup>13</sup> The still standing Church of St Margaret of Antioch near Kopčany can be listed as “Church 13” in Mikulčice (see Excursus 2.2.3).

As a whole, these churches do not deviate from the above-stated characteristics of Great Moravian sacral architecture. Most were discovered within a relatively short period (1954–1964) during the previously mentioned “golden age” of excavations of Great Moravian sacral architecture. They were examined and documented using unified methodology and equipment corresponding to the period. The churches were numbered 1 to 12 according to the order of discovery. A revision excavation of most of Mikulčice church buildings in 2008–2013 enabled to repeatedly uncover, document and examine the structures using digital technologies and modern analytics tools while considering the partial archaeological and construction-technology questions related to each building (see Excursus 2.5.1).

Most structures are preserved in the form of the so-called foundation negative (*Ausrisgraben*), a secondarily filled groove after the extracted foundation masonry. Intact remains of original masonry were detected exceptionally, in the form of smaller isolated remnants of the original foundation masonry preserved within

8 To the church complex in Uherské Hradiště – Sady, see Excursus 1.3.1.

9 For an overview, see e.g. Vavřínek 1980; Štefanovičová 2001.

10 Vavřínek 1980, 281.

11 Vavřínek 1980, 282.

12 Maříková-Kubková 2010, 24–28.

13 For an overview, see e.g. Poláček 2008a.

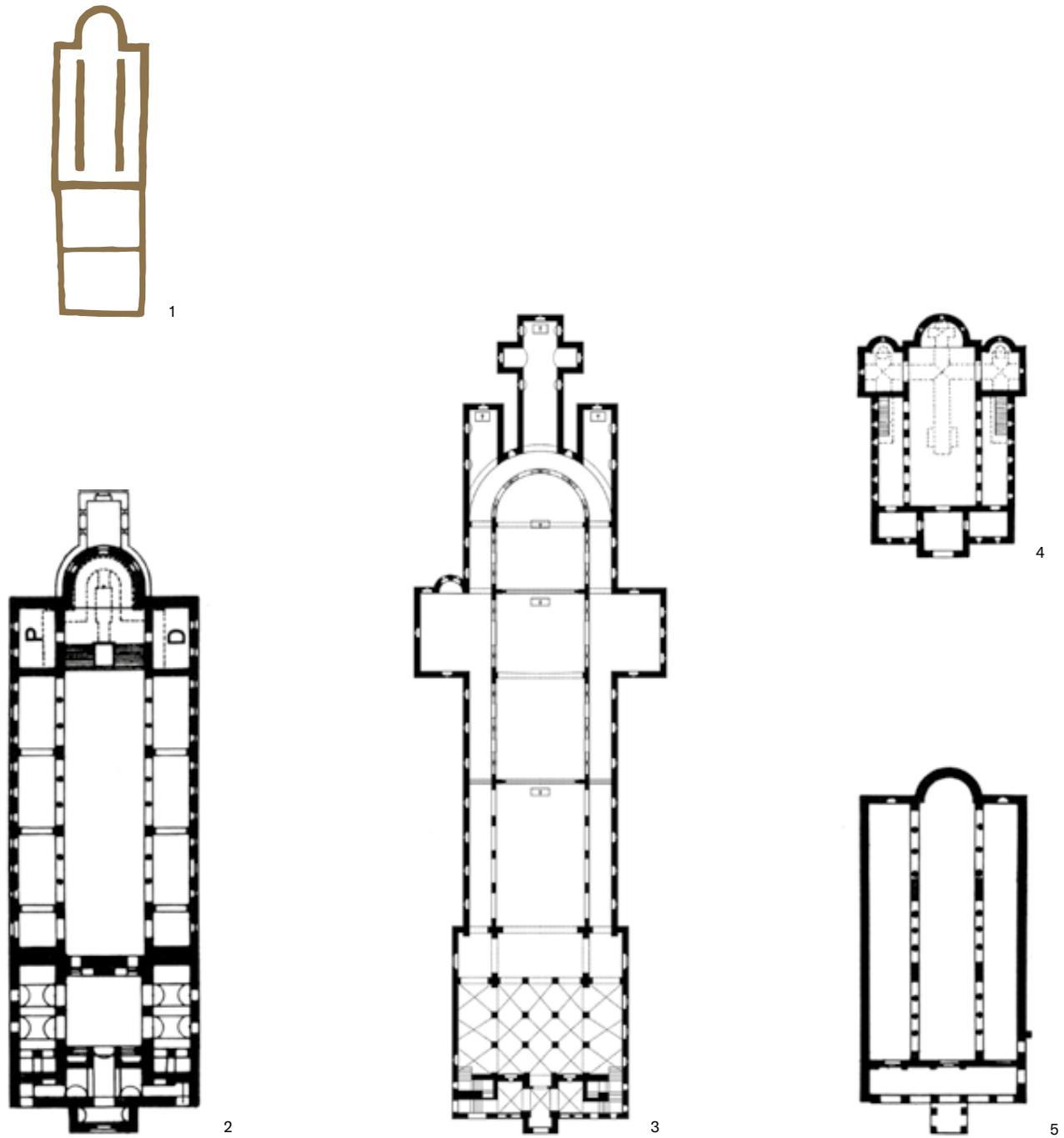


Fig. 89 Comparison of ground plans of pre-Romanesque basilicas.  
 1 – Mikulčice, Church 3; 2 – Werden near Essen, St Salvator, 824–859, Germany;  
 3 – Corvey, church in the Corvey Abbey, 844, France; 4 – Steinbach, Einhard's  
 Basilica, 815–827, Germany; 5 – Rome, Santa Maria in Cosmedin, renewed  
 around 777, Italy.

0 10 20 30m

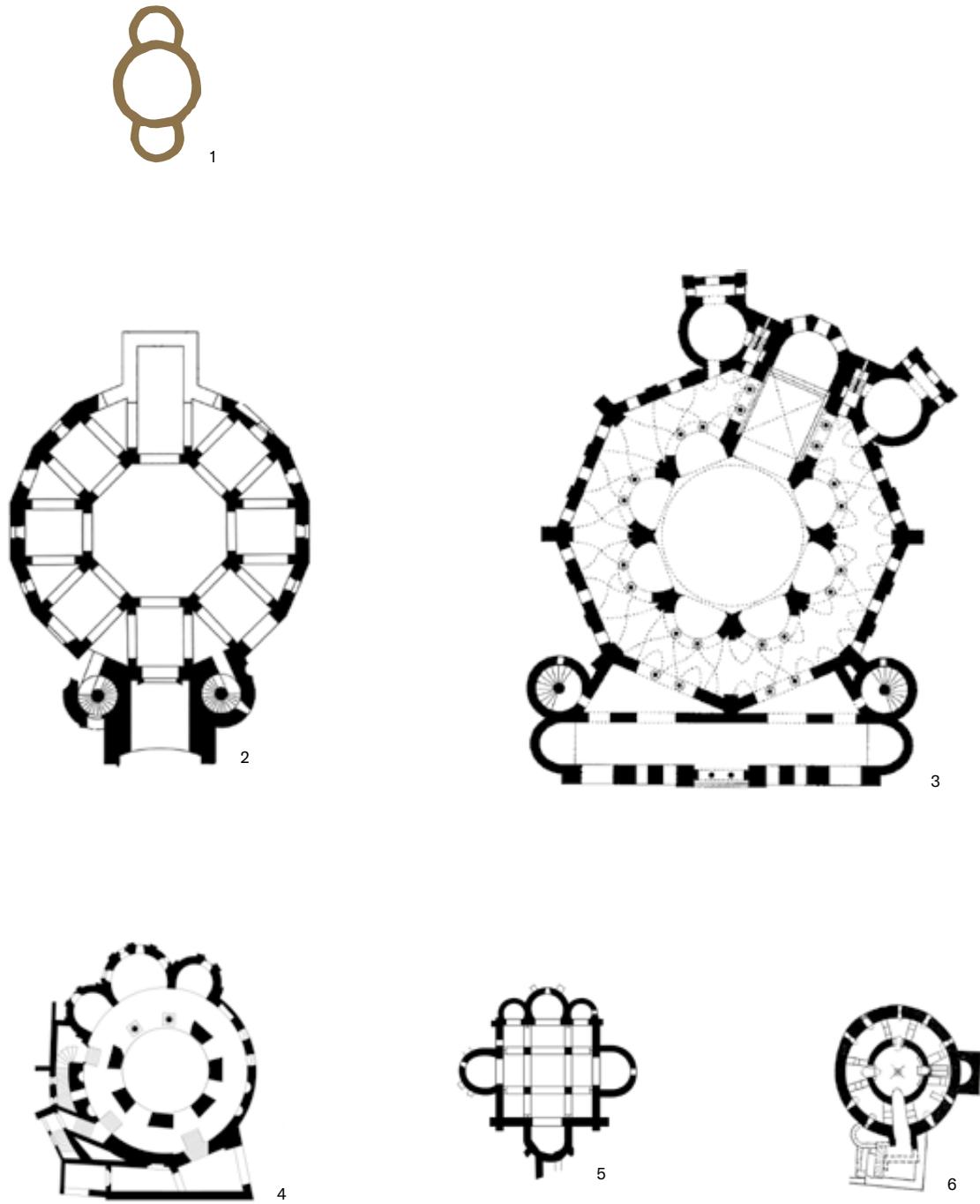


Fig. 90 Comparison of ground plans of pre-Romanesque circular-plan buildings.  
 1 – Mikulčice, Church 6; 2 – Aachen, Palatine Chapel of Charlemagne, Germany; 3 – Ravenna, San Vitale, 6th century, Italy; 4 – Zadar, Church of St Donatus, beginning of the 9th century, Croatia; 5 – Germigny-des-Prés, oratory, 806, France; 6 – Fulda, St Michael's Church, burial chapel of the Fulda monastery, 822, Germany.

0 10 20 30m

the foundation groove (negative). This is true with two exceptions where the masonry has survived to a greater extent: the southern perimeter wall of Church 3 and the eastern apse of Church 6 (Fig. 91).

The Church of St Margaret near Kopčany on the present-day Slovak side of the River Morava is exceptional among the sacral buildings in the Mikulčice - Kopčany agglomeration (Fig. 92). The core of the structure is the only Great Moravian architecture still standing so is a unique source for the study of pre-Romanesque 9th-century architecture in Moravia and Slovakia.<sup>14</sup> The original overall form of the fragments and “negatives” found at Mikulčice and other sites can be examined concerning the building’s layout, the structure of above-ground masonry, the construction details, building-technology and decorative elements. The context of the newly discovered enclosed unit of a court character in the neighbourhood of the Church of St Margaret near Kopčany provides new outlines to the issues of the settlement-historical structure of the Kopčany part of the agglomeration (see Excursus 2.2.3). It might provide the answers to questions that have remained unanswered for decades in Mikulčice: Were the courts that existed there residential, representative and economic units of the elites? What was their form and function?

The determination of the function of the individual churches is a complicated question. It is probable that the most important church in Mikulčice, in terms of both monumentality and position, was the church in which the prince/ruler attended the services.<sup>15</sup> It was certainly Church 3 - the basilica, together with the neighbouring palace, which symbolised the princely power consecrated by the adoption of the Christian faith and also served as the family cemetery (see Excursus 2.5.2). In contrast to the sacral buildings on the acropolis, which were presumably and with a high probability founded by the prince, private ownership is often considered for buildings in the suburbium, in connection with the sought after (but not yet found) magnate courts.<sup>16</sup> A more detailed specification of the function of the individual churches can only be reached through cooperation between archaeology, historical science and history of art with the primary focus on the issues of the liturgy. The aim is to examine the liturgical activity in the churches and their integration into the operation of the power centre (access to the church, its connection to the stronghold’s main routes, etc.). The best conditions for the investigation of these questions are provided by “enclosed” residential units such as the magnate court at Pohansko near Břeclav, the ecclesiastical complex in Uherské Hradiště - Sady and the whole area of the acropolis in Mikulčice.

The presence of interior graves inside the churches shows a specific function of some buildings. The burials placed in church naves are considered hypothetical dynastic graves. In Mikulčice, this applies to Church 2, 3 and 4 within the acropolis area.<sup>17</sup> Church 3 has in this regard the most prominent place among the Mikulčice churches, as five individuals were buried in its naves (see Excursus 2.5.2).

The basic attribute of the whole set of Mikulčice churches is the narrow dating, determined by the historical limits of the existence of Great Moravia (from the 830s to the early 10th century) and by the settlement context of the site. The beginnings of church construction in Mikulčice correspond to the arrival of Christianity



Fig. 91 Excavation of Church 6 in 1960.

The eastern apse of the rotunda with exceptionally preserved original masonry is in the foreground of the photo.



Fig. 92 Church of St Margaret of Antioch near Kopčany from the north-east. The state after removal of plaster in 2008.

14 Baxa et al. 2005.

15 Konečný 1978, 399.

16 E.g. Poulik 1975, 129-130; Baxa - Maříková-Kubková 2017.

17 Poláček 2020.

in Moravia and can hardly be earlier than the 830s. On the other hand, it is unlikely that the Mikulčice churches would have survived the strongly presumed downfall of the power centre in the early 10th century in their liturgical function.

### Churches and spatial organisation inside settlement areas

Mikulčice churches are part of the agglomeration's settlement areas. The exception is Church 10 in the suburbium west of the outer bailey, which lacks evidence of occupation in its surroundings. The position of each of the churches reflects the development, function, hierarchy and urbanism of the corresponding settlement area. In addition, it is influenced by the particular landscape predispositions. While we can roughly describe this settlement context, we cannot always reliably interpret it. The main obstacle is the limited and specific testimony of the archaeological record as we lack written sources, epigraphic evidence and support from absolute chronological evidence. Through stratigraphic observations, we can tell which churches were founded in previously occupied areas and which were used for profane purposes after their function ended.

Settlement features or horizons in superposition with a sacral structure also enable us to approximately date the building.

We know that all the Mikulčice churches except for Church 5 were surrounded by cemeteries at the time of their active use, together forming the so-called sacral districts. These complexes were sometimes separately enclosed by a wooden wall that divided them from the residential area of the settlement (Church 6). In other cases, such as the area of Church 4 on the acropolis, the church and the cemetery were situated inside a regular palisade or a fence-enclosed area together with settlement features. Another, somewhat different example, is Church 3 - the basilica, where the enclosed "sacral" area far exceeds the extent of the churchyard; we cannot be certain if this was an area reserved for future extensions of the cemetery or if the residential buildings for the clergy or other structures related to the operation of the church and the cemetery were situated here. Regrettably, at a long-term intensively occupied site, such as Mikulčice, and given the unfavourable condition of the preservation of settlement features and our limited possibilities of closer archaeological dating, we cannot unambiguously tell which settlement features situated inside the sacral areas were

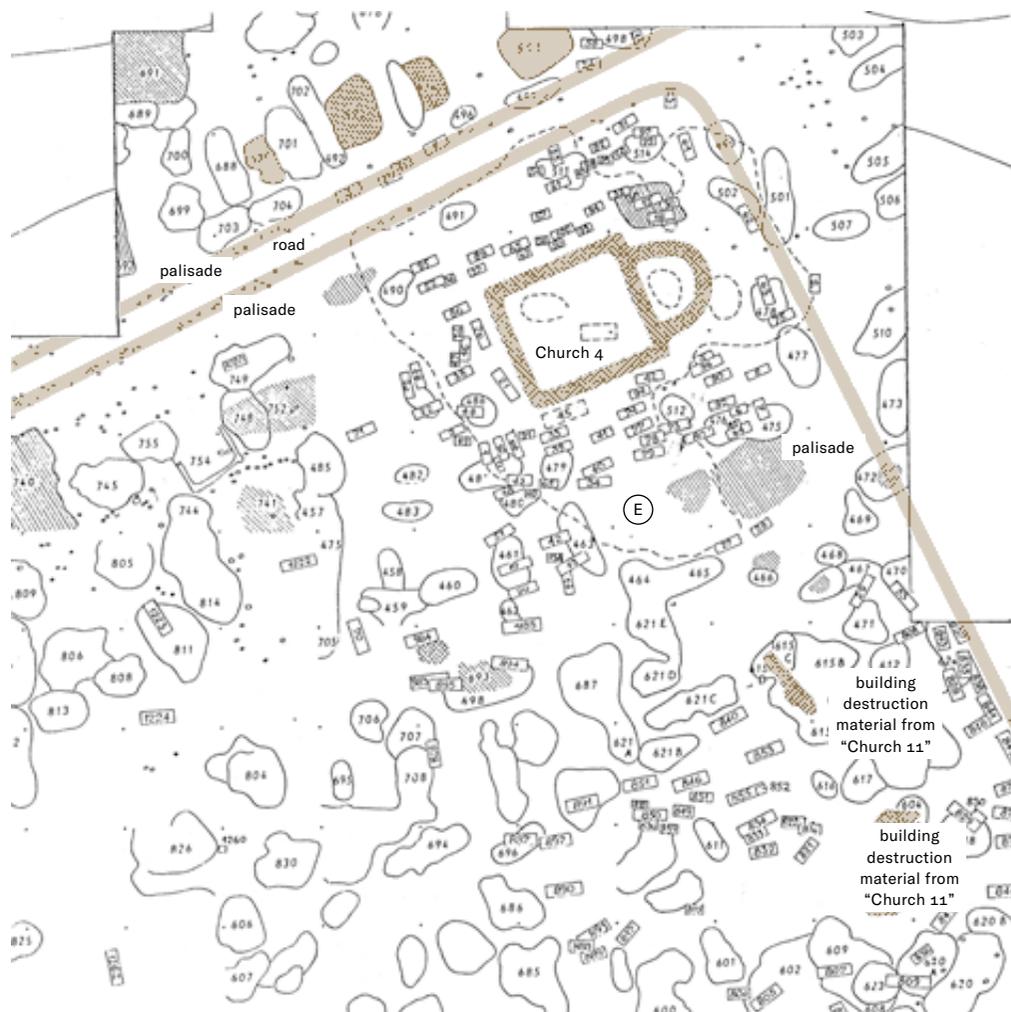


Fig. 93 Plan of the excavated area near Church 4 and hypothetical Church 11.

The main road of the Mikulčice agglomeration divides the sacral area of Church 4 in the south from the residential zone in the north. Church 4 with its cemetery is situated in the north-east corner of the area, which is enclosed with a palisade and interpreted as a hypothetical court.



contemporary with them and which predated them. This makes the interpretation of these units relatively complicated. In most cases, we are unable to clearly state whether they were mere sacral areas of churches including cemeteries (possibly with buildings for the clergy and the ecclesiastical administration) or princely/magnate courts combining sacral, residential and representation functions. A potential adept for the latter interpretation is the partially examined enclosed unit near Church 4 (Fig. 93), hypothetically compared to the magnate court at Pohansko near Břeclav (see Excursus 2.4.5).<sup>18</sup> However, with this enclosed unit - in contrast to the relatively shortly occupied and therefore better “readable” Pohansko - we encounter a complicated archaeological context and fragmented archaeologically provable building structures.

Given the complexity of the settlement development of the Mikulčice stronghold (see Excursus 2.2.2) and the current state of the processing of the results of long-term fieldwork, the interpretation of the Mikulčice sacral areas’ structure is primarily based on

the inner spatial organisation or, more precisely, the topography of the stronghold. Although it lacks a chronological dimension, it makes it possible to define the basic urbanistic features and relations of the residential complex. Besides the above-mentioned units delimited by wooden fences or palisades, the position and orientation of the churches, their sacral areas and the general built-up areas in the stronghold are defined above all by roads. The most important structures of the whole agglomeration were arranged along the main road in the area of the acropolis (Fig. 94).

Having entered the acropolis through the west gate, the main road (Fig. 69; 95) formed the southern boundary of the Church 2 cemetery. After 10 m, it reached the north-west corner of Church 3 area enclosure and continued along the entire northern side. It continued (without archaeologically proven traces) through the area north of the palace and to the north-east, delimiting the “court” near Church 4 from the north in a length of almost 50 m. Before reaching the north-east gate of the acropolis, it passed a metal

18 See Klanica 1986b, 128.

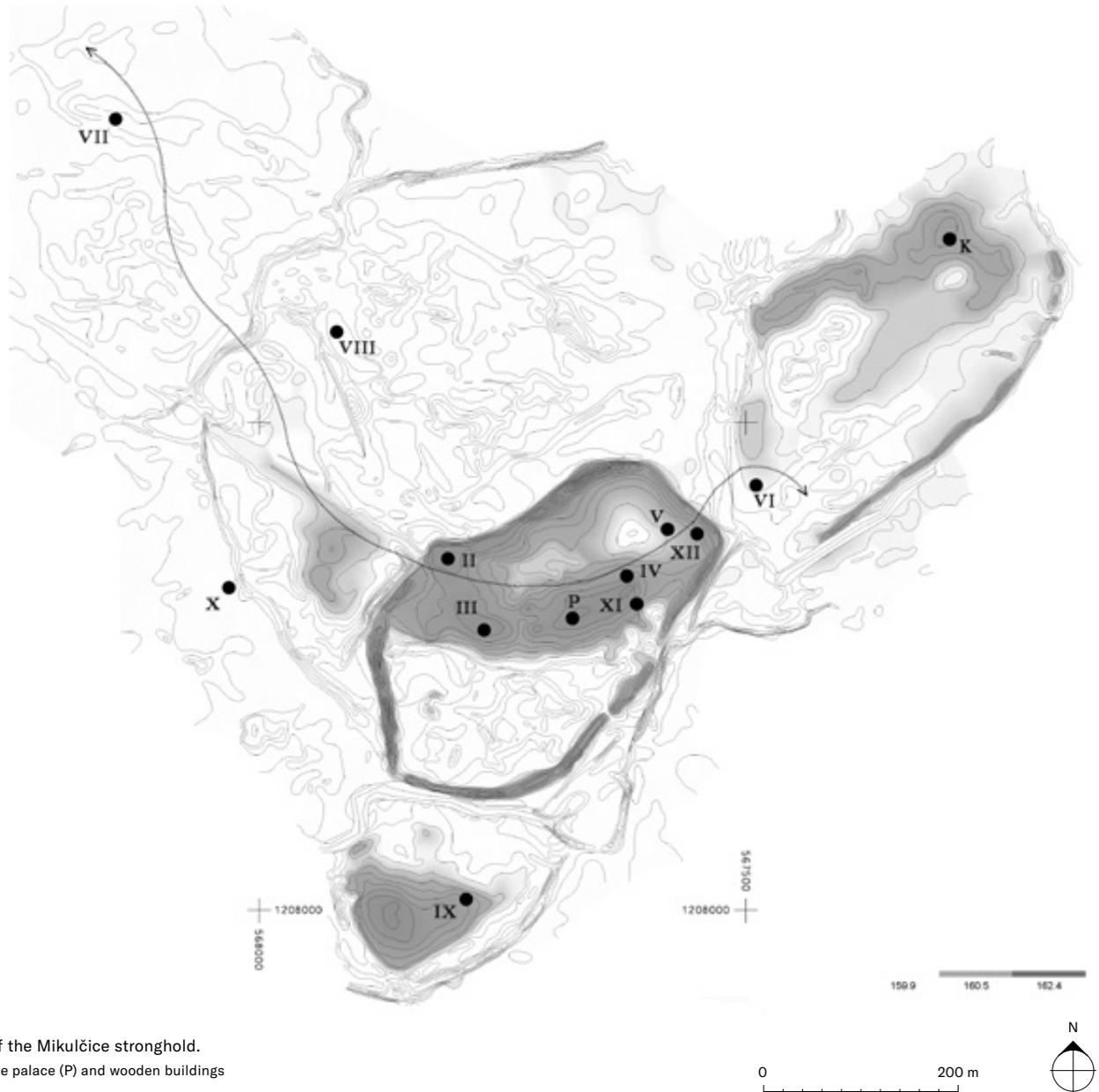


Fig. 94 Hypsometric plan of the Mikulčice stronghold. The main road, Churches 2-12, the palace (P) and wooden buildings in Kostelec (K) are marked.

workshop on the left and delimited the cemetery of hypothetical Church 12 on the right. This image of the main road as the key element of the urbanistic structure of the acropolis corresponds to the chronologically most advanced phase of the development of the agglomeration, i.e. the late 9th and early 10th century. We can say that at that time, the road separated the whole southern, “sacral” zone of the elevated part of the acropolis from the northern, “profane” zone. The elongated “sacral” zone consists of the enclosed Church 3 area in the south-west, the palace area in the central part and the enclosed “court” unit near Church 4 in the north-east. The whole area with the palace in the centre, the prestigious Church 3 building on one side and Church 4 on the other comprises the potential central princely representative-residential and sacral part of Great Moravian Mikulčice (Fig. 95). This goes in accordance with its position within the acropolis – central and elevated: this area is one of the highest-positioned in both the acropolis and the whole agglomeration, which we call a “palace district”.

The permeation of residential, economic and funeral activities is a characteristic feature of the spatial organisation of the residential and cemetery complexes in Mikulčice. The cemeteries and settlement structures often follow each other without visible divides, mutually overlapping and leaving the impression that the people almost lived in a cemetery there or, vice versa, that they buried their dead in the settlement. This was possibly the reality of the 9th-century power centre’s living culture or it reflects short-term changes in the function of the complexes with alternating settlement and burial phases that we are unable to clearly distinguish both temporarily and spatially. These local sequences very often end with graves as the latest elements of the whole development. We can ask whether these were the last inhabitants of the former centre who spent the rest of their lives there, for whom it no longer made sense to bury their dead in the churchyards or they were victims of the violent events connected with the demise of the power centre.

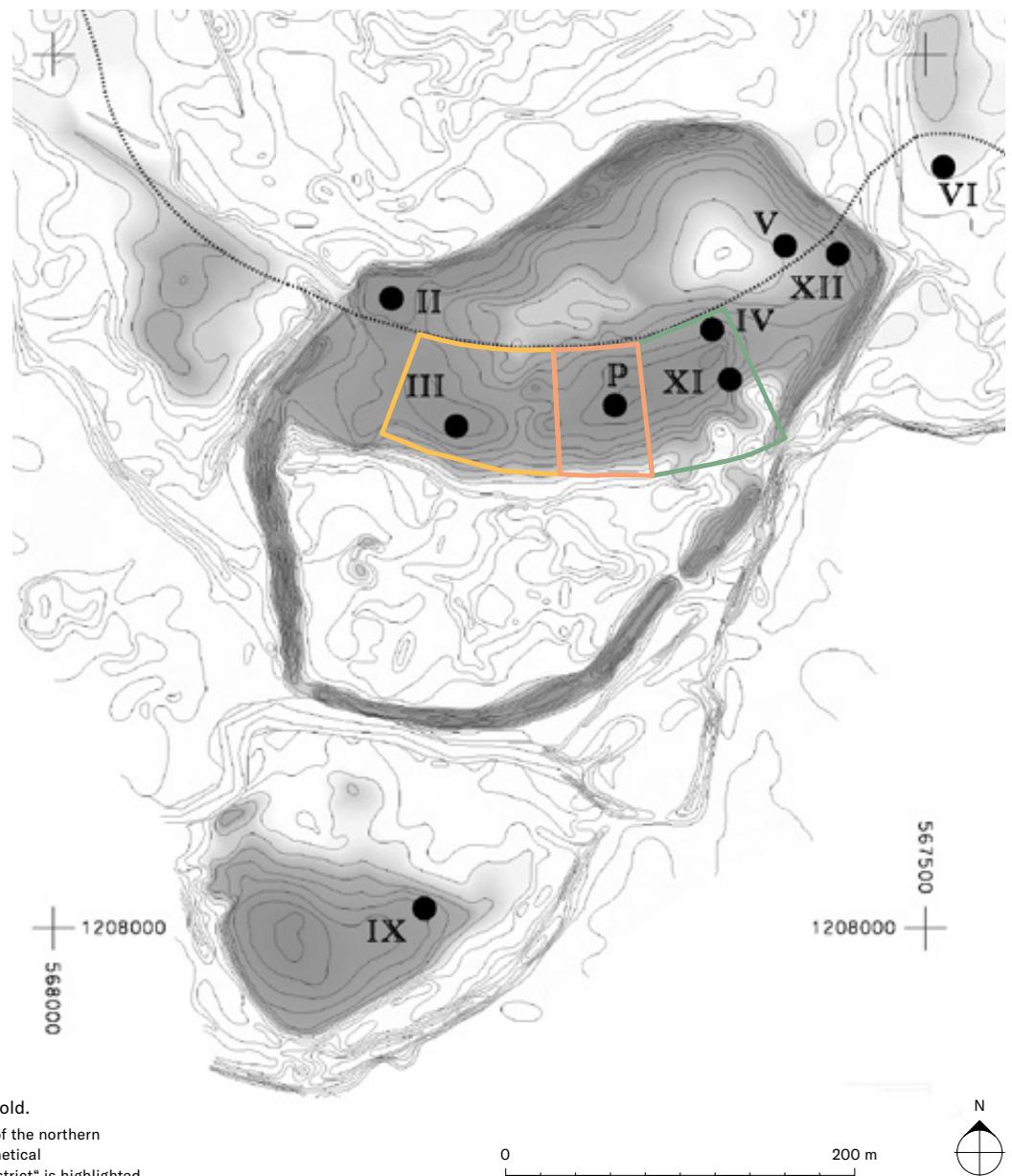


Fig. 95 Hypsometric plan of the Mikulčice stronghold. The main road of the agglomeration and internal structure of the northern elevated part of the acropolis (Valy) are marked. The hypothetical representative-residential and sacral area of the „palace district“ is highlighted (left: sacral area of Church 3, centre: representative-residential palace area, right: residential and sacral area with Church 4 and hypothetical Church 11).

# Revision Excavation of Mikulčice Churches in 2008–2013

– Lumír Poláček

Revision excavations conducted by the Institute of Archaeology, Czech Academy of Sciences, Brno, were part of a Czech-Slovak cross-border project concerning the preparation of a new visitor presentation of church buildings in Mikulčice and Kopčany. Church 2 – the only church building in Mikulčice that is presented in situ today in an exhibition pavilion – was the first to be investigated in late 2007 and early 2008.<sup>1</sup> Fieldwork continued in 2010–2013 (Fig. 96) with a revision excavation of the palace and all Mikulčice churches except for Church 7 and two hypothetical sacral buildings denoted 11 and 12.<sup>2</sup>

Fieldwork in the second stage of the revision excavation was based on unified methodology. First, the recent backfill of the original excavation was removed throughout the area. Then the area uncovered during the excavations in the 1950s–1960s was cleaned and newly documented. Detailed sections were subsequently examined to study stratigraphic and building-historical questions while taking samples for exact scientific analyses.

The revision excavations aimed to verify and complement the results of the original fieldwork from the 1950s–1960s. Another partial task was the revision and detailed documentation of the remnants of the individual buildings including multi-image photogrammetry (Fig. 97), as well as the search for answers to chronological, historical-building and building-technology questions. As the temporal conditions of the fieldwork were determined by the construction work schedule, the speed of the work needed for the archaeological excavation was enormous. On the other hand, it gave archaeologists a unique opportunity to complement and verify the existing image of sacral architecture in Mikulčice and acquire information for a later complex evaluation and the overall publication of the archaeological material of the individual buildings. We can state that the new fieldwork has already fundamentally influenced the procedure for the processing of “old” excavations while addressing new specific questions for this work and further theoretical research.<sup>3</sup>

Of the new findings, there are only a few examples related to the three basic questions raised at this point.<sup>4</sup> The first concerns the reliability of the original field documentation. As most churches were preserved in the form of negatives of the foundation masonry, i.e. secondarily filled foundation grooves, one of the first tasks of the revision excavation was to verify the reliability of the original field documentation concerning the depiction of the layout of the buildings. The outcome is confirmation that the ground plans of the

churches in the original documentation from the 1950s and 1960s correspond to the course of the foundation grooves in the field. All preserved intact masonry that was found either in small or large fragments, based on the “negatives”, has been newly and precisely documented. The new corrections to the original layout plans include the apse of Church 3, for instance, which was somewhat shorter in reality than stated in the documentation and the literature.<sup>5</sup> On the other hand, the “irregular” (trapezoidal) foundation of the Church 5 presbytery has been confirmed.<sup>6</sup> In the case of Church 10, it was possible to confirm the existence and shape of the support pillars on the outer sides of the nave and the presbytery – elements that are often referred to in connection with Dalmatian analogies of the building (Fig. 97: 3).<sup>7</sup>

Further questions concerned the building structures and the technologies used. Traces of wooden structures applied to masonry buildings have been discovered for Church 8 and other features. In terms of the quality of building technologies, Churches 7 and 8 can be described as “second-class”, whereas the three-nave Church 3 was the highest-quality building. With its massive foundations, the quality of its masonry and dimensions, the Mikulčice basilica is unparalleled among Great Moravian churches to date – it was the only “monumental” building in its milieu (Fig. 89: 1; 98).<sup>8</sup> The double-apse rotunda in the suburbium was also architecturally and constructionally a highly advanced building (Fig. 90: 1; 97: 2). The remaining Mikulčice churches represent the “standard”; the still standing Church of St Margaret near Kopčany is an illustrative example.

As regards the third area of questions i.e., the dating of the churches, there is relatively little new information although it is of fundamental importance. We need to distinguish between relative dating, the evidence of the churches’ building development, and absolute dating. Church 2 shows the most complex building development and probably the longest existence: originally a wooden structure with a cast mortar floor, then a masonry church with a rectangular presbytery, to which a tomb(?) chamber was attached from the north in yet another phase. Part of the rather complicated archaeological complex is Grave 2032 with small gold *gombiky* newly found beneath the south-west corner of the building.<sup>9</sup> Another building with evidence of gradual construction development is Church 3 – a three-nave basilica with the later addition of a narthex and an atrium.<sup>10</sup> As for the actual three-nave area, it has been newly discovered that the pits of the two most prominent graves of Great Moravian Mikulčice – Graves 380 and 580 – were situated below the

1 Poláček – Škojec 2009.

2 Poláček – Škojec 2011; 2012; Poláček et al. 2013b; Hladík et al. 2014b, 230–231. The existence of Church 1, which was sought in the 1950s in the immediate vicinity of Church 2 (see Poulik 1957, 249–258) cannot be proved; therefore, Church 1 is no longer listed in later literature.

3 Poláček 2014c, 68–73.

4 Ibid.

5 Poláček – Škojec 2012, 150.

6 Poláček et al. 2013b, 236–237.

7 Poláček – Škojec 2012, 151–152.

8 Ibid.

9 Poláček – Škojec 2009.

10 Poláček – Škojec 2012, 149–150.



Fig. 96 Revision excavation of the Church 3 main nave in 2011. The person lies in the original place of Grave 580.

foundation masonry of the arcade wall between the main nave and side aisle.<sup>11</sup> There are several possible interpretations that may explain this complicated archaeological context, see Excursus 2.5.2.

New indications concerning the absolute dating of the churches have been primarily obtained in places where the revision excavation documented a superposition of the building with settlement features or graves. As for settlement features, this concerns four buildings: the “palace” and Churches 4, 5 and 8. Ceramic material from pits disturbed by the foundations of these buildings is characteristic of the high or late Great Moravian horizon.<sup>12</sup> Contrary to the traditional hypotheses that most churches in Mikulčice came into existence in the first half of the 9th century and before the arrival of the Cyril-Methodius mission in 863,<sup>13</sup> it is evident today that these buildings date to the later part of the second half of the 9th century. The dating of churches found in superposition with

graves is more complicated and depends on the overall evaluation of the corresponding cemeteries. The traditional image that the graves from the church cemeteries are later than the construction of the church is undergoing now a revision. This is documented by newly discovered graves situated below the foundations of Churches 2, 3 and 9.<sup>14</sup>

Although it may appear that discoveries of Great Moravian sacral architecture have been exhausted, the cases described above show that fundamental findings can still be expected both in the field and when processing the fieldwork documentation and the archaeological material. These discoveries must advance as quickly as possible to the stage of systematic processing and publication to avoid the fate of their counterparts from the golden age of the research of sacral architecture in the 1950s and 1960s, which although unique are also rather problematic for present-day and future research.

11 Ibid.

12 Poláček – Škojec 2011; Poláček – Škojec 2012; Poláček et al. 2013b.

13 Poulik 1975, 49–121.

14 Poláček – Škojec 2009; 2012, 149–150; Poláček et al. 2013b, 237.



1



2



3

Fig. 97 Orthophotoplans of Mikulčice churches during the revision excavation in 2011-2013.

1 - Church 4; 2 - Church 6; 3 - Church 10.



0 10 m

## Interior Graves of Church 3

– Lumír Poláček

The only church in Mikulčice with a large number of inhumations in the church naves is Church 3 – the basilica (Fig. 98).<sup>1</sup> Although most of the graves inside the church were poorly preserved, the remains of grave constructions and grave goods testify to the exceptional character of the individuals buried there. A total of four inhumations were discovered in the three-nave space of basilica – a woman buried in the northern aisle (Grave 318), two men buried in the main nave (Graves 380 and 580) and another man in the southern aisle (Grave 544). A fifth grave discovered (Grave 330) is quite problematic because it was situated in the destruction layer of the church. All the deceased were probably buried in masonry tombs, or more precisely, in graves with masonry (mortar) covers painted red on top.<sup>2</sup>

Four more graves were found in the narthex. It is uncertain if they were dug outside the church and then overlaid by the narthex, which was constructed later, or if they were actual church burials.<sup>3</sup> The graves were severely damaged, which makes it impossible to be certain that the most important individual in the narthex – a man in a coffin with iron fittings in Grave 490 near the southern wall – was buried in a “masonry tomb”. Moreover, we lack evidence of the red painted mortar cover known from the graves in the three aisles.<sup>4</sup> The remaining three graves in the narthex contained neither masonry tombs nor coffins with iron fittings. Two grave pits were found without any skeletal remains.

In accordance with other researchers, it can be hypothesised that the graves in the interior of the three-nave space of the church belonged to the top elite of Great Moravia, who were most likely members of the ruling Mojmirid dynasty.<sup>5</sup> This is attested by the position of the graves in the main area of the church as well as by their construction and grave goods. The coffins of four of the five individuals buried in the three aisles had iron fittings and

all were probably deposited in “masonry tombs”. Judging by the find assemblages from better preserved Graves 318, 380 and 580, the grave goods were not richer than those from the richest graves from the cemetery by Church 3; nevertheless, they yielded assemblages of remarkable qualities.<sup>6</sup> The most important individual buried in Church 3 appears to have been the man in Grave 580 in the main nave (Fig. 99). His arms – a sword, an axe and a *seax* with a decorated pommel – suggest that he was a bearer of secular power, not a church dignitary (cf. Fig. 100). This opposes the controversial interpretation of Grave 580 as the burial of Archbishop Methodius.<sup>7</sup> The author of this bold theory drew on the assumption that the main altar was located not in the apse, but the middle of the main nave, and thus Grave 580 could be situated “in a great Moravian church, on the left side in a wall behind the altar of the St Mother of God”, which is how it is described in the legend “The life-prologue of Cyril and Methodius”.<sup>8</sup> The grave goods from Grave 580 correspond to earlier times, before the death of Methodius in 885. The finds from the interior graves appear to have come from the first three-quarters of the 9th century; given the significant number of arms and buckets, the beginning of burying at this site should be dated to the early phase of this period (Fig. 100).<sup>9</sup>

The interpretation of the burials in the interior of Church 3 is closely related to the overall assessment of the construction development. This applies not only to the graves in the secondary spaces of the church but also to Graves 380 and 580 in the main nave. Revision excavation confirmed that both the grave pits (similar to Grave 490 in the narthex) were partially under the foundations of the church (Fig. 97). The most likely interpretation is that this grave pit was intentionally dug under the church wall to create a symbolic link between a “dynastic” grave and the church.<sup>10</sup>

1 See Poláček 2020, 18–25.

2 Kostelníková 1958a, 76–77; Hladík – Mazuch – Poláček 2018, 104–109.

3 The narthex and the atrium are both annexes of the three-nave church. Cf. Schulze-Dörrlamm 1995, 573 and Klanica 1986b.

4 Cf. Kostelníková 1958a, 201.

5 Schulze-Dörrlamm 1993, 619.

6 Poulik 1975, 76–77; Klanica 1986b, 135–136; Klanica et al. 2019.

7 Klanica 1993.

8 Cf. Staňa 1996a. Many of the Klanica's arguments are unacceptable both factually and interpretationally. Importantly, due to a new publication with sources concerning the cemetery near Church 3, it will be possible to ground any future arguments in reliable sources, see Klanica et al. 2019.

9 Klanica 1986a; Schulze-Dörrlamm 1993, 572.

10 See Poláček 2020, 30.

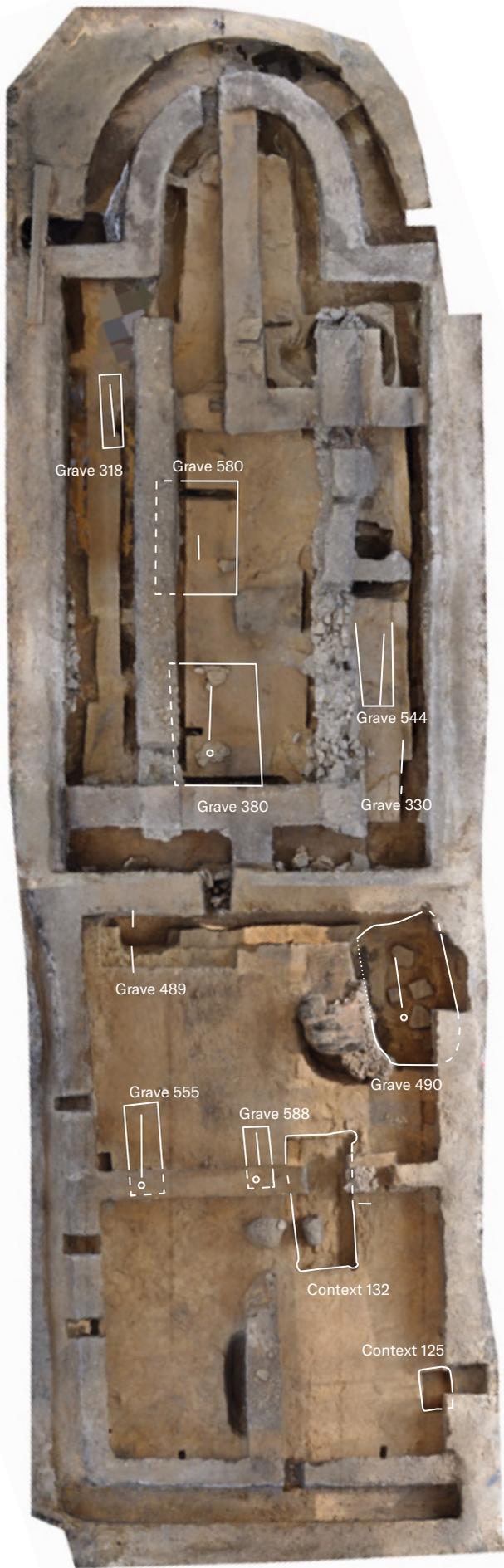


Fig. 99 Grave 580 in the Church 3 main nave during the excavation in 1957.

The sword and iron coffin fittings are well visible among the grave goods.



Fig. 98 Orthophotoplan of Church 3 during the revision excavation in 2011.

The interior graves, which were found inside of the church or under its walls, are marked.

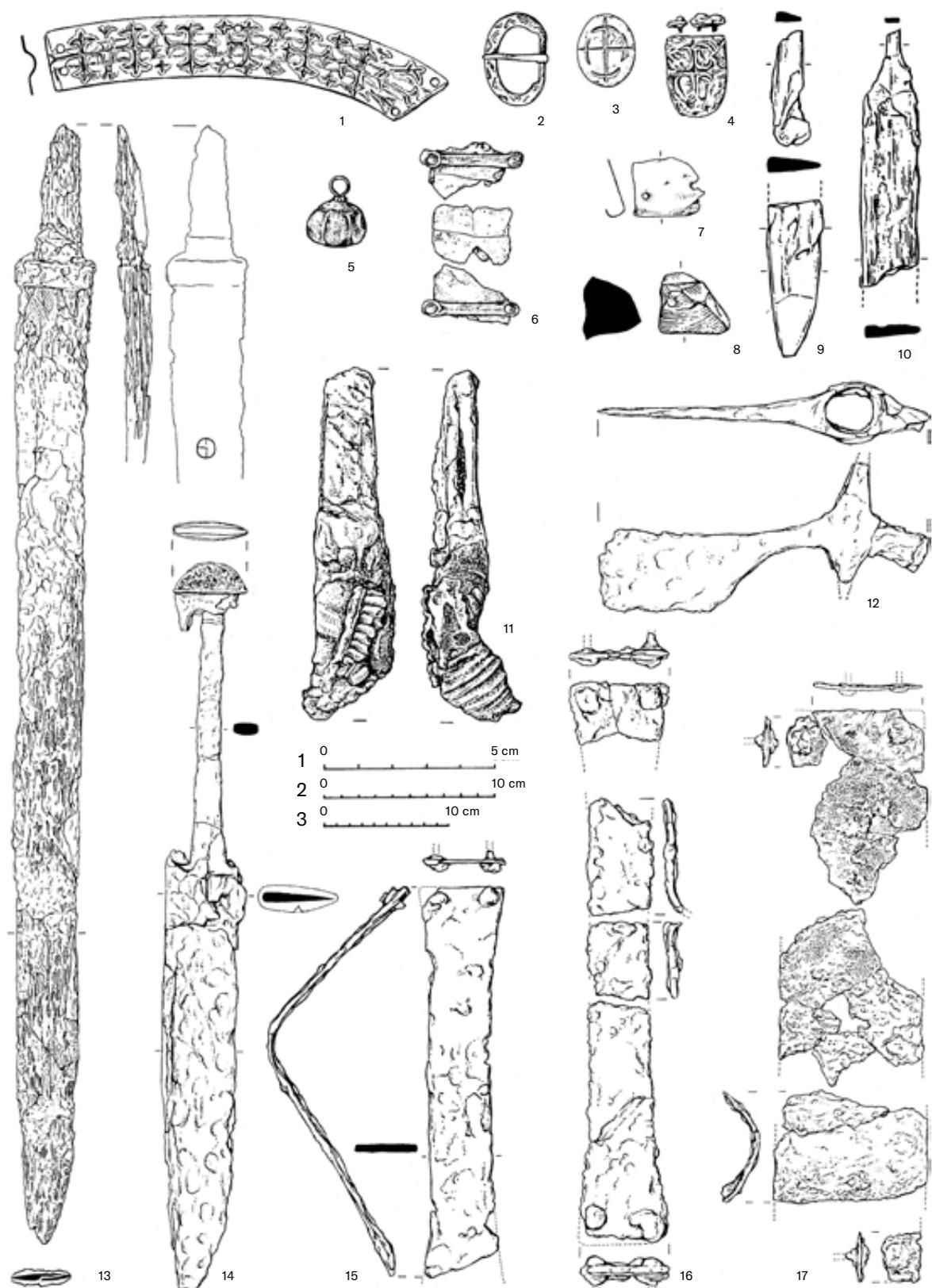


Fig. 100 Selected grave goods of Grave 580 from the main nave of Church 3.

1 - Silver gilded fitting of a seax scabbard; 2-4 - set of gilded silver belt fittings - buckle, strap slide and strap-end (last two are decorated with a lily cross); 5 - gold *gombik*; 6-7 - fragments of bronze, partly gilded fittings; 8 - flint striker; 9-10 - knife fragments; 11 - the remains of the leather pouch (?) with an unidentified object; 12 - axe; 13 - a sword with a cross mark on the blade; 14 - seax with a decorated pommel; 15-17 - partially reconstructed coffin fittings.



Typical decorative techniques for Great Moravian jewellery in one artefact: beaded wire, rope twist, granulation and decoration with glass inlays of fitting in shape of liturgical book, Inv. No. 594-2884/86, Mikulčice-Kostelisko, Grave 1735.

# 2.6

## Specialised Craft Production

– Šimon Ungerman

Specialised crafts production in Moravia, especially iron processing, dates back to the end of the 8th century at the latest. This is particularly evidenced by the archaeologically investigated iron production areas in the Moravian Karst, as well as the hoards of iron objects, which appeared in large numbers at the end of the 8th and beginning of the 9th century.<sup>1</sup> The 9th century is characterised by a rapid increase in specialised crafts and traditional homemade production. The main production was concentrated within the central agglomerations, in Mikulčice, Staré Město – Uherské Hradiště and Pohansko near Břeclav, where the evidence of specialised production is a characteristic part of the court milieu (see Excursus 2.1.2 and 2.1.3).

There is direct and indirect evidence of specialised production in the archaeological record of these and other sites. Direct evidence in the form of manufacturing operations are the most important, although rarely found in a convincing form. An example is a fine-metal workshop near Church 5 on the acropolis of the Mikulčice agglomeration and a blacksmith's workshop in the northern suburbium at the same site (see Excursus 2.6.1).<sup>2</sup> However, there is often more indirect evidence of local production in the form of tools, semi-finished products, production waste, raw materials, etc. It takes systematic documentation and the critical assessment of these finds to obtain essential information about the organisation of production at any site. The products – everyday objects and luxury artefacts – also provide vital evidence of the level of local crafts production. Among them, objects of high technical and artistic quality stand out as metalworking art and craft products. These are mainly found in graves as jewellery, warrior gear and equestrian equipment, etc. They represent the general level of local or regional crafts production, technological quality, artistic invention and a high level of work organisation.

In connection with the evidence of production in Mikulčice, questions are often asked about which branches of the craft industry are represented and whether it was a specialised craft or just homemade production. A further question is whether the local metalworking workshops were only operated for the needs of the centre, respectively the princely court, for a local market or long-distance trade. From the archaeological perspective, it is important to study in detail the location of the workshops, production areas and other evidence of production and thus address the question of production organisation within the entire agglomeration. Documenting the direct and indirect evidence of production provides essential information on the organisation of crafts production and the functions of the individual areas of the Mikulčice

agglomeration.<sup>3</sup> As a result, it is possible to present preliminary models of the distribution of crafts production within the acropolis and suburbium (see Excursus 2.6.1).

### “Invisible” craftsmen

While we can systematically study the objects belonging to the members of the Great Moravian elites as well as several archaeologically documented workshops with the associated finds of tools, semi-finished products and waste,<sup>4</sup> almost nothing is known about the producers themselves. Extant written sources give us no information about them. Nor can we identify their burials, as it was uncommon to deposit craft tools as grave goods in the Great Moravia (unlike other regions in the Early Middle Ages).<sup>5</sup> Several graves at the burial grounds in Staré Město – Na Valách and at the Mikulčice basilica revealed pieces of gold in the shape of a drop, pebble, stick, and a cut-off piece of gold sheet. These graves contain mostly rich equipment, which means that not the goldsmiths, but members of the elites (who did not directly take part in making jewellery) were buried in them. These gold pieces may have been intended as a substitute of a gold coin (i.e. served as the obolus of the dead), or they could symbolise the exclusive social position and control over the distribution of precious metals.<sup>6</sup>

Generally, the social group that craftsmen belonged to must have been very diverse in the Great Moravia. Therefore, it would not make much sense to try to characterise them as a whole including their social position, level of specialisation etc. In this and other respects, there were certainly substantial differences between a village potter on one side, and an armourer working directly for an aristocrat on the other. We will thus discuss only producers of luxury objects for the elites. We can get inspired by our knowledge of top craftsmen from other parts of early medieval Europe where some written records of these people were preserved. The most information can be learned from Scandinavia whose social-economic complexity is comparable to that of the Great Moravia.

The first question to ask is how to call these “elite” artisans – more precisely, to what extent were the individual professions separated from each other in contemporary perception. Written sources from Western and Northern Europe are of certain help, as they practically do not use terms that would denote the specialised professions. We can usually read only the general terms like a “blacksmith”, “goldsmith” etc. It was desirable that an individual

1 Bartošková 1986; Curta 2011.

2 Klanica 1974, 56–67; Klíma 1985; cf. Poláček 2008c, 280–284.

3 For the systematic documentation and mapping of the Mikulčice findings, see Poláček – Marek 2005, 32–33.

4 Klanica 1974, 55–84; Čáp – Macháček – Špaček 2011, 26–32; Galuška 1989; 2013, 114–171.

5 Tobias 2009; Tánase 2010; Rácz 2014; Ježek 2017.

6 Sejbal 1960; Kavanová – Šmerda 2010; Galuška 2012b; 2013, 175–179; 2014b; Kouřil – Poláček 2013, 414, Pl. 2: 4.

should master various production processes – such a person could thus produce a wide range of goods and satisfy as many customers as possible. On the other hand, if several craftsmen worked in one place and all of them worked on enough orders, each of them could focus on tasks they did the best.<sup>7</sup>

The situation in the Great Moravia was probably similar. If we stick to the professions whose products are archaeologically documented and had a “status character”, we will be able to name only a few of them. Besides the above-mentioned blacksmith/armourer capable of producing a sword, spurs, protective armour etc., some goldsmiths (“fine-metal workers”<sup>8</sup>) made gold and silver jewellery. The production of belts, sword belts and other straps (see Essay 3.6) stood (in terms of utilised technologies and materials) somewhere in between these two crafts. Depending on the desired design, a mount set could be made either by the blacksmith (wrought iron, inlaying, niello), the goldsmith (repoussé silver sheet, filigree, granulation) or by both (bronze casting, chip-carved decoration). As for the production of glass beads etc., a question remains whether this made up a separate craft or whether it was a part of goldsmiths/jewellers work. In any case, this activity was involved in the production of the items only to a limited extent and supplied mainly glass inlays for jewellery or strap-ends. Local glass production was mostly based on glass spherical buttons and beads for necklaces that were not regarded as luxury goods.

We can just guess what was necessary for one to become a craftsman (women were much less likely to do this job). Researchers assume that craft was usually passed from father to son, just as occupation and social status in general tended to be inherited in the Early Middle Ages. Learning the craft could have started quite early (around the age of seven), so theoretically even a young man on the verge of adulthood had already gained considerable experience. Of course, each craft required somewhat different dispositions: while smithery called for physical strength, a goldsmith needed fine and skilful hands as well as good eyesight (no magnifying glasses were known), which spoke in favour of younger individuals.<sup>9</sup>

Top craftsmen enjoyed great respect in the society, as they were able to manufacture items that no one else could. The very process of making a sword or a jewel decorated with granulation must have been shrouded in an aura of mystery for lay observers. The lives of such specialists were strongly tied to the elites who provided them with work and rewarded them accordingly. Some of them could thus accumulate considerable wealth and establish a well-recognised position in the community. This does not necessarily contradict the written sources that state that some craftsmen had the status of unfree tenants. In these cases, the relationship with their lord and possible benefits arising from his favour mattered most. Under favourable circumstances, their lives may not have differed that much from the lives of free craftsmen.<sup>10</sup>

In more general terms, the most favourable conditions were enjoyed by craftsmen who worked at the princely court and received direct orders from the monarch and his closest aristocrats. This milieu must have been very inspiring as they could learn and get inspired by specialists from other fields and other countries that often stayed there too. The court could be a very competitive place at the same time, forcing them to improve and specialise on

the production of a selected range of products. If working at the royal court, the craftsmen were in the centre of events and public affairs – they could even see visitors from foreign countries, their weapons and jewellery, diplomatic gifts or other imported luxury items. Therefore, new types of jewellery or new artistic styles could often be born at the princely court or among the elites in general. The innovations then spread to other parts of the country and to lower social classes.<sup>11</sup>

The relationship between top craftsmen and the elites can thus be described as a symbiosis beneficial for both parties. Artisans benefited mainly from the fact that the elites were their customers, or provided them with fuel, food, clothing, and so on. Worth mentioning is also the fact that the craftsmen lived and worked within the Great Moravian strongholds which ensured their protection. They were dependent on the elites and this dependence could be limiting at times. On the other hand, not even the elites could get by without skilled artisans, because no one else was able to produce items of prestige needed to express their exclusive position within the society (unless they tried to obtain such items from abroad which was rather lengthy and certainly not cheaper).<sup>12</sup>

### Production and decoration techniques<sup>13</sup>

The research of techniques used in the Early Middle Ages for the production of artefacts made of precious and non-ferrous metals has a relatively short tradition in our country. It only started to develop more significantly in the last decade in connection with the development of modern analytical methods. Especially in the case of Moravian sites, the vast majority of objects found so far, although often very lavish, still await more detailed examination.<sup>14</sup> An integral part of the research is experimental jewellery production, which provides useful feedback for verifying the technical feasibility and time consumption of individual technological processes.<sup>15</sup>

Based on what we know about the production of luxury jewellery in the Early Middle Ages, we can assume that goldsmiths worked mostly on the orders of particular customers. The client provided the craftsman with the necessary amount of precious metal – either in the form of coins, bars, older objects or fragments of them intended for re-melting. They agreed on the number and appearance of the products, as well as the goldsmith’s reward, which could be, for example, a part of the precious metal supplied (cf. Excursus 3.3.1).<sup>16</sup>

The approximate purity of the precious metal could be determined using touchstones. At first sight, they look like ordinary whetstones, but microscopic analysis reveals traces of abrasion of precious or non-ferrous metals on their surface.<sup>17</sup> Determination of the purity was important not only to determine the value of the precious metal itself but also to estimate its mechanical and physical properties (e.g. melting point), which implied the possibilities of its use.<sup>18</sup>

11 Westermann-Angerhausen 2006, 118; Schulze-Dörrlamm 2009a; Steuer 2010, 216; Küllerich 2014, 444; Ungerman 2015, 273.

12 Hedeager 2002, 7–11; Behr 2012, 54; Pesch 2012, 39.

13 I would like to thank Estelle Ottenwelter and Patrick Bárta for their valuable comments and suggestions on the following text.

14 E.g. Kavanová 2009; 2011; Baxa et al. 2010; Fikrle – Frána – Tomková 2012; Kolářová – Děd – Ottenwelter 2014; Ottenwelter – Děd – Šejvlová 2014.

15 E.g. Čáp – Macháček – Špaček 2011; Barčáková 2014.

16 Wamers 1994, 150; Baumeister 2004, 44, 105; Hardt 2004, 227–229; 2012, 273.

17 Ježek 2017, esp. 13, 15.

18 Bosselmann-Ruickbie 2011, 76.

7 Capelle 2012, 17–18; cf. Armbruster 2010, 203.

8 For terminology, see Aufderhaar 2012, 87.

9 Capelle 2012, 26; Pesch 2012, 39, 41; cf. Lohrke 2004, 23, 33, 173.

10 Klanica 1974, 19–20; Treffort 2002, 38; Baumeister 2004, 106; Hardt 2012, 272.

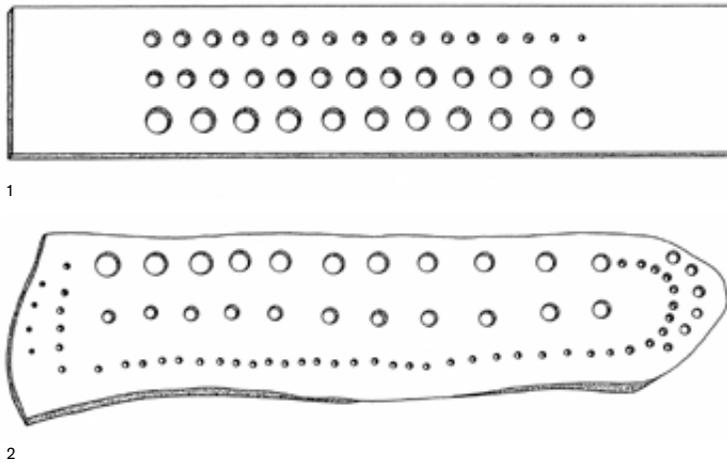


Fig. 101 Draw-plates for the production of round wire.  
1 - Modern; 2 - early medieval from the Staraja Ladoga site, Russia.

All semi-finished products - in the case of jewellery, these were particularly wires, granules and sheet metal - had to be made by hand, as there were no mechanical devices that could facilitate their production. A top-class jeweller certainly did not work alone but had one or more helpers. These could be primarily apprentices, who, under the leadership of the master, gradually learnt the secrets of the goldsmith's craft. They had to master all the necessary production processes beginning with the most basic laborious and lengthy activities, which would have included the production of semi-finished products.

The wire was made using a draw-plate, which was a hard metal plate with a number of different-sized holes (Fig. 101). The basis for the production of the wire was a longer, hand-forged rod with an approximately circular cross-section, which was drawn through increasingly smaller holes until a wire with a regular circular cross-section and the desired diameter was formed.<sup>19</sup> The square wire (i.e. wire with a square section) was produced in its final form by hammering, as evidenced by the changing shape and dimensions of the wire section of the earring with two beads from Mikulčice (Fig. 181: 2 in Excursus 3.3.2). The use of this technology is also evident in the case of a wire with a hexagonal and similar cross-section, in which it is sometimes possible to find traces of hammer blows. Other methods of wire production, e.g. by twisting a metal strip (Fig. 102: 1), have not yet been proven in the Great Moravian jewellery.<sup>20</sup>

Sheet metal was produced by hammering a piece of metal on the anvil until the desired thickness was reached.<sup>21</sup> Based on the finds of metal bowls or other vessels, we know that early medieval craftsmen were able to produce relatively large pieces of sheet metal in this way. When producing Great Moravian jewellery, it was

19 Duczko 1985, 16-17; Eilbracht 1999, 30-33; Bühler 2000, 208-211; Armbruster 2002, 163-169.

20 Cf. Whitfield 1990; Bühler 2000, 211-225.

21 Armbruster 2002, 151-152; Barčáková 2014, 316.

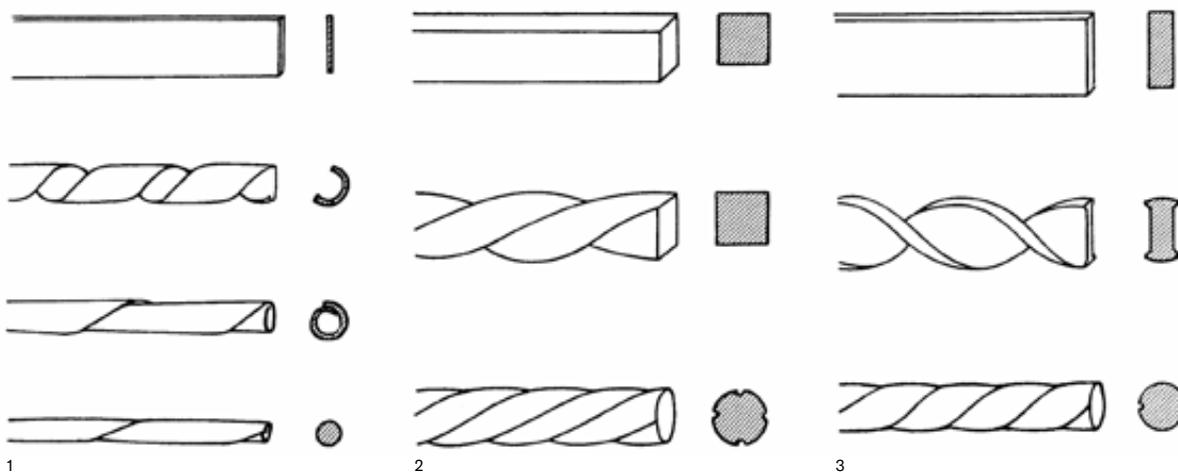


Fig. 102 Three ways to produce round wire.  
1 - Twisting a sheet metal strip; 2 - twisting a square profile wire; 3 - twisting a rectangular wire.

sufficient to make smaller pieces, as most of the necessary sheet metal components were not particularly large. The hemispherical components, in particular the hemispheres of the buttons and earring beads, were shaped using a doming block. At the Staré Město – Na Dvorku site, a rare piece of elk antler with several hemispherical different hole sizes was found.<sup>22</sup> The holes served just like doming blocks, where circular pieces of metal sheet could be shaped into hemispheres of beads and smaller buttons using a punch with a rounded head.<sup>23</sup>

The main decoration techniques of luxury Great Moravian jewellery are granulation, filigree, glass inlays (rarely made of semi-precious stones) and gilding. The first two techniques were laborious in terms of preparatory work and application. The essence of granulation is decoration composed of small metal spheres, so-called grains or granules, usually fixed to sheet metal or a wire base (called applied granulation). In Great Moravian jewellery, two main types of granulation can be distinguished based on grain size. So-called coarse-grained granulation uses relatively large grains (about 1.5 mm in diameter), each of which is supported by a small, round wire ring for stability. This decoration covers all (e.g. a button, Fig. 192: 1 in Essay 3.5) or part of the surface of the object (e.g. a hemispherical button of a finger ring, Fig. 183: 1 in Essay 3.4) while such grains are placed individually less often, with larger gaps between them (Fig. 183: 2 in Essay 3.4). The second type of granulation is called poppy granulation, where substantially smaller grains (0.3–0.5 mm in diameter) are usually assembled on the surface of the jewellery into geometric shapes (double lines, full triangles or diamonds, etc.) separated by empty spaces (e.g. Fig. 176: 2 in Excursus 3.3.2; Fig. 192: 3 in Essay 3.5). However, attaching grains to a sheet metal or wire base was not the only way they were used. In addition to applied granulation, we also distinguish so-called three-dimensional or free granulation, where larger grains are assembled into a compact three-dimensional formation. The best example is a cylindrically-shaped pendant used in “grape” earrings (e.g. Fig. 179: 1, 2; 182: 4 in Excursus 3.3.2).

The starting material for the production of granules are pieces of precious metal, preferably of the same size – cut pieces of wire are best suited for this. The craftsman mixes them with charcoal and sprinkles them into a crucible. The original irregular pieces of metal are melted and formed into regular spheres due to surface tension. After cooling, the granules are cleaned and sorted according to size.<sup>24</sup>

The granules are joined together or to the base by soldering. In the Early Middle Ages, two types of solder were used – metallic solder and fusion welding. Metallic solder is an alloy that has a melting point substantially lower than the metals from which the parts to be connected are formed. The solder in the form of fine filings is applied between the components to be connected and melts in the heat and bonds the components together. This type of solder is particularly suitable for bonding relatively large components. Conversely, fusion welding, which is a mixture of copper salt (e.g. copper acetate) and water-soluble organic adhesive, is ideal for fine granulation applications. A thin layer of the mixture is applied to the part of the surface of the object to be decorated by granulation,

the granules are laid on it and the adhesive component binds them in place. Due to the heat, the organic components of the solder evaporate, and the granules are again firmly bonded to the base.<sup>25</sup>

Filigree is a decorative technique that uses wires, which – as in the case of granulation – are either soldered to sheet metal or a similar base or form separate three-dimensional formations.<sup>26</sup> A wide range of decorative wires (Fig. 103) is documented in the Antiquity and Middle Ages. For the jewellery and other objects with filigree decoration, which were uncovered at Great Moravian burial grounds, not all the illustrated types of filigree wires were used. Leaving the wires with a round (Fig. 103: 1) and a rectangular cross-section (Fig. 103: 2) aside and focusing solely on the filigree wires, which have a somewhat structured surface, beaded wire (Fig. 103: 7) and rope twist (Fig. 103: 5) occur most often in the Great Moravian milieu.

The production of beaded wire, if the individual beads and furrows between them are to have the same shape and size, is extremely time consuming and requires skill and practice. The 12th-century treatise *Schedula diversarum artium*, written by the monk Theophilus Presbyter, is of key importance in explaining the production of beaded wire.<sup>27</sup> The author mentions two basic manufacturing processes, each using a completely different tool. The first tool is referred to as *lima inferius fossa* and is described as a blade with two edges and a narrow groove running between them (Fig. 104: 1). When a craftsman repeatedly passes this tool, commonly referred to today as a “beading file” or “double-edged swage”, on a round wire in the transverse direction (i.e. perpendicular to the longitudinal axis of the wire), two furrows with a rounded bead between them are formed. The bead is created by the flowing of two “half-beads”; in the case of imperfect execution, both “half-beads” remain separated by a distinct seam (Fig. 104: 2 in the middle). The manufacturer then moves one of the tool edges to the other groove and repeats the process. In other words, each bead must be manufactured separately. The second type of tool is designated by Theophilus as *organarium* and is described as a two-part die, where the upper and lower halves are joined together by pegs, which enable the two halves to be knocked together with a hammer and then removed again (Fig. 104: 3). The working surface of both die halves must be provided with channels with one or more holes; the shape of the hole corresponds to the shape of the half of the required bead of beaded wire (Fig. 104: 4).

The passage from Theophilus’s work became the impetus for numerous experiments in which early medieval jewellery experts – often in cooperation with professional goldsmiths – sought to find out exactly how both types of tool work, what work traces they produce on wires, and thus how the use of the first or second type of tool can be determined on particular objects from archaeological excavations or museum collections. They also attempted to verify whether other tools not mentioned by Theophilus could be used to produce beaded wire, namely a single-edged tool (Fig. 104: 2 on the left) and a multi-edged swage (Fig. 104: 2 on the right).<sup>28</sup> Beaded wire on Great Moravian jewellery has, so far, been studied from this perspective only to a limited extent (cf. Excursus 3.5.1). However, based on the findings in the above-mentioned publications on experiments, the initial hypothesis is that Great Moravian goldsmiths

22 Galuška 2013, 143–152. Sporadic finds of doming blocks, this time made of copper alloy, come from the Islamic countries of the Near East (Spink – Ogden 2013, 66 incl. ref.).

23 Čáp – Macháček – Špaček 2011, 46–47, 66–67; Barčáková 2014, 316, Fig. 6/15, 6/16, 6/63, 6/64, etc.

24 Wolters 1983; Čáp – Macháček – Špaček 2011, 36, 54–58.

25 Čáp – Macháček – Špaček 2011, 33–36 incl. ref.; Spink – Ogden 2013, 77–79.

26 Wolters 1987.

27 Brepohl 1999; Speer ed. 2014.

28 Duzko 1985, 16–21; Whitfield 1998; Bühler 2000, 226–242; Tamla – Varkki 2009.

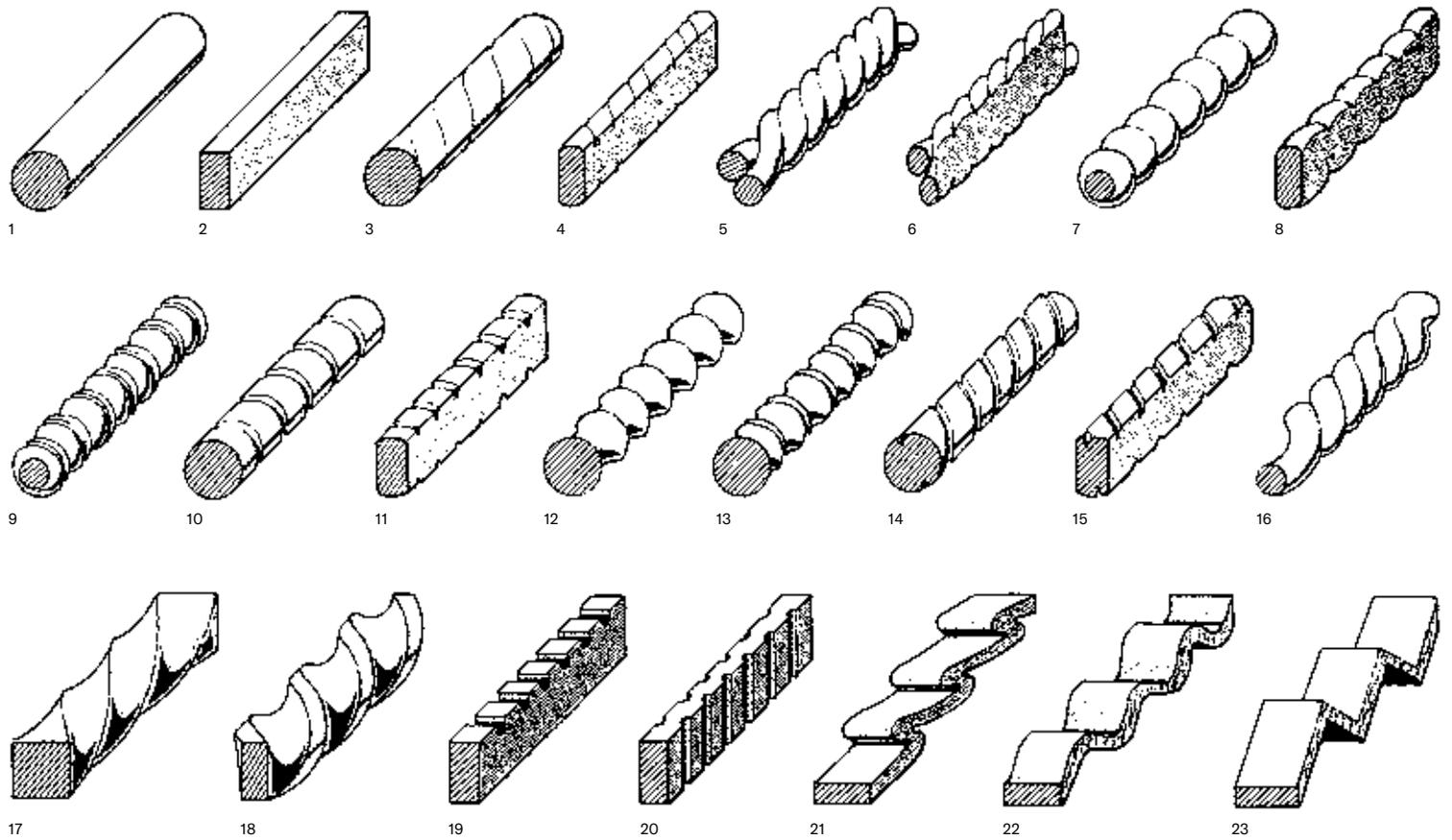


Fig. 103 Different types of filigree wire (Nos. 1-16) and filigree wires of quadrangular cross-section and hammered wires (Nos. 17-23).

mainly used double-edged swages, whereas spherical beads symptomatic of *organarium* are not common in Great Moravian beaded wire. However, future research using modern imaging methods and analyses will surely bring many interesting findings, and the hypothesis may prove to be incorrect.

Decorative inlays appear most often on buttons, finger rings and strap-ends. Inlays made of different coloured glass overwhelmingly prevail and have a flat underside and a convex (less often flat) upper side. This is related to the manner of their insertion, where the underside rests on the surface of the object to be decorated and the inclined sidewalls of the inlay are fixed using a sleeve made of a strip of metal (Fig. 183: 4, 5 in Essay 3.4).<sup>29</sup> Especially in the case of buttons, it sometimes happened that the inlay fell out - the cause was probably a too low (and therefore poor sealing) sleeve.<sup>30</sup> Sporadically, we can see that on large inlays, the metal sleeve is cut into a series of triangles (Fig. 185: 4 in Essay 3.4 and 214: 10 in Essay 3.6). These triangles were easily bent onto the inlay without wrinkles on the sleeve (which may appear on a sleeve formed by a metal strip). Semi-precious stone inlays are rare on Great Moravian objects. The best known are two strap-ends from Mikulčice, the face

<sup>29</sup> Cf. Larock 1983; Bosselmann-Ruickbie 2011, 77-79; Spink - Ogden 2013, 87-88.

<sup>30</sup> E.g. Mikulčice, Church 3, Graves 318, 424 and 437 (Klanica et al. 2019, 40, 65, 70, Fig. 35: 10; 74: 5; 82: 1). The question is whether the manufacturer also relied on another method of attaching the inlay, such as cementing.

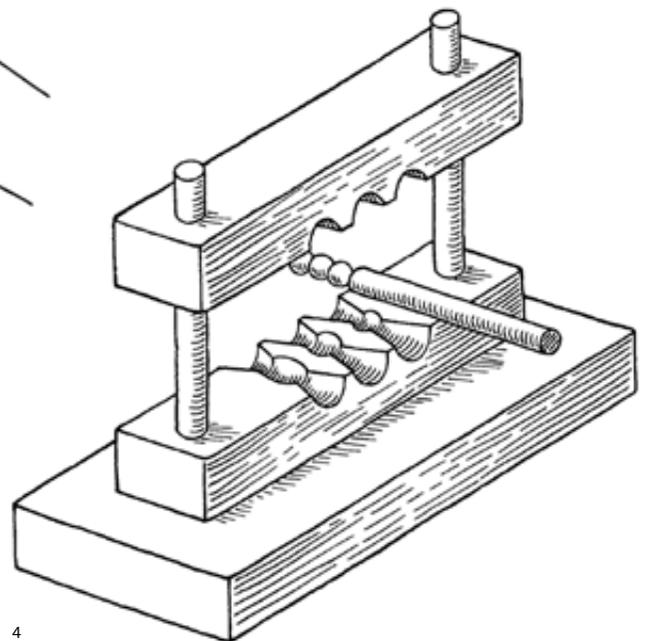
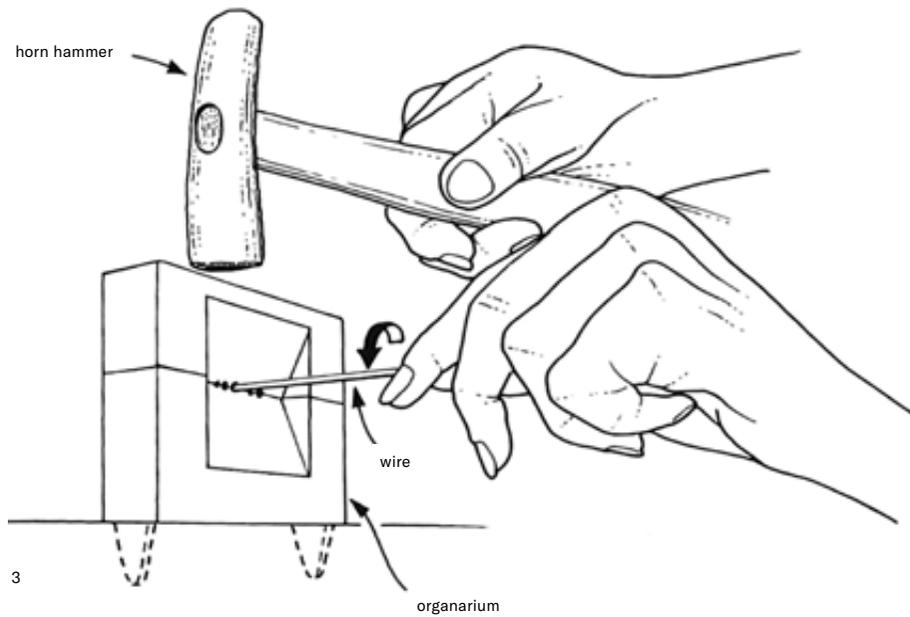
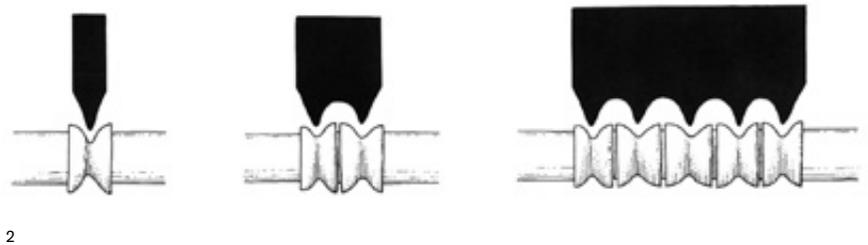
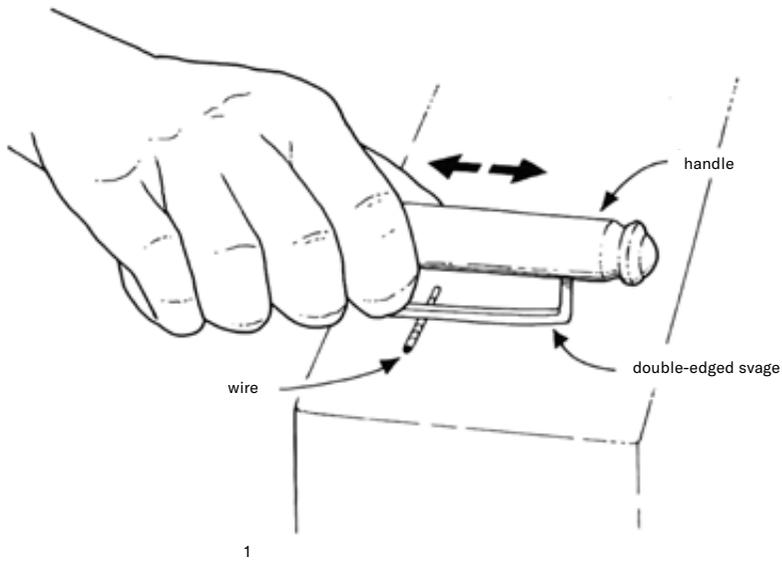


Fig. 104 Different types of tools for production of the beaded wire.  
 1 – Reconstruction of the double-edged tool described by Theophilus Presbyter;  
 2 – types of hand-rolling tools, which can be used to produce beaded wire (each tool is shown in profile above a wire showing the effect of one series of rolls): left: single-edged tool; middle: double-edged swage; right: multi-edged swage with four grooves; 3 – production of beaded wire using the two-part die (*organarium*) described by Theophilus Presbyter; 4 – design of a two-part die reconstructed by E. Brepohl, where beaded wire with differently shaped and sized beads can be produced in each channel.

of which is set with an oval-shaped Antique gem, while the scene carved into the larger side of the gem is not visible as this side is turned down (Fig. 214: 10 in Essay 3.6).<sup>31</sup>

Another decoration technique, chasing, was used mainly for metal buttons with a vegetal or geometric ornament. Chasing was done from the front of the sheet metal based on pre-drawn lines and was usually combined with punching the areas forming the background of the decoration motif (for more details, see Excursus 3.5.1).<sup>32</sup> Chasing was also used for decorating silver strap-ends, usually the flat reverse side (Fig. 214: 1, 6, 10 in Essay 3.6).

Surprisingly, the technique of casting, when the raised decoration on the surface of the object is created simultaneously with the production of the object, was hardly ever applied to the lavish Great Moravian jewellery. The cast lead beads, crosses, buttons and pendants, which appear in relatively greater numbers in Moravia at the end of the 9th century, were intended for folk strata and do not belong to the material culture of the elites.<sup>33</sup>

In items from the men's gear, production and decoration techniques are directly interconnected and are largely related to the material used. Items made of silver and non-ferrous metals were either made of sheet metal or were cast. Casting is associated with decorations made by chip-carving and niello techniques. Iron articles made by forging are most often provided with raised decoration, made in the same way (forging), or decorated with inlaying. We will briefly describe the individual techniques.

Casting was used in the production of lavish fittings for male belts and calf straps (bird-shaped clasps, strap-ends, buckle frames, strap-slides; see Essays 3.6 and 3.7) although rarely for the spurs and fittings associated with them. However, not all of these items are Great Moravian products, some of them are highly likely to be of Carolingian origin (see Excursus 1.2.1). None of these objects has yet been researched in more detail on how they were manufactured. We can assume that they were made by casting into a lost mould, using wax or lead models that were not preserved to create a clay mould.<sup>34</sup> Stone moulds from the territory of Great Moravia are more or less missing, unlike the Mediterranean and neighbouring areas strongly influenced by Byzantine culture. However, even local moulds made of quality fine-grained rocks, sometimes two-piece and very precisely processed<sup>35</sup>, were intended mostly for making models and not for casting final products.<sup>36</sup> Regardless of this, making a stone mould only made sense for mass-produced items - not for unique and custom-made products.

The raised decoration techniques include chip-carving, a technique based on alternating sloping surfaces, using the contrast of light and shadow. For cast objects, this decoration was made during the production of the model, and after casting was only highlighted and cleaned. One of the belt sets found at the Mikulčice Church 3 - the basilica is a good example of this technique (Fig. 214: 4 in Essay 3.6).

The niello technique - unlike chip-carving - is based on colour contrast within a single coherent area and is characterised by dark matt grey, dark brown or black lines on a shiny metallic background.

The dark matter used in the decoration may consist of one or more sulphides (silver, copper or lead sulphides; the composition of the mixture varied at different times). The designation of this mass and hence the whole technique as "niello" is derived from its dark colour (cf. Latin term *nigellum*). When applied, narrow grooves are recessed into the object surface and the entire surface is covered with the described mass. Niello adheres to the surface of the product under the influence of heat. After cooling, the surface is sanded so that the niello remains only in the grooves; the entire surface is then polished. There are also objects in which niello in the form of ductile fibre was specifically applied only to the grooves.<sup>37</sup>

In the Great Moravia, objects decorated with niello are rare. For example, the calf strap fittings, which were uncovered in two graves in Mikulčice, combine chip-carving and niello (Fig. 222: 1, 2 in Essay 3.7). Fittings are made of cast silver; the central decorative fields are decorated with chip-carving and additionally gilded, while the marginal surfaces remain silver and are decorated with black niello curves or lines. These fittings are probably of Carolingian origin (see Essay 3.7). Niello remains an unexplored phenomenon in the context of grave goods from the Great Moravian burial grounds. Due to the infrequent occurrence of this decoration technique, it appears that local artisans did not normally use it or were not able to manufacture it at all. In that case, the mere presence of niello would qualify the product as an import. This would not be that surprising, as Great Moravian craftsmen did not master the technique of enamelling, which is characterised by the application of different coloured glass onto a metal base.<sup>38</sup>

As with niello and enamel, inlaying is a decoration technique based on colour contrast. However, unlike the two other techniques, inlaying was commonly used in Great Moravia, usually for decorating iron objects. The manufacturer first engraved a groove on the smooth surface of the object, inserted a silver or non-ferrous metal wire into it and forged it into one level with the rest of the surface, then filed the entire surface.<sup>39</sup> In some lavish products, such inlaying can form a very sophisticated ornament.<sup>40</sup> Rarely does surface inlaying cover the entire surface of the object so the iron core is more or less invisible. The spurs from Grave 437 of the Mikulčice Church 3 - the basilica, with the outer surface completely covered with silver strips (see Essay 3.2), are an example of this.<sup>41</sup>

Alternatively, the entire surface of the object is covered by ordered panels of two or more different coloured metals that form a geometric pattern.<sup>42</sup> In the Great Moravian milieu, the spurs and the corresponding fittings from Grave 266/49 in Staré Město - Na Valách have a specific decoration. These iron objects are adorned with silver wires and pieces of gilded copper foil, which had previously been covered by punched dots made from the reverse side. Both types of decoration were attached to the iron base by a special sealant, which after firing turned into a dark glassy mass.<sup>43</sup>

Gilding was practised on objects made of slightly or substantially cheaper metals (silver, copper, bronze, etc.), and covered either all

31 Church 3: Mikulčice, Graves 390 and 433 near Church 3 (Kouřil ed. 2014, 362, Cat. No. 176: 2; 365; Klanica et al. 2019, 59, 68, Fig. 66: 2; 79: 2; for determination of minerals, see Mrázek 2000, 33-39).

32 More generally, e.g. Destrée 1983; Williams - Ogden 1994, 17-21.

33 Měřinský 1988; Kouřil 2014.

34 For more in general on the casting technique, see e.g. Schmidt 1994; Pitarakis 2006, 42-48; Doncheva - Bunzelov 2018; Söderberg 2018.

35 E.g. Ōdekan ed. 2007, 257-258; Eniosova 1998; Eniosova - Saračeva 2006; Szmoniewski 2010, 162-163; Bosselmann-Ruickbie 2018; Volodarec-Urbanović 2018.

36 Spink - Ogden 2013, 80-81.

37 Bosselmann-Ruickbie 2011, 87; Greiff - Hartmann 2019, 55-67 incl. ref.

38 See, for example, a knife in a scabbard with a gold sheet metal fitting, which, along with other associated fittings, is decorated with circular medallions filled with *cloisonné* enamel; it comes from Grave 23/48 in Staré Město - Na Valách (Hrubý 1955, 413, Pl. 54: 1-3; Kouřil ed. 2014, 379, Cat. No. 200). For more on enamel in general, see e.g. Wamers 1998-1999; Mitchell 2001; Bosselmann-Ruickbie 2011, 87-89; Eichert - Mehofer 2011.

39 More in Wolters 2007 incl. ref.

40 E.g. spurs from Ducové, Slovakia: Kouřil ed. 2014, 357, Cat. No. 170.

41 Kouřil ed. 2014, 354, Cat. No. 166: 1; Klanica et al. 2019, 70, Fig. 82: 2, 3.

42 Galuška 1999, 84-93; Szőke 2018.

43 Galuška 1998b; cf. Wolters 2007, 548-549.

or part of the surface of the object. This is a final treatment that is only done when granulation, filigree, chased decoration or niello is finished.<sup>44</sup> In the Early Middle Ages, gilding was mainly carried out by fire-gilding; gold is dissolved in mercury (or with an admixture of silver) and the resulting amalgam is applied to the surface of the decorated object. After heating, most of the mercury evaporates and the remaining gold and mercury residues form a compact and hard layer firmly attached to the underlying metal. Relatively larger smooth surfaces (i.e. without granulation, etc.) should be polished afterwards.<sup>45</sup> Another method called plating was used to cover the object with thin gold or silver foil.<sup>46</sup>

Another alternative final surface treatment is tinning. The tin (or tin-lead alloy) could cover all or just part of the object. This was done to achieve an effective silvery appearance and to protect iron objects from corrosion. To date, the tinning technique has been found in our territory only on a limited number of artefacts from the 9th and 10th centuries, mainly on spurs and knives with metal handles.<sup>47</sup> As the traces of tin or its oxides on the original surface of the iron objects are usually overlaid with corrosion, tinning cannot be detected with a naked eye but only by applying modern analytical methods. Since this technique was not particularly laborious or expensive, it could have been used in the studied period much more than we can conclude according to the available archaeological material. In early medieval Western Europe (from the Merovingian period onward), tinning was applied to a wider range of objects – besides spurs, it was used on warriors' belt fittings and parts of horse harnesses, as well as on everyday items such as spoons, keys, furniture fittings etc.<sup>48</sup> For stated examples of artefacts, two main tinning methods are considered. So-called hot dipping consists of immersing the object for a few minutes in a bath of molten tin or its alloy at a temperature of about 260 °C. The second method is called fusion plating, where either all or part of the surface of the object is covered with flux (pitch), sprinkled with tin filing or powder and then heated.<sup>49</sup>

## Jewellery and metal dress ornaments

Great Moravian graves have yielded a wide range of artefacts, many of which comprise jewellery and dress accessories. The occurrence of these objects depends primarily on whether their owner was male or female. In general terms, the clothing worn by the Moravians at that time did not contain many metal parts. Male clothing included a leather belt and straps tied around their calves. In most cases, all that remains of these items in graves are the metal fittings (it is also possible that some belts or calf straps did not have any metal parts). Women and girls tended not to wear dress accessories, and in the majority of cases, only jewellery is found in their graves. This basic gender differentiation applied regardless of the owner's age and social status. However, in the following texts (Chapter 3), we will focus solely on lavish objects discovered in the graves of members of the elites.

If Great Moravia is in any way exceptional in the context of European early medieval archaeology, it is primarily because an unusually large quantity of luxury jewellery has been preserved from that era. This wealth is even more notable for the fact that in other parts of Europe, it was not usual to bury the dead with lavish grave goods during the 9th century. The number of grave goods declined or disappeared completely in the Frankish Empire during the 8th century. The custom of burying the dead with jewellery, dress ornaments or other objects survived in the 9th and 10th centuries solely in the peripheral regions of the Frankish Empire, such as in North-Eastern Bavaria.<sup>50</sup> The situation was similar in the Byzantine Empire, although our knowledge of the burial rite there is limited by the low number of 8th- to 10th-century cemeteries that have been thoroughly excavated and published. Although women's jewellery is relatively common among the finds, jewellery made from precious metals comes only from a few graves.<sup>51</sup> The custom of burying people with grave goods was also widely practised in the 9th and 10th centuries in Northern Europe, although the range of women's jewellery was completely different from that found in Great Moravia.

Luxury Great Moravian jewellery can be defined as a group of ornaments made from precious metals and decorated with demanding jewellery-making techniques, primarily granulation and filigree. The earlier Czech and Slovak specialised literature referred to such ornaments as “Byzantine-Oriental jewellery” (in connection with their assumed origin), while more recently, the term “Veligrad jewellery” has been used. The foreign literature continues to use the general term “lavish Great Moravian jewellery”, which is also used in the following chapters, as it is easily comprehensible. In functional terms, the most numerous types of ornaments are earrings (see Essay 3.3) and spherical buttons (see Essay 3.5), while others significantly occur more rarely: finger rings (see Essay 3.4), lunular pendants, sheet metal beads, etc. In addition to this, the people of Great Moravia used many ornaments made from bronze, or lead, intended for women from the lower social classes. This group, which includes the same functional types as lavish jewellery, i.e. earrings, buttons, finger rings, etc., is traditionally referred to in the literature as “Danube jewellery”.<sup>52</sup> This was cheap, mass-produced jewellery, with simple decoration; in most cases, no special knowledge was needed to produce it. Given the focus of this publication, no special attention is paid to this type of jewellery in the following chapters.

Luxury jewellery – as well as lavish parts of men's clothing – is found in the territory of Great Moravia almost exclusively in inhumations. The cemeteries are situated primarily by churches within the area of important fortified settlements; besides Mikulčice, the most important sites include Staré Město – Uherské Hradiště and Pohansko near Břeclav.<sup>53</sup> However, this type of jewellery is sometimes found in rural cemeteries, established outside the Great Moravian centres,<sup>54</sup> or in barrows on the edge of the settled territory.<sup>55</sup>

44 Armbruster 2002, 176–177; Zuyderwyk – Besteman 2010, 88; Patscher 2019, 117.

45 Spink – Ogden 2013, 81–82, 87; Greiff – Hartmann 2019, 54–55.

46 Ottenwelter et al. 2012, 531–532.

47 Hošek – Mařík – Šilhová 2008, 323; Ottenwelter – Leroux – Déd 2008, 77 incl. ref.; Baxa et al. 2010, 504–506, 510; cf. Mehofer 2018, 384; for S-shaped temple rings with tinning from the 11th to 13th centuries, see Ottenwelter et al. 2012.

48 Svoljšak et al. 1997, 264, 265, Pl. 20: 1, 2; Karo – Knific – Milić 2001; Ottenwelter – Leroux – Déd 2008, 76–77 incl. ref.; Krohn 2009, 223; Eggenstein 2011, 379–380, No. 9.

49 Ottenwelter – Déd – Hošek 2011.

50 Pöllath 2002.

51 E.g. Poulou-Papadimitriou – Tzavella – Ott 2012; Ivison 2017; Pülz 2017.

52 Niederle – Zelnitius 1929; Niederle 1930; Eisner 1947; Hrubý 1955, 222; Dostál 1965, 363; 1966, 30.

53 Hrubý 1955; Poulik 1955; Galuška 1996; 2013; Kalousek 1971; Staňa 2001; Macháček et al. 2016; and others.

54 E.g. Nechvalín 1 and 2 (Klanica 2006a; 2006b), Šlapanice (Geisler 2013, 135, 139–140) or Dolní Věstonice – Na Pískách (Unger 2007).

55 E.g. Hluk – Hluboček and Vrbka – Tabarky (Dostál 1966, 126–128, 190–191, Pl. XV: 19–28; LXI: 16–19).

## 2.6.1 excursus

# Fine-Metal Workshop Near Church 5

– Lumír Poláček, Šárka Krupičková

The most important evidence of metalwork production in the Mikulčice stronghold area was discovered close to Church 5 in Mikulčice in 1962 (Fig. 105). Feature 10/V with an overall length and width of 10×3 m showed an unusual concentration of iron slag, bronze and lead ingots, and glass material as evidence of local fine metalwork. Zdeněk Klanica interpreted the find as a pre-Great Moravian jewellery workshop.<sup>1</sup> The feature represents one of the few objects documenting the production of this character to have been discovered in Mikulčice and the Great Moravian area.

In the Early Middle Ages, we can generally refer to the disproportion between the relative richness of the finds of art and craft products and the rather sporadic evidence of production. Specialised craftsmen, including manufacturers of items from non-ferrous metals (fine-metal workers), were a much sought-after group, especially in elite residences. They were hired as court artisans for

1 Klanica 1974, 56–63.



Fig. 105 Feature 10/V interpreted as fine-metal workshop in the photograph from 1962.

In the foreground: sand-clay floor backfill of the feature 10/V with control blocks, left in the background: the apse of Church 5.

the local elites and provided them with exclusive products so its members could demonstrate their affluence and high social status. There were also itinerant craftsmen, who travelled from customer to customer, founding temporary workshops. They unwittingly played an important part in the transfer of technologies, fashion trends in decoration and the education of apprentices.<sup>2</sup>

With the current level of research, it is impossible to determine whether the Mikulčice workshop was used over a long period or only seasonally, nor can it be dated absolutely with greater precision. Its link to the pre-Great Moravian period has been repeatedly questioned;<sup>3</sup> the field documentation offers no provable absolute chronological evidence, and the corresponding archaeological assemblage contains items from a broad period ranging from the late 8th to the early 10th centuries.<sup>4</sup> This points to a dating of the structure to the later part of the 9th century. A solid stratigraphical lead for the dating is the close proximity of Church 5, which has the same orientation as the workshop.<sup>5</sup>

Based on the archaeological context, we can state that the workshop consisted of two parts documented by separate sand-clay floor backfill (Fig. 106). While finds evidencing work with ferrous metals (iron slag) are documented from the south-western part, evidence of non-ferrous metallurgy and glass casts have been discovered in the north-eastern part.<sup>6</sup> This duality may reflect changes in the use of the structure over the course of time or the parallel processing of iron, copper and glass in the two separate spaces. The joint operation of related craft disciplines is also documented from much more ambitious projects of large professional workshops in the complexes of early medieval monasteries, such as 9th-century St Gallen.<sup>7</sup> Joint jewellery and blacksmith workshops from the Viking Age have also been discovered in Vorbasse, Denmark.<sup>8</sup> This sharing might have had a prosaic explanation in the form of the attached production of specialised iron tools for the needs of the neighbouring non-ferrous metal workshop.<sup>9</sup> Therefore, for purely practical reasons, the character of early medieval workshops and the knowledge of metalwork craftsmen might have been “polytechnical” to a considerable extent.

The Mikulčice workshop only offers up sparse information about its former equipment. Numerous sunken holes filled with grey ash or metal slugs and ingots were found in the flooring of both areas. A hard ash layer bordered by two lines of holes filled by corroded crushed iron and slag was found in the south-western

2 Aufderhaar 2012, 88, incl. ref.; on the “invisible” craftsmen, see also Essay 2.6.

3 Poláček 1996, 250; Staňa 1997, 78; Zábajník 2005, 102.

4 Cf. Klanica 1974, 61, 63.

5 On preliminary dating of the church to the late 9th century, see Poláček 2014c, 71.

6 Klanica 1974, 56–63.

7 Capelle 2012, 20, Fig. 5.

8 Aufderhaar 2012, 89.

9 Aufderhaar 2012, 89.

part. This conspicuous feature could be interpreted as the remnants of a heating device, perhaps an elevated type of furnace with a side size of 130 cm.<sup>10</sup>

A furnace was basic equipment for metal workshops that prepared their own raw material or used the production method of casting. Reaching and maintaining a constant temperature of around 1,200 °C was a necessity. An alternative to a stable heating device, albeit with limited possibilities, was the use of a portable kiln.<sup>11</sup> Other necessary parts of the workshop included the so-called cold working place, where cold metal was worked by chasing, filing, drawing out, etc. Further basic equipment was the goldsmith's workbench, the place where the artisan spent most of their time decorating and finalising their products (e.g. designing and outlining ornaments, polishing). Besides the production area, each workshop needed safe storage for precious metals, semi-finished products and finished components, especially if this material belonged to the customer who ordered the work.<sup>12</sup>

However, the internal layout or technical equipment of workshop feature 10/V cannot be specified in more detail. One of the reasons may be that it was a surface log structure whose remains were destroyed during the reconstruction or demise of the power centre. Specialised tools, indirect evidence of fine metalwork, have

not been found either. Primarily, these are in the form of crucibles, which are paradoxically concentrated in other parts of the acropolis and the suburbium and, otherwise, scattered virtually all over the stronghold.<sup>13</sup> The clearest testimony to specialised fine metalwork from the Great Moravian milieu to date comes from a workshop discovered in Staré Město - Na Dvorku, where a buckhorn matrix for chasing hollow hemispheres, crucibles with evidence of precious metal melting and jewellery tools have been found along with other items.<sup>14</sup>

Fine metalwork was one of the strategically most important spheres of craft production in the Early Middle Ages. Presumably, it was under the direct control of the members of the highest elites, possibly the prince himself. This is why the workshops were often part of the inner fortified complexes of power centres.<sup>15</sup> Such a strategic position is also documented by the workshop near Church 5 in Mikulčice as well as other presumed workshops on the stronghold's acropolis. On the other hand, the presence of other metalworking workshops in the suburbium needs to be yet understood. These are documented by some of the most distinctive concentrations of crucibles within Mikulčice (Fig. 107; the northern extramural settlement, the western part of the Kostelisko area).<sup>16</sup>

10 Klanica 1974, 58.

11 Aufderhaar 2012, 91; on experimental production using a portable kiln, see Čáp - Macháček - Špaček 2011, 38, Fig. 27.

12 Aufderhaar 2012, 88-89, 92.

13 Poláček 2008c, 281-282.

14 Galuška 2013, 109-174.

15 Donat 1995, 97-99.

16 Poláček 2008c, 281-282.

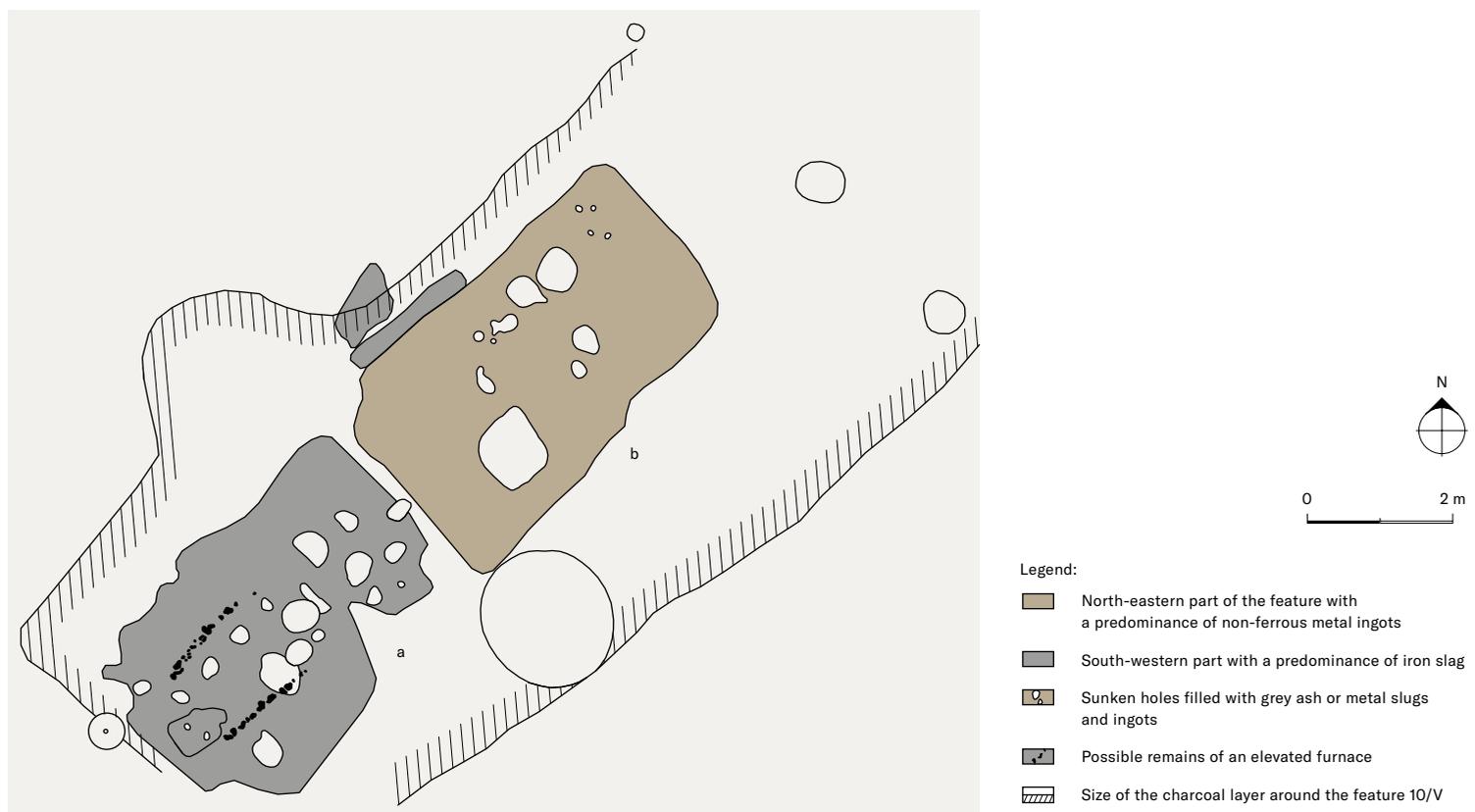
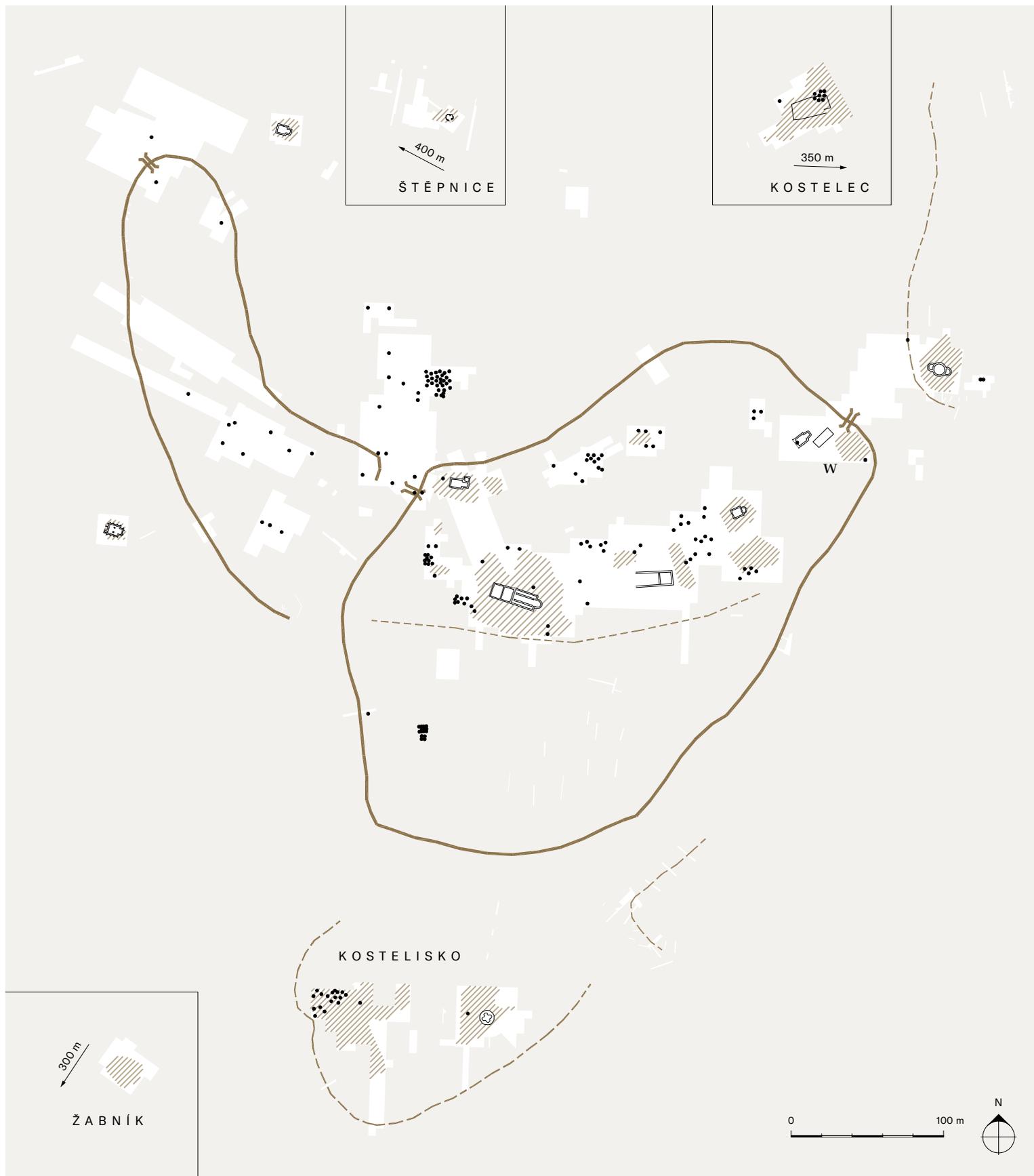


Fig. 106 Plan of the feature 10/V interpreted as a fine-metal workshop.



Legend:

- Crucible

Fig. 107 Crucibles finds in the area of the Mikulčice stronghold (W - fine-metal workshop).



Grape pips (*Vitis vinifera*) are frequent and the most numerous find of the fruit species at the Mikulčice stronghold.

# 2.7

## Food and Drink – A Reflection of Social Stratification

– Michaela Látková

One of the best indicators of social stratification both in modern and historical societies is the archaeological record of consumed foods, which can provide important information on nutritional quality. This kind of information is best obtained when merging the resources of the natural sciences and archaeology. Archaeobotany and archaeozoology are two such integrated disciplines used to systematically analyse and interpret biological materials retrieved from archaeological sites. Stable isotope analysis of human skeletal remains has become a novel tool for verifying and broadening our understanding of historical diets.<sup>1</sup> Dietary diversity and quality are more reliable markers of the social structure in a given population than others: grave goods, for instance, can to a certain extent reflect different funerary customs, practices, and rituals, but may not necessarily tangibly connect to the social status of a given individual.<sup>2</sup>

Traditionally, agricultural communities fully dependent on the cultivation of crops and livestock farming are limited by the availability of food resources from the land. On average, basic foods consumed by communities in temperate climate zones consist of cereals and products made from them.<sup>3</sup> In a balanced diet, the plant component should make up 70% of all food consumed.

The numerous rich finds unearthed at the Mikulčice settlement have been the subject of exceptionally extensive archaeological research. The site also has a long-standing tradition of archaeobotany, with plant macroremains first analysed over 50 years ago by the botanist Emanuel Opravil. As a result of his pioneering research, we now have a comprehensive picture of the natural environment of the Holocene floodplain in the Middle Morava region, particularly during the Early Middle Ages.<sup>4</sup> Unfortunately, the archaeobotanical methods used at the time of Opravil's research have grown outdated. While archaeobotanical analysis remains an integral component of all excavations at Mikulčice, the current approach to macroremain analysis is based on systematic sampling and flotation of all sediment. As a result, it is now possible to address not only palaeoecological, but palaeoeconomic issues, among others.

Archaeobotanical material from the Mikulčice settlement agglomeration – comprising a total of 28 archaeological sites – were recently newly analysed. The sediment samples reflect the various environments at these sites, e.g. settlements, graves, or river basin backfills.<sup>5</sup> The characteristics of the archaeobotanical materials have been largely influenced both by natural conditions and the excavation methods used to unearth the various archaeological

structures. These considerations were reflected in the methods employed for archaeobotanical sampling and plant material extraction (see Excursus 2.7.1).

### Cultivated agricultural crops

The diversity of the macroremains from crops cultivated at the Mikulčice stronghold attest to the consumption and general use of a number of cereals, legumes, cultivated fruit, and vegetables. At most archaeological sites, cultivated crops are usually found in the form of charred cereal grains. Fortunately, due to the high level of groundwater at Mikulčice, seeds and whole fruit from vegetables, cultivated fruit, and fibre crops were found.<sup>6</sup> These species are only very rarely found at “dry” archaeological sites (Fig. 108).

At Mikulčice, cereals were found in the largest numbers in the “produced crops” category, represented by five species including both bread crops (wheat and rye) and non-bread crops (millet, barley and oat).<sup>7</sup>

Legumes are represented by five species at Mikulčice. Apart from the traditional legumes found at contemporary medieval sites (lentil, pea), less typical legumes were found at Mikulčice, notably bitter vetch and Celtic bean. Grass pea, also discovered at the site, is quite uncommon for this period and place.<sup>8</sup>

The wide range of fruit and vegetables cultivated at Mikulčice is documented by the seeds and stones from peach trees, grapevine, apple and pear trees, walnut, plum trees, and cucumber.<sup>9</sup> Similar – but less frequent – luxury crops dated to the Early Middle Ages have been found at different sites in Prague,<sup>10</sup> various excavation sites in Bohemia and Moravia,<sup>11</sup> and at medieval sites in Poland.<sup>12</sup> Luxury crops generally confirm the high statuses of these central early medieval sites. And at Mikulčice, they are an equally reliable indicator of the high standard of living enjoyed by the resident elites there.

Fibre and oil crops represent the remaining category of plants cultivated at Mikulčice. The versatile use of these plants was one of the main reasons for their cultivation in the vicinity of the stronghold. Among the fibre or oil crops documented from Mikulčice are species such as hemp, flax, and poppy. Hemp was the most frequently found species of fibre crop.<sup>13</sup>

1 Katzenberg 2007; Schwarcz – Schoeninger 2012.

2 Johansson 1996, 32.

3 Hajnalová 2012, 29; Hladík 2014, 172; Dresler – Macháček 2008; Vignatiová 1992, 98.

4 Opravil 1962; 1983; 2003.

5 Látková 2017, 33–34.

6 Opravil 1962; 2000; 2003; Látková 2017.

7 Látková 2017, 47–55.

8 Látková 2017, 55.

9 Látková 2017, 57–60.

10 Čulíková 1998; 2001a; 2001b; 2005; 2008.

11 Žatec: Kočár et al. 2010; Olomouc: Opravil 1994; Pohansko near Břeclav: Doláková et al. in press.

12 Krakow: Klichowska 1964; Mueller-Bieniek – Walanus – Zaitz 2015; Wolin: Latalowa 1999.

13 Látková 2017, 60.



0 1 mm

Fig. 108 Finds of plant macroremains from the Great Moravian stronghold of Mikulčice-Valy.  
 1 - *Hordeum vulgare-vulgare*; 2 - *Panicum miliaceum*; 3, 4 - *Triticum aestivum*;  
 5 - *Secale cereale*; 6 - *Lens culinaris*; 7 - *Pisum sativum*; 8 - *Lathyrus sativus*;  
 9 - *Prunus domestica, insititia*; 10 - *Persica vulgaris*; 11, 12 - *Vitis vinifera*;  
 13 - *Cucumis sativus*; 14 - *Petroselinum crispum*; 15 - *Daucus carota*;  
 16 - *Cannabis sativa*.

A total of 27 species – more precisely, taxons – cultivated at the Mikulčice stronghold have been documented, providing evidence of sophisticated agricultural practice during the Great Moravian period. Of the crops excavated across the settlement agglomeration, 37,303 plant macroremains (seeds) were found.<sup>14</sup>

### Collected plants

Plant collecting has been an irreplaceable element of human nutrition ever since the times of the hunter-gatherer groups. Historically, the occurrence of wild trees, shrubs, and herbs in the natural vegetation has provided a supplementary source of plant food to both humans and domestic animals. Unfortunately, current archaeobotanical methods fail to provide unequivocal evidence of plant collecting. The range of wild species collected was definitely much wider than the range detected based on plant macroremains. Some wild species would have been collected because they were an important source of vitamins and minerals in times of scarcity or poor harvests of cultivated crops. Other species would have been collected as fodder for domestic animals, for their medical properties, for use as textile colourings or, in the case of species containing hallucinogens, for use in magic rituals.

Several of the more interesting species collected have been documented in Mikulčice. Evidence of several species of wild consumable fruit have been discovered, such as sweet cherry (*Prunus avium* L., syn. *Cerasus avium*), blackthorn (*Prunus spinosa*), raspberry (*Rubus idaeus*), European dewberry (*Rubus caesius*), blackberry (*Rubus fruticosus* agg.), Cornelian cherry (*Cornus mas*), wild strawberry (*Fragaria vesca*), and musk strawberry (*Fragaria moschata*). All of the above species were most likely consumed, and it can be assumed that attempts were made to cultivate sweet cherry.<sup>15</sup> Based on ecology and biotope, these species are commonly found on hillsides in shrubs, baulks, and groves, along paths, and in light, broadleaved forests, and mostly occur in warmer areas and at lower altitudes. Around the Mikulčice stronghold, they probably grew in forests, baulks, pastures, and meadows. The fruit of these species would have been collected from such areas and brought to the stronghold.

In the gatherer economy, the picking of hazelnuts (*Corylus avellana*) was a routine activity. Fragments of hazelnut shells are found relatively often in the natural sediment of silted-up riverbeds and at formerly common residential areas.

Acorn fragments from oak (*Quercus* sp.), plentifully supplied in the archaeobotanical material, can be interpreted as proof of gathering fodder for domestic animals. Also, hornbeam (*Carpinus betulus*) seeds occur in larger numbers in common settlements along with charred cereals. The relatively high frequency of hornbeam seed fragments suggests that they were possibly gathered for purposes such as oil production.<sup>16</sup>

Wild species may have been used for medical purposes. For instance, hawthorn (*Crataegus* sp.), which is among the most frequently documented wild plant species in the Mikulčice archaeobotanical materials, undoubtedly had a medicinal function. Neither can we discount the use of elder (*Sambucus nigra*), dane-wort (*Sambucus ebulus*), or rowan (*Sorbus aucuparia*), which, apart from their medical effects, are also understood to have been used in magical rituals.

These species provide ample evidence of a gathering economy, representing only a small part of the wider possibilities offered by the surrounding environment.

### The Great Moravian diet

The nourishment of the residents of Mikulčice during the Great Moravian period is an issue that continues to perplex archaeological as well as other scientific disciplines. Unfortunately, there are no written sources on the preparation of meals during this time, with the earliest preserved cooking instructions dating to as late as the High Middle Ages and even up to the Modern Period.<sup>17</sup> Therefore, any reconstruction of the typical Great Moravian diet during the early medieval period is dependent on extensive interdisciplinary research.

The latest archaeobotanical findings clearly prove that during the Early Middle Ages plant-based foodstuffs were an important component of a wide spectrum of foods consumed at the Mikulčice stronghold. A plant-based diet would have consisted of cereals, legumes, cultivated fruit, vegetables, and delicacies that grew naturally around the stronghold.<sup>18</sup>

Current knowledge on the composition of these plant foods is based mainly on the results of archaeobotanical analysis.<sup>19</sup> It should be noted, however, that findings on the subsistence strategies of the Mikulčice stronghold cannot be necessarily applied to other Great Moravian sites. Different types of meals may have been preferred at other settlements, either influenced by the local accessibility of resources or the environmental conditions for growing foodstuffs. Additionally, whether the settlement was central or rural would have also played a part. Certain differences in subsistence strategies are also evident within the Mikulčice agglomeration itself.

Based on the detailed archaeobotanical analysis, higher quality species such as wheat and demanding cereals like millet were detected from remains found at the central fortified areas of the stronghold – the acropolis and outer bailey. Less common instances of legumes, such as bitter vetch, Celtic bean, and grass pea were also found in this area. The different statuses of the areas is also evident from the typical finds of fruit pips and stones from trees and shrubs, such as peach and vine, along with nuts and seeds from cultivated vegetables (cucumber). Unlike cereals and legumes, fruit, nuts, and vegetables would have been considered delicacies used to enrich the basic diet and rarely feature among the basic foods. The archaeobotanical finds from the central fortified areas of the acropolis and outer bailey show that the inhabitants had access to luxury food items, enhancing the typical early medieval diet by providing necessary vitamins and minerals to the privileged class.

In the unfortified areas, such as the extramural settlement and the agglomeration periphery, the archaeobotanical assemblages generally contained lesser quality crops. Of the bread cereals, rye was most commonly found, with lesser quality legume finds mainly featuring traditional species such as lentils and peas. Archaeobotanical finds of seeds, pips, and stones from fruit trees, nuts, and cultivated vegetables were notably scarce.<sup>20</sup> For the general population who lived in the unfortified parts of the agglomeration, plant food sources consisted of mush and bread prepared from

14 Opravil 2003; Látková 2017.

15 Opravil 1972, 20.

16 Bui – Girard – Lanfranchi 2014.

17 Beranová 2005, 11–12.

18 Opravil 2003; Látková 2017.

19 Látková 2017.

20 Látková – Hajnalová 2019; Látková 2017.

Sites & Species	Mikulčice	Pohansko near Břeclav	Libice	Prague, Liechtenstein Palace	Prague, Hartig Palace	Prague, Prague Castle RS3, 3rd courtyard	Žatec	Nitra Castle	Nitra surroundings	Bajč	Krakow	Krakow-Wawel
<i>Anethum graveolens</i>	x			x	?							
<i>Cerasus avium</i>	xxx		xx	x	xx	x						
<i>Cucumis sativa</i>	xx			x								
<i>Ficus carica</i>				x	x	x						
<i>Juglans regia</i>	xx											
<i>Lathyrus sativus</i>	x	x							x			
<i>Malus domestica</i>	x		xx	xx	xx	x					x	
<i>Persica vulgaris</i>	xx	x		x	x							
<i>Prunus domestica ssp. insititia</i>	xx		xx	x	x		x					
<i>Pyrus communis</i>	x				?						x	
<i>Setaria italica</i>	x								x			
<i>Vicia ervilia</i>	x	x										
<i>Vicia faba</i>	x	x						x	x	x		
<i>Vicia sativa</i>	x							?				
<i>Vitis vinifera</i>	xxx	x		x	xx		x	x			x	x

Fig. 109 Analysis of the species' spectrum documents the presence of a privileged class at the archaeological site in the second half of the 9th century.

Captions: x – 1 find    xx – 3 and more finds    xxx – 10 and more finds



Fig. 110 Finds of grape pips unearthed at the Great Moravian stronghold of Mikulčice-Valy.

crops readily available within the environment. On the other hand, these foods most probably constituted a basic ingredient across Great Moravian society as a whole.

Beverages were an essential part of the Great Moravian diet as well. Non-alcoholic drinks included water, milk, fruit and vegetable juices, as well as herbal and medicinal infusions. But early medieval written sources concentrate rather on the accounts of the consumption of alcoholic beverages.<sup>21</sup> Among the most popular varieties were beer, mead, and wine. However, the fragrance, appearance, and particularly taste of these beverages would have been substantially different from how we know them today. Apart from being consumed as an alcoholic beverage, wine – the product of vine cultivation – served a liturgical purpose as part of the Eucharist during the Great Moravian period.<sup>22</sup>

### Luxury food from Mikulčice and similar sites

Based on the substantial plant materials found as a result of intensive excavations of various archaeological structures going back to the last century,<sup>23</sup> we know there was an elite social group among the inhabitants of the Great Moravian stronghold of Mikulčice-Valy. They would have had access to a wide variety of delicacies, as attested by the finds of stones, pips, and seeds from peach, vine, walnut, and cucumber. The overall extent and frequency of these finds at Mikulčice indicate the unique position of the Valy stronghold among Great Moravian centres of similar importance and character (Fig. 109).

Based on the characteristics of the types of delicacies found in Mikulčice, there is a clear indication that these species were most likely not imported into the stronghold arising from the trade or exchange of goods or services, but instead grown in the immediate vicinity of the stronghold. This assumption can be made given that some of the species cannot be conserved (e.g. dried), meaning damage could not have been prevented during transportation over long distances. This would seem to point to the existence of a thriving fruit-farming and vegetable-growing scene on the site of the Great Moravian agglomeration itself. This is all the more likely given that species such as fruit trees and vine require specific skills, e.g. pruning, and would need to have been protected against bad weather and wild animals. As they do not occur wild, these species would certainly have required cultivation in protected orchards and gardens. Unlike the cultivation of traditional crops such as cereals and legumes, fruit farming and viticulture are more demanding agricultural practices necessitating considerable human labour and time. Moreover, fruit trees and vine yield produce only after several years of intensive and specialised cultivation. All of these agricultural clues provide convincing evidence of a fully developed society forced to produce traditional crops simply to secure survival. The early medieval community that inhabited the stronghold obviously had the time, energy, and skills to engage in specialised activities, such as maintaining fruit orchards and vineyards and processing crops, leading to the production of wine and other products.

### *Vitis vinifera* or *Vitis sylvestris*?

The Mikulčice-Valy stronghold holds an exceptional position among the early medieval sites in large part due its vine plant finds. An exceptionally rich assemblage of over 2,000 grape pips (n = 1,968) have been dated to the 9th century based on an absolute dating of grape pips found at the silted-up river branch around Bridge 1 in Mikulčice (Fig. 110).<sup>24</sup>

Finds of *vitis* pips are frequent and numerous at the Mikulčice agglomeration. A map illustrating the occurrence of grape pips clearly shows that vine was a common species at the Mikulčice stronghold (Fig. 111), documented by the various ways in which they were preserved – charred, mineralised, or waterlogged. The highest frequency of vine remains was recorded in the central fortress of the agglomeration (acropolis and outer bailey) and at Kostelisko, a part of the extramural settlement. Grape pips were generally rarer in the extramural settlement and only occasionally found at the agglomeration's periphery, Mikulčice-Trapíkov and Kopčany. The highest numbers of grape pips were found in two excavation areas – Kostelisko in the southern suburbium, and in the silted-up riverbed near Bridge 1 (trench B 2012).<sup>25</sup>

The occurrence of grapevine in Mikulčice is significantly different from all contemporary sites of similar character. Although grapevine-related remains (pips and wood) have been found at other early medieval strongholds, they are not as frequent as they are in Mikulčice, highlighting the exceptional status held by the Mikulčice stronghold and its inhabitants.

From an economic point of view, the practice of viticulture reflects the agricultural culture of the community that engages in it. Vine growing is a rather demanding agricultural activity, mainly due to the slow return of invested energy. Before a vineyard can be planted, the soil must be prepared two years in advance, with the first harvest yielding three years later at the earliest. It is certainly far more time-consuming than growing cereals, which can be harvested in the same year as they are planted. It is reasonable to infer, then, that the economy of the area was characterised by a high level of development overseen by a centrally governed community.

21 Beranová 2005, 120–129.

22 Látková et al. in press; Beranová 2015, 126.

23 Opravil 1962; 2000; 2003.

24 CalAD: 766–899, see Barta – Hajnalová – Látková 2014.

25 Látková – Hajnalová 2014.

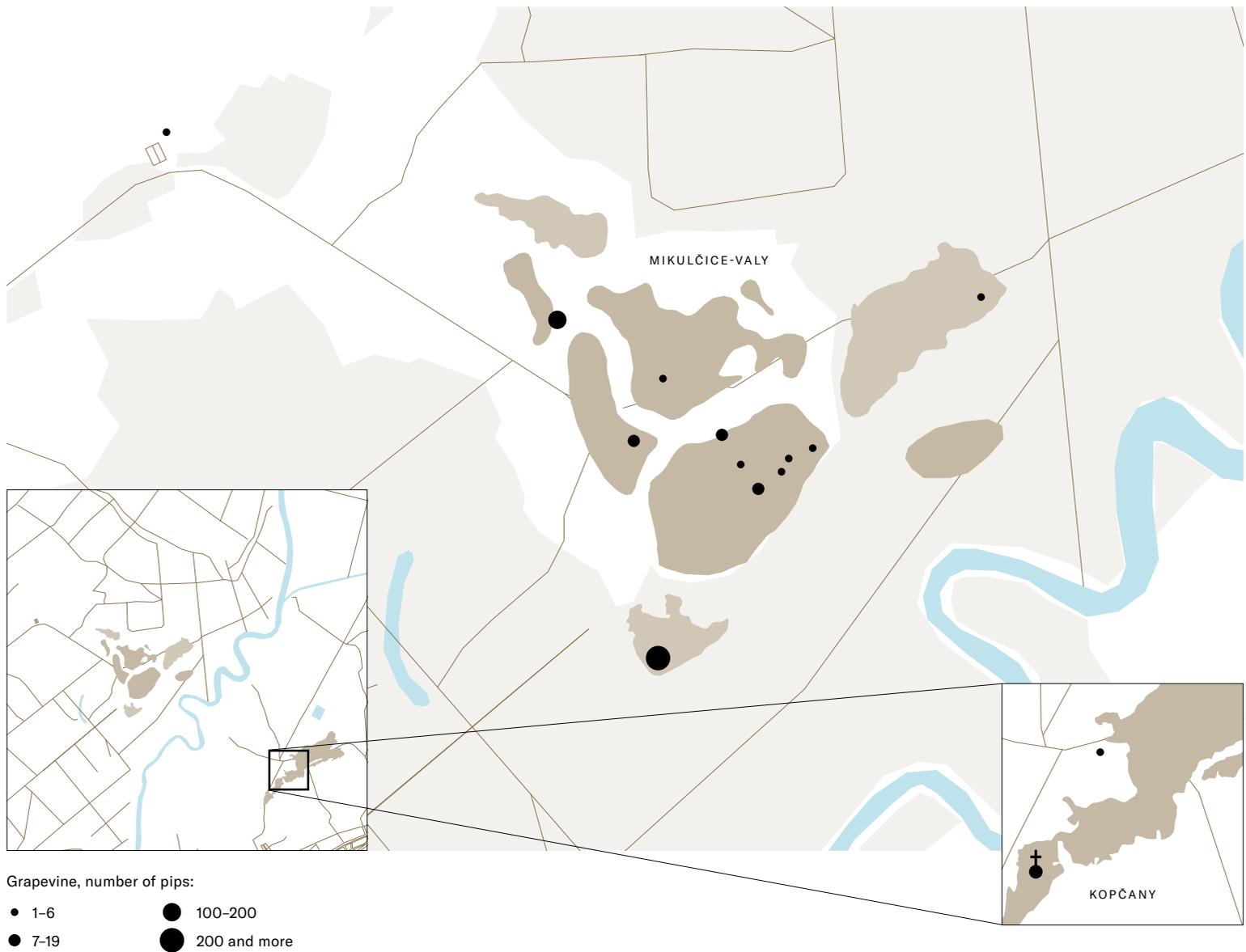


Fig. 111 Distribution and numbers of grapevine pips found at the Great Moravian stronghold of Mikulčice-Valy.

# Acquisition of Plant Material

– Michaela Látková

## Sampling

As plant pollen was poorly preserved in the Mikulčice floodplain, the archaeobotanical analysis focused on extracting macroremain samples, mainly seeds and charred material (for the whole process of acquisition, see Fig. 112). These were obtained mainly by sampling sediment from different archaeological contexts. The sampling strategies employed were dependant on the methodology used for the given archaeological excavation,<sup>1</sup> whether complete or zero sampling of the feature backfill. Within the Mikulčice agglomeration, the sampling was only carried out in the excavation area of Kopčany-Kačénáreň.<sup>2</sup> A systematic point-sampling strategy using a grid with square units – deemed the most suitable for the current research – was employed at the other 12 excavated areas of the Mikulčice agglomeration. In the final phase, some areas were not sampled, with column sampling carried out at three excavation areas. In other excavation areas, a judgmental sampling strategy was employed.

As sediment samples were obtained using different methods, some of the archaeobotanical analysis may have been distorted, impacting on the identification of taphonomic processes and subsequent assessment of the origins of the samples. This is why sediment sampled differently can never be compared directly. At Mikulčice, systematic archaeobotanical sediment sampling began with the recruitment of an archaeobotanist in 2011. Since then, all archaeobotanical samples have been systematically recorded in accession diaries, with standard-volume sediment samples also taken.

In praxis, archaeological excavations are carried out in natural layers, with the excavated area divided into a grid covering 100 × 100 cm square units. A sample of 10 litres of sediment is taken for archaeobotanical analysis from each context (in the case of larger features, from each square unit). The sediment from the archaeobotanical sample is poured into a plastic bag. The sample is labelled with contextual data, with the sample then prepared for transportation to the flotation station.

## Extraction of plant material

Different flotation techniques are employed to obtain plant material from soil samples. Based on the technique used, the extraction method can be either manual (manual flotation and wet sieving) or machine-based. Flotation by machine takes place in a flotation tank, usually a plastic barrel into which water is poured with a hose. Rosette-shaped jets are located in the top third of the tank under

a mosquito mesh into which soil is gradually poured. The water from the jets releases the lighter floatable organic material, which is then captured in a sieve with a mesh size of 0.25 mm.

At Mikulčice, a flotation tank (the modified Siraf type) is used to extract plant material from the archaeobotanical samples.<sup>3</sup> This method is complemented by a wash-over of the heavy residuum.<sup>4</sup> Merging these extraction techniques is designed to obtain as many plant macroremains from the sediment as possible. The heavily mineralised, waterlogged, and charred macroremains tend to stay in the heavy residuum and must be extracted manually from the residuum together with the artefacts and ecofacts during the final flotation step. The plant macroremains that fail to float or rise in the water column remain in the heavy residuum due to the natural saturation of Mikulčice's sediment with minerals and metals (chiefly iron and manganese), heavily permeating mostly charred PMRs.

Flotation procedure proceeds as follows. The volume of sediment intended for flotation is measured in calibrated containers. The sediment is immersed in a flotation tank lined with a mosquito mesh. The sample is agitated with water, which releases the organic remains from the sediment floating on the surface. The remains are then washed away through the outlet and captured in a sieve. Following the flotation of the sample in the tank, the remaining sediment (heavy fraction) is given a manual wash-over. Using surgical tweezers, other ecofacts (bones, malacofauna) and artefacts (pottery, metals, glass, daub, mortar) are collected from the heavy residue remaining in the tank after the second flotation phase. The last step involves drying the flotated fraction, artefacts, and ecofacts.

## Laboratory analysis methods

After drying, the extracted plant macroremains are separated from the other constituents of the flot using laboratory and stereoscopic microscopes. Archaeological and archaeobotanical data pertaining to the sample are recorded and archived on laboratory sheets. Plant macroremains are then sorted, identified, and documented under a stereo microscope at various magnifications (40×, 75× and 250×). Sorted seeds and other plant parts are analysed based on taxonomy using a stereoscopic microscope. To verify the botanical categorisation of the samples during macroremain analysis, the archaeobotanist also consults special photographic or illustrated seed atlases<sup>5</sup> along with reference collections of seeds, fruits and wood.

1 Jones 1991.

2 Jones 1991; Pearsall 2000; Látková 2017, 33; Látková 2014, 113–114.

3 Williams 1973, 288–292.

4 Steiner – Antolín – Jacomet 2015; Badham – Jones 1985; Hajnalová, E. – Hajnalová, M. 1998.

5 Anderberg 1994; Berggren 1969; 1981; Jacomet 2006; Scherman 1967; Schweingruber 1978; Kohler – Schneider 2001.



Fig. 112 Archaeobotanical sampling, extraction of plant material using a flotation tank followed by manual wash-over and sorting of the plant macroremains in the laboratory of the Mikulčice research base.

## 2.7.2 excursus

# Occurrence of “Luxury” Crops in the Settlement Areas

– Michaela Látková

The Mikulčice-Valy site is exceptional for its large collection of archaeological finds and the unique characteristics of the macroremains unearthed there. Based on detailed assessment of the occurrence of luxury crops (cultivated fruit<sup>1</sup>, vegetables<sup>2</sup>, nuts<sup>3</sup>, certain species of legumes,<sup>4</sup> and fibre crops<sup>5</sup>), there are clear differences between settlement areas within the Mikulčice agglomeration.

The assortment of species found in the archaeological sediment indicates that a number of cultivated crops, by no means traditional, were grown and consumed there. A total of 21 of these cultivated species were identified at the stronghold and in its vicinity.<sup>6</sup> Cereals naturally comprised some of the cultivated crops, but as they cannot be considered reliable proof of the presence of an elites at the stronghold, they are not evaluated in detail in this excursus.

The plant macroremains of luxury crops found in all areas of the Mikulčice agglomeration vary in number, frequency of occurrence, and characteristics (Fig. 113). Since the older archaeobotanical finds identified by Opravil could not be precisely localised within the agglomeration, only material from excavations carried out in the past seven years were used for analysis.<sup>7</sup> The following evaluation shows differences between areas in the occurrence of different species, proving that luxury crops can be considered evidence of status.

- 1 Peach, apple, pear and grapevine.
- 2 Carrot, parsley and cucumber.
- 3 Persian walnut.
- 4 Grass pea, bitter vetch and Celtic bean.
- 5 Poppy and flax.
- 6 Látková 2019.
- 7 Látková 2019.

### Acropolis

At the main fortified area of the Mikulčice stronghold – the acropolis – eight botanical taxons of luxury crops were recorded, with the average occurrence at 0.26 per sample. The number of taxons as well as the average frequency of the luxury crops occurring here was the highest of all the areas assessed. The high concentration of masonry buildings, the numerous graves with luxury goods, and the higher occurrence of luxury crops all point toward not only the presence of a privileged class, but the superiority of this central complex within the hierarchy of the settlement.

### Outer bailey

In the neighbouring area of the outer bailey, six botanical taxons of non-traditional crops were found, with the average occurrence at 0.16 per sample. Taxons of non-traditional crops were also found, albeit fewer than in the neighbouring area, at the outer bailey itself. The similarity in the variety of species and the frequency of the different taxons found at the acropolis and outer bailey indicates that a higher social class inhabited these locations.

Excavation area	Number of samples	Number of PMR	Number of taxons	Frequency of PMR	Average PMR per sample
Acropolis	132	35	8	15	0.26
Outer bailey	169	28	6	6	0.16
Extramural settlement	36	10	3	6	0.09
Kostelisko	75	285	3	1	2.65
Riverbed	27	232	7	7	8.59
Periphery	236	7	3	5	0.02

Fig. 113 Occurrence of luxury species in the settlement areas of the Mikulčice agglomeration.

## Extramural settlement

The unfortified suburbium is the largest settlement of the agglomeration, a sprawling extramural area divided into small sections.<sup>8</sup> One of its settlement areas, Kostelisko, is notable for the high occurrence of luxury crops due to a set of circumstances unique to this particular area (discussed below in more detail). Kostelisko aside, however, only 10 seeds from rare crops were found in the vast area of the extramural settlement, with the average occurrence at 0.09 per sample.

### Kostelisko

The finds excavated at Kostelisko hold a special status within the unfortified extramural settlement, bucking the overall trend observed across the settlement agglomeration as a whole. A total of 285 finds were excavated here (98% grape pips), with occurrence at 2.65 luxury crops per sample. The precise localisation of the samples showed that all of the finds came from the backfill of a single settlement feature.<sup>9</sup> The high concentration of grapevine pips point to the accumulation of waste from the processing of grapes and preparation of other vine products.

### Riverbed

The water-saturated layers of the silted-up river branches, which would have surrounded the fortified core of the agglomeration in the 9th century, are notable for their high concentration of luxury crops. In these natural riverbed layers, a total of 232 seeds (8.59 per sample) and stones were found. The seven taxons of luxury crops identified in this location closely resemble the finds from the acropolis and outer bailey. The high groundwater level maintained at these silted-up river branches provide an ideal environment for preserving organic material, including plant macroremains. Although the exact origin of the finds is unclear, they most likely accumulated in the river from different places, with the river branches feeding different areas of the Great Moravian landscape – both settlements and the natural biotope.

## Periphery of the agglomeration

The more common crops were found at the periphery of the agglomeration, a series of settlements stretching over 1 km from the notional centre of the agglomeration but within the floodplain of the River Morava. Conditions at the Mikulčice-Trapíkov settlement<sup>10</sup> mirrored those at Kopčany – Za jazerom pri sv. Margite on the Slovak side of the river.<sup>11</sup> A total of seven seeds of luxury crops were found at the Mikulčice-Trapíkov settlement, with occurrence at 0.02 per sample. The most frequent seeds documented at the periphery of the agglomeration were grape pips, commonly found across the agglomeration.<sup>12</sup>

Providing important insights on the nutritional characteristics of the local diet, the archaeological record of consumed foodstuffs is one of the best indicators of social stratification. Based on the occurrence of luxury crops, we know that a hierarchical structure existed in the residential areas of the Mikulčice agglomeration. The central fortified core comprising the acropolis and outer bailey produced significantly larger numbers of luxury crops than in the unfortified settlements of the extramural settlement and the agglomeration's periphery.

8 Poláček et al. 2007, 125; Látková – Hajnalová 2019.

9 Látková et al. in press.

10 Hladík – Mazuch – Látková in press.

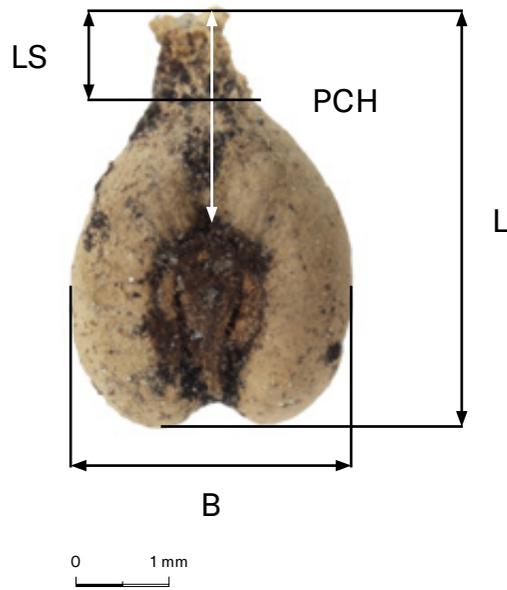
11 Látková 2014; Baxa – Prášek – Glaser-Opitzová 2008.

12 See Essay 2.7.

## 2.7.3 excursus

# Size or Shape? Grapevine Pips From an Archaeobotanical Perspective

– Michaela Látková



Grapevine cultivation results in many different clones, which differ in terms of phenotypic properties and the overall shapes of the pips. This makes it very difficult to distinguish different varieties of vine from archaeobotanical material.<sup>1</sup> Exhibiting morphological and genetic similarities, the cultivated form of vine is related to wild grapevine (*Vitis vinifera subsp. sylvestris*, C. C. Gmelin). This species occurs within an area extending from the Atlantic coast through Southern Europe and then south to the Black and Caspian Seas as far as the Western Himalaya and Tajikistan. The area also includes the region of Central Europe along the Rivers Danube and the Rhein.<sup>2</sup> Currently, wild grapevine is unknown in the Czech Republic.<sup>3</sup> In Slovakia, its occurrence has been documented in the Danube region (Mužla-Čenkov) and Nitra region (Veľký les near Šurany).

Importantly, from an archaeobotanical perspective, the grapevine pip retains its shape, a characteristic trait discernible even when the seed coat has suffered significant damage. A number of studies have attempted to demonstrate and characterise the biodiversity and unique properties of pips from the *Vitis L* genus. Traditionally, cultivated and wild forms have been identified using “traditional” morphometric methods,<sup>4</sup> enabling different parts of the pips to be measured, with the values obtained then used to calculate indices. However, these methods are often subject to criticism on the grounds that carbonisation causes morphological changes in the pips; it has also been proven that morphometry cannot reliably distinguish cultivars from wild species.<sup>5</sup>

Recent<sup>6</sup> genetic and botanical studies on grapevine domestication and the determination of cultivated and wild grapevine varieties have produced contradictory results. Research of wild grapevine populations – whether occurring wildly or grown in genetic banks – have revealed feral hybrid forms of *Vitis riparia* and *Vitis labrusca*,<sup>7</sup> previously considered European types of *Vitis sylvestris*. To that end, to accurately determine whether a species of wild grapevine is indeed *Vitis sylvestris* s.s. or, for example, a crossbred American species, the region in which it is found must be properly assessed.

Grapevine pips have been the subject of much attention by the international and Czechoslovak archaeobotany community. In the Czech context, the most detailed assessment of grape seeds was carried out by Emanuel Opravil,<sup>8</sup> the only Czech archaeobotanist to employ the morphometric approach aimed at defining

Fig. 114 Measured parts of grape seeds.

Legend: L – length, LS – length of grapevine stalk, B – breadth, PCH – distance from the stalk to the chalaza.

- 1 Terral et al. 2010.
- 2 Zohary – Spiegel-Roy 1975.
- 3 Maděra – Martinková 2002, 484.
- 4 Stummer 1911; Mangafa – Kotsakis 1996.
- 5 Bouby et al. 2013, 2.
- 6 Bodor et al. 2010; Gyulai et al. 2009.
- 7 Bodor et al. 2010.
- 8 Opravil 1963; 1965; 1977; 1980; 1985.

differences between grapevine pips.<sup>9</sup> He attributed the differences in pip shape to their different origin/species (*Vitis vinifera* vs *Vitis sylvestris*). Opravil concluded that 49% of the large assemblage of grape pips from Great Moravian Mikulčice (n = 1,512) – the result of over 40 years of archaeological and archaeobotanical research – were *Vitis sylvestris*.<sup>10</sup>

Several archaeobotanical methods can be used to ascertain whether a sample comes from a cultivated or a wild species based on seed measurement (length, width, length of stalk).<sup>11</sup>

### Morphometric analysis

Metric methods were used to discern wild from cultivated forms. Pip parts were measured and indices then calculated. Two morphometric methods were applied to all archaeobotanical finds from each archaeological site, including the more recent finds of wild grapevine pips.<sup>12</sup> The measurements included<sup>13</sup> total seed length (L), length of stalk (LS), distance from the stalk to the chalaza (PCH), and breadth (B) (Fig. 114).

The first method – the Stummer index – is used to distinguish cultivated and wild forms of grapevine based on pip breadth/length ratio ( $B/L \times 100$ ).<sup>14</sup> Values ranging from 76 to 83 indicate wild grapevine (*Vitis vinifera subsp. sylvestris*), while values ranging between 44 and 53 indicate cultivated forms (*Vitis vinifera subsp. vinifera*). It should be noted, however, that this method has been the focus of criticism, especially with regard to its suitability for assessing charred material.<sup>15</sup>

The second method involves four equations<sup>16</sup> aimed at eliminating deviation caused by carbonisation, rendering it suitable for both charred and non-charred material. Based on a similar principle to the previous method, the index obtained from the equations – and thus each grape-pip find – is classified into one

of four groups. Interestingly, unlike the first method, none of the four equations used in the second method account for pip breadth, the dimension most affected by the carbonisation of plant material.

Although waterlogged material is particularly suited to morphometric analysis, the waterlogging preservation process can cause (under certain circumstances) significant damage to the original shape of the pip. The epidermis of the grapevine pip consists of four layers, its thickness varying at different parts. Although grape pips are usually well-preserved across a range of sediment types due to the structural support provided by sclerenchyma tissue, in certain instances their coats can deteriorate. As large differences from the original dimensions tend to occur, these types of damaged pips are excluded from morphometric analysis.

### Morphological homogeneity of *Vitis sylvestris* s.s.

While grapevine pips from cultivated cultivars (*Vitis vinifera* s.s.) vary greatly in size and shape, wild vine (*Vitis sylvestris* s.s.) pips are typically uniform.<sup>17</sup> The morphological homogeneity of wild vine pip stock occurs due to a process of natural selection and environmental influence, while the morphology of the domesticated vine is more influenced by human selection and other interventions. The morphological diversity observable in the cultivated grapevine pips points to vine domestication and diversification, the aim of which was to repeatedly influence the size and shape of the grapes.<sup>18</sup>

Both methods were applied to the grape pips found at the Mikulčice stronghold.<sup>19</sup> And although the results of the measurements are inconclusive, the dimensions of the pips would seem to correspond to wild vine. The indices calculated should not be accepted without taking into account the overall shapes of the pips, given that environmental influences alter size, not shape. All things considered, it can be assumed that various, now extinct, local species and/or primitive cultivars were grown in the Great Moravian Mikulčice.

9 Opravil 1972; 1977; 2000.

10 Opravil 2000, 353.

11 Stummer 1911; Mangafa – Kotsakis 1996.

12 Stummer 1911; Mangafa – Kotsakis 1996.

13 Measurement results are given in millimetres and rounded to two decimal places.

14 Stummer 1911.

15 Terral et al. 2010; Bouby et al. 2013; Pagnoux et al. 2015; Logothetis 1970 (in Greek with English summary); 1974; Smith – Jones 1990.

16 Mangafa – Kotsakis 1996.

17 Pagnoux et al. 2015, 7.

18 Pagnoux et al. 2015, 7.

19 Látková et al. in press.





Fishing spears from Mikulčice.

## 2.8

# Animal Food Products in Mikulčice Diet

– Lenka Kovačiková

For decades, archaeological research in the area of the important Great Moravian centre of Mikulčice has produced various archaeological records. Each record is related to a different type of human activity. One group of natural sources is represented by animal bones, teeth, scales and shells, which can remain in a soil profile for hundreds of years. These are called ecofacts and are studied by the field of archaeozoology. Regarding the vast, complex settlement agglomeration in Mikulčice in the 8th to 9th century, there are no written sources available that enable us to describe the everyday life of the local inhabitants. Fortunately, the existing animal bone assemblages preserve plenty of information: from diet composition, agriculture and landscape in the past, through to those defining human-animal relationships and describing exterior and utility characteristics. Due to the careful, systematic evaluation of larger osteological sets and the interconnection of numerous findings from bones, different parts of the Mikulčice site have come back to life.

A key figure connected to the study of animal bone remains in Mikulčice is Zdeněk Kratochvíl, who published his first findings in 1978 and continued until 1988. He managed to evaluate information

on an incredibly large assemblage, which had been collected since 1954 and comprised of more than 200,000 records. Mikulčice finds are thus rightfully among the richer European assemblages from the 8th to 9th century. Kratochvíl recorded not only animal species and their anatomy, but also their sex and age at death (slaughter age) to describe meat consumption. He also recorded the characteristics of individual animal species typical for Great Moravia, such as their height at withers and age structure, and the cumulation of animal bones in the area of the stronghold. His osteometric studies are among the best. Another contribution to the data on the fauna of Mikulčice in the Early Middle Ages comes from a group of three Polish researchers from 2003: Wiesława Chrzanowska, Dorota Januszkiewicz-Załęcka and Anna Krupska, who followed the work of Zdeněk Kratochvíl. New finds appeared only recently, in 2014, due to the current archaeological research meaning that the analyses of selected archaeozoological material can continue.

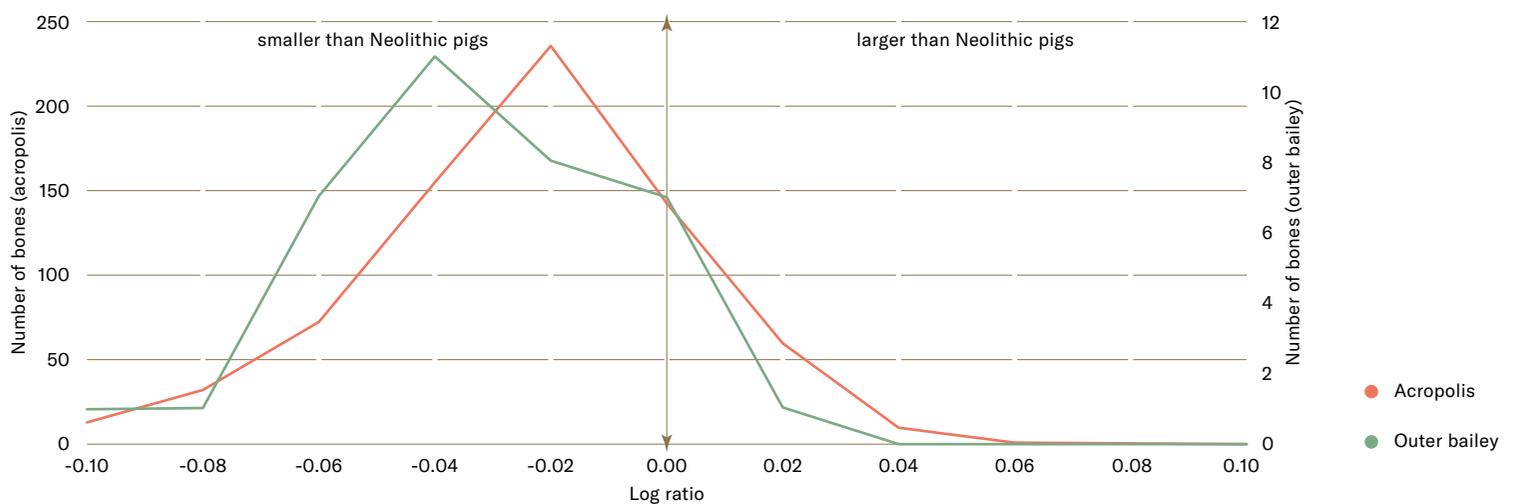


Fig. 115 Comparing the width dimensions of selected long bones of domestic pigs (*Sus domesticus*) from the acropolis and outer bailey in Mikulčice with the dimensions of the bones of domestic pigs from the Neolithic period.

## Domestic pig

Animal products in the diet of the Mikulčice inhabitants in the 8th–9th century were based on available low-risk sources, especially meat from livestock. Finds of animal bones and teeth, which predominate in the osteological material from all parts of this Great Moravian site (more than 95% of finds) prove that the basis of the economy was pigs, cattle, sheep and goats. The most important of these was the domestic pig (*Sus domesticus*). The high percentage of its bone remains can be interpreted as indirect proof of a larger cumulation of inhabitants with a higher socioeconomic status.<sup>1</sup> The results of the analyses of various Anglo-Saxon osteological assemblages from the Early Middle Ages (7th–9th century) provide evidence that pork meat consumption rose hand in hand with increasing urbanisation.<sup>2</sup> An indisputable advantage of pig raising is a large number of piglets in a litter with faster feed conversion and weight gain. Therefore, raising pigs is a natural choice when trying to feed a large population.<sup>3</sup> Compared to raising cattle or sheep, raising pigs is one-sided as its sole aim is to provide meat. The demand for protein was not necessarily a reason to overproduce pork meat as the diet of the population also consisted of other types of meat. The redundant animals could have been a means for gaining economic advantages or other benefits.

- 1 Ashby 2002, 37–59
- 2 Crabtree 1996, 58–75.
- 3 Iwaszczuk 2014, 69–101.

Records regarding the timing of tooth replacement, eruption and intensity of abrasion on pigs found at the acropolis and the outer bailey at Mikulčice show that more than half of these animals were slaughtered between the age of six months and three years – at the time of culminating physical growth. The presence of finds of piglets a maximum of six months old as well as adult pigs older than three years (c. 12% of the individuals in the population), which were probably used for reproduction, indicates – to a limited extent – the production of pork meat directly at the stronghold. Regarding individual parts of the area, it turns out that the inhabitants of the acropolis most often consumed meat from pigs older than two or those with a higher fat content; it was unusual to kill piglets younger than one-year-old. In the outer bailey, it was quite the opposite.<sup>4</sup>

Width measurements of selected adult pig bones from the Great Moravian centre in Mikulčice were compared with identically placed measurements of domestic pig bones from the time of the beginning of agriculture on the European continent (Neolithic Age; Fig. 115). It emerged from the comparison that the pigs were considerably smaller than their ancient predecessors were; they had shorter and slimmer legs. The average height at withers of adult pigs, calculated from measurements of long bones in legs, corresponds with the range between 77 and 81 cm.<sup>5</sup> The pigs were most likely not just one breed, as their size varied from the smaller ones to

- 4 Kovačiková et al. 2020.
- 5 Kratochvíl 1981, 133.

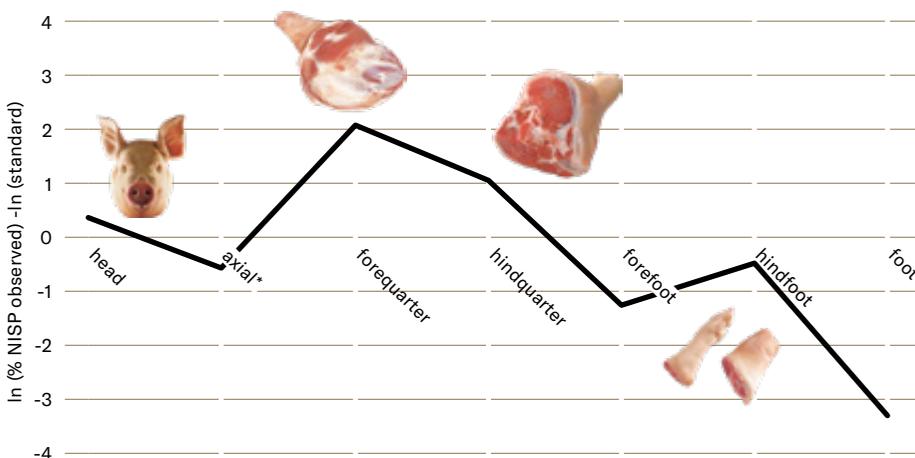


Fig. 116 Body parts of domestic pigs (*Sus domesticus*) from the acropolis in Mikulčice.

The number of bones in each category corresponds to the standard, i.e. the actual number of bones in the skeleton of one pig. Categories reaching positive values on the y-axis are overestimated in the assemblage. On the contrary, the categories in the negative part of this axis are underestimated. NISP – Number of Identified Specimens.

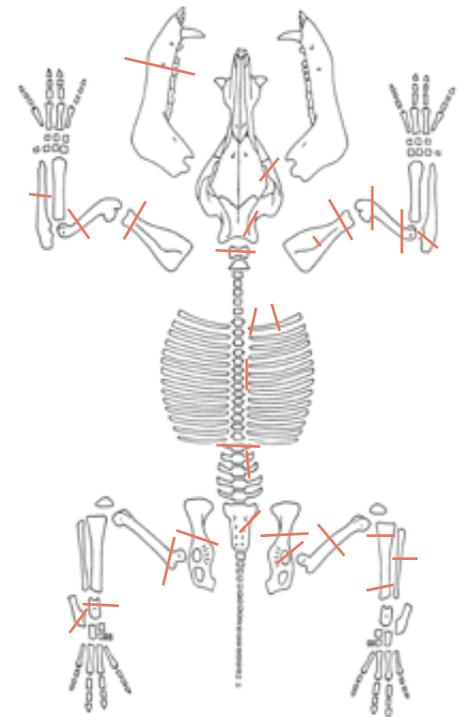


Fig. 117 Butchery marks on the bones of a domestic pig (*Sus domesticus*) from the outer bailey, which attests the pork meat processing.

the bigger ones, which were close to wild boars in terms of the size of their frames. This is in accordance with the theory of the supply of pork meat to the stronghold from various places. At the same time, it was proven that the meat at the acropolis came from pigs older than one year, most often from more sturdy and muscular animals, while people living in the outer bailey often had to settle for meat from smaller animals. This difference is rather obvious when comparing the measurements of the long bones from limbs and shoulder blades. The occurrence of domestic pig bones with a frame size corresponding to that of wild boars is also more frequent in the acropolis.

Apart from slaughter age and size, it was also studied if there were bones from all the body parts of the pigs found as part of the osteological material in the area of the acropolis and the outer bailey, and the level of distribution in the assemblages (Fig. 116). If a pig is reared, killed, butchered and then consumed in an area, its bones remain at the same place, so all its body parts should be found during archaeological research. This was confirmed in the assemblages from Mikulčice, where neither meaty bones, nor the bones unattractive to consumers were missing. Therefore, it can be deduced that the local people either made full use of the animal meat by breeding, or they brought complete animals from elsewhere. However, an imbalance in the numbers of bones from selected parts of the body is noticeable. In refuse contexts at the

acropolis and outer bailey, there is a noticeable surplus of shoulder and rump bones - the parts of the body that are distinctive for their high meat yield. These parts of the carcass may have been brought from elsewhere, such as the Mikulčice hinterland. Apart from these, there was also a noticeable surplus of skulls, which can be interpreted by the high value of fat and brain with its strong nutritional value. Pigs' feet, on the other hand, were probably not very popular, as the number of these in the assemblages is undervalued.

Some pig bones from the outer bailey (there is no such data available for the acropolis) still had butchery marks (Fig. 117). These were primarily vertebrae, ribs, scapula, pelvis, and humerus or femur. Chops on the pig mandible, created when taking the pig's tongue out, are no exception. From the position and orientation of the chops and cuts, it is clear that during slaughtering the meat was separated into joints and cut into larger pieces. This practice was different for cattle, where the body was cut into smaller parts.

### Not only meat but also milk

It was natural for breeders to focus their attention on livestock that, in addition to meat, provided other products such as milk. The slaughter age of cattle (*Bos taurus*) derived from the dentition signs shows that at least one-third of all the cattle from the acropolis and outer bailey were slaughtered between the ages of six and

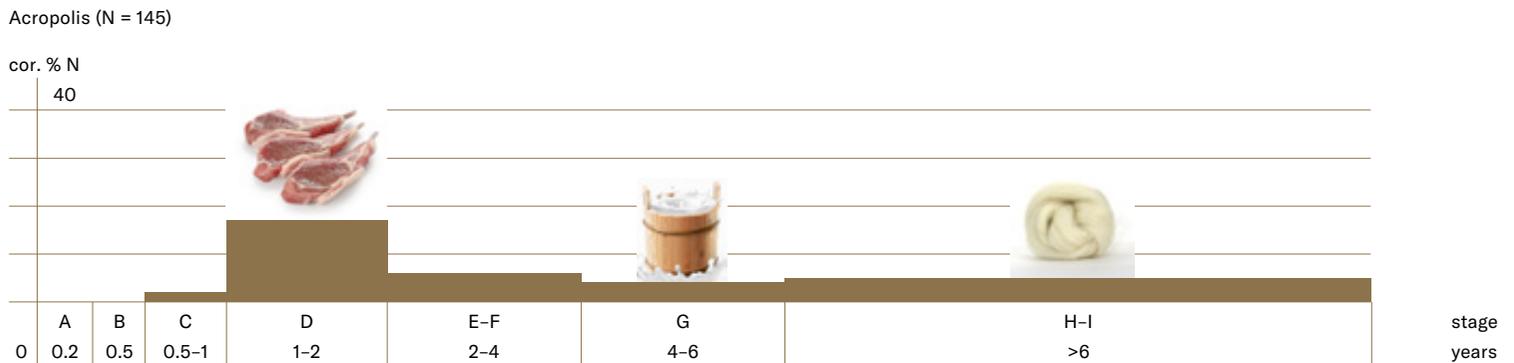
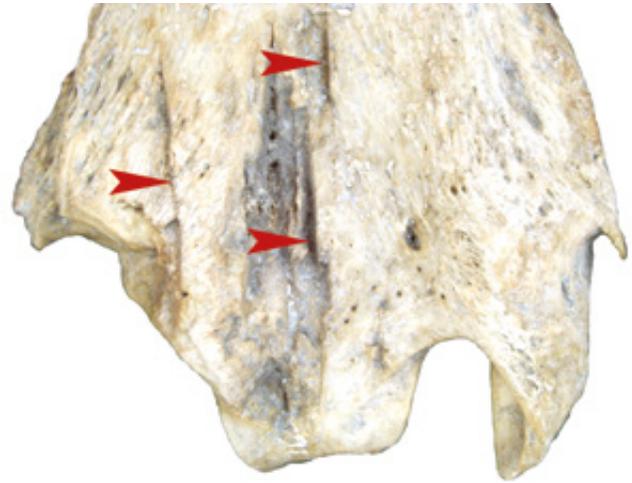


Fig. 118 Slaughter age distribution of sheep and goats (*Ovis/Capra*) from acropolis estimated on the basis of eruption, replacement and wear stages on teeth.

The diagram shows the management practices of these N - Number of teeth.

eleven years, which appears to be because of milk production. The group of cattle in the stated age range was more numerous in the outer bailey than the central part of the stronghold. By putting this conclusion together with the lower consumption of two- to three-year-old cattle typical of the outer bailey, it supports the hypothesis of a more agriculturally productive outer bailey and a larger consumption in the acropolis, where the Mikulčice elites resided.

For sheep (*Ovis aries*) and goats (*Capra hircus*), apart from animals at the age of one to three years slaughtered for meat, there was a no less significant group of individuals older than two to three years, which are assumed to have been bred for milk or wool (combined efficiency; Fig. 118). According to the existing archaeozoological data, what appears to be different is the approach of people from the acropolis and the outer bailey to raising sheep and goats as such. While lambs and kids in the outer bailey were slaughtered during the first year of their lives (probably before winter), there is hardly anything similar in the acropolis. In most cases, the bones and teeth found there belonged to sheep and goats fed for more than a year. One possible explanation is that in the more densely populated outer bailey it was necessary to feed a larger number of inhabitants and reduce the demands related to feeding the animals during wintertime. Other differences between parts of the area in terms of the numbers of slaughtered animals older than three years can be observed. In the acropolis, the ratio of older sheep and goats is about one-third higher than in the outer bailey. Animal breeding in this place can thus be considered as long-term, with the emphasis on milk and, in the case of sheep, wool.



### Traps and nets

Animal hunting in the Early Middle Ages was connected to the social elites, especially on a symbolic level rather than in reality. Occasional hunting and game consumption can thus be understood as a sign of social identity.<sup>6</sup> In the area of the Mikulčice acropolis, furred game bones were discovered, which probably did not escape the attention of the hunters.<sup>7</sup> The diversity of the game was rather high. Apart from commonly occurring red deer (*Cervus elaphus*; Fig. 119), roe deer (*Capreolus capreolus*), wild boar (*Sus scrofa*) and brown hare (*Lepus europaeus*), an analysis of the animal bones discovered that the hunted animals also included elk (*Alces alces*), brown bear (*Ursus arctos*) and Eurasian beaver (*Castor fiber*). Other studies – also from the acropolis – unearthed evidence of hunting aurochs (*Bos primigenius*) and red squirrel (*Sciurus vulgaris*).<sup>8</sup> Especially in the case of bears and beavers, one can ask the question of whether people were motivated more for their fur than meat. Regardless of the answer, the ratio of the bones of the hunted mammals in the osteological assemblages from acropolis is very low – usually less than 3%. The same applies to the outer bailey. Animal hunting in both parts of the area was not too significant, probably because it was an activity with a higher risk of failure. A larger population density resulting in pressure on the surrounding area could also have been a reason for the marginal interest in hunting.

It can be difficult or almost impossible to see bird bones, especially the smaller species, with the naked eye during archaeological research. Therefore, it is important to consider that the remains of avifauna in the osteological assemblages from earlier research,

Fig. 119 Multiple chop marks (red arrows) on the tibia of an adult red deer (*Cervus elaphus*) found in the Mikulčice outer bailey document venison processing.

6 Sykes 2006, 164.

7 Kratochvíl 1980, 31–36.

8 Chrzanowska – Januszkiewicz-Zalęcka 2003, 121–138.

when the soil sediment flotation method was not commonly in use, could be undervalued when compared to mammal bones. That said, it has proven possible to acquire a substantially varied collection of bones from small and large wildfowl species, both in the acropolis and the Mikulčice outer bailey, such as grey partridge (*Perdix perdix*), quail (*Coturnix coturnix*), hazel grouse (*Bonasa bonasia*), black grouse (*Tetrao tetrix*), coot (*Fulica atra*), wood pigeon (*Columba palumbus*) and stock dove (*Columba oenas*).<sup>9</sup> These species could have had a symbolic significance for the Mikulčice inhabitants<sup>10</sup> and were not necessarily the prey of hunters for subsistence. The rare finds of peregrine falcon (*Falco peregrinus*) and northern goshawk (*Accipiter gentilis*) bones may signal their ritual significance<sup>11</sup> and be a record of training birds of prey for hunting smaller birds or mammals. Falconry, which was practised by those of the highest social rank, such as the nobility or the clergy,<sup>12</sup> was widespread in parts of Europe at that time.<sup>13</sup>

9 Mlíkovský 2003, 215–338.  
 10 Ibid.  
 11 Ibid.  
 12 Prummel 1997, 333–338.  
 13 Serjeantson 2006, 138.

The River Morava, close to the Mikulčice settlement agglomeration, provided suitable conditions for fishing. Proof of this can be found in the ichthyological finds from the acropolis and the outer bailey that have been studied to date. These consist of more than 4,000 bones, some of which are head bones, spine, ribs, fins and scales. Some of the bone fragments have traces of chops, cuts and burning, which reveal the heat treatment of fish catches. A more detailed study of food remains refers to the consumption of four groups of fish.<sup>14</sup> The most frequent group is cyprinid fish, especially common carp (*Cyprinus carpio*), roach (*Rutilus rutilus*), tench (*Tinca tinca*), dace, chub and ide (*Leuciscus leuciscus*, *L. cephalus* and *L. idus*). Although carp has been documented in Mikulčice by many bones, it is not possible to claim that it was also a common species in the larger area. No evidence of the presence of carp can be found in assemblages from Bohemia with similar dating. In neighbouring Poland, it is clear that carp appears in the 10th century at the earliest.<sup>15</sup> The other two groups of fish include pike (*Esox lucius*) and wels (*Silurus glanis*). Neither of these prefers fast-flowing

14 Zawada 2003, 339–354.  
 15 Makowiecki 2003, 129–130.

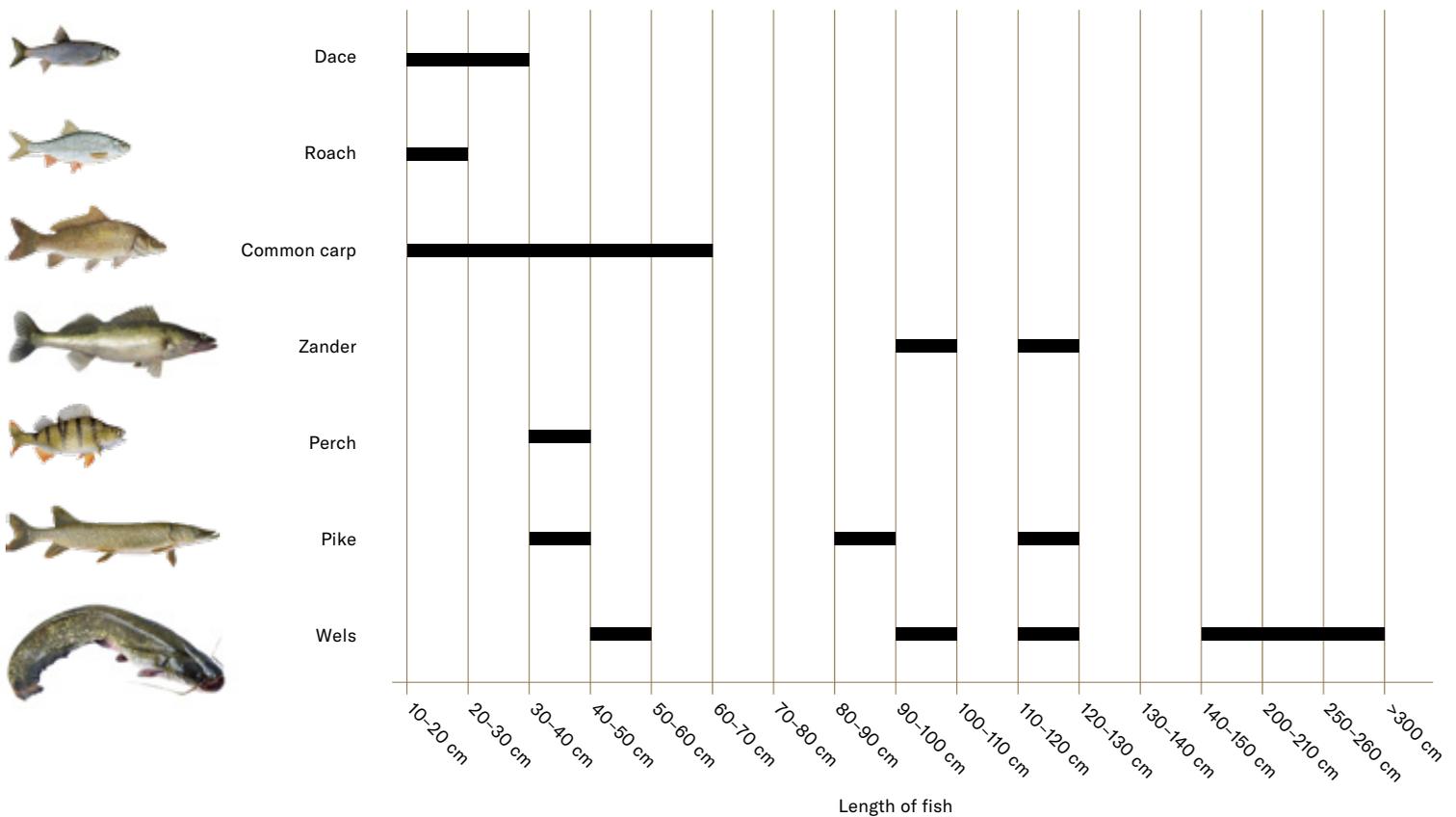


Fig. 120 The size of fish species in Mikulčice, which was estimated on the basis of bone dimensions.

rivers, but welcome rugged banks with plant undergrowth where they can find enough food and opportunities for hiding.<sup>16</sup> Such conditions could probably be found at the River Morava. It is also important not to overlook perch fish, such as European perch (*Perca fluviatilis*) and zander (*Stizostedion lucioperca*), which are demanding on water quality and whose western border of occurrence in Europe has historically been the Danube River Basin.<sup>17</sup> Regarding the size of the above-mentioned fish, both older and larger ones, as well as standard to undersized fish were caught (Fig. 120). For example, the length of most zander and wels fish estimated from the measurable bones exceeded 90 cm; for pike, it was more than 80 cm. These can all be described as an above-standard catch. Several bones also proved a find of wels more than 3 m long.<sup>18</sup> It can be estimated that it lived for more than 30 years and weighed more than 60 kg. On the other hand, the trend for a smaller size was mainly for roach and dace (up to 20 cm).

Cyprinid fish fins are essential for parasitically growing larvae of unionid mussels (*glochidia*), such as the thick-shelled river mussel (*Unio crassus*; Fig. 121).<sup>19</sup> During the archaeological excavation of the acropolis and the outer bailey of Mikulčice, more than one hundred shells of this water species, which needs running water to survive,<sup>20</sup> were found. This amount of shells accounts for c. 1.8 kg of meat, which – after recalculating to calories – covers the daily intake of a young woman or a child.<sup>21</sup> Therefore, it is clear that thick-shelled river mussels, which were collected from the riverbed near the site, were rarely consumed and only contributed to a greater diversity of the local inhabitants' food.

### The Slavic elites from the perspective of archaeozoological conclusions

The results of the studies of settlement finds in the form of animal bones, which were found in the area of the Mikulčice stronghold, define not only identical but also contrasting signs of the two parts of this significant power centre – the acropolis and the outer bailey. These signs are related to the animal component of the diet of the local population and animal raising. When comparing the two archaeozoological assemblages, it is easier to observe some features related to the lifestyle of the Slavic elites connected to the acropolis. It shows that residents of the acropolis were not completely dependent on meat and other animal product supplies from elsewhere – on the contrary, they were actively raising animals to a certain extent. This is why thinking of the acropolis as only a place of consumption may be simplistic and inaccurate. The local people partially raised pigs, cattle, sheep and goats. Milk production is also documented in the case of ruminants. There is also evidence of increased consumption of quality pork meat at the site, especially from sturdy animals that were fed long term. The focus on the size of the animals is also evident in the case of various fish, such as wels, pike and zander. The meat of the animals raised comprised the major food staple. Game, fish and freshwater molluscs were a welcome diversification.



Fig. 121 One of the representatives of aquatic bivalves recorded in the archaeozoological material from Mikulčice – thick-shelled river mussel (*Unio crassus*).

The picture depicts the right valve of this clam species.

16 Baruš – Oliva et al. 1995a, 561; Baruš – Oliva et al. 1995b, 297.

17 Baruš – Oliva et al. 1995b, 399.

18 Zawada 2003, 340.

19 Horsák – Juříčková – Pícka 2013, 144–145.

20 Horsák – Marek – Poláček 2003, 83–107.

21 Gulyás – Tóth – Sümegi 2007.

## 2.8.1 excursus

# Bone Collagen Memory: Stable Isotope Analysis

– Lenka Kovačiková

Some of the animal bones and teeth excavated in Mikulčice contained well-preserved collagen, a water-insoluble fibrous protein that constitutes extracellular matrix.<sup>1</sup> Collagen from animal bones contains stable carbon and nitrogen isotopes (<sup>12</sup>C, <sup>13</sup>C, <sup>14</sup>N, <sup>15</sup>N). Animals receive these from fodder, and they are deposited in bone tissue and can be detected and measured many years after the death of the animal. A few grams of well-preserved skeletal remains was sufficient to provide more precise information on the composition of the diet of both farm and wild animals as well as the properties of the pastures around the Mikulčice stronghold. Each bone sample was subject to laboratory preparation, and a series of steps completed by Isotope Ratio Mass Spectrometry. The ratio of stable isotope measurements in sample was compared to the same ratio in a standard material. The stable carbon and nitrogen isotope values, usually expressed as  $\delta$  (in ‰), were subsequently discussed in an archaeological context. The results of the isotope analysis<sup>2</sup>

of the collagen samples from the farm animals indicate that the natural environment around Mikulčice was suitable and probably sufficiently nutritional enough to serve as pasture (Fig. 122). On the other hand, evidence of animals fattened in pigsties is entirely missing or appears only exceptionally. Particularly in relation to the intensive farming of omnivorous pigs, pig pannage was a way of sufficiently feeding these animals without such management practice becoming economically unsustainable for the inhabitants of the stronghold. In the natural environment, pig pannage consisted of 90% of plants while earthworms, crustaceans, insects or small amphibians constituted the remaining 10%.<sup>3</sup> Together with the results of archaeobotanical analyses, the isotope measurements provide a clearer idea of the landscape used for pasture and pig pannage. The biotopes used by animals were a patchwork of grass communities, biotopes created or influenced by human activity and open woodland.<sup>4</sup>

1 Silvipriya et al. 2015, 123–127.

2 Kovačiková et al. 2020.

3 D'Eath – Turner 2009, 19.

4 Látková 2017, 65–66.

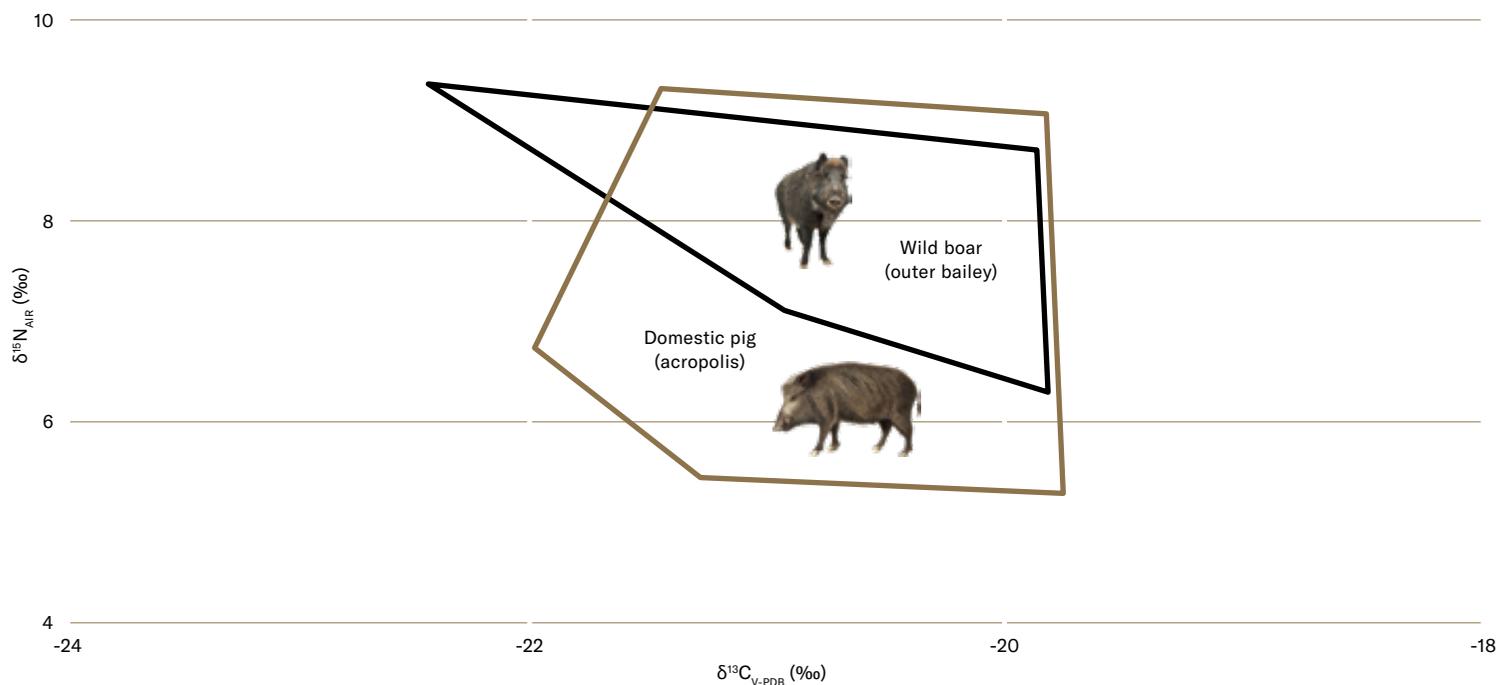


Fig. 122 Range of stable nitrogen ( $\delta^{15}\text{N}$ ) and carbon ( $\delta^{13}\text{C}$ ) isotope values obtained for domestic pigs (*Sus domesticus*) and wild boars (*Sus scrofa*) from Mikulčice.

The present values show that the domestic pig diet did not differ much from that of wild boars.

## 2.8.2 excursus

# European Weatherfish: Cobitid Fish Documented by Willow Fish Traps, Not by Bones

– Lenka Kovačiková

Archaeological excavations in Mikulčice yielded various remains of willow fish traps from the 9th century,<sup>1,2</sup> which were used for catching fish. Willow sticks were the preferred material to make these traps. Historical ethnographic analogies<sup>3</sup> state that the best willow sticks suitable for wicker items are one-year-old sticks cut during dormancy as they lack knots and do not crack when bent. The shape and size of at least one of the willow fish traps found in Mikulčice (Fig. 123) resemble the traps used for catching European weatherfish (*Misgurnus fossilis*) in South-Eastern and Eastern Europe.<sup>4</sup> European weatherfish mostly live on the riverbed so cannot be caught on a fishing line. Although this cobitid fish, with an average length of 20–25 cm (Fig. 124), is a native inhabitant of slow-flowing rivers, it can sometimes appear in still water. When provided with shelter, sufficient vegetation and invertebrates, which it feeds on, it can create large populations.<sup>5</sup> The osteological material from Mikulčice do not contain any remains of European weatherfish bones to date – but they contain finds of willow fish traps. As the European weatherfish is hunted by predatory fish in its natural habitat, it is regarded as suitable bait for wels and pike fishing.<sup>6</sup> If it swims near the surface when used as bait, it tends to naturally move down to the riverbed. Its relentless activity then provokes predators to attack it.<sup>7</sup> Using weatherfish as bait may explain why its bones do not appear in the osteological material. Although we do not have any information about the significance of European weatherfish to the Great Moravian diet, later literature on this species states that if eaten immediately after being caught, its meat has an unpleasant, muddy taste. However, the taste improves if the fish is left in clean water for some time.<sup>8</sup> Furthermore, it can even survive in conditions with limited access to air, which is a good prerequisite for transportation over long and short distances and for keeping it fresh out of the river for longer periods.

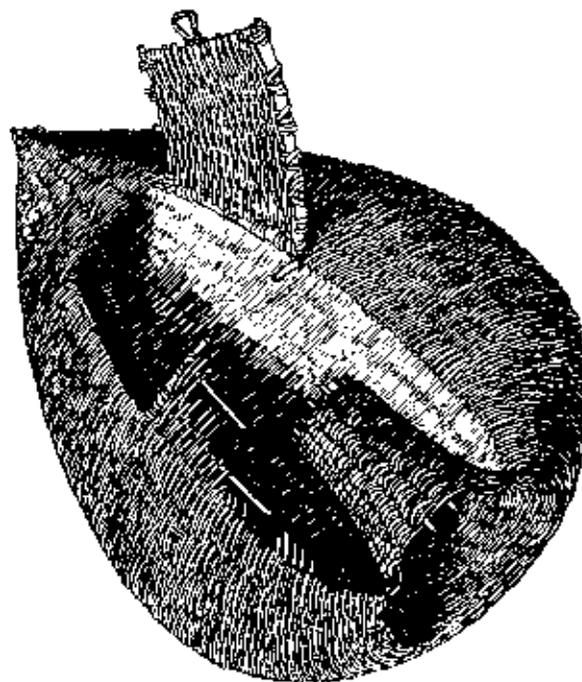


Fig. 123 One of the used and environmentally-friendly fishing techniques in Mikulčice was the capture of fish in wicker baskets – fish traps.

The remains of the fish traps were discovered during the archaeological excavation of the silted-up river branch of the River Morava. The fish traps, which were up to 90 cm long, were placed at the bottom of the river, where they represented a barrier (trap) for moving fish.



Fig. 124 European weatherfish (*Misgurnus fossilis*) with an average length of 20–25 cm could serve as a bait for catching larger predatory fish.

- 1 Andreska 1975, 134–135
- 2 Mazuch 2003, 369–370.
- 3 E.g. Válka 2014, 109.
- 4 Andreska 1987, 29–30.
- 5 Baruš – Oliva et al. 1995b, 288–291.
- 6 Hanel – Lusk 2005, 287–289.
- 7 Šimek – Rys 1989, 122.
- 8 E.g. Frič 1859, 188–189.

## 2.8.3 excursus

# Introducing the Carp

– Lenka Kovačiková



Fig. 125 Detail of carp vertebra (*Cyprinus carpio*) from Mikulčice. This bone element proves the presence of a six-year-old fish that was approximately 35 to 45 cm in size.

The common carp (*Cyprinus carpio*) was the most frequent species of fish found in Mikulčice. Although its size ranged between 10 and 60 cm, it was usually larger than 30 cm<sup>1</sup> (Fig. 125). Carp from the Great Moravian period likely resembled their wild ancestor, the wild carp, whose elongated torpedo-shaped body was covered with large, regular yellow-brown scales<sup>2</sup> (Fig. 126: 1, 2). The confluence of the the Rivers Morava and Danube is believed to be the westernmost place of the occurrence of wild carp.<sup>3</sup> With regard to the location of Mikulčice, we can assume that carp might have been imported there and then raised successfully. Written sources tell us that the Romans kept various species of fish (including carp) in reservoirs named *piscinae*. Such reservoirs were even built in military camps and forts located along the Danube, taking advantage of the carp caught in the river. After the fall of the Roman Empire and the establishment of Christianity, carp were slowly introduced to reservoirs and ponds in Central and Western European monasteries, and carp breeding gradually expanded over the 7th to 13th centuries.<sup>4</sup> Keeping fish in primitive reservoirs had several advantages in that it was fresh and available regardless of the weather and fishing skills. Carp was also easier to catch than pike and wels.<sup>5</sup> The geographical location of Mikulčice probably played a significant role in the spread of carp from their original habitat, and breeding this fish could suggest a higher social status of its inhabitants.

- 1 Zawada 2003, 340–354.
- 2 Balon 1995, 1–55.
- 3 Baruš – Oliva et al. 1995b, 259.
- 4 Balon 1974, 18–25.
- 5 Balon 1995, 1–55.

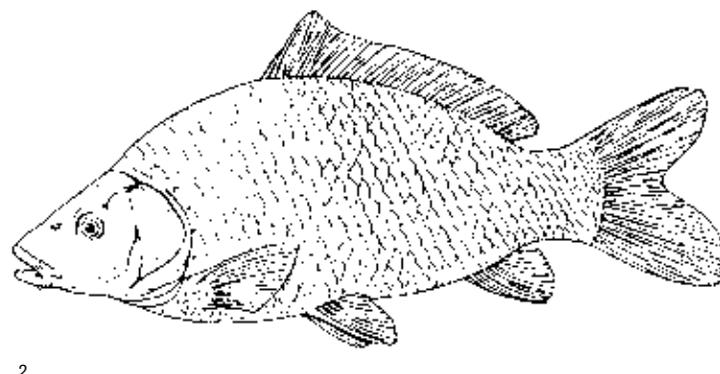
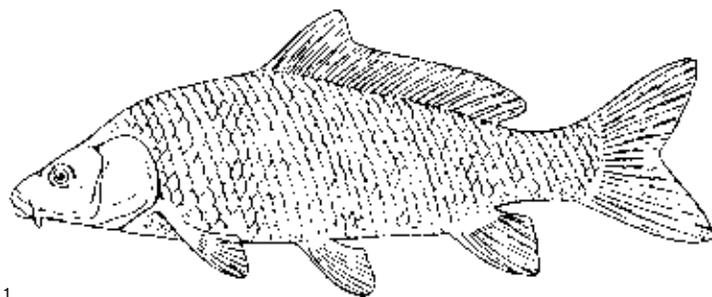


Fig. 126 Wild populations of common carp (*Cyprinus carpio*) have a more elongated body shape than the domesticated form of this species.



Grinding stone finds are significant for processing of grain, which represented a key food product in the centres as well as in hinterland and countryside.

## 2.9

# Economic Hinterland of the Power Centre and the Question of Subsistence

– Marek Hladík, Michaela Látková

Understanding the relations between central fortified agglomerations and both the nearest and more distant surroundings presents one of the crucial issues of present-day Great Moravian archaeology. This issue can be addressed from several points of view, or rather, on more levels.<sup>1</sup> Questions regarding the relation of a centre to its surroundings, or the organisation of the economic hinterland of a power centre brings us to the key issue – learning about the basic economic and social characteristics of Great Moravia.<sup>2</sup> Since the whole of society was divided into social layers,<sup>3</sup> we assume that the individual tasks of the subsistence process – that is, securing the main energy needs of a community – were distributed throughout the whole social spectre. It is highly likely that the elite units of society focused on the organisational and administrative aspects of economic relations. This division of tasks, which represented the individual steps of the whole subsistence strategy of the society, is easily documentable when comparing the results of the archaeological excavations of fortified agglomerations with the excavations of unfortified settlements and burial grounds near the centres. Such a method can contribute to creating a complex picture of the whole of Great Moravian society and its economic basis.

When studying social and economic relations in Great Moravia, we assume that the character of activities engaged in by the communities living in different types of areas fundamentally influenced how these areas looked like (in this case, we primarily consider the centres and the settlements in their vicinity). Based on such various archaeological evidence, we are then able to form a picture of the subsistence strategy of Great Moravian society.

There are three groups of issues comprising the discussion on the economic hinterland of central agglomerations in Great Moravia. First, the primary step was to ensure food for the whole community, which means raising the question of cultivating crops and breeding livestock.<sup>4</sup> This is followed by the question of the processing of plant and animal food and its subsequent storage. Finally, we study the transportation of the processed food from the producers to the consumers. At this point, we are most interested in the question of supplying the centres with food.

### Great Moravian centres as the apex of the whole system and the relations with the surrounding settlements

Before introducing an interpretation model of the economic strategy of the Mikulčice power centre, we should briefly examine several phenomena of the settlement structures near the central Great Moravian agglomerations. From the archaeological sources currently available, it is clear that settlement concentration near the Great Moravian centres greatly increased in the 9th century. This fact is easily observable and scientifically documented near all significant agglomerations.<sup>5</sup> In most cases, it is also clear that this significant concentration does not follow on from any similar intensive settlement from the time before Great Moravia.<sup>6</sup> The general scientific consensus is that the significant increase in settlement density in the 9th century was related to the concentration of the central functions of the settlements and the creation of fortified settlement agglomerations.<sup>7</sup> However, the answer to the question as to what led to such a dramatic increase is less clear. This question is currently the subject of multiple research, and the decisive starting point appears to be the picture of a complex geographical structure of an agglomeration and its hinterland. Great Moravian centres in the second half of the 9th century appear to be the apexes of the whole system surrounded by a network of settlements and their burial grounds.

The situation described above naturally brings us to the question of how the settlements might have profited from nearby centres and vice versa. Research shows that settlements near centres profited from the existence of the centres. Quality craft products came from the centres into their surroundings and, at the same time, the centres provided protection for their surroundings in terms of space (refuge function of agglomerations) and identity (sphere of influence defined as “belonging somewhere”; identification with the centre). However, what could the settlements near the centres have given in return so that the centres could profit from their vicinity? It might have been products or services. Based on current research, we do not assume – in the case of products – that the surroundings would mostly supply the centres with craft products of any great technical complexity or expensive materials (such as iron or precious metals). This does not rule out the possibility that the centres might have been supplied from the surroundings with craft products from the available materials (wood, leather, bones, fabrics etc.). We believe that agricultural products represented a more important group of products coming to the centres from their surroundings. The surroundings of the centres thus secured

1 Hladík 2020.

2 Ibid.

3 Kalhous 2014b.

4 Vignatiiová 1992, 98.

5 Galuška 2008a; Hladík 2014; Macháček 2007b; Poláček 2008c.

6 Hladík 2020.

7 Hladík – Mazuch – Látková in press.

some of the products needed for the whole network of relations to function. Apart from primary food production, another significant aspect was the services that the residents of the settlements near the centres could provide. We mainly consider that these rural communities were connected to the activities related to building the centres (e.g. fortification) or the transportation of material needed for construction, maintenance and the common operation of the centre (stone, wood, clay).<sup>8</sup>

### The Mikulčice hinterland as an example of the described relations and economic strategy

As one of the most significant Great Moravian centres, the Mikulčice agglomeration was surrounded by a network of settlements interacting with its centre. These relations represented the social and economic basis of Great Moravian society. Based on existing research, we presume that the nearest economic hinterland of Mikulčice was to be found within a 10 km radius (Fig. 127). The research of unfortified settlements and burial grounds in this designated area has been ongoing since the 1980s.<sup>9</sup> We have conducted intensive research where we have explored parts of the hinterland area using non-destructive methods as well as some rural settlements through standard fieldwork. This was mainly in the settlements of Mikulčice-Trapíkov and Mikulčice-Podbřežníky (see Excursus 2.9.1 and 2.9.2).<sup>10</sup> Both settlements lie in the immediate proximity of Mikulčice centre and the archaeological evidence found during the fieldwork contributes to understanding the economic basis of the agglomeration. Earlier research of Great Moravian settlements in Prušánky-Podsedy and Mutěnice-Zbrod considerably completes the picture of the relations between the centres and their surroundings.<sup>11</sup> From a geographical point of view, the four above-mentioned Great Moravian settlements represent an almost perfect cross-section through the hinterland. Mikulčice-Trapíkov, which lies in a floodplain 1 km from the notional centre of the agglomeration, is situated closest to the fortified core. From the functional interpretation point of view, this represents a position on the border between the extramural and the hinterland settlement. The Mikulčice-Podbřežníky settlement is located on the edge of the raised border of the floodplain, about 3 km from the centre. The Prušánky-Podsedy and Mutěnice-Zbrod settlements lie, respectively, at a distance from the floodplain of the River Morava of approximately 6 and 9 km from the centre (Fig. 128).

To describe the subsistence system in the economic hinterland of the Mikulčice agglomeration, two basic questions must be asked: (1) To what extent were the agglomerations dependent on their rural surroundings from the subsistence point of view? and (2) if these structures were connected, what events and processes determined the character of these relations? Based on the current level of knowledge, we assume that the Great Moravian central agglomerations represented superregional centres in the Great Moravian era, which were not completely autarkic considering food supplies.<sup>12</sup> Currently, there is no evidence of food storage – mainly cereals, which formed the staple foods of studied society – in the whole area of the settlement agglomeration in Mikulčice.<sup>13</sup>

Granaries cannot be found in the centre of the fortified agglomeration or the unfortified settlements in its immediate surroundings (Mikulčice-Žabník, Mikulčice-Trapíkov, Kopčany-Kačenáreň). It is important to add that all these settlements were in a floodplain area. The nearest presence and concentration of granaries can thus be found in the Mikulčice-Podbřežníky settlement, lying in an elevated area above the border of the floodplain.<sup>14</sup> Apart from this site, a larger number of granaries were also found at the furthest settlement of Mutěnice-Zbrod. Both sites deserve a closer comparison. In Mikulčice-Podbřežníky, there were 13 granaries found dating back to the Great Moravian period. In the case of the other five, such dating is also very likely. The depth of these granaries was 1–2 m. Most probably, it was one of the cereal storages for the central agglomeration. A different situation in the number and space disposition of storage pits and granaries can be found in the Mutěnice-Zbrod settlement. A total of 29 features interpreted as storage pits or granaries were found at this settlement, which was settled from the 7th until the 9th century. Of these, only five are dated to the 9th century.<sup>15</sup> The depth of these Great Moravian granaries is around 1 m. By comparing the number of granaries in relation to the dwellings discovered at the two discussed settlements, we come to some interesting conclusions. While there were between 13–18 granaries and only 4 dwellings found in the Mikulčice-Podbřežníky settlement, there were 5 granaries and 5 dwellings in the Mutěnice-Zbrod settlement. The ratio of Great Moravian dwellings to granaries in Podbřežníky is thus 1:4 and in Zbrod 1:1. The storages in Podbřežníky were also deeper than those in Zbrod. This situation supports the hypothesis of storing cereals for the centre at unfortified settlements in the immediate vicinity of the centre. Cereals stored in such pits were probably intended for long-term storage and were most likely overproduced, which might have also been used for export.<sup>16</sup> Based on the results of archaeobotanical analyses, it is clear that mainly winter crops (wheat, rye and barley) were cultivated in Mikulčice<sup>17</sup> where the time needed for storage before the next sowing was only two months. For that reason, digging and using grain pits for storing cereals intended for sowing appears to be groundless.<sup>18</sup>

Palaeoeconomy of the Mikulčice stronghold regarding a plant-based food supply and the reconstruction of the subsistence strategy is based on identifying plant cultivation, the processing methods and how the land was used in the economic hinterland.<sup>19</sup> Archaeobotany methods can help to distinguish production areas from consumption areas and thus aid the closer localisation of the economic hinterland of the archaeological sites (see Excursus 2.7.1).

Among the most used “sources” of the land around the early medieval Mikulčice centre were the agricultural land (fields, meadows/pastures) and forests. The most important of these was the agriculturally cultivated areas, which were fields that provided the main food supply – cereals and legumes. The absence of husked species of wheat (“prehistoric” types), which can survive in land with continuous agricultural cultivation in the form of “weed additives”, indicates that the fields near the Mikulčice stronghold were established in new or rather areas that had been unfarmed for a long

8 Dresler 2011.

9 Klanica 1987; Poláček 2008c.

10 Hladík 2014; Hladík – Mazuch – Látková in press; Mazuch 2008; Poláček 2002; 2008c.

11 Klanica 2006a; 2008a.

12 Hladík 2014; Macháček 2007b, 331.

13 See e.g. Kočár – Dreslerová, 2010.

14 Mazuch 2008.

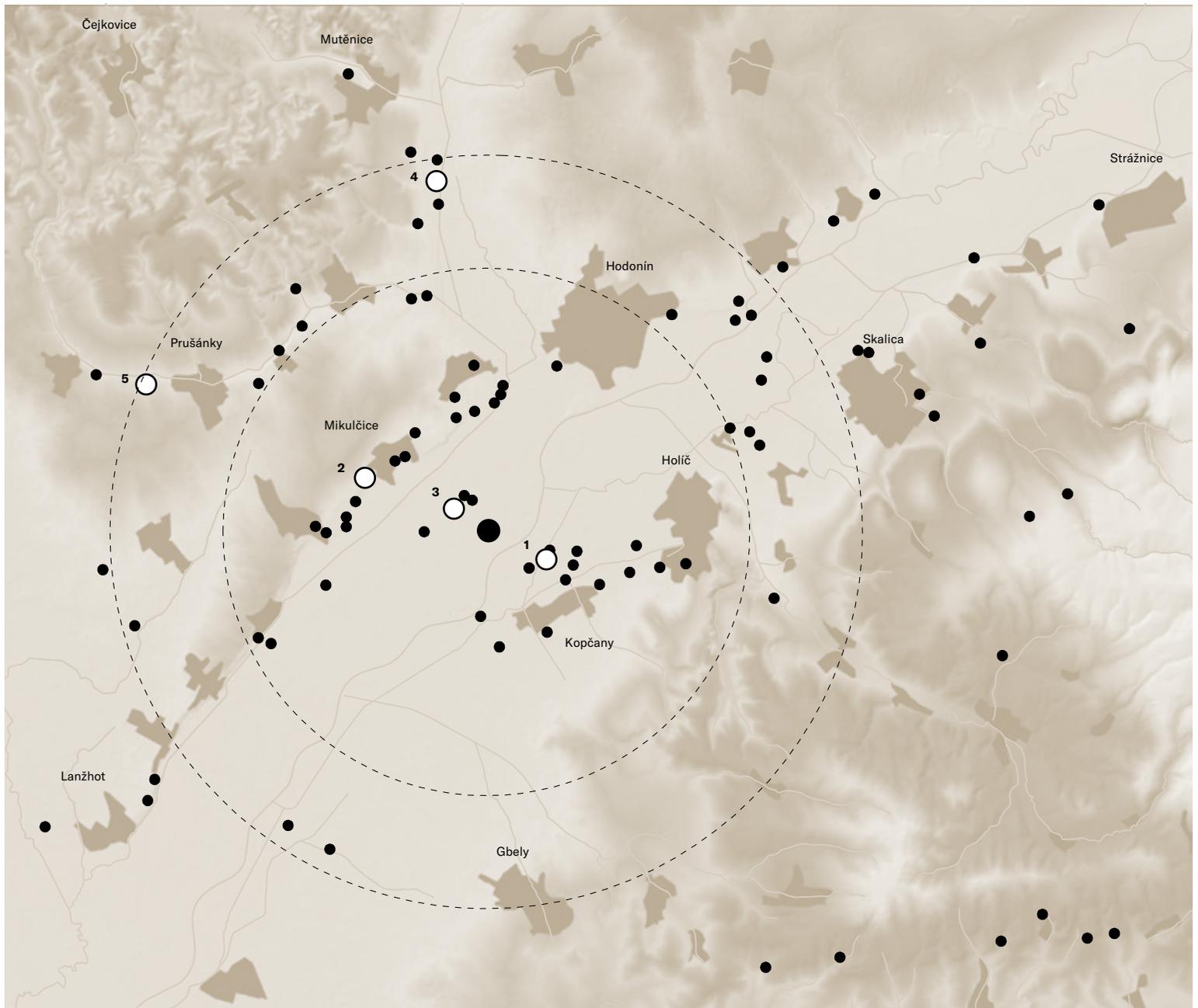
15 Klanica 2008a, 185.

16 Látková 2017, 105.

17 Látková 2017, 47–55; spring crops stand for millet and oat.

18 Látková 2017, 105.

19 Hillman 1981; 1984; Jones 1984; Fuller – Stevens 2009.



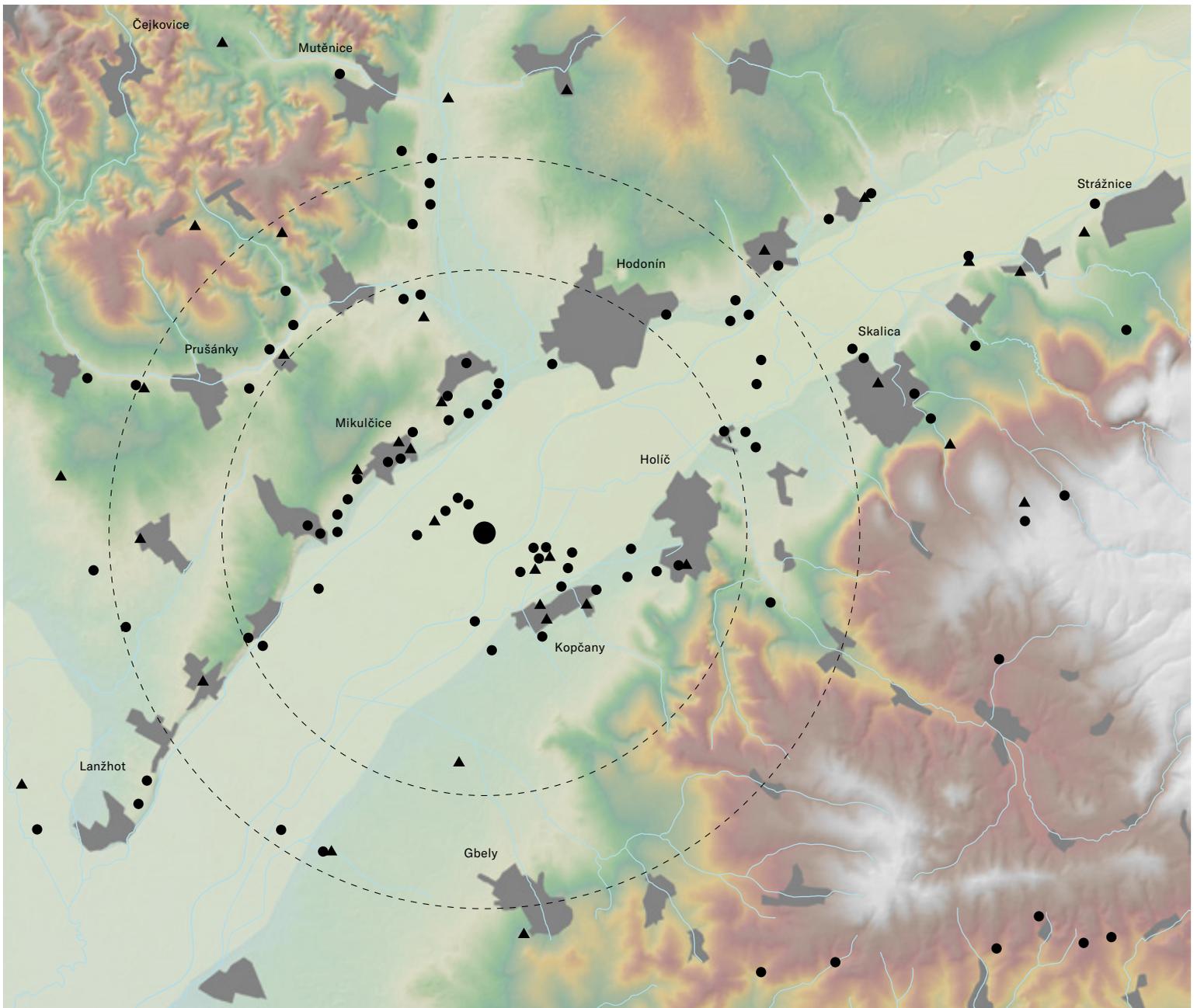
Legend:

- Mikulčice-Valy stronghold
- Great Moravian settlements mentioned in the text
- Great Moravian settlements
- Assumed extent of the economic hinterland of Mikulčice (circles 7 and 10 km define the periphery zone of the hinterland)
- Watercourses



Fig. 127 Great Moravian settlements in the economic hinterland of the Mikulčice agglomeration and in the wider area of the middle course of the River Morava.

1 – Kopčany-Kačenáreň; 2 – Mikulčice-Podbřežníky; 3 – Mikulčice-Trapíkov;  
 4 – Mutěnice-Zbrod; 5 – Prušánky-Podsedky.



Legend:

- Mikulčice-Valy stronghold
- ▲ Great Moravian burial grounds
- Great Moravian settlements
- Assumed extent of the economic hinterland of Mikulčice (circles 7 and 10 km define the periphery zone of the hinterland)
- Watercourses
- River Morava floodplain
- Max: 448 m AMSL
- Min: 152 m AMSL



Fig. 128 Great Moravian settlements in the economic hinterland of the Mikulčice agglomeration and in the wider area of the middle course of the River Morava. The River Morava floodplain is marked.

time. The high occurrence of grassland ecosystem species indicates that the fields and meadows resembled a mosaic in the landscape and were sometimes divided by balks or groves. The analysis of the demands of wildy growing species on land pH (especially the high concentration of indifferent species) strongly suggests that the fields in the nearest agricultural hinterland of the centre can be localised directly into the floodplain of the River Morava, to the close proximity of the stronghold (Fig. 128).<sup>20</sup> The presence of fields in the area of the floodplain, which at that time was probably not flooded, was most probably inevitable in early medieval times. One of the reasons for this could be the infertility of chernozem caused by a lack of precipitation. Situating fields on less quality, less fertile soil types (from today's point of view) during early medieval times appears to be an attempt to move the fields into areas with a higher (but not a high level) of underground water. This could also be one of the many reasons for establishing central settlements during the Early Middle Ages directly in the area of the floodplains of larger rivers.

Situating arable and other agricultural land in the closest proximity of the settlements was also important, especially in terms of control and protection, as was the need for accessibility (timewise). There were up to 30 different activities that needed to be regularly carried out in a field throughout the year;<sup>21</sup> ploughing, harrowing, sowing, hoeing, manuring and harvesting are just some of those that required the greatest mobilisation of the workforce.

20 Látková 2017, 122-125.

21 Hillman 1984, 1.

## Economic relations between the centre and the hinterland as a manifestation of the elites

The relations that have been briefly introduced, document the complexity of a society with a clear and stable elite segment, which had a strong influence on the form of the whole of Great Moravian society as well as on the form of the settlement network, at least in the nearby geographical surroundings of the power centres. This influence manifested itself on several levels. By examining the issue from the point of view of space archaeology, the following model for Mikulčice emerges. Activities connected to the presence of elite groups (cumulating food storages and the final processing and consumption of food) can be mainly observed in the central zones of the agglomeration and their vicinity. In the unfortified parts of the agglomeration and its peripheries, we can also find archaeological sources related to transportation and the final processing of food immediately before consumption. In the larger surroundings of the centres, as well as in the peripheries of the economic hinterlands of the centres (up to 10 km in diameter), there is evidence of a common rural settlement focused on the primary production and processing of the basic sources required for the whole of society to function.

Based on these conclusions, we can assume that around the Great Moravian agglomerations there were clearly structured economic hinterlands, which fulfilled their specific functions related to the centres. Furthermore, we assume that the centres were not only passive receivers of products (energy from the outside) but also actively participated in the administration and management of the hinterland. The level of this engagement could vary among individual centres depending on the geographical, political and functional specifics. This engagement is logical, even from the point of view of the sustainability of the whole system.

## 2.9.1 excursus

# The Great Moravian Settlement in Mikulčice-Trapíkov

– Marek Hladík

The complex, situated on a slightly elevated sand dune directly in the River Morava floodplain, is less than 1 km from the fortified centre of the Mikulčice-Valy agglomeration. The settlement was investigated in several phases in 1989–2015. Even though the overall uncovered area of 5,400 m<sup>2</sup> is the second-largest 9th-century settlement excavation in the hinterland of Mikulčice, it still comprises a mere 15% of the overall area, or more precisely of the Trapíkov sand dune complex.<sup>1</sup> The largest area was uncovered during the rescue excavation conducted between 2010–2012 in connection with the construction of a new archaeological base of the Institute of Archaeology of the Czech Academy of Sciences in Brno.<sup>2</sup>

Altogether, fifteen 9th and early 10th-century dwellings and nineteen settlement pits from the same period were discovered at the Trapíkov site in 1989–2015 (Fig. 129). The dwellings had the character of slightly sunken structures (pithouses) with a stone hearth in the corner. A specific type of context with concentrations of pottery vessel and grinding stone fragments was discovered in between the cultural and the underlying layer. In contrast to what could be expected from a rural settlement, not a single grain pit or another storage pit has been found in the settlement complex. Some of the twelve graves uncovered in the settlement complex are from the very end of the occupation since they were situated directly above settlement features or dug into their floors. Therefore, this was not a regular cemetery but so-called “settlement” graves. The real cemetery is comprised of the graves uncovered at Virgásky, a sand dune adjacent to Trapíkov. In contrast to the graves from Trapíkov, which were even furnished with spurs in one case and a finger ring in another, the grave finds from Virgásky were generally “poor”, represented by a knife, a pottery vessel and a bronze earring at most.<sup>3</sup>

The dating of the settlement is based on a pottery assemblage with predominant Mikulčice produced vessels from the second half of the 9th and the early 10th centuries, with specimens of the somewhat more broadly dated Blučina ceramic group (see Excursus 3.10.1) also included. Information about the social and economic character of the settlement comes from finds of iron artefacts (knives, sharpeners, scythe, spurs, keys and lock fittings) and stone. The last category represents a rather large assemblage of grinding stones, mostly found directly inside the sunken dwellings.

Archaeobotanical analysis of vegetal macroremains from Trapíkov contributes to the image of the nutritional habits of the settlement’s inhabitants. Millet prevails among grains, followed somewhat surprisingly by common wheat (a typical cereal found in the Mikulčice acropolis, see Essay 2.7), barley and rye. In contrast to the fortified centre of the agglomeration, cultivated fruits and vegetables were lacking with a single exception, a carbonised grapevine seed (a single find has also been documented from the agglomeration’s “antipole” on the Slovak side of the river – the Kačenáreň settlement near Kopčany).<sup>4</sup>

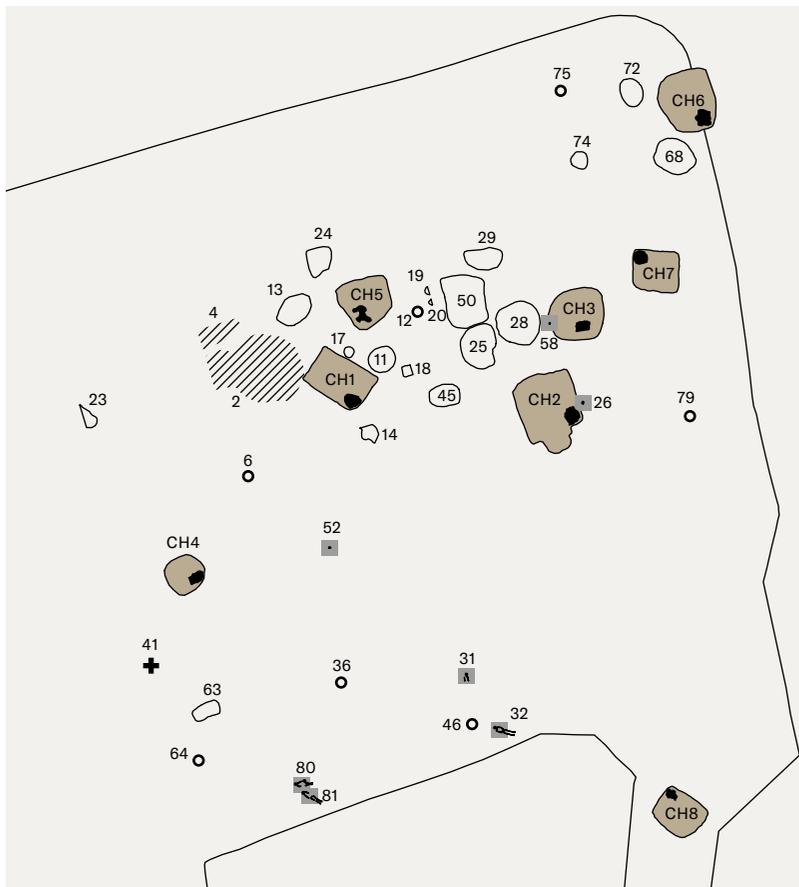
The position of Trapíkov on the boundary between a power centre and its economic hinterland predetermined the settlement for ensuring the services and commodities needed for the fortified centre. Its counterbalance on the opposite side of the agglomeration was the Kačenáreň settlement near Kopčany on the present-day Slovak side of the Mikulčice agglomeration. As at Trapíkov and in contrast to the core of the agglomeration with predominant surface structures, dwellings sunken into the terrain, so-called pithouses, can be found (see Excursus 2.2.3).

1 Hladík – Mazuch – Látková in press.

2 Poláček et al. 2013a.

3 Kostelníková 1958b; Poláček 2008b, 35–36.

4 Látková 2017, 180.



Legend:

- Dwellings
- Hearths
- Pits
- Pottery, grinding stones
- Layers
- + Hoard
- Graves

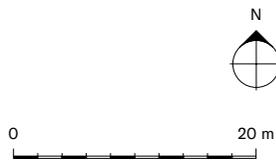


Fig. 129 Mikulčice-Trápek, excavation 2010–2012. General plan of the investigated area of the Great Moravian settlement. The research base of the Institute of Archaeology of the Czech Academy of Sciences stands today in this place.

# The Great Moravian Settlement in Mikulčice-Podbřežníky

– Marian Mazuch

The Podbřežníky settlement is situated on the south-western edge of the built-up territory of the municipality of Mikulčice, on a long gradual slope that forms the elevated edge on the right bank of the River Morava floodplain. Rescue excavations were conducted there in two main phases – 2006–2007 and 2019 – in connection with the construction of family houses.<sup>1</sup> Besides evidence of the prehistoric, early Slavic and Older Hillfort periods, a larger part of the features discovered belonged to the Great Moravian period, more precisely the second half of the 9th and the early 10th centuries. The extent of the uncovered area makes the site one of best-examined settlements in the economic hinterland of the 9th-century power centre of Mikulčice-Valy. Regrettably, the archaeological collection from the entire first phase of the research was destroyed in a tragic fire at the Mikulčice archaeological base in the autumn of 2007.

Ninth-century features included five dwellings – pithouses, two rectangular features of an unknown function, four technical facilities (two small iron-making furnaces, a bread oven and a feature that was probably used to roast grain), about 20 grain pits and several waste pits (Fig. 130). The five examined Great Moravian pithouses differed in structure, size, internal equipment and other details. Two of the pithouses contained stone ovens; the others probably had open hearths. Bearing posts in the corners of the structures

were discovered for two pithouses while the others lacked evidence of above-ground structures. The size of the houses varied from 300×300 cm to 470×470 cm. Apart from the residential function, a production character can be considered for some of them, given the presence of iron-making furnaces in their immediate vicinity and the finds of slag and fragments of non-ferrous metal melting pots.<sup>2</sup>

A rather unique discovery was the find of four individuals of children's age non-ritually deposited inside one of the pithouses. Their remains were radiocarbon dated to the late 9th century and the first half of the 10th century, as was a horse skeleton discovered at the bottom of one of the storage pits.<sup>3</sup>

Given the concentration of grain pits, Podbřežníky can be considered an agricultural settlement that participated in the provisioning for a fortified centre, primarily by supplies of grains and other commodities and services. The 300 m distant cemetery in Mikulčice-Panské excavated in 2001 probably belonged to the settlement. This burial ground is characterised by a large number of warrior graves with axes and spurs (a *seax*, in one case) and, for a “rural” milieu, rich jewellery. The presence of local rural elites was evidently connected to the power centre in Mikulčice-Valy.<sup>4</sup>

2 Ibid.

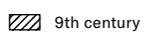
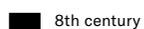
3 Mazuch 2020.

4 Poláček et al. 2000; 2001.

1 Mazuch 2008; 2020.



Legend:

- |   |   |
|---|---|
|  9th century |  Great Moravia |
|  8th century |  Unspecified   |

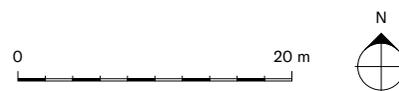


Fig. 130 Mikulčice-Podbřežníky, excavation 2007-2008 and 2019. General plan of the investigated area of the Great Moravian settlement.

# From the Harvest to the Loaf

– Michaela Látková

The crop processing can be reconstructed based on detailed analysis of plant macroremains and archaeological finds (such as agricultural tools), ethnographic observation, and the examination of iconographic and written sources. This collective data can be further used to reconstruct the agricultural practices of historical societies (Fig. 131).<sup>1</sup>

When assessing economic activities at archaeological sites, it is important to know the origin, function and sense of each archaeobotanical sample; whether it is a product (foodstuff), kitchen/production waste item, fodder crop or daub/ceramic admixture. Within archaeobotanical research, the study of taphonomy is employed to identify samples directly corresponding to certain stages in the post-harvest processing of crops.<sup>2</sup>

Charred archaeobotanical materials from archaeological contexts usually consist of the remains of cereals and weeds grown in cereal fields. At archaeological sites, these items are most frequently preserved in large quantities in the form of food storage or food processing waste. Since they typically come into contact with fire – during roasting, baking or due to a storage blaze – most charred items remain preserved.<sup>3</sup> Legumes, which are boiled in water, are preserved in much rarer cases.

Before obtaining the final product, the harvested crop must undergo post-harvest processing, which involves eight phases in the case of free-threshing cereals such as wheat, rye and barley,<sup>4</sup> which were documented at the Mikulčice stronghold.<sup>5</sup> During post-harvest processing, cereals and legumes are filtered to obtain the clean grain product. At each stage of the process, waste along with semi-products requiring further treatment are separated. Several models – mainly based on ethnographic analysis – are used to classify and determine the origins of the finds.<sup>6</sup> But these models can only be applied if the techniques and processes of traditional historical agriculture replicate early medieval practice.

Products and waste filtered at different stages during archaeological treatment do not have the same chance of being preserved in the process of archaeologisation. At dry sites, plant macroremains are typically found preserved as a result of carbonisation, and most frequently occur in the form of final storage products or waste from manual cleaning. Stored, cleaned cereals are usually preserved in larger quantities and for longer periods of time, while roasted and baked cereals are more likely to carbonise. Waste from winnowing and sieving is more likely to be preserved in cases where the harvest was threshed, winnowed or sieved at the settlement itself, or

in cases where waste was brought to the settlement and stored there, e.g. animal fodder or raw material used in daub or ceramic admixtures. Semi-products that require further processing are more often than not completely absent from archaeobotanical finds.

Only when the characteristics of the finds and their assemblages from different areas are determined is it possible to compare and assess them. Interpreting the economic functions or nature of a given area depends on establishing whether the finds are waste, products, or waste from earlier or later phases of post-harvest processing.<sup>7</sup>

## Post-harvest processing of crops

The first step in the process of cleaning cereals is harvesting. Archaeobotanical methods can be used to determine the type of harvesting employed at a certain site based on the presence of seed species, climbing weeds or the presence/absence of straw (the root systems of cereals and weeds). Harvesting is followed by another important step, threshing, which is in some cases preceded by drying. However, archaeological and archaeobotanical finds of threshed crops are relatively scarce. Threshing involves the separation of weed seeds, chaff and long straw from grains. After separating the long straw, intermediary products (cereal grains, weed seeds, chaff and impurities) are collected and cleaned further. The next step involves winnowing, which results in waste by-products consisting of light weed seeds with aerodynamic properties (the size and shape of the seeds combined with the presence of wings or pappi enables drifting), light chaff and other cereal seed coats, all of which are blown away by the wind. The semi-products of winnowing are further processed during coarse sieving. As part of this step, waste in the form of large weed seeds and heads is collected, leaving cereal grains and impurities of equal size to pass through the sieve. The semi-products that pass through are further processed during fine sieving. In this step, cereal grains remain in the sieve, while finer waste such as weed seeds and other impurities are allowed to pass through. This cleaned grain can only be stored for a limited period of time. The final step in the processing of the grains is to manually sort the final products. The grains are prepared for grinding directly afterwards before being consumed in the kitchen (Fig. 132).

Depending on the size of the community that grew and processed the crops, some of the post-harvest processing steps may have taken place immediately following the harvest, or else crops were stored and processed over subsequent months.

1 Jones 1984; 1990; Bogaard 2004; Fuller – Stevens 2009; Borzová 2016.

2 Jones 1984; 1990.

3 Ibid. Bogaard 2004; Fuller – Stevens 2009.

4 Post-harvest processing of millet differs from that of free-threshing cereals.

5 Látková 2017.

6 Cf. Hillman 1984; Jones 1984; 1990; Fuller – Harvey 2006.

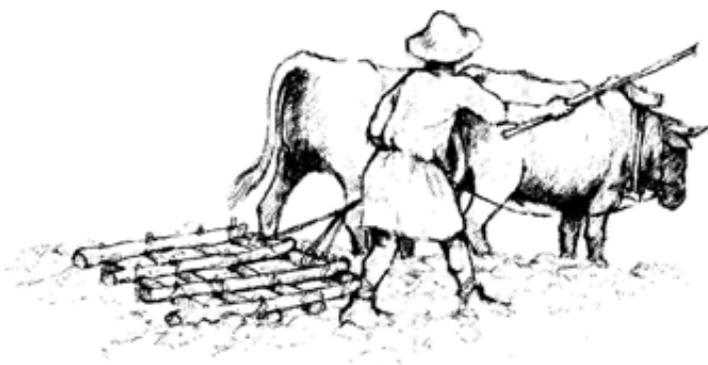
7 Látková 2017, 101–106; Jones 1984; 1990.



1



2



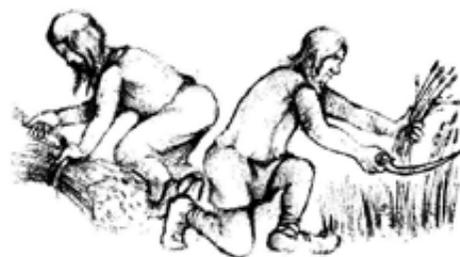
3



4



5



6

Fig. 131 Reconstruction of early medieval agricultural practices.  
1 - Plowing; 2 - manuring; 3 - harrowing; 4 - sowing; 5 - hoeing; 6 - harvest.



1



2



3



4



5



6



7



8

Fig. 132 Reconstruction of early medieval steps of the post-harvest processing of crops.

1 - Drying; 2 - treshing; 3 - raking; 4 - winnowing; 5 - coarse sieving; 6 - fine sieving; 7 - manual sorting; 8 - grinding.

## Producers vs consumers

Based on archaeobotanical analysis, we were able to identify samples that exclusively correspond to the final phases of post-harvest processing (fine-sieving of waste and manual removal of impurities); in other words, the final stock of crops.<sup>8</sup> Our analysis also suggests that some of the initial post-harvest processing stages (threshing and coarse sieving) took place in the fields immediately after harvesting, with the partially cleaned grain stock subsequently transported to the stronghold for further processing at the settlement.<sup>9</sup> The massive quantities of chaff and straw found in raw ceramic materials (used to make roasting trays – in Czech called *pražnice*) reveals that waste from earlier cereal processing stages was used later<sup>10</sup> and, possibly, as animal fodder and litter for domestic animals, or for roofing, fuel and mattress fillings. Unfortunately, archaeological and archaeobotanical methods are not suitable for identifying these kinds of products.

8 Látková 2017, 101.

9 Ibid, 103.

10 Hladík – Mazuch – Látková in press.



# Princely Court and Its Material Culture

3



Replica of Great Moravian sword from Mikulčice, Grave 265 in the interior of Church 2.

# 3.1

## Ninth- and Tenth-Century Swords in Moravia: Weapons, Top Smithery Products and Symbols of Power

– Jiří Košta

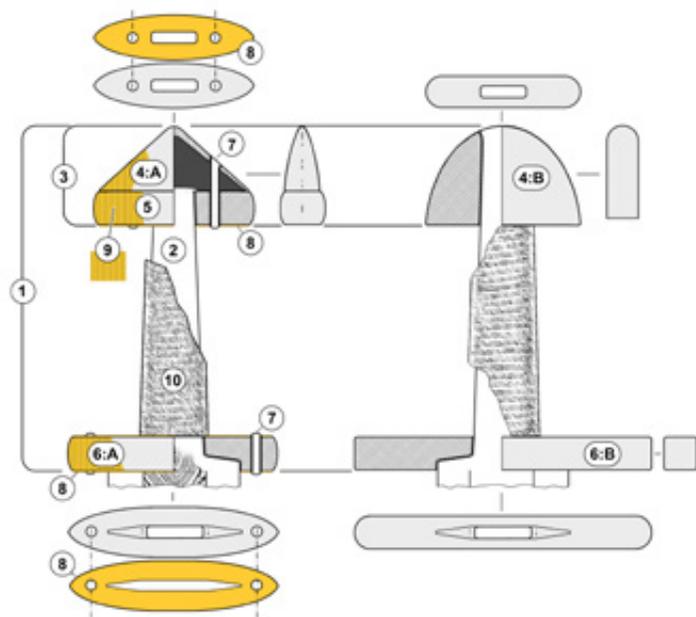


Fig. 133 Sword hilts on early and late Carolingian swords.

1 - Sword hilt; 2 - blade tang; 3 - upper hilt; 4 - pommel (4:A - pommel as part of an upper hilt consisting of two pieces, 4:B - pommel as an upper hilt consisting of one piece); 5 - upper guard; 6:A - lower guard; 6:B - crossguard; 7 - rivets; 8 - non-ferrous plates covering the upper and/or lower sides of the guards; 9 - wire inlay; 10 - grip.

A sword was the most effective and, technologically, the most complicated personal weapon of the Early Middle Ages. A considerable amount of iron and costly steel was needed to make one. Moreover, the production of quality swords required extraordinary smithery skills that were passed down within, and only rarely leaked out of, a limited number of top workshops. Its efficiency, high production costs and use limited to fighting and warrior games all resulted in the sword becoming one of the most important attributes of the social elites. It was a key artefact defining the male component of the higher echelons of society, an important symbol of executive and judicial power and a physical tool in the execution of law - a material expression of economic power and political dominance. Thus, in many respects, the symbolic significance of the sword exceeded its primary function.<sup>1</sup>

From Late Antiquity, the most important type of European sword was a long sword called the *spatha*. The weapon had a straight longitudinally symmetrical blade, usually, 70-80 cm long and was primarily designed for cutting. This type of sword, which dominated the weaponry of the Late Roman cavalry and infantry units alike,<sup>2</sup> also became popular in the Germanic world and among the military elites of the barbaric kingdoms that expanded in the territory of the Western Roman Empire during the 5th century. The appearance of swords at that time was also affected by nomad modes combining Hunnic, Sarmatian and East Germanic traditions. Through numerous evidence from cemeteries, the development of swords in the 6th and 7th centuries is best documented in the eastern part of the Merovingian Frankish Empire, in Anglo-Saxon England, and overlapping into the following century, in the Nordic world of the Vendel Period.<sup>3</sup> The blades of most early medieval *spathae* did not usually narrow down the blade, which means that the point of balance was rather distant from the crossguard. While the shape of the blade remained unchanged for a long time, the shape and decoration of the hilts developed dynamically. Decoration was primarily used on flat guards fixing the grip. The upper guard was soon connected with a decorative tang or a cap terminal covering the end. The result was a two-piece upper hilt consisting of an upper guard and a pommel.

Between the mid-8th and 10th centuries, the Frankish swords underwent fundamental shape and technological development, which eventually resulted in Western Europe abandoning the traditional form of the Late Antique long sword (Fig. 133; 134). In the long-term

1 The content of this essay summarises years of research into early medieval swords in the territory of Moravia; the results are the content of detailed monographic publications on medieval swords from the Czech Republic (Hošek - Košta - Žakovský 2019; in press). For partial studies, we specifically recommend the publications on large sword assemblages from Mikulčice (Košta - Hošek 2014) and Pohansko near Břeclav (Košta et al. 2019).  
 2 Miks 2007.  
 3 Menghin 1983; Arrhenius 1983; Steuer 1987; Norgård-Jørgensen 1999; Lehmann 2016; Mortimer - Bunker 2019.



Fig. 134 Comparison of sword blades from the second half of the 9th and the early 10th century.

1 – Mikulčice, Grave 375; 2 – Nechvalín, Grave 125; 3 – Mikulčice, Grave 438; 4 – Pohansko near Břeclav, Grave 26; 5 – Vranovice.

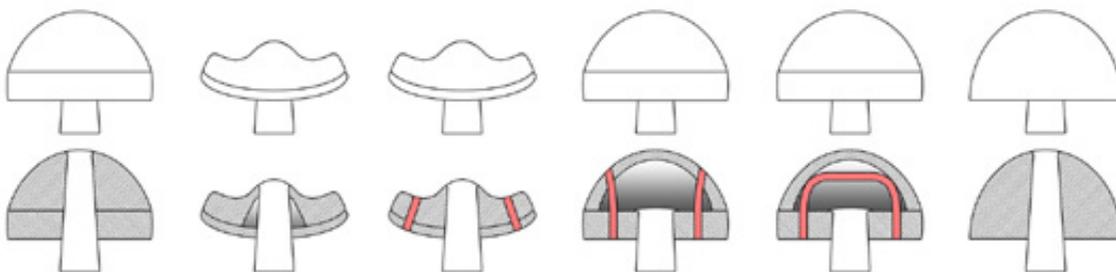


Fig. 135 Upper hilt construction variations on Moravian swords from the 9th and 10th centuries.

horizon, the transformations that started at that time led to the formation of high medieval swords. These were the result of adapting to new fighting methods and the related change in the sword-handling culture. Heavy cavalry became the linchpin of the Frankish army, and the sword had to be suitable for both foot and horseback fighting. This placed new demands on the shape (a longer crossguard, narrower and longer blade, etc.) and higher blade quality. The blade now had to be designed to withstand clashes with rivals' swords (see Excursus 3.1.1) for a long time, as knights in heavy armour could not rely on a shield when defending themselves against attacks on the right side of the body. An undoubted impulse for the dynamic development and spread of innovations in sword design was that measurable blade quality parameters were among the top criteria when the quality of swords was compared by their owners, who logically sought weapons of the highest possible quality. The consequences of military reforms, the increased demands during the Carolingian expansion and the turbulent 9th and 10th centuries finally led to an increase in the efficiency of sword production.<sup>4</sup> A consequence of these changes was a decline in the use of blades with fully pattern-welded cores and later with pattern-welded surface panels. This traditional decorative element, with its deeply rooted symbolic content, was replaced by a mark or inscription usually consisting of inlaid pattern-welded strips (see Excursus 3.1.2). The trend to simplify the upper hilt design (Fig. 135) and a quantitative decline in splendidly decorated hilts asserted itself outside the Viking and Anglo-Saxon world. The summary of the above-mentioned phenomena indicates the possibility of a planned effort to systematise the production of quality blades in the territory of the Frankish Empire to achieve high quality. The numerous and mostly high-quality blades signed with the name Ulfberht may have been a result of this process.

The design of swords in Western and Central Europe during the 8th century is best known from cemeteries in the eastern and northern periphery of the expanding Frankish world – Bavaria, Thuringia and the territories inhabited by the Saxons and the Frisians.<sup>5</sup> As the deposition of war gear in graves in the Frankish territory virtually ceased in the early 9th century, the dominant aspect in the knowledge of Frankish swords is the weapons found in the Viking world and the territories of the eastern neighbours of the Frankish realm – Dalmatian Croats<sup>6</sup> and old Moravians.<sup>7</sup>

It is no wonder that in early medieval society, limited to materialised methods of conveying social status to a considerable extent, that the sword became an important means of higher strata communication across various regions of Europe, with its unambiguity of meaning and noticeability bridging language and cultural barriers. Between the late 8th and 10th centuries, extensive areas of Western, Central, Northern and Eastern Europe adopted the Frankish type of sword as it had been formed during the 8th and 9th centuries.<sup>8</sup> The causes of this cultural transfer differed in the individual European regions, including the volume and quality of Frankish production, the power-political influence of the Carolingian Empire, the regulation of long-distance trade and, to a certain extent, Viking raids into the Frankish territory. This transfer meant that swords were instrumental in the transmission of fashion

trends and technological innovations from the Frankish Empire to both neighbouring and distant regions. Therefore, swords can aid today's research with an understanding of medieval military and smithery, the knowledge of long-distance contacts and cultural influences, the study of the development and spread of technologies, and with a comparative analysis of the social systems. They are also used for the correlation of the chronologies of individual European regions. Despite a clear dominance of swords with a West-European design, the inhabitants of the Moravian duchy also came into contact with long cutting weapons based on the nomadic military traditions of the East European steppes – late Avar, Khazar, Bulgarian and, from the last quarter of the 9th century, Magyar designed sabres.<sup>9</sup> The influence of Byzantine weapons, regrettably burdened by an insufficient level of knowledge, probably did not reach or if so, only marginally, Moravian territory.

At present, 65 double-edged swords or parts are known from Moravia (Fig. 136). Based on the archaeological contexts, their deposition can be dated to the 9th and 10th centuries. Typologically, the earliest of them correspond to early Carolingian weapons produced from approximately the mid-8th century.<sup>10</sup> Most of the Moravian swords, 52 items, were deposited intentionally as part of the grave goods. Several more graves with swords were found close to the southern and south-eastern borders of present-day Moravia, not far from the Great Moravian centres on the Rivers Morava and Dyje, to which they were historically linked. Fragments of swords were also deposited in two iron item hoards discovered at the Klášťov stronghold (Vysoké Pole, Zlín District); one contained a blade, the other a crossguard and an upper guard that might have originally been part of one sword.<sup>11</sup> To date, accidentally lost hilt components<sup>12</sup> have only been discovered during extensive excavations of the Great Moravian centres in Mikulčice (4 specimens) and Pohansko near Břeclav (2 specimens).<sup>13</sup> The situation is similar to that of the metal parts in sword strap sets.<sup>14</sup>

The bodies of the deceased buried with a sword were not cremated but deposited in a supine position. In many – but not all – cases, the burials were accompanied by richer grave goods. These were mostly found in flat cemeteries and only rarely in barrow burial grounds. The size and character of these cemeteries were varied; sword finds are known from extensive necropoleis with hundreds of graves as well as from burial grounds for small communities. In the Pohansko near Břeclav agglomeration, sword graves were also found among burials scattered within the settlements. The individual finds of sword graves are distributed throughout the part of Moravia from which burial complexes from the Great Moravian period are registered. Burials containing a sword have thus been discovered in over 30 burial grounds concentrated within 23 settlement complexes. The north-western border of this area is

4 Hošek – Košta – Žákovský in press.

5 Stein 1967; Müller-Wille 1978, 77–79; Geibig 1991; Westphal 2002.

6 Vinski 1983; Jelovina 1986; Belošević 2007; Bilogrivić 2009.

7 Summarily, Hošek – Košta – Žákovský 2019; in press.

8 Arbman 1937.

9 Hošek – Košta – Žákovský 2019, 25–26.

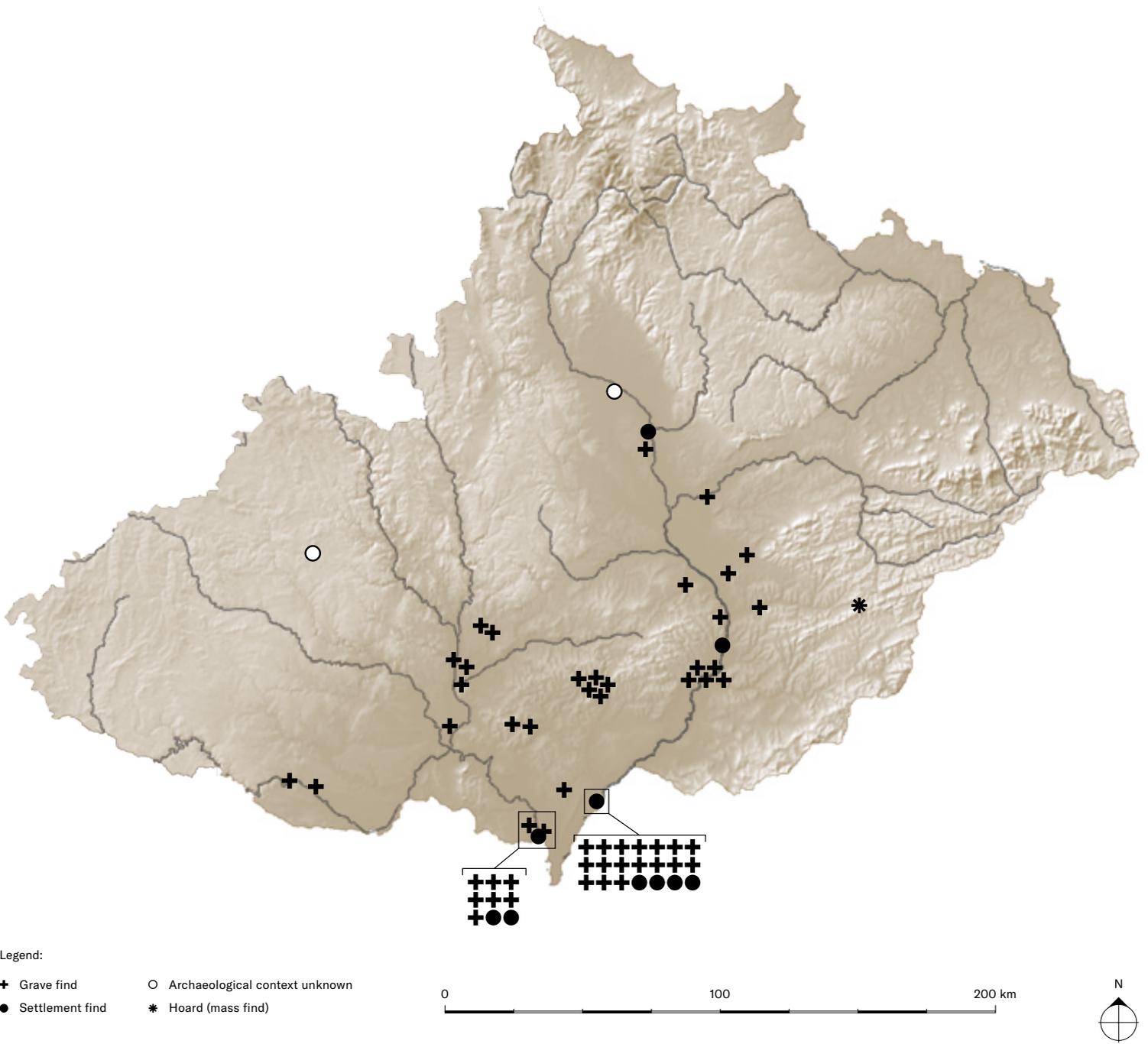
10 Hošek – Košta – Žákovský 2019; in press.

11 Geisler – Kohoutek 2014, 45–47, 67–71.

12 Košta – Hošek 2014, 235–237; Košta et al. 2019, 214–216; Hošek – Košta – Žákovský in press.

13 A non-sepulchral context is also more likely for several more swords whose circumstances of the find are unknown. A torso of a Petersen type X sword was found in Osová Bitýška (Žďár nad Sázavou District), outside the area of 9th- and 10th-century cemeteries but near a historical route connecting the Brno region and Bohemia. The excellent state of preservation of a sword with a Petersen type Y hilt, probably from the cadastral area of Lhota nad Moravou (Olomouc District), indicates it is a river find. A fragment of a sword with a hilt close to a Petersen type V was discovered in Univerzitní Street leading towards Michael's Hill in the historical centre of Olomouc and comes from the 10th century. Like the latter, the two weapons mentioned above might also have been deposited during the post-Great Moravian period (Frait 2006; Hošek – Košta – Žákovský 2019, 182–183, 200, 193–194).

14 Ungerman 2011a.



Legend:

- + Grave find
- Archaeological context unknown
- Settlement find
- \* Hoard (mass find)

0 100 200 km



Fig. 136 Finds of 9th- and 10th-century swords in Moravia.  
 1 – Grave find; 2 – settlement find; 3 – hoard (mass find); 4 – archaeological context unknown.

delimited by later Přemyslid administrative centres in Olomouc, Brno and Znojmo. However, almost everywhere, the custom of depositing swords in graves was practised rarely or sporadically. In most rural burial grounds and cemeteries related to regional centres, excavations have discovered only one or two swords (an exception is Nechvalín where four swords were discovered in two burial grounds<sup>15</sup>). Many cemeteries did not contain a single grave with a sword – the large necropolis in Dolní Věstonice is worth mentioning at this point.<sup>16</sup>

Larger sword assemblages were found in the agglomerations of the main Great Moravian centres. However, even among these, there are considerable differences in the quantity and character of the evidence of burials with swords. Out of the many burial complexes of the Staré Město – Uherské Hradiště agglomeration, where the possibilities of archaeological excavation are limited as it is a continually settled area, double-edged swords have so far only been found in the Na Valách cemetery.<sup>17</sup> All were accompanied by rich grave goods. Of the five swords found, four most likely date to the earlier horizon of the extensive burial complex. A single-edged weapon from the cemetery surrounding the church in Uherské Hradiště – Sady was probably deposited at the beginning of the inhumation burials in Moravia.<sup>18</sup> This means that evidence of sword depositing from the time of the greatest political expansion of Great Moravia is generally lacking in this important centre.

In Pohansko near Břeclav, men equipped with swords were repeatedly (in four cases) buried in graves at the cemetery at the magnate court within which the most important local sacral structure was built. The settlement's stray finds document the presence of warriors with swords in the complex around the rotunda in the northern suburb at the end of the Great Moravian period. Finds of graves with swords were also discovered at burial grounds or in burials deposited within settlements in the agglomeration and the wider hinterland of the Pohansko stronghold – in the southern suburb and the cadastral areas of Kostice, Břeclav-Pošterná and Bernhardsthal (Austria). Most burials with swords from Pohansko are characterised by relatively limited grave goods and the absence of spurs.<sup>19</sup>

An extraordinarily large number of swords were discovered within the extensive excavations in the agglomeration of the Mikulčice-Valy stronghold (Fig. 137). While seventeen swords were part of the grave equipment, four fragments of these weapons, along with a fragment of a crosspiece of a Magyar sabre, were stray finds from non-sepulchral contexts. Another single-edged weapon with a lighter design was found in Mikulčice-Panské in the wider hinterland of the stronghold. Sword graves are concentrated in the central fortified area. Seven swords were part of two cemeteries surrounding churches – the earlier phase of Church 2, the earliest known church building at the site, and Church 3, a three-nave structure that represents the largest Great Moravian ecclesiastical building to date. Two more swords were found directly in the interior of these churches. Three swords were part of a small burial ground situated close to the foundations of a large centrally situated palatial structure. The last of the sword graves on the inner bailey was part of a complex and as yet unambiguously

interpreted context south of Church 4, close to the hypothetically presumed eleventh church building; its inventory indicates it is one of the latest deposited sword burials in Mikulčice. No swords have been found at the cemeteries of Churches 4 and 12 and in the later phase of Church 2, which were built on the acropolis in the late phase of the Great Moravian period; sword graves are also consistently absent from churchyards of the Mikulčice extramural settlements. One sword grave comes from a cemetery in Kostelec, north-west of the acropolis, and three grave finds were discovered south of the acropolis, in the western part of Kostelisko. Swords were repeatedly deposited in both these positions at the beginning of the development of the extensive burial complexes. The latest find, a type X sword from Grave 2041 in Kostelec, is still awaiting a complex analysis.<sup>20</sup>

Swords were included in grave goods throughout the Great Moravian period, from the beginning of the inhumation burials, which started sometime between the late 8th and the end of the first third of the 9th century. If the image of the development of swords offered by archaeological sources is limited by their presence in graves, any statements concerning the situation in the previous period can only be made with a considerable level of uncertainty. The movable material culture of the male elites in the pre-Great Moravian period is primarily represented by assemblages of Avar belt fittings and spurs with hooks, which document Bavarian or Frankish cultural influences. It is evident that during the 8th century, the elites in the territory of Moravia sought models from both these directions. The use of Frankish war gear in combination with late Avar artefacts has been repeatedly documented from the territory of present-day Austria (from the Carinthian Slavs, for instance).<sup>21</sup> The inventory of Grave 119/60 from the earliest phase of burial ground near the church complex in Uherské Hradiště – Sady with a single-edged sword (*scramaseax*), a long knife (*seax*) and a screw-shaped split pin from an Avar belt is reminiscent of this culturally mixed milieu.<sup>22</sup> The find of a late Merovingian *spatha* in the Avar period cemetery in Želovce, Slovakia, east of Moravia, is worth mentioning.<sup>23</sup> A fundamental shift in the cultural gravitation of the Moravian elites is undoubtedly connected with the changes that occurred in the Carpathian Basin in the 790s. These resulted in the collapse of the Avar Khaganate and the expansion of Frankish power deep into the Middle Danube region. The typologically earliest group is represented by swords typical of the early Carolingian period in the Frankish Empire. The spectrum of double-edged swords from Great Moravian contexts corresponds to this. Several such swords were deposited in graves from the earlier horizon of the cemetery in Staré Město – Na Valách (Fig. 138: 1, 2), for instance.<sup>24</sup> Of the Mikulčice specimens, the sword from Grave 265 from the interior of the earlier phase of Church 2, with the pommel decorated with fine silver and brass wires arranged in a chessboard motif, can be mentioned (Fig. 138: 3; 140: 2).<sup>25</sup> A richly decorated sword with a three-lobed pommel of a Petersen special type 2 comes from Grave 10 in a newly uncovered cemetery

15 Klanica 2006a; 2006b.

16 Ungerma 2007.

17 Hrubý 1955; Košta – Hošek 2019; Hošek – Košta – Galuška 2019.

18 Galuška 1996, 104; Galuška et al. 2018.

19 Košta et al. 2019; Hošek – Košta – Žákovský 2019, 76–85, 124–125.

20 Košta – Hošek 2014; Hošek – Košta – Žákovský 2019, 152–177.

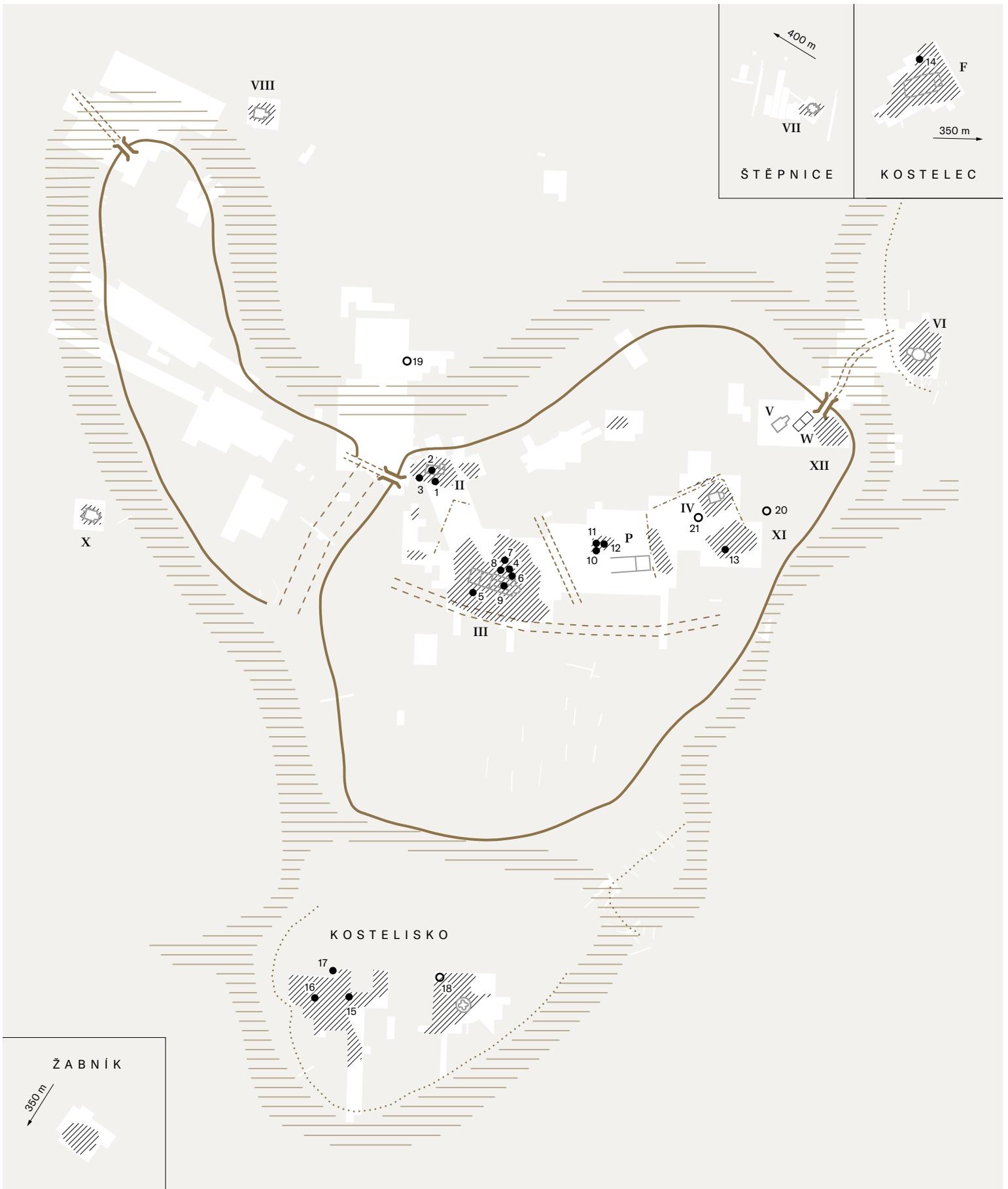
21 Nowotny 2007; Eichert 2010; 2012.

22 Galuška 1996, 104; Galuška et al. 2018.

23 Čilinská 1973, 23–24, 57, 199; Hošek – Haramza 2018.

24 Hrubý 1955; Košta – Hošek 2019; Hošek – Košta – Žákovský 2019, 241–243, 245–247.

25 Košta – Hošek 2014, 70–81; Hošek – Košta – Žákovský 2019, 160–163.



Legend:

- Grave finds of swords
- Settlement finds of parts of swords (18-21)
- Fortification
- ⌋ Gate
- ⋯ Palisade, fence
- - - Bridge
- - - Ditch
- ⋯ Terrain boundary
- Excavated area
- ▨ Cemetery, group of graves
- IV Churches
- P Palace
- F Wooden feature
- W Fine-metal workshop

0 100 m



Fig. 137 Plan of the Mikulčice stronghold with marked positions of finds of swords or parts thereof.

Numbers of grave finds of swords: 1 – Grave 90; 2 – Grave 265; 3 – Grave 280; 4 – Grave 341; 5 – Grave 375; 6 – Grave 425; 7 – Grave 438; 8 – Grave 500; 9 – Grave 580; 10 – Grave 715; 11 – Grave 717; 12 – Grave 723; 13 – Grave 805; 14 – Grave 1347; 15 – Grave 1665; 16 – Grave 1750; 17 – Grave 2041.



Fig. 138 Examples of swords decorated with vertical wire inlay. 1 – Staré Město – Na Valách, Grave 223/51 (Petersen type H); 2 – Staré Město – Na Valách, Grave 119/AZ (Petersen type H); 3 – Mikulčice, Grave 265 (Petersen type H); 4 – Mikulčice, Grave 1750 (Petersen type K).

in Šlapanice (Fig. 139: 1, 2); a specimen with an almost identical hilt was extracted from the bed of the River Scheldt in Dendermonde (Termonde), Belgium.<sup>26</sup>

The two-part upper hilts of these weapons were fitted with pommels in the shape of a triangle or a circle segment divided into three vertical sections<sup>27</sup> and were often decorated with a vertical wire inlay that was usually brass, more rarely of silver. It consisted of fine wires placed close to each other, creating an illusion of flat coverage of the whole of the upper hilt and the crossguard with a non-ferrous metal. Inlay decoration was sometimes accompanied by fine wires or delicate metal plates adorned with a variety of ornaments (Fig. 139). The crossguards of these swords were short, and the blades were often decorated with surface pattern welding with repeatedly occurring simple pattern-welded marks. The production of these weapons began in the Frankish realm around the second third of the 8th century. They are typical swords deposited in graves in the northern and eastern periphery of the Frankish Empire from the second half of the 8th century until the abandoning the custom of burying weapons in graves in the early 9th century.<sup>28</sup> The actual occurrence of these weapons in living culture was probably much longer; their production and, above all, their use certainly continued deep into the 9th century, as documented by numerous depictions in Carolingian illuminations and by sepulchral finds from territories outside the Frankish realm. Swords of the Early Carolingian construction from Moravia are closely related to finds from Croatia, Austria, Southern Germany and the Rhine riverbed.<sup>29</sup> A large group of related specimens was examined in the Rhine delta region, primarily in connection with the excavations of the Carolingian emporium in Dorestad.<sup>30</sup> As many of the exports from the central and eastern parts of the Frankish Empire to Scandinavia, the British Isles and the Atlantic coast of the European continent passed through the Rhine/Meuse delta, these analogies confirm the close relationship between the Moravian collection and the Frankish milieu.

In the earlier phase of Great Moravian culture, certainly well long time before the late 9th century, the graves also began to contain Petersen type K swords with an upper hilt whose hollow pommel, attached to the upper guard with a pair of rivets, was divided into five or more vertical segments (Fig. 138: 4; 140: 1, 3).<sup>31</sup> The crossguards of these swords were longer than in the previous types, usually exceeding 100 mm. The surface of the metal parts of the hilt in many specimens was also covered with surface fine wire inlay and in the most luxury swords, with plant tendril ornaments and inscriptions. These weapons no longer appear in Saxon and Frisian cemeteries but were often deposited in magnate burials in Dalmatia, a region that underwent very similar processes a short time before Moravia.<sup>32</sup> Type K swords, probably formed in the late 8th century, are typical products of Frankish workshops produced primarily during the first two-thirds of the 9th century.

26 Geisler 2010, 476–477; Hošek – Košta – Žákovský 2019, 250–252; Dunning – Evison 1961, 136–137, Pl. XXIX:b.  
 27 Moravian early-Carolingian swords with triangular pommels correspond to Geibig combination types 1 and 5, which include Petersen type B and earlier variants of type H as well as the Immenstedt type defined based on an analysis of 8th-century German swords. The upper hilts with three-lobed pommels can usually be categorised as type 2 of Geibig typology or as Petersen special type 2 (Petersen 1919; Stein 1967; Geibig 1991).  
 28 Szameit 1986; Geibig 1991; Kleemann 2002; Westphal 2002.  
 29 Summarily, see Hošek – Košta – Žákovský in press.  
 30 Ypey 1984; 1986.  
 31 Petersen 1919, 105–112; Geibig 1991, 44–47.  
 32 Bilogrivić 2009.

All Moravian type K sword finds come from Mikulčice.<sup>33</sup> Apart from one fragment from a surface survey, they were found in two graves. A sword with a pattern-welded blade from richly equipped Grave 1750 from Mikulčice-Kostelisko, situated south of the fortified complex of the Mikulčice stronghold, had a hilt decorated with a brass fine wire surface inlay (Fig. 138: 4; 140: 3). The second sword, this time with a very long crossguard and a pommel segmented by fine brass wires, was found in Grave 90 from the earlier horizon of the cemetery near Mikulčice Church 2 (Fig. 140: 1; 145: 1; 149: 1 in Excursus 3.1.1). Recent archaeological excavations in the cadastral area Kostice in the hinterland of the Pohansko near Břeclav stronghold uncovered a grave with a sword with an almost identical blade decorated as in the case of the sword from Mikulčice with surface pattern welding and a mark in the form of two opposite omega-shaped symbols (Fig. 151: 2 in Excursus 3.1.2). The sword from Kostice has a two-part semicircular upper hilt, which typologically is Petersen type N (Fig. 141: 2) although the shape and design are close to the weapon from Mikulčice. The swords probably come from the same workshop.<sup>34</sup> Based on the typical decoration and the spatial distribution of the finds, the origin of type K swords is rightfully sought in the Carolingian Empire.

Swords from Great Moravian contexts were most often fitted with long straight crossguards and semicircular-shaped upper hilts. Swords with two-part semicircular upper hilts are relatively rare; as with other Carolingian swords, the hollow pommel is attached to the upper guard by a pair of rivets (Fig. 141: 2). These hilts, categorised as Geibig type 8 or Petersen type N, appeared during the first half of the 9th century.<sup>35</sup> Apart from the above-mentioned sword from Kostice, they are known from two Mikulčice graves, from Nechvalín and Holešov.<sup>36</sup> Specimens with simple one-piece upper hilts categorised as Petersen type X (Fig. 141: 3) were predominant.<sup>37</sup> It is the Moravian archaeological contexts that enable the conclusion that type X swords started to be produced approximately in the middle of the 9th century. They were deposited in graves in Moravia during the second half of the 9th century and at least at the beginning of the 10th century.

Although some of the swords with a semicircular upper hilt were fitted with pattern-welded blades or blades signed with simple marks, most blades were undecorated with narrow fullers. Blades with inscriptions, letter-like signs or geometrical signs consisting of several symmetrical elements also occurred. The large variation of blade shapes is most distinct in the Moravian finds of swords with semicircular upper hilts compared with other parts of Europe at that time (Fig. 134). Long (83-90 cm) and relatively narrow blades stand out and were often fitted with narrow fullers forged into the blade at a distance from the crossguard (Fig. 134: 1, 2). A large assemblage of swords with long blades is known from Mikulčice; more such weapons were discovered, for instance, in Grave 29 in Šlapanice, in Jarohněvice and two graves at Nechvalín.<sup>38</sup> A major find of a long-blade sword with a displaced fuller is a sword from Grave 174 from the earlier phase of the cemetery near the magnate court at Pohansko near Břeclav, whose dating in the second half



1



2

Fig. 139 Remnants of rich decoration have survived on the hilt of a Petersen special type 2 sword from Grave 10 in Šlapanice despite considerable damage.

1 - Current condition of the hilt; 2 - reconstruction of the original appearance.

33 Košta - Hošek 2014, 60-70, 225-234, 237; Hošek - Košta - Žákovský 2019, 155-156, 159-160, 176.

34 Košta et al. 2019, 212-214; Hošek - Košta - Žákovský 2019, 124-125.

35 Petersen 1919, 125-126; Geibig 1991, 48-50; Košta - Hošek 2014, 248-249.

36 Košta - Hošek 2014, 111-123, 179-193; Hošek - Košta - Žákovský 2019, 107-108, 187-188.

37 Petersen 1919, 158-167; Geibig 1991, 56-58; Košta - Hošek 2014, 249-251, 261-270.

38 Košta - Hošek 2014, 253-261; Hošek - Košta - Žákovský 2019; in press.

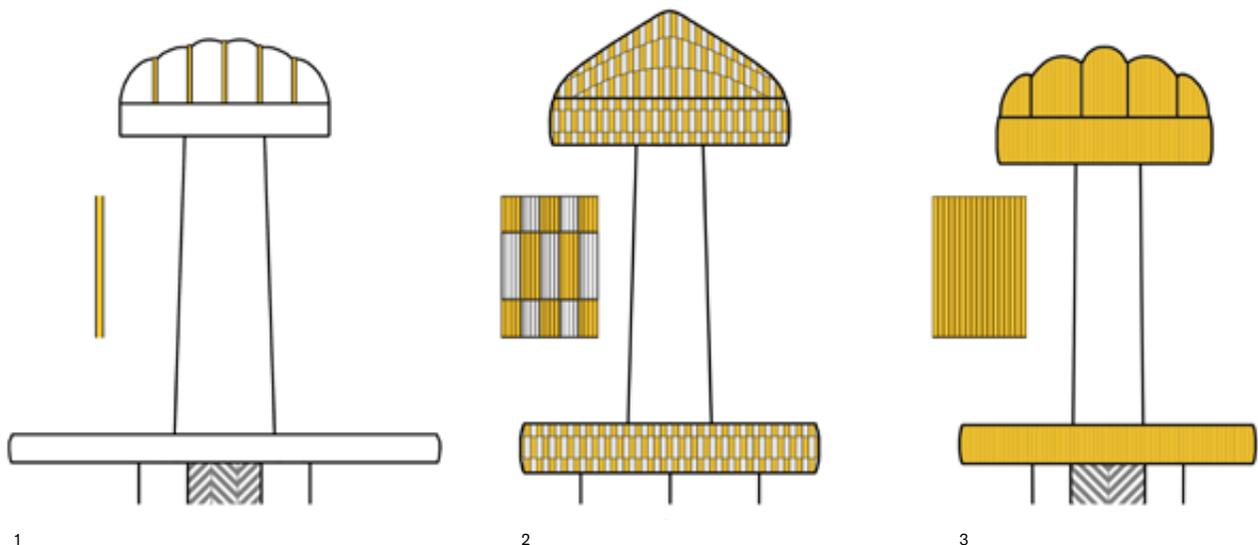


Fig. 140 Reconstruction of decorated sword hilts from Mikulčice.

1 – Petersen type K sword from Grave 90 with the upper hilt segmented by fine brass wires; 2 – Petersen type H sword from Grave 265 from the interior of Church 2, decorated with a chessboard motif formed by a surface vertical inlay of fine silver and brass wires; 3 – Petersen type K sword from Grave 1750, with the upper hilt covered by a surface vertical wire inlay.



Fig. 141 Examples of swords with undecorated upper hilts.

1 – Pohansko near Břeclav, southern suburb, Grave 118 (similar to Petersen special type 2/U); 2 – Kostice – Zadní hrád, Grave 1 (Petersen type N); 3 – Mikulčice, Grave 438 (Petersen type X); 4 – Lhota nad Moravou (Petersen type Y).

of the 9th century based on the archaeological context was also confirmed by radiocarbon dating.<sup>39</sup> Long-blade weapons were already used in Moravia in the late 9th century.

Another type of sword, more frequently found in Bohemia and Southern Germany, appeared in Moravia in the late Great Moravian period.<sup>40</sup> Petersen type Y swords are characterised by low one-piece or two-part upper hilts with an upward curved upper guard and a hint of three-part segmentation on the top (Fig. 141: 4). Compared to swords with semicircular upper hilts, most of the blades have more archaic shapes and many are decorated with surface pattern-welding. It is possible that these hilts were often attached to older blades. Type Y swords were traditionally dated in the 10th century, which is not in discord with grave finds from Bohemia and the Carpathian Basin. The most important recent contribution concerning the beginning of their occurrence is the discovery of two pattern-welded specimens in Graves 129 and 130 at the Thunau-Obere Holzwise stronghold in Lower Austria. Based on both the archaeological and radiocarbon analysis, these weapons from the contact zone between Frankish Eastern Bavarian Mark, Moravia and Bohemia can be dated to the last third of the 9th century.<sup>41</sup> According to current research results, a relation between type Y swords and Moravia during the existence of the Mojmirid principality appears rather weak. The only sword out of the four Moravian finds of this type with a proven archaeological context was part of the inventory of Grave 71 in the periphery of the cemetery in Rajhradice, accompanied by a set of sword belt mountings.<sup>42</sup> Another Y type sword from Moravia was identified among the artefacts from a disturbed cemetery from the Great Moravian period in Vranovice.<sup>43</sup> A stray find of the upper hilt of a high two-part archaic version of a type Y sword from the acropolis of the Mikulčice stronghold (Fig. 142), similar to the upper hilt of the early dated sword from Grave 130 in Thunau, cannot yet be more closely stratigraphically categorised, even though it has the attraction of linking it to evidence of the fights for the stronghold in the early 10th century. Regardless, type Y swords are absent from grave goods at the main Great Moravian centres; they possibly found their way to graves only at the time of the disintegration of Mojmirid Moravia.

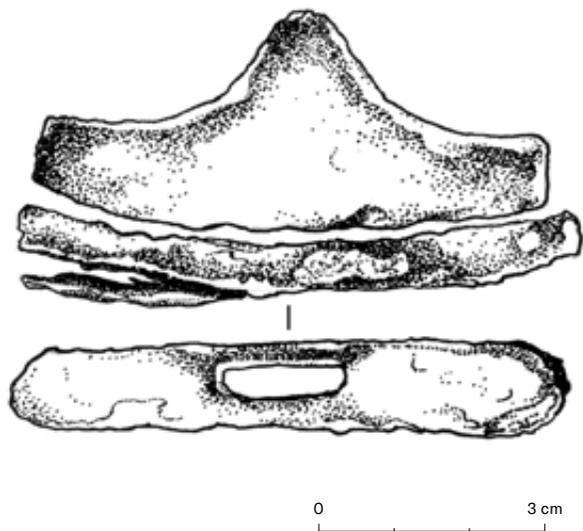


Fig. 142 Petersen type Y upper hilt of an archaic two-part form with a tang fragment found as a stray find close to the palatial structure in the central part of the fortified core, possibly a silent witness to the fall of the Mikulčice stronghold in the early 10th century.

39 Košta et al. 2019, 187-191, 201-203.

40 Košta - Hošek 2020.

41 Nowotny 2018, 86-91; Nau - Mehofer 2018, 363-367.

42 Král 1970; Staňa 2006, 145-146, 169; Hošek - Košta - Žákovský 2019, 232-233.

43 Galuška 2001, 185-190; Hošek - Košta - Žákovský 2019, 264-265.



Fig. 143 Fragment of the cast upper guard of a sword found in a settlement context in the northern suburb of the Pohansko near Břeclav stronghold.



Fig. 144 Hilt of a weapon combining sword and sabre features from Boleradice.

The range of swords from the late phase of the Great Moravian period also includes the find of a fragment of an upper guard, cast from leaded bronze and decorated with engraving, from the northern suburb of the stronghold at Pohansko near Břeclav (Fig. 143). Analogies can be found in Petersen type W swords and rare bronze hilts with triangular pommels. To date, these weapons, mainly known from Scandinavia, the Baltic countries and Eastern Europe, are dated to the 10th century.<sup>44</sup>

Double-edged swords arrived in Moravia as a cultural import together with other Frankish lifestyle attributes. It is possible that already at that time, local smiths were experienced in the production of long single-edged weapons influenced by the Avar tradition. However, no demonstrable succession can be read from the preserved sources, despite the existence of several hybrid specimens that are difficult to interpret.<sup>45</sup> During no later than the first half of the 9th century, Frankish designed swords became a standard part of the material culture of the higher echelons of Moravian society. This does not mean that Great Moravians did not encounter other long-bladed weapons; they were trading with the Khazar Khaganate, were in close contact with the Bulgarians and, from the last third of the 9th century, with the Magyars. However, they only used them marginally or at least it was not in their interest to demonstrate the social status of their deceased ancestors by depositing them in their graves (which limits our knowledge of their occurrence). The scarce evidence of the use of such weapons includes a Khazar designed sabre found in one of the graves in Olomouc-Nemilany<sup>46</sup> and a hybrid weapon from Boleradice combining sabre and sword features, with a crossguard with a design similar to that of the Nemilany specimen (Fig. 144).<sup>47</sup>

Let us return to the double-edged weapons of West-European design and ask whether specimens that might have been produced in Moravia can be distinguished among them. At this point, we cannot provide a clear answer. Even though we can reliably determine that the region with the key influence on sword design and production was undoubtedly the Frankish Empire, we are unable to decide on the origin of particular specimens, except for a few rare cases where several indicia sets are available. A condition for more extensive production of double-edged swords in Moravia was the transfer of the technology and skills from the Frankish territory.

Neither the local types of hilts nor the original forms of hilt decoration came into existence in Great Moravia. Only hilts formed by cores from organic materials plated with iron, discovered in three Great Moravian graves, were exceptional in the Europe of that period. However, they were attached to various blades whose provenance in Moravia can be mostly ruled out.<sup>48</sup> The application of locally produced hilt components can be considered in the case of frequently represented and constructionally simple Petersen type X upper hilts. Ascribing domestic origin to hilt types that are simple or occur often (or to lower-quality blades) may be misleading.

44 Petersen 1919, 156-158; Košta et al. 2019, 188, 215-216.

45 Hošek - Košta - Žákovský 2019, 25-26.

46 Kouřil 2008a, 127; Přichystalová - Kalábek eds. 2014, 101-104.

47 Poulik 1948, 150-151; Hošek - Košta - Žákovský 2019, 66-67.

48 These include a sword from Grave 580 with a blade decorated with a silver cross deposited in three-nave Church 3 in Mikulčice (Košta - Hošek 2014, 145-155), a sword with a pattern-welded blade from Grave 116/51 in Staré Město - Na Valách (Hošek - Košta - Galuška 2019) and a sword from Olomouc-Nemilany bearing the inscription of the Ulfberht group (Hošek - Košta - Žákovský 2019, 195-196; in press).

Signs of later adjustments to the hilts of early-Carolingian swords are constantly observed, for instance, within the sword assemblage from Pohansko near Břeclav (e.g. Fig. 141: 1).<sup>49</sup>

Fitting and repairs to undecorated hilt components did not require extraordinary smithery skills although the question of sword production in Moravia is more heavily linked to the character of Moravian blades. As in the case of hilts, no original features or decorative elements can be found in blades from Moravia. A relatively numerous group of swords with long (83-90 cm) and rather narrow (47-57 mm) blades appear in Moravian archaeological contexts sometime during the second half of the 9th century. However, these are characterised by a set of progressive features that have only been dated in the second half of the 10th and the 11th centuries in European professional literature to date (Fig. 134: 1, 2). These blades, occurring together with Petersen Type N and X hilts with semicircular upper hilts and long crossguards, are of average to considerably above-average quality, but surface pattern welding is rare and inlaid marks only appear sporadically. Swords with long blades are closely linked to another unusual element in Moravia - narrow fullers (up to approximately 2 cm) that begin at a distance of several centimetres from the lower end of the crossguard.<sup>50</sup> It is an open question as to what extent this group of blades reflects local production and how much is due to broader changes initiated from the Frankish Empire whose onset has, to date, been categorised in a later period due to the limited possibilities of dating the swords found in Frankish territory.<sup>51</sup> The lack of knowledge about the development of swords in Bavaria and on the eastern periphery of the Frankish Empire, the regions with which the Moravian elites were in the closest contact, is particularly painful. Regardless, blades with the discussed dimensions were exceedingly rare in Europe before the middle of the 10th century and apart from Moravia, they show no considerable concentration. They did not even occur in Bohemia,<sup>52</sup> and so far have not been distinguished among swords from Slovakia either.<sup>53</sup> Therefore, it is among these characteristic weapons - whose production was conditioned on securing experienced sword makers - that we might search, with a high level of probability, for specimens produced in one of the Great Moravian centres. Mikulčice is the best candidate, given the large number of swords with the mentioned types of blades. Finally, rare, atypical low-quality blades inexpertly imitating Frankish models can also be linked to the production of local smiths. Given the information about the size and military potential of the Great Moravian army in the second half of the 9th century and the evidence of the concentration of other prestigious and highly specialised crafts in Great Moravian centres, we can assume that swords were produced in Mojmirid Moravia.<sup>54</sup> The domestic output was insufficient to satisfy the demand, at least regarding luxury specimens. Visible details of the rendition of the blade and the decoration of the hilts on imported Frankish swords undoubtedly became important features in the internal stratification of the Great Moravian elites.



1



2

Fig. 145 Examples of burials with swords from Mikulčice.

1 - Grave 90 from the earlier phase of the cemetery near Church 2 with a Petersen type K sword, spurs near the feet and an iron-bound bucket behind the head; 2 - Grave 500 from the cemetery near Church 3 with a Petersen type X sword and an iron belt set, deposited in a wooden coffin with iron fitting in a large grave pit underlaid with and surrounded by massive stones.

49 Košta et al. 2019, 219.

50 Košta - Hošek 2014, 253-261; Košta et al. 2019, 201-203, 219; Hošek - Košta - Žákovský 2019; in press.

51 Geibig 1991, 83-90.

52 Hošek - Košta - Žákovský 2019; in press.

53 Ruttikay 1975; 1976.

54 See, for instance, Ruttikay 1982; Macháček et al. 2007a; Galuška 2013.

The number of burials with swords is negligible in relation to the overall number of graves from the Great Moravian period known from Moravia so far. The deposition of a valuable weapon in a grave (Fig. 145) was an exceptional event. In many cemeteries, which we can understand as a reflection of the individual communities linked by closer relations, it took place only once or not at all throughout the Great Moravian period. The number of swords that became part of the grave goods and the real number of swords used in living culture was not in direct proportion. The Great Moravian army, whose core resisted the Frankish forces in the second half of the 9th century, must have consisted of hundreds of mounted warriors equipped with swords for the Mojmirid rulers to be able to pursue active policies in the Central European region. The number of people they had at their disposal is better reflected by the finds of spurs. We can rightfully assume that mounted warriors who documented their status with spurs as part of the grave goods were usually equipped with a sword. The axe, a traditional Great Moravian weapon, was unsuitable for fighting on horseback. The question that remains is to what the sepulchral finds of swords testify about Great Moravian society.

The funeral rite rules were not as binding as to dictate a uniform list of grave goods (Fig. 146). On the contrary, the form of the grave goods changed in both space and time, reflecting local customs as well as the dynamic process of the stabilisation of the social structures of Great Moravian society, which eventually remained unfinished due to the historical circumstances. The transformation of ancient, deep-rooted social networks brought to the forefront individuals who had to confirm their right to a high social status with constant personal deeds. By depositing rich grave goods, the survivors typically expressed their claim to maintain the deceased's social position in a permeable society that did not yet consider its inheritance automatic. The stabilisation

process of social relations was reflected in a gradual reduction in grave goods, first to jewellery and parts of clothing.<sup>55</sup> Then, virtually the only information available about militarised male elites is the riding boots with spurs which, in *pars pro toto* meaning, testified to the ownership of a horse. The find of metal parts of a sword belt without the weapon deposited in Grave 54 in Rajhradice can similarly be explained as a symbolic replacement of the whole by a part.<sup>56</sup> The presentation of weapons linked to a prominent deceased person undoubtedly remained an important part of the funeral rituals, but the survivors no longer felt the need to deposit them in the graves. While the process of the reduction in the funeral equipment remained unfinished in Great Moravian society, the ratio between the individuals owning a sword and those equipped with this weapon for their last journey changed, as did the social groups among which the custom of depositing war gear persisted. Although the representatives of the elites of the late Great Moravian period who lived in the northern suburb of Pohansko near Břeclav undoubtedly owned swords (this is documented by settlement finds, among other evidence), they did not consider it important to equip their deceased buried in the local rotunda with them. In contrast, contemporary sword burials occur in clearly less prestigious situations at the same site, including Grave 26 situated on the edge of an extensive cemetery at the magnate court and Grave 118 found together with other graves within a large settlement at the Pohansko southern suburb (Fig. 141: 1).<sup>57</sup>

As far as can be judged from the anthropological data, only grown men were equipped with swords for their last journey. This distinguishes swords from spurs and axes, which are also known

55 Steuer 1982, 421, 525–528; Steuer 1995, 89–95; Brather 2008; Štefan 2007; Klápště 2009.

56 Staňa 2006, 144, Fig. 53.

57 Macháček et al. 2016; Košta et al. 2019.

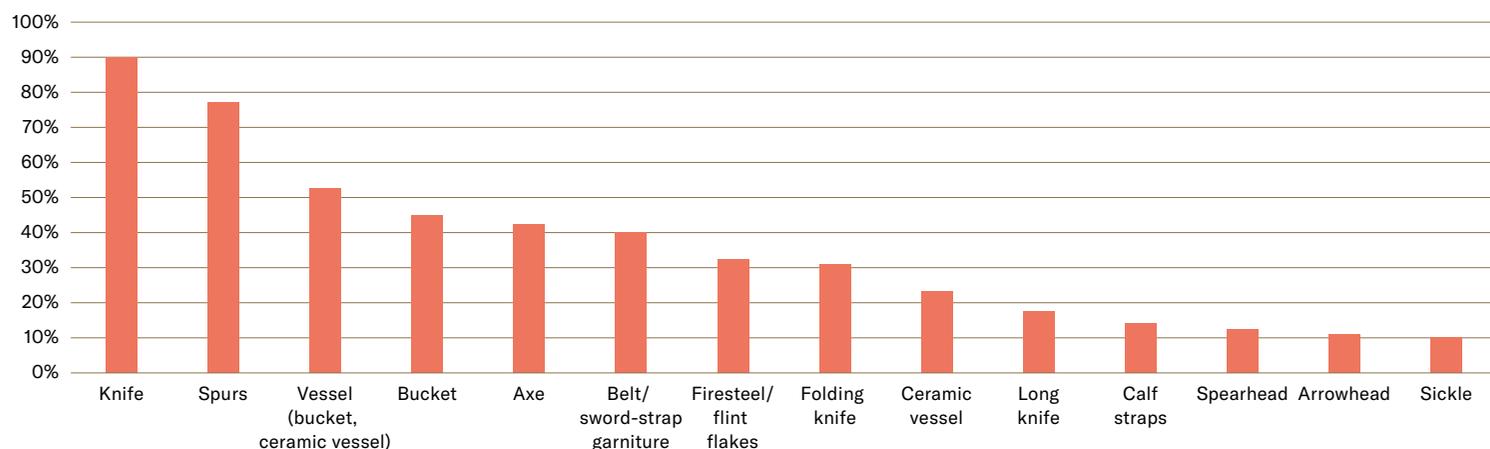


Fig. 146 The relative representation of the individual categories of grave goods in Moravian burials with swords from the 9th and 10th centuries.

from child burials.<sup>58</sup> The survivors were probably also discouraged by reasons other than the high value of the sword – otherwise, it would be difficult to explain why dead children were equipped with luxury jewellery. The reason may be found in a personal disposition requirement – swords accumulated in the family property or distributed by the ruler and the top elites might only have been entrusted to youths of a certain age. Non-functional sword symbols (analogical to miniature children’s spurs or axes) have not been distinguished in the Great Moravian graves.

The presence of a sword in a grave in the Great Moravian period indicated the high social status of the deceased. The ownership and use of a sword were connected with the equestrian class, as shown by the large presence of spurs in the equipment of Moravian graves with swords (approximately in three-quarters of the graves, see Fig. 146).<sup>59</sup> Parts of the grave goods were usually selected from the personal and family property, which was divided between the survivors and the deceased. Therefore, swords could only become part of the equipment if the deceased owned several. Especially at the time of the dominance of the unreduced burial rite, they were used for a finer segmentation of higher strata. The considerable differences in the quality, ornateness and certainly the costliness of the individual specimens used as grave goods also indicate the different possibilities of the survivors. The decision to deposit swords in graves was influenced by the local customs (we can mention the repeated depositing of swords in the graves of the Nechvalín cemeteries<sup>60</sup>) and by extraordinary circumstances that might have included exceptional merit of the buried person (in service to the ruler or within the community, for instance) or an urgent need to strengthen the prestige of the survivors by a demonstration of their ability to be generous with their means. The often-discussed situation of the last member of the family in the male line carrying the sword with him to the grave is rather less likely. Of course, the particular circumstances are almost impossible to ascertain based on archaeological data.

As the distribution of imported prestigious war gear was controlled by the ruler and a small group of the highest elites, interconnected by a network of ties with the elites of the neighbouring regions, and since representatives of the Mojmirid clan undoubtedly also controlled the local production of luxury weapons and armour, the deposition of swords in graves can be regarded as a testimony to the links between the higher strata and the central power. Therefore, sword graves in rural cemeteries perhaps belonged to members of the local elites who increased their prestige within the local community through service to the ruler. In important cemeteries in the centres of Mojmirid power such as Mikulčice and Pohansko, sword burials took place in the presence – and under the direct control – of members of the ruling clan, who certainly expressed themselves at least indirectly on the social activity of the deceased and could thus fundamentally influence the course of the funeral ceremonies. These surely had to be approved, or at least accepted, by local representatives of the church. It is among the relatively numerous graves with swords in the cemeteries on the acropolis of the Mikulčice stronghold or near the magnate court at Pohansko that we might look for representatives of the part of the ducal retinue from which the still unsettled foundations of the administrative

apparatus of the Mojmirid principality started to be formed. As for two graves containing swords with marks in the shape of small crosses from non-ferrous metals in the Mikulčice churches, we can rightly consider the possibility that they belonged to members of the princely family (see Excursus 3.1.2; Fig. 153). One of these, the sword from Grave 580, was buried together with a large quantity of extraordinarily valuable grave goods in the nave of Church 3, the Great Moravian largest known church; the remnants of the other come from Grave 265 discovered in the earlier phase of Church 2, the oldest known Christian church in Mikulčice.<sup>61</sup>

In the Frankish Empire, the value of a sword corresponded to a small herd of cattle so the costs of purchasing a weapon imported to Moravia must surely have been even higher.<sup>62</sup> Rather than war booty or the black market, the main means of acquisition of Frankish swords were political and family gifts from the Frankish elites and the central “market of the Moravians” controlled by the Mojmirids (see Essay 1.4), on which valuable weapons were mainly exchanged for wax, honey, horses and slaves. In Great Moravia’s non-monetary economy, it was virtually impossible to acquire a sword through local market exchange. As the Frankish rulers controlled, to a considerable extent, the distribution of swords among the highest elites of Great Moravia, the Mojmirids dominated the redistribution of swords and other luxury goods within their domain. The control of imports and the organisation of the production of weapons and other luxury products became one of the fundamental pillars of their power. The mutual exchange of valuable gifts was key to strengthening social relations while service provided in exchange for a gift formed the basis of a vassal-lord relationship. To the successful, this system offered the possibility to own otherwise unattainable items. Chief among these were certainly swords, which could be used to increase and consolidate one’s prestige and distinguish oneself against the lower components of Great Moravian society.<sup>63</sup>

The Moravian elites certainly did not endeavour to acquire Frankish swords (and other war gear) primarily to be able to equal the Frankish army in battle. Even the best sword would be of no avail to a warrior who could not use it. A sword needs to be perceived as a materialised reflection of the complex cultural relations that were formed on the eastern periphery of the Frankish world, of which the realm of Moravian Mojmirids was indisputably a part. It was not wars, as so frequently mentioned in the written sources, but the newly formed mutually beneficial networks of social relations and dependencies, the sharing of common cultural assets and undoubtedly family bonds that formed the relations between the Moravians and the inhabitants of the Frankish Empire in the first place. The possession of a sword in such society required not only the ownership of a horse but enough time and means to ensure lifelong training in martial arts and participate in meetings accompanied by warrior games. In this context, swords do not primarily represent tools used for killing but symbols of the militarised elites of West European Christian world, whose culture successfully penetrated the eastern part of Central Europe after the fall of the Avar Khaganate.

58 Košta – Hošek 2014, 306.

59 Košta – Hošek 2014, 302–303; Ruttkay 1982; Szameit 2007, 67–68.

60 Klanica 2006a, 31–39; 2006b, 20–21, 46–49; Hošek – Košta – Žákovský 2019, 184–188.

61 Schulze-Dörrlamm 1993; Košta – Hošek 2014, 281–285; Hošek – Košta – Žákovský in press.

62 Bachrach 2001; Coupland 1990, 40–44.

63 Härke 2000, 377–391; Štefan 2011; 2014.

## 3.1.1 excursus

# Early Medieval Sword Blade Design

– Jiří Hošek, Jiří Košta

Sword blades were among the most demanding forged products in the Middle Ages. The study of these helps us to understand the level of the blacksmithing technologies used. A good-quality sword from the 9th and mid-10th centuries had to have a blade with the required length (the average was about 80 cm) and be easily manageable: relatively light and well balanced, with the point of balance closest to the guard. The blade had to resist constant bending or breaking, and the cutting edges had to withstand contact with shields, armour and opponents' weapons. Moreover, a blade had to be strong and flexible while the cutting edges had to have the optimal hardness so any clash with an opponent's sword would

leave no visible marks. A blade's mechanical properties could be affected by its overall shape and robustness and by the use of various iron alloys, which were usually combined in common designs, and by the heat treatment (Fig. 147).

In the 9th and 10th centuries, the development of the shape of sword blades gradually led to greater diversity (Fig. 148). In addition to the conservative shapes corresponding to the 8th-century blades, very broad blades were scarcely found. A group of long and relatively narrow blades with fullers dated as early as the second half of the 9th century were also typical of the finds from the Great Moravian territory. Similarly shaped blades have been regularly

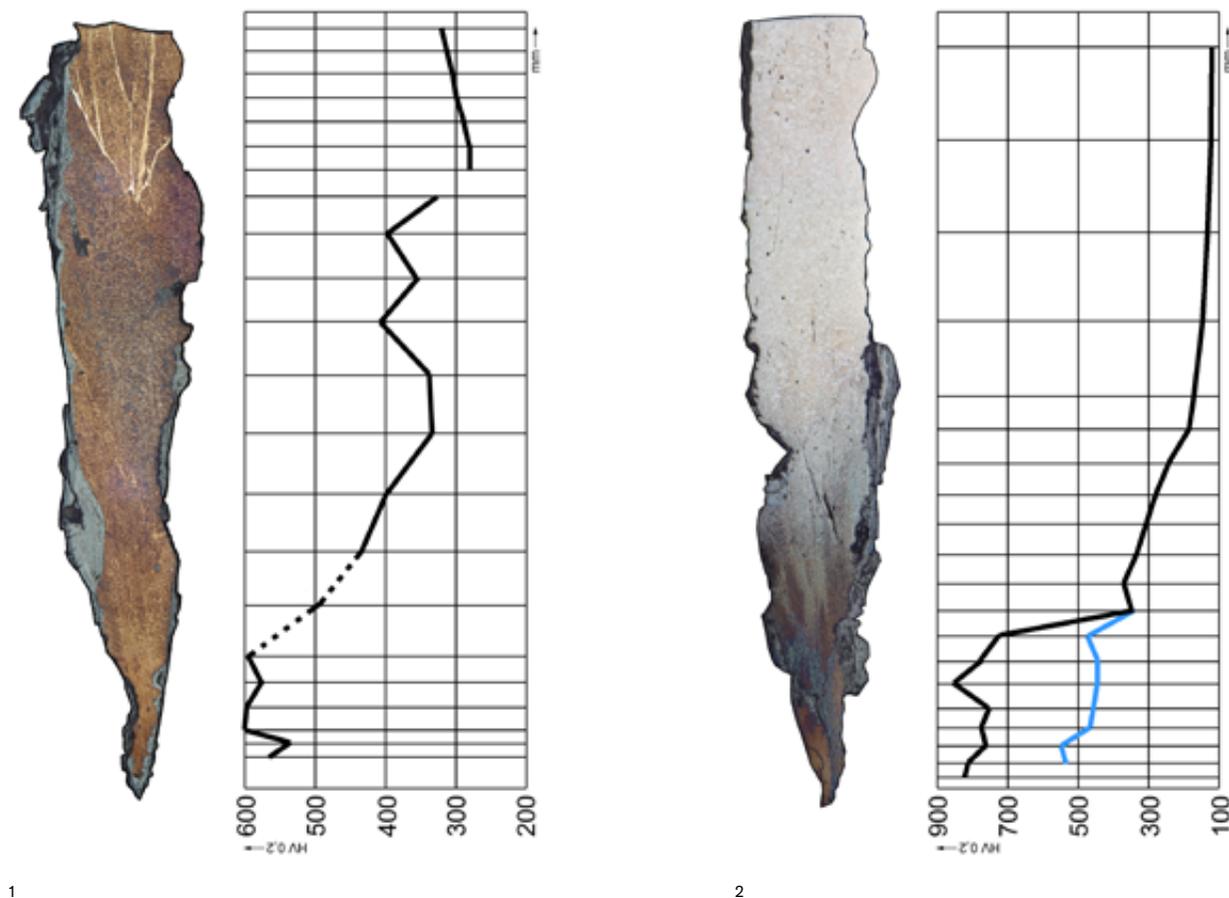


Fig. 147 Metallography samples taken from medieval sword blades. The tables show the progress of the hardness from the core towards the edge.

1 – Pohansko near Břeclav, Grave 26: the sword has a high-quality all-steel composite blade; 2 – Mikulčice, Grave 1347: the sword was fitted with a standard-quality blade with an iron core and a steel edge.

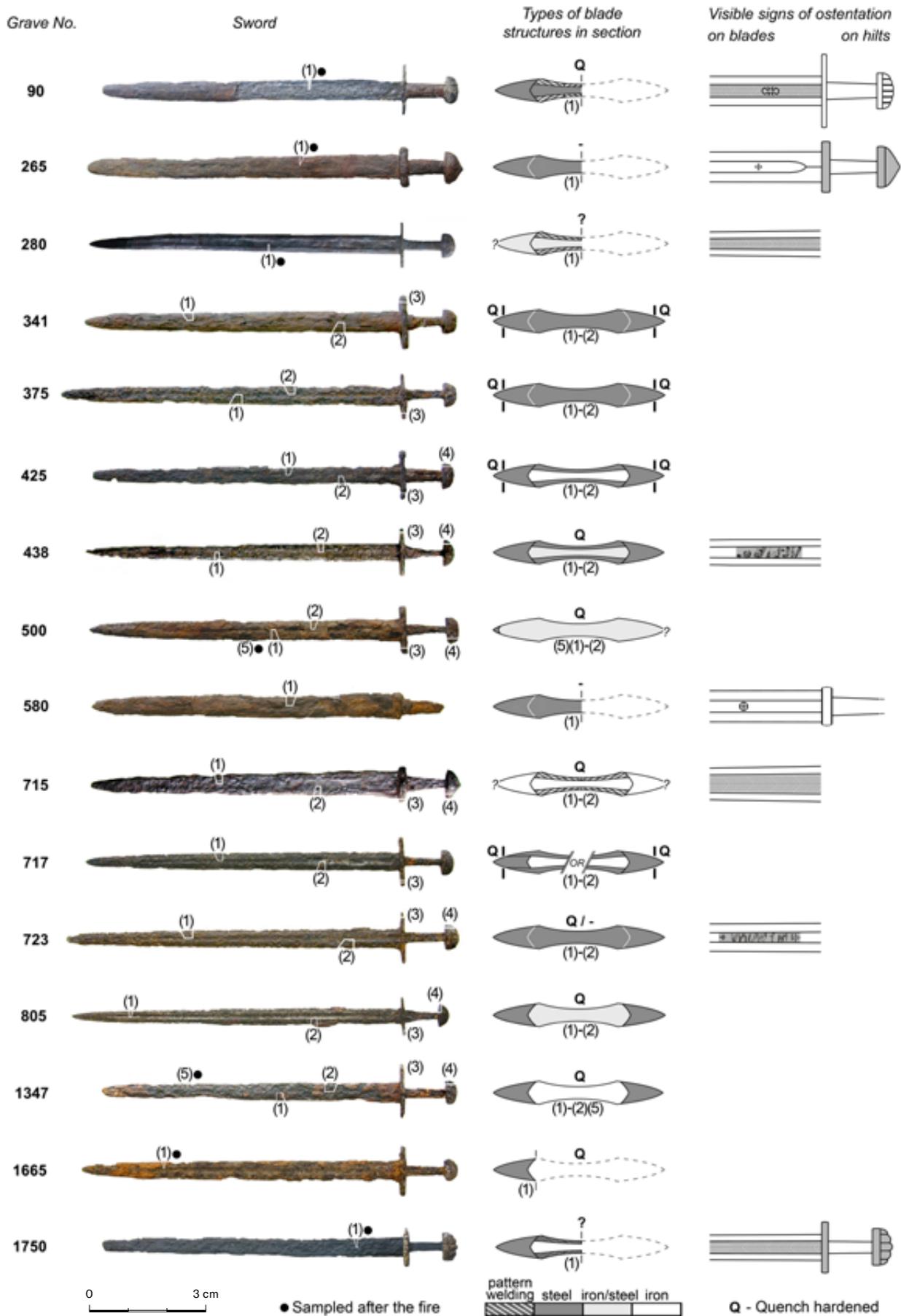


Fig. 148 Metallographically examined swords from Mikulčice.

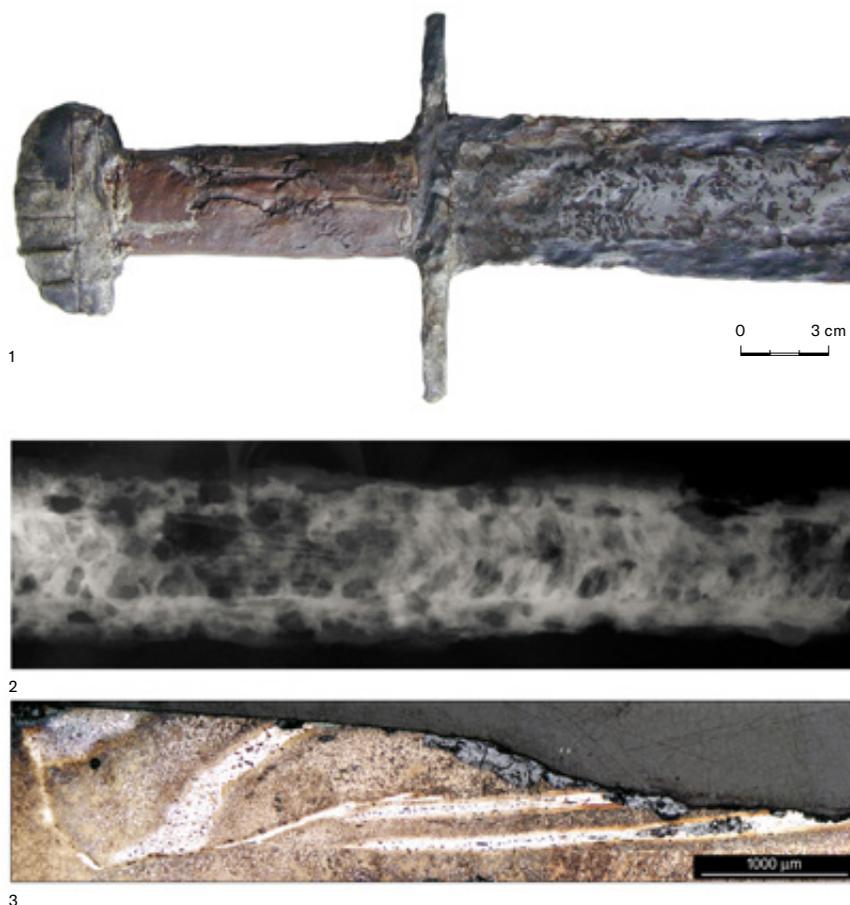


Fig. 149 Examples of surface pattern-welding.

1 – Petersen type K sword from Grave 90 in Mikulčice where the blade has an omega-shaped mark inlaid into a pattern-welded surface panel; 2 – X-ray image of a pattern-welded sword blade from Grave 1750 in Mikulčice; 3 – pattern-welded surface panel visible in the blade cross-section of a Petersen type V sword from Olomouc – Univerzitní Street (etched by Oberhoffer agent), the inscription Ulfberht is located on the other side of the blade.

found on swords from other parts of Europe that date as late as the second half of the 10th century. The general trends in the development of sword blades included the lengthening of the blade, pronounced tapering that resulted in a more distinct point and the narrowing of the central fuller; the length of this was relatively shortened in comparison with the blade.<sup>1</sup>

The materials used for making sword blades can be categorised into steel where the strength and hardness could be effectively increased by hardening (iron alloys containing more than 0.2% to 0.3% carbon), plain iron, which although soft and tough, the strength and hardness could not be increased by hardening (containing less than 0.2% carbon), and a pattern-welded composite consisting of alternating layers of phosphoric iron (containing 0.4% to 1.5% phosphorus) and steel or plain iron, which had a decorative function. Blacksmiths were able to create various patterns on the blade surface by alternating different twisted and non-twisted panels (Fig. 149). However, the properties of these composites were adversely affected by the very low toughness of the phosphoric iron, which made them useless for improving the mechanical properties of sword blades.<sup>2</sup> The decorativeness of pattern-welding influenced the notion of the ideal sword form, which became a standard in Europe for many years. At the beginning of the 8th century, the

symbolic function of the pattern-welded surface was gradually replaced by the symbols embedded in the upper part of the sword blades. This was the result of the transfer of pattern-welded decoration technology.

While it was advantageous to use hardened steel with a high carbon content for the cutting edges, the blade core was ideally made from materials that balanced flexibility, strength and toughness (Fig. 148). These were different types of steel and were sometimes combined with iron. In lesser quality swords, the core would be made of plain iron (Fig. 147: 2). Fullers were the only part of a blade surface to which manufactures applied various forms of decoration, such as pattern-welding or inlaid marks and inscriptions, which were usually made from pattern-welded composites, although rarely completely from phosphoric iron or non-ferrous metals (see Excursus 3.1.2). The period of Great Moravia was still dominated by the traditional blade design, where the edges were welded to the core (Fig. 150). From the second half of the 10th century, these were gradually replaced by blades with a core overlapped by a coat of steel. Blades forged from a single piece of steel have been rarely found. The 9th and 10th centuries saw the culmination of the use of non-pattern welded blades that had a single core or a core with steel surface panels attached. Pattern-welded blades became at the time less common, and almost only those with pattern-welded surface panels with a plain core in between remained in living culture. However, in the first half of the 8th century, most swords were still decorated with surface pattern-welding. The second half

1 For an analysis of sword blades in summary, see Geibig 1991, 83–90; for a metric assessment of blades found in the Czech Republic, see Košta – Hošek 2014, 253–261.

2 For the mechanical properties of historical pattern-welded composites, see Thiele et al. 2015.

of the 8th century also saw the revolutionary transformation in the proportion of steel and iron used in blade production. Previously, blades with iron cutting edges (and iron or pattern-welded cores) dominated but these were soon replaced by blades with steel cutting edges and a steel core, which until then had been rare. While the proportion of another popular design, i.e. blades with steel cutting edges and iron or pattern-welded cores, had remained relatively stable from the 8th to the first half of the 10th century, their popularity gradually decreased in the later period. A new version of the layout of iron and steel blade components appeared in the first half of the 9th century, which consisted of an iron core surrounded by cutting edges and surface steel panels. This was the prototype for the later steel coated blades.<sup>3</sup>

In terms of blade design, 9th and 10th-century Moravian swords did not deviate from the European standard.<sup>4</sup> About one-third of the swords had pattern-welded blades (ten were metallographically examined, while others were X-rayed to determine the presence of pattern-welding), and only one sword (from Grave 223/51 from Staré Město - Na Valách) was found to have a fully pattern-welded core. Of the thirty metallographically examined blades, two were made from a single piece of steel (one from Grave 10 in Šlapanice and another from Grave 124 in Nechvalín) and eighteen had cutting edges welded onto a non-pattern-welded core. The quality of blade processing depended on the selected design, the materials used and the blacksmith's experience and skills. The degree of applying good technological procedures can be seen, for example, in the purity of the materials used (slag inclusions content), the quality of the forge welds and the hardness profile of the cutting edges determined by the quench hardening method used, etc. In general, poor, average and extremely high-quality products are found among the early medieval swords from Moravia. Examples of poorly crafted products include the very heavy sword blade from Grave 500 in Mikulčice made of unequally carburised low-purity material and the sword blade from Grave 715 in Mikulčice, which is decorated with surface pattern welding although the core and cutting edges are iron. On the other hand, examples of good-quality swords include four swords of advanced design with cutting edges and lateral steel panels enveloping an iron core (swords from Graves 425, 438, and 717 in Mikulčice, and the sword from Holešov), ten Moravian swords with all-steel composite blades that were metallographically examined, weapons from the interiors of Mikulčice churches (Graves 265 and 580) and the sword blade with the inscription Ulfberht from Grave 26 in Pohansko near Břeclav (Fig. 147: 1). Some of the pattern-welded weapons with steel cores and cutting edges were also of good quality, for example, the sword from Grave 71 in Rajhradice, the weapon from Grave 126 in Nechvalín and the sword with an omega-shaped mark from Grave 90 in Mikulčice (Fig. 149: 1).<sup>5</sup>

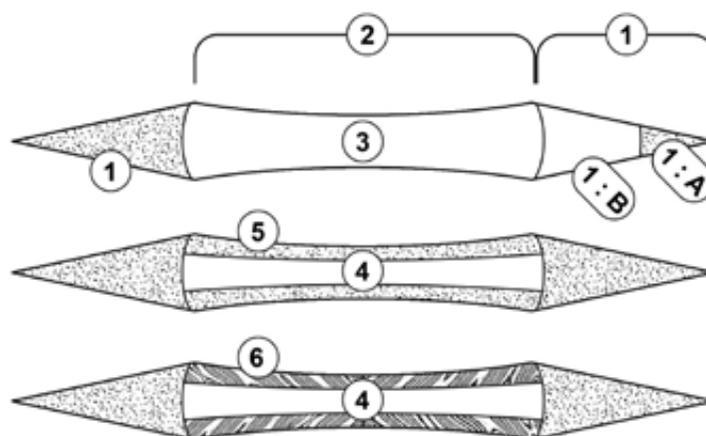


Fig. 150 Structures of blades of early medieval swords.

1 - Cutting edge A - cutting edge tip, B - cutting edge body; 2 - blade body/middle portion (in which the fuller appears as a rule); 3 - body/core of blade; 4 - blade core; 5 - surface panels; 6 - pattern-welded surface panels.

3 For the design of blades of early medieval swords in summary, see Košta - Hošek 2014, 271-279; Hošek - Košta - Žákovský in press.

4 For a catalogue and an archaeometallurgical assessment of Moravian artefacts, see Hošek - Košta - Žákovský 2019; in press.

5 For the processing of swords from Mikulčice in summary, see Košta - Hošek 2014; for an assessment of the sword from Grave 26 in Pohansko near Břeclav, see Košta et al. 2019.

# Sword Blade Marks and Inscriptions

– Jiří Hošek, Jiří Košta

The individual and composite marks and inscriptions in blade fullers are considered an important phenomenon in the decoration of medieval swords.<sup>1</sup> Like the pattern-welded panels, the early medieval marks and inscriptions were made from twisted or untwisted composite strips that combined phosphoric iron with plain iron or steel. Strips from a single piece of phosphoric iron, which after etching has a different colour and structure than the blade surface, or steel were used more rarely.<sup>2</sup> At least from the 9th century, non-ferrous metal inlaying – a technology that went on to become extremely popular – started to sporadically appear. The marks were placed on one or both sides of the blade several centimetres from the crossguard; long composite marks and inscriptions were about 20 cm long.

The oldest simple marks appeared in the second half of the 8th century on pattern-welded blades (Fig. 151; 152: 1-7). The different folding techniques used for the composite strips meant they were readable on the pattern-welded background but their visibility was limited. For various practical reasons, including worse technical parameters and demanding production, this was probably why bladesmiths gradually refrained from making pattern-welded blades. There were cases of swords where pattern-welding was skipped in the place of the inscription or applied only on the other side of the blade.<sup>3</sup> It was also common to inlay simple marks from iron composites into non-pattern-welded blades, which were often identical with the marks used on blades with pattern-welding running down the fullers. The pattern-welding technique, undoubtedly associated with strong symbolism, continued in use but only in categories of weapons and tools where it did not adversely influence the mechanical properties (e.g. knives and spearheads).

While pattern-welded blades were common in Frankish swords, the marks may have been perceived as quality identifiers. There was a limited range of the marks and identical characters appeared on more swords. These probably denoted quality products from specific workshops, as was undoubtedly the case of two blades with marks in the shape of two mirrored omegas found in Grave 90 in Mikulčice, and grave discovered in Kostice – Zadní Hrud at the Pohansko agglomeration near Břeclav (Fig. 151: 2; 152: 1, 2).<sup>4</sup> An important group among the finds from Moravia and the neighbouring areas are two types of S-shaped marks. A small variation

in the shape of two interconnected spirals decorated the Petersen Type B blades from Grave 65 in Pohansko (Fig. 151: 1; 152: 6), while larger marks from S-shaped strips were identified on as many as three Great Moravian swords (Fig. 151: 3, 5; 152: 3-5).<sup>5</sup>

The popularity of simple pattern-welded marks culminated in the late 8th century and early 9th century (of course, blades with similar marks were used and made later). The first half of the 9th century featured a new phase in the development of the characters on swords, which is characterised by swords inlaid with pattern-welded inscriptions. The Ulfberht-group inscriptions are typical for the 9th and the first half of the 10th centuries (Fig. 153).<sup>6</sup> The signature (possibly by a church dignitary who guaranteed the production) refers to an important Frankish workshop that produced high-quality swords. Considering the estimated production volumes, it might have denoted a production standard issued by several Carolingian workshops. The genuine Ulfberht swords were most often inscribed with +VLFBERHT+; the variation +VLFBERHT+ was less frequent and probably older. The reverse side of the blades was decorated with a complex geometrical pattern in the form of a lattice or an interlaced motif surrounded by vertical bars. Flawlessly applied inscriptions were identified on high-quality blades with quench-hardened cutting edges and steel or iron-steel cores (+VLFBERHT+) and on blades with cutting edges from eutectoid steel or even hypereutectoid steel (potentially crucible steel where treatment requires expert knowledge), which was not commonly used in early medieval Europe (+VLFBERHT+). The quality of blades with misspelt inscriptions or imitations of the Ulfberht inscriptions was reduced to blades made solely of iron.<sup>7</sup>

To date, three Ulfberht swords have been found in Moravia (Fig. 152: 11-13). Petersen sword type X from Grave 26 in Pohansko near Břeclav bears the inscription +VLFBERHT+ (Fig. 153: 2),<sup>8</sup> while on the sword from Grave 41 in Olomouc-Nemilany, the inscription I VLFBERHT I is framed by bars instead of crosses (Fig. 153: 1).<sup>9</sup> The two swords were buried in the graves sometime in the late 9th or early 10th century. The beginning of the inscription was preserved on a secondarily used blade on a Petersen type V dated to the 10th century, found in the centre of Olomouc.<sup>10</sup> The back of the blade was decorated with pattern welding. The blades on all three Moravian Ulfberht-group swords had a good-quality all-steel construction corresponding to the standard of +VLFBERHT+ swords mentioned earlier. A damaged, illegible pattern-welded inscription was discovered on an extremely high-quality blade with

1 For a summary of the development and construction of marks and inscriptions with particular regard to the Moravian finds, see Hošek – Košta – Žákovský in press; for manufacturing technology, development and archaeological context of the marks and inscriptions on swords, see the latest work by Moilanen 2015.

2 For the use of non-composite steel and iron for iron inlays, see Moilanen 2009; for the use, technological parameters and appearance of phosphoric iron, see Košta – Hošek 2014, 282-283; Thiele et al. 2018.

3 This was the case of the sword from Grave 190/50 in Staré Město – Na Valách: a pattern-welding surface was used on the reverse side of an Ulfberht sword found in the centre of Olomouc.

4 Košta – Hošek 2014, 60-70; Košta et al. 2019.

5 Swords from Holešov, from Grave 190/50 in Staré Město – Na Valách, and Grave 118 from the southern suburb at Pohansko near Břeclav; see Hošek – Košta – Žákovský 2019.

6 For a summarising analysis of the Ulfberht swords, see Stalsberg 2008; 2009.

7 For an archaeometallurgical assessment of the Ulfberht blades, see Williams 2012, 116-183. Košta et al. 2019.

8 Selucká – Richtrová – Hložek 2002.

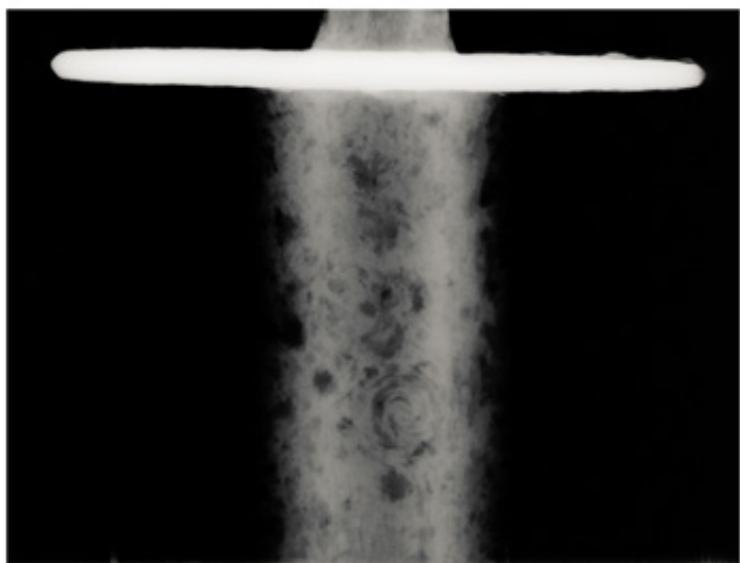
10 Frait 2006.



1

2

3



4



5

0 3 cm

Fig. 151 Examples of simple pattern-welded marks.

1 - Reconstruction of an S-shaped mark on a sword from Grave 65 from Pohansko near Břeclav; 2 - reconstruction of a pair of opposite omega-shaped marks on a sword from Kostice - Zadní Hrud; 3 - reconstruction of an 8-shaped mark on a sword from Grave 118 from the southern suburb at Pohansko near Břeclav; 4 - X-ray image of a spiral on the pattern-welded blade of a sword from Lhota nad Moravou; 5 - large 8-shaped mark on the blade of a sword from Grave 190/50 from Staré Město - Na Valách.

Fig. 152 Marks on 9th and 10th-century swords from Moravia.

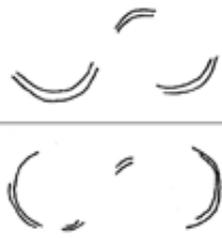
1 - Mikulčice, Grave 90; 2 - Kostice - Zadní Hrud; 3 - Holešov; 4 - Pohansko near Břeclav, southern suburb, Grave 118; 5 - Staré Město - Na Valách, Grave 190/50; 6 - Pohansko near Břeclav, magnate court, Grave 65; 7 - Lhota nad Moravou; 8 - Mikulčice, Grave 265 (non-ferrous inlay); 9 - Mikulčice, Grave 580 (non-ferrous inlay); 10 - Šlapanice, Grave 29; 11 - Pohansko near Břeclav, magnate court, Grave 26; 12 - Olomouc - Univerzitní street; 13 - Olomouc-Nemilany, Grave 41; 14 - Mikulčice, Grave 438; 15 - Mikulčice, Grave 723; 16 - Ždánice.



1



2



3



4



5



6



7



7



9



10



11



12



13



14



15



16



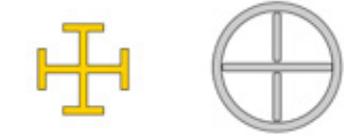
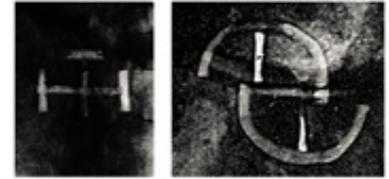
1



0 3 cm



2



1

2

0 3 cm

Fig. 153 Ulfberht inscriptions on swords.  
1 – Olomouc-Nemilany, Grave 41; 2 – Pohansko near Břeclav, first church, Grave 26.

Fig. 154 X-ray images and reconstruction of sword crosses.  
1 – Mikulčice, interior of Church 2, Grave 265; 2 – Mikulčice, interior of Church 3, Grave 580.

steel cutting edges and surface panels surrounding an iron-to-steel core, which was buried in the second half of the 9th century in Grave 438 near Mikulčice Church 3 (Fig. 152: 14). Traces of an illegible inscription or an inscription belonging to a similar character group was detected by X-ray on a sword from Ždánice (Fig. 152: 16). Another two swords with a geometric decoration that imitated the inscriptions or geometric characters usually found on the reverse side of blades with inscriptions also had all-steel high-quality composite construction. This concerns the sword from Grave 29 in Šlapanice (Fig. 152: 10) and the sword from Grave 723 in Mikulčice where the blade was decorated with a letter-like mark made from phosphoric iron (Fig. 152: 15).<sup>11</sup>

Swords that are considered exceptional are those with crosses made from non-ferrous metals (Fig. 152: 8, 9; 154). The decoration was found on the only two swords discovered in the interiors of the Great Moravian churches, in graves that are justifiably considered to have been connected to members of a ruling family. The sword from Grave 265, with a Petersen type H pommel decorated with a chessboard motif from silver and brass inlay, which was deposited in the older phase of Church 2 in Mikulčice – probably the oldest church building there – was decorated with a cross potent made from yellow-coloured metal. The blade of the sword from Grave 580, one of the richest inhumations in old Moravia deposited at the prestigious location of the largest Great Moravian church – Mikulčice Church 3 (basilica) – bears a silver cross in a circle. Unfortunately, the hilt of this sword, which was probably made from organic material, was not preserved. Both of the crosses were inlaid into non-pattern-welded all-steel blades of good quality, whose inlaid parts were not quench hardened.<sup>12</sup>

The finds of the 9th and 10th-century swords with non-ferrous inlaid crosses are exceedingly rare. One of these, a Petersen type N sword – with an inlaid cross potent dated to the second half of the 9th century – comes from Hedeby.<sup>13</sup> A brass cross potent also decorated the blade of the Petersen type H sword from Lithse Ham in the Netherlands; the cross was placed in the centre of a pattern-welded geometric grid, which decorated the reverse side of the blade with the +VLFBERHT+ inscription.<sup>14</sup> Although such inscriptions are rarely found on 9th-century blades, they probably were not unusual. In his essay “On Swords”, the Arabian scholar al-Kindi (803–870) mentions Frankish swords decorated with inlaid crosses made from gold or brass.<sup>15</sup> Notker’s biography of Charlemagne (*Gesta Karoli*), written in the 880s in the monastery of St Gallen, contains a description of Charlemagne’s sword. This reportedly contained a cross in its centre, which “should serve to doom heathens”.<sup>16</sup> In the Middle Ages, the symbol of a cross on a blade repeatedly appeared in the context of representative and ceremonial swords belonging to rulers, including the emperors of the Holy Roman Empire.<sup>17</sup>

11 For a summary of the Mikulčice swords, see Košta – Hošek 2014; for a catalogue of Moravian swords, see Hošek – Košta – Žákovský 2019.

12 Košta – Hošek 2014, 70–81, 145–155, 281–282, 307–308; Hošek – Košta – Žákovský in press.

13 This sword was dropped onto the seabed of the port around or prior to the year 894, as suggested by dendrochronological dating of the pier whose pile damaged the sword; see Geibig 1999, 57, Pl. 5, 13; Kalmring 2010.

14 In the case of this sword, Ypey considered its production to be at the end of the 8th or the first half of the 9th century; the blade might have been decorated with the brass cross secondarily; see Ypey 1986, 139–143.

15 Hoyland – Gilmour 2006, 43.

16 “...post haec balteus spate colligatus. Que spatha primum vagina, sekundo corio qualicumque, tercio lintheamine candidissimo cera lucidissima roborato ita cingebatur, ut per medium cruciculis eminentibus ad peremptionem gentilium duraretur” (Notkeri *Gesta Karoli* I, 34).

17 The oldest preserved coronation swords of the rulers of the Holy Roman Empire (*Reichsschwert*) can be mentioned at this point: a blade decorated with a silver cross in a circle from the second half of the 12th century (the mark used might have been inspired by older ceremonial weapons); the ceremonial royal sword of Frederick II of Sicily with a small golden inlaid cross, which was produced in Palermo around 1220; or the St Vitus sword used at the coronations of Bohemian kings with a filed Latin cross, which replaced the original pattern-welded mark or symbol (see Schulze-Dörrlamm 1995; 1997; Fillitz 1986, 168; Bravermanová 2007).



Detail on the prick ending of the rich inlaid iron spur from Mikulčice, Grave 232 near Church 2.

## 3.2

# Ostentatious Spurs From Mikulčice

– Pavel Kouřil

Relics of horse and equestrian equipment represent one of the most significant categories of artefacts found in Mikulčice, material proof of the exceptional position of power held by the agglomeration. The first thing that stands out is the professional craftsmanship, as well as the number of spurs that have been found. Although spurs are not absolutely necessary to control a horse, in practical terms they allow the rider to speed up and just as quickly change direction, especially when both hands are busy.

Incredibly, more than 570 spurs have been found in Mikulčice to date, a remarkable number despite the relatively large size of the area excavated (Fig. 155). We simply do not know of any other site in the Czech Republic, or indeed any other European country, to have yielded so many finds (see Excursus 3.2.1). Most of the spurs come from graves; roughly a third were obtained from settlement layers and features. The great majority of them were made of iron; none were made of precious metal, and only a few were cast from bronze. And it is the bronze, gilded or tin-plated in exceptional cases, but also the iron spurs decorated with silver or copper/brass inlaying, that are the most luxurious pieces. This essay primarily focuses on a selection of these luxury pieces, items that provide clear evidence of the existence of an elite society. Before we move on to the topic and present the individual artefacts in more detail, let us highlight two important things. Firstly, of the total number of spurs found so far in Mikulčice, exclusive finds (Groups I and II, see below) comprise a relatively small proportion (approximately 30 spurs). Secondly, luxury spurs occur among the grave goods of the deceased almost exclusively in cemeteries close by the most important Mikulčice's sacral buildings – Churches 2, 3 and 6.<sup>1</sup> For the purposes of this study, we have divided the Mikulčice spurs into 4 basic groups based on the material used, decoration and, to a lesser degree, typology and chronology. Group I consists of decorated gilded or tin-plated bronze spurs. Group II consists of iron spurs featuring silver or copper/brass inlay and, less commonly, completely tin-plated iron spurs. Group III contains iron spurs decorated particularly on the end plates and pricks with just sporadic inlaying and a metal-plated surface. Finally, Group IV comprises the overwhelming majority of various undecorated iron spurs, with highly variable and differently shaped plates.

From a chronological perspective, spurs are generally objects whose development trends can be traced relatively reliably as they change over time. Although spurs conclusively indicate membership of the privileged class, not everyone who owned them were necessarily a priori members of the equestrian elites. A number of researchers have attempted to classify spurs according to typology and chronology; therefore, we must take into account a variety of models from different parts of Europe to work with, including

a diverse range of comparative material. For early medieval times, especially for the pre-Great Moravian and Great Moravian period that we focus on here, researchers in Central and Eastern Europe still use the model created by V. Hrubý,<sup>2</sup> which in a way forms the basis for the classification system used by B. Dostál,<sup>3</sup> A. Ruttkay<sup>4</sup> and B. Kavánová,<sup>5</sup> as well as the classification based on the settlement finds by D. Bialeková.<sup>6</sup> The extensive Mikulčice collection, although badly damaged in a fire of the base and depositories in 2007, undoubtedly remains a key resource for extensive and detailed study in the future. For now, we may say that it contains all the basic types of early medieval spurs, including a number of variations. These range from hookspurs featuring two bent hooks inside and out; eyelet spurs (loop spurs); spurs with a rectangular frame (buckle spurs); spurs with side rivets (Biskupija-Crkvina type); to metal-strip spurs; spurs that generally have three rivets in a horizontal groove on the end plate (these tend to slightly predominate in Mikulčice); spurs with a central rib and two rivets on the end plate; and the most recent artefacts with mostly simple plate in various shapes with one to four rivets and a long prick sometimes measuring more than 5 cm (Fig. 156).

### Prestige spurs

Let us first focus on the beautiful bronze pairs (Group I), each of which is a unique product with no apparent direct analogies in this country, or, as far as we know, in any other region. We will start our interpretation with the bronze, respectively copper gilded spurs, found in Grave 44 south of the nave of Church 2 (Fig. 157), which contained the remains of a well-built young man aged between 25 and 30. The well-preserved skeleton was placed in a relatively shallow position compared to the rest of the site, with no traces of any wooden components; the archaeological documentation states that it laid over an earlier grave. This was no ordinary burial; in fact, the grave goods interred alongside the deceased confirm the high social status and importance of the deceased. Besides the aforementioned spurs and complete sets of strap fittings (oval buckles firmly fastened with tongue-shaped loops and strap-ends of the same shape), the grave included another two sets without the strap-ends (either absent or not found) made in the same way and undoubtedly from calf-strap mounts; and two gilded bronze spherical buttons decorated with palmettes just enhance the impressive quality of these grave goods.<sup>7</sup> However, the surprising and completely unique aspect of this grave in the context of the

2 Hrubý 1955.

3 Dostál 1966.

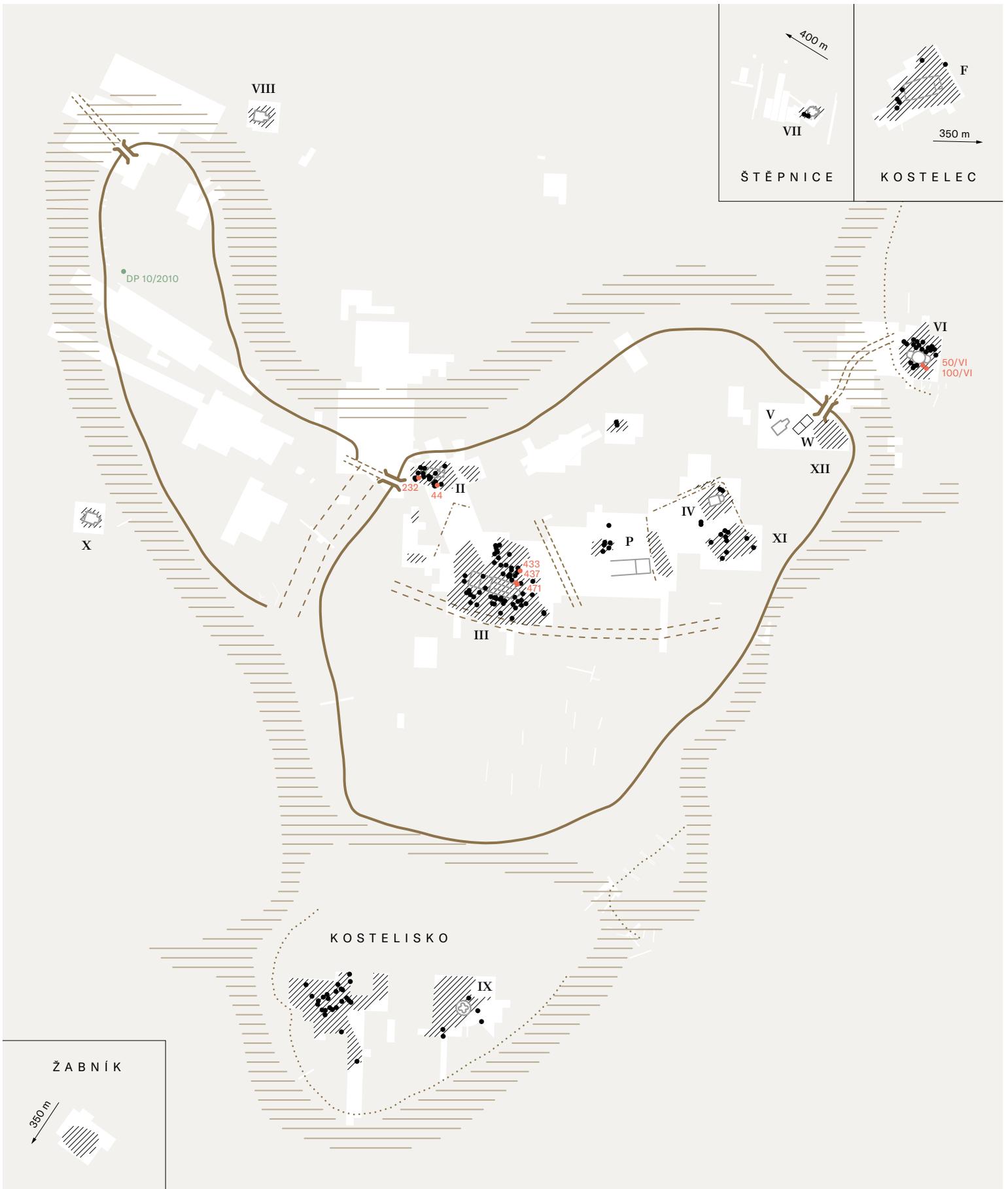
4 Ruttkay 1976; 1982.

5 Kavánová 1976.

6 Bialeková 1977.

7 Poulik 1957, 366–367; 1967, 81–101.

1 For clear summary of the churches, see Galuška – Poláček 2006, 92–153.



Legend:

- Graves with spurs
- Graves with ostentatious spurs (grave No.)
- Lead spur matrix (see Excursus 3.2.3)
- Excavated area
- ▨ Cemeteries, groups of graves
- Fortification
- ⌋ Gate
- - - Palisade, fence
- - - Bridge
- - - Ditch
- ⋯ Significant terrain boundaries
- IV Churches
- P Palace
- F Wooden feature
- W Fine-metal workshop



Fig. 155 Plan of the Mikulčice stronghold with marked positions of finds of graves with spurs.

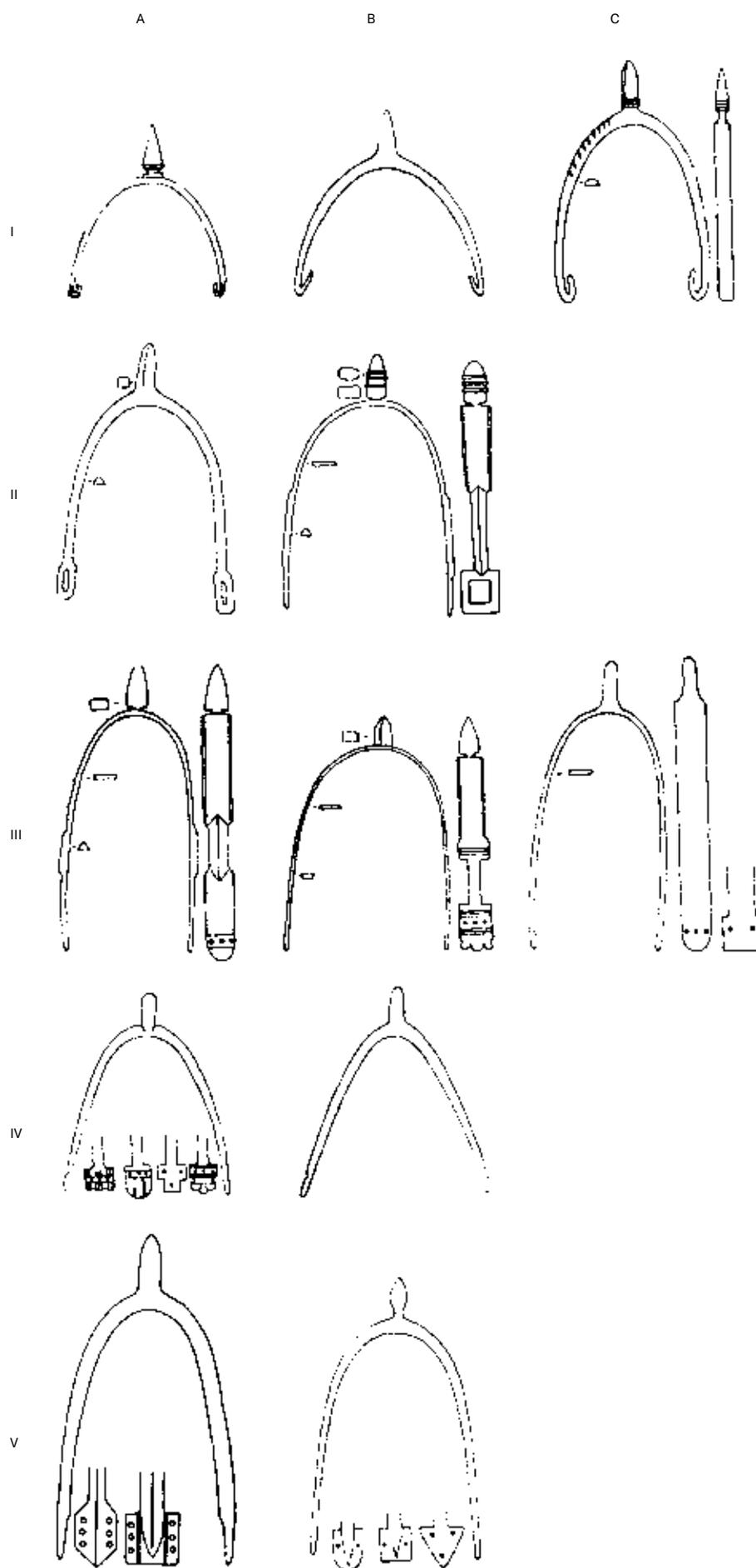


Fig. 156 Basic types of early medieval spurs according to Darina Bialeková (1977).

Legend: IA, IB, IC – hookspurs; IIA – eyelet spurs; IIB – spurs with a rectangular frame (buckle spurs); IIC – metal-strip spurs; IIIA, IIIB, IIIC – metal-strip spurs; IVA – spurs with three rivets on a horizontal groove on the end plate; VA – spurs with side rivets (Biskupija-Crkvina type); VB – spurs with simple plate in various shapes with one to four rivets and a long prick.

Mikulčice as well as other Great Moravian cemeteries is that except the above-mentioned bronze spurs, there was another pair found to the right of the man's foot. Although these spurs were made of iron, they bear the same shape and arm-ends as those more lavish spurs, and were accompanied by two iron buckles and iron loops (for further unique finds of spurs in grave, see Excursus 3.2.2).

Let us now explore the technological aspects of these luxury items. The most recent analyses surprisingly reveal they were cast from almost exclusively unalloyed copper, which is a relatively complex process that would have made it then more difficult to work the product. Representing another unexpected discovery, each spur consisted of three separately cast parts: two arms with a plate and a prick. The evidence that ostentatious cast spurs were made of three separate parts can be seen as well in the lead matrix of the Biskupija-Crkvina-type spurs found during a metal-detector survey at Mikulčice (see Excursus 3.2.3). All three parts of spurs from Grave 44 were connected by silver solder in the centre of the arms and the resulting shape was gilded all over. The plates were tongue-shaped featuring three rivets in a horizontal groove resting on a copper base. The wear on the gilding on the inside of the arms and the tip of the prick indicates intensive use - this theory is supported by the fact that one of the broken arms on each of the spurs was repaired, which involved soldering and underlaying both breaks with a copper sheet. This manufacturing process, which is apparent in the asymmetry of the arms on both spurs, was also applied on the spurs from Grave 50 of Church 6 (will be discussed later). However, this technique was not used on any of the other bronze spurs at Mikulčice, nor are we aware of it having been applied in any Western productions. Although, it should be noted that from there we have a very limited number of the corresponding type of spurs (featuring three, or rarely four, rivets in a horizontal groove on the end plate). This type was most likely made in the Carolingian territory, but with the exception of peripheral regions (particularly in the 9th century), these spurs were not placed into graves anymore. This type of spurs has not been indeed documented in outlying regions of the Carolingian Empire either, nor is it known of from the old Croatian (Dalmatian) territory, or from the Biskupija-Crkvina horizon, which has yielded impressive and lavishly decorated pieces (Fig. 158).<sup>8</sup> In few sporadic cases, it has been recorded in Lower Austria, Slovenia and, less frequently, in Bavaria, but primarily in areas settled by Slavs.<sup>9</sup>

However, an unquestionable Western influence can be detected in the parabolic shape of the arms, the overall composition of the engraved decoration, and the shape of the shorter, slightly conical prick ending in a cone. Here, the arms were divided into five segments; between the fourth and fifth segments, both connected to the end plate, the arm narrows significantly, a feature also observable in other ostentatious spurs. This distinctive narrowing most likely served a practical purpose, evidently associated with how the spurs fastened to the footwear.<sup>10</sup> A similar narrowing is characteristic for the group of the so-called "metal-strip" spurs, a type either contemporaneous with, or somewhat predating the type featuring plates with a transverse groove.<sup>11</sup> The individual segments are separated from one another by three narrow strips



Fig. 157 One from a pair of gilded copper spurs decorated with mask-like motifs from Mikulčice, Grave 44 near Church 2.

1 - General view, spur Inv. No. 594-4438/57; 2 - detail on masks on the arm; 3 - detail on plate with three rivets; 4 - detail on mask-decorated prick.

<sup>8</sup> Gabriel 1981, 245-258; 1988a, 110-116; Kleemann 2002, 126-129; Kind 2007, 543-612; Petrinec 2009, 192-203.

<sup>9</sup> Stamm 1995, 197; Pöllath 2002; Maurina 2006, 41-56; Kouřil - Tymonová 2013, 138-144; Robak 2013, 34; Nowotny 2018, 95-98.

<sup>10</sup> Cf. also Kavánová 1976, 25.

<sup>11</sup> Kouřil - Tymonová 2013, 141, incl. other ref.



Fig. 158 Set of luxury spurs with their buckles and strap-end from Biskupija-Crkvina (Croatia), basilica sarcophagus in the northern area of narthex.

decorated with a recessed zigzag pattern.<sup>12</sup> One exclusive motif that appears on all sections of the arms (ten times in total) and on the prick (four times) is that of a realistic human face viewed from the front (mask motif). The artist has accentuated the eyes, nose, beard and hair, the last feature is portrayed in a manner reminiscent of a ruler's crown (?). The central decorative features on the plates are two small crosses one on top of the other; around the edge, there are three small masks similar to those on the arms, again separated by a zigzag line. This is the so-called saltire (St Andrew's cross), moulded in low relief and resembling the letter X (meaning Christ in Greek) and a recessed isosceles Greek-type cross (crux

12 The pricks of certain Dalmatian lavish spurs from the Biskupija-Crkvina horizon are adorned with a sharp triangular zigzag (also known as wolf's teeth) (Belošević 1980; Jelovina 1986; Petrincec 2009; for a clear synopsis, Jurčević 2019, 78–81).

quadrata).<sup>13</sup> The small strap-ends and loops of the fastening sets are decorated and shaped in the same way; the masks (six in total) separated by a zigzag line can as well be found on the oval buckles. These fittings are also gilded to a high standard.

As mentioned previously, a second pair of similarly designed spurs was found in Grave 50 by Church 6, the two-apse rotunda (Fig. 159). They were worn by a tall man aged between 30 and 40 buried in a prestigious location very close to the southern wall of the main nave. Symbolising the individual's prominent status, besides this set of spurs, the grave contained a number of other valuable bronze items: gilded clasps in the shape of a pair of birds, a gilded strap-end, an engraved buckle with a plate behind the nape of the head and finally an odd bronze object whose purpose is unclear.<sup>14</sup> Unlike the previously mentioned spurs, this pair was cast from tin bronze, although again made up of three parts joined together by silver solder. They were then completely gilded, even though the gilding on the top of the four-sided prick with its conical ending and on the inner side of the arms is considerably worn, which suggests the spurs were used relatively frequently and for a long time. They are similar to the items from Grave 44 in terms of their size, parabolic shape and the shape of the prick. The engraved decoration on the symmetrical arms and the appearance of the plates, however, are different. The arms are accentuated by a central rib decorated with the motif of a fir twig (fish skeleton) running along their entire length, which gives them their triangular cross-section. According to certain researchers, this decorated rib moulding, appearing as well on other exclusive Mikulčice artefacts, could supplant the filigree decoration, which – albeit rarely – was used on spurs in the Carolingian milieu.<sup>15</sup> The arms are further divided into six decorative segments, using the same transverse ribs; the arm again narrows considerably between the fifth and sixth segments. The resulting twelve fields on each spur are filled with plant decoration (?), probably a half-palmette (?). This motif is also used on the four fields on the prick framed by a strip that also appears on the arms, and the same strip is around the perimeter of the unusually shaped plates. These have the shape of two connected ovals and bear the identical decoration as the arms and the prick. In this case, four rivets are inset on a base in a transverse groove, wrapped in filigree wire.

The other parts of the set – the tongue-shaped strap-end, which also features four rivets in a beaded wreath, and loop firmly attached to the buckle – are divided into four fields, the axis of which forms a cross, a reminiscent of a stylised figure – probably of the Saviour; a double zigzag line replaces the rivets on the loop. Exactly the same composition can also be found on the fittings from the Grave 100/VI of the same cemetery belonging to the wealthy rider.<sup>16</sup> The engraved decoration at the front is not entirely legible, although it is probably based on the overall decorative pattern of the item. It should be noted that the engraved technique also features on the buckle and strap-end (with four rivets) from the same grave, which most probably represent knee-length binding. The central



Fig. 159 One from a pair of gilded copper spurs decorated with raised floral decoration from Mikulčice Church 6, Grave 50.

1 – General view, spur Inv. No. 594-579/60; 2 – detail on plant decoration, probably a half-palmette on the arm; 3 – detail on plate with four rivets; 4 – detail on plant-decorated prick.

<sup>13</sup> The motif of a cross, which was relatively popular in Carolingian ornamentation, also caught indirectly on amongst the Moravian Slavs; for more details, see Robak 2013, 163-165, 171-176; 2019, 453-477; also Bialeková 1999, 109-123; Roganský 2009; Hanuliak – Pieta 2014, 138-151; Kouřil 2014, 102-113; Kouřil ed. 2014.

<sup>14</sup> For details, see Profantová 2003, 212-222; for the unusual object, see Macháček 2015a, 265-276.

<sup>15</sup> Profantová 2003; Kořta – Lutovský 2014, 84-87.

<sup>16</sup> Profantová 2003, 27-28.



Fig. 160 Some analogies to Great Moravian spurs from Carolingian territory.

1 - River Rhein near Mainz, Germany; 2 - Welbsleben, Germany; 3 - Hambacher Wald, Germany; 4 - Haithabu, Germany.

decorative motif here is a horizontal saltire,<sup>17</sup> which was also used in combination with a crux quadrata on the above-mentioned sets of spurs from Grave 44, but also, for example, on the strap-end from Grave 295 from from Church 3 (basilica) in Mikulčice.<sup>18</sup>

Both splendid pairs immediately attracted considerable and well-deserved attention when they were found. Over the years, many leading Czech and Slovak researchers have commented on their style, design, chronology and provenance. One of them, J. Poulík - the head of Mikulčice excavations - dated the spurs from Grave 44 to the middle of the 9th century considering them a product of a local workshop.<sup>19</sup> However, he later changed his opinion and dated them to the first quarter of that century, while upholding the theory that they were of local provenance. He claimed that especially the “masks” motif used as a principal artistic element was applied in the Middle Danube region particularly at the beginning and during the first half of the 9th century, and that the other accompanying items originated later.<sup>20</sup> Poulík also deemed the spurs from Grave 50/VI to be a local product made in the same workshop during the first half of the 9th century,<sup>21</sup> and he pointed out certain Western analogies.<sup>22</sup> The spurs were also covered by B. Kavánová in her work on Slavic spurs found in the territory of the former Czechoslovakia. She affirmed Poulík’s conclusions, considering the spurs a local product - probably inspired by the Rhine complex - dating to the early 9th century.<sup>23</sup> J. Dekan deemed them a sophisticated piece of work, representing a synthesis of both Carolingian and domestic traditions.<sup>24</sup> Proposing quite different theory regarding the chronology, Z. Klanica preferred the later Great Moravian period, stating that the spurs from Grave 44 are older than those from Grave 50/VI; no further light was shed on their provenance, however.<sup>25</sup> In the comprehensive study of the necropolis by Church 6, N. Profantová dated both pairs, including the fittings, to before the mid-9th century, speculating that they, together with the goods from Grave 100/VI, were produced by one, probably Moravian, workshop, and were buried shortly after the middle of the century; she also found parallels with various Western spurs.<sup>26</sup> Her opinion was opposed by J. Košta, who, following a detailed analysis of the chronology of that cemetery, concluded more or less in agreement with Klanica that the spurs from Grave 44 were made no earlier than the middle of the 9th century. Košta considered the spurs from Grave 50/VI (and Grave 100/VI from the same necropolis) to have been made during the second half of the 9th century; he deemed it possible they may have originated in the Great Moravia.<sup>27</sup> A similar opinion had been given earlier by H. Chorvátová.<sup>28</sup> From the well-known foreign authors who have commented on the Mikulčice spurs, we mention J. Werner who considered them local products inspired by Carolingian models and made during the reign of the East Frankish ruler Louis the German.<sup>29</sup> The spurs from Grave 44 were also indirectly mentioned by M. Schulze-Dörrlamm, who dated the burials by Church 2

17 Kouřil ed. 2014, 380.

18 Ibid, 371; Klanica et al. 2019, 34-35.

19 Poulík 1957, 298.

20 Poulík 1967, 96.

21 Poulík 1963, 41-44.

22 Poulík 1967, 85-86.

23 Kavánová 1976, 20, 25.

24 Dekan 1976, 130.

25 Klanica 1985c, 126-127; 2006a, 49.

26 Profantová 2003, 61.

27 Košta 2008, 287-289; Košta - Lutovský 2014, 84.

28 Chorvátová 2004, 221-229.

29 Werner 1969, 505-506.

(including this grave) to the end of the 9th or beginning of the 10th century, and spurs from the Grave 50 (but also 100) to the second third of the 9th century.<sup>30</sup>

To provide a brief summary of the annotated views on the spurs and their fittings in question, we can more or less see a consensus they were generally inspired by the Western models, tending towards the theory they are of local provenance. However, a relatively significant discrepancy in their dating remains, with researchers yet to deliver a convincing construction or material analysis of these key finds.

If we are to seek suitable analogies, therefore, we must look further west to Carolingian territory. Several spurs found there, albeit dated earlier (roughly to the second or last third of the 8th century), can almost certainly be considered precursors and ideological models to the artefacts produced in Mikulčice. In terms of general characteristics, these Western models are slightly parabolic in shape, cast from bronze and often gilded. The semioval cross-section arms tend to end in a narrow loops/eyelets profiled on the outside (*Schlaufensporen/Ösensporen*); a significant feature is that the arms are divided into segments, fitted with a shorter prick, generally conical, which in rare cases is profiled at the base. The chip-carved decoration is based on the so-called Anglo-Carolingian animal style, or the decoration features spiral (volute) or plant ornamentation, combined in exceptional cases with small moulded circular bulges arranged in a regular pattern. Unfortunately, the great majority of these spurs have been found without accompanying strap fittings, such as from River Rhein near Mainz (with an iron prick), at Welbsleben (Welbshausen), Hambacher Wald (Forst), Barleben (including one loop), Sursee, Pfahlheim-Letten and Haithabu (Fig. 160).<sup>31</sup> In common with the Carolingian set, the Mikulčice finds are parabolic in shape, of approximately the same size, and display similar segmentation of the arms (albeit not particularly distinctive in certain Western spurs such as those found at Sursee), decorative techniques and motifs. Important is the use of a Christian symbol – the crosses on the sets serving an ideological as well as decorative purpose – and also the gilded surface. The distinguishing element, on the other hand, is in the arms narrowing towards the bottom, as appears (although with decoration) only on the sturdier spur from Hambacher Wald near Jülich; here, the arms are also distinctively segmented, featuring (amongst other things) small niello isosceles crosses.<sup>32</sup> Further differences can be observed in how the arms end in plates, and in the shape and decoration of the short thick prick, unconventionally set into the arc of the arms. We should note that the short thick prick in this shape was used in the Western milieu up from the beginning of the second third of the 9th century.<sup>33</sup> According to X-ray and XRF analyses, the Mikulčice spurs were assembled from three separate cast parts with copper used as the starting material for the spurs from Grave 44 and tin bronze for the spurs from Grave 50.<sup>34</sup> In terms of decoration, the use of the mask motif (stylised human heads) is most likely to have been inspired by



Fig. 161 One from a pair of bronze spurs with raised decoration from Mikulčice, Grave 433 near Church 3.

1 – General view, spur Inv. No. 594-792b/57; 2 – detail on the metal-strip arm; 3 – detail on plate with three rivets; 4 – detail on undecorated long prick.

30 Schulze-Dörrlamm 1995, 571; 2009a, 750.

31 Haseloff 1951, 36–37; Stein 1967, 53, 285, 365, 378; Vierck 1984, 387–388; Schulze-Dörrlamm 1998, 136; Nawroth 2001, 198; Wamers 2005, 57–61; Eggenstein et al. eds. 2008.

32 Haseloff 1951, 36–37; Pohle – van den Brink – Ayooghi eds. 2014, 46–47.

33 Schulze-Dörrlamm 1993, 579.

34 However, we lack any comparison with spectral analyses of Western spurs. Tin bronze was also used on some of the pre-Great Moravian hooked spurs (widely acknowledged to have been made locally), and on the late phase of Avar cast bronzes; for more details on this, see Kouřil 2019a, 181–200.

Western precursors,<sup>35</sup> or could have been drawn from the traditions of the Carpathian Basin, respectively from Byzantine art, where depictions of human faces were relatively popular. It is assumed that the local anthropomorphic depictions featured rather a face without a beard or hair, but with a moustache.<sup>36</sup> As well the palmette and semi-palmette motifs (and plant ornamentation in general) are of course known from the Carolingian milieu,<sup>37</sup> but they also frequently appear on artefacts (usually on a stamped background) from the Late Avar and Great Moravian period, surviving in the Carpathian Basin until the late 10th century.<sup>38</sup>

Based on our analysis, we support the opinion that both outstanding Mikulčice pairs are undoubtedly heavily influenced by Carolingian craftsmanship. However, given their particular morphology, the casting and assembly techniques used and their chronology, we can conclude that they were produced at a local workshop. Nevertheless, the craftsmen who made them, working for the highest local elites, must have been very familiar with complex Western-type of spurs. Therefore, it is possible to assume that those craftsmen were of foreign origin. Such theory was advanced by the S. Brather who suggested that spurs with plates and rivets in a transverse groove were made by foreign masters working in the Great Moravia during the 9th century. This is possible for the time when these spurs began to be produced, although it is hard to imagine it being the case after several subsequent decades of mass production.<sup>39</sup> Considering the segmented arms ending in an eyelet had gone out of fashion in the Western milieu at the beginning or at the latest during the first third of the 9th century, and then the Moravian spurs of somewhat different quality could have been theoretically made no earlier than sometime during the 830s to 850s.

The spurs with plates and most frequently with three rivets in a transverse groove represent a type common particularly during the second half of the 9th century, peaking during the third quarter of the same century. This type, which was the most widespread within Great Moravia, is assumed to continue to be used even in the 10th century. It is also a distinct possibility that both Mikulčice ostentatious pairs, as well as certain other spurs (e.g. from Grave 232 by Church 2 and Grave 100 by Church 6) were the very first models of this type to be made.<sup>40</sup> The plates, although shaped somewhat differently, can be seen on spurs found in the Great Moravia, which are referred to as the Biskupija-Crkvina type, generally with three rivets set vertically on both their edges. These spurs are dated as earlier than the type we study – here they are characteristic primarily for the second quarter of the 9th century. Their fastening system must have been different and also more difficult considering the number of rivets and their peculiar placement. But although they do share intrinsic features in common with their Carolingian forerunners, only a few specimens with rivets arranged in this way have been found in the former imperial territory.<sup>41</sup>

As regards the chronology of Grave 44, the accompanying grave goods date it relatively reliably to the second half or final third of the 9th century, which makes it evidently not one of the earliest in the cemetery. In our opinion, the only exception are the repaired copper spurs that had been clearly used for a relatively

long time and could be – to a certain extent – considered as ceremonial. The pair was likely inherited by the young man and interred as a symbol of his hereditary high social status when he himself had actually mostly worn the iron spurs in daily practice. Concerning the spurs and their fittings from Grave 50/VI and the calf strap mounts made in the same manner from Grave 100/VI, we believe they were the products of the same workshop that made the “mask” spurs, probably dating to before or around the middle of the 9th century.

There is a clear link between the above-mentioned specimens and other outstanding bronze spurs with the relevant sets excavated from Grave 433 by the three-nave basilica (Church 3), the biggest Great Moravian sacral building (Fig. 161). The grave, sunken into an earlier settlement feature, was situated at a distance of approximately 8 m from the north-east corner of the shrine. It contained the remains of a young man aged between 20 and 30. Evidence of the importance and status of the deceased is apparent, besides the spurs, in the quality of the rest of the grave goods, notable lavishly decorated silver tongue-shaped strap-end and another smaller silver strap-end with an ancient gem secondary set into it.<sup>42</sup>

The parabolic-shaped tin-bronze spurs consists of two parts. The arms and the prick were cast as one piece, and the tongue-shaped plates were cast separately. The arms have a triangular cross-section, the longer cylindrical prick that narrows towards the base tapers into a cone at the top. The plates, which feature engraved decoration, are attached by three rivets in a transverse groove; the rivets, which lay on a copper base, are wrapped with a thin wire and a similar copper base was also used on the inner side. The buckles and loops of the fastening straps are also cast and decorated with engraved plant ornamentation (with palmettes as the central motif). Traces of gilding can be seen only occasionally, with the exception of the copper bases under the rivets of the plates, most notably on the plate of the spur with a substantial part of one arm missing.<sup>43</sup> The spur was most probably interred in the grave in a fragmented state as a broken artefact. Once again, the spurs show the influence of Western designs, however, they were likely made in a local workshop sometime during the second quarter or around the middle of the 9th century, a period believed to coincide with the first burials by the basilica.<sup>44</sup>

### Children's spurs

The fourth and last pair made from non-ferrous metal are the small spurs with metal-strip arms from Grave 471 by Church 3 (Fig. 162). The small grave pit was dug just next to the north-eastern corner of the church and contained the remains of a child, approximately two years old. The grave goods included just one complete spur, and only one arm of the second specimen was preserved; it also contained the fittings from these spurs' fasteners as well as two pear-shaped silver spherical buttons decorated with a motif of multiple palmettes.<sup>45</sup> The arms on the parabolic spurs have a roof-shaped (slightly concave) cross-section. The arms narrow considerably toward the lower third of their length before rounding off at the end and feature three rivets underlaid by a silver plate on the outer

35 E.g. Benda 1966, 12–13, Fig. 16, 17.

36 Profantová 2011, 91–92.

37 Lennartsson 1997–1998, esp. 453–455.

38 Dekan 1976, 123; Bollók 2015b, 225 sq.

39 Brather 2001, 300.

40 Kouřil – Tymonová 2013, 141–143.

41 Koch 1982, 68–69; Gabriel 1988a, 110–113; Kouřil 2005, 86; Robak 2017, 120.

42 Klanica et al. 2019, 68–69.

43 The arm was evidently not placed in the grave at all; it is unlikely that it would have been missed when excavating the grave.

44 Kouřil – Tymonová 2013, 142.

45 Klanica et al. 2019, 81.

side and copper plate on the inner. The spurs are made from brass, as are the sets, which feature distinctively profiled buckles, oval roof-shaped loops, and tongue-/roof-shaped strap-ends with three rivets on a silver underlay wrapped with silver twisted/beaded wire. The arms are decorated with wrought indentations arranged in dense rows. The short cuboid prick, with its rounded top and five notches on the edges, is set into the arc of the arms and clenched on the inner side.

Over recent years, increasing attention has focused on the chronology of the metal-strip spurs. On the one hand, the usage of such spurs is associated primarily with the second half to the end of the 9th century or even with the early 10th century,<sup>46</sup> while other equally legitimate evidence found at various cemeteries in Mikulčice, particularly by Church 3, seems to favour a dating of just before the middle of the 9th century. Similarly, based on analysis of the stratigraphic situation, Grave 471 indicates dating to around the mid-9th century.<sup>47</sup> Yet again, we may seek the origin and precursors of these metal-strip spurs in the production of Western workshops, where they occur already in the late Merovingian period, as well as in the later Carolingian necropoleis.<sup>48</sup> The spurs from the grave of a small child (*infans* I) are of a key importance in understanding the social stratification of the Great Moravian society. They are undoubtedly symbolic proof that the boy was a member of the ruling class, and also indicate that this privileged status was hereditary, including its legal basis. This is not a unique phenomenon, miniature objects: spurs or axes, or spears, and other items indicating noble status, have also been found in various children's graves, primarily at the main Great Moravian sites.<sup>49</sup>

Another burial that again yielded some extraordinary spurs is Grave 437 situated in close proximity to Grave 471 (Fig. 163). Found by the feet of a boy aged between 3 and 4 were a pair of small spurs accompanied by buckles and loops. Besides a small knife, the other grave goods included a splendid silver spherical button found by the boy's head, which perhaps originally contained a glass insert.<sup>50</sup> The spurs were most probably forged from one strip of iron (?) and at the ends of the arms, semioval in cross-section, there were tongue-shaped plates with three rivets in a transverse groove. The arms of the entire preserved piece are clearly asymmetrical; at the second spur, one plate is absent. Again, it seems that this is how the spurs were interred in the grave. There are also no strap-ends in the sets and the end is missing from the conical cylindrical prick on both pieces. This set belongs to the inlaid iron spurs that make up Group II. The outer surface of the spurs is densely inlaid with silver, with the overlapping parts beaten down into the surface, giving the impression that the entire piece was made of silver; this surface would have been far more resistant to abrasion than if it were merely silver-plated. The silver rivets on the plates were also underlaid with a silver base and wrapped with a beaded wreath made of the same material; copper plate was used on the inner side. The buckle frames and loops were decorated in a similar manner to the spurs themselves; the plate behind the nape of the head and mandrel are evidently made from silver-plated iron. This



Fig. 162 One from a pair of small spurs with metal-strip arms from Mikulčice, children's Grave 471 near Church 3.  
1 - General view, spur Inv. No. 594-1025a/57; 2 - detail on the undecorated arm; 3 - detail on plate with silver base and three silver rivets; 4 - detail on undecorated prick.

46 Košta 2008, 280-282.

47 Kavanová 2012, 169-170, 182.

48 E.g. Stein 1967, 236-237; Schnitzler - Arbogast - Frey 2009, 407-408.

49 E.g. Hrubý 1955; Kalousek 1971, 133-134; Profantová 2005, 313-334; Galuška 2012a, 104; Klíma 2019, 119; Nowotny 2019, 215; for a clear synopsis, see Klápště 2005, 24-27; 2012, 18-20; cf. e.g. Goßler 2013, 86; Borzová - Molnárová 2017, 113-128; Profantová - Tomková 2018, 273.

50 Klanica et al. 2019, 69-70.



Fig. 163 One from a pair of iron spurs thickly inlaid with silver from Mikulčice, Grave 437 near Church 3.  
 1 - General view, spur Inv. No. 594-1127a/57; 2 - detail on the arm with silver inlaying; 3 - detail on tonque-shaped plate with three rivets in a transverse groove; 4 - detail on conical cylindrical prickle.

type of decoration has a long tradition in the Merovingian and Carolingian milieu, where we know of many products designed in this manner.

### Inlaid iron spurs

Western influences can also be seen in the two pairs of inlaid iron spurs from the graves of adults, which are some of the most spectacular relics of this type to have been found at Mikulčice. The first of them comes from the deep and wood-reinforced Grave 232 from cemetery near Church 2 (Fig. 164).<sup>51</sup> This pair belonged to an adult male. Apart from these and the corresponding buckles with a loop and strap-end, the grave was free of any other goods.<sup>52</sup> The shape of the spurs is only slightly parabolic and is more reminiscent of the letter U. The arms, rectangular in cross-section, end in smaller square plates with three horizontally recessed rivets. These rest on a gilded copper base and are wrapped in copper beaded wire. The short prismatic prickle ends in a pyramid shape at the top, is fitted into the arc of the arms and is clenched on the inner side. The decoration, featuring some masterful inlaying, is wholly unique. The arms are divided up into four basic fields, while they are visibly narrower between the third and fourth fields, in the section connecting to the end plate, where no decoration is used. In the centre of these fields, as in the centre of three sides of the prickle (the fourth side, which faced the ground when the spurs were worn and was thus not visible, is undecorated), there is a shallow recessed oval marked out by a beaten copper beaded wire; rising from this are four copper-plated circular points spaced so as to evoke the shape of a cross. This Greek isosceles cross is clearly marked on the interspaces separating the individual fields of the arms. The hot-gilded copper decoration in the form of small raised points also features on the plates in two rows. The thin plate inserted between the prickle and the arc of the arms is also decorated in the same way around the perimeter (with a copper beaded wire). The remaining surface of the arms is filled with a grid pattern made using silver inlaying. Exactly the same system is also used on the complete set.

These inlaid iron spurs share a number of common characteristics with the gilded bronze spurs from Graves 44 and 50. In particular they are roughly of the same shape, have a short, relatively robust pointed prickle, segmentation on the arms, including the distinctive undecorated narrowing in the bottom third, the arms end in plates with three rivets in a transverse groove, and the arms and the prickle are covered in decoration throughout.<sup>53</sup> However, somewhat puzzling is the contrast in the grave goods, which are basically absent in the Grave 232. The use of two (or more) different metal elements when applying the inlay is rather unique in our region. Nevertheless, it was used in Staré Město - Na Valách on the fine spurs from Graves 224/51 and 266/49 (both pairs are the Biskupija-Crkvina type). While the first are thought to have been made at the end of the 8th century, the second could have been placed in the grave early in the first half of the 9th century; it is assumed that both are of local provenance.<sup>54</sup> If we look at Western European relics of material culture, we can see a number of analogies for inlaid spurs, including the use of a combination of two

51 Werner 1969, 506.

52 Poulik 1957, 326.

53 Cf. also Kavánová 1976, 20.

54 Galuška 1998b, 95-107; 1999, 84-108; for a critical view of this, see Robak 2017, 120-124.

different materials, already in the Merovingian period<sup>55</sup> and of course later. For example, the spur from Ellwangen-Pfahlheim, which dates from the third quarter of the 7th century, is inlaid with two different metals, and roughly in the middle of the arms there are small round dots, in which inlay is used to accentuate an isosceles cross. These products were apparently some sort of “prototypes”, which were subsequently modified by the craftsmen and probably served as inspiration for the spurs made in Bašovce or Nitra.<sup>56</sup> It is thought that the so-called *Streifenmotiv* was then inspired primarily from the Bavarian region.<sup>57</sup>

Apparently, the spurs from Grave 232 are the evidence of very fine and precise craftsmanship; and although we cannot find any direct foreign precursors for them, it is more or less clear that they were based on the work of Western workshops. If we claim that the bronze gilded spurs were made locally, we could perhaps then apply this theory to the spurs from this grave, including the preserved set. Given its position and depth, we may then consider the burial to be one of the oldest at the necropolis by Church 2, even taking into account that we lack any other accompanying items. The spurs indicate that they were made and interred in the grave quite early, perhaps around the middle of the 9th century, although J. Poulík dated it later, to the last four decades of that century.<sup>58</sup> These, together with the gilded pairs, were early examples of an extensive group of spurs with three rivets in a transverse groove, which became most widespread in the Great Moravia and gradually also found their way into neighbouring regions.<sup>59</sup>

The last unique inlaid spurs from Mikulčice (Group II) are the iron spurs from Grave 100 by Church 6 (Fig. 165).<sup>60</sup> The grave is positioned almost 3 m to the south of the eastern apse and contained the remains of a deceased male (*juvenis*, aged between 14 and 16). The rich grave goods, including a silver spherical button with bulges and granulation as well as complete sets of calf strap mounts featuring engraved decoration (see also Grave 50) indicate, together with the spurs and their sets, that this young man held important social status. Parabolic in shape and size, the spurs are an exact copy of the pairs from Graves 50 and 44, while their tongue-shaped plates - featuring three rivets set in a transverse groove - associate them with the latter mentioned pair. The short cylindrical prick, that narrows towards the base, smoothed on top, was evidently forged together with the arms from one piece of an iron bar (?). The entire surface of the spurs, including the prick and the relevant metal parts of the fasteners, is adorned with silver inlay consisting of sets of three semicircles and quarter-circles arranged in a scaly pattern. This is again a motif that was familiar during the Merovingian period, and which clearly survived for a relatively long time. The exact same decoration was used, for example, on the head of the *spatha* from around the middle of the 7th century found in Grave 20/1893 at the cemetery in Pfahlheim (there, the inlay work used silver and copper).<sup>61</sup> In Moravia this motif was applied on the iron spurs with tongue-shaped plates from Grave 225 at Pohansko near Břeclav

55 E.g. Christlein 1973, 151; Nawroth 2001, 56.

56 Hanuliak - Pieta 2014, 147.

57 Stein 1967, 30.

58 Poulík 1957, 326. It should be noted that structurally similar spurs decorated with inlays (identical x-motif) were discovered in the boy's Grave 1/2000 in Zalavár-Vársziget at Church of St Hadrian; the burial may be assumed to have taken place around the middle or during the second third of the 9th century (Szóke 2008, 49; 2010a, 580; 2010b, 42-43; Kouril - Tymonová 2013, 142).

59 Cf. also Wachowski 1986-1987, 60-61.

60 Profantová 2003, 27-28.

61 Nawroth 2001, 24-25.



Fig. 164 One from a pair of iron inlaid spurs from Mikulčice, Grave 232 near Church 2.

1 - General view, spur Inv. No. 594-1647a/56; 2 - detail on the arm with masterful inlaying; 3 - detail on smaller square plate with three rivets wrapped in copper beaded wire; 4 - detail on short prick ending in a pyramid shape.



Fig. 165 One from a pair of iron spurs decorated with silver inlay from Mikulčice, Grave 100 near Church 6.

1 - General view, spur Inv. No. 594-646/60; 2 - detail on the arm with silver inlay consisting of sets of semi- and quarter-circles arranged in a scaly pattern; 3 - detail on tongue shaped plates with three rivets; 4 - detail on short cylindrical prick.

(only prick features different decoration). Although the inlying here was only done with copper,<sup>62</sup> the fact that the two pairs are identical indicates that they were made in the same workshop, probably at Mikulčice. With this workshop, as already mentioned above, we can associate other spurs described in this essay (bronze and iron, with the exception of the hookspurs).

## Conclusion

Let us now briefly summarise our analysis of these ostentatious Mikulčice spurs and their sets. With the exception of the oldest bronze spurs with hooks bent inwards, all the other exceptional spurs were found predominantly in graves of young males and children, which were located in the immediate vicinity of important sacral buildings. Unfortunately, it is not possible to provide clear details of the grave pits, their dimensions, modifications and any wooden (or iron) elements (with the exception of Grave 232). What is significant is the relatively rich accompanying material, which contains (again except for Grave 232) decorated bronze gilded or silver artefacts, precious stones and calf strap mounts (see Essay 3.7). Notably, none of the graves was found to contain weapons; the custom of placing weapons into graves had apparently been abandoned in the previous years. The grave goods as a whole clearly indicate that the individuals buried here were high-born, claiming a hereditary privileged status in the Great Moravian society; this is particularly evident in the cases of the children buried with miniature spurs. Interestingly, there seems to have been a general acceptance of placing even damaged spurs in graves, which is especially surprising in the case of the children's pairs; there were also a number of missing or incomplete sets, although this is nothing unusual for the Great Moravian necropoleis.<sup>63</sup>

The spurs assessed here are unique originals, for which we currently have no identical parallels. Even so, it is clear that any precursors must be sought in the Carolingian milieu; most probably in the products made by the Rhine workshops. However, it seems to us that these are not direct imports. The spurs could have been made (imitated) locally, perhaps by a foreign craftsman - a specialist familiar with Western designs and with the necessary skills and techniques to carry out the work, even though the method used to cast and assemble them, especially the bronze gilded items, after all seems to be quite different. In our opinion, in the most cases they were made before or around the middle of the 9th century. In any case, they testify the efforts made by the emerging Moravian aristocracy (the magnates) who used them as symbols of their high status, as part of their attempt to compete with the Western elites, and establish a clear hierarchy within local Moravian society. The spurs may even also be interpreted as a means of co-creating and forming of their identity.<sup>64</sup>

62 Benda 1966, Fig. 50; Kalousek 1971, 133-135.

63 Cf. Kouřil - Tymonová 2013, 141.

64 Recently on the topic, e.g. see Bilogrivić 2019, 113-147.

## 3.2.1 excursus

# Spurs and the Central-European Slavs

– Pavel Kouřil

It is not yet clear precisely when the Slavs began to use spurs. The oldest of the pieces attributed to this ethnic group are the spurs with arms ending in hooks, mostly bent inwards and less frequently outwards. It is generally accepted that late Merovingian as well as Carolingian influences, historically inspired by the Late Roman traditions, played a significant role in their origin and production. We consider it unlikely any influence was derived from the Western Baltics, particularly the southern Sub-Carpathians of Curvature. The more comprehensive of the early research dates their first use to the 6th and 7th centuries, and their more lavish bronze successors to around the middle of the 8th century.<sup>1</sup> However, this chronology has proved rather problematic and not entirely conclusive, especially when applied to the Bohemian lands, Slovakia and areas populated by the North-Western Slavs.<sup>2</sup> The most recent in-depth analysis dates the Great Moravian bronze and, less definitively, iron spurs to the middle to late 8th century and possibly beyond into the first decades of the following century.<sup>3</sup>

Of the 17 bronze hookspurs and component parts discovered in Moravia, over half (10) were found in Mikulčice (Group I). Characterised by a high degree of craftsmanship and a certain level of uniformity (Fig. 166), the hookspurs were all cast using two-piece moulds and fitted without pricks. Based on X-ray fluorescence analysis, most were made from leaded bronze and various other metals, predominantly tin and a small amount of zinc. The decoration on the arms and pricks (horizontal grooves, fir-twig/hourglass motifs) was made by filling; in only a few cases, moulded ribs made of rolled metal feature alongside the filed grooves. We cannot rule out the possibility that some ornamentation was wrought, while in rare cases the moulded decoration may have also been cast. The surfaces of some of the spurs were also tin-plated, with one possibly silver-plated.<sup>4</sup>

In the Great Moravian region, unlike in Slavic areas further north and east, the bronze and iron hookspurs (Groups I, II and III) were swiftly supplanted by more advanced types, or could have been synchronous with them for a certain amount of time. Based on our current knowledge, nothing indicates they survived in Moravia beyond the 9th century. The Slavic/Moravian elites dispensed with hookspurs relatively quickly in favour of more ornate, lavish models found in Carolingian milieu. This type of prestige spur, distinguished by a short prick and parabolic arms ending in plates, has been found in several rich elite graves in the church necropoleis of Mikulčice.



Fig. 166 Bronze hookspurs and their parts from Mikulčice.

1 – Inv. No. 594-391/72; 2 – Inv. No. 594-390/72; 3 – Inv. No. 594-571/83;  
4 – Inv. No. 594-1360/60; 5 – Inv. No. 594-836/69; 6 – Inv. No. 594-572/83.

1 E.g. Žak – Maćkowiak-Kotkowska 1988; Wadył 2018, 14–15.

2 Profantová 2016, 23, 35–36; Jakubčinová 2017, 101–102; Biermann 2019, 25; Wadył 2018, 14–15.

3 Kouřil 2019a, 181–200.

4 For more details, see Kouřil 2019a.

## 3.2.2 excursus

# Grave Goods That Include Two Pairs of Spurs

– Pavel Kouřil



Finds of two pairs of spurs in a single grave are limited to two central Great Moravian sites: Grave 44 at Mikulčice cemetery (described previously) and Graves 119/AZ and 50/50 at the necropolis in Staré Město - Na Valách<sup>1</sup> (Fig. 167). Both of the burials at Staré Město are considered “warrior graves” containing rich grave goods. Occupied by a tall, well-built man, the first warrior Grave (119/AZ) contained a pair of spurs (found with an accompanying set) attached to the boot of the deceased’s right foot, another pair lying next to his left foot, a type-H sword with a short lenticular brass-inlaid crossguard, one long and one short iron spear, a typical Moravian warrior axe (*bradatice*) and a bucket. Along with the remains of a largely un-preserved male skeleton, the second warrior Grave (50/50) contained a pair of spurs with remains of leather by the man’s legs, another pair of spurs lying in what would have been the left-palm position, a gold-ribbed spherical button, calf strap mounts (with buckles and strap-ends), a square fitting and another standalone strap-end (by his waist). These four pairs of spurs from Staré Město were all made of iron and featured paddle-shaped arms with orthogonal endings; unfortunately, however, the poor condition of the items prevents us from commenting on any other aspects of the decoration or technical design. Worth mentioning for being somewhat comparable are the goods found in Grave 1/2003 at Modrá near Staré Město. Here, in addition to a pair of large iron spurs (featuring two-rivet paddle-shaped plates) with accompanying sets, two further spur arms - both ending in orthogonal plates and again featuring two rivets - were found in a pouch together with other small objects at the site of the deceased’s left palm: it is thought these arms belonged to a pair of different spurs; on the whole, though, the burial has only average grave goods.<sup>2</sup> Disregarding the occasional and rather inconclusive finds of three spurs among the goods of a single grave, as far as we know no other burials containing two pairs of spurs dating to this period have been found in Bohemia or Slovakia, nor have we encountered any similar instances in areas of Central or Eastern Europe.

<sup>1</sup> Hrubý 1955, 87, 381, 473.

<sup>2</sup> Galuška 2012a, 91-110.

Fig. 167 Two spur pairs found in Mikulčice, Grave 44 near Church 2.

### 3.2.3 excursus

## Lead Spur Matrix

– Lumír Poláček

The as yet unpublished lead spur arm matrix DP 10/2010 was found during systematic detector prospecting of the Mikulčice stronghold in 2010. The artefact was found in the north-western part of the outer bailey (Fig. 155). Since the depth of the find was within reach of modern ploughing (up to 25 cm), no more information is available concerning the archaeological context of the artefact. Regardless of this, the find is exceptional. First, direct evidence of metal-casting production is generally rare in Mikulčice and Great Moravia. Second, this matrix is a unique and illustrative example of how particular art and craft product patterns could be transferred between the individual cultural and geographical areas in their time. Moreover, it is a type of spur previously unknown from Mikulčice and close to ostentatious specimens of Carolingian spurs from the Biskupija-Crkvina site in Croatia. The lead used clearly identifies the artefact as a working cast of a mould for the item – under no circumstances was it a part of a functional spur.

The spur arm was found whole but deformed (Fig. 168). This was evidently secondary deformation, as is understandable for an artefact made of soft lead material. The end plate of the spur was slightly damaged during the excavation. A recent cast of the item was made from liquid polyurethane to reconstruct the original appearance of the spur. During its production, the cast was artificially shaped into the presumed original parabolic shape of the spur arms; for documentation purposes, it was also artificially straightened into a “straight shape” (Fig. 169).

The modern cast makes it possible to reconstruct the original form of the matrix and the corresponding spur. The length of the arm is 112 mm when straightened; the height of the reconstructed, parabolically shaped arm is c. 97 mm. The dimensions of the low rectangular end plate are 28×18 mm; the places for two vertically oriented rows of rivets are merely suggested by hollows no deeper than 1 mm. Except for a shorter (1.3 cm) undecorated section in the bottom part, the whole spur arm of the semicircular cross-section is richly decorated (Fig. 170). The decoration consists of six repeating fields divided by an undecorated section (five fields above and one below). The decoration on all the fields consists of a similar vegetal tendril ornament. The individual fields of the arm are divided by a flat stripe with a cross distinctively rendered in relief in the central part. The decoration of the end plate is similar. The tendril decoration of the matrix is close to the ornaments of Carolingian spurs from Croatia, especially from a sarcophagus in the northern area of the narthex of the basilica in Biskupija-Crkvina (Fig. 158; 170 on the right).<sup>1</sup> In contrast to the matrix, the decoration of the pair of spurs is limited to the end plates and a small part of the arms close to the prick. On the other hand, the segmentation of the decorative fields of the matrix precisely



Fig. 168 Spur arm lead matrix.

Inv. No. DP 10/2010 from the outer bailey in Mikulčice.

<sup>1</sup> Petrinec 2009, 79, 196, Pl. 108.



Fig. 169 A recent polyurethane cast of the matrix. It was gradually straightened during its solidification after the removal from the mould into the likely original (authentic) and an artificial "straight" form.

corresponds to the decorative scheme of the above-mentioned ostentatious gilded bronze spurs from Graves 44 and 50/VI, especially those from Grave 50 near Church 6 in Mikulčice (5 + 1 decorative fields; see Fig. 157; 159).

The arm in question is one of three technological parts, from which ostentatious cast spurs from Mikulčice were constructed (Graves 44 and 50/VI). The spur has three vertically placed small rivets on both sides of the end plates, denoted as a Biskupija-Crkvina type. Thus, the categorised spurs are usually dated to the second quarter of the 9th century in the domestic milieu, which means that they should represent a time horizon preceding the occurrence of the above-mentioned ostentatious bronze spurs from Graves 44 and 50/VI (see Essay 3.2). Its decoration makes the matrix from Mikulčice closest to the ostentatious early Carolingian spurs from Biskupija-Crkvina (Fig. 158). The lead matrix might have found its way to Mikulčice precisely from there – from the ancient Croatian area or directly from the Frankish Empire. Whether it was brought by a craftsman or trader who came from those regions or was acquired by a member of the local elites who used it is a model to order the production of a similar spur from local craftsmen is a question that will probably never be answered. Be it as it may, it is the first evidence of a spur of this type in Mikulčice that, moreover, indicates the possibility of local production according to a foreign model. If real spurs produced from this or a similar matrix existed in 9th-century Mikulčice, they might have been the precursors of both the aforementioned ostentatious pairs of gilded bronze spurs from Graves 44 and 50/VI in Mikulčice and formed a missing link in their genesis.



Fig. 170 Detail of the spur arm decoration (left) compared with the decoration of the spur from Biskupija-Crkvina (right).



Golden earring from Mikulčice, the wealthy female Grave 505 near Church 3, the three-nave basilica.

# 3.3

## Earrings as Typical Representatives of the “International” Fashion

– Simon Ungerman

In the Great Moravia, earrings were included exclusively in the female burials. Unlike in some nomadic ethnic groups, Great Moravian men did not wear this type of jewellery. In archaeological literature, the term “earring” is used for an ornament defined mostly by its shape: the basic feature is an oval- or circle-shaped wire fitted with a pendant or other elements. They are usually found directly next to skulls in the graves; however, this does not allow us to tell if they were worn in the earlobe like modern-time earrings. Especially in cases when a woman or girl was buried with several pairs of earrings, we can assume that at least some of them were attached to a headdress, a stripe of cloth or leather that was part of her hairstyle.

### Typology

Considering shape, luxurious Great Moravian earrings are a hugely variable group of jewellery. V. Hrubý and B. Dostál, the founders of modern archaeological research of Great Moravia, divided earrings into five basic groups (Fig. 171)<sup>1</sup> with the main criterion being the shape and construction of the major decorative element, which includes grapes, beads, basket beads, columns and crescents. Let us briefly introduce you these five groups of earrings.

1) Earrings with a grape pendant (Fig. 171: 1-5) are characterised by the elongated and granulated element, which consists of granules visually resembling grapes. The grape pendant is basically cylindrical in shape and finished with a larger granule. It can be single- or double-sided, either outside (Fig. 171: 1) or both inside and outside of the lower arc (Fig. 171: 2-5). The grape granules are occasionally decorated with other, substantially smaller granules – either single or made into pyramids (Fig. 171: 5). Sometimes the wire of the lower arc is left plain (Fig. 171: 1, 2), but more often it is decorated with filigree wire (Fig. 171: 3-5) or with rows of granules in addition (Fig. 171: 3, 5). There is also a rare decoration of mesh made from thin wires, which continues on the upper arc (cf. Fig. 171: 6).

2) Bead earrings are usually fitted with four beads – hollow globes made from two sheet metal hemispheres (Fig. 171: 7-11). When there are more beads, they cover the entire lower arc (Fig. 171: 12) and even continue on the upper arc of the earring. The beads are always decorated, even if it is just a beaded wire covering the seam between the hemispheres (Fig. 171: 11). But more common is granulated geometrical decoration (Fig. 171: 7, 8, 10, 12) or the covering of the surface of the bead with granules, each of them is fitted in a tiny circle made of fine round wire (Fig. 171: 9).

3) The main decorative element of basket earrings (Fig. 171: 13-18) are globules made from filigree wire, so-called basket beads. As with sheet metal beads, basket beads consist of two hemispheres, each of them is composed of several pretzel-shaped beaded wires (rarely circles from the same wire). The minimum amount of basket beads per earring is four (Fig. 171: 18). If there is more of them, they cover the entire lower arc (Fig. 171: 13, 17) or they constitute a biconical accumulation under the lower arc (Fig. 171: 14-16).

4) The earrings with column-shaped pendants (Fig. 171: 19-23) are characterised with the only decorative element, which is a pendant made of two globular beads connected with an elongated link. The link has the shape of a cylinder made from granules (Fig. 171: 19, 20), a sheet metal cylinder (Fig. 171: 23) or circles made from wire of rectangular cross-section (Fig. 171: 21, 22). The entire column-shaped pendant is decorated with granulation.

5) The fifth group of earrings contains a crescent-shaped element in the lower arc, the so-called lunula (Fig. 171: 24-29). Most often, the lunula is made from filigree wires (Fig. 171: 25, 28, 29), occasionally from sheet metal (Fig. 171: 24, 26, 27). This group of earrings is even more diverse than the other above-mentioned groups due to the use of chains (Fig. 171: 24) and construction elements typical for the previous groups: grape pendant (Fig. 171: 27-29), bead (Fig. 171: 26) and basket bead (Fig. 171: 25).

The five basic earring groups are further divided into types and variants based on other construction and decorative elements. Hrubý’s and Dostál’s typology has become generally accepted, however, it is not the only possible one. As well, the classification of earrings with more construction elements (for instance, both grape pendants and beads in Fig. 171: 6) will always depend on our point of view and which one will be preferred over the other. Nevertheless, a typology in itself should not be the main objective of the research, rather a means to approach and study the archaeological material.

### Origin

As early as the first half of the 20th century, Czechoslovak scholars began to research the origins of Great Moravian luxury jewellery. At that time, it seemed improbable that jewellery decorated with such elaborate techniques as granulation and filigree had been made directly in Great Moravia. L. Niederle, who used to be the main specialist in this field of study, distinguished two origin-types: “Byzantine” and “Oriental”. He assumed that Byzantine-type jewellery – mainly earrings with grape pendant – was made in Constantinople or in the Eastern Mediterranean. In general, he associated this group with the use of gold, the so-called coarse granulation (see Excursus 3.3.2), and precious stones. On the other hand, the bead and basket bead earrings made from silver

<sup>1</sup> Hrubý 1955, 228-246; Dostál 1966, 35-41.



and decorated with finer (“poppy-seed”) granulation or filigree were considered “Oriental”. Niederle assumed these were made in Mesopotamia (East Syria and Iraq) and Turkestan – by which he probably meant what is today the territory of Central Asian states east from the Caspian Sea.<sup>2</sup>

Under Niederle’s influence, V. Hrubý, who processed the lavish jewellery from the site Staré Město – Na Valách, described the gold and silver earrings found there as “earrings of Byzantine-Oriental character”. He hypothesised that most of them were manufactured in local workshops, but he did not deem it probable that such jewellery was produced entirely independently in Moravia. Hrubý assumed an external impulse in the form of foreign goldsmiths who brought their knowledge and tradition to the Great Moravia.<sup>3</sup> In his time and even later throughout the second half of the 20th century, there were no reliable analogies from the Mediterranean area or elsewhere, which would suggest where such foreign craftsmen came from. Therefore, the prevailing interpretation amongst the Czechoslovak researchers was that luxurious Great Moravian jewellery was produced locally and only drew on the Late Antiquity traditions. The elaborate decorative technologies necessary to create such jewellery were supposed to be brought into Great Moravia by goldsmiths from the Avar Khaganate, which demise dates at the end of the 8th and beginning of the 9th century.<sup>4</sup>

Here, the researchers were confused by a certain “optical illusion”. The demise of the Avar Khaganate coincided with the beginning of inhumation burials in Moravia. The members of the Great Moravian elites were buried with ostentatious grave goods including jewellery, which might have made the impression that this type of ornaments started to be made just at that time. The more probable is that the elites wore the gold and silver jewellery earlier, before the introduction of inhumation. Unfortunately, there are no 8th-century archaeological records, especially the burial grounds, which would reflect the existence of such jewels in this period.

Nevertheless, it does not seem that the question of the origin of Great Moravian jewellery can be answered simply and unambiguously. This is mainly because this large group of jewellery consists of many types of earrings, finger rings, buttons and pendants. It would be useful to track the origin of very precisely defined types – this is the only basis on which general conclusions can be made. The starting point is always a spatial analysis of the occurrence of a given type in the broadest geographical context possible – at least on a European scale, taking into account the different nature of archaeological record and the state of research in different parts of Europe. Despite that, it has become clear that some of the types have a very broad area of occurrence. For instance, earrings with four beads have been found in many European countries, from Sweden to Greece.<sup>5</sup> If the Great Moravian specimens (Fig. 176: 1–6 in Excursus 3.3.2) are part of such a spatially broad group of finds,

the only possible interpretation is that this type of jewellery has its origin in a single important centre, which was hardly elsewhere than in the Byzantine Empire. Also a chronological analysis concluded that this jewellery had long been made in Byzantine territory, at least during 8th–11th centuries, repeatedly inspiring and influencing the production of similar earrings all over South-East and Central Europe (see also Essay 3.4).

On the other hand, if a certain type or several closely related types occur only in the territory of Great Moravia, it is an important sign (but not an unquestionable evidence) that they were of local origin. An example of such jewellery are earrings with column-shaped pendant (Fig. 171: 19–23), which have been found only in Moravia, Slovakia and sporadically in Zalavár (Hungary).<sup>6</sup> It can be hypothesised that a Moravian goldsmith had the idea of connecting two same-size beads with another element and hang such pendant onto an earring without any other embellishments, the novelty caught on and spread in several variants. However, it should be noted that after the downfall of Great Moravia, this type of earrings sank into oblivion.

As for the genesis of different types of Great Moravian earrings, both origins can be considered – the adaptation of a foreign model (or a subsequent modification of its shape and decoration) and the creating of a new, specific Great Moravian type. Nonetheless, it must be emphasised that the first option was much more frequent. Great Moravian earrings and other types of adornments were more dependent on Byzantine jewellery production than previously assumed by the Czechoslovak researchers. Numerous new finds made in the Balkan region and in the core of the Byzantine Empire (mainly Greece) significantly changed our knowledge of the types of jewellery that were common there – and that they cannot be of Great Moravian origin.<sup>7</sup>

The influence of “Oriental” jewellery seems quite problematic now, although older literature considered it to have been very strong (see above). Little is known about early medieval jewellery in the Islamic countries in the Near East and Central Asia. This is caused by the fact that the most of the available artefacts are mainly in museums and private collections, which lack the archaeological context. Provenance and dating can be usually ascertained only approximately, based on style analysis. The number of preserved earrings that can be reliably dated into the 10th century or before is very low, and moreover, they are not similar to the Great Moravian jewellery at all. Significantly more of preserved pieces of Islamic earrings are dated to the 11th century and later, however, they do not show traits, which could have survived from the previous era and would suggest a closer link with Great Moravian earrings.<sup>8</sup>

Current research emphasises that the early medieval Islamic jewellery did not develop in isolation but absorbed the older traditions (Late Antique, Sasanian, etc.), and was constantly influenced by the Byzantine jewellery. Several types of earrings, which were both used in Byzantine and Islamic regions and differed only in

2 Niederle 1926–1927; 1930.

3 Hrubý 1955, 228–246, 308–312.

4 Benda 1978; Turčan 1982; Štefanovičová 1984; 1995b; 2004; cf. Szőke 2010b, 38–41. For more details, see Ungerman 2017, 24–27.

5 E.g. Mesterházy 1991, 146–153; Kóčka-Krenz 1993, 66–67; Zoll-Adamikowa 1999, 103–105; Grigorov 2007, 23–26, Fig. 9: 11–13; 10; 11: 3–10; 46; Petrínek 2009, 249–253; Sokol 2016, 175, 182–186; Ungerman in press a.

6 Dostál 1966, 40, Fig. 10: 1–14; Holčík 1991, 94, Pl. 3, 11; Szőke 2014, Fig. 43.

7 Ungerman 2017, esp. 27–30; Ungerman in press a.

8 Cf. Jenkins – Keene 1982; Zimmer 1991; von Gladiss 1998; Spink – Ogden 2013; all incl. ref.

Fig. 171 Selected types of the five main groups of earrings belonging to the production sphere of the luxury Great Moravian jewellery according to Bořivoj Dostál.

minor modifications, are documented mainly for a period from the 10th to 13th centuries. For example, there are lunula earrings decorated with cloisonné enamel (Fig. 172) or basket-shaped earrings (Fig. 173) which – with their one large pendant – are much different from the Great Moravian earrings with basket beads (Fig. 171: 13–18). Both of these types occur mostly in the Eastern Mediterranean, and in the Near East respectively, and considering their later dating, could not influence the Great Moravian jewellery.<sup>9</sup> Further conclusions (and hopefully new ones will be drawn from future research) are based on the comparison of technologies used in different regions. The main feature of Islamic jewellery decoration was a rope twist with granulation. On the contrary, the beaded wire is largely absent and in cases where it occurs it is interpreted as a direct Byzantine influence.<sup>10</sup> The beaded wire belongs to the fundamental decoration techniques of the Great Moravian jewellery (see Essay 2.6). This clearly shows that goldsmiths working in the Great Moravia must have taken over this type of filigree wire from a jewellery tradition other than Islamic (cf. Excursus 3.3.1). The inspiration in this regard (and surely not only in this) was most likely Byzantine jewellery.

#### *Imitatio imperii* – spreading of luxury jewellery

Let us revisit earrings of the Byzantine tradition. The area in Central and South-East Europe on which they occur is remarkably large. However, the mechanisms that enabled the propagation of the jewellery can be only hypothesised. The archaeological record provides no direct evidence, written sources are silent about this phenomenon and scientific research has not deeply focused on it. The reason for this is probably that early medieval jewellery is rarely analysed in detail on a broader geographic basis than that which is defined by the borders of modern states, although superregional expansion is characteristic of luxury jewellery in general – it is not confined to the Early Middle Ages. Also Hellenistic and Roman jewellery occurred on a large territory as it expanded from developed ancient empires to the “barbarian” peoples beyond their borders. This continued into the Early Middle Ages when luxury goods including jewellery travelled from the Byzantine Empire (and the Mediterranean in general) to the Lombards, Franks, Avars, Slavs and other ethnic groups; the Mediterranean jewellery then went on to be manufactured and imitated by those peoples.<sup>11</sup>

The primary prerequisite for the spreading of Byzantine luxurious jewellery was the fact that it was impressive and attractive, made from precious metals and sophisticatedly decorated. Apart from its appearance, the awareness of its origin must have also played an important role. For centuries, Byzantine Empire had a great political power with the richest court culture in Europe. The elites of other ethnic groups looked up to it and did their best to imitate it. One of the possibilities was by a mastery of Byzantine jewellery.

The Great Moravian elites was no exception. It can be only hypothesised where and when it came into contact with Byzantine jewellery for the first time, however, it is highly probable that it was in the 8th century at the latest. At that time, a Moravian elites must have been clearly defined, which is proven by the central



Fig. 172 Crescent-shaped earring decorated with enamel, which was made in the Byzantine style but has an Arabic inscription.



Fig. 173 Gold basket bead earrings worn in the Byzantine Empire and the Muslim Near East in the 10th–12th centuries.

9 Langó 2010; Bosselmann-Ruickbie 2011, 25–26, 41–44, 244–253; Spink – Ogden 2013, 100–101, 114–121.

10 Von Gladiss 1998, 50; Spink – Ogden 2013, 68–70, 124–129.

11 Ungerman 2018b, esp. 30–31 incl. ref.

sites – Mikulčice being the leading one – where hooked spurs and cast fittings from multiple-part belts of Avar type have been found.<sup>12</sup> Moravia, which was in close proximity to the Avar Khaganate, was not strong enough yet to have its independent politics and so had to learn to get along with the Khaganate. In the archaeological record, the physical evidence for finding a *modus vivendi* is the adoption of the Avar-type belt by the Great Moravians elites. By wearing it, the highest-ranking Moravians expressed their acceptance of belonging to the Avar power sphere. At the same time, there was an effort to imitate the appearance of the Avar elites. In any case, if the elites of the two power formations were in direct contact – and it is difficult to imagine that they were not – the Moravians must have been acquainted with luxury Avar jewellery. Recent research shows that Avar material culture was under strong Byzantine influence. This concerned not only the shape and decoration of belt fittings,<sup>13</sup> but also of women’s jewellery, for example, earrings with pyramidal pendants and star-shaped earrings. These were adopted by the Avars in the same or a very similar form to Mediterranean types.<sup>14</sup> Thanks to the Avars, the Moravians were able to acquaint themselves with some types of Mediterranean jewellery.

This is not to say that the Moravians were limited to the Avar Khaganate in this matter. A general attribute of elites is the acquisition of superregional contacts that reach substantially further than those of the common population. In the Early Middle Ages, noblemen took part in long war campaigns and in diplomatic negotiations in foreign countries, and met with envoys and visitors from abroad. Some young women from aristocratic and ruling families were married into a distant country, making the relations between the two countries more intensive. However, without written sources, all such superregional contacts can be proven only exceptionally.<sup>15</sup> Members of the elites had the most opportunities to find out about the jewellery worn in other countries, and they also had the wealth needed to attract foreign goldsmiths who were able to pass on the necessary knowledge to local apprentices and masters in the case where they had not had such knowledge and skills before. On the other hand, long-distance trade is not so important in this context as it does not allow custom production of luxury jewellery based on the specific orders of individual customers.<sup>16</sup>

## Status

Early medieval societies were significantly patriarchal and Great Moravia was certainly not an exception. The head of each household (*familia*), a noble or a farming family including related individuals and also unrelated servants, was a man. The social status of the wife, children and relatives of such a man depended on his legal status, wealth, abilities and the respect he had in the community.<sup>17</sup> The social status of individuals was directly reflected in their overall appearance – the clothes they wore, the utensils they used etc. The male members of the Great Moravian elites expressed their status through such things as elaborate weapons, garments made from precious textiles, and belts with decorated fittings (see Essay 3.6).

The wives and daughters of aristocrats typically wore luxurious clothes and jewellery made from precious metals. Gold and silver jewellery items had high material value and were a form of property accumulation. They were easy to carry and could be melted or exchanged for other valuable goods if necessary. For this reason, they might have played an important role as a wedding gift from a groom to the bride or as a dowry that she got from her parents (see Excursus 3.3.1).<sup>18</sup> In the Early Middle Ages, these material aspects were inextricably linked with immaterial and symbolic aspects – a set of jewels from precious metals adorning a girl or a woman was an immediate and telling proof of her high social status.

It is of course difficult to estimate how large a jewellery set of a Great Moravian female aristocrat could be. A certain idea is offered by the richest female graves in Mikulčice, Pohansko near Břeclav and the Staré Město agglomeration – these graves contain 10 to 15 (or even more) pieces of gold and/or silver jewellery.<sup>19</sup> However, the actual number of jewels owned by the buried women must have been substantially greater as it is not likely that they would be buried with all their belongings in the grave and that the family members would not inherit anything (see Essay 3.4). Gallus Anonymus, in a chronicle describing the court of the Polish duke Bolesław I the Brave (992–1025) wrote about the ladies-in-waiting who “were so burdened with gold crowns, necklaces, wire bracelets on their arms and hems embroidered with gold and precious stones so heavy that they would not be able to carry the weight of the metals without the help from others”. This is of course a hyperbole by a writer who wanted to emphasize the immense power and wealth of the Polish ruler, the beneficiaries of whom were the people around him.<sup>20</sup> On the other hand, the quoted excerpt is to a certain extent based on reality. Early medieval nobility was characterised by strong rivalry, because its members did not have their position secured and the respect they had in society depended entirely on them (see Excursus 1.2.2). The court milieu amplified such rivalry even more. The resulting competition concerned not only the male members of the elites, but also the women. For female aristocrats, this rivalry might have had the form of showing up at the court in the most luxurious clothing and the richest jewellery possible.<sup>21</sup> Apart from the amount of jewellery, the material and precision with which it was made was crucial.

12 Profantová 1992; Klanica 1995; Zábojník 2005; Poláček 2008e; Galuška 2013, 41–97; Kouřil 2007; 2019a; and others.

13 Daim 2010; Daim et al. 2010, incl. ref.

14 Types I and II according to Čilinská 1975, 65, 67–72, Fig. 1; Garam 1995, 276–280; 2001, 20–23, 28–29, Pl. 4–6, 10; Staššíková–Štukovská 1999; Balogh 2014.

15 Curta 2015, 13; Winger 2017.

16 Cf. Schulze-Dörrlamm 2010b, 247; Winger 2017, 193.

17 Fichtenau 1984, 134–137; Devroey 2006, 83–94.

18 Cf. Fichtenau 1984, 141–143; Siegmund 1998, 113, 122; Bougard – Feller – Le Jan eds. 2002; Hardt 2011, 9 incl. ref.

19 E.g. Mikulčice, Graves 328, 470, 505 near Church 3, 470, 505 (Klanica et al. 2019, 42–43, 80–81, 94–95, Pl. 36, 90, 104); Pohansko near Břeclav, Graves 63, 135, 158, 256 (Kalousek 1971, 53–55, 89–90, 103–105, 148–149, Fig. 63, 135, 158, 256); Staré Město – Na Valách, Graves 24/48, 251/49, 282/49, 193/51 etc. (Hrubý 1955, 413, 450–451, 455–456, 518–519, Pl. 55: 1–13; 61: 1–13; 66: 1–10, 15; 74: 8, 9; 84: 1–8; Galuška 2013, Fig. 187, 200, 202, 220); Uherské Hradiště – Sady, Grave 209/59 (Galuška 1996, 137, Fig. 88: 1–17; 2013, Fig. 203, 204).

20 Gallus 2003, I, 12, 56–57; cf. Hardt 2008, 745–746.

21 Hardt 2011, 9–10.

### 3.3.1 excursus

## Jewellery Making Tradition and the Value of Craftsmanship

– Šimon Ungerman

There is an interesting fact about the Mikulčice gold earrings: their filigree decoration was made exclusively from beaded wire. Its manufacture was very demanding – to achieve the same shape and size of all segments – they had to be made one by one (see Essay 2.6). On the other hand, rope twist – whose manufacture was fast and easy – was never used in gold earrings and only exceptionally in silver ones (Fig. 174). Rope-twist wire decoration, for instance on finger rings, looks impressive, as the twists are distinct and regular (see Essay 3.4). Despite this, the producers of the Mikulčice gold earrings did not use rope twist, but opted for the beaded wire, which was much more difficult to make. It almost seems that it used to be desirable “to spend as much time as possible” on making earrings. This can be incomprehensible to modern people who aim for the highest possible manufacturing effectiveness. Early medieval people, however, had a different mindset in many aspects.<sup>1</sup> Most probably, there was a certain jewellery-making tradition that was passed on from the master jewellers to their disciples who continued with the tradition their entire professional life (unless they moved to a distant destination where they had to adapt to a different local demand). Such a tradition determined what different types of jewellery should look like; this concerned the established type of technology and the craftsmen did not feel the need to simplify the production process significantly. There is no doubt that different jewellery-making traditions were either successively practised or coexisted in early medieval Europe. At that time, each region was characterised by a certain spectrum of jewellery types and a certain set of technologies used. An example of two different jewellery-making traditions is the Great Moravian jewellery and the jewellery found in “hack-silver” hoards across northern parts of Europe, including Poland, and dated to the 10th and 11th centuries.<sup>2</sup> They differ not only in the selection of types but also technologically. For instance, all filigree decoration in the “hack-silver” hoards is made from rope twist and corrugated band while beaded wire is not present. Of course, the existence of such traditions and regional circuits does not rule out the existence of superregional types, such as the earrings with four beads (Fig. 176). However, a detailed analysis has clearly shown that they were produced differently in each region – their size, design and decoration are different, which corresponds with the differences in the jewellery-making technologies used (see Excursus 3.3.2).

Let us get back to the effectiveness of production, which is closely linked with both the price of jewellery and of the goldsmiths’ work. Even if we assume that the final form of jewellery was influenced by a certain tradition, it must be also acknowledged that the goldsmiths were part of an early medieval economy and



Fig. 174 Exceptional use of a rope twist on the Great Moravian silver earring (see the lower arc). Silver earring with four beads, Mikulčice-Klášteřísko, Grave 1298.

<sup>1</sup> Cf. Gurevič 1978.  
<sup>2</sup> Kóčka-Krenz 1993.

could not ignore the law of supply and demand. We can draw on the claims by H. Steuer, a recognised expert on early medieval trade, concerning the determination of jewellery price. He states “...well until into modern times, jewellery made of precious metal was valued and paid for by weight, not according to the artistry or design of the piece”.<sup>3</sup> This hypothesis is supported by numerous “hack-silver” hoards containing fragments of earrings, bracelets, torcs and other jewellery. Commonly, at some point a jewel’s owner would start seeing it as a mere piece of precious metal with the only criterion for the determination of its price being its weight and metal purity. However, this is just one side of the story. It is necessary to distinguish the acquisition price of the jewels and their price in the subsequent sale, as they were most probably considerably different. We can assume that the goldsmiths worked on orders and thus probably got the necessary material (or an equivalent required for its purchase), and subsequently remuneration for the manufacturing. Thus, the acquisition price was the sum of the costs of material and work. The client also would have paid for a timely delivery and an agreed quality of the product, which had to meet the customer’s aesthetic requirements. When a jewel later went out of fashion or changed owner, it might have well lost its original function in the new context and its price would begin to be based merely on its weight and purity of metal.

We can only speculate about the way in which the elites remunerated goldsmiths who worked for them and the way salaries were ascertained (see Essay 2.6). In case of Great Moravian gold earrings, it might have been derived from the weight of metal. As a rule of thumb, the higher the weight of raw metal, the higher the number of components (pieces of round and filigree wire, sheet metal and granules) - and by extension the amount of labour necessary. In any case, goldsmiths were highly qualified specialists who were pampered by the elites. Their wages were high enough for them not to feel the urge to take their business elsewhere. This might explain why the goldsmiths did not mind a few extra hours spent on a pair of luxury earrings and why they decorated them

with beaded wire although the rope twist would have had looked very similar. If there was anyone else - apart from the goldsmiths themselves - able to appreciate the minute differences between the types of filigree wire, in the Great Moravia, such people would have been the members of the elites. Let us picture an aristocrat showing up in the society with a new pair of gold earrings. The jewels would have immediately become an object of careful assessment by other noble women. They were not only able to estimate their weight, but they also probably knew how time-consuming - and thus costly - each decorative technique was. A pair of easy-to-make gold earrings might have astonished a simple villager, but not a knowledgeable aristocrat.

To learn more about the perception of the value and function of jewellery, it is very instructive to study other parts of early medieval Europe and the Near East where considerably more written sources have been preserved. We can start with the sources from Muslim countries - these are primarily wedding contracts, the oldest of which date to the 10th century. These contracts were concluded especially by the members of the ruling elites and rich urban middle class. Their purpose was, among others, to list a bride’s dowry. The lists primarily contained jewellery and coins from precious metals, dresses, veils, blankets, carpets, and silver, copper or crystal vessels, and toiletries. Jewellery included a variety of functional types that the women used for adorning their bodies, literally from head to toe: diadems, hairpins, earrings, arm rings, bracelets and anklet rings. A jewellery set for a bride from the top classes weighed several kilograms. The listing of the bride’s dowry was linked with a property custom: jewellery in particular remained the bride’s personal property that only she could dispose of; it served as a financial reserve, in the event, for instance, of her husband’s death.

In these wedding contracts, the price of jewellery constituted key information. It was expressed in two ways: particularly for larger pieces, net weight was entered by the notary, while for jewellery containing precious stones and pearls, the current market

3 Steuer 2010, 215.



Fig. 175 Pair of gold crescent-shaped earrings, Fatimid jewellery. Provenance unknown, probably Egypt or Syria, 11th century.

price was used. However, the fact that both values were expressed in gold dinars, which correspond to 4.5 grams of gold, does not make the distinction between them much clearer although both types of record certainly reflected actual social practice. Particularly abnormally heavy jewellery, which was not suitable for prolonged wearing, served primarily the accumulation of wealth. Although such jewellery sometimes contained decoration, the cost of making it was probably negligible compared to the material value of the piece. The customer could expect that in case of a sale of such massive pieces the buyer would not pay much more than the value of the material. The second type of data - the market value of the jewels - reflected not only the price of the material used, but also the work done. This is the best illustrated by objects listed in the wedding contracts that were not made from precious materials (e.g. a jewellery box decorated with glazed ceramics) but were still assigned a high price that reflected a great amount of labour.<sup>4</sup>

Unfortunately, neither the Muslim sources provide data that would reveal the proportion of jewellery purchase price that was paid for a goldsmith's work. A. von Gladiss estimated it at one-quarter of the total price. However, this estimate is based on a very limited number of observations and it is uncertain to what extent it can be generalised. Nevertheless, a quarter of the purchase price would certainly make a decent wage. This would correspond with the words of a Muslim historian who claimed that rich and cultured citizens were able to appreciate not only the precious material from which jewellery was made, but also sophisticated craftsmanship. It can be therefore assumed that such customers did not tend to skimp on the remuneration for top craftsmen. On the other hand, opposite pressures also existed in some Muslim societies. Conservative religious leaders in particular urged craftsmen in general to be content with low profits and wages. There also was the risk that a sale of a jewel at a price significantly higher than the price of material would be perceived as usury. This concerned solely Muslim goldsmiths - no such restrictions applied to Christians and Jews.<sup>5</sup>

4 Von Gladiss 1998, 21-27.

5 Ibid, 27, 43, 67.

### 3.3.2 excursus

## Imports or Local Imitations?

– Simon Ungerman



Fig. 176 Earrings with four beads are the most widespread type of bead earrings in Great Moravia.

1 – Silver earring from Dolní Věstonice, Grave 742/57; 2 – golden earring from Mikulčice, Grave 505 near Church 3; 3 – silver earring from Mikulčice-Kostelisko, Grave 1871; 4 – golden earring from Staré Město – Na Valách, Grave 76/48; 5 – gilded copper-alloy earring from Staré Město – Na Valách, Grave 33/48; 6 – gilded silver earring from Staré Město – Na Valách, Grave 151/50.

When studying the origin of the Great Moravian jewellery, the following question is of fundamental importance: how to differentiate between earrings that were imported into the Great Moravia, and those produced there. The first step in finding an answer to this question is to determine the frequency of occurrence of individual types. These, however, have to be defined as precisely as possible. If a specific type is represented by a relatively high number of pieces (or is found in a high number of graves), it is mostly a local product. It is hardly possible that all local demand for a given type could be satisfied by imports. To give an example, earrings with four beads decorated by the so-called coarse-grained granulation (Fig. 176: 3) are the most widespread type of bead earrings in the Great Moravia. Another argument in favour of their local origin is the unified size, as the height of complete pieces lies in the surprisingly narrow range of 2.6 to 2.9 cm.<sup>1</sup> On the contrary, earrings which are found in one or a very few graves all over the Great Moravian territory are much more likely to be imported.

In more general terms, to reliably distinguish real imports from their true local imitations is difficult (for jewellery as well as other types of objects). Earrings with occasional occurrence need a more detailed shape analysis, even on the level of individual construction elements. This means focusing on the geographical distribution of such elements (are they found in other regions too?) as well as on identifying elements that were (or were not) adopted by producers of the types reliably associated with the Great Moravia. And even if we mark some pieces as imports, a certain degree of doubt will remain. This is due to another circumstance that needs to be addressed – the chronological aspect. The fact that a given type is found in a relatively high number of graves speaks for its long-term popularity, not only its local provenance. On the contrary, another type with a rare occurrence can be interpreted as being chronologically sensitive, which means that it was being used only for a short period of time and thus is rather suitable for dating than the types with a long-term occurrence. Nevertheless, a short-term occurrence does not necessarily mean that a given piece can be marked as an import.

In this context, several rich female graves uncovered mainly in the Staré Město agglomeration are of key importance. The grave goods include gold or silver earrings which are practically unknown in the rest of the Great Moravian territory. To give an example, the Grave 193/51 at Staré Město – Na Valách site contained, among other things, three pairs of gold earrings (Fig. 177: 1-3).<sup>2</sup> The pair with eight beads is completely unique for Moravia. Lunula earrings with (originally) three beads were only found in one more grave, situated in the Staré Město agglomeration as well (Uherské Hradiště – Sady,

<sup>1</sup> Ungerman in press a.

<sup>2</sup> Hrubý 1955, 518–519, Pl. 84: 1–8; Galuška 2013, Fig. 202.

Grave 209/59).<sup>3</sup> The third pair, earrings with a grape pendant, is notable for its decorated upper arc, another relatively rare feature. This grave and other similar ones are of a considerable chronological significance, as they come from a period around the end of the 8th and beginning of the 9th century when inhumation burial was adopted in the South and East Moravia. Therefore, these graves make it possible for us to learn about the oldest archaeologically detectable layer of luxury jewellery in the Great Moravian territory.<sup>4</sup>

It is equally interesting that many construction elements of the earrings from these graves are seen in contemporary earrings found in the Carpathian Basin and the Balkans – these two regions were strongly influenced by the Mediterranean. This makes us believe that noble Moravian women (or goldsmiths in their service) were aware of the trends in contemporary jewellery making no later than the end of the 8th and beginning of the 9th century, but most likely before. Therefore, jewels from the oldest Great Moravian graves cannot be automatically identified as imports, as some of them may have been made locally. Even in the 8th century, the pre-Great Moravian elites must have had artisans in their service and certainly was not solely dependent on imports.

Let us now focus on some selected types of earrings from the oldest Great Moravian graves (and their construction elements) which could be imported, or which exactly copied the contemporary Mediterranean jewellery. The lower arc of the bead earrings from the above-mentioned Grave 193/51 in Staré Město – Na Valách is covered with four smaller beads. There are also three beads slightly larger above them; the largest bead is located below the lower arc (Fig. 177: 3). We see the same construction principle on the pair from the Grave 11 in Wartmannstetten, Lower Austria (Fig. 178: 1). The entire grave goods were previously classified as the Great Moravian jewellery, but recent research suggests that the Mediterranean may be more likely a place of origin.<sup>5</sup> A cast imitation found at Okorš site, Bulgaria, of a type to which also pieces from Wartmannstetten belong to, speaks in favour of this theory (Fig. 178: 2).<sup>6</sup>

A very rich Grave 209/59 in Uherské Hradiště – Sady contained a pair of gold earrings with a double-sided grape pendant finished by a sea pearl at each end; the same decoration was used at the top of the upper arc (Fig. 179: 1).<sup>7</sup> Another distinctive feature of these earrings is the covering of three segments of the ring with fine wire mesh. The very use of genuine pearls proves the fact that the earrings were imported from the Mediterranean – or that at least their producer was strongly linked to this region (the person may have come from there or had contacts there).<sup>8</sup> We know more gold earrings of this type from the Staré Město agglomeration. The pearls, however, were not preserved (most likely due to their organic origin): only empty wire split pins for threading the pearls remain.<sup>9</sup> Other such specimens from this site as well as from Mikulčice have a more simple design as their ring lacks braiding or other filigree decoration (Fig. 179: 2).<sup>10</sup> We know a very few contemporary Byzantine types with pearls – they include, for example, a gold earring from



Fig. 177 Grave goods from the 193/51 female grave in Staré Město – Na Valách.

Golden earrings from this grave, which comes from a period around the end of the 8th century, are practically unknown or rare in the rest of the Great Moravian territory.

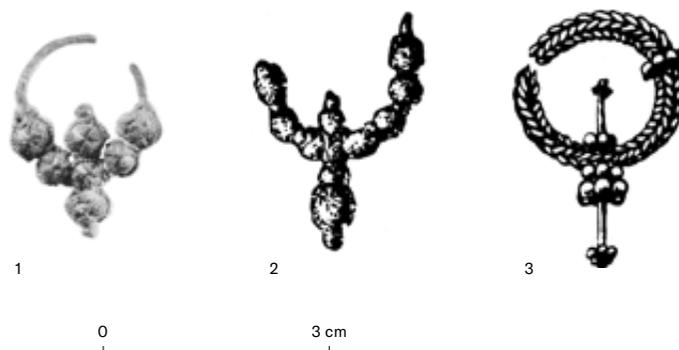


Fig. 178 Mediterranean earrings comparable with the oldest and rare Great Moravian exemplars.

1 – Bead earring from Grave 11 in Wartmannstetten in Lower Austria; 2 – cast bronze earring from Okorš, Bulgaria; 3 – golden earring from the Late Avar necropolis at Nagypall I, Grave 54, Hungary.

3 Galuška 1996, 137, Fig. 88: 11-14; 2013, Fig. 203, 212.

4 Ungerman 2017, 20-23 incl. ref.

5 Hampl 1961, 26-30, Fig. 14-18; Ungerman 2017, 71-73.

6 Atanasov – Grigorov 2005, Pl. 4: 9; Atanasov – Iotov – Mihajlov 2011, 233, Fig. 12: o.

7 Mrázek 2000, 34.

8 Galuška 1996, 137, Fig. 88: 7, 8; cf. Bosselmann-Ruickbie 2011, 80.

9 Staré Město – Na Valách, Grave 51/50, 103/50 (Hrubý 1955, 473-474, 480, Pl. 67: 6; 73: 15, 16; Galuška 2013, Fig. 129). For the earring without the decoration of the upper arc, see Staré Město – Špitálky, Grave 15 (Poulik 1955, 320, Fig. 19: 1).

10 Uherské Hradiště – Sady, Grave 86/59 (Galuška 1996, Pl. 82: 13, 14); Mikulčice, Graves 240 and 683 near Church 3 (Klanica et al. 2019, 28, 141, Fig. 17: 5; 163: 3/683).



Fig. 179 Earrings of the Mediterranean origin with a double-sided grape pendant finished with pearls or their imitations.

1 - Golden earring decorated with real pearls from Grave 209/59 in Uherské Hradiště - Sady; 2 - golden earring from Mikulčice, Grave 683 near Church 3, originally probably decorated with pearls; 3 - golden earring from the treasure found in Donji Petrovci, Serbia; 4 - golden earring from Grave 43 of the Avar burial ground in Želovce, Slovakia; 5, 6 - two single golden earrings from Grave 27 near the Great Basilica of Pliska, Bulgaria.

the Donji Petrovci treasure in Vojvodina, Serbia (Fig. 179: 3), whose deposition is dated to the end of the 8th century.<sup>11</sup> The construction method of these earrings was also copied in the Late Avar earrings found in large numbers in the Carpathian Basin. However, glass beads in these cases replaced the sea pearls, as those were expensive and difficult to obtain (Fig. 179: 4).<sup>12</sup>

The real pearls were used for making ostentatious earrings in Byzantine Empire even in the 9th and 10th century as well. However, only exceptional cases are documented in the territory of the Empire, as luxurious jewellery was hardly used as grave goods. This stresses the significance of finding a pearl earring in the direct vicinity of the Byzantine Empire, e.g. in the Grave 27 near the so-called Great Basilica in Pliska, Bulgaria (Fig. 179: 6).<sup>13</sup> In terms of shape, this piece is of the type with four beads and a hook and eye fastening typical for the Mediterranean, with the difference that a real pearl was fastened in place of both central beads (above the lower arc, only a split pin remained, but the pearl itself is missing). Such earrings could hypothetically serve as a model for a large group of Balkan earrings with four sheet metal beads. Indeed, most of the local earrings of this type have all the beads undecorated, i.e. smooth on the surface, by which the producers may have wanted to imitate the smooth surface of real pearls. The lack of surface decoration of the beads is certainly not due to economic reasons, as the lower arc is often lined with beaded wire (Fig. 180: 1). Simplification of these earrings resulted in a type with two smooth beads located above each other - one representative of this type was found in the above-mentioned Grave 27 in Pliska, where the lower bead is larger than the upper one (Fig. 179: 5). Similar earrings are known from other parts of the Balkans, e.g. from the Remulli site in Albania<sup>14</sup> - the piece found on this site has the hook and eye fastening (Fig. 180: 2). On contrary, this type of jewellery - either with a decorated ring (Fig. 181: 1, in the lower part) or left undecorated (Fig. 181: 2), but without the fastening - is rare in Moravia. Concerning their unique occurrence, such earrings can be classified as imports or their local imitations.

Earrings with four beads are found in great numbers all over the Balkans, including Greece. This too suggests that they are of Byzantine origin and spread to the Great Moravia from this region. Equally important is the fact that all three main variants found in Moravia are known in the territory of the Byzantine Empire or its close vicinity: those with undecorated beads (Fig. 180: 3), or with the hemisphere joint covered with beaded wire (Fig. 180: 5, 6); those with beads decorated with granulation arranged in geometric patterns (Fig. 180: 4); and finally those with beads completely covered with coarse-grained granulation (cf. Fig. 180: 7). All of these variants likely originated in the Mediterranean (though not necessarily in the same time) and from there spread to the Great Moravia to be adopted by local craftsmen. However, they did not completely copy all the construction details of the Mediterranean models. Many Balkan pieces are made with the lowest bead larger than others (Fig. 180: 1 on the right), or the ring has the eye and hook fastening at the end of the lower and the upper arc respectively (Fig. 180: 1, 5-7; cf. Fig. 180: 2). The Great Moravian specimens lack these features.

11 Bartzak 1997-1998, 268, Pl. 1: 10; Demo 2014, 63.

12 Type IX according to Čilinská 1975, 65, 77-79, Fig. 1; 1973, 42, Pl. VIII: 15, 16. Cf. Staré Město - Na Valách, Grave 166/51 (Hrubý 1955, 514, Pl. 78: 3).

13 Vážarova 1980, Fig. 1; 2: 1; Henning 2007, 693-694, Pl. 15: 187, 188.

14 Korkuti - Komata 1985, 101, Cat. No. 387.



0 3 cm  
1-4, 6, 7

Fig. 180 A large group of Balkan earrings with four (or two) sheet metal beads.

1 – Pair of silver earrings, originally with four sheet metal beads, Dukat i Ri, Barrow II, Grave 41, Albania; 2 – golden earring with two unequal large beads, Remulli, Albania; 3 – silver earring, Biljane Donje – Begovača, Grave 257, Croatia; 4 – golden earring with four beads decorated with granulation, Nin – St Asel Church, Croatia; 5 – silver earring, Piatra Frecăței, Romania; 6 – silver earring, Matičane – Breg, Grave 31, Kosovo; 7 – cast gilded silver earring with four beads decorated with the imitation of coarse granulation, the Garvân treasure, Romania.



0 3 cm

Fig. 181 Great Moravian finds of earrings with two beads, classified as imports or local imitations.

1 – Staré Město – Na Valách. Golden earring from Grave 103/50 (top) and a silver piece from Grave 200/51 (bottom); 2 – gilded silver earring from Mikulčice (outside of a grave context; Inv. No. 404/š).



Fig. 182 Golden earrings with a grape pendant.  
 1 – Porto Rafti, Greece; 2 – Lombard necropolis S. Albano Stura, Grave 182, Italy;  
 3 – Late Avar necropolis at Vösendorf, Lower Austria; 4 – Mikulčice, Grave 588  
 near Church 3; 5–7 – a female grave with rich grave goods near the Church  
 of St Mihovil in Trilj, Croatia; 8 – Thessaloniki – Diikitiriou Square, Greece.

Earrings with a grape pendant are of the Mediterranean origin as well. They consisted of a one-sided triangle-shaped flat grape pendant made up of granules during the Roman period and in the Late Antiquity (Fig. 182: 1, 2).<sup>15</sup> The design of this type of earrings was changed at the latest in the 8th century as its flat grape pendant was replaced by a three-dimensional grape pendant made up of several “levels” or “wreaths” of granules with a larger granule in the lower part. Nodules are also added on both ends of the lower arc. An example of this new shape is a gold earring from the Late Avar burial ground of Vösendorf on the southern outskirts of Vienna (Fig. 182: 3). Identical pieces are found in Great Moravia, e.g. in Mikulčice (Fig. 182: 4). However, neither the new shape of the grape pendant nor the nodules are likely to have been a local invention. This is supported by finds in a rich female grave near the St Mihovil Church in Trilj, South Croatia, which contained (among other things) three pairs of earrings with a double-sided three-dimensional grape pendant and nodules. One of the pairs has an undecorated ring (Fig. 182: 5); two pairs are characterised by their lower arcs and half of the upper arcs decorated using rope twists and they differ only in the length of the grape pendants (Fig. 182: 6, 7). We can date the grave to the end of the 8th century as it contained an unworn Byzantine solidus of Constantine V and his son Leo (760–775).<sup>16</sup> The importance of this grave complex thus lies in proving the Mediterranean origin of the filigree decoration that covers all or part of the upper arc. This decorative element (as was discussed above) is seen in certain earrings from the Late Avar burial grounds (Fig. 178: 3)<sup>17</sup> and the oldest Great Moravian female graves (Fig. 177: 2; 179: 1; 181: 1). It disappeared from Central Europe in the course of the 9th century, and from that time, it does not occur in the Mediterranean and the Balkans. By contrast, production of earrings with a three-dimensional grape pendant went on for several more centuries in the Byzantine Empire, as shown by a gold piece from Thessaloniki dated to the 13th century (Fig. 182: 8).<sup>18</sup>

15 E.g. Baltoyianni 1997, 177, Cat. No. 189; Bingöl 1999, 69, Cat. No. 42; Micheletto et al. 2014, 107, Fig. 14.  
 16 Karaman 1921; Piteša 2009, 86–92; 2014, 60–72. For the coin, see Šeparović 2009.  
 17 E.g. Abony, Grave 97 (Hampel 1905 II, 795; III, Pl. 469: 1); Nagypall I – Határi-dűlő, Grave 54 (Kiss 1977, Pl. XXX: 54/1).  
 18 Papanikola-Bakirtzi ed. 2002, 436–437, Cat. No. 567; Antonaras 2012, 122, Fig. 9.



Great Moravian silver finger ring with conical bezel.

## 3.4 Luxury Finger Rings

– Simon Ungerman



Fig. 183 Great Moravian luxury finger rings with a hollow hemispherical bezel decorated with filigree, granulation and glass inlays.

1 – Rajhradice, Grave 70; 2 – Staré Město – Na Valách, Grave 193/51; 3 – Přerov-Předmostí – Chromečková zahrada; 4 – Mikulčice, Grave 322 near Church 3; 5 – Pohansko near Břeclav, Grave 242 near the first church; 6 – Mikulčice, Grave 470 near Church 3.

Finger rings made of precious metals such as gold, silver, gilded silver and gilded bronze are yet another category of female luxury jewellery. They are typically decorated with granulation, filigree, or glass inlays.<sup>1</sup> It should be noted at the outset that finger rings represent a very small fraction of all grave finds, with only three dozen specimens found to date in the region of present-day Moravia. Unlike luxury earrings and spherical buttons, which can number in the several hundred for a single Great Moravian site, finger rings are found on a much less frequent basis. Unfortunately, the reason why this is so is not yet clear. Nonetheless, we do know the custom of wearing precious metal finger rings was confined to a select group of individuals from among the Great Moravian elites.

### Typology

The vast majority of luxury finger rings were assembled from the two main elements of sheet metal – the hoop and bezel – each created separately beforehand and then soldered together. While cast finger rings represent a completely marginal type within Great Moravia, sheet metal rings can be divided into several types based on the shape and decoration of the bezel. Finger rings with a hollow hemispherical bezel are by far the most frequent; here the bezel is decorated either with coarse granulation (type A) or fine granulation together with one or more glass inlays (type B). Based on the details of the decoration, these types can be further categorised into subtypes, some of which are represented by one or two finds only. Indeed, some of the other main finger ring types have been found in similarly scarce quantities, making them unique pieces in the context of Great Moravia and, given the dearth of analogous finds elsewhere, also within Europe. Lastly, characterised by a greater number of finds, type F rings are notable for a large inlay made from either glass or semi-precious stone.

Let us now look at the main types of luxury finger rings in more detail. Starting with type A, the most frequent of these rings feature a hemispherical bezel completely covered with large granules and set into small rings made from either round wire (Fig. 183: 1) or, more rarely, a rope twist (Fig. 183: 2). A finger ring found at Přerov-Předmostí (Fig. 183: 3) combines granulation with a convex, blue-glass inlay placed on top of the bezel. However, given that the presence of one or more glass inlays is one of the identifying features of type B, this piece is considered a mixture of both types. A type-B finger ring from Grave 322 near Church 3 (Fig. 183: 4) features a hemispherical bezel decorated with triangular granulation and a dark-blue-glass inlay placed on top. Red triangular glass inlays feature in a ring from Grave 242 at Pohansko near Břeclav (Fig. 183: 5), while another variant of this ring displays three triplets

<sup>1</sup> Most of the text in this essay is based on Ungerman 2017.

of small glass inlays in cylindrical collars made from sheet metal (Fig. 183: 6). Type D is represented by a finger ring from Grave 454 near Church 3: resembling the hemispherical bezel, this conical variant is rounded at the top (Fig. 184) featuring a decorated surface (mainly by granulated triangles). As for type F (i.e. with one inlay from glass or semi-precious stone), inlays of convex hemispherical shape prevail; the inlay then determines the shape of the whole bezel. A ring from Skalica, Slovakia, has the inlay lined with two rope twists; the space between them filled with a row of large granules (Fig. 185: 1). An imitation of this kind of collar, made using pressed sheet metal, can be observed in a piece from Grave 33/48 at Staré Město - Na Valách (Fig. 185: 2). Type F finger rings sometimes also display a bezel formed by either a large or small cylindrical collar containing a glass inlay, as observed in a ring from Grave 1935 at Mikulčice-Kostelisko (Fig. 185: 3). The bezel of a unique finger ring from Grave 43 at Pohansko near Břeclav (Fig. 185: 4) exhibits a large almandine cut into an oval with bevelled sides. Whatever the shape of the bezel, sheet metal hoops are usually covered with parallel rope twists (Fig. 184) and occasionally merged with round wires (Fig. 183: 1, 5). Interlace decoration made from filigree wires (Fig. 183: 6) is much rarer, as are hoops simply made from two massive wires twisted together (Fig. 185: 2).

## Owners

Given that luxury finger rings from graves in present-day Moravia and South-Western Slovakia represent a relatively small set, we can easily form a profile of the individuals buried alongside. Based on an approximate evaluation of age and sex, the deceased were girls and women, both young and old, the sole exception being an individual from Grave 322 at Mikulčice (Fig. 183: 4) identified as a male ranging in age between 20 and 30. Four children, each no more than the age of seven, were buried in separate graves in different sites. Considering two of the graves contained other types of jewellery such as earrings and glass buttons, we can conclude the two buried were girls, which is also highly likely in the case of the other two graves. Interestingly, only one of the four was buried with an appropriately sized finger ring, while the others had rings that were too large for them, which suggests the rings were not ordinarily worn during their short lifetimes.<sup>2</sup> In a similar case, Grave 193/51 at Staré Město - Na Valách contained a young female of indeterminate age whose rich grave goods included, among other things, two identical finger rings (Fig. 183: 2) that, according to Czech archaeologist L. Galuška, were of “such a diameter in shank as to outsize even the middle finger of a grown man living today”. Not only that, the surfaces of both rings showed significant wear in contrast with other pieces of jewellery found in the same grave, giving the impression, to quote Galuška again, “of having just left the jeweller’s workshop”.<sup>3</sup> Evidently, in the cases of the girls buried with adult-sized finger rings, they were not the original owners of these items. The likelihood is that they were either given the rings as heirlooms by relatives during their lifetimes or had them “assigned” alongside other grave goods upon their death. In the context of Great Moravian jewellery as a whole, this practice may have been more widespread than we are now able to confirm. For example, in the case of earrings and buttons, no definite



Fig. 184 Great Moravian silver finger ring with conical bezel. Grave 454 near Church 3, Mikulčice.



Fig. 185 Finger rings from Moravia, where the inlay determines the shape of the whole bezel.

1 - Skalica, Barrow 33, Grave 2, Slovakia; 2 - Staré Město - Na Valách, Grave 33/48; 3 - Mikulčice-Kostelisko, Grave 1935; 4 - Pohansko near Břeclav, first church, Grave 43.

<sup>2</sup> Ungerman 2017, 52, 79, note 18.

<sup>3</sup> Hrubý 1955, 518; Galuška 2013, 229-230.



Fig. 186 Finger rings of the Mediterranean origin, characterised by a simple hemispherical-to-conical bezel.

- 1 – Matičane-Breg, Grave 46, Kosovo; 2 – Mihaljevići-Varošište, Grave 71, Bosnia and Herzegovina; 3 – Biskupija-Crkvina, Grave 29, Croatia; 4, 5 – Dunje – Trpčeva Crkva, North Macedonia; 6 – Matičane-Breg, Grave 3, Kosovo; 7 – Demir Kapija – Crkvište, North Macedonia; 8 – Bigrenica, Serbia; 9 – Stranče-Gorica, Grave 9, Croatia; 10 – Edessa, Greece; 11 – Aerino and Azoros, Greece; 12 – Vukovar – Lijeva bara, Grave I-1951, Croatia; 13 – Ostrovica – Greblje, Grave 16, Croatia.

relationship between the size and age of the person buried can be derived, nor can we identify individuals buried with adornments of “disproportionate” size. In what constituted a symbolic handover of power and wealth, adult members of the Great Moravian elites engaged in the customs of passing on prestigious items to their children (for weapons and miniature spurs found in boy graves, see Essay 3.2) and interring these items alongside their sons and daughters upon their premature death.<sup>4</sup>

We are still unable to prove that the finger rings of Great Moravia served any other than a purely decorative purpose. In Southern and Western Europe, wedding and signet rings were common in the Late Antiquity and the Early Middle Ages, with some materials and iconographic motifs having an apotropaic function. Of course, the wearing of engagement and wedding rings had deep roots in Roman and Early Byzantine cultures, manifesting in various figural motifs and inscriptions. However, these features are notable for their complete absence in the Great Moravian finger rings. Even the infrequent finds of rings in several child graves would suggest they had little to do with marriage. Neither were they used for the purpose of sealing documents, since Great Moravian rings lack a flat bezel suitable for a relief inscription or monogram. Finally, signet rings, which are generally associated with the male as opposed to female sphere, would hardly have found use among the largely illiterate lay elites.

## Origins

For reasons of economy, the sheer variety of rings found in the Great Moravian graves means we must forgo commenting on the origin of each type.<sup>5</sup> However, as representative examples, let us explore the origins of the hemispherical-bezel ring types A and B, those found in the most numerous quantities.

During the Early Middle Ages, sheet metal rings featuring a hollow hemispherical bezel decorated with filigree and/or granulation were worn in many parts of South-Eastern and Eastern Europe, including Great Moravia. These finger rings can be divided into two main groups based on bezel shape. Rings of the first group are characterised by a simple hemispherical-to-conical bezel (Fig. 186: 1–13), while those of the second group feature a hemispherical bezel atop an underlying cylindrical element (Fig. 187: 1–5). Finger rings belonging to the first group, which are mostly made of silver or bronze (gold pieces are rare), are typically decorated with filigree, granulation, or a combination of both techniques. Filigree, the most common type of decoration, consists of either teardrop-like shapes (Fig. 186: 1, 2) or arcade arches (Fig. 186: 3, 4, 5); the less common type, granulation, is always based on triangular patterns (Fig. 186: 8, 9). In some pieces, the whole surface of the bezel is covered with small wire rings (Fig. 186: 6) or a coiled wire with loose threads (Fig. 186: 7). The construction and decoration of the hoop vary considerably. For instance, items from North Macedonia and Greece feature a hoop assembled from several parallel wires soldered together (Fig. 186: 4, 10, 11). In contrast, sheet metal hoops from the Balkans tend to be covered with parallel filigree wires (Fig. 186: 1), occasionally complemented with interlace in the middle (Fig. 186: 12) or imitation of interlace consisting

of a coiled wire pressed flat (Fig. 186: 5). Among the less frequent hoops are those made of several wires twisted together (Fig. 186: 6) or variants cast as a whole including the decoration (Fig. 186: 3, 13). The above-mentioned rings are mainly typical of the Southern Balkans dating to between the 10th and 12th centuries.

As previously noted, the second group of finger rings typically feature a hemispherical bezel with a cylindrical part underneath, an element that serves to fix a wreath of large granules. This group is significantly more homogeneous than the first: the bezel is always decorated with granulation and the material used is almost exclusively silver (very rarely gilded bronze). The granulation usually consists of a pattern of triangles (Fig. 187: 1) occasionally complemented by granulated lines to create a cross or star (Fig. 187: 2, 3), a type of decoration observed in pieces from South-Eastern Europe. In contrast, finger rings from Ukraine typically display a hemispherical bezel completely covered either with fine granulation (Fig. 187: 4) or larger granules set into wire rings (Fig. 187: 5). All of the finger rings in the second group are dated to either the second half of the 10th century or the 11th century.

Balkan researchers unanimously agree that these hemispherical-bezel finger rings are of Byzantine origin, probably originally spreading to Dalmatia from towns on the Adriatic coast.<sup>6</sup> Use of these finger rings in other parts of Balkans largely reflects the military victories of the Byzantine Empire from the end of the 10th to the first quarter of the 11th century, which led it to regain the territories south of the Danube lost over the preceding centuries. When, toward the end of his life, Emperor Basil II (976–1025) gained Sirmium and the area occupying present-day Belgrade, the border of the Byzantine Empire extended as far as the southern edge of the Carpathian Basin. Similarly to Kievan Rus’ and various parts of Eastern Europe, those finger rings could not be exported from any other regions than the Byzantine Empire.

A comparison of Great Moravian type A finger rings with their Balkan and Eastern European counterparts reveals slight differences in shape and decoration, which can be explained by two factors: regional production and chronology. In terms of production, none of the items found in the Great Moravian graves are considered direct imports. With the more commonly found finger ring types, i.e. those featuring a bezel completely covered in coarse granulation (Fig. 183: 1), understood to have been produced in the Great Moravia itself, albeit strongly influenced by Mediterranean products. Chronologically, the Great Moravian pieces are older, with most of the finger rings dated with no small amount of precision to the early Great Moravian period, roughly spanning the first half of the 9th century. This may explain the absence of those finger rings featuring the cylindrical element covered with massive granules at the bottom of the hemispherical bezel (Fig. 187: 1–5), a type dated in South-Eastern and Eastern Europe to no earlier than the second half of the 10th century.

Some type A finger rings have been found in graves linked to the oldest Great Moravian inhumations dating to the beginning of the 9th century (Fig. 183: 2). As far as we are aware, no analogous specimens dating to such an early period have been discovered in other parts of Europe. Thus, we encounter a rather paradoxical situation: the oldest finger rings of this type are documented in Moravia, although this region is located far from the Mediterranean – the supposed place of origin. The most probable reason for this is the

4 Mořkovský 2005; Ungerman 2005a, 213, 218–219; Klápště 2009, 533–534; cf. Graenert 2004, esp. 185–187; Lohrke 2004, 42–43, 98–107, 171–172.

5 For a more exhaustive account, see Ungerman 2017, 58–70, incl. ref.

6 Giesler 1981, 112; Cetinić 1998, 152; Tomićić 2004, 417; Petrinec 2009, 280; Bikić 2010, 111.



Fig. 187 Finger rings of the Mediterranean origin, characterised by a hemispherical bezel atop an underlying cylindrical element.

1 – Zvonimirovo – Veliko polje, Grave 17, Croatia; 2 – Svinjarevci-Studenac, Grave 15, Croatia; 3 – Matičane-Breg, Grave 16, Kosovo; 4 – Huščyn, Ukraine; 5 – Pidgirci/Plesneck, Mound 1, Ukraine.

poor condition of the archaeological record in the Mediterranean. In this respect, our current knowledge of Byzantine finger rings from the 8th and 9th centuries is notably lacking, with only a handful of pieces dating to the period discovered thus far.<sup>7</sup> Not only that, of those to have been found, the hemispherical-bezel finger rings are not among their number even though we know this type must have appeared in the Mediterranean around the 8th century, nor do they feature in the large sets of the Late Antiquity and early Byzantine jewellery found to date.

The origin of type B finger rings, which feature a hemispherical bezel fitted with one or more glass inlays, is less clear. None have been found in the 10th to 12th century sets from the Balkans. And although glass inlays were used in the region, they feature in different types of finger rings. One of the more tempting explanations, therefore, is that the type B finger rings are unique to Great Moravian jewellery making. However, bearing in mind the scant number of Mediterranean finger rings from the 8th to 9th centuries, with every new find the more likely we are to revise the current state of knowledge in this area. The site Monceau-le-Neuf-et-Faucouzy in Northern France yielded a silver finger ring with a truncated cone-shaped bezel topped with a convex inlay made from opaque, light blue glass; the lower part of the bezel is set with a row of much smaller, round, yellow-glass inlays (Fig. 188). Tentatively dated to the 7th century,<sup>8</sup> the finger ring represents an utterly rare find in the Merovingian context and, in all probability, could only have been imported to the place of discovery from the Mediterranean. If this reasoning is correct, then even the Great Moravian producers of type B finger rings must have drawn inspiration from Mediterranean craftsmanship, notwithstanding subsequent local modifications. Overall, then, distinguishing possible Mediterranean imports from local imitations found at the Great Moravian burial grounds is problematic for most finger ring types, not to mention other jewellery such as earrings.



Fig. 188 Rare find of Mediterranean finger ring in the Merovingian context.

Monceau-le-Neuf-et-Faucouzy, France.

7 Bosselmann-Ruickbie 2011, 147.

8 Hadjadj 2007, 108, No. 18.

### 3.4.1 excursus

## Limited Reception of Mediterranean Jewellery in Great Moravia

– Šimon Ungerman

In terms of numbers, luxury finger rings represent a rather insignificant category in the Great Moravian jewellery. Generally, they were worn exclusively by noble women and girls living in the main Great Moravian strongholds at Mikulčice, Staré Město and Pohansko near Břeclav. Unlike, for example, luxury earrings, the wearing of gold and silver finger rings did not find popularity among female members of the local elites, nor did the practice spread to rural areas. Whatever the reason, the reception of Mediterranean jewellery in the Great Moravia was clearly limited.

Due to reasons of brevity, I have decided to analyse finger rings from Bulgaria to give context to the nature of the finds from Great Moravia. I largely draw on a monograph by Bulgarian archaeologist Valeri Grigorov,<sup>1</sup> which documents metal jewellery items found in the region of present-day Bulgaria dating to between the 7th and 11th centuries, a period that outspans the Great Moravian Empire. My purpose here is not to exhaustively compare the exact numbers of jewellery types or pieces between the regions, a questionable endeavour for many reasons, but rather to provide a basic overview of the types of finger rings used in Bulgaria, a region that fell under the long-lasting influence of the Byzantine Empire. Fortunately, we have the relatively reliable work of Bulgarian researchers like Grigorov to consult, unlike, for example, in neighbouring Greece where archaeological research of the Early Middle Ages, particularly of burial grounds from the period, has been a long-neglected area.

The following overview of early medieval finger rings from Bulgaria disregards specimens made from a single piece of bronze sheet characteristic of the Danube style, a type of jewellery intended for the masses. Bulgarian finger rings comprise many types (Fig. 189), most of them made by casting. The most frequent cast finger rings feature a circular or oval flat bezel containing a simply engraved decoration (Fig. 189: III-1 to III-6), and can be further categorised according to motif, whether a cross, rosette, pentagram or bird. Several dozen pieces belonging to each of these subtypes have been found in Bulgaria. Among the other frequent types are cast finger rings featuring a smaller rhombic or oval bezel with two or three spherical projections on each shoulder (Fig. 189: VI-1), and finger rings with a massive conical bezel (Fig. 189: VII-1). Finger rings made by soldering multiple wire or sheet metal components together (Fig. 189: VIII, IX) comprise only a small part of all Bulgarian pieces. While type VIII is characterised by a cylindrical collar for a glass or other type of inlay, the sheet metal finger ring characteristic of Fig. 189: IX features a conical or hemispherical bezel decorated by granulation and/or filigree. Both types are equivalent to Great Moravian types A and F, respectively. Unsurprisingly, given the scarcity of jewellery made from precious metals found among grave

goods in Bulgaria, Grigorov's work only documents five type IX rings, most of them made from silver. This is caused by the fact that only a minimum number of pieces of jewellery from precious metals are seen among the grave goods.

The composition and range of finger ring types as well as the occurrence of pieces made from precious metals differ between the regions. The Bulgarian finger rings most certainly reflected the Byzantine fashion of the time and, in that respect, were similar to most of the types commonly worn in the Eastern Mediterranean and Near East. Although the preserved archaeological material includes the finger rings belonging to members of the elites, they represent only a fraction of the whole set. Considering, then, that the practice of placing items made of precious metals among grave goods was more the exception than the rule in many parts of the Byzantine Empire, it would appear the Bulgarians adopted Byzantine burial rites along with Christianity. The vast majority of Bulgarian finger rings were cast bronze pieces featuring engraved decoration (Grigorov's types III to VII) and mass-produced for the general population. It is likely that finger rings made from precious metals served as a model for the production of at least some of these more common types. However, there is no evidence to prove this was the case, the one notable exception being the type IV-2 bronze finger ring featuring a votive inscription (Fig. 189: IV-2), which has been verified as an imitation of solid gold specimens.<sup>2</sup> Interestingly, cast finger rings never became fashionable in the Great Moravia,<sup>3</sup> nor did precious sheet metal finger rings based on Mediterranean and Byzantine models, of which only a few Moravian noblewomen possessed. And if we assume these trends were short-lived, it also potentially explains the absence of cheaper mass-produced imitations.

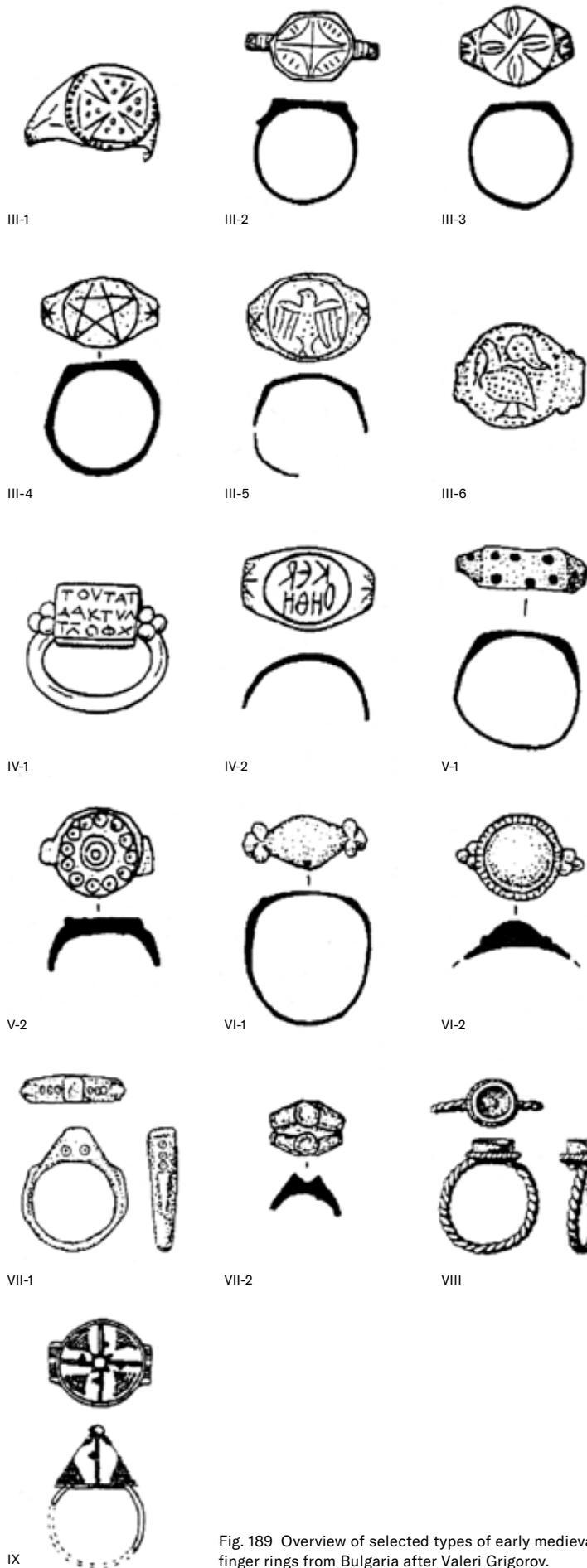
We must also address two key chronological features of Bulgarian jewellery. Firstly, due to its geographic proximity and close political alliances, Bulgaria became one of several regions to be under the strong influence of the Byzantine Empire, which endured over centuries. Naturally, then, the Bulgarians gradually adopted, among other cultural borrowings, the whole range of Byzantine jewellery. Secondly, jewellery from the Middle Byzantine period (9th–12th century) remained largely unchanged, with many types continuing to be used for as long as three centuries and some even up until the subsequent Late Byzantine period. The long-term use explains why the archaeological material from the territory of Bulgaria contains such significant numbers of jewellery of given types.

Of course, Great Moravia was geographically more distant from the Byzantine Empire than Bulgaria and it remains unclear from exactly where the Byzantine and Mediterranean influences

2 Bosselmann-Ruickbie 2011, 289, 297–299, 301, 304–306, 309, Cat. Nos. 140, 161, 163, 169, 177–180, 185.

3 Cf. Ungerman 2017, 48.

1 Grigorov 2007.



originated. Byzantine Empire-controlled towns on the Adriatic coast are a possible source, but unfortunately we know very little about the material culture of their inhabitants from the 8th and 9th centuries.<sup>4</sup> As a result, we cannot reliably conclude whether or to what extent it differed from the material culture in central parts of the Byzantine Empire. Based on what we know, jewellery worn in the territory of present-day Moravia must have been influenced by the Mediterranean culture around the end of the 8th century at the latest (see Excursus 3.3.2). However, the question is whether such influences were somehow “filtered” by the Avar Khaganate. But as the Khaganate did not exist anymore in the 9th century, the Mediterranean influences could have directly spread to Great Moravia in this period. Nevertheless, Great Moravia was never placed under the grip of Byzantine rule, lasting a mere century as an independent political unit, a relatively short period of time when compared with Bulgaria, its more eastern counterpart.

4 See Curta 2010, incl. ref.

Fig. 189 Overview of selected types of early medieval finger rings from Bulgaria after Valeri Grigorov.



Two-layered spherical gold *gombík* with difficult type of filigree decoration, bosses and poppy granulation – one of the most splendid Great Moravian *gombík* at all, Mikulčice, Grave 505 near Church 3.

# 3.5

## Gombíky: Unique Symbols of the Great Moravian Elites

– Šárka Krupičková

The term *gombík* (*sg.*) was introduced to Czech archaeology by the archaeologist Jan Eisner<sup>1</sup> more than 70 years ago. Spherical hollow buttons with a loop, as traditionally denoted by this term,<sup>2</sup> have been known from early medieval Moravia since the beginning of the 20th century. The excavations of the first church cemeteries at Moravian sites brought the discoveries of many exclusive *gombíky* (*pl.*), and the artefact soon became a characteristic attribute of Great Moravian archaeology. To this day, it is perceived as an elite symbol and is related exclusively to the Great Moravian period. The continuing social significance of these items is proven by the use of a *gombík* motif on the obverse of the current Czech two-crown coin, which was put into circulation in 1993. This makes it the only archaeological artefact that the inhabitants of the Czech Republic have in front of them, or rather in their hands every day, albeit indirectly.

### Variety in unity. *Gombík* typology

An unifying element of the majority of the metal *gombíky* discovered is the basic design consisting of a spherical body and a suspension system.<sup>3</sup> The body consists of two joined hemispheres or, more rarely, a corpus chased out of a single piece of metal sheet to a three-quarter height of the sphere and covered with a spherical cap – the so-called collar. A design combining the two techniques can sometimes be encountered (Fig. 190: 1). A suspension system consisting of a circular loop held by a clamp with a ring is usually attached to the spherical hollow body; alternatively, the suspension system consists de facto only of a split loop secured by a ring. It is also known a combination of both systems (Fig. 190: 2). The body of most *gombíky* is decorated with chased decoration or soldered elements, although undecorated specimens are also known.

It would appear that this is a rather unified type of artefact. However, a more detailed look at the range of the specimens found reveals a variety of sizes, shapes, technology and material. In terms of size, *gombíky* have a wide-ranging globular diameter of 0.5–6.5 cm. Not all *gombíky* are strictly spherical; pear-shaped, polyhedral and oval specimens are also known. Demanding jewellery techniques and various combinations were applied to metal *gombíky* including chasing, soldering, filigree work, granulation work and glass cabochons (more about goldsmith's technics see in Essay 2.6). There are also several variants of the material composition: specimens made of precious metals and gilded copper alloy are known. Moreover, the individual parts of a *gombík* may slightly differ in the metal alloy composition (more in Excursus 3.5.1). *Gombíky* made of glass with

a simple metal split loop (or a collar with a split loop) soldered on it form a separate category. Despite this variability, certain established typical combinations and characteristic manufacturing trends can be observed, which are summarised in the following text.<sup>4</sup>

The most frequently found variant of Great Moravian *gombíky* are specimens with chased decoration and among these, those with chased vegetal ornamentation. In Mikulčice, for instance, this variant comprises more than 40% of the overall number of *gombíky*. A characteristic vegetal ornament is a stylised motif of palm tree leaves although it is applied in a highly variable manner on *gombíky*. In Mikulčice, it is often composed into a decorative scheme of a so-called arcade resembling an architectural structure consisting of columns with arches with leafwork inside (Fig. 191: 1). Another frequent variant is the so-called heart meander, which is a continuous motif consisting of oppositely oriented pairs of S-shaped meanders resembling a heart shape (Fig. 191: 2). A third typical decorative scheme is in the form of medallions, a set of three circular fields with a decorative motif inside. The occurrence of other types of chased motifs is also characteristic of medallions – besides stylised plants, they typically include representations of animals, most often birds (Fig. 191: 3). The spectrum of motifs is completed by continuous intertwined motifs, all-over nets with motifs inside and geometric ornaments dividing *gombíky* into quarters (Fig. 191: 4, 5, 6); the representation of stylised human faces is rare (Fig. 191: 7).

A varied category of *gombíky* are specimens with plastic decoration soldered to their spherical surface. *Gombíky* decorated with granulation are widespread. Simpler specimens have dense all-surface granulation with the individual granules sitting in small rings of smooth wire (Fig. 192: 1); sparser granulation on the surface of the *gombík* is less frequent (Fig. 192: 2). *Gombíky* with a surface covered with fine so-called poppy granulation in the form of geometrical patterns were much more difficult to manufacture (Fig. 192: 3). Besides granules, filigree components could also be soldered to the surface in the form of strips, rope twist or beaded wire (Fig. 192: 4), or the spherical body of the *gombík* was covered with semicircular bosses (Fig. 192: 5). Filigree techniques were usually combined with complementary granulation. An impressive form of surface decoration on some *gombíky* were glass cabochons (Fig. 192: 6; for more about decoration techniques, see Essay 2.6).

Although the described decorative elements are characteristic of the entire territory of Great Moravia, it is not easy to identify identical or very similar specimens of *gombíky*. Only simple types with all-surface repeating decoration in the form of granulation, simple or twisted wire, for instance, are encountered across the individual sites. Other specimens of *gombíky* with soldered decoration can also be described as remarkably similar, even though

1 Eisner 1947, 146.

2 For more on terminology, see e.g. Klanica 1970b, 421–422; Chorvátová 2008b, 209–211; 2009, 12.

3 After Ottenwelter et al. 2020, Fig. 8.

4 For details on the typology, see also Krupičková in preparation.

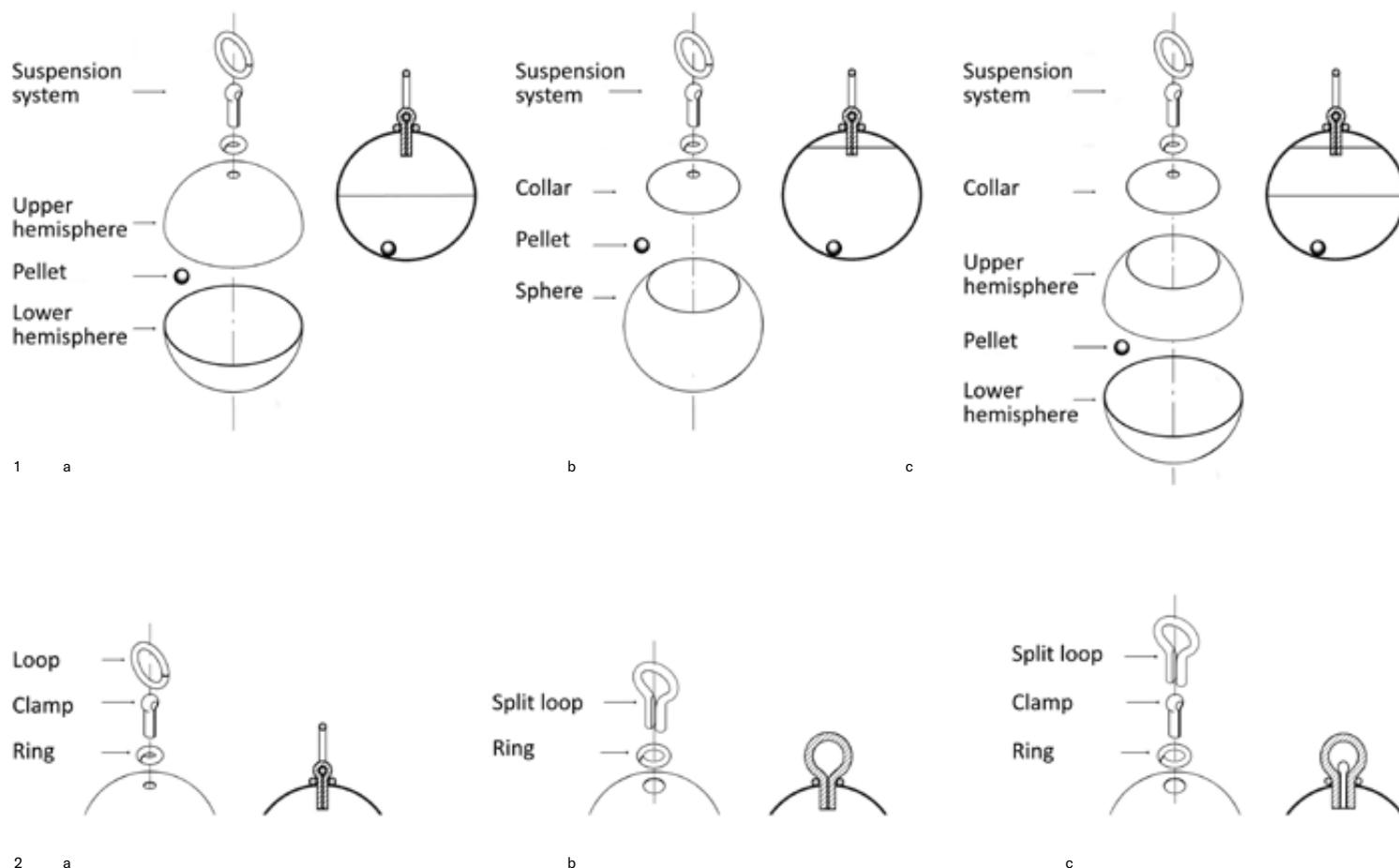


Fig. 190 Types of *gombiky* construction according to Estelle Ottenwelter et al. 2020, Fig. 8.

1 – Different types of body construction (with two hemispheres, one sphere and collar and a combination of both); 2 – different types of suspension system (loop – clamp – ring, split loop – ring, split loop – clamp – ring).

they were found at different cemeteries. An example of this is polyhedral *gombiky* with five blue glass cabochons and massive granules (Fig. 193: 1-3), which were discovered at two central Great Moravian strongholds. Three exclusively pure gold specimens are known from female Grave 318 near Church 3 (basilica) in Mikulčice.<sup>5</sup> Of the same shape, but made solely of gilded copper alloy is a *gombik* from Grave 271 near Church 2 at the same site as well as two *gombiky* from child Grave 205 at the cemetery near the first church at Pohansko near Břeclav.<sup>6</sup> The specimens from Grave 318 dominate these three in terms of the quality of the material and the overall size. The finds from the other two graves can be interpreted as secondary production of a cheaper imitation of the original luxury model. However, the specimens are not completely identical and, for example, differ in the arrangement of the granules. Therefore,

it is not clear if they were manufactured in the same workshop and if the craftsman had the model directly available. The same group but with a single glass cabochon might include two *gombiky* with preserved textile eyelets from Grave 498, which will be discussed further in the context of the evidence of the form of wearing and the function of *gombiky*.

The evidence of almost identical *gombiky* decorated with surface chasing is exceptional. A scarce example is the artefacts with a geometrised vegetal ornament found separately in three different cemeteries within the Mikulčice settlement agglomeration. The first of the four artefacts were discovered in 1957 in Grave 550 near Church 3 (basilica) (Fig. 194: 1). A similar *gombik* was found one year later in Grave 420b near Church 2 (Fig. 194: 2), and the third in 1957 in Grave 102 near Church 2 (Fig. 194: 3). The last one comes from Grave 3 discovered in 2007 on the cemetery near the Church of St Margaret of Antioch near Kopčany (Slovakia), less than 2 km away as the crow flies from the location of the first find (Fig. 194: 4).

<sup>5</sup> Klanica et al. 2019.

<sup>6</sup> Unpublished Mikulčice research field documentation, 1956; Kalousek 1971, 126-127.



Fig. 191 The decoration of chased *gombíky* from Mikulčice is easily visible on unrolled hemispheres documented by multiple-image photogrammetry.

1 - Vegetal ornament in an arcade scheme, Mikulčice, Grave 11/VII near Church 3; 2 - heart-shaped meander similar to "S-Friese", Mikulčice, Grave 343 near Church 3; 3 - bird ornament in a medallion scheme, Mikulčice-Kostelisko, Grave 1729; 4 - continuous intertwined motif, Mikulčice, Grave 550 near Church 3; 5 - net, Mikulčice-Klášteřisko, Grave 1314; 6 - geometric motif, Mikulčice, Object 132; 7 - stylised human faces, Mikulčice, Grave 170 near Church 3.



Fig. 192 *Gombíky* with plastically protruding soldered decoration.

1 - All-surface granulation on smooth wire rings on a gilded *gombík* from a copper alloy, Mikulčice, Grave 77/VI near Church 6; 2 - *gombík* from a gilded copper alloy with coarser sparse granulation, Mikulčice, Grave 364 near Church 3; 3 - gold *gombík* with poppy granulation arranged in triangles in six segments, Mikulčice, Grave 300 near Church 3; 4 - two-layered gold *gombík* with demanding filigree decoration, bosses and poppy granulation - one of the most splendid Great Moravian *gombíky* at all, Mikulčice, Grave 505 near Church 3; 5 - silver *gombík* covered with bosses with poppy granulation, Mikulčice, Grave 134 near Church 2; 6 - *gombík* with blue glass inlays, Mikulčice, Grave 216 near Church 3.



All have a non-identical second *gombík* in the graves. At a closer look, it is evident that the first and second pieces are identical as are the third and fourth. It appears that the solitary specimens from Grave 550 near Church 3 and Grave 420b near Church 2 are a separated pair of *gombíky* as are the specimens from Grave 102 near Church 2 and Grave 3 near the Church of St Margaret near Kopčany. The second pair is smaller than the first and have a simple decoration without the decorative cutting on the knitted lines. Separation of the pairs may point to a personal connection between the buried people or their families. In this context, it is important that the second *gombík* from Kopčany Grave 3 is also linked with Mikulčice suburbium (extramural settlement). The almost identical specimen was found in Grave 42/VI near Church 6 (Fig. 193: 5, 6). Both specimens have a non-identical second *gombík* in a grave.

These examples of identical chased *gombíky* in more graves from more cemeteries are for now unique. They do not reveal the serial production of the same pairs, but rather the personal relationships or the circulation of artefacts in society.

Fig. 193 Rare uniformity in the shape and decoration of polyhedral *gombíky* with blue glass inlays and massive granules.

1 – Gold *gombík* Inv. No. 594-100c/57, Mikulčice, Grave 318 near Church 3;  
2 – gilded copper alloy *gombík* Inv. No. 594-1767/57, Mikulčice, Grave 271 near Church 2; 3 – gilded copper alloy *gombík* Inv. No. P197, Pohansko near Břeclav, first church, Grave 205.



Fig. 194 Rare identical decoration of chased *gombíky* and imitations from several places of the Mikulčice agglomeration.

1 – Inv. No. 1426/57, Mikulčice, Grave 505 near Church 3; 2 – Inv. No. 3003a/58, Mikulčice, Grave 420b near Church 2; 3 – Inv. No. 4464/57, Mikulčice, Grave 102 near Church 2; 4 – Inv. No. 2485b, Kopčany (Slovakia), Grave 3 near Church of St Margaret of Antioch; 5 – Inv. No. 2485a, Kopčany (Slovakia), Grave 3 near Church of St Margaret of Antioch; 6 – Inv. No. 571/60, Mikulčice, Grave 42/VI near Church 6.

To the roots of the phenomenon.

### The origin of Great Moravian *gombiky*

The greatest occurrence of *gombiky* conspicuously overlaps with the core territory of Great Moravia (the finds from the Mikulčice stronghold and its hinterland alone number 440 specimens, thereof 324 specimens from acropolis and suburbium, Fig. 195). This fact, already evident at the time of the systematic excavations at central Great Moravian strongholds in the second half of the 20th century, led scholars to the conclusion that *gombiky* “were a characteristic part of the attire (...) of the ruling class of the Moravians”.<sup>7</sup> However, later literature repeatedly points out that other types of jewellery and clothing, previously also regarded as artefacts typical of Great Moravia, have much broader roots and occurrence.<sup>8</sup> Alternative opinions concerning the origin of *gombiky* have also appeared in foreign literature analysing finds from Hungary and the Balkans.<sup>9</sup> Therefore, the origin and spread of *gombiky* can be summarised in an unbiased manner, based on the presumed function, production technology and decorative motifs.

If admitting that the original purpose of a *gombik* was to fasten clothes, then the primary focus needs to be on the origin of button-type fasteners. The methods of fastening clothing in the Early Middle Ages were based on the traditional use of fibulae and brooches, which had been known in Europe since the Bronze Age and were also used in numerous variants in the Roman and Migration Periods. The tradition of using fibulae and brooches was also in fashion in early medieval Western and Northern Europe.<sup>10</sup> The traditional view of fastening clothes with buttons is that it was quite exceptional until the 13th century. Only in the High Middle Ages did buttons massively and definitively penetrate European medieval fashion in connection with the popularity of close-fitting clothing at the expense of loose tunics of an ancient tradition.<sup>11</sup> However, in connection with the new excavation, it appears that the buttons penetrated European fashion sooner and more often than first thought.<sup>12</sup> Buttons discovered at a Viking cemetery in Birka are one of the few exceptions. From the clothing of the man buried in Grave 1074, for instance, 18 massive bronze buttons were preserved in the area of the trunk, arranged in six regular groups of three pieces (Fig. 196: 1). This find has been identified as remnants of an Oriental caftan. Based on other similar finds and written reports by contemporary Arab travellers, it appears likely that the Oriental garb was worn by a Viking – some Vikings adopted the clothing style of their Asian trading partners.<sup>13</sup> It is precisely using caftans that the direction from which button-type fasteners came to Europe can be demonstrated. A caftan is a typical Central Asian garment that was widespread among Iranian and Turkic tribes in the broad geographic regions of the Pontic-Caspian steppes for more than two millennia. It is usually described as a “fitted coat with long sleeves”, often cut in the front part, girded and fastened together with one or more buttons, sometimes hidden under a decorative hem.<sup>14</sup> Several authentic and fully preserved early medieval caftans are known, mostly from the Northern Caucasus (Fig. 196: 2). Altogether, 132 pieces of textile known from the Moshchevaya Balka

cemetery comprise part of the Hermitage collection. These silken fabrics from workshops in North-Eastern Persian area are usually known as Sogdiana silk. Some are fitted with preserved fasteners. According to published pictorial material, they are mostly textile buttons with loops through which eyelets from another part of the clothing were threaded.<sup>15</sup> In terms of the cut, these finds can be described as tightly cut caftans with several small buttons in the area of the trunk.

The influence of fashion customs across cultural milieus in the Early Middle Ages can also be shown in the example of China, where clothing in the form of a caftan is also documented. Under the Tang dynasty (618–907), China unprecedentedly opened itself up to influences from Central Asian steppe regions, and clothing innovations coming “from the north” became extremely popular. Many impulses spread along the Silk Road, which included a caftan with somewhat tight sleeves and less overlap than the traditional gown, sometimes known under the Chinese term “hufu”. This new fashion was already supported in the early years of the Tang dynasty by the royal court, which originated in China’s northern regions where assimilation and family bonds to nomadic steppe ethnics were commonplace, including the subjugation of khaganates with a Turkish population.<sup>16</sup>

The above-mentioned Central Asian “button tradition”, which was also perceptible in the burial clothes of the nomads penetrating the Carpathian Basin, does not correspond to the Great Moravian archaeological contexts, however. Clothes with a caftan-style cut were fastened with smaller buttons (usually up to 1 cm in diameter) and often undecorated, whereas Great Moravian *gombiky* abounded in decorativeness and typological diversity. It is evident that apart from the technological knowledge of a button-like fastener, Moravia must have been influenced by other cultural sources and impulses bringing ornateness and symbolism. The sepulchral archaeological context of the *gombiky* also testifies to quite differently cut clothes when compared to caftans.

Analyses of other Great Moravian jewellery and clothing suggest numerous influences from the Byzantine cultural area (see Essay 1.2). It was in the areas under Byzantine’s dominance that metal *pendilia*, sewn to clothes or headdresses, appeared in the Late Antiquity and the Early Middle Ages. Like Great Moravian material, Byzantine pendants were often richly ornamented with soldered filigree and granulation decoration; unlike *gombiky*, they sometimes had a markedly elongated shape or movable fastening (Fig. 196: 3, 4).<sup>17</sup> Another significant part of late ancient clothing took the form of decorative woven or sewn textile silk stripes based on the older Roman tradition of status symbols for senators and horsemen, called *clavi* (sg. *clavus*), which evoked inspiration for metal artefacts (Fig. 196: 5, 6).<sup>18</sup> Moreover, the *clavi* appear on Byzantine tunics in pairs, in the figurative sense of the word, “hung” down from the collarbone area, sometimes occurring in triplets. This principle is close to the location of *gombiky* in Great Moravian graves. Therefore, it is from the Byzantine Empire that the idea of decorated “*gombiky*”, possibly combining the decorative function of a pendant with the practical function of fastening clothes in the chest area, might have come to Great Moravia.

7 Klanica 1970b, 424.

8 For instance, Ungerman 2017; 2018a, esp. 30–31; Ungerman in press b. See also Excursuses 1.2.1, 3.4.1 and 3.3.2.

9 Mesterházy 2000; Szóke 2010b, 38–41; taken over by Bühler 2014, 191–192, 197.

10 Kleemann 1992, 94–99; Martin 1995; 2000.

11 Owen-Crocker – Coatsworth – Hayward 2012, 106–107.

12 Hedeager Krag 2004.

13 Arbman 1940, Pl. 93; Geijer 1938, 143, 150, Pl. 33.

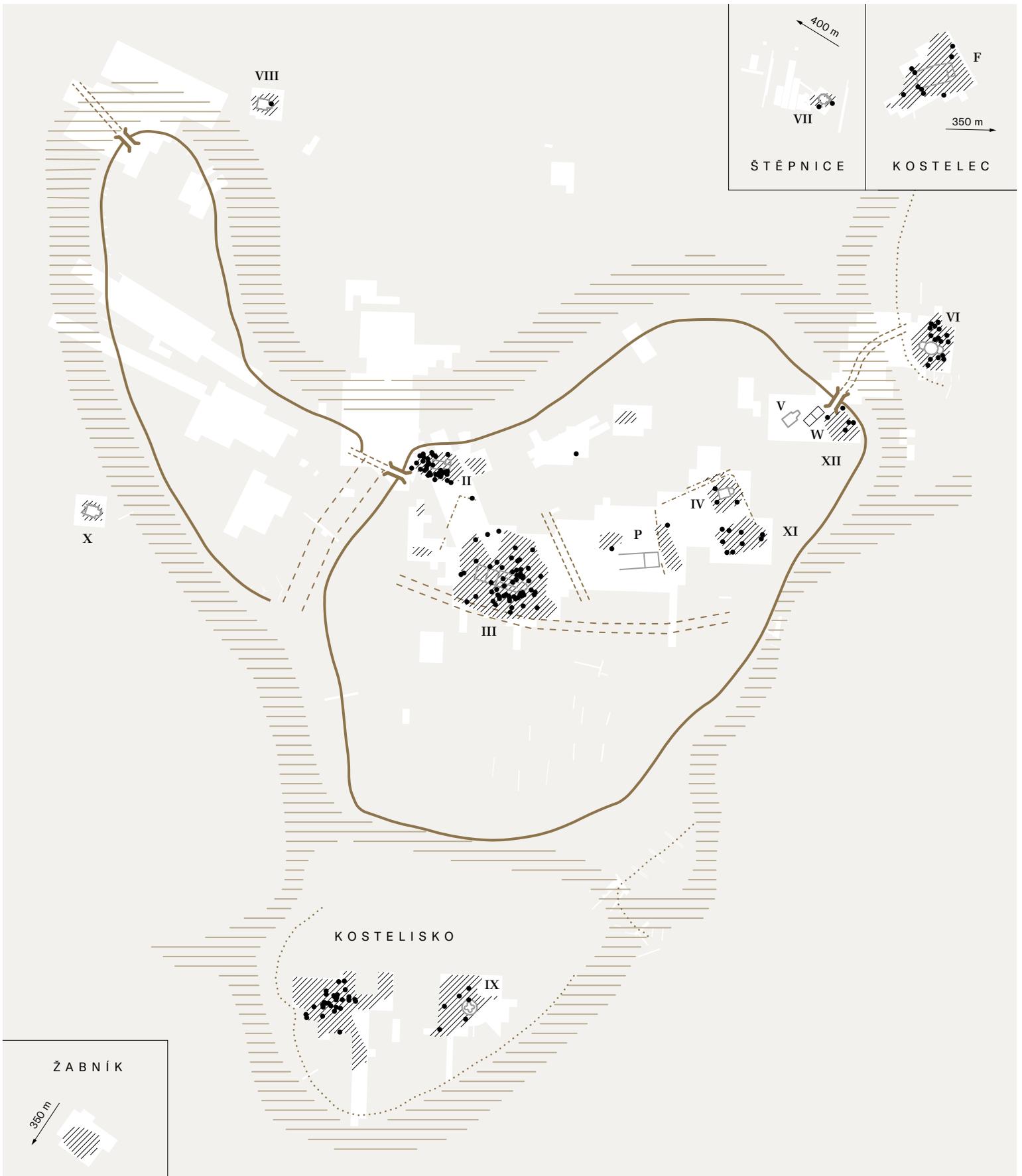
14 Peck 1992.

15 Ierusalimskaja – Borkopp 1996, 18, 20–21, 25, 39, 44, 46.

16 Swartz et al. ed. 2014, 435–436; Benn 2002, 40–43, 100–106.

17 Totev 1993, esp. 58–75; Bosselmann-Ruickbie 2011, 18–40; Aladjov 2018, 52, 57–58.

18 Thomas ed. 2016, 44, 47, 60, 109, 119, 130.



Legend:

- Graves with *gombíky*
- Excavated area
- ▨ Cemeteries, groups of graves
- Fortification
- ⌋ Gate
- - - Bridge
- - - Ditch
- ⋯ Palisade, fence
- ⋯ Significant terrain boundaries
- IV Churches
- P Palace
- F Wooden feature
- W Fine-metal workshop

0 100 m

N

Fig. 195 Plan of the Mikulčice stronghold with marked positions of graves with *gombíky*.

Other cultural influences can be identified on the ornamental level of the decoration of chased *gombiky*. Great Moravian *gombiky* with chased decoration most often feature vegetal geometrised ornaments, which appeared in this form for the first time in this country. By analogy, their origin can be sought in three sources where similar decorative motifs occur. The first is the toreutics of post-Sasanian (Iranian) origin. An assemblage of chased vessels from a trove from Sânnicolau Mare, Romania, represents an extraordinary find of this nature. In 1799, 23 gold vessels, which probably fall into the Avar cultural sphere, were discovered there. Their edges are lined with friezes decorated with stylised palmettes and other vegetal motifs (Fig. 197: 1) close to the decoration of Great Moravian *gombiky*.<sup>19</sup> Based on chased *gombiky* with a heart-shaped meander motif, it appears that another important motif source was early Eastern Mediterranean Christian ecclesiastical architecture. In Dalmatia, Italy and Carinthia, similar motifs of the so-called “S-Friese” carved into stone chancel screens (*pluteum*) can be encountered, for instance (Fig. 197: 2, 3).<sup>20</sup> The third – but no less important – source of inspiration are silken fabrics decorated with vegetal and zoomorphic motifs. In the 9th century, silk was no longer produced only in China but also by communities in Central Asia, and silk workshops were plentiful across the Byzantine territory. Although no more than small fragments of silken fabrics survived on corrosive products from iron in graves from the territory of Great Moravia, these fragments document that silk was imported there in the 9th century. Information about their decoration is only indirect as it comes from later finds, such as a secondarily used original Byzantine silken *samitum* with a Persian hunting motif of King Bahram Gor (see also Excursus 3.8.3; an analogous fabric comes from Moshchevaya Balka<sup>21</sup>). Such an anthropomorphic motif has not appeared on *gombiky* to date, but a link to silken models is evident on *gombiky* with medallion shaped decorative schema (Fig. 197: 4, 5).<sup>22</sup>

Therefore, a symbiosis of technological procedures, motifs and decorative techniques from the Orient and Eastern Mediterranean stood at the birth of chased *gombiky*. Even though the paths through which these influences reached Great Moravia cannot yet be more precisely reconstructed, they presumably included the diplomatic-trade influences as well as the migration of craftsmen, which is discussed in more detail in the following text.

### Clothing fasteners, pendants, status symbols or protective amulets?

In Central Europe, the appellation *gombik* terminologically evokes the presumed main method of use of the artefact: in present-day Slovak and Hungarian, the words *gombik/gomb* denote a button type clothing fastener. From the beginning, finds of Great Moravian *gombiky* were interpreted as a functional part of period clothing. This was apparently why Jan Eisner<sup>23</sup> first published this exact term in connection with early medieval spherical hollow artefacts, based on his native Slovak tongue. To a considerable extent, the item’s appearance corresponded to modern ornamental clothing

fasteners used by the Hungarian aristocracy. However, we do not know what *gombiky* were called by the inhabitants of Great Moravia, and their function was much broader than the traditional archaeological term would suggest.

On the practical level, how *gombiky* were used can be divided into archaeologically proven methods (in the territory of Great Moravia) and those that are merely presumed based on various analogies from other cultural areas. Both variants will be discussed more thoroughly.<sup>24</sup>

Organic materials that would help to interpret the function of *gombiky* are rarely preserved in Great Moravian graves. There are a few exceptions, which scientifically document the use of *gombiky* in at least two different ways. In 1957, the grave of a child deceased at the age of 3–4 years was discovered 2 m south of Church 3 in Mikulčice; the child was buried in a wooden coffin with iron fittings. The grave goods included an iron knife in a wooden sheath and a pair of massively gilded copper alloy *gombiky* situated in the collarbone area. The *gombiky* were found in a strongly corroded organic wrap; its removal during the conservation surprisingly revealed preserved textile eyelets. The suspension system consists of eyelets threaded through the loops of the *gombiky* and other eyelets that surround the hemisphere of the *gombik*. The former served to attach the spherical buttons to the fabric; the latter, made of different textile, was originally stitched to the fabric they were intended to fasten (Fig. 198: 1).<sup>25</sup> In this case, the *gombiky* were demonstrably used as a (clothing) button type fastener. Moreover, the finds from Grave 498 are not unique. A similar case is known from child Grave 889 from the cemetery near the hypothetical Church 11 in Mikulčice.<sup>26</sup> Fastening using a leather “strap” is also described for two pairs of *gombiky* from Staré Město – Na Valách (Graves 5/48 and 68/48).<sup>27</sup> These were all smaller and moderately decorated spherical or polyhedral shaped *gombiky* with chased ornaments or plastic decoration in the form of large granules and a glass cabochons on the spherical cap. Therefore, it can be stated that in these cases, the size, shape and technological characteristics do not rule out the practical use described above.

There is also scientific evidence of different use of *gombiky*. A small bronze wire tube with a remnant of a necklace string was attached by corrosion to the loop of one of the *gombiky* in Grave 391/55 at the Dolní Věstonice – Na Pískách cemetery. This *gombik* must have been used as a pendant on a necklace cord (Fig. 198: 2).<sup>28</sup> In Grave 485/49 at the same cemetery was a necklace that contained, apart from glass beads, seven glass and bronze *gombiky* with the loops situated just next to the bead openings; apparently, they were also used as pendants. *Gombiky* from Grave 378 in Rajhrad and Grave 117 in Uherské Hradiště – Horní Kotvice<sup>29</sup> were in the same position, close to the necklace beads. The inclusion of *gombiky* in a necklace can also be considered for nine graves from Staré Město – Na Valách.<sup>30</sup> Scientific evidence of this specific use is lacking from the elite milieu of the most important Great Moravian cemeteries, however. Moreover, the documented *gombiky* found in necklace contexts are of smaller and less impressive variants.

19 Freiburger – Bühler 2015, 9–42; Bollók 2015c, 43–70; on the closeness of the motifs to Great Moravia, see also Szóke 1960, 76; Dostál 1966, 60; Schulze-Dörrlamm 2010a, 128–129.

20 Bühler 2014, 48, Pl. 18: 1; Menalo 2018, 36.

21 Ierusalimskaja 2012, 98, 123.

22 For a comparison of silken patterns, see Ierusalimskaja – Borkopp 1996, 74–75, 84; Ierusalimskaja 2012, 106, 128–129.

23 Eisner 1947, 146.

24 For details on the issue, see Krupičková – Ottenwelter – Březinová 2019.

25 Klanica et al. 2019, 90–91; Kostelníková 1973, 38; unpublished Mikulčice research field documentation, 1957.

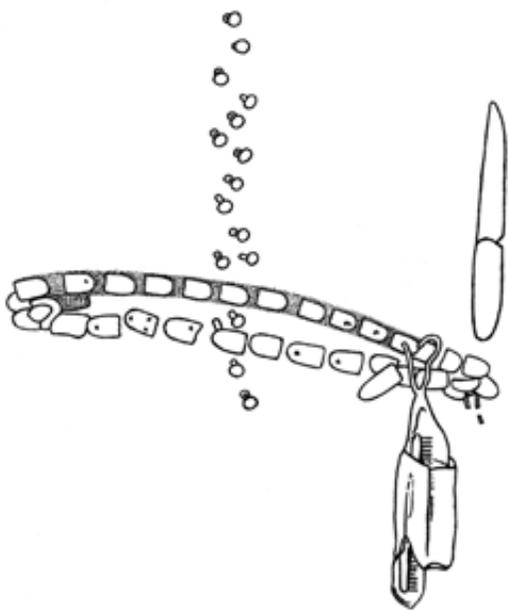
26 Klanica 1970a, 45–47, Pl. 38, 43: 5, 6; Kostelníková 1973, 38.

27 Hrubý 1955, 215 – with an incorrect grave number, 409–410, 420.

28 Ungerman 2007, 131; Ungerman in press b, ID 1016.

29 Ungerman 2007, 131.

30 Hrubý 1955, 262.



1



2



3



4



5



6

Fig. 196 In terms of shape, function and symbolism, the origin of *gombiky* is bound to Asian clothing fasteners as well as Byzantine pendants and clothing ornaments.

1 – Buttons from Birka, Sweden, Grave 1074; 2 – Central Asian early medieval silk caftan, Moshchevaya Balka, Russia; 3 – metal *pendilia* depicted in 10th-century gold and enamel Byzantine icon of St Michael, the treasury of St Mark's Basilica in Venice, Italy; 4 – *pendilia* from Preslav treasure, exposed in Archaeological Museum Veliki Preslav, Bulgaria; 5 – clavi on 6th-century tunic from Panopolis, Egypt; 6 – clavi in detail of 7th–9th-century woollen tapestry from Egypt.

Another possible use of *gombiky* in the context of a necklace is suggested by various archaeological finds, e.g. from Grave 25/48 in Staré Město – Na Valách: “The considerably decomposed skeleton of a 7–8-year-old girl lay on her back. Near her lower jaw, there was a necklace with pairs of buttons – pendants along its sides; another button lay above the lower jaw.”<sup>31</sup> In this case, the *gombiky* might have functioned as fasteners used to hang the cord with the beads, possibly in combination with a specific cut of the clothing. This principle is known in several variants from Northern Europe; rather than *gombiky*, the Vikings used more traditional clips, hanging decorative bead cords between pairs of them.<sup>32</sup> A similar principle of fastening a necklace is also known from a preserved tunic from the Caucasus, from the Moshchevaya Balka site (Fig. 199: 1).<sup>33</sup>

However, a comparison of concurrent finds of beads and *gombiky* at Mikulčice cemeteries, which amounts to 8% of all graves containing *gombiky*, makes it clear that at least the Great Moravian elites did not commonly use *gombiky* and beads together on their clothing.<sup>34</sup>

The range of the use of *gombiky* might have been wider, even though the following interpretations have to rely on indirect analogies. Based on finds from the Na Valách site in Staré Město near Uherské Hradiště, Vilém Hrubý believed that *gombiky* (which he called buttons) might have served as hair accessories. His opinion was based on the occasionally frequent occurrence of *gombiky* and earrings in the graves near the skull.<sup>35</sup> They may not have

31 Hrubý 1955, 414.

32 Martin 1995, 43–44; Jørgensen et al. 1997, 59, Fig. 46.

33 Ierusalimskaja – Borkopp 1996, 46; Ierusalimskaja 2012, 61, 68, 74.

34 Krupičková in preparation.

35 Hrubý 1955, 91–93.

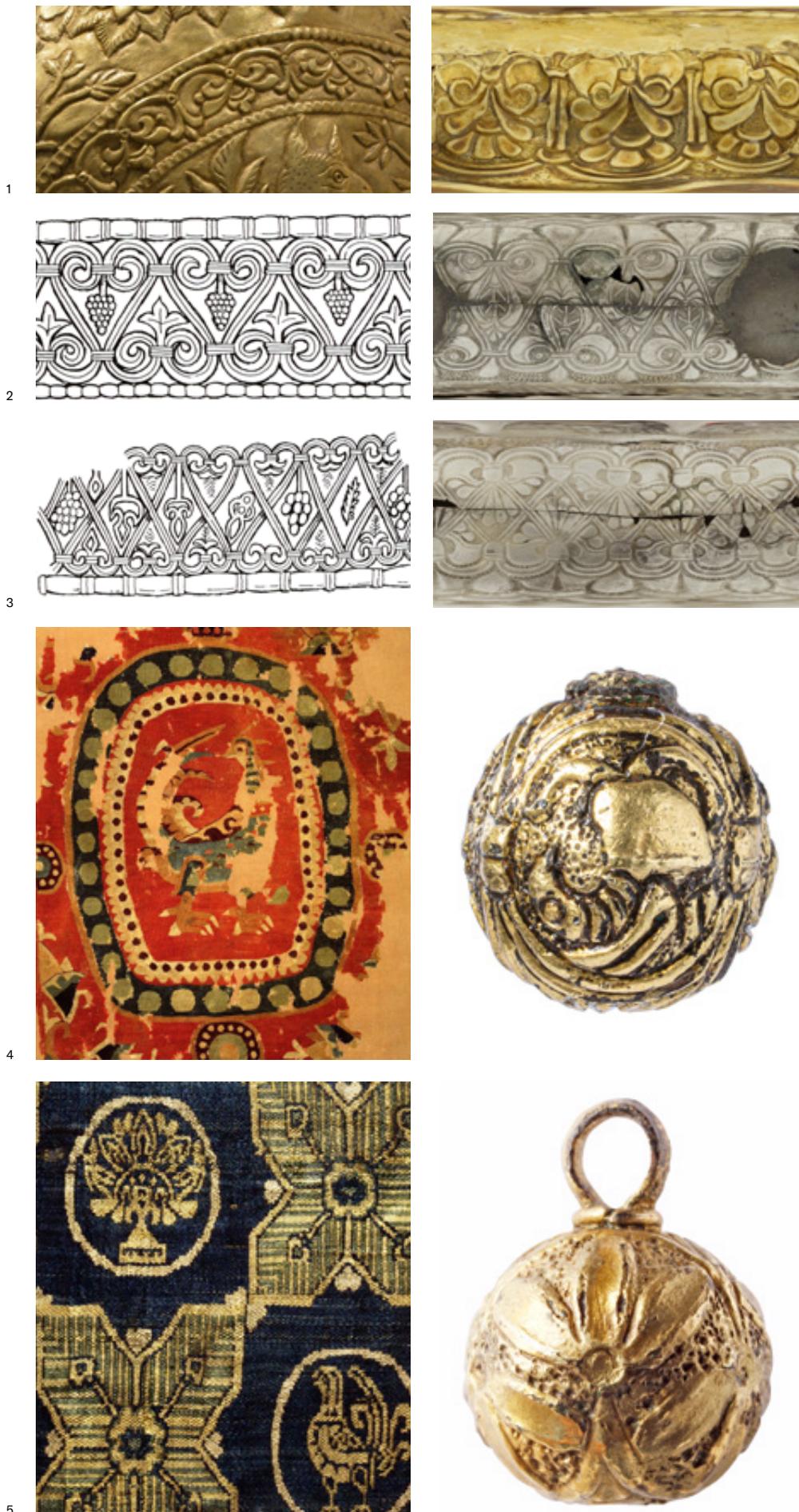


Fig. 197 Sources of inspiration for motifs on Great Moravian *gombíky*.

1 – Vegetal chased motifs on a replica of Avar gold jug No. 7, original from Sănnicolau Mare, Romania, compared with *gombík* Inv. No. 594-1120/57, Mikulčice, Grave 490 inside of Church 3; 2, 3 – S-Frieze on chancel screens, Northern Italy, 8th century compared with *gombíky* Inv. No. 594-299/57, Mikulčice, Grave 343 near Church 3 and Inv. No. 594-4461/57, Mikulčice, Grave 100 near Church 2; 4, 5 – silk with circular medallions with bird and vegetal motifs, Moshchevaya Balka, Russia, compared with *gombíky* Inv. No. 594-1038b/57, Mikulčice, Grave 508 near Church 3 and Inv. No. 594-4443/57, Mikulčice, Grave 54 near Church 2.



Fig. 198 Scientific evidence of the use of *gombíky* in Great Moravian finds.

1 – *Gombíky* with preserved textile eyelets, Mikulčice, Grave 498 near Church 3, Inv. Nos. 1174a/57 and 1174b/57; 2 – glass *gombík* with a corrosion-attached metal bead with a cord threaded through it, Dolní Věstonice – Na Pískách, Grave 391/55.

been a direct part of hair decoration but pendants attached to the headdress or headband of organic material. In this context, we can mention the analogical iconographic depictions of Byzantine crowns decorated with spherical pendants along the sides of the head (Fig. 199: 2).<sup>36</sup>

Regardless of how *gombíky* were attached to or hung on the clothing, it is evident that besides a decorative aspect and a prospective practical function, the symbolic significance of these artefacts was essential for their wearers. A link between *gombíky* and the elites was evoked for researchers earlier by the occurrence of *gombíky* in the church cemeteries of the Great Moravian centres and their presence in other graves with rich grave goods. This has also been repeatedly confirmed by recent surveys. These imply that *gombíky* occur in 9% of Great Moravian graves, on average in “rich” necropoleis in the strongholds and their hinterland;<sup>37</sup> some of the most important (and, seemingly, chronologically earlier) necropoleis surpass these values and considerably exceed 10% representation. This is, above all, true of the cemeteries near Churches 2 and 3 in Mikulčice.<sup>38</sup> *Gombíky* can thus be regarded as identifiers of the Great Moravian elites in the sense of a specific form of grave goods that members of other social groups lack.<sup>39</sup>

The elite character of *gombíky* is also due to the production technology, which was demanding in terms of knowledge, experience and craftsmanship.<sup>40</sup> In most cases, this is also true of the use of precious metal for the production of gold and silver pieces or for surface gilding on *gombíky* made of a copper alloy. These technological procedures did not enable the series production of *gombíky*. Presumably, the costly unique artefacts were made to order for affluent customers. The Great Moravian elite could appreciate this and used these exclusive and unique products for spectacular self-presentation (see Excursus 3.3.1). The need to openly demonstrate their high social status through jewellery and clothing, reflected in the rich grave goods, indicates the instability of Great Moravian elites, who had to constantly defend their position. This was not the only role of exclusive products in Great Moravia’s social system; jewellers did not supply the open market – only their “own” patrons from the Great Moravian nobility.<sup>41</sup> Jewellery products were subsequently used by the community leader both for self-presentation and as an important gift-giving strategy as part of social exchange, which took place solely based on social and political relationships.<sup>42</sup> Through the distribution of exclusive items made by “their” craftsmen, the leaders would win the favour and gratitude of supporters from among the leaders of (other) communities. This was also probably true of *gombíky* – chased *gombíky* occur only exceptionally in graves outside central cemeteries, often in no more than one or two pairs per necropolis. The individuals buried in these graves can be considered to be leading elites of the local community, supporters who received gifts from a leader in the central agglomeration. For completeness, it can be added that the Great Moravian leaders themselves similarly received gifts from the rulers of neighbouring (more developed) territories. This is one possible way that exclusive products from Frankish or Byzantine workshops got to Great Moravia (see Excursus 1.2.1).

The social and economic situation in Great Moravia did not reach a stage where general society would require cheap series produced jewellery (typically, wire or cast jewellery). To a certain extent, more mass production can be demonstrated by the example of some simple variants of *gombíky*, moreover in connection with their occurrence in rural cemeteries. An example is the cemetery in Dolní Věstonice, where 26 out of the total of 31 metal *gombíky* can be categorised in a single typological group. These are relatively simple pieces with their surface covered with fine circles of smooth or twisted wire (Fig. 200: 1). *Gombíky* with a different type of decoration occurred quite exceptionally in the cemetery.<sup>43</sup> The occurrence of a distinct group of *gombíky* made of glass and fitted with a metal split loop (or a collar with a split loop; Fig. 200: 2) is primarily linked to rural cemeteries. Glass *gombíky* also occur more frequently in the context of necklace finds. These artefacts, evidently devoid of what may have been the (original?) function of *gombíky* as status symbols, were connected with different communities and their clothing habits. It is not clear whether they were imitations of metal *gombíky* (originating e.g. from a modification of glass beads; hence the popularity of hanging them in necklaces), whether they developed independently or whether

36 Chorvátová 2008b, 211–212; 2009, 13; for a comparison of the interpretation of pendants from a trove from Preslav, see Bosselmann 2001, 490.

37 Chorvátová 2008b, 213.

38 Krupičková in preparation.

39 Brather 2004.

40 See also Barčáková 2014; Čáp – Macháček – Špaček 2011.

41 See also the model of exclusive textile production in Birka – Andersson 2008, 81–83.

42 For model strategies, see e.g. Schortman – Urban 2004, 189–192; for their applications to Great Moravian material, see Excursus 1.4.2.

43 Ungerman 2007, 134–135.

it was the other way round and luxury *gombiky* used as status symbols developed from original simpler undecorated or glass artefacts.

The link between *gombiky* and the higher echelons of society is evident from Great Moravian material although their symbolic significance to society was broader. It is likely that *gombiky* also had a religious meaning for their wearers. On the general level, this statement is based on written sources and ethnographically documented analogies, which repeatedly confirm the apotropaic importance of clothing and its parts in pre-modern societies.<sup>44</sup> These models are also in effect confirmed by the actual *gombiky*. An important example is the occurrence of small metal balls inside some of them (Fig. 201), which made a clinking sound when moved. This principle is generally linked to a magic protective function and may have acted as symbolic apotropaic objects (charms) for their wearers.<sup>45</sup> Apart from the sound, the ornaments used to decorate *gombiky* might have acted as protective symbols. A question that arises is how many elements of the new religion - Christianity - were applied to *gombiky*. Clear evidence of Christian symbolism is known from the much less numerous material from Bohemia although the trend is not so evident in Great Moravia at first glance. A chased motif of a cross has only been documented on six *gombiky* from Mikulčice; the Maltese cross is rendered in poppy granulation on bosses welded to the surface of six more *gombiky* (Fig. 202: 1, 2). A detailed look not only at the individual ornaments but at the overall composition of the decoration shows that more than 40 *gombiky* from Mikulčice have the motif of the cross “coded” in themselves. For instance, the decoration on the *gombik* in form of the coarse granules welded in a cross pattern (Fig. 202: 3, 4). Moreover, many zoomorphic (fish, bird) and vegetal (palm branch) motifs are linked to Christianity figuratively. Interestingly, the *pendilia* and *clavi*, which we presented as typical elements of early medieval clothing in the Eastern Mediterranean, functioned as apotropaic amulets/charms in the Byzantine world, supposedly protecting their owner from evil forces.<sup>46</sup>

What also makes *gombiky* exceptional is that they can be considered a “unisex” artefact as they occur in both female and male graves. For completeness, it should be added that most often they are found in the graves of children of both sexes, with a predominance of girl graves. The use of the same decorative and prestige parts of clothing by both sexes is not common in the early medieval context. The clothing coded information, readable in contemporary optics, about the individual’s social status, affluence, job or community but always bound to his or her sex and symbolising the female and male ideals of the period.<sup>47</sup> A violation of the gender division can be encountered in the self-presentation clothing of the ruling stratum in Byzantine Empire, where the differences between the genders fade away in some periods and male and female rulers are depicted in the same type of a ceremonial loros.<sup>48</sup> Possibly, there is a similar principle behind the occurrence of *gombiky* in the graves of both sexes. A chronological aspect also arises in Great Moravia where the age and sex of the individuals buried with *gombiky* change over time. Based on a detailed study of Mikulčice cemeteries, it is evident that near Churches 2 and 3, which are

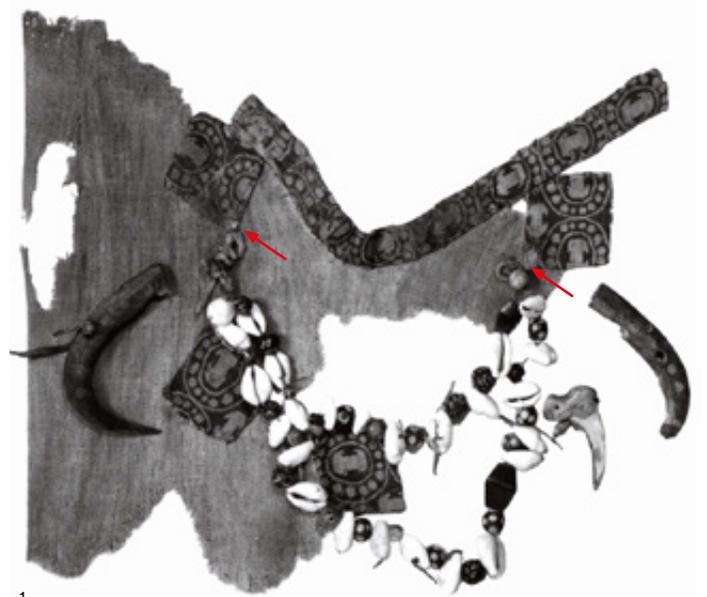
44 Křížová 2001; Ball 2016, 55–65; Ewing 2009, and others.

45 Smetánka 2003, 11–16.

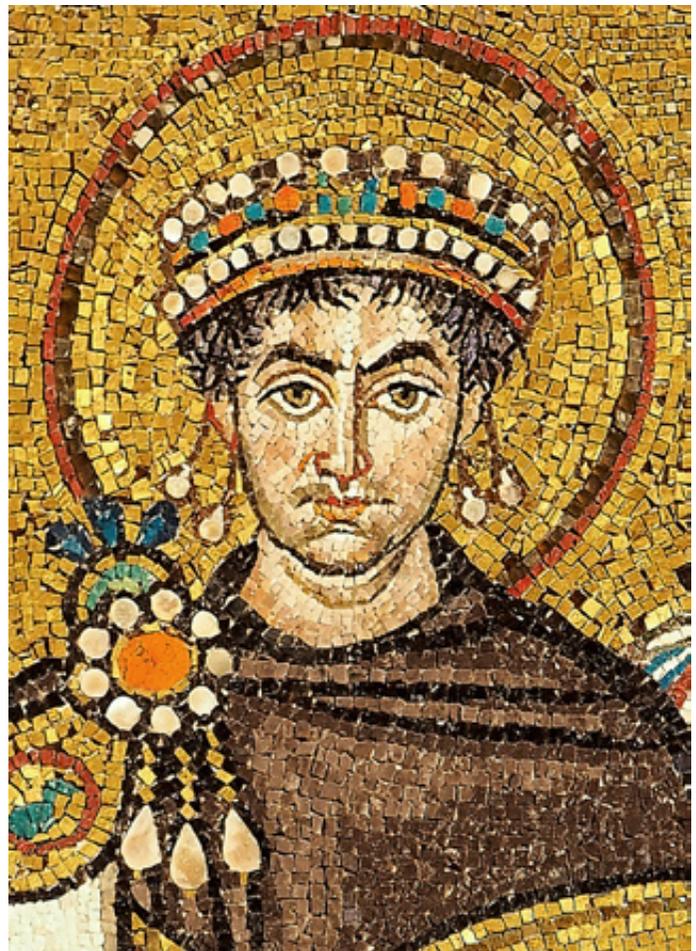
46 Thomas ed. 2016, 59.

47 Ball 2005, 2; Thomas ed. 2016, 43–46.

48 Ball 2005, 19–29.



1



2

Fig. 199 Analogous use of spherical buttons and pendants.

1 – Button for necklace fastening, Moshchevaya Balka, Russia, Inv. Nos. Kz 6672, 6673, 6674; 2 – pendants similar to *gombiky* in Byzantine imperial crowns, Emperor Justinian in a mosaic in San Vitale, Ravenna, Italy.



Fig. 200 Simple types of *gombiky* occur most frequently in the non-elite milieu.

1 – Copper *gombik* with soldered smooth wire ringlets, Dolní Věstonice, Grave 385/55; 2 – glass *gombik* with a metal loop, Mikulčice-Panské, Grave 78, Inv. No. M 181/00.

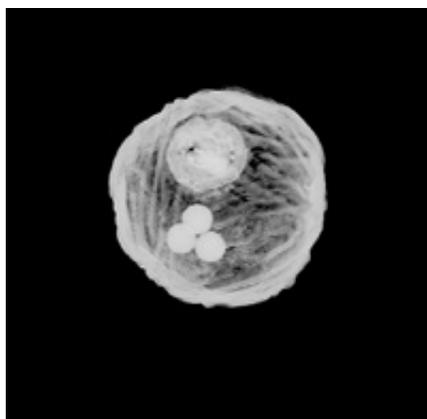


Fig. 201 Rare evidence of three small balls inserted in the body of a *gombik* with chased birds.

Inv. No. 1038a/57, Mikulčice, Grave 508 near Church 3.

considered earlier burial grounds within the acropolis, *gombiky* occur in increased numbers in adult graves (with a relative high representation of male graves; Fig. 203: 1). The cemeteries on the acropolis and in extramural settlements that are considered later show an opposite trend (Fig. 203: 2). *Gombiky* (like other grave goods) are relatively less numerous there, dominantly occurring in child graves at these necropoleis. For Great Moravia, an explanation of these tendencies might lie in the gradual abandonment of ostentatious self-presentation in the burials of the Great Moravian elites. After all, this would correspond to the period customs that were widespread in the Frankish and Byzantine Empires.<sup>49</sup>

*Gombiky* were not intended for every member of the community; approximately one in ten individuals deceased in some of the Great Moravian strongholds was buried with them. Based on further grave goods, the design and the location of the graves in the necropolis and their selective occurrence within the individual centres, it is evident that these artefacts were reserved for the social elites. During the consolidation of the Mojmirid realm, they used them as a symbol of their social status and had themselves buried with them. Typical features of these status symbols include a splendid rendition that could be produced only by highly skilful craftsmen acquainted with European technological and decorative trends, apparently working to order for an affluent donor. These mostly chased and rather large *gombiky* (often well over 3 cm in diameter) were deposited in the graves in pairs near the collarbone. Sometimes, they were replaced or accompanied by precisely rendered pieces with soldered filigree decoration in smaller dimensions, possibly forming a set of three or four *gombiky* in the functional position near the chest or the head. On the symbolic level, the *gombiky* were, perhaps from the beginning, supposed to secure spiritual protection for their wearers besides affiliation with the elites. The need for the elites to demonstrate high social status through the burial rite gradually receded, which reflects in the diminishing grave goods, including *gombiky*. These artefacts remained present in the graves but became more frequent in child and especially girl burials.

Two models of the occurrence of *gombiky* appear in parallel at rural sites – ostentatious specimens in selected graves of the local elites versus cheaper and simpler products (made of glass, for instance) in other graves. A different fashion characterised by more frequent use of *gombiky* in necklace contexts can be assumed for the rural milieu.

Although it turns out that the occurrence of *gombiky* has a broad cultural context, these artefacts in their typical form remain a phenomenon of 9th-century Mojmirid Moravia both from the perspective of the technology-artistic rendition and as a social status symbol.

49 Pöllath 2002; Poulou-Papadimitriou – Tzavella – Ott 2012; Ivison 2017; Pülz 2017.



Fig. 202 Various ways of depicting crosses on *gombiky* from Mikulčice.

1 – Chased cross on a silver *gombík* with bird ornaments, Inv. No. 3083/78, Mikulčice-Valy, trench 43/-15; 2 – Maltese crosses arranged on the surface of poppy granulation bosses, *gombík* Inv. No. 4468/57, Mikulčice, Grave 128 near Church 2; 3 – concurrence of decorative fields in the shape of a cross, *gombík* Inv. No. 1124b/57, Mikulčice – Valy, trench F-618; 4 – granules forming a cross, *gombík* 4464/57, Mikulčice, Grave 498 near Church 3.

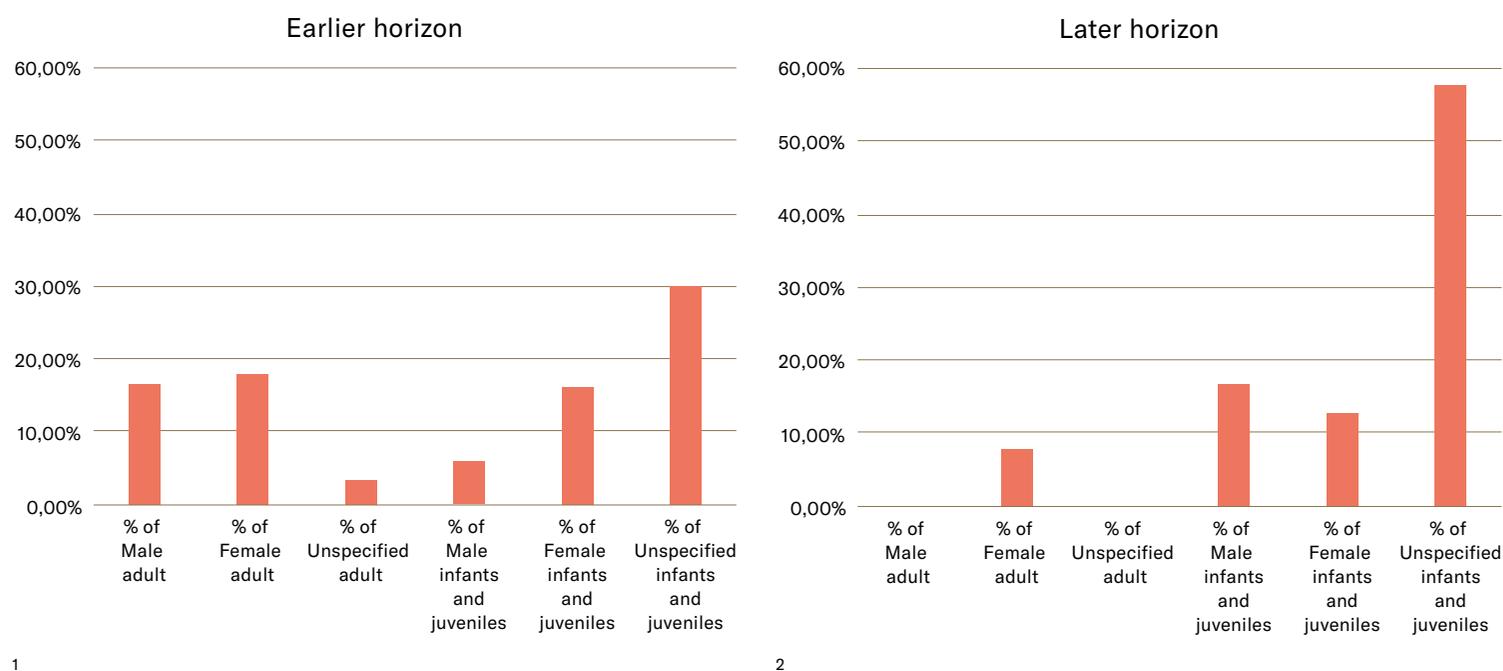


Fig. 203 Relative representation of *gombiky* in graves from Mikulčice according to sex and age of buried individuals in context of different necropoleis (sex of infant and juvenile individuals were determined according to grave goods).

1 – Earlier necropoleis (Churches 2, 3, 9, 11) with 961 graves, of this 115 with *gombiky*; 2 – later necropoleis (Churches 4, 6, 12) with 390 graves, 24 of them are with *gombiky*.

### 3.5.1 excursus

## Mikulčice Elite Jewellery: A Technical Study of *Gombíky*

– Estelle Ottenwelter



Taking a technical approach to elite Moravian jewellery can reveal extensive information about the artefacts, which in turn, provides clues for comparing and identifying production by specific workshops and their provenance.<sup>1</sup> The material used to manufacture the jewels, the construction of the jewels, the different manufacturing steps, the decoration techniques displayed, the tool marks on the surface and the profile of the semi-finished components can help to identify similarly produced jewels and highlight the difference. Moreover, they provide information about the level of technicity attained by the goldsmiths and the quality of the jewels.

When observed under binocular scanning electron microscopy (SEM), tool marks can be clearly identified. X-ray radiography enables to visualise the internal construction of the jewels, revealing components and soldering areas. Precise analysis can be conducted on previously observed components or areas by energy dispersive X-ray analysis (EDS) to characterise the materials used to manufacture the jewels as well as the soldering and gilding technology. The measurement of the different components of the jewels can also identify the production of semi-finished products produced in the same workshops.

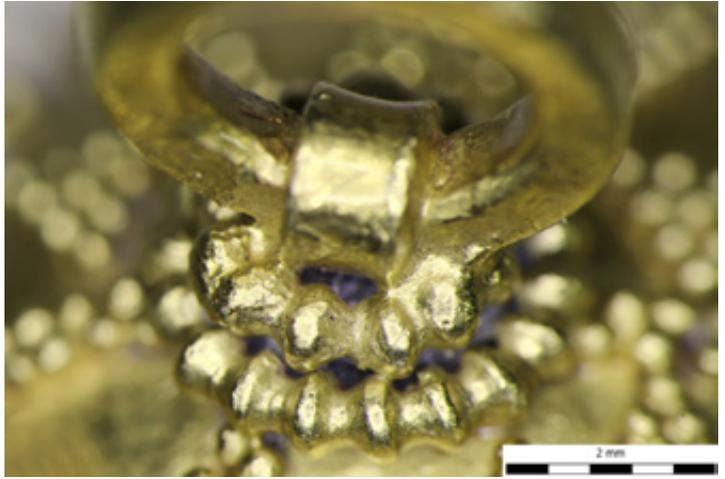
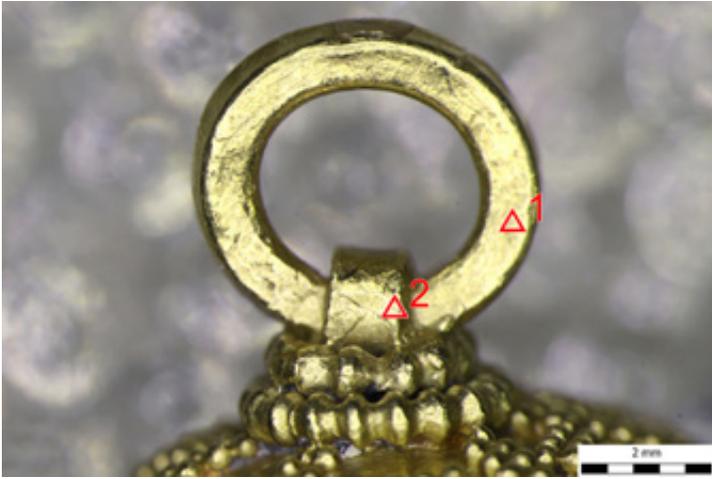
The results of observations and analyses by SEM/EDS on three examples of fine *gombíky* from Mikulčice are presented: the golden *gombík* Inv. No. 294/57 (Fig. 204), the silver *gombík* Inv. No. 142b/57 (Fig. 207) and the gilded copper *gombík* Inv. No. 1426/57 (Fig. 210).

*Gombík* Inv. No. 294/57 was found in an elite adult male Grave 300 from Church 3 cemetery at Mikulčice stronghold. The deceased was buried in a wooden coffin with iron fittings. Other grave goods included four knives and a sword. This small *gombík* (14.5 mm diameter) of 2.8 g, is made of two hemispheres joined together (Fig. 204). It has a suspension system made of three distinct elements (a loop, a clamp and a ring) (Fig. 205: 1) which is inserted into the pierced upper hemisphere. The loop is made of a square-sectioned wire (Fig. 205: 1). The clamp is made from a flat strip (Fig. 205: 2) and the rings (double) are made of beaded wires (Fig. 205: 2). The *gombík* is decorated with granulation work: six meridians formed by a double line of granules define six equal fields (Fig. 204). Each field is decorated with superposed triangles of increasing sizes towards the joining areas of the hemispheres. The diameter of the granules is only 0.4 mm. The granulation work is precise and fine without any flooding effect (Fig. 205: 4–6).

The beaded wires are particularly fine and regular (Fig. 205: 2). Their profile and surface contrast with the usually observed beaded wires on solid silver (Fig. 208: 1) and gilded copper *gombíky* (Fig. 211: 1). On the latter, the beaded wires are more irregular and a specific tool mark, called the equator cut, (a perpendicular line in the middle of the bead) produced by the beading files during

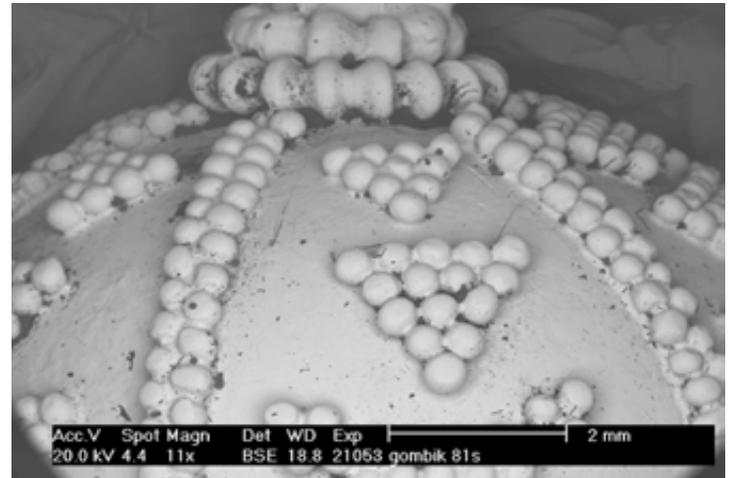
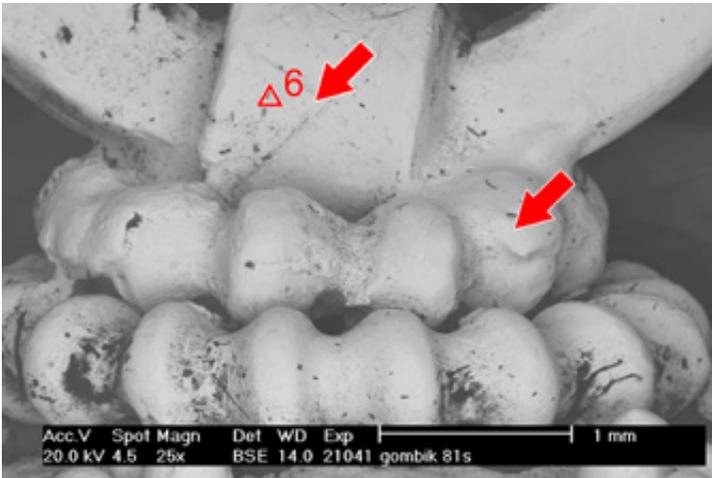
Fig. 204 *Gombík* Inv. No. 294/57, Mikulčice-Valy, general view.

<sup>1</sup> Ottenwelter – Déd – Barčáková 2014; Ottenwelter 2020.



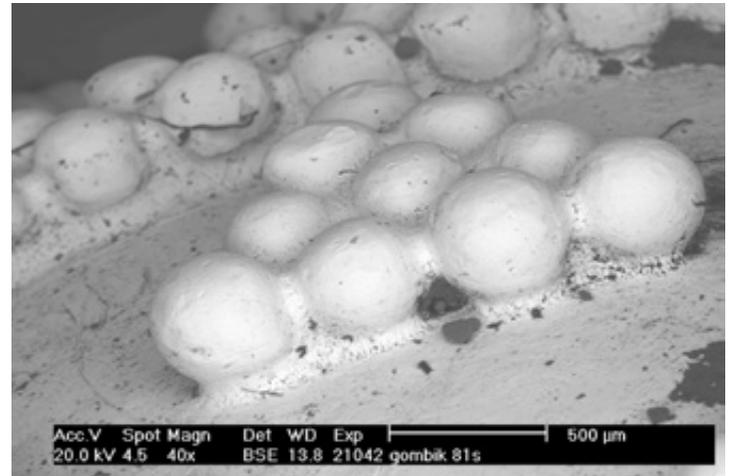
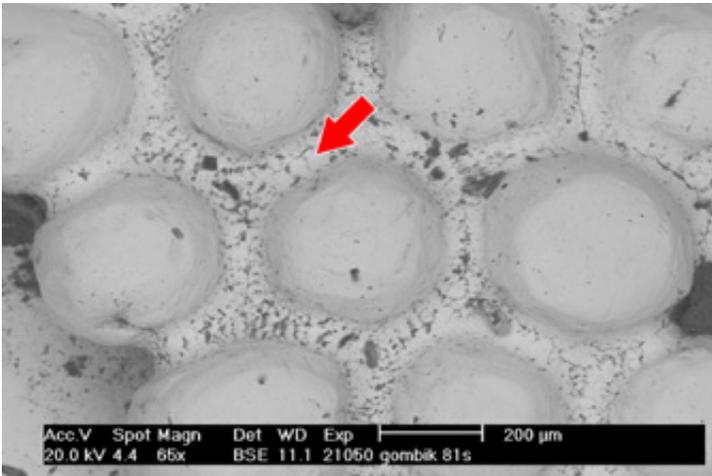
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Fig. 205 *Gombik* Inv. No. 294/57, Mikulčice-Valy, detailed views.  
 1 – Suspension system; 2 – beaded wire rings; 3 – unmelted and partly molten patches of solder on the suspension system (SEM micrograph, BSE image); 4 – detail of the granulation work (SEM micrograph, BSE image); 5 – solder area between the granules (SEM micrograph, BSE image); 6 – solders are below the granules (SEM micrograph, BSE image).

<i>Gombik</i> Inv. No. 294/57, Mikulčice	Surface analysis	Sub-surface analysis	Chemical composition [Wt.%]		
			Au	Ag	Cu
Loop (point 1)		X	77.3	17.5	5.2
Loop	X		94.2	5	0.8
Clamp (point 2)		X	84	13	3
Ring, beaded wire (point 3)		X	79.2	15.5	5.3
Granule (point 4)		X	82.6	13.2	4.2
Hemisphere (point 5)		X	92.3	6.7	1
Solder area, suspension system (point 6)		X	69.2	17.7	13.1
Solder area between hemispheres (point 7)		X	86.4	12	1.6
Solder area granules (point 8)		X	83.5	13.5	3

Fig. 206 Chemical composition of the *gombik* Inv. No. 294/57.

EDS analysis on SEM (normalised wt% on the metallic elements – light elements (except C) not reported but considered in the quantification).



Fig. 207 *Gombik* Inv. No. 142b/57, Mikulčice-Valy, general view.

manufacture is usually observed.<sup>2</sup> The absence of this equator cut, the regularity of the beads and the regular space forming a cylindrical section between them suggests that another type of tool was used to produce the beaded wires. This may have been produced by a double swage block with beaded negative forms referred to as an organarium and described by the monk Theophilus in his *Treatise on Divers Arts*.<sup>3</sup> Very similar beaded wires, believed to have been produced with an organarium, were observed on Viking Age jewellery from Birka by Wladyslaw Duczko.<sup>4</sup> The earliest beaded wires produced in an organarium were found on 6th-century Byzantine jewellery suggesting that this implement was probably invented by Byzantine goldsmiths.<sup>5</sup>

An analysis of each component showed that ternary alloys of Au-Ag-Cu with an average percentage of 83 wt.% Au, 13.2 wt.% Ag and 2.8 wt.% Cu were used to manufacture the different components (Fig. 206). Another ternary alloy with 4 wt.% more Ag and 10 wt.% more Cu and, therefore, a lower melting point, was used to solder the different components together. This solder was applied as patches. Unmelted patches and partly molten patches of solder are still visible on the suspension system (Fig. 205: 3).

The use of high purity gold alloy beaded wires probably produced by an organarium, regular, small and unflooded fine granulation work, perfect knowledge of the material and solder technique, as well as known analogies from the Byzantine Empire, could indicate a Byzantine provenance.

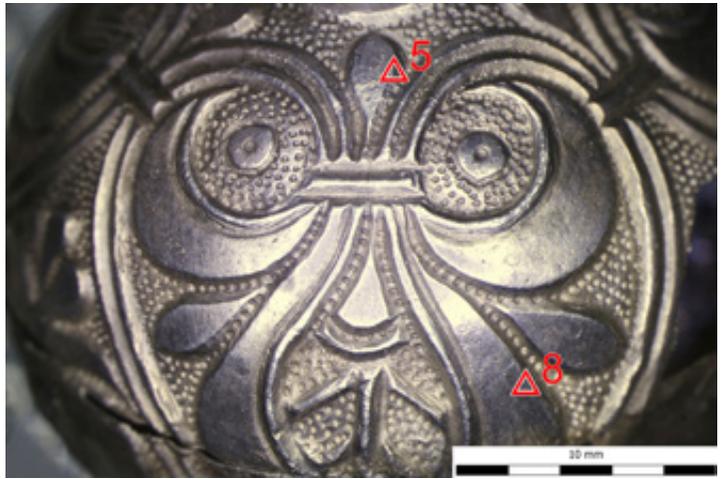
*Gombik* Inv. No. 142b/57 was discovered in adult female Grave 328 from Church 3 cemetery in Mikulčice stronghold. The deceased was buried with seven golden earrings, another (paired) silver *gombik*

2 Duczko 1985, 18–19.

3 Hawthorne – Smith 1963, 88–90.

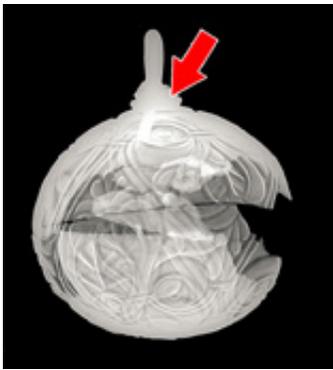
4 Duczko 1985, 19–21.

5 Ibid, 21.



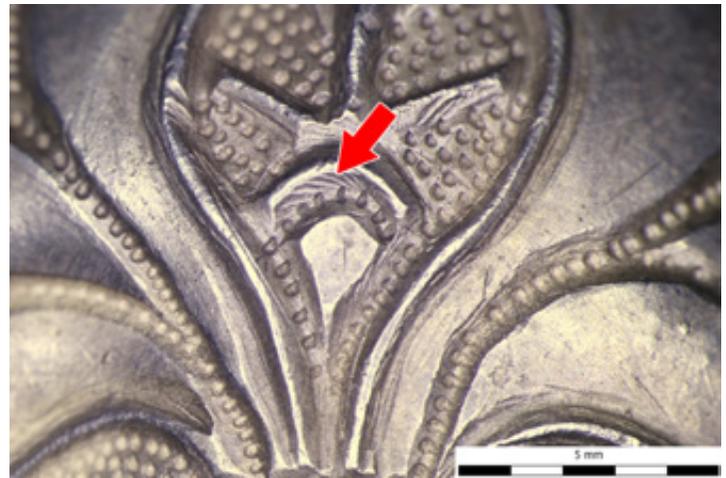
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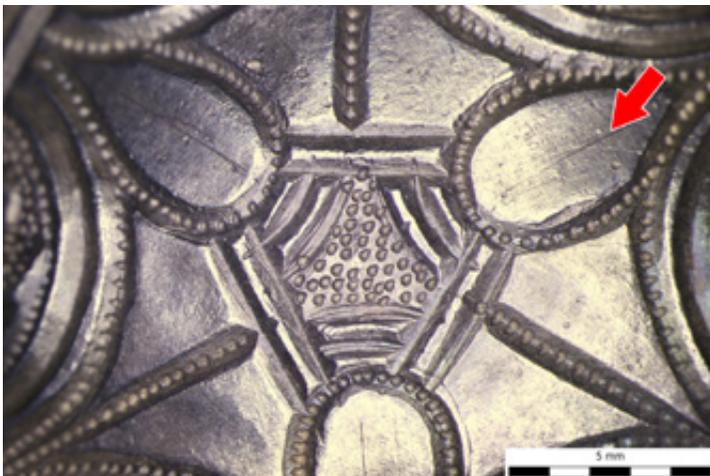


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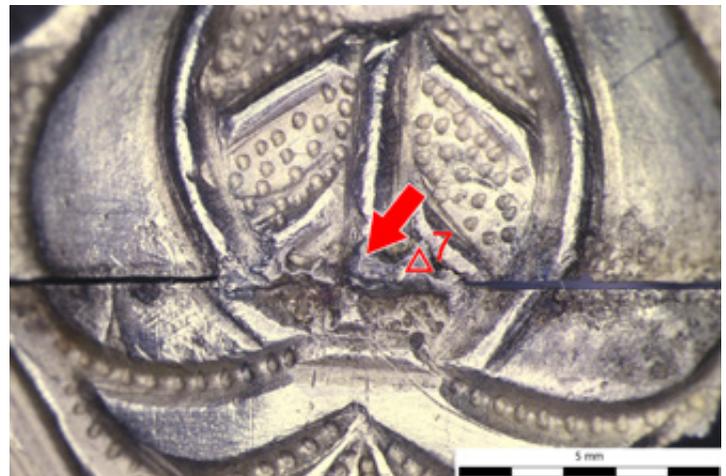
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Fig. 208 *Gombík* Inv. No. 294/57, Mikulčice-Valy, detailed views.  
 1 – Suspension system; 2 – chased palmette decoration; 3, 4 – X-ray radiographs;  
 5 – chasing tool marks; 6 – sketch lines; 7 – modern repairs.

<i>Gombík</i> Inv. No. 142b/57, Mikulčice	Surface analysis	Sub-surface analysis	Chemical composition [Wt.%]				
			Au	Ag	Cu	S	Zn
Loop (point 1)	X		2.2	95	1.8	1	-
Clamp (point 2)		X	-	91.5	8.5	-	-
Solder (point 3)		X	-	82.8	17.2	-	-
Ring (beaded wire) (point 4)		X	1.6	95	3.4	-	-
Upper Hemisphere (point 5)		X	1.5	93.3	5.2	-	-
Lower Hemisphere (point 6)	X		1.7	96.5	1.2	0.6	-
Solder (modern repair) (point 7)		X	-	60.3	23.4	1.6	14.7

Fig. 209 Chemical composition of the *gombík* Inv. No. 142b/57. EDS analysis on SEM (normalised wt% on the metallic elements – light elements (except C) not reported but considered in the quantification).

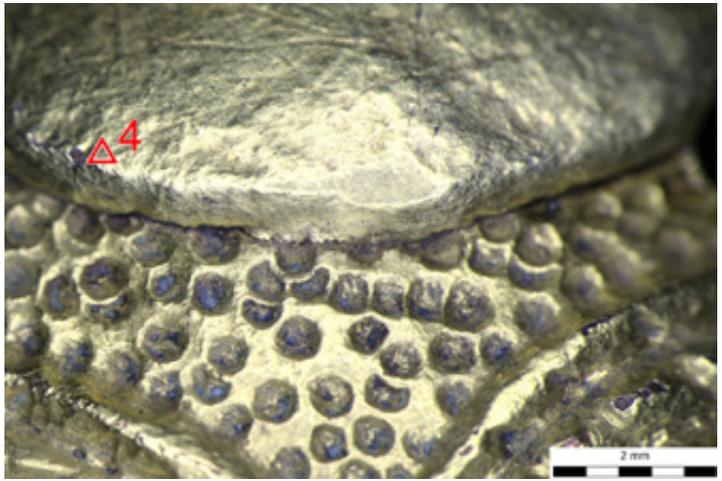
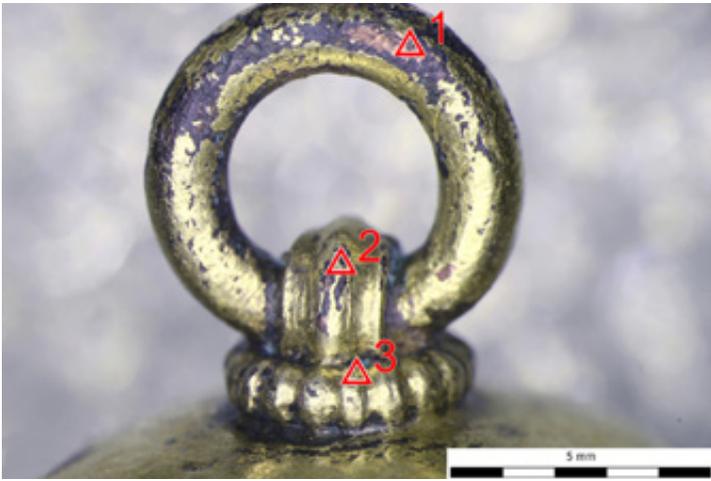


Fig. 210 *Gombík* Inv. No. 1426/57, Mikulčice-Valy, general view.

and an iron knife. This large *gombík* (33 mm in diameter) is made of six components joined together (two hemispheres, a loop, a clamp, and two beaded wires). It is decorated by chasing with palmette motifs in heart meanders on a dotted background (Fig. 207). An Ag-Cu hard solder was used to solder all the components together. An excess of molten solder is visible on the suspension system (Fig. 208: 1). The *gombík* was repaired in modern times with a hard solder containing Zn (Fig. 208: 7). Chasing tool marks are visible on the surface of the object. Sketch lines can be observed in Fig. 208: 6, while chasing tool marks are visible in Fig. 208: 5. High purity silver with a small amount of gold (average 2 wt.%) and a small amount of copper (average 3 wt.%) was used to manufacture the different components (Fig. 209). The *gombík* is an exceptionally fine piece with precise chasing work. The sketch lines and regular chasing tool marks reveal the work of a very skilled silversmith.

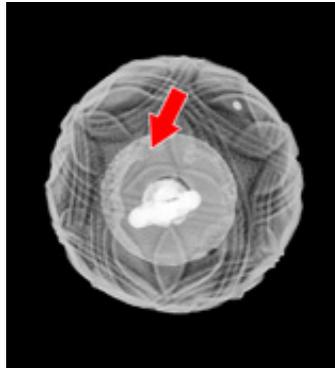
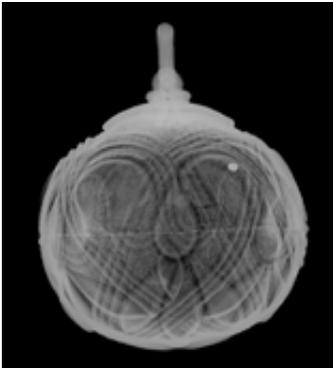
*Gombík* Inv. No. 1426/57 is a gilded copper alloy, chased *gombík* discovered in child (4–5 years old) Grave 550 from Church 3 cemetery in Mikulčice. Other grave goods included another similar *gombík* forming a pair, a crescent pendant in gold, a silver bead, a silver wire (from earrings) and two knives. The *gombík* is medium-sized (28 mm in diameter) and weighs 9 g. It is made of six components joined together (two hemispheres, a loop, a clamp, a beaded wire, and a collar) (Fig. 210). The loop is formed with a round-sectioned wire while the clamp has a triangular section. The ring is made from a beaded ring (Fig. 211: 1) and the two hemispheres are topped by a collar (Fig. 210; 211: 2). It is decorated by chased motifs of a lily bud on a dotted background with a trefoil in a triangle on the lower pole (Fig. 210). A vent (Fig. 211: 7) was made on the upper hemisphere to avoid the two hemispheres bursting during soldering.

The different components were made from almost pure copper (Fig. 212). A small amount of Sn (1.2 wt.%) was detected in the hemispheres and the collar (3.1 wt.%) while another material was used to



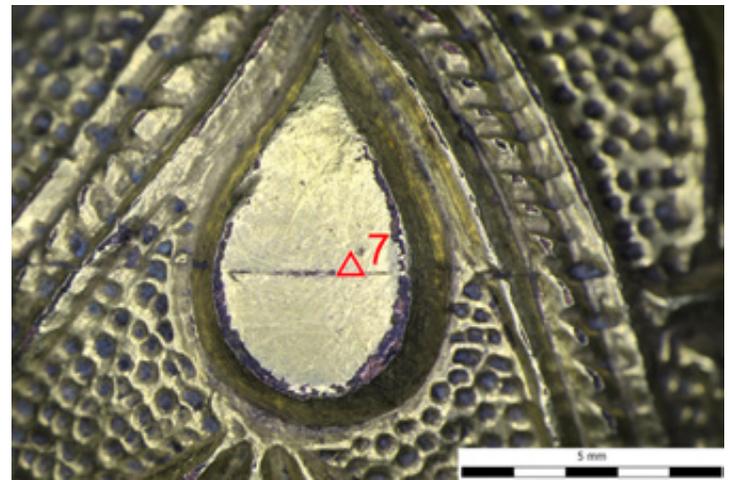
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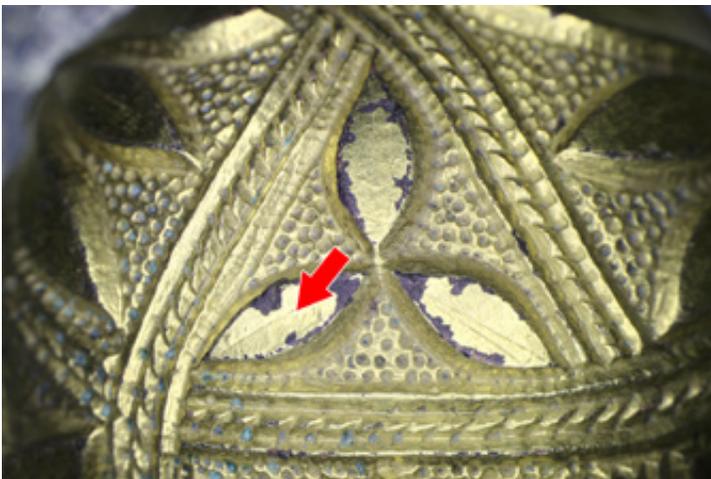


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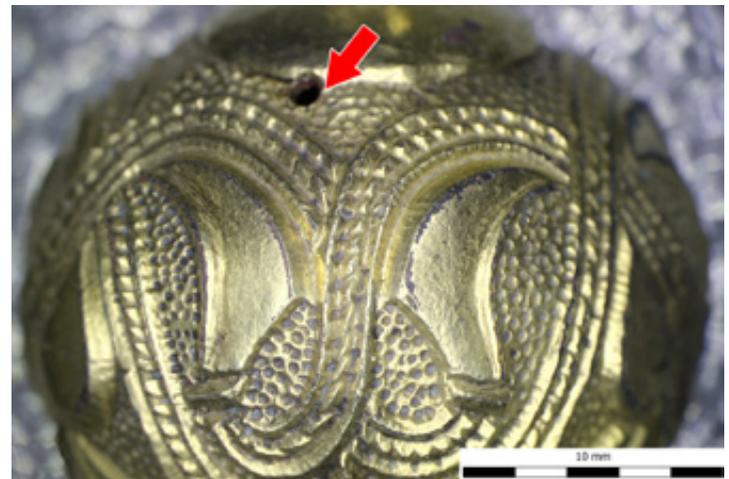
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Fig. 211 *Gombik* Inv. No. 1426/57, Mikulčice-Valy, detailed views.  
 1 – Detail of the beaded wire ring; 2 – collar detail; 3, 4 – X-ray radiographs;  
 5 – solder areas between hemispheres; 6 – detail of the sketch lines; 7 – vent  
 on the upper hemisphere; 8 – solder area between the hemispheres (SEM  
 micrograph, BSE image); 9 – partly burnished gilding layer (SEM micrograph,  
 BSE image).

manufacture the ring since a small amount of Pb (3.5 wt.%) and Sn (1.3 wt.%) were also detected. Analysis of the solder area (Fig. 211: 5) revealed that a hard Ag-Cu solder close to the eutectic composition (a mixture of Ag-Cu with the lowest melting point) was used to join the different components together. The smeared solder is visible under the collar on the X-ray radiograph (Fig. 211: 3, 4).

After soldering and chasing, the *gombik* was gilded by fire gilding: an amalgam of Au and Hg was applied on the cleaned surface and then heated. The gilding layer was then burnished to produce a compact surface with a bright golden colour although it remained porous and dull in the recesses.

The quality of the *gombik* is extremely high. The chased decoration was perfectly planned and organised. Sketch lines are visible on the surface (Fig. 211: 6). The goldsmith had excellent skills in chasing, soldering, gilding and excellent knowledge of the material.

These three examples show the diversity of the construction, decoration and the material displayed in the manufacture of the finest *gombiky* from Mikulčice. They also demonstrate very skilful chasing, granulation work, soldering, gilding and excellent knowledge of the materials and use of tools, which bear witness to highly sophisticated craftsmanship. The perfection of these *gombiky* suggests that these products may have been diplomatic gifts, imported products or jewels produced by foreign goldsmiths originating from the Byzantine Empire or the Islamic Caliphate, where the art of chasing, gilding and granulation work had a long tradition and was equally perfectly mastered.<sup>6</sup>

6 Ottenwelter et al. 2020.

<i>Gombik</i> Inv. No. 1426/57, Mikulčice	Surface analysis	Sub-surface analysis	Chemical composition [Wt.%]						
			Au	Ag	Cu	Hg	Sn	Pb	O
Loop (point 1)		X	-	-	95.9	-	-	-	4.1
Clamp (point 2)		X	-	-	95.9	-	-	-	4.1
Ring (beaded wire) (point 3)		X	-	3.1	85.5	-	1.3	3.5	6.6
Collar (point 4)		X	-	-	93.1	-	3.1	-	3.8
Hemisphere (point 5)		X	-	-	97	-	1.2	-	1.8
Gilding (point 6)	X		85.6	2.5	2.5	9.4	-	-	-
Solder area (point 7)		X	-	66.8	33.2	-	-	-	-
Solder, $\alpha$ phase (point 8)		X	-	87	13	-	-	-	-
Solder, $\beta$ phase (point 9)		X	-	3.7	96.3	-	-	-	-

Fig. 212 Chemical composition of the *gombik* Inv. No. 1426/57.

EDS analysis on SEM (normalised wt% on the metallic elements – light elements (except C) not reported but considered in the quantification).



Strap-end from Mikulčice, Grave 100 near Church 2.

## 3.6 Belt and Its Parts

– Šimon Ungerman



With this essay devoted to belt fittings, we come to an aspect of material culture dominated by men. In the graves of Great Moravian women, apart from a few exceptions, no fittings have been found that could be interpreted as having been part of a belt. Moreover, it was relatively rare for men to be buried with a belt with metal parts. This is evident from a comparison with Avar cemeteries, where a substantial part of the male population was equipped with a belt made up of multiple parts. The same was true of Merovingian culture, where belt fittings also commonly appear in women's graves. There may be a number of reasons for these differences. It is possible that Moravian women were not in the habit of using belts, or may have used a strip of cloth or a narrow leather belt tied into a knot, i.e. with no metal parts. With respect to Great Moravian male graves, it is highly likely that the relative infrequency of belt fittings is influenced by funerary customs. Belts with metal parts are likely to have been much more common in the living culture, and certainly not every man was buried with such a belt. This appears to be corroborated by the fact that the proportion of graves with weapons is significantly lower in Great Moravian cemeteries than it is in the Merovingian or Avar milieu, i.e. the occurrence of weapons in Great Moravian graves does not reflect their frequency in living culture.

The following text is devoted solely to the lavish belt fittings from the most important Great Moravian strongholds, primarily from Mikulčice. These fittings are mostly made from silver or gilded bronze. They were made from sheet metal, or were cast; they are decorated partly using techniques that can be seen in women's jewellery (granulation, filigree, inlays from glass or semi-precious stones), and partly by chip-carving, inlaying or niello, i.e. techniques typically used to decorate larger items from a man's armaments and equipment. Some of these belt fittings are the finest examples of Great Moravian craftsmanship. This is also one reason why they always feature at major exhibitions on the topic of Great Moravia. However, many aspects associated with the production and use of these items are still unclear.

Each luxurious belt set found in the Great Moravian milieu is unique, with no two sets the same. This fact also indicates that these were exclusive products, created to reflect the needs of the person for whom they were crafted as well as the maker's own inventiveness. While their appearance is original, the individual sets are similar in terms of their composition (number of fittings and their design) and in their decoration. Based on their design attributes we may distinguish between three main groups of belt sets: those with bird-shaped clasps, those with a common buckle with a prong, and finally sword belts.

Fig. 213 Bird-shaped clasps are distinctive parts of Great Moravian belts.

1 - The clasp in form of one bird, Bojná hillfort (Slovakia); 2 - the clasp in form of two birds, Mikulčice, Grave 390 near Church 3.



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## Belts with bird-shaped clasps

The most distinctive and also relatively large group of belt sets from Great Moravian graves comprises sets with a specific fastener, using a bird-shaped clasp.<sup>1</sup> The entire set consists of a buckle without a prong, one to three bird-shaped clasps and a strap-end. The clasp may take the form of either one bird (Fig. 213: 1), or two birds side by side (Fig. 213: 2; 214: 3, 9, 12). The clasps were fastened onto a leather strap in the places where other belts had holes. The belt fastened with one or both protrusions of the clasp (i.e. the heads of the “birds”) hooked around the inner edge of the frame of the buckle, so it did not need to have a prong. Virtually all the lavish belt sets of this type (more or less complete) were found in Mikulčice, in seven graves; another one was discovered at the stronghold of Pohansko near Břeclav<sup>2</sup> (cf. Excursus 3.6.1).

The fittings of these Mikulčice belts are made from various materials and also differ in the use of varying production and decorative techniques. Sometimes, the same decorative pattern is used on buckles and strap-ends. We will start with the strap-ends, which are always tongue-shaped and fitted with a row of rivets on the attachment edge; those rivets were used to fasten the strap-end to the leather strap. The strap-end face is always significantly structured, while the reverse side is flat and features embossed or engraved decoration, such as a human figure (Fig. 214: 1, on the right). The strap-end face is divided up into two discernibly separate zones – the edge, which is U-shaped, and the central zone, which is separated from the edge zone by a distinct hollow. The decoration on the edge zone is completely different to that of the central zone. This is clearly evident on, for example, the strap-end from Grave 100 by Church 2 in Mikulčice.<sup>3</sup> This strap-end is cast from silver, with much of the face being gilded (Fig. 214: 1, on the left). The edge zone of the face has five diamond-shaped facets, while the central zone is covered by two facets of different sizes, circular and oval. All these seven facets are accentuated in two ways. The first is that they stand out from the surrounding surface of the strap-end face. The other is in the use of colour contrast, where the facets are left silver, while the rest of the surfaces (which are imitating the granulation and beaded wire) are gilded. What is important is the fact that some of these elements were also used to decorate the buckle: alternating on the buckle frame there are a total of six diamond-shaped facets with imitation granulation between them (Fig. 214: 2).

There are also similarities in the decoration of the gilded bronze strap-end and buckle found in the backfill of Grave 248 by Church 3 in Mikulčice.<sup>4</sup> The edge zone of the strap-end (Fig. 214: 4) is divided up into seven distinct raised triangular facets, while the rest of the edge zone surface is covered by small circular depressions (possibly for inlays) and chip-carved grooves. All these decorative elements are also used on the buckle frame (Fig. 214: 5), although unlike the buckle from Grave 100, there are fewer raised facets (here just three).

And, finally, this group of artefacts also includes the strap-end from Grave 433 by Church 3, made from sheet silver (Fig. 214: 6). The edge zone of the face features a total of seven slightly raised diamond-shaped facets; the space between them is filled with pretzel-shaped beaded wires. In contrast, the central zone consists of two larger, roughly oval facets, covered with recessed decoration in the form of a twig or fish bone. Unfortunately, we do not know the appearance of the other fittings forming the original set from which only the strap-ends have been preserved. From Grave 433 we have one smaller silver strap-end set with a Roman gem as well as an iron buckle embellished with silver inlaying, which together might have formed part of a single belt. Also, sometimes associated with this grave are three bronze bird-shaped clasps, although it is most probable that this is a mistake.<sup>5</sup> It is therefore unclear how the fastening mechanism of the belt with the larger strap-end functioned.

It is entirely understandable that when making fittings for one particular set the craftsmen wanted to use the same decorative elements to ensure that the fittings were a “visual match”. On the other hand, we can see that when making these fittings they did not proceed at random, but kept to an established system. This may be referred to under the working name of the “Mikulčice pattern” and may be briefly summarised as follows: the decoration of the strap-end face consists of two differently decorated zones, while the decoration of the edge zone is precisely reproduced on the buckle frame. It is highly likely that these sets are the work of Mikulčice craftsmen who copied one another, or even that they are the product of a single workshop. This conclusion might at first seem trivial, as researchers have never considered these sets – emblematic for Mikulčice and hence for the entire Great Moravia – to be of anything more than local provenance. On the other hand, this does not necessarily apply a priori for all parts of the belts that were fastened with bird-shaped clasps.

In this respect, it is interesting to take a look at other selected sets with bird-shaped clasps, on which the strap-end and the buckle featured decoration other than the “Mikulčice pattern” described above. The set from Grave 50 by Church 6 in Mikulčice, made of gilded bronze, includes a tongue-shaped strap-end, around the edge of which runs a moulded wavy line (Fig. 214: 7).<sup>6</sup> In the central axis of the face there are two raised saltires (Saint Andrew’s crosses), always with grooves on the top, around which there are protruding rectangular facets with straight inlaying. The lower parts of the strap-end face feature chip-carved decoration and are gilded. The entire face thus lacks any division into an edge and central zone. The decoration of the buckle frame (Fig. 214: 8) is also different from the “Mikulčice pattern”: the entire face of the frame is completely divided up into nine decorative fields, bordered

1 Ungerma 2002, 99–106; Profantová 2003, 66, 68.

2 Pohansko near Břeclav, first church, Grave 13 (Kalousek 1971, 33, Pl. 42: 1–3; Kouřil ed. 2014, 359).

3 Poulik 1957, 309–316, Fig. 90–92; Kouřil ed. 2014, 366.

4 Kouřil ed. 2014, 361; Klanica et al. 2019, 30, Fig. 20: 1, 2.

5 Klanica et al. 2019, 68–70, Fig. 79: 1, 2, 10; 80: 7–9.

6 Profantová 2003, 21, Fig. 36: 1–4/50; Kouřil ed. 2014, 364.

Fig. 214 Decorative belt sets with bird-shaped clasps from Mikulčice. 1–3 – Belt fittings from Grave 100 near Church 2; 4, 5 – strap-end and buckle from the backfill of Grave 248 near Church 3; 6 – strap-end from Grave 433 near Church 3; 7–9 – belt fittings from Grave 50 near Church 6; 10–12 – belt fittings from Grave 390 near Church 3.

by raised rectangular facets with straight inlaying; each field is filled with a saltire, like on the strap-end. What is very important is the fact that the sheet metal plate of the buckle features a slot for the prong, so this was originally a buckle of standard design. It was perhaps only after the prong was damaged or deliberately removed that the entire set was fitted with two bird-shaped clasps (Fig. 214: 9). It is obvious that the overall composition of the decoration on the buckle and the strap-end and also the individual decorative elements have numerous analogies in the Carolingian material.<sup>7</sup> Also, given its excellent quality, it is assumed that the set in its original form came to Mikulčice as an import from the Frankish Empire. The new owner of the belt then evidently tried to “fit in” with it in Mikulčice – and as most of the lavish belt sets at this site fasten using bird-shaped clasps, the easiest way to fit in would be to change the fastener. It is also assumed that the strap-end from Grave 295 by Church 3 is Frankish in origin (see Excursus 1.2.1, Fig. 24).

Finally, one example that illustrates the diversity of the decoration on belt sets with bird-shaped clasps is the belt set from Grave 390 near Church 3.<sup>8</sup> Let us consider the large strap-end, made from sheet silver (Fig. 214: 10). Not even its face is divided up into an edge and central zone. This is because the maker wanted to use three inlays that differed considerably in terms of the size, shape and colour: by the attachment edge there is a small square inlay made of an unidentified darker material; in the middle of the strap-end there is a piece of pinkish glass in the shape of a spherical segment (cabochon) with a stylised engraving of a four-legged animal; set into the bottom part of the strap-end there is an Roman carnelian gem, straight down the side (which bears an engraving of Mercury). The remaining surface of the strap-end face is entirely covered by two types of silver filigree wire: arch-shaped with a plastic profile or flattened and wavy. This decorative principle, where the producer seemed reluctant to leave even a single part free of decoration, is referred to as *horror vacui*. This, together with the disparity of the three inlays used, gives the decoration of the strap-end face a somewhat “barbaric” appearance. The chased figure of a man with his arms raised in prayer (“orans”) on the reverse of the strap-end (Fig. 214: 10, on the right) also implies that the maker – otherwise a competent goldsmith – had no great experience with figural scenes (for more on this and other depictions, see Excursus 3.6.2).

### Belts with a common buckle

Most of the lavish belt sets found in Mikulčice were fastened using bird-shaped clasps. Common buckles, i.e. those with a prong attached to the bar of the frame, were used less often. One particularly remarkable set is that from Grave 70 by Church 6, comprised of a buckle and a strap-end.<sup>9</sup> Both items, made of gilded bronze, are unique in the Great Moravian context. The buckle frame (Fig. 215: 2), or rather the visible part of it, consists of two halves; both ends of each half are shaped into the stylised head of a water bird with a broad beak, possibly a duck. When the grave was uncovered the slot of the sheet metal plate of the buckle contained an iron prong, which apparently was later fitted to replace the original bronze

prong. The strap-end (Fig. 215: 1) also features an unusual design: the end section of its roughly pentagonal shape has a wavy edge; the main decorative element on the face is a raised moulded rosette. All these attributes are atypical for Great Moravian products and imply that the set is an import from the Frankish Empire.<sup>10</sup> Other such imports include the strap-end and buckle from Grave 323 in Rajhradice, which also belong to this design group of sets (see Excursus 1.2.1, Fig. 21: 2, 3).

### Sword-belts

Belts worn by elite Great Moravian warriors to carry their swords can be identified in two ways: either on the basis of the belt fittings found in the graves in the immediate vicinity of a sword, or on the basis of a specific shape of fitting. Regarding the first method of identifying a sword-belt, it must be emphasised that fittings found by swords do not necessarily have to bear any special design or other features. One example is Grave 223/51 in Staré Město – Na Valách, where a sword in a scabbard was laid alongside the right arm of the deceased man. Lying beside the hilt of the sword was a buckle, with a strap-end below the blade (around half-way along its length), both made of gilded bronze. The buckle has a sheet metal plate and a rectangular frame decorated with low circular protrusions with an indentation in the middle (Fig. 216: 2). The face of the tongue-shaped strap-end is covered by a stylised floral motif made by chip-carving technique (Fig. 216: 1).<sup>11</sup> The man originally had straps wrapped around his calves and spurs by his feet, all fastened using sets of buckles with a strap-slide and strap-end. However, the grave did not contain any other fittings that could be associated with a sword-belt. This means that the sword-belt was in the form of a simple leather strap, around 2 cm wide (judging by the width of the strap-end), onto which the scabbard was stitched or riveted. The only metal parts were thus the buckle and the strap-end.

In Mikulčice, sword-belt sets of this type include the set of silver fittings from Grave 580 inside Church 3, consisting of a buckle, a strap-slide and a strap-end. The strap-end face (Fig. 216: 3) and the plate of the strap-slide (Fig. 216: 4) are adorned with the same motif of a cross with the arms ending in lily shapes; the oval buckle frame (Fig. 216: 5) is decorated with curved lines. The decoration is always engraved; the grooves are gilded. Although the skeleton in Grave 580 had completely decomposed, these fittings were found below the upper part of the sword, originally placed on the left-hand side of the buried individual. Nor can we completely rule out the possibility that the belt was used to carry a *seax*, which was also part of the grave goods. Unfortunately, from the preserved documentation it is unclear where this weapon lay – one possibility is that it was placed underneath the sword.<sup>12</sup> In any case, the buckle, strap-slide and strap-end were evidently part of a belt to carry one of these two bladed weapons; again, there were no other fittings of a specific shape. What is unusual is the presence of the strap-slide, which otherwise is not common in the Great Moravian or Carolingian belt sets. If the loose end of the strap were weighed down by a strap-end, which would make the end hang down vertically

7 On buckle decorations, see e.g. Jelovina 1986, 56, Pl. VII: 85, 88, 90; Wamers – Brandt eds. 2005, 135, Cat. No. 36e.1, Fig. on page 136 top left. On facets with inlaying, see e.g. Zuyderwyk – Besteman 2010, Pl. 3: 1, 3; 4: 2; 9: 17; 10: 21.

8 Kouřil ed. 2014, 362; Klanica et al. 2019, 59–60, Fig. 65: 1, 5, 6; 66: 2.

9 Profantová 2003, 24, Fig. 41: 3/70, 4/70; Kouřil ed. 2014, 360, Cat. No. 174.

10 Cf. e.g. the Carolingian belt and other fittings from Slovenia, Croatia, Bosnia and Herzegovina, decorated with a rosette motif: Bitenc – Knific eds. 2001, 95–96, Cat. No. 313; Knific 2007, Fig. 2: 7 (Gradišče nad Sotesko); Bitenc – Knific eds. 2001, 98, Cat. No. 321 (Gradišče nad Bašljem); Jelovina 1986, 56, Pl. VII: 84, 86, 87, 89, 91, 92 (Biskupija – Crkvina); Werner 1960–1961, Pl. I: 3 (Mogorjelo).

11 Hrubý 1955, 524, Pl. 80: 3, 5; Kouřil ed. 2014, 374, Cat. No. 192.

12 Kouřil ed. 2014, 367, Cat. No. 181; Klanica et al. 2019, 117–120, Fig. 133–135.



Fig. 215 Unique items of belt fitting with a common buckle: gilded bronze buckle and strap-end with stylised heads of water birds, possibly a duck.

1, 2 - Belt fittings from Grave 70 near Church 6 in Mikulčice.



Fig. 216 Fittings of sword-belts, which were identified thanks to their discovery in the graves in the immediate vicinity of a sword.

1, 2 - Belt fittings from Grave 223/51 at Staré Město - Na Valách; 3-5 - belt fittings for a sword or seax from Mikulčice, Grave 580 inside Church 3.

from the belt, no strap-slide would be needed. In contrast, straps that tied around the calves or used to attach spurs to boots were generally fitted with a strap-slide.

The other large group of sword-belts consists of those with fittings of a specific shape. In 9th-century Western and Central Europe there are three main types of sets, which differ in terms of their shape and number of fittings. The type that is most widespread and also the best researched is comprised of sets containing a three-armed mount. The second type of sets with the working name of “Závada type” is characterised by its fittings with a neck and a loop. The third type, referred to as “Marsum type” typically features rectangular fittings with moulded ribs semicircular in section on the shorter sides.<sup>13</sup> The main place in which these types originated was the Frankish Empire, from where they spread to regions beyond its borders, where they were taken up, copied and perhaps also slightly modified. From hereon, only the first two types will be discussed, as we do not yet know of any comprehensive Marsum-type set from the Great Moravia. Even the first two types do not occur in the Great Moravia in any great numbers - most graves containing swords lacked any specific sword-belt fittings.

The most lavish and thus the most famous sword set from the Czech Republic is that from the rich double grave in Kolín. It includes a three-armed mount (Fig. 217: 1), one larger (Fig. 217: 4) and one smaller oval fitting (Fig. 217: 3) and a buckle (Fig. 217: 2). The set probably originally contained another smaller oval fitting and a strap-end. The fittings are cast from silver; raised parts form a plant ornament decorated with niello, the lower parts are gilded. In the reconstruction of the sword-belt, the three-armed mount served as a strap-distributor (Fig. 217: 5). Extending from two of its arms was the main strap, belted around the waist; a secondary strap came from the third arm, used to keep the sword scabbard in an oblique position to prevent it from getting in between the legs while walking. This secondary strap was connected to the larger oval fitting attached to roughly half-way down the length of the scabbard. The two smaller oval fittings were used to attach the mouth of the scabbard to the main strap. The main strap was fastened with a buckle and a (now missing) strap-end. The Kolín set is a fine example of Carolingian craftsmanship, and the buried man probably received it as a gift or as war booty.<sup>14</sup>

It is considered likely that equally lavish sword-belts also found their way to the elites governing the core regions of Great Moravia, although perhaps not in any great numbers. However, we do not yet know of any from Mikulčice or other central Moravian strongholds; the sets of sword fittings found there are made of iron and the decoration on them is simple. Two sets have been found at the cemetery by Church 3 in Mikulčice, the composition of which greatly differs from the Kolín set; the only thing all three have in common is a three-armed mount. The set from Grave 500 consists of four types of fitting: apart from the three-armed mount (Fig. 217: 6), it includes three smaller rectangular fittings (Fig. 217: 8), one larger rectangular fitting (Fig. 217: 9) and a buckle (Fig. 217: 7).

13 Ungerman 2011a; 2015; cf. Robak 2013; 2014.

14 Lutovský 1994, 45-48, Fig. 2, 3; Košta - Hošek 2008b, 17-25; Košta - Lutovský 2014, 26-28, 65-76.

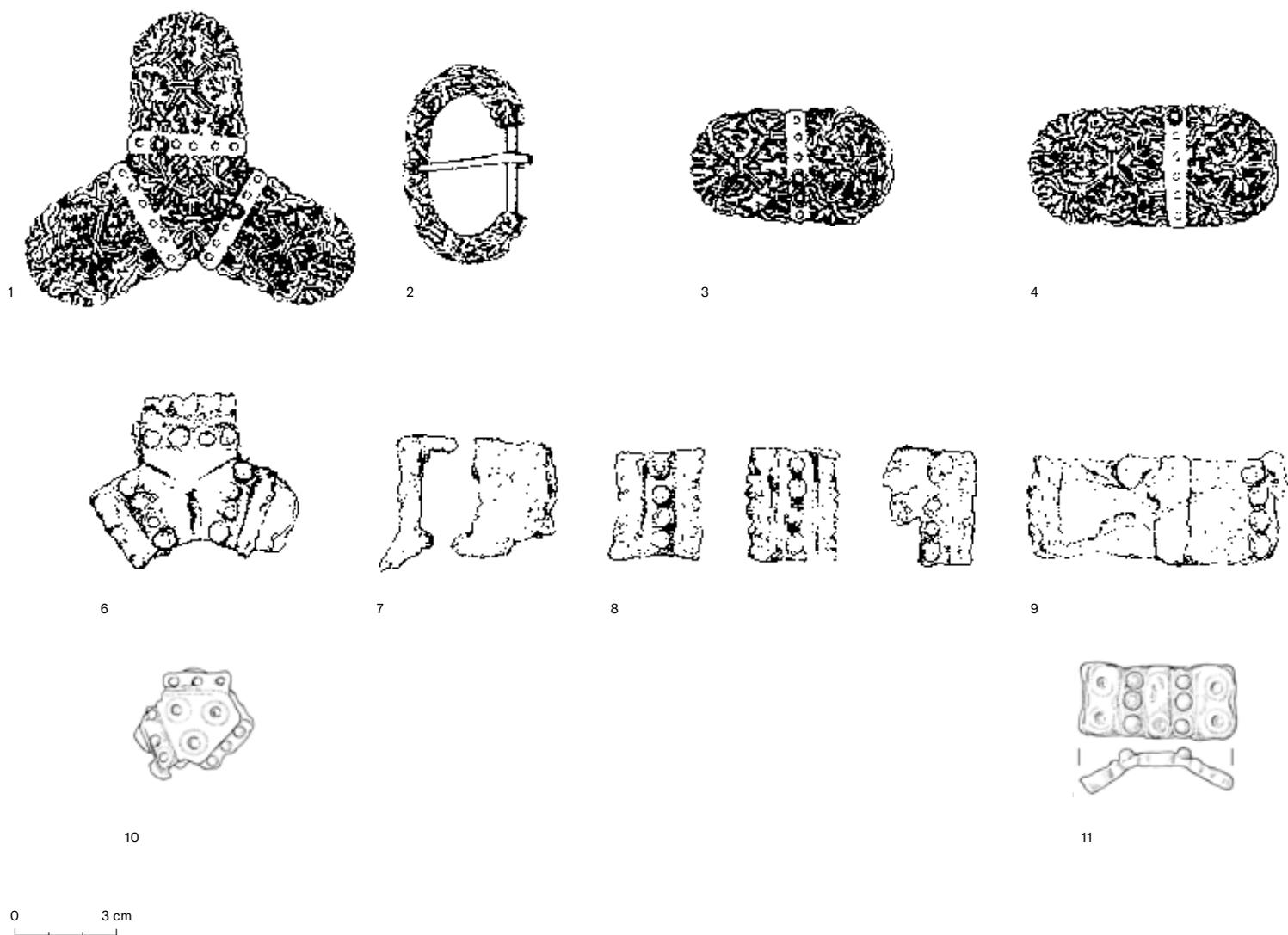


Fig. 217 Most widespread and also the best researched of sword-belt-type is comprised of sets containing a three-armed mount (always left).

1-4 - Sword-belt fittings from a rich double grave in Kolin; 5 - a reconstruction of a sword-belt with a three-armed mount and three oval mounts; 6-9 - sword-belt fittings from Mikulčice, Grave 500 near Church 3; 10, 11 - sword-belt fittings from Mikulčice, Grave 375 near Church 3.

The three-armed mount here served as a connecting element between the main and the secondary strap; the three smaller rectangular fittings with a line of rivets along their central axis were probably used to fasten both straps to the scabbard in the same places as in the set from Kolin (Fig. 217: 5). The purpose of the larger rectangular fitting is not completely clear.<sup>15</sup>

The second set from Mikulčice contains just two fittings: a three-armed mount with very short arms (Fig. 217: 10) and a rectangular fitting bent twice at a blunt angle (Fig. 217: 11). Both are decorated with small circular depressions on the face (probably originally containing decorative inlays that have been lost), always edged with an engraved ring.<sup>16</sup> We cannot say for sure whether the set is

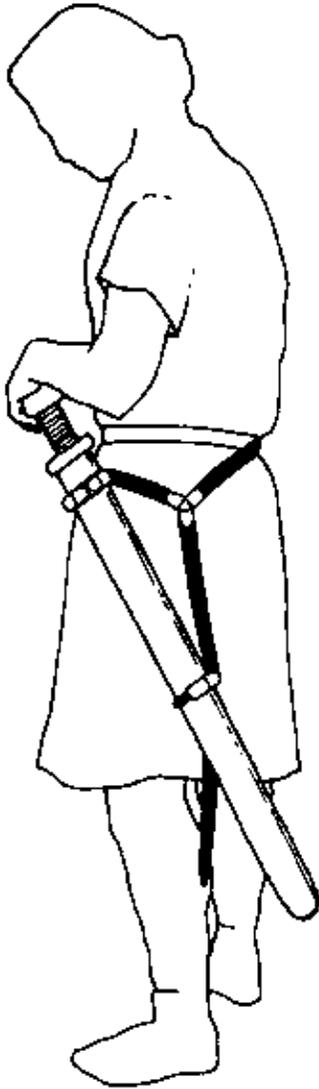
complete. This also raises some uncertainty over what the whole sword-belt originally looked like. However, there are still more unanswered questions. Given the material used (iron) and the generally simple decoration, it is possible that the two Mikulčice sets were made in local workshops. It is unclear whether their makers copied imported Carolingian models precisely, or if the alterations in the two sets are the result of local innovation.

The best testimony to the use of Závada-type sword-belt sets in Great Moravia is provided by two graves (54 and 71) at the cemetery in Rajhradice. On the right of the waist of the man in Grave 54 and by his right elbow, there were four fittings, although the grave did not contain the actual sword. The set comprises a fitting with a neck and a loop, now incomplete (Fig. 218: 3), a two-part hinged fitting (Fig. 218: 4), a tongue-shaped strap-end with three rivets (Fig. 218: 1) and a fitting of the same shape with no rivets, which

15 Košta 2004, Pl. XXXVII; Ungerman 2011a, 581-584; Klanica et al. 2019, 91-93, Fig. 104: 1-7.

16 Ungerman 2011a, 581, Fig. 6: 1, 2; 2015, 259, Fig. 7: 1, 2; Klanica et al. 2019, 54-55, Fig. 58: 3, 4.

5



might originally have had a loop on the reverse (Fig. 218: 2).<sup>17</sup> Grave 71 at the same site contained a sword, next to the hilt of which there were three iron fittings: a low roof-shaped fitting with rounded arms (Fig. 218: 7), a fitting with a neck and a loop (Fig. 218: 6), again incomplete, and a damaged tongue-shaped strap-end (or perhaps a fitting; Fig. 218: 5). Judging by the position of the fittings in the grave, the sword-belt was wrapped around the sword.<sup>18</sup>

It is still unclear what the Závada-type sword-belts actually looked like – how they fastened (i.e. if the set also included a buckle and strap-end) and what purpose the individual fittings served.<sup>19</sup> Fittings with a neck and a loop, for instance, were generally used to connect the ends of two straps, but we can only guess that in

this type of sword-belt they were used to adjust the length of the secondary strap and thus also the tilt of the scabbard (for probable reconstruction see Fig. 218: 8). Here it is important to point out that evidence has been found indicating that in the Early Middle Ages this type of fitting was also used to connect the straps on horse harnesses. The finding of an actual fitting with a neck and a loop cannot therefore be considered definitive proof of the existence of Závada-type sword set. A considerable number of these fittings have been found in Mikulčice, for example, although they come solely from settlement layers and we are unable to determine their original purpose. It is likely that the specimens that feature a more complex or decorated plate or outside part of the loop are Carolingian imports.<sup>20</sup> However, this does not support the theory that they were formerly part of a sword-belt, as Carolingian horse harness fittings were sometimes lavishly decorated.<sup>21</sup>

### The symbolism of the military belt

The belt is associated with many symbolic meanings in ancient and medieval times. As early as in the Old and New Testament we can find a number of passages in which the belt, or “girded loins”, is a symbol of power, justice and loyalty to God, hence a symbol of willingness and readiness to obey God. In a more modern context, for the Christian monks and hermits the belt is a sign of their self-control, moral purity and abstinence, as the belt symbolically binds the loins, which are the root of sexuality.<sup>22</sup>

However, we will focus mainly on the power symbolism of the belt, which stems primarily from its purpose as a key element of a warrior’s equipment, where his sword or other weapons are hung. For the Early Middle Ages, the Roman tradition was of great importance, setting the importance of the symbolic role of the military belt for the next few centuries. The military belt (*cingulum militiae*), was the most important distinguishing sign of the Roman legionnaire and an emblematic symbol of the entire military as a social group. The saying “fasten the belt” was therefore also used in the Roman times in the figurative sense of “become a soldier”. In contrast, “to be stripped of one’s belt” meant humiliation and disgrace. As a result of Diocletian and Constantine’s reforms of state administration, the belt also became part of the official clothing of civil dignitaries. After all, at that time the civil state administration was organised along the lines of the army administration, a fact that was reflected in the official designations, as the civil dignitaries were called *militia*, while military officials were referred to as *militia armata*. Therefore, the expression *cingulum dare* – literally “give (someone) a belt” – was used to mean “appoint someone to office”.<sup>23</sup> This symbolism of the belt also lived on in the Byzantine Empire, where the holding of official functions was commonly referred to using expressions such as “wear the belt of a *protospatharios*” far into the High Middle Ages. The highest-ranking officials were issued with garments with a clearly specified colour and decoration, as well as a belt and other attributes of office, presented by the emperor himself during a ceremony held in a church. We only have a vague idea of what their belts looked like from the written sources: they had gold or silver fittings and were adorned with various types of semi-precious stone, while the strap itself could

17 Staňa 2006, 144, Fig. 53: 1–4; cf. Knific 1999, Fig. 9: a; Ungerman 2011a, Fig. 8: 3.

18 Staňa 2006, 145, Fig. 54: 5–7.

19 Ungerman 2011a, 584–588; 2015, 263–267; Robak 2018.

20 Klanica 1984, esp. Fig. 8: 20, 21; cf. Kolník 1999, 228, Fig. 2.

21 Karo – Knific 2015; 2019.

22 Studený 1992, 207–208; Schopphoff 2009, esp. 90–104.

23 Sommer 1984, 83; Hoss 2010.

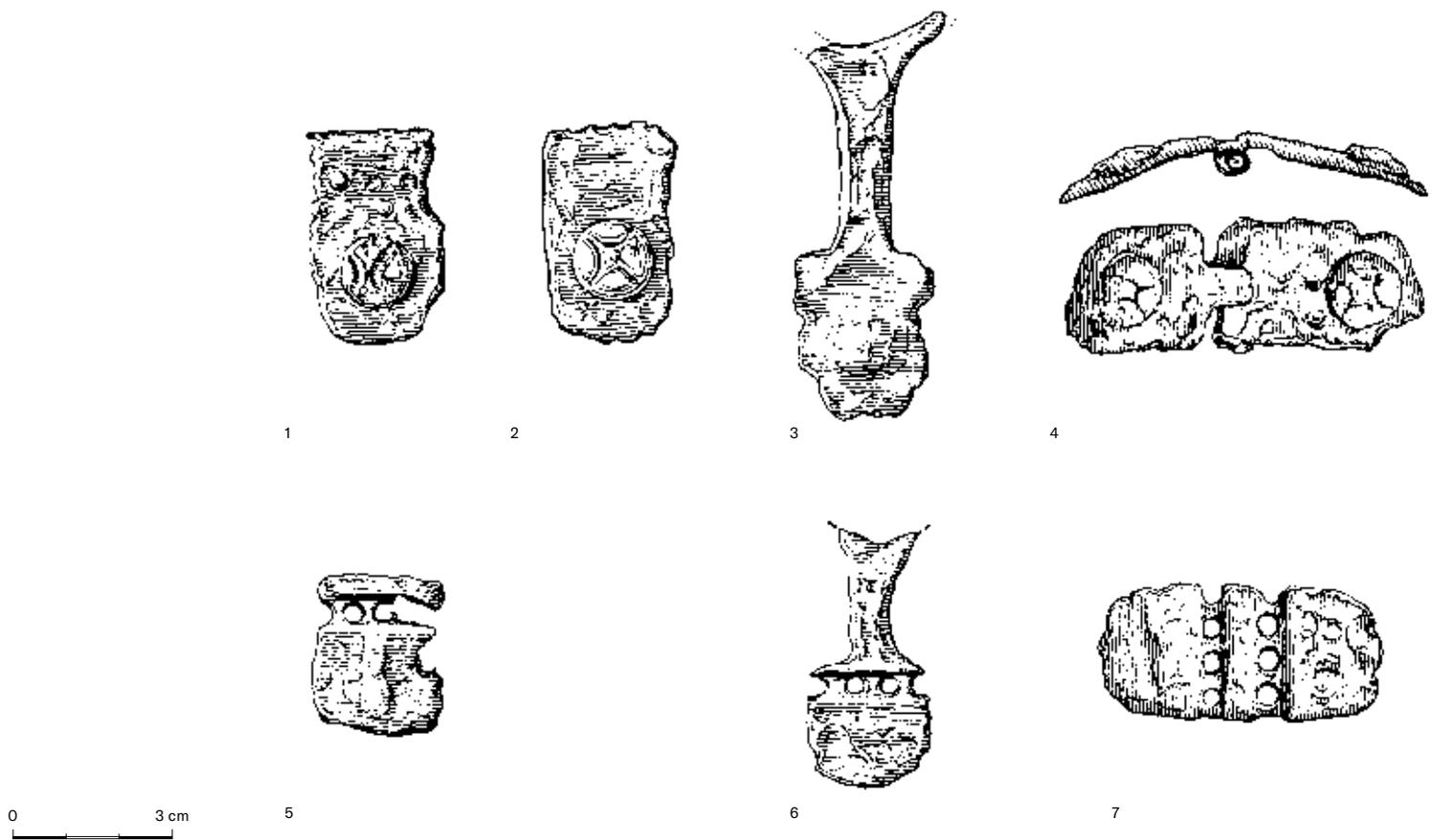


Fig. 218 Závada-type sword-belt sets and their hypothetical reconstruction.

1-4 - Rajhradice, Grave 54; 5-7 - Rajhradice, Grave 71; 8 - hypothetical reconstruction according to Zbigniew Robak.

have been red or purple. Such lavishly decorated belts also formed part of diplomatic gifts, which the Byzantine emperors gave to foreign rulers and dignitaries.<sup>24</sup>

In the Frankish Empire, there were rituals associated with handing over or taking off a military belt with weapons that we do not know of from the Roman or Byzantine Empires. The written sources show that the sons of Frankish rulers in the 9th century were ceremonially girded with a belt at the age of 13-15, whereby they were accepted as adult men and warriors. Young aristocrats also underwent the same ceremony.<sup>25</sup> A lavishly decorated sword with a belt was also an important symbol of government. A Carolingian ruler handed over the reign of his entire empire to his successor by giving or bequeathing him a belt with a sword, royal garments, a crown and a sceptre.<sup>26</sup> All these attributes can be seen in a depiction of Lothar I on his throne (Fig. 228: 2 in Excursus 3.7.1). The ritual of taking off a man's belt and weapons was, on the other hand, part

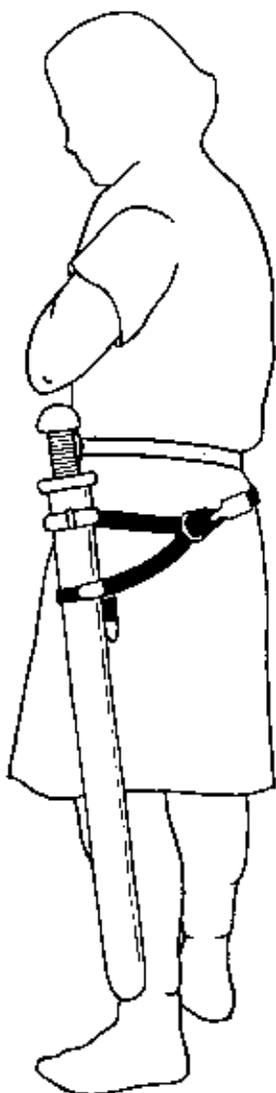
of public penance for a serious crime. The highborn penitent thus lost his military and - to a large extent - also his social status, as he ceased to be a member of the *militia saecularis*, i.e. the lay ruling class. Such penitence forbade him to remain married and also to engage in activities associated with the aristocratic way of life - to bear weapons, ride a horse, attend banquets, hold office, testify in court, etc. One notorious case is that of Emperor Louis the Pious, who was accused of many misdeeds and crimes in 833. He confessed to his crimes in the Abbey of Saint-Médard de Soissons, took off his belt (*cingulum militare*) with his weapons and placed them on the altar, donned his penitential clothing, surrendered his rule and retreated into seclusion.<sup>27</sup>

<sup>24</sup> Parani 2007, 504; Albrecht 2010.

<sup>25</sup> Dette 1994, 17, 27; Le Jan 2000, 285; Lohrke 2004, 107; Fray 2011, 776, 805.

<sup>26</sup> Nelson 1996, 84; cf. Schulze-Dörrlamm 2012.

<sup>27</sup> De Jong 1992; Leyser 1994b, 57-64; Althoff 2003, 58.



8

As the Moravians were in close contact with the Frankish Empire in the 9th century, and adopted Carolingian armaments and equipment (see Excursus 1.2.1), the Moravian elites must have been, at least to some extent, aware of the symbolism associated with such militaria. Unfortunately, the rare written sources concerning Great Moravia contain no mention of this. However, certain information can be found in two passages from the Chronicle of Cosmas, which relate to Bohemia in the 11th century. When Vratislav II became the Prince of Bohemia in 1061, he divided the Moravian appanages between his brothers Conrad and Otto, while he forced his youngest brother Jaromír to become a cleric. However, Jaromír, “neglecting the grace he had received through the laying on of hands, took his military belt (*militare cingulum*) and fled with his followers to the Polish prince.” An account of events seven years later confirms that the first mention of the belt had a deeper meaning. After the death of bishop Šebíř, Conrad and Otto summoned Jaromír back from Poland to become his successor: “They ungirded him of his military belt (*zona militari*) and he again took a clerical habit and tonsure.”<sup>28</sup> This clearly shows that the symbolic significance of the belt (which certainly came with a sword, even though this is not explicitly mentioned) was seen in exactly the same way in Bohemia as it was in the Frankish Empire under Louis the Pious, i.e. as a token of belonging to the lay aristocracy and hence the symbol of the ability to rule the country as a whole.<sup>29</sup> We may therefore assume that the Carolingian symbolism of the military belt was also known in the Great Moravia. Proof of this may also lie in the great attention that magnates from Mikulčice and other important strongholds devoted to the decoration of their belt fittings (Fig. 214–216).

28 Cosmas of Prague 2009, II, 22, 140.

29 Sommer 1993, 216.

### 3.6.1 excursus

## Belts With Bird-Shaped Clasps as a Specific Symbol of the Mikulčice Elites?

– Šimon Ungerman

As mentioned previously in the Essay 3.6, complete belt sets of lavishly decorated fittings that fasten with bird-shaped clasps appear to be specific to Mikulčice. It is remarkable that very few examples of this type of belt set have been found at other important Great Moravian centres. Does this fact reflect any real differences between the Great Moravian centres? Or is it caused merely by the fragmentary nature of the archaeological record? The following text discusses both possibilities.

If we look at what we believe to have been the core of Great Moravia, i.e. the territory of what is now Moravia and South-Western Slovakia, the individual regions making up that core show clear differences in their material culture. The best evidence of this lies in pottery, where we distinguish between regional pottery groups (Blučina, Mikulčice, River Morava, etc.; cf. Essay 3.10). Although pottery was certainly made and distributed in a different manner to luxury goods, it would be wrong to a priori reject the possibility that there may have been certain regional differences in products intended solely for the elites. Especially if we assume that members of the elites ordered prestigious products from “their” craftsmen, who lived together with them in the same stronghold (see Essay 2.6). Yet the products made in the individual workshops could have had certain specific features. From this perspective, we should see the concentration of belt sets with bird-shaped clasps in Mikulčice as a certain local peculiarity, which did not really catch on in other parts of Great Moravia.

On the other hand, one might argue that in terms of numbers, the belt sets at Mikulčice make up just a very limited group of finds, so certainly not everyone who wore such a belt while alive was necessarily buried with it; other owners might have left it to their offspring, for example. At other sites such belts might have been worn less often, which further reduces the probability that they would be put into graves. Even so, we cannot say that there is a complete lack of evidence that such sets were used outside Mikulčice and nearby Pohansko near Břeclav. A set of bronze fittings that still bore the remnants of a leather strap, which is a simplified version of the design of the belt set with bird-shaped clasps was discovered in Grave 156/49 at Staré Město – Na Valách (Fig. 219). The main components of the Staré Město set are a very wide buckle and an unusual cylindrical-shaped strap-end. The size of both fittings was adapted to suit the abnormally wide strap; judging by the largest part of the strap-end the strap was at least 7.5 cm wide. Riveted to the strap were two pairs of triangular clasps, with a prong to snap behind the buckle frame.<sup>1</sup> The maker of this belt used the same design principle as that seen on the Mikulčice sets with bird-shaped clasps. Given the cheaper material (bronze), he did nothing more than heavily stylise the

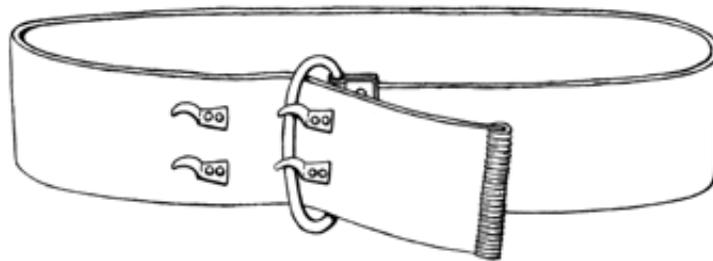


Fig. 219 A reconstruction of the belt from Staré Město – Na Valách, which is a simplified version of the lavish belt sets design with bird-shaped clasps.

Grave 156/49 at Staré Město – Na Valách.

shape of the clasps – without our knowledge of the Mikulčice sets we would probably not have guessed that the design was based on clasps in the form of more realistic birds. The difference is that in the Staré Město set there was a considerable space between the clasps making up one of the pairs, which was due to the unusual width of the leather strap. In Mikulčice the straps on the belts in question were significantly narrower (the widest was not more than 4 cm; cf. Fig. 214: 10), so there might not have been a gap between the two “birds”, which could have been connected to form one “double” clasp (Fig. 214: 12, etc.).

The person who made or ordered the Staré Město type belt might have been inspired by the wealthy elites of Mikulčice. However, it is also possible that there was someone living in Staré Město who wore a lavish belt with bird-shaped clasps, and that the evidence of this fact has simply not yet been discovered at the cemeteries that have been excavated. The only other comparable case currently known is from Grave 310/48 in Dolní Věstonice – Na Pískách, where a highly disparate belt set was found. It consisted of an iron buckle without a prong, a square lead strap-end (with a relief of a four-legged animal adorning the face) and finally a bronze clasp in the form of two birds,<sup>2</sup> which is completely identical to certain pieces in Mikulčice (cf. Fig. 214: 3, 9). Both of the latter graves were equipped with militaria (a pair of iron spurs and an axe respectively), so the men buried in them must have stood out from the ordinary population. We thus have proof that belts with bird-shaped clasps started to spread from the highest Great Moravian elites to warriors of somewhat lower social status. However, the scope of this adoption seems – at least given the existing archaeological

1 Hrubý 1955, 198, 440, Fig. 36, Pl. 59: 1, 2.

2 Poulik 1948–1950, 81, 164, Fig. 40: b; Ungerman 2007, 166–167.



Fig. 220 Is the bird-shaped clasp specific to Mikulčice? Some parallels in material culture from eastern part of Great Moravia and other regions.

1 – Bojná I, Slovakia; 2 – Grave E299 in Nitra-Šindolka, Slovakia; 3 – Gradišče nad Bašljem, Slovenia; 4 – buckle without a prong from the Roermond hoard, Netherlands.

record – considerably limited, as limited as the number of graves of members of the highest elites who were buried with lavish belts with this type of fastener.

Were belts with bird-shaped clasps also worn in the Nitra region, which formed the eastern part of Great Moravia? No evidence of complete lavish sets of this type has yet been found there. However, this might not be relevant, as this situation is fundamentally influenced by the source material. The cemeteries excavated in the territory of what is now Slovakia have mostly been smaller rural ones. In the most important Great Moravian centres, such as Bratislava and Nitra, we have not yet discovered any similarly extensive and rich cemeteries like those found at Mikulčice or the Staré Město agglomeration.<sup>3</sup> In the case of Bratislava and Nitra it is possible that cemeteries with the graves of members of the elites were destroyed by later urban development. On the other hand, the Bojná hillfort, which has been intensively researched in recent years, is situated in what is now a sparsely populated forest area, yet no cemetery has so far been discovered there. Even so, evidence of the use of belts with bird-shaped clasps from Slovakia is not completely lacking. A clasp made of gilded bronze (Fig. 220: 1) was also found at the Bojná hillfort.<sup>4</sup> Grave E299 at the Nitra-Šindolka cemetery contained the remains of a child, who had a silver bird-shaped clasp near its neck (Fig. 220: 2), used secondarily as a pendant on a necklace. The grave is dated to the 10th century (probably to the second half).<sup>5</sup> Both artefacts could indicate the use of belts with this type of fastener in Great Moravian Nitra, although we cannot

rule out the possibility that the item from Nitra-Šindolka was part of war booty obtained by the Hungarians in another part of Great Moravia. Finally, in this context it is also important to mention the silver bird-shaped fitting found at the Zalavár-Vársziget stronghold (Hungary), which is exactly the same shape and size as the clasp from Pohansko near Břeclav.<sup>6</sup> Although the Zalavár agglomeration at the southern tip of Lake Balaton was not part of Great Moravia, nevertheless, the women's jewellery from there has an unmistakably "Great Moravian character" which indicates close contact with the ruling elites of the Great Moravia. The use of belts with bird-shaped clasps would be just one of the many parallels in material culture between Zalavár and Great Moravia. It is therefore apparent that belts with bird-shaped clasps were more widespread in the Great Moravia than it might at first seem – if we were to consider just the lavish sets from Mikulčice.

We are unable to say for sure where this type of belt fastener actually originated. In general, the armaments and equipment of elite Great Moravian warriors were based on Carolingian designs (see Excursus 1.2.1). Is that also the case with the origin of bird-shaped clasps and the functionally related buckles without a prong? Or is this specific to Great Moravia? It is not easy to answer this question, as comparative material from the Frankish Empire is still highly fragmentary. Although the corpus of published Carolingian fittings has grown considerably in recent years,<sup>7</sup> we still face the problem that in the core of the Frankish Empire, noblemen were not buried in the 8th and 9th centuries with militaria. In other words, there are no graves there that might yield entire sets of fittings in the immediate vicinity of the skeletons of the deceased (thus indicating the purpose of the fittings), as is the case in Great Moravia. We are therefore compelled to speculate. The fortified site at Gradišče nad Bašljem in Slovenia was found to contain an extensive assemblage of Carolingian fittings of sword-belts and other military and riding equipment. This assemblage includes two iron "bird-shaped belt fittings", however details of only one have been published so far (Fig. 220: 3).<sup>8</sup> The fitting is flat, with just the head of the bird standing out. The surface of the fitting is made up of the body and tail of the bird; in both parts there is, or originally was, a rivet to attach it to the leather strap. The fitting is 4.4 cm long, making it roughly twice the length of the Great Moravian bird-shaped clasps, although the dimensions of the fitting do not essentially preclude it having been used for this purpose. The second indication that the type of fastener in question originated in Western Europe is the buckle from the Roermond hoard in the Netherlands. This hoard contains an extensive number of Carolingian fittings and silver coins, the most recent of which date from the mid-9th century. One of the silver buckles has an oval frame decorated with niello and a sheet metal plate, although this lacks a slot for the prong (Fig. 220: 4). The buckle was actually used, as evidenced by the "many dents and chips" on the inner side of the frame.<sup>9</sup> The buckle must therefore have fastened with some sort of clasp riveted directly onto the strap, as is the case with the Great Moravian belts with bird-shaped clasps. On the basis of this – albeit sporadic – evidence, in the future we also need to work with the possibility that this type of fastener is not specifically a Great Moravian innovation, but came to Moravia from the Frankish Empire.

3 Cf. Hanuliak 2004.

4 Pieta et al. 2011, 206, Fig. 96: 2; Kouřil ed. 2014, 444, Cat. No. 389.

5 Fusek 2007, 438, Fig. 1: b; Fig. 2; Kouřil ed. 2014, 444, Cat. No. 390; cf. Ungerman 2015, 268, note 21.

6 Szóke 2014, 107, Fig. 85 on the upper right; Kalousek 1971, 33, Fig. 13: 2; Pl. 42: 3.

7 Robak 2013; 2014.

8 Knific 1999, 64–65, Fig. 9: č.

9 Zuyderwyk 2007, Cat. No. 15; Zuyderwyk – Besteman 2010, 92, Fig. 13.

## 3.6.2 excursus

# Iconography of Lavish Strap-Ends From Mikulčice

– Šimon Ungerman

The lavish belt strap-ends from the Great Moravian cemeteries have attracted a great deal of attention from researchers since they were first discovered. This is partly due to the human figures and other depictions on the reverse – which also make these strap-ends unique items within the European context. However, the absence of contemporary analogies makes it difficult to interpret the images and understand their significance for the belt owners.<sup>1</sup>

The following text will only describe the iconography of the strap-ends from Mikulčice, with the interpretation of the image on the reverse of the strap-end from Grave 100 by Church 2 being the least problematic. It features a figure of a man in a priest's robe with his hands raised in prayer. He has a nimbus around his head and a Greek cross on his chest (Fig. 214: 1). He is evidently a saint, although no attribute or inscription reveals his true identity. However, such detail was not strictly needed; the image might not necessarily have been universally comprehensible – it was sufficient for the owner to know who he had depicted on his strap-end. The reverse of the sheet metal strap-end from Grave 390 by Church 3 also portrays a figure of a man with raised arms (Fig. 214: 10). The person is dressed in a bell-bottomed doublet and broad trousers, which are tucked up into his boots. The background is densely covered with punched dots. Once again, there is no attribute and this time the clothing cannot give even a general idea of the identity of the person depicted.

There has been a great deal of speculation concerning the image on the strap-end from the backfill of Grave 248 by Church 3. Engraved on the punched background of the flat reverse side is a stylised human figure in a broad tunic (Fig. 214: 4). Although the arms of the figure are again raised, this is not the gesture of orant as in the previous two cases – the maker was attempting to depict the figure holding an object in each hand. The interpretation of what these two objects may be has been the basis for the discussion by a number of researchers as to what the entire image portrays. There are essentially two distinct possibilities: a ruler or a supernatural figure. V. Denkstein, for example, believes that the object held in the right hand is a banner (*labarum*), i.e. an attribute of rule used in Roman and Byzantine Empires. He is of the opinion that the object in the figure's left hand was a horn, which would symbolically imply that the person depicted was anointed.<sup>2</sup> Conversely, K. Benda claims that the figure portrays the goddess Victoria (*Nike*), who is holding a tablet (originally bearing her name) and a *cornucopia*.<sup>3</sup>

Z. Klanica believes that the items held in the figure's hands were an axe and a drinking horn (*rhyton*), which are supposed to be attributes of the Slavic god Perun.<sup>4</sup>

The reverse of the large silver strap-end from Grave 433 by Church 3 features an engraved plant motif framed with a double interlace; the background is again covered with punched dots (Fig. 214: 6). The main motif can be best described as a tree, with five branches with stylised leaves extending out from its trunk on both sides. Researchers most often interpret this as the tree of life.<sup>5</sup> However, it is also possible that this is the world tree, which stands in the middle of the world and connects the earth with the heavens and the underworld, so a kind of *axis mundi* (cosmic axis), serving as a channel of communication between the world of men and the gods.<sup>6</sup> Whichever interpretation may be true, the tree is a universal symbol, one that is associated with many ideas and appears in a number of religions – both pagans and Christians have adopted it as their own. The interlace around the edge of the reverse of the strap-end can be seen as a form of “magical protection” of the main motif.<sup>7</sup>

Apart from Moravia, we do not know of any strap-ends with human figures on the reverse from the same period, i.e. from the 9th century. In the Frankish Empire, the belt fittings made at that time were decorated almost exclusively with plant motifs. In rare cases there is an animal motif, such as a lion or griffin, although those animals are depicted using stylised plant elements.<sup>8</sup> The makers of the Mikulčice strap-ends adopted the basic morphology of Carolingian strap-ends, where the face is adorned with distinctive raised decoration, while the reverse side is flat and any decoration is engraved. Apart from that, they seem to have developed their own style. While Carolingian plant ornamentation draws heavily on Mediterranean art of the Late Antiquity, the plant motif on the reverse of the strap-end from Grave 433 in Mikulčice is completely different – the stylisation of the branches and leaves and the punched background are reminiscent of the decoration of Great Moravian spherical buttons with plant motifs (see Essay 3.5). All this indicates that the craftsmen who decorated the reverse of the lavish Great Moravian strap-ends with human figures or plant motifs did so independently of the Carolingian products made at that time.

If we are unable to ascertain the identity of the figures depicted on the Mikulčice strap-ends with any degree of certainty, it is clearly also difficult to determine what meaning the images

4 Klanica 1997, 102; for other interpretations, see Ungerman 2001b, 226–227; Vančo 2008, 47–50; for the motif on the face side of the strap-end, see Balcárek 2009, 48–49.

5 Dekan 1976, 168; Klanica 1997, 103.

6 E.g. László 1974, 104.

7 Cf. Kitzinger 1993, 3–6; Engemann 1997, 42.

8 The sword-belt fittings allegedly found in Loon, Netherlands (Roes 1958; cf. Schulze-Dörrlamm 2008, 391, Fig. 4); the strap-end from Ladánybene – Benepusztá, Hungary (most recently Bollók 2014, 88, Fig. 4: 1; 2015a, 353–355, Fig. 2: 1).

1 In aggregate Ungerman 2001b, incl. ref.

2 Denkstein 1961.

3 Benda 1973.



Fig. 221 Bronze Merovingian buckles featuring a depiction of prophet Daniel in the lion's den.

1 - Renève, France; 2 - unclear provenance, possibly Chalon-sur-Saône, France.

had for the belt owners. Our interpretation of this may to a certain degree be facilitated by the bronze and bone Merovingian buckles, the plates of which are adorned with Christian motifs. They come from cemeteries in several parts of the Frankish Empire, mostly in Eastern France and Western Switzerland, and are dated from the 5th to 7th centuries. Christian motifs can be divided up into two main groups: these are motifs of divine protection, which illustrate stories from the Old Testament, as well as the New Testament motifs (Christological, to be more precise).<sup>9</sup> The Old Testament motifs most often feature Daniel in the lions' den, which may serve here as an illustrative example. Daniel usually tends to be depicted in the gesture of orant and with two lions, one on each side, which are humbly licking his feet (Fig. 221). These images refer to the story of the prophet Daniel, who, despite the royal ban, continued to worship God. He was thrown into a den of lions, although he was not harmed as, in his words, "My God sent his angel and he shut the mouths of the lions. They have not hurt me, because I was found innocent in his sight."<sup>10</sup> Here, Daniel is an example

of a righteous man, who firmly believes in God and is saved by Him in his time of need. In the Late Antiquity and Early Middle Ages, this and other motifs of divine protection were clear enough and were generally well known. They, therefore, appear in prayers for the dying or deceased, in the sense of "God, save his soul, just as you saved Daniel from the lions' den, Noah from the flood, David from Saul and Goliath, freed Moses from the hands of the Pharaoh, the apostles Peter and Paul from prison," etc.<sup>11</sup> When a person in the Early Middle Ages got himself a buckle adorned with one of these motifs, he was convinced that the image would protect him against all kinds of evil forces and that after death - if he were buried with the belt - it would help to summon the same divine intervention to save his soul.

Were the images on the Mikulčice strap-ends intended to serve a protective purpose? That was apparently the case in the engraving of the saint (Fig. 214: 1). It is also highly likely in the case of the orants with no further attributes (Fig. 214: 10) - if the image was intended for "personal" protection, the identity of the figure depicted did not have to be recognisable to everyone. Incidentally, Merovingian buckles also sometimes feature the image of one or more orants, which, in the absence of any attributes or inscriptions, is difficult or impossible to identify.<sup>12</sup> In any case, the gesture of the orant on this Mikulčice strap-end indicates that the image has some religious or magical significance. The assumption made by certain Czechoslovak researchers that the images on this (Fig. 214: 10) and another strap-end (Fig. 214: 4) depict a Great Moravian magnate,<sup>13</sup> or ruler (see above) seems somewhat unlikely based on comparison with the iconography of Merovingian buckles.

On the other hand, it must be said that the information that can be gained from Merovingian buckles as analogies to the Great Moravian strap-ends is limited. There is no direct link between the two groups of objects - members of the Great Moravian elites and their craftsmen would clearly not have known of those Merovingian buckles, as the most recent of them are from the first half of the 7th century. The similarity in the decoration on both groups of fittings, primarily given by the motif of the orant, is naturally down to the fact that this motif was generally widespread in the Late Antique and early medieval art. We may suppose that the Mikulčice craftsmen were familiar with them, for instance, from Great Moravian churches, the interiors of which could have been decorated with frescoes or pictures showing prophets, saints, etc., in the gesture of orant. Otherwise, there are definitely a number of other differences between the two groups of fittings - apart from being from different periods. Merovingian buckles were made in great numbers and the iconography of the decoration of many of the types was constant and thus generally comprehensible. There are far fewer Great Moravian strap-ends, with their decoration on the reverse, each of which is unique and there is certainly no fixed iconography. In other words, these were exclusive products, and their makers must have had a degree of freedom when taking account of the individual needs and wishes of the customers who ordered them. The possibility that they served a purpose other than protective thus cannot be completely ruled out a priori, although it will be very difficult to determine any further information in this respect.

9 Werner 1977; von Reitzenstein 1991; Treffort 2002; Poulain 2008; Gaillard de Sémainville 2010; all incl. ref.

10 Old Testament, Book of Daniel 6, 7-24; cf. Kramer 2002, 201-203.

11 Leclercq 1920, 435-436; Kühn 1941-1942, 158; Guex 2001, 20; Treffort 2002, 48.

12 E.g. Billoin - Gaillard de Sémainville - Michon 2005.

13 Poulik 1975, 84.



Buckle with a strap-slide made of gilded silver, originally part of the calf strap. Mikulčice-Kostelisko, Grave 1665a.

## 3.7 Calf Straps

– Simon Ungerman



The buckles, strap-ends and strap-slides found in the graves of Great Moravian men originally served a variety of purposes: some formed part of belts (see Essay 3.6), while others were part of the straps that fastened spurs to the feet (see Essay 3.2). The third option how these fittings could have been used was to fasten leather straps bound crosswise over leg wraps or trousers around the calves. It is not always possible to clearly distinguish what purpose specific fittings were designed to serve based on their shape, decoration or size. In particular, the fittings of spur and calf straps are in no way different from one another and their original function may be assumed mainly on the basis of their position in the graves. If the grave has not been disturbed or if objects have not subsequently been moved (e.g. as a result of rodents in the hollow part of the coffin), the fittings of spur straps are found by the feet, while the parts of calf straps lie by the knees or calves. There are some graves in which the deceased man was obviously buried with both types of straps.

Sets of calf strap fittings can be divided up into five groups according to the material and decorative techniques used: 1) silver and lavishly decorated; 2) bronze, mostly gilded; 3) iron decorated with inlaying; 4) iron with raised decoration; 5) iron with no decoration. It may be said that these groups are of considerable importance for the social interpretation of the graves in which the fittings were found. Sets of fittings of the first three groups have been found in a relatively small number of graves; in those, the buried individual may be considered to have been a member of the highest Great Moravian elites. The fittings of the fourth and fifth groups, on the other hand, i.e. iron fittings with simple raised decoration, or with no decoration at all, occur relatively often and although the men whom they were buried with were of privileged status, they generally did not belong to the Great Moravia's ruling elites. Now let us present selected examples of sets of calf straps from all five groups. Attention is focused mainly on the sets from graves in Mikulčice, although certain lavish sets from other sites around Moravia are also worth mentioning.

Found by the knees of the man from Grave 380 by Church 3 was a complete set of calf strap fittings consisting of two buckles with a strap-slide and two strap-ends, all made of solid silver (Fig. 222: 1, 2). The buckles have a flat D-shaped frame and a sheet metal plate, into which is threaded a high strap-slide with an oval plate. Both the strap-ends are tongue-shaped, and at the attachment edge are fitted with a hole for inserting the leather strap and five rivets for attaching it. All the rivets are edged with rings made from beaded wire; those rings are covered by a thin silver cap that is shaped to match the wire rings under it. The face of the strap-end is divided up into two decorative fields, each of which contains a chip-carved and gilded palmette. In contrast, the remaining areas of the strap-end around the two decorative fields have a flat surface decorated

Fig. 222 Set of calf strap fittings consisting of buckle with strap-slide and strap-end. Gilded silver, decorated with chip-carving, niello and gilding.

Mikulčice, Grave 380 inside Church 3.

with niello in the form of semicircles and wavy lines. The decoration on the strap-slide plate is similar, as it is in reduced form on the buckle frame. The result is an impressive alternation of light and shade on embossed gilded surfaces and the colour contrast of the black niello on the silver base.<sup>1</sup>

An analogous set was found at the cemetery at Kostelisko just to the south of the fortified part of the Mikulčice stronghold in double Grave 1665; however, this set is not complete – one strap-end is missing.<sup>2</sup> The decoration on the fittings differs from the set from Grave 380 only in the details, e.g. in the shape of the palmette and the niello work, which here consists solely of lines (and not semicircles). Both sets were identified by M. Lennartsson as being original Carolingian products that formed part of her style group I dated roughly to the first half of the 9th century.<sup>3</sup> Both sets are also part of the most lavish Carolingian imports we know of from Mikulčice and also from the territory of Great Moravia as a whole.

The second group of calf strap fittings includes products made of bronze, a metal which, although inexpensive, also made these fittings look very lavish thanks to the elaborate raised decorations and gilding on them. One complete set from Mikulčice that may be included in this group is that deposited by the knees of a young boy in Grave 100 by Church 6. Both buckles have an undecorated frame and a strap-slide with a tongue-shaped plate (Fig. 223: 1). The surface of the plate is adorned with chip-carving, where a raised double slashed line divides the plate up into five decorative fields, four of which contain a heavily stylised plant motif; the fifth field is filled with a double wavy line. The decoration on the face of the strap-ends is the same, apart from the fact that the wavy line is replaced by four rivets for attaching the strap-ends to the strap (Fig. 223: 2).<sup>4</sup> What is remarkable is that discovered just 2 m away from this grave was Grave 50, in which the buried adult had cast bronze spurs by his feet; the right spur was fastened to the foot using exactly the same buckle, strap-slide and strap-end (Fig. 23: 1, 2 in Excursus 1.2.1) as those found in Grave 100. All the products undoubtedly come from the same workshop; it is possible that they were all originally worn by one warrior and were only later split between two owners. In the In Excursus 1.2.1, I present the opinion that it is more likely that the spurs from Grave 50 were produced in the Frankish Empire rather than in the territory of Great Moravia. The same would then apply for the calf strap fittings from Grave 100.

One of the examples from other sites that can be included in the second group of calf strap fittings is the set from Grave 129/62 at Uherské Hradiště – Sady. Both the strap-ends and the plate of the one preserved strap-slide feature crescent-shaped formations on the longer sides, which gives them a concave bend (Fig. 223: 4); the buckles are fitted with a frame with transverse grooves (Fig. 223: 3).<sup>5</sup> The same decoration is found on the buckles in the set from Grave 193 by the first church at Pohansko near Břeclav (Fig. 223: 6). The decorative motifs on the distinctive relief of the strap-slide plate and the face of the tongue-shaped strap-end are a central rosette and

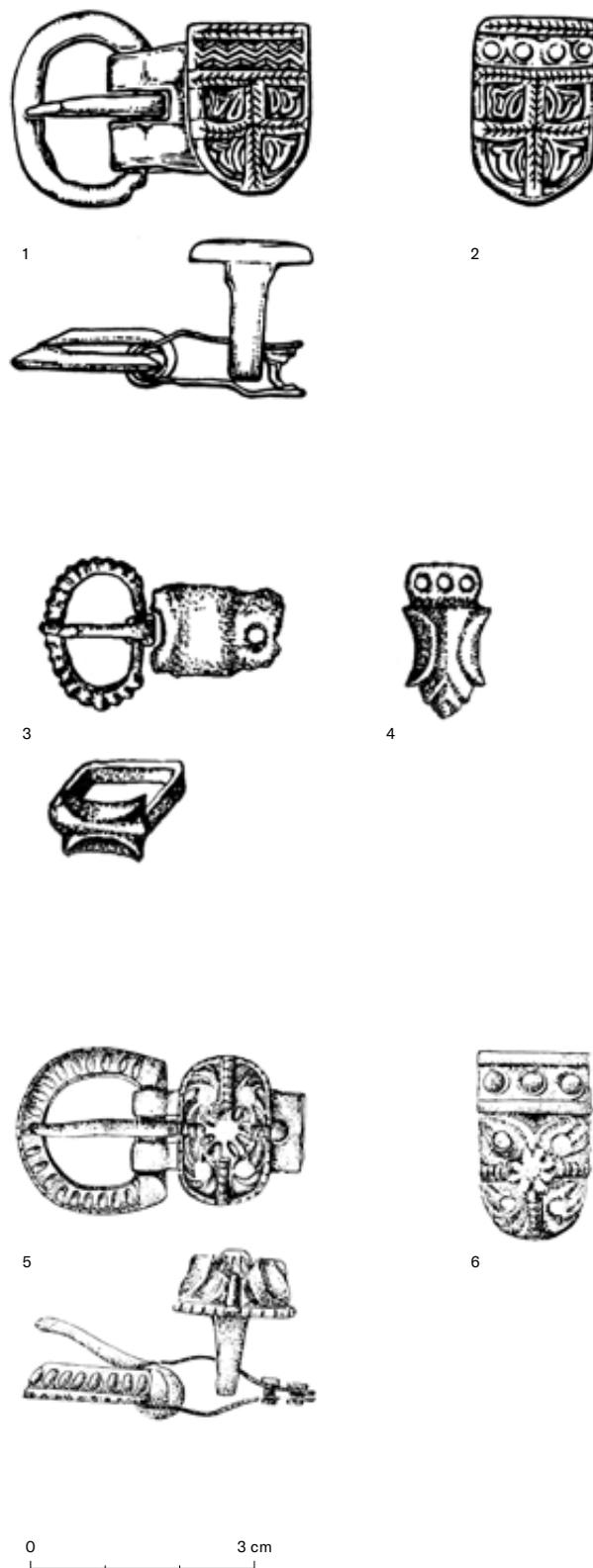


Fig. 223 Decorated and gilded bronze calf strap fittings found at burial grounds near Great Moravian churches at the strongholds of present-day South Moravia.

1, 2 – Mikulčice, Church 6, Grave 100; 3, 4 – Uherské Hradiště – Sady, Grave 129/62; 5, 6 – Pohansko near Břeclav, first church, Grave 193.

1 Kouřil ed. 2014, 373, Cat. No. 190; Klanica et al. 2019, 56, Fig. 62: 3, 4, 9, 10.

2 Not published in its entirety; Kouřil ed. 2014, 372, Cat. No. 189.

3 Lennartsson 1997-1998, 496, 578; cf. Schulze-Dörrlamm 2009b, 750-752.

4 Poulik 1963, 154-155, Pl. XX: 5, 6; Profantová 2003, 27-28, Fig. 49: 2-7/100; Kouřil ed. 2014, 374, Cat. No. 191.

5 Galuška 1996, 51, 140, Fig. 95: 11-17.



Fig. 224 New cleaned and conserved strap-end from a calf strap with ornamentation made by using silver inlays. Mikulčice, Grave 553 near Church 3.

a slashed band (Fig. 223: 5, 6).<sup>6</sup> Most of the above-mentioned decorative elements are unique in the Great Moravian context, so both sets must be considered as possibly being Carolingian in origin.<sup>7</sup>

What is crucial with the iron calf strap fittings is whether they have been well cleaned and conserved. With such objects, this is the only way that the details of the decoration can be discerned, or reliably be described as absent. Inlaying decoration, which is the attribute defining the third group of sets, has so far only been found in rare cases. One example is the set from Grave 553 by Church 3, where the whole of the face of the strap-end (Fig. 224) and the strap-slide plate were entirely covered with branched ornamentation made using silver inlays.

The fourth group contains iron fittings featuring raised decoration. The man in Grave 1241 at Mikulčice-Klášteřisko had a set consisting of two buckles with strap-slides and one strap-end (Fig. 225: 1, 2); the faces of all the fittings are covered with raised ornamentation in the form of concentric rings made by punching. However, mostly the decoration on the iron fittings is far simpler, e.g. comprising parallel grooves or roof-shaped profiling on the face of the strap-end or the strap-slide plate. One example of a set from the fifth group, i.e. iron with no decoration, is the set of fittings from Grave 500 at Prušánky 2 (Fig. 225: 3, 4, 5).

In the territory of what is now South-Eastern Moravia, where the core of the Great Moravian Empire was situated in the 9th century, calf strap fittings have been found at 10 sites, in a total of 46 graves. Analysis of this set yielded several important findings relating to the abundance of the individual material groups, the width of the straps, the completeness of the fitting sets, as well as the position of the graves within the sites and other equipment of these graves.<sup>8</sup>

There are relatively few sets from the first three groups; in each group, these sets occurred in just three to five graves. The largest fittings are always part of one of these groups and, by coincidence, they all come from Mikulčice. To be specific, the gilded silver fittings from Graves 380 and 1665 were made for straps 2.7 cm wide (Fig. 222: 1, 2). The “record holders” in this respect are the inlaid fittings from Grave 553, which are as wide as 3.5 cm (Fig. 224). It cannot have been very comfortable to wear such broad leather straps (not to mention the massive fittings on them) bound around the calves. I assume that the primary purpose of these fittings was for show – the owners needed larger fittings to make the beauty of their decoration stand out. Also related to this is the fact that especially the sets that form part of the first and second groups are, with a few exceptions, complete, i.e. they always consist of a buckle, a strap-slide and a strap-end; their owners took care of them and perhaps did not wear them every day. The strap-end in particular was not absolutely necessary for fastening the calf strap; however, the face of the strap-end offered further space for decoration, thus enhancing the aesthetic appeal of the set as a whole.

The iron fittings with raised decoration or no decoration (i.e. the fourth and fifth groups) appeared in a total of 34 graves and thus comprise the bulk of the processed assemblage of calf strap fittings. The vast majority of these fittings were designed for straps 1.3–1.8 cm wide (the straps on just two of the sets were wider, 2 cm and 2.3 cm respectively). This indicates that relatively narrow straps were sufficient for the required purpose – i.e. to hold up the

6 Kalousek 1971, 121, Fig. 193: 2–5; Pl. 42: 4, 5.

7 Schulze-Dörrlamm 2009b, 750.

8 Ungerman 2019, esp. 300–309.

leg wraps or to tie the trouser legs to calves. In other words, this confirms the above-mentioned assumption that broader straps and fittings were mainly for show. In addition, especially in the case of the undecorated iron fittings, one may notice that the majority of them do not comprise comprehensive sets; the strap-ends in particular are often missing. Some strap-ends could obviously have fallen off and been lost while they were worn, although generally it seems that many calf straps were actually designed by their maker without a strap-end – apparently because the strap-ends were the most easily dispensable part for fastening the straps.

Throughout the whole of the assemblage, it seems particularly clear that in Great Moravia calf straps were a fixed part of a warrior's clothing, as almost three quarters of the graves also contained spurs and/or a weapon (sword, axe, spear). As there were no militaria in the remaining graves (especially the richest ones), this more than anything else indicates the symbolic or "optional" nature of the grave goods in Great Moravia. It is generally assumed that the man from Grave 380 in Mikulčice (cf. Fig. 222: 1, 2), for example, was a member of the highest elites based on the fact that the grave is situated inside Church 3 (basilica), the largest church at the site, as well as from the presence of a gold button by his neck.

Almost all of the sets from the first to fourth groups were found at the most important of the Great Moravian strongholds. Only undecorated iron calf strap fittings also found their way to rural cemeteries (e.g. Nechvalín), although many of these are situated nearby the stronghold: e.g. the sites Prušánky 1 and 2 are located in the Mikulčice hinterland, the cemetery at Bulhary – Gajdošova cihelna is near the stronghold at Pohansko near Nejdek, etc. From this fact alone – and also of course taking account of the grave goods – it is clear that not all the men buried with calf straps had the same social status. The sets of gilded silver or gilded bronze fittings belonged to members of Great Moravia's highest elites. These fittings served as a model for men from other social classes, although they had them made from a far cheaper material – iron. However, iron sets have been found in the graves of most men who were "publicly presented" during the funeral ritual in the role of a warrior, and so must have belonged at least to the broader circle of privileged individuals. On the other hand, undecorated iron fittings played much less of a representative role, and primarily served a practical purpose. In any case, this is an example of militaria, which spread from the elites to lower-ranking warriors. This process did not always occur as a matter of course, as belt sets with bird-shaped clasps, for instance, remained limited to a small part of the elites and were rarely worn by the men from other social classes (see Excursus 3.6.1).

The Carolingian influence played a key role in the spread of the custom of adding a buckle, a strap-slide and a strap-end to calf straps in Moravia. We assume this on the basis of the fact that a dominant proportion of the most lavishly decorated sets (the first and second groups) comprises what are demonstrably or probably imports from the Frankish Empire. These fittings were part of the calf straps worn by members of the Carolingian aristocracy. We do not possess any contemporary archaeological evidence from the Frankish Empire itself, and for the 9th and 10th centuries we can only reconstruct garments based on the written and iconographic sources (see Excursus 3.7.1). Finds of calf strap fittings of Frankish provenance in the Great Moravian graves are thus of fundamental importance to our understanding of Carolingian material culture, as are finds of sword belt fittings (see Essay 3.6).

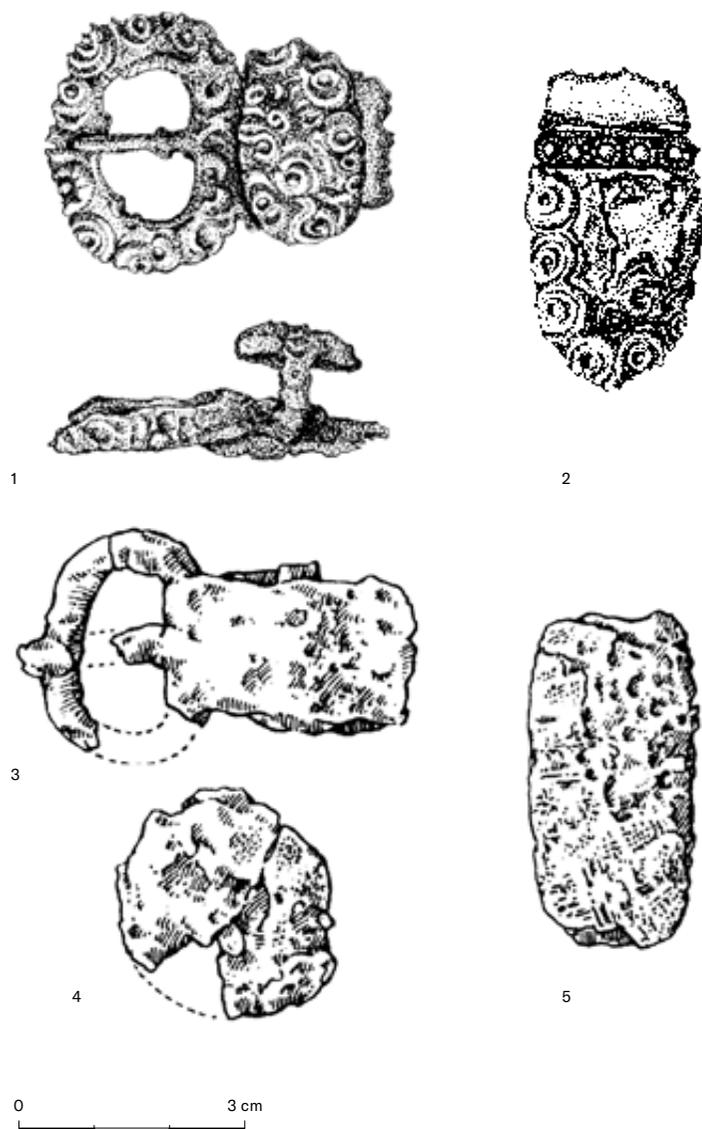


Fig. 225 Iron calf strap fittings found at Great Moravian cemeteries in present-day South Moravia with raised decoration (1, 2) and no decoration found (3-5).

1, 2 – Mikulčice-Klášteřisko, Grave 1241; 3, 4, 5 – Prušánky 2, Grave 500.

### 3.7.1 excursus

## Evidence of Calf Straps in the Frankish Empire

– Simon Ungerman

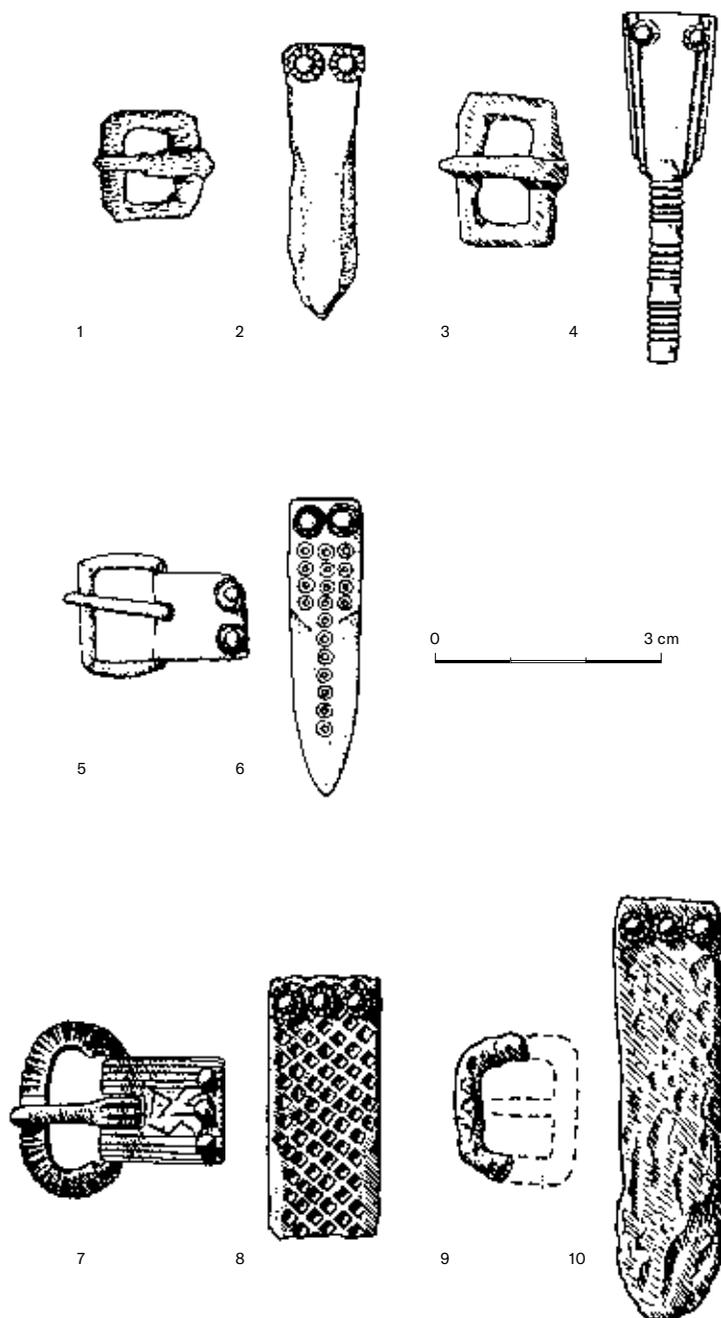


Fig. 226 Calf strap fittings from Late Merovingian male graves. 1, 2 – München-Aubing, Grave 707; 3, 4 – Stetten an der Donau, Grave 33; 5, 6 – Munzingen, Grave 214; 7–10 – Merdingen, Grave 233. 1, 2, 9, 10 – iron; 3–8 – bronze.

In the early medieval period, it was completely normal for men to wear calf straps tied across their trousers and/or leg wraps (in Scandinavia called “winigas”); various types of greaves were also worn. Foot soldiers needed them to protect the parts of the leg not covered by the shield in battle (mainly between the knee and the ankle), as well as riders. However, it is certainly not always possible to find archaeological evidence of these straps – only when they were fitted with metal parts. It is only in very rare cases that straps have been preserved that did not have any fittings at the ends; this tends to occur only when the soil conditions are exceptionally favourable, thus allowing organic materials to be preserved.<sup>1</sup> Another limiting factor is the burial rite. Given the cremation rite practised in the region, for Moravia in the 6th to 8th centuries we only have the minimum of information on what a warrior’s armament and equipment looked like. We therefore do not even know whether calf straps with metal parts were in use in this country at that time. If this was the case, they would probably be elements adopted from the Merovingian-Carolingian cultural milieu, as we know of nothing comparable in the Avar Khaganate – i.e. the milieu that was closest to Moravia in geographical terms.

Within the territory of the Frankish Empire calf strap fittings are found in men’s graves mostly from the late Merovingian period (c. 7th century and beginning of the 8th century). There, the buried men have at most one buckle and/or strap-end by both knees or calves (Fig. 226), while strap-slides occur only in rare cases. The fittings vary considerably in terms of their material, shape and decoration. The range of materials used to make fittings includes iron, bronze and silver, clearly whatever the owner could afford. Some of the most lavish are the calf straps decorated with gold threads discovered next to one of the men buried at Straubing-Alburg – Hochwegfeld, Grave 593. A thorough laboratory analysis found that the entire stripes made up of the gold threads were attached to strips of fine fabric 1.3–1.5 cm wide; this was all lined with leather straps to hold everything in place. According to the published reconstruction, two straps each roughly 2 m long were wrapped crosswise around each leg (Fig. 227: 3); both ended in a small gilded silver buckle, or a strap-end, which has a flat elongated shape and is fitted with a hollow bead consisting of two hemispherical parts at the end (Fig. 227: 1, 2). The strap-ends were purely decorative, as they could not be threaded through the buckle frame. The ends of the straps were tied into a knot below the knee.<sup>2</sup> Knotting calf straps together, i.e. without the use of a metal fitting, could have been much more common in that and subsequent periods of the Early Middle Ages than can now be inferred from the archaeological record.

1 E.g. Cologne, Basilica of St Severin, Grave P 100 (Fremersdorf 1941–1942, 136, 139, Pl. 49: B; Stein 1967, 313).  
2 Möslein 2002–2003, 254–257; Bartel 2002–2003, 261–264.

Militaria disappeared from graves with the end of Merovingian row cemeteries in the core of the Frankish Empire. We therefore only have the minimum amount of information about the appearance of fittings on calf straps in the Carolingian milieu. All we have for the Carolingian and Ottonian Periods in relation to this question are the written and iconographic sources. M. Müller and A. Bartel distinguished between five types of male garments worn at the calves at that time in Western Europe. 1) Leg wraps consisted of a strip of canvas tied to the calf (often over the trousers), either forming a cross or a spiral (Fig. 228: 1-3, 7). 2) Calf straps were bound crosswise over the trousers or leg wraps (Fig. 228: 2). 3) Greaves made from various materials were to protect the shins, both in battle (Fig. 228: 9), and at work (Fig. 228: 6); however, it is important to point out that these were different from trousers with a decorative stripe at the front (Fig. 228: 4, 8). 4) The both researchers also mention some kind of leggings, often made from decorated fabric and held up by garters below the knees (Fig. 228: 5). 5) It is difficult to present iconographic evidence of hose with a sole that reaches up to the knee or to the top part of the thigh, as the only archaeological finds we have date from the 11th century.<sup>3</sup>

In a picture of Emperor Lothar I seated on the throne (Fig. 228: 2) and on a few other Carolingian depictions showing calf straps, although no fittings are represented on those straps, there is no doubt that the use of the fittings in the Frankish Empire persisted from the Merovingian era to the Carolingian Period. The fittings from Mikulčice and other Great Moravian sites are of fundamental importance in this respect as they are of Western European provenance and clearly demonstrate the use of calf straps with fittings in the Frankish Empire in the 9th century as well. Although the silver gilded fittings with niello decoration (Fig. 222: 1, 2) look very lavish and must have been costly to make, these fittings were probably not the absolute best quality Carolingian products made at that time. We may also assume that fittings were made from pure gold (or even decorated with precious stones), and that these were intended for members of the ruling dynasty and probably also the highest-ranking imperial aristocracy. Only a few gold fittings - regardless of their original purpose - have been by definition preserved within the territory of the Frankish Empire, and their archaeological context is in most cases unclear. The preserved examples include the strap-slide allegedly from Seeheim,<sup>4</sup> the sword-belt fitting from a private collection in Switzerland,<sup>5</sup> as well as a three-armed strap-divider from Hoen,<sup>6</sup> which came to Scandinavia as part of the loot plundered by the Vikings in the Frankish Empire. The calf straps worn by the male members of the highest Carolingian elites could also have been fitted with elaborately decorated gold buckles, strap-slides and strap-ends.

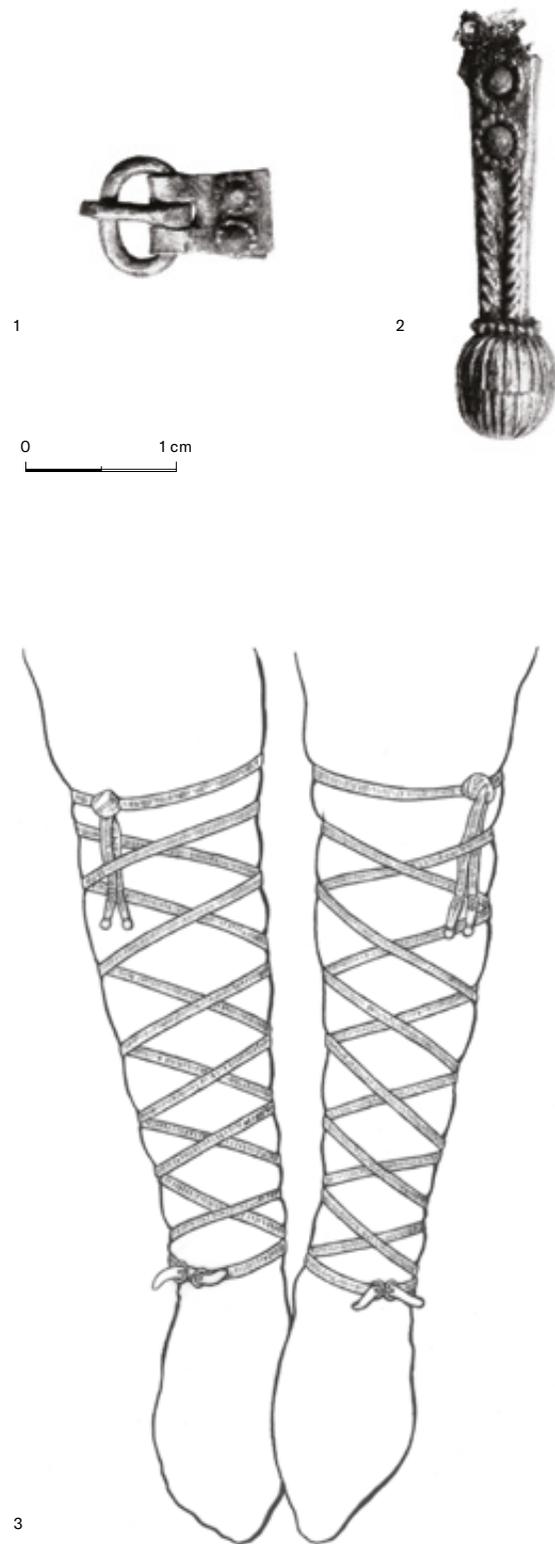


Fig. 227 Original strap-end with buckle, both from gilded silver (1, 2) and the reconstruction of calf straps decorated with golden threads (3).  
Straubing-Alburg, Hochwegfeld site, Late Merovingian Grave 593.

Fig. 228 Iconographic evidence of men's leg garment from Carolingian and Ottonian illuminated manuscripts.  
1 - Emperor Lothar's gospel book, Paris; 2 - Lothar's psalter, London;  
3 - Gumpold of Mantua, Vita of Saint Wenzel, Wolfenbüttel, fol. 18v;  
4-9 - Stuttgarter Psalter, Stuttgart.

3 Müller 2003, esp. 66-78; Bartel 2002-2003, 264-272; cf. Ungerman 2019, 294-296.  
4 Schulze-Dörrlamm 2009a, esp. 166-185; 2011, 369-375.  
5 Trier 2010; cf. Ungerman 2011a, 596, note 27; 2015, 272-273.  
6 Westermann-Angerhausen 2006, 241-242.



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Bronze gilded plate with preserved silk fabric on the inside from Mikulčice, Grave 590 near Church 3.

## 3.8

# Luxury Textiles From the Great Moravian Elite Graves

– Helena Březinová



Fig. 229 Silkworm caterpillars feeding on mulberry leaves.

The saying that “clothes make the man” is no cliché; it is a fact that has accompanied human society from ancient times to the present day. Clothing fabrics and how they are made are strong expressions indicating a person’s wealth and social status; clothing may also be used to strengthen one’s position or influence. As in other periods, in the 9th-century Great Moravia these tendencies were primarily associated with one type of textile – silk. Its unique look made silk one of the most sought-after and expensive textiles, undoubtedly an exclusive commodity, and it became synonymous with luxury.

### Silk – the most perfect textile raw material

The acquisition and production of silk has a long history, steeped in mystery, great wealth and certainly bloodshed. Silk fibre is secreted by the glands of the silkworm, which lives entirely on a diet of mulberry leaves (Fig. 229). During pupation, the caterpillar secretes this fibre and makes it a cocoon around itself, in which it completes its transformation into a moth. The small oval cocoon is made up of many layers of fibre, which can be up to several thousand metres in length (Fig. 230).

The deliberate cultivation of silkworms, the acquisition of intact silk fibres from cocoons and the method used to make silk textiles were developed from around the 4th millennium BC in China. The silk workshops there were very strictly guarded; their production, export and the resulting profits were all in the hands of the imperial court. For many long centuries the secrets of making silk remained in China, and did not reach other parts of the world until the finished textiles, sewn products and silk yarns were brought over by traders. They were a huge sensation and created enormous demand, as the appearance, quality, fineness, colour and shine of silk fabrics completely surpassed any textiles made from commonly used materials, such as wool or linen. Silk thus became one of the most important trading commodities to be carried along the trade routes from China to Central Asia and then via Persia and Mesopotamia to the Mediterranean Sea, known as the Silk Road. Some of the major buyers of silk fabrics included the wealthiest inhabitants of the Roman Empire, who spent huge amounts on exclusive silk goods. Other regions that gradually came to produce silk were Central Asia, Persia and the Islamised Eastern Mediterranean, which processed Chinese silk. Efforts to obtain their own silkworm eggs and mulberry seeds came to a peak in the 6th century AD, when these valuable commodities were smuggled in secret to the Byzantine Empire. There, a state silk monopoly developed, which strictly controlled the production, sale and export



Fig. 230 Silkworm cocoons made from silk fibre.

of silk. The first European country to begin to develop independent silk farming was Spain under Arab rule from the the end of the 8th and beginning of the 9th century.<sup>1</sup>

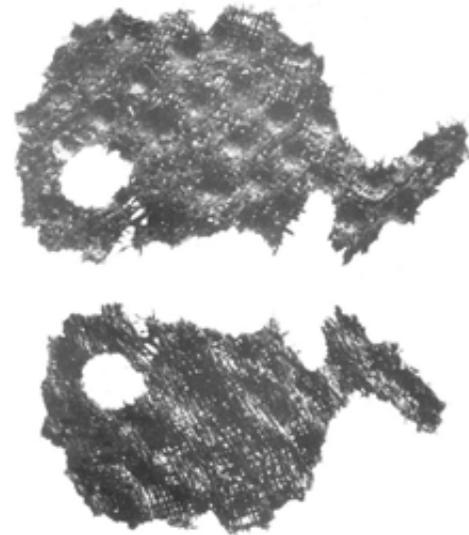
A drawloom was used to make patterned silk fabrics, with its ingenious shedding device enabling the pattern to be repeated all across the width of the fabric and allowing work with patterned wefts of multi-coloured silk or metal threads. In the Early Middle Ages, the most popular type of weaving technique was samite (weft-faced compound twill), where the fabrics consisted of a main warp, a binding warp, and a weft composed of two or more series of threads, usually of different colours.<sup>2</sup> The main motifs of the pattern were geometric and floral ornaments, depictions of animals (eagles, gryphons, lions, elephants, horses) composed in rows or medallions and embellished with a decorative border; hunting scenes were also depicted (see Excursus 3.8.3).

### Silk routes

Silk textiles came to the early medieval Europe from Asian workshops through the Byzantine Empire, as an important commodity in trade and diplomatic relations. Long-distance trade in luxury commodities was undoubtedly under the control of the rulers themselves; the goods were primarily intended for the sovereign and for members of the highest social classes. Besides being an exclusive trading commodity, silk fabrics were also an important instrument of diplomacy and power politics. There are no known reports directly relating to Great Moravia, but according to parallels from the surrounding early Christian world, we may assume that silk played a similar role there too.<sup>3</sup> The ways in which people could come to own silk fabric or clothing certainly included gifts from foreign rulers at the diplomatic-political level as well as exchanges as part of domestic power politics. Inheritances and dowries may also have played a part, as these definitely included luxury textiles. An important role was also played by the church, which was increasingly growing in strength, of which liturgy and hierarchy silk formed an important part. Apart from the actual rulers, church officials could also wear silk robes.<sup>4</sup> The presence of silk in the church and in the highest echelons of society is also proven by preserved liturgical and reliquary textiles, as well as remnants of those preserved in elite graves.<sup>5</sup>

### Silk and patterned textiles in Mikulčice elite graves

The presence of luxury items is in the archaeological research mostly evidenced in the grave goods of the deceased, which included clothes and parts of clothing or funereal textiles (blankets, cloaks). It is not easy to record textiles in the early medieval archaeological contexts as in the most cases textiles are preserved in the form of small fragments of mineralised structures retained in the corrosion layers of metal objects. Only a systematic and thorough study of all the found artefacts may tell us more about the used textiles. A detailed textile and technological analysis may then provide general information about the methods of textile production and the



1 For the history of silk production, see e.g. Kuhn – Zhao Feng eds. 2012; Otavský – Wardwell 2011, 325–347.

2 Březinová – Bravermanová – Bureš Víchová 2019, 20.

3 Vedeler 2014; Poláček 2007b.

4 Vedeler 2014, 56–66.

5 Muthesius 1997; 2004.

Fig. 231 Samite preserved near a silver spherical hollow button called *gombík*.

Mikulčice, Grave 318 inside Church 3.



0 1 cm

level of its development at that time (see Excursus 3.8.1). The main indicators considered are the textile raw material used and the weave of the fabric. In addition to the prevailing linen or woollen fabrics in tabby or twill originating from domestic production, the Mikulčice find collection also included two types of textiles whose parameters differ from those above. These are samite-type fabrics and fabrics with a supplementary pattern weft.

In connection with luxury goods, the most important finds are samite-type fabric. They were described in the Great Moravian material back in the 1970s, when 11 of them were recorded in rich graves from the Mikulčice acropolis and extramural settlement. These were graves from the cemetery by Church 2 (108), Church 3 (318, 380, 457, 505, 580, 582) and Church 9 (101/IX). In all cases, these were fabrics with two weft and warp systems; the material was determined as silk and linen (Fig. 231).<sup>6</sup> The latest study of textile remains resulted in a discovery of a small well-preserved fragment of silk samite inside a double bronze gilded plate from Grave 590 by Church 3, the so-called three-nave basilica (see Excursus 3.8.2)

Samite-type fabric finds are known from the early medieval archaeological context in the Northern and Western Europe, from important Viking and Slavic sites, where they are consistently interpreted as imported goods.<sup>7</sup> They have also been recorded in lavishly equipped graves from other prominent Great Moravian strongholds (e.g. Staré Město - Uherské Hradiště agglomeration, Pohansko near Břeclav, the assumed stronghold in Rajhrad).<sup>8</sup> However, no finds have been documented in the extramural settlement, hinterland or vicinity of the excavated strongholds. It is thus clear that the presence of patterned silk fabrics is associated with other luxury items and is linked solely to the graves of the elites of that time.

Another special group comprises fabrics in a tabby or, in exceptional cases, a twill weave with a geometric pattern consisting of a supplementary pattern weft. In the archaeological material from the vicinity of Mikulčice agglomeration, a total of 16 finds of such fabrics have been documented: one from the acropolis by Church 3 (Grave 540), seven from the extramural settlement in Kostelisko (Graves 1665, 1666, 1759, 1766, 1989, 2004, 2041), five from the cemeteries at Mikulčice-Panské (Graves 18, 22, 118B; Fig. 232), one from Josefov-Záhumenica (Grave 176) in the hinterland of the stronghold, and three from the cemetery in Čejč - Za Hřbitovem, which is located at a greater distance from the stronghold (Graves 100, 115, 148).

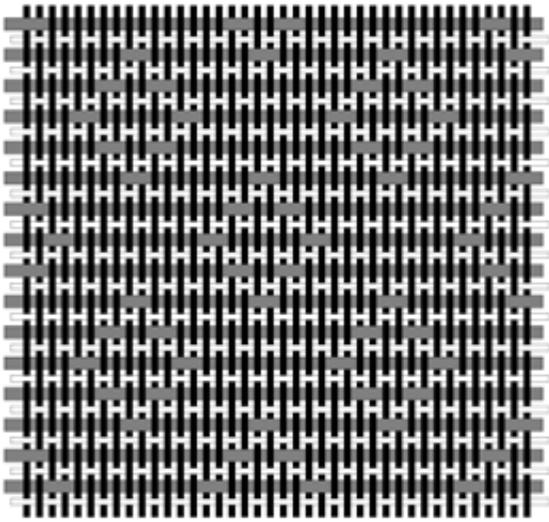
The most interesting and also most well-preserved find is the remnant of the patterned fabric on the surface of an iron sword in a scabbard from Grave 2041 at Kostelisko - the extramural settlement of Mikulčice stronghold. The fabric is evident in the upper third of both sides of the body of the sword and adheres tightly to the surface of the top third of the blade; above it, the layers of wood and leather from the scabbard are preserved, so it is clear that it comes from the inner lining of the wooden scabbard. Interesting is the detail preserved in the immediate vicinity of the hilt, which indicates that the fabric reached as far as onto the surface of the scabbard and extended roughly 10 mm over its top edge, which could have formed an interesting decorative feature. The fabric presented in this manner would also explain the use of a fine, patterned fabric to line the scabbard, much of which would not

Fig. 232 Fabric with a supplementary pattern weft preserved on a fragment of an iron bucket fitting.  
Mikulčice, Panské cemetery, Grave 118B, Inv. No. M380/00.

6 Kostelníková 1973, 9, 22–26.

7 Geijer 1938, 58–67; Maik 1997; Grömer 2017, 101; Vedeler 2014, 9–10, 35–38.

8 Kostelníková 1973, 22–24.



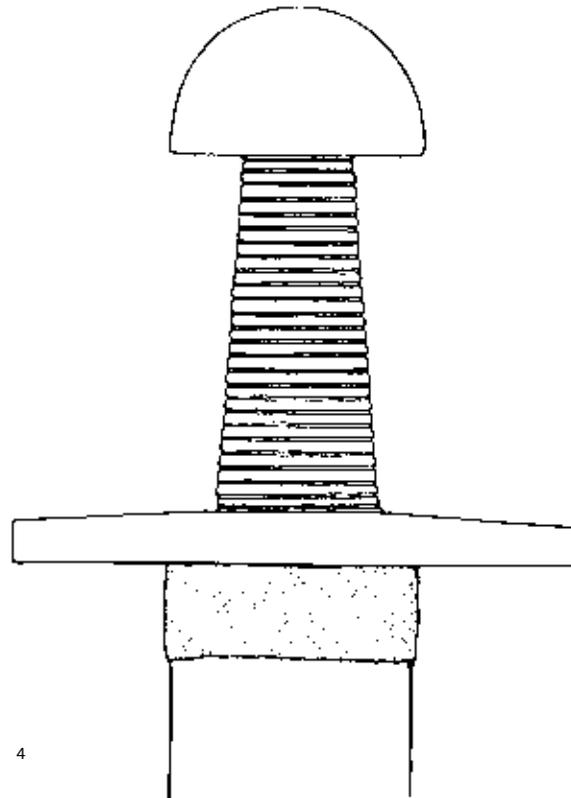
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Fig. 233 Supplementary pattern weft from Mikulčice-Kostelisko, Grave 2041 (Inv. No. 266/114).

1 - Diagram showing fabric weave with a supplementary pattern weft, legend: black - warp; white - ground weft; grey - supplementary pattern weft; 2 - reverse side of fabric preserved in the corrosion layer of an iron sword in its scabbard; 3 - original of the preserved scabbard; 4 - hypothetical reconstruction of the extended fabric on the scabbard of the sword.

be visible at all. The fabric is made from linen in a tabby weave; on the front, the supplementary pattern weft creates diagonal series of small diamonds (Fig. 233: 1). The reverse side of the fabric is visible on the surface of the sword, on which thicker wefts with a plied twist S/2z float freely (Fig. 233: 2, 3).<sup>9</sup>

Fabrics with similar patterns from the early medieval sites abroad are known as well, for instance, the finds from the Viking centres of Birka and Haithabu, or from the early medieval stronghold at Gars Thunau in Lower Austria.<sup>10</sup> However, the origin of these finds remains unknown, either they may have been produced locally, or imported from areas with more advanced textile production. Although those fabrics are not such rare and luxury goods as silk fabrics, their patterning and the fact they were difficult to produce make them different from regular textiles. Therefore, these items are considered to reflect the social status of their owners as well.

### Clothing as a status symbol

The most important and also most visible way of using textiles is as clothes and parts of clothing. Clothing has always served a mainly practical purpose, as a means of protection in poor weather. However, it has also served a highly important representative role, enabling the person to express their social status, profession and wealth. Wearing a silk clothing was the ideal way of expressing one's social status and importance. Silk was completely different from fabrics made of other materials, thus its "exotic" origin was clearly apparent, together with the fact that it was expensive and difficult to obtain. From archaeological record, we know that pieces of silk were sewn into clothing made from domestic materials, as is evident in the narrow stripes of silk patterned samite from Viking finds.<sup>11</sup> It is clear that all-silk garments were the privilege of just a very few people at that time, and so owning a smaller, more affordable piece of such fabric was certainly appealing and used to represent one's status. This may be similarly assumed with the inhabitants of the Great Moravian Mikulčice, although the state of preservation of the small remains of silk fabrics do not make it possible to determine their original size, or how they were used. In this regard it must be noted that we have no archaeological record to evidence how the Great Moravian clothing looked and was cut, and therefore we have to base our theories on the few local iconographical depictions (e.g. strap-ends with orants) and especially on the Frankish and Byzantine evidence.<sup>12</sup>

### Luxury at first sight

Silk is undoubtedly a luxury commodity, one that travelled long-distance trade routes intended for the wealthiest people of the medieval world. Silk clothing or accessories were clearly distinguishable from other textiles, meaning that the effect of exclusive silk was clearly visible and thus it was well suited to be presented in public. Therefore, a person who owned/wore clothing of expensive patterned fabrics made their social status and wealth apparent immediately.

Reliable, though few examples of archaeological evidence of the presence of silk fabrics come from the Great Moravian milieu. Regarding the study and processing of textile remains and tools used to make fabrics, Mikulčice is the most well-researched early medieval site in the Czech Republic. The completely new find of a small, yet very well preserved, fragment of silk samite on a small gilded plate unearthed in 1957 during the excavation of Grave 590 became a highly important discovery of the recent studies. This has enabled us to elaborate on the conclusions from the past research in greater detail and particularly to confirm the presence of luxury textiles in a lavishly equipped child's grave from the cemetery near Church 3 (basilica) in Mikulčice. Eleven samite-type fabric finds have been recorded at Mikulčice, offering convincing evidence that this luxury material was available to the inhabitants of the Mikulčice stronghold, although it was definitely affordable to only a very small group of the richest or most influential people.

The long-term study of Mikulčice textile remains have confirmed the potential of this type of archaeological record, which provides important information about the processed textile fibres, the variability of textile techniques, the diverse ways in which the products were used, and about the domestic production as well as imported goods.

9 This is an unpublished find discovered in 2016; Březinová – Otavský – Otavská 2018.

10 Geijer 1938, 48–57; Hägg 2015, 126–128; Grömer 2017, 100.

11 Vedeler 2014, 7–8.

12 Kybalová 2001, 20–69.

### 3.8.1 excursus

## Mikulčice Textiles – Textile Technological Survey

– Helena Březinová

Textile remains preserved among finds from the Mikulčice agglomeration were first studied and described in the 1970s by M. Kostelníková,<sup>1</sup> and from 1990s they have been systematically studied by H. Březinová.<sup>2</sup> During this time, analyses were carried out on more than 440 remnants of textile structures, in the vast majority of cases preserved in corrosion layers on the surface of metal objects from graves, mostly on spurs, knives, razors, sharpeners, buckles, spherical hollow buttons called *gombíky*, jingle bells, swords or axes. Imprints of fabrics have also been documented on the bases of pottery vessels (Fig. 234). The finds, particularly from the acropolis at Mikulčice, as well as from the extramural settlements (Kostelisko, Kostelec), from centre's hinterland (Mikulčice-Panské, Josefov-Záhumenice) and from their more distant surroundings (Čejč – Za Hřbitovem) have been studied primarily.

The entire set of textile remains from the Great Moravian Mikulčice reflects the current state of preservation and is considerably influenced by the time of discovery and basic post-excavation processing. Systematic study of the textile remains in the phase of fieldwork and subsequent conservation of metal objects from graves started only in the 1990s. Therefore, in this respect the well-documented cemeteries are those that have been researched during the last 40 years. However, these cemeteries tend to represent rather a lesser elite or rural milieu, as the excavation of the “richest” burial grounds (especially the church cemeteries of the Great Moravian Mikulčice) was conducted back in the 1950s to 1960s. Information gathered about the textile finds from this period was possible only thanks to the pioneering work of Marie Kostelníková.

1 Kostelníková 1972; 1973; 1975.

2 Březinová 2013.



Fig. 234 Imprint of textile structure on the base of a pottery vessel.  
Mikulčice, Inv. No. 351/66.



The assessment and comparison of the analyses results of the individual textile remains has furthered our understanding of the production of textiles, their quality and original use.

The overwhelming majority of textile remains consists of tabby fabrics; a twill weave is represented in far less amount, being considered a typical local textile production (Fig. 235: 1). The most interesting testimony is provided by fabrics made using more complex textile techniques – samite (weft-faced compound twill) or the use of a supplementary pattern weft (Fig. 235: 2, 3), where the quality of the textile processing is clearly of a higher standard.

Overall the majority of the fabrics were of fine and medium quality (with a density ranging from 11-20 threads per 1 cm), which indicates the nature of the textile goods most commonly used. A greater number of coarse fabrics has been recorded in the wider surroundings of the Mikulčice centre, while the finest fabrics come from the fortified core of the stronghold and extramural settlement, which reflects the assumed social status of the people buried in the particular areas of the site.

Owing to the fragmentary state of the find, it was very difficult to determine the textile raw material used; this was possible with only very few of the samples analysed. Most of these comprised plant fibres, probably flax; silk or wool was identified in only a few isolated cases.

Interesting findings concerning the variability of the use of textiles were provided by an interpretation of their original function. Besides the clothing and dress accessories of the buried individual, these were fabrics associated with burial customs, i.e. with the manner in which the individual objects were placed into the grave, with the design of the grave pit, the coffin or the arrangement of the actual human remains. The samples that were most easily documented were the remnants of fabric cases for tools, weapons or everyday items, which were intended to protect the blade or the entire object from becoming damaged, blunt or rusty. Descriptions were also made of the fabrics used to make sword scabbards or knife sheaths, as well as the fabric used to cover the top edge of the bucket. Imprints of fabrics on pottery then relate to the technical use of textiles, such as to seal the pin of a potter's wheel.

One phenomenon observed relatively frequently was the presence of multiple different textiles in a single grave. Generally, 2 to 3 different textile structures were identified, although in several cases there were as many as 5, 7 or even 9 different types of textiles. These accumulations of various types of fabrics, which were frequently associated with clothing, dress accessories, covers and cases, are clear proof that textile products were a common and routinely traded commodity, that a varied and diverse textile material culture existed there, although very little of this has been preserved for the modern-day research.

Fig. 235 Mineralised remnants of different fabrics on the surfaces of various artefacts from Mikulčice.

1 – Fabric in a tabby weave on the surface of an iron clasp knife, Mikulčice-Panské cemetery, Grave 18, Inv. No. M 9/00; 2 – fabric wrap on the surface of an iron blade, Čejč – Za Hřbitovem cemetery, Grave 89, Inv. No. 159-163/03; 3 – fabric with a geometric motif woven with a supplementary weft, preserved on the disc of spurs, Mikulčice-Panské cemetery, Grave 22, Inv. No. M 106/99.

### 3.8.2 excursus

## Samite – Weft-Faced Compound Twill: A Top Silk Product

– Helena Březinová

A completely new and the most important discovery resulting from the recent research of the Mikulčice textiles is the small remnant of silk fabric preserved on a bronze gilded plate (Inv. No. 1994a/57; 216/š) found in 1957 in the child's Grave 590 near Church 3 (basilica) in Mikulčice (Fig. 236).

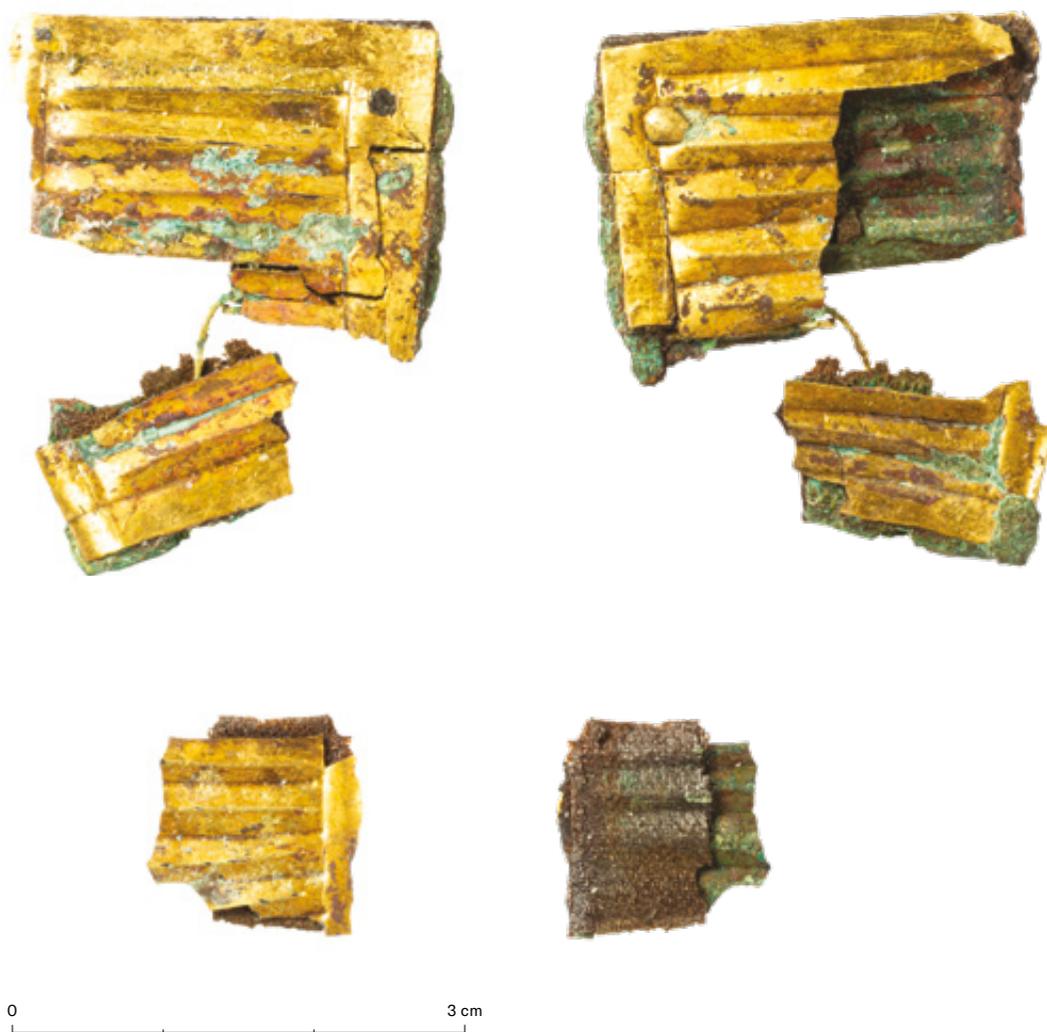
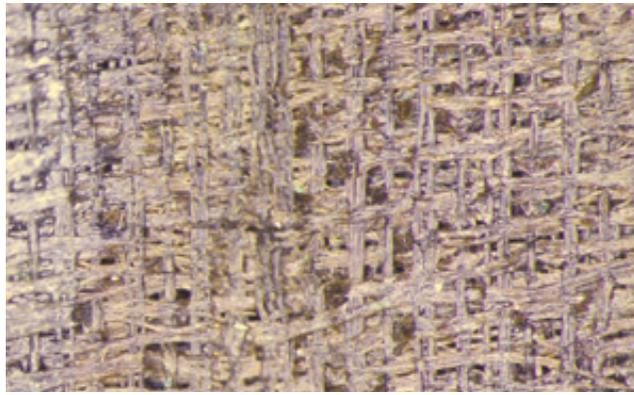


Fig. 236 Bronze gilded plate with preserved silk fabric on the inside, two pieces (avers and revers).

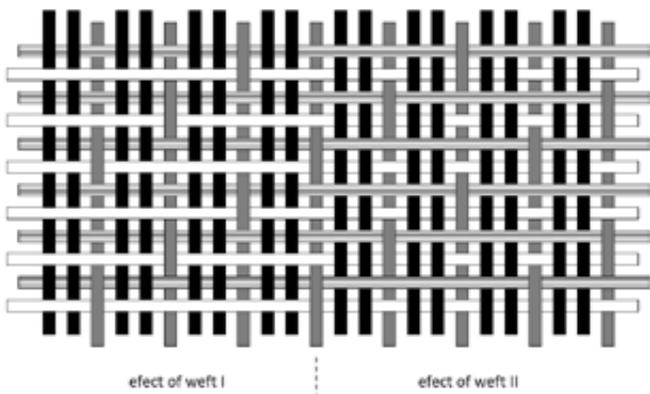
Mikulčice, Grave 590 near Church 3, Inv. No. 1994a/57.

Fig. 237 Silk fabric from the Grave 590 near Church 3, Mikulčice.

1 – Detail of samite; 2 – technique diagram showing samite, legend: black – main warp, gray – binding warp, white – weft I., striped – weft II; 3 – REM image of silk fibres.



1 0 2 mm



2



3

## Technical analysis of the fabric

Weave:	samite – weft-faced compound twill (Fig. 237: 1, 2, 3)	
Warp	proportion:	2 main warps to 1 binding warp main: silk, twistless binding: silk, twistless
	count:	36 threads per cm (main warp), 18 threads per cm (binding warp)
Weft	proportion ( <i>passée</i> ):	1 weft I to 1 weft II weft I: silk, twistless weft II: silk, twistless
	count:	c. 40 <i>passées</i> per cm

Characteristic of the weave: samite (weft-faced compound twill) with two weft series; the thread of the main warp lies between the layers of wefts I and II; binding warp interlaces in 1.2 twill Z *par passée*.

Pattern: the coloured pattern fabric was formed by the different wefts I and II; on the preserved fragment it is clear that at one point weft I passes from the front to the back and weft II from the back to the front; neither the original colour scheme nor the form of the pattern can be determined.

Method: textile-related technological survey and documentation; Olympus SZX 7 stereomicroscope, QuickPHOTO microscope software; Tescan Vega3 LM scanning electron microscope.

The find of silk samite comes from the grave of a small child, containing a pair of silver spherical hollow buttons, bronze gilded plates, fragments of silver plate, an iron knife and a bucket.<sup>1</sup> The fragment of silk, measuring 1 × 1.5 cm, was preserved on the inside of a double bronze gilded plate, joined with thread and with a corrugated surface. According to its preservation, it is clear that the fabric was originally between the bottom and top layers of the double plate. It may thus be assumed that the silk fabric, which was probably part of a garment or a clothing accessory, had metalwork decoration on it.

The silk fabric belongs to a group of textiles called samite, which were made in the Near East from the 4th century AD. Another major producer was the Byzantine Empire, from where these luxury textiles came to Europe, where they were intended solely for the very highest-ranking members of elites. This Mikulčice samite is thus highly valuable and, after the devastating fire of the archaeological depository in 2007, is the only physically existing evidence of the presence of this imported commodity in Mikulčice.

1 Klanica et al. 2019.

### 3.8.3 excursus

## Magic of Silk: Byzantine Silk Fabrics

– Helena Březinová

Remnants of Great Moravian textiles from the 9th century almost entirely comprise small fragments preserved in the corrosion layers of metal objects, and do not reflect the colour or the patterning of the original textiles. In the case of preserved silks, which were originally glossy, colourful and had various patterns, this means that their great aesthetic value cannot be appreciated anymore. We can get an idea of the appearance of these textiles from study of textiles preserved in church collections, libraries, archives, or from the archaeological sites with an environment suitable to preserve organic material.<sup>1</sup>

Fig. 238 Patterned samite on the end-sheet of Gospel Book cim. 2.

Around 870, Frankish-Saxony region, today in Prague Castle Archive, Metropolitan Chapter of the Saint Vitus.

1 Muthesius 1997.



The beauty and diversity of silk textiles can be admired, for instance, in the fragments of fabrics preserved in Northern Europe from the Viking period. Many Scandinavian sites have yielded testimony for intense trade between the Vikings and the eastern regions, with furs in particular being traded in one direction and silks in the opposite. The largest collections of silk textiles come from Birka (Sweden) and Oseberg (Norway), where samite-type fabrics are predominant among the finds dating to the 9th century.<sup>2</sup>

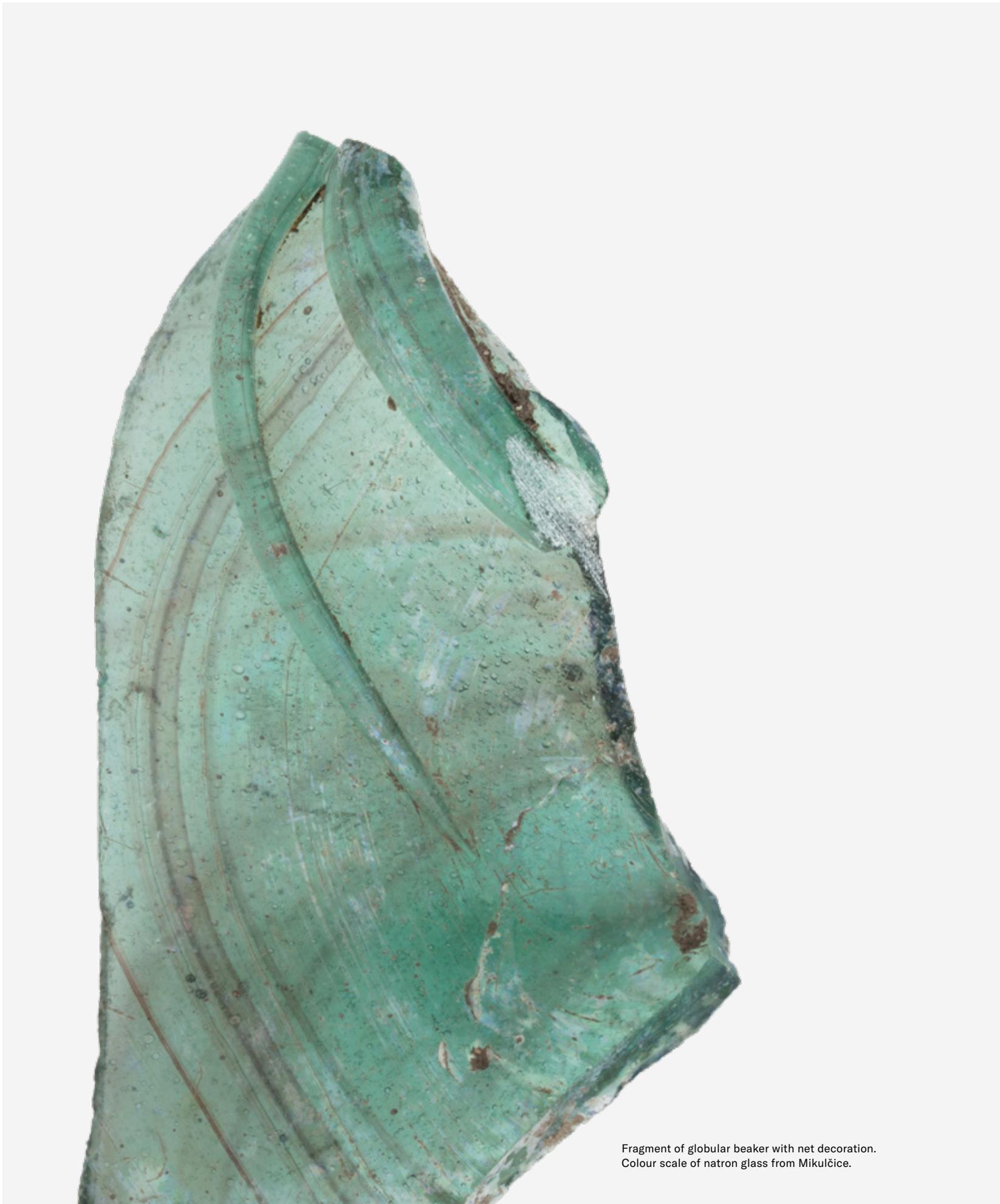
In the Czech Republic, the closest analogy to the Great Moravian samite silk fabrics can be found in the binding of the Gospel Book originating in the Frankish-Saxony region and dating to around 870 (cim. 2, Metropolitan Chapter of the Saint Vitus Cathedral, Prague Castle). The fabric is glued to the inside of the front and back wooden plates of the book binding, both parts of fabric, each 22 × 35 cm in size, once formed a single unit. This is a blue-and-green fabric with a yellow, pink and green pattern. The central motif is a hunting scene with riders on horseback, lions, donkeys and dogs, which is framed by a circular medallion with floral and geometric motifs filling the space around its perimeter (Fig. 238). The medallion was approximately 63 cm in diameter. The fabric made using the samite technique is dated to the end of the 8th and

the beginning of the 9th century and comes from the Byzantine Empire. The scene on the fabric depicts a tale from a legend about the Persian king Bahrám Gór (420–438), a popular motif of the Persian weaving workshops, which was also assumed and widely used in the Byzantine silk workshops.<sup>3</sup>

3 Kubinová 2018, 177–189, 294.

2 Vedeler 2014, 9–10, 35–38; Geijer 1938, 58–67.





Fragment of globular beaker with net decoration.  
Colour scale of natron glass from Mikulčice.

## 3.9

# Vessels, Window Panes and Small Glass Artefacts in the Material Culture of the Mikulčice Elites

– Hedvika Sedláčková

The material culture of Great Moravia has been studied since the 1950s, when systematic archaeological excavations of the large settlement complexes in Mikulčice, Staré Město – Uherské Hradiště agglomeration, Pohansko near Břeclav and other sites in Moravia and South-West Slovakia commenced. At that time, jewellery from coloured and precious metals, iron, and wooden and ceramic artefacts were also assessed and published in detail. In the case of glass artefacts, the main focus was on minute jewels and garment accessories, which included plentiful finds of glass beads and buttons as well as less frequently discovered glass inlays of finger rings<sup>1</sup>.

Glass received more attention later, at the end of the 1980s. This first phase of the processing of Great Moravian glass is connected with the name of Zdenka Himmelová († 2002), who first published finds of window glass.<sup>2</sup> In the mid-1990s, Himmelová went on to compile a detailed catalogue that included all the fragments of vessels, flat glass, tools and fragments of a production-waste character that were discovered during the closed phase of systematic excavations in Mikulčice between 1954 and 1992.<sup>3</sup> The finds featured 138 artefacts found mostly in the settlement context of the acropolis and outer bailey, while only a few of the artefacts came from graves. Himmelová sorted the finds into several groups such as vessels, window glass, glass artefacts and evidence of production. The typological analysis was accompanied by glass composition analyses: in the case of nine vessels and one sample of window glass, indicative semi-quantitative spectral analysis was used and five pieces of production evidence were analysed by means of chemical spectrography. Based on available information, Himmelová developed a basic chronology that divided the finds into two groups of approximately the same size. An earlier group – vessel fragments and production waste – was assessed as glass dated to the 1st to 4th centuries CE. A later group containing 69 pieces of glass, 55 of which were vessel fragments, was dated to the 9th century. Unfortunately, only 25 of the artefacts that were recorded in the original catalogue – mostly ancient glass – survived the tragic fire of the Mikulčice research base in 2007.

In the second phase, finds from other sites were included in the research of the Great Moravian glass.<sup>4</sup> A collective study assessed finds from earlier excavations at the nearby stronghold Pohansko near Břeclav and the ecclesiastical area in Uherské Hradiště – Sady. New finds were obtained from the hillfort in Bojná near Topolčianky in Slovakia. Finds published earlier – from Pohansko

near Nejdek, the princely grave near Kolín in Central Bohemia and finds from a glass workshop near the Church of St Hadrian in Zalavár, Hungary – were included in the overall assessment. Nine out of the one hundred finds from Sady described in the study underwent chemical analyses<sup>5</sup> and nine artefacts from Bojná, Kolín and Pohansko near Břeclav were analysed by means of the SEM/EDS method.<sup>6</sup>

The studies yielded several crucial findings. In general, they showed that glass vessels were not exceptional – they were found at the most important Great Moravian sites. They might have constituted only a small part of material culture, but – as will be shown later – they had a high evidence value. The study also confirmed the presence of vessels from early wood-ash glass and another variant of potassium-calcium glass from Sady and smoothers from Bojná and Pohansko near Břeclav, which together prove intensive contacts with the western part of the Carolingian Empire. The third important finding seems to be that the glass assortment in the milieu of secular elites (Bojná, Mikulčice and Pohansko near Břeclav) differs from the glass found in the milieu of the ecclesiastical elites in Sady – both concerning the shape spectrum and provenance. This last discovery seems to be of paramount importance for reconstructing the structure of the society at that time (see Excursus 3.9.3).

In connection with the preparation of this publication, all preserved Mikulčice finds were subjected to a new examination. Scientific analyses formed an important part of the study. The analysed artefacts included the 25 finds that had survived the blaze, three earlier artefacts that were not included in Himmelová's catalogue, and four finds of hollow glass discovered recently at the site. A total of 32 glass items from Mikulčice were processed.

Apart from fragments of vessels, tools and evidence of production, two glass buttons and three beads were also analysed as comparative material (A9, A10, A19, A22, A28). The results proved that the range of glass in this assemblage was surprisingly wide: several groups of natron glass (1), soda-plant-ash glass (2), specimens of early wood-ash glass (3), artefacts from other potassium-calcium types of glass (4) and, undoubtedly, lead glass.<sup>7</sup> The dating of plant-ash glass allowed a shift in the dating of some of the vessels in the “ancient glass” group according to Himmelová to a later period – and thus to make the idea of their origin more precise.

1 E.g. Hrubý 1955, 246–258, Fig. 85, 86; Staššíková – Ungerman 2009.

2 Himmelová 1989.

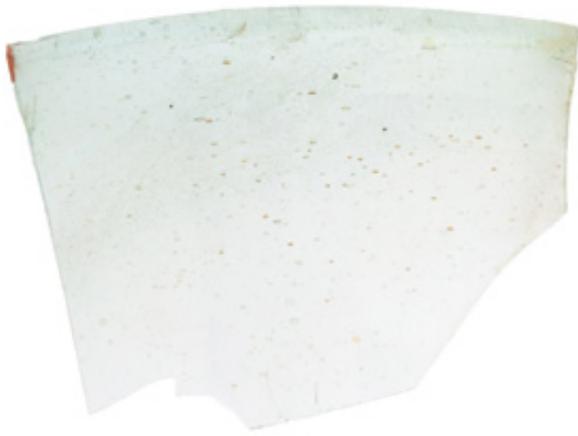
3 Himmelová 1995.

4 Galuška et al. 2012.

5 Wedepohl 2012.

6 Galuška et al. 2012, Pl. 64.

7 Frána 2000.



2



1



Fig. 239 Fragments of glass vessels. These two vessels and fragments of a beaker with net decoration (Fig. 242: 1) are the only Great Moravian vessels made from antimony-free natron glass.  
1 - Mikulčice, Inv. No. 594-1362/57, preserved torso of a greenish glass funnel beaker, probably from Grave 398 near Church 3; 2 - Mikulčice, without Inv. No., fragment of the bottom of a medium blue funnel beaker.



Fig. 240 Globular beaker with net decoration from Pohansko near Nejdek.

Stray find made in 1940 in the vicinity of the Great Moravian stronghold, probably from a grave. This find is missing, and only this photograph has been preserved in the archive of the Czech Academy of Sciences, Institute of Archaeology (Freising Archive).



Fig. 241 Almost the entire globular beaker with net decoration from a princely grave in Kolín, Central Bohemia.

The grave is dated to the second half of the 9th century and was accidentally discovered in 1864. It was a burial of a man and a woman with luxurious grave goods. The only preserved glass artefacts are this beaker and a bowl; fragments of another two unpreserved vessels have also been mentioned.

## Types of Mikulčice drinking glassware from the Great Moravian period in the context of contemporary finds

On this site, drinking glassware is represented by two main forms of Carolingian glass: funnel and globular beakers. Funnel beakers spread on the territory of today's Netherlands, England, Norway, Sweden, Denmark and Germany; they were the most frequent type of vessel in the Carolingian milieu.<sup>8</sup> The manufacturing of this type of vessel, known from Western and Northern Europe (and now also from the territory of Great Moravia) – has been documented in a glassworks in Cordel near Trier<sup>9</sup> and in San Vincenzo al Volturno.<sup>10</sup>

The Mikulčice file originally contained fragments of 14–15 funnel beakers from colourless glass with greenish accents (16 fragments), primarily green pieces (4 fragments), and exceptionally also blue-green, yellow-green, bluish and violet glass fragments. Also preserved was a torso of an artefact from light blue-green glass (A1) and a fraction of a vessel base from blue glass (A8), both from antimony-free natron glass (Fig. 239: 1, 2). This group also includes the fragment of the globular beaker from greenish glass with red streaks (Fig. 242: 1); another five analysed samples of the same composition represent ancient glass (see Excursus 3.9.2; Fig. 251).

The second most frequent shape of Carolingian vessels – the globular beaker – has been recorded in Mikulčice by at least ten fragments of smooth rims and bodies with applied trail decoration. In two instances, the trails formed a net decoration, while elsewhere they made parallel lines. The unusual net decoration was also featured on the fragments of globular beakers found in Bojná and Pohansko near Břeclav (Fig. 242). Whole vessels were preserved in a grave complex excavated in Kolín and among earlier finds from Pohansko near Nejdek. Although in this case we lack the archaeological context, a fully preserved vessel suggests it comes from a grave as well. The territory of the Great Moravian Empire yielded a relatively significant concentration of finds. The second area where net decoration has been found is the Viking milieu in Scandinavia, with two documented vessels from Birka (a globular beaker and a funnel beaker) and a fragment from Dorestad in the Netherlands.<sup>11</sup> In rare cases, this decoration has also been featured on vessels found in Italy<sup>12</sup> and Slovenia.<sup>13</sup>

The three preserved shapes – from Grave 739 in Birka,<sup>14</sup> the princely grave in Kolín<sup>15</sup> and Pohansko near Nejdek<sup>16</sup> (Fig. 240; 241), give us an idea of the overall shape of the vessel. The beakers from Birka and Pohansko near Nejdek are approximately the same height (8 or 8.2 cm) and are made of light green glass, while the beaker from Kolín is smaller (7 cm) and light blue-green in colour. The fragment from Pohansko near Břeclav was of the same colour (Fig. 242: 4), while the fragment from Bojná was light blue (Fig. 242: 3).

8 Steppuhn 1998.

9 Arbman 1937, 28–30.

10 Stevenson 1997, 132–133.

11 Arbman 1937.

12 Newby 1991, 35, Fig. 4.

13 Marušić 1960, 20, Fig. 1.1.

14 Arbman 1937, 48, 49, Pl. 9:1.

15 Košta – Hulínský – Sedláčková 2011, 62–65.

16 Novotný 1963, 31, 35, Fig. 27.

Glass of different colours was used to manufacture the globular beakers found in Mikulčice. The unpreserved fragments with filament decoration were made from light green<sup>17</sup> or light blue glass,<sup>18</sup> and the fragment with white trails was emerald green.<sup>19</sup> The fragments described so far were made from monochrome glass, but the parts of the other two vessels from Mikulčice had transparent red streaks with marbled effect in the basic greenish and light blue material (Fig. 424: 1, 2). The glass of the latter type was one of the specialities of Carolingian glassmaking and was produced from the end of the Merovingian period.<sup>20</sup> A bowl and a beaker with striations of transparent red glass with marbled effect from the end of the 8th and the beginning of the 9th centuries were found in Dorestad, Netherlands; the luxurious character of the vessel is emphasised by reticello.<sup>21</sup> Eleven vessel fragments dated to the 9th- to 10th-century Haithabu contain yellow, red and blue melted-in fibres.<sup>22</sup> Fragments of a funnel and a globular beaker and a glass cane with red fibres in the glass were found in a glassworks in Cordel near Trier.<sup>23</sup> Green and blue window glass with red marbling effect was produced in San Vincenzo al Volturno.<sup>24</sup> The hanging lamp excavated in Sady was made from a similar glass with red reams (see Excursus 3.9.3).

Chemical analyses of globular beakers with net decoration showed the use of glasses of different composition. The specimens from Mikulčice, Bojná, Pohansko near Břeclav and Kolín were made from natron glass from different sources of sand and the artefacts might have been manufactured in different places (see Excursus 3.9.2; Fig. 252). On the other hand, the fragment of blue glass with red reams found in Mikulčice was made from soda plant-ash glass, which also was determined in fragments of other vessels, in production waste and beads (see Excursus 3.9.2; Fig. 254).

Bottles were represented in the original assemblage, which were mostly categorised as ancient glass in Himmelová's catalogue. The only artefact dated to the 9th century by Himmelová was an unpreserved fragment of a bottleneck made from clear blue glass with an applied opaque white glass trail.<sup>25</sup> In theory, it might have belonged to the group of vessels from blue glass with the opaque white trail decoration, however, these are dated to the 11th century.<sup>26</sup> A fragment of funnel rim from greenish glass<sup>27</sup> (Fig. 243) is the very first evidence of early wood-ash glass, which was manufactured on German territory from the end of the 8th century. The production of glass, recently confirmed by a find of Carolingian glassworks with three furnaces near Bodenfelde in Lower Saxony, probably took place on multiple sites.<sup>28</sup> The artefacts from early wood-ash glass and related potassium-calcium glass were rather rapidly introduced in the Great Moravian milieu. They have been found in Bojná, Pohansko near Břeclav and Mikulčice in the form of smoothers; vessel fragments were also found in Sady (see Excursus 3.9.2; Fig. 255).



Fig. 242 Fragments of globular beakers with net decoration. Colour scale of natron glass (1, 3-4) and soda plant glass (2).

1, 2 – Mikulčice, Inv. No. 112/402/26; 3 – Bojná, Slovakia, inv. No. 476/09; 4 – Pohansko near Břeclav, Inv. No. P 178 421

17 Himmelová 1995, Cat. Nos. 46, 73, Fig. 9: 11 and 10.  
 18 Himmelová 1995, Cat. No. 36, Fig. 9: 12.  
 19 Himmelová 1995, Cat. No. 108, Fig. 11: 7.  
 20 Steppuhn 1998, 63.  
 21 Dorestad: Baumgartner – Krueger 1988, 71-72, Cat. Nos. 14, 16.  
 22 Steppuhn 1998, 64, Fig. 13: 3-5.  
 23 Arbman 1937, 30-33, Fig. 1: 4, Pl. 1: 1 and 2, 3: 2.  
 24 Dell'Acqua 1997, 36, Fig. 5, 6.  
 25 Himmelová 1995, Cat. No. 83, Pl. 9: 2, find from feature 940.  
 26 Baumgartner – Krueger 1988, 77-80.  
 27 Himmelová 1995, Cat. No. 59, Pl. 11: 8, stray find.  
 28 E.g. Stephan – Myszka 2017, esp. 252-257.



Fig. 243 Small bottle with funnel neck found in Mikulčice, Inv. No. 594-383/71.

It was made somewhere in the western part of the Carolingian Empire based on a new recipe using potassium ash.



Fig. 244 Bottle fragments from Mikulčice originally categorised as ancient glass. However, the use of soda plant-ash glass proves a later date of manufacture; this glass began to be imported to Italy from the Islamic region as late as the 7th century. Most probably it arrived in Mikulčice in the form of cullet – glass fragments for recycling. The light blue-green bottle fragment (1) was deposited as an offering in a grave.

1 – Inv. No. 594-650/69; 2 – Inv. No. 594-4857/65.

The presumed ancient origin of another two bottle fragments was not confirmed. The upper part of the bottle made from light blue-green glass with wheel-cut decorations on the shoulders and cylindrical neck, which was found under the knees of the deceased in Grave 993,<sup>29</sup> and a fragment of a horizontal rim of a bottle made from deep green (emerald) glass<sup>30</sup> were made of soda plant-ash glass (Fig. 244: 1, 2). Their composition proves that they could have been manufactured as late as the Early Middle Ages, i.e. approximately in the 7th–9th century (see Excursus 3.9.2; Fig. 254).

## Lamps

The overview of shapes should also include two fragments of vessel feet excavated in the area around Church 5, which were destroyed by the fire at the Mikulčice research base. They were most likely a part of goblet-shaped lamps.<sup>31</sup> Small vessels in the shape of goblets with stems and disc-shaped feet were widespread since the end of the 4th to the 9th century in the Byzantine area along the Mediterranean Sea. The finds of several types of lamps mainly come from churches and monasteries.<sup>32</sup> Most probably they had a lighting or liturgical function both in Mikulčice and Sady (see Excursus 3.9.3).

The frequently published fragment with massive stem and finished with a ball-like shape with an air bubble made from excess glass has been interpreted as the bottom part of a lamp (Fig. 245: 1). It was the only item where non-European origin was assumed.<sup>33</sup> On its other end, where oil bowls are located in lamps, the item is broken off; the glass plate that was originally there is clear on the breakages. Its shape suggests it was a variant of a hanging stemmed lamp with solid base, which occurred mainly in the Eastern Mediterranean from the 5th to 7th century, and sporadically as late as the 11th century.<sup>34</sup> The composition of the glass is the same as in the fragments of the window glass mentioned below, which allows us to assume it is a deformed glass cut-off made during the manufacturing of flat glass (see Excursus 3.9.2; Fig. 253).

## Window panes

Four fragments of flat brown-yellow and purple glass with grozed edges were excavated from the acropolis. The connection of two fragments with Church 3 – the Mikulčice basilica – suggests the existence of glazed windows in this temple and perhaps elsewhere (Fig. 246: 2, 3). The window glass made in the workshop near Church of St Hadrian in Zalavár had a similar appearance and colour; indeed, the composition of the natron glass from which the Mikulčice glass plates (and the “lamp”, Fig. 245: 1) were made corresponds to the composition of Zalavár products.<sup>35</sup> With certain reservations, the flat-glass group can be amended with the emerald green fragment (Fig. 246: 4) and the minute fragment of colourless glass with pink colour around the edge caused by copper. It is probably stained glass (Fig. 246: 5, see Excursus 3.9.2; Fig. 253).

29 Himmelová 1995, 86, Cat. No. 45, Fig. 8: 9.

30 Himmelová 1995, Cat. No. 18, Fig. 8: 2.

31 Himmelová 1995, Cat. Nos. 4, 5, Fig. 8: 11, 7.

32 E.g. Antonaras 2007, 52–53.

33 Himmelová 1995, Cat. No. 89, Fig. 9: 7.

34 Uboldi 1995, 120–121, type IV.1: 6th–7th century; Antonaras 2017, 89: 11th-century finds from Torcello, Cairo, Corinth and Thessaloniki.

35 Szőke – Wedepohl – Kronz 2004.

## Working tools – smoothers

Apart from vessels (i.e. either glassware or lamps), work tools – nine smoothers – were also found within the stronghold. They were massive semilenticular artefacts with diameters ranging from 6 to 10 cm, which have been mostly interpreted as textile-production tools. In the 7th–11th centuries they were common in Western Scandinavia and North-Western Europe – and only rarely elsewhere. The conspicuous absence of smoothers in Central Europe was the result of the earlier state of knowledge; they are now also known from Mikulčice, Bojná and Pohansko near Břeclav; all the finds come from a secular background. The Mikulčice smoothers were found at the acropolis, half of which were found in the backfill of settlement features.<sup>36</sup> As for materials, natron glass, potassium-calcium and lead glass are represented. Such variability has not been encountered even in Haithabu – in over a hundred smoothers found there, potassium-calcium glass and potassium-lead glass (only sporadically) was represented.<sup>37</sup> One of the Mikulčice artefacts is hollow (Fig. 247: 1). A shape that has been found only exceptionally in Scandinavia and has been dated exclusively to the context of the 7th to 9th centuries.<sup>38</sup>

## Evidence of production

Himmelová categorised nine of the excavated fragments with traits of production evidence – pieces of partially melted glass from an unfinished melting process, cut-offs, glass drops, pieces of raw glass and a strongly deformed drop – as ancient glass. She expressed her assumption that at least the pieces of incompletely melted glass and glass drops are evidence of local production, not of import. She considered part of the “old glass” dated to the 1st to 4th centuries CE to be material for secondary production.<sup>39</sup>

There are seven fragments of this type, which allowed for analysis. Four were listed in Himmelová’s catalogue (Fig. 248: 1–4), while two had not yet been catalogued (Fig. 248: 5, 6). Three fragments were from natron glass with an admixture of antimony (Fig. 248: 2, 3, 6). The same composition was assessed in a fragment of ancient glass and two studied glass buttons. This match in composition explains the purpose of the “old glass” in Mikulčice (see Excursus 3.9.2; Fig. 251; 254).

The fragments of a beaker and two bottles from Mikulčice from soda plant-ash glass have been mentioned earlier. The glass of the same composition was ascertained on a fragment of production waste and on a hollow blue bead.<sup>40</sup> More beads of identical composition that were found at the magnate court at Pohansko near Břeclav have been published<sup>41</sup>. It is thus likely that glass of this composition was widespread on the territory of Great Moravia. This glass, whether in the form of a product or amorphous production waste, should not be confused with glass from the Roman era. It gradually replaced the older natron glass from as late as the 6th to 7th century; first, it was imported as material for recycling



Fig. 245 Glass fragment from Mikulčice categorised as a bottom of a lamp with a reconstruction of original insertion to the polycandelon. But considering the composition of the glass, it may be also a cut-off produced during the manufacture of flat glass.

1 – Mikulčice, Inv. No. 594-159/79; 2 – unknown location, bronze Byzantine polycandelon with glass lamp, from 6th–7th century.

36 Himmelová 1995, Cat. Nos. 122, 123, 126, 128.

37 Steppuhn 1999, 135, 137, note 27.

38 Steppuhn 1998, 74–76, 117–119, Fig. 30; Steppuhn 1999; Pöche 2005, 80–81.

39 Himmelová 1995, 93, 94, Cat. Nos. 130–138, Fig. 13: 1–9.

40 There are two representatives of later elements at the site: possibly a faceted bead from blue soda plant-ash glass (A28) and a fragment of a ribbed beaker, which represents vessels commonly manufactured in Italy from the 14th century (A29).

41 Přichystalová – Štelcl – Vávra 2014, 50–52, Pl. 3, Sample 1, 2, 4, 7, 10.



Fig. 246 Window pane from Mikulčice.

1-3 - Mikulčice, Inv. Nos. 594-301/65, 594-247/66, 594-301/65, the fragments of flat glass have a shape created by cutting from larger panes, a trace of possible fitting into a lead frame is apparent on the lenticular fragment; 4 - Mikulčice, Inv. No. 594-343/67, emerald green fragment of what was probably flat glass produced with the use of mosaic cubes in San Vincenzo al Volturno, Italy; 5 - Mikulčice, without Inv. No., this very small fragment of colourless glass with traces of copper on one of the breakages is possibly a representative of the "stained glass" of a similar type that was found in Uherské Hradiště - Sady and Zalavár, Hungary.



Fig. 247 Glass working tools - smoothers - from Mikulčice.

1 - Inv. No. 594-844/55, the only almost completely preserved specimen of the nine finds from before the blaze, however hollow; 2 - Inv. No. 594-577/87, a smaller fragment of a smoother made from potassium-calcium glass.

from the Islamic area to Italy since the 7th century,<sup>42</sup> and since the 9th century, it was imported by the Vikings from their sails to Haithabu as material for bead making.<sup>43</sup> Thanks to the analyses, the knowledge concerning the dating of the find can be considerably expanded, particularly in cases concerning very small fragments that are typologically difficult to assess.

### The role of the vessels and their fragments in the Great Moravian society in Mikulčice and contacts documented by glass

A new assessment of the surviving fifth of the original Mikulčice glass finds brings new results connected with the material published earlier. It confirms that the glass vessels that were rare at that time were not unavailable for the Mikulčice elites – even though it probably used more modest products than the ecclesiastical elites of Sady. Theoretically, the glass in Mikulčice might have also been of the same high quality as in Sady, although this has not been proven. Apart from drinking glassware, lamps have been found in Mikulčice. At least some of the church windows were glazed. Unlike in Sady, glass working tools – smoothers – were used in Mikulčice.

Most Mikulčice finds show an obvious relationship to the Carolingian Empire, especially its northern part. This is indicated by the geographical spread of smoothers and funnel beakers as vessels that were the most frequently represented in North-Western Europe and Scandinavia. On the other hand, questions arise in connection with the relatively high number of finds of beakers with net decoration in Great Moravia and their relatively low representation in North-Western Europe.

Particularly the existence of graves containing whole vessels (Kolín and probably also Mikulčice and Pohansko near Nejdeč) deserves special attention. Is this a unique random phenomenon reflecting the economic and social status of the buried, or is it linked to unspecified ties with the Viking milieu where entire glass vessels appeared most often in the 9th century? It is assumed that the insertion of fragments of (mainly ancient) glass into graves had a different symbolical role in the spirituality of the inhabitants. This phenomenon is known from Mikulčice, Uherské Hradiště – Sady and other Great Moravian burial grounds.<sup>44</sup>

Another important issue connected with research into Mikulčice glass is connected with glass-processing workshops. The existence of such a workshop in Mikulčice – although not clearly identified – is indirectly indicated by the finds of the fragments of ancient vessels, pieces of raw glass and production waste. Practical use of this type of glass is indicated by the matching composition of the fragments of ancient natron glass with an admixture of antimony and the common Great Moravian garment fastener: globular buttons with a loop made from metal wire. The find of a pendant – an amulet – made from the base of a bowl dated to the 1st century CE suggests that part of the glass fragments might have been recycled directly, without secondary melting. However, considering the drilling of the hole in the middle of the base and the careful removal of the remains of the body, this pendant could have been made only by an experienced craftsman knowledgeable in working with glass and possessing the necessary tools.



Fig. 248 Glass fragments with the character of production waste found; state after the blaze. They are made of natron glass of different composition including soda rich plant-ash glass (10: 6). Like the glass buttons with the admixture of antimony and beads from soda plant-ash glass, these fragments suggests the existence of a local workshop for secondary glass processing in Mikulčice, although this has not been found physically.

1 – Mikulčice, Inv. No. 594-333/89; 2 – Mikulčice, Inv. No. 594-649/69;  
3 – Mikulčice, Inv. No. 594-654/69; 4 – Mikulčice, without Inv. No.; 5 – Mikulčice, without Inv. No.; 6 – Mikulčice, Inv. No. 594-411/70.

42 An example of the occurrence of soda plant-ash glass in the Bari praetorium, the seat of the Byzantine governor: Neri et al. 2019.

43 Sanke – Wedepohl – Kronz 2002, 38.

44 Himmelová 1995, 85; Ungerman 2009, namely 228.



The low number of the finds of glass fragments from Mikulčice makes it impossible to closely specify the method of its acquisition. Himmelová was not satisfied with the most common explanation – i.e. that it is proof of the exploitation of older artefacts from the Roman era from the more or less distant vicinity of Mikulčice – and thus sought out other interpretations.<sup>45</sup> This mainly concerns soda-rich plant-ash glass, which, on the one hand is now represented by a single fragment with the character of production waste, but on the other hand – judging by the composition of finished products in the form of beads – was used in significant quantities. The occurrence of soda-rich plant-ash glass at the sites in Southern Italy is logically associated with business contacts with Eastern Mediterranean countries. Considering the fact that there are no sources of this glass in the more or less distant surroundings of Mikulčice, a targeted import from an undefined centre – either in Italy or North-Western Europe – must be assumed. Certain contacts with the Byzantine Empire are evidenced by goblet lamps, which are rare outside of Great Moravia to the north of the Alps.

This chapter has thus provided a brief summary of the current state of research into Mikulčice glass while considering the finds from other Great Moravian centres and the wider European context. Earlier, the assessment of material was primarily based on typology; now to a large extent it is based on the results of scientific examination. Concerning at least the question of glass (be it fragments intended for recycling or finished products), the latest results place the Great Moravian society into a much wider distribution network than had been previously assumed.

45 Himmelová 1995, 85.

Fig. 249 Near Church 5 in Mikulčice, an amulet was found that was made from the base of an ancient, 1st-century bowl.

Mikulčice, Inv. No. 594-296/63. The opening in the middle of the base was carefully chipped off and the remains of walls above the base ring were finely finished. It is another example of the possible use of "old" glass.

## 3.9.1 excursus

# Development of Glass Production Technology

– Dana Rohanová

The beginnings of the production of glass date back to the period of 3000 to 2000 years BCE in the areas of what is now Egypt and the Near East (Syria, Israel, Palestine, Iran and Iraq). Initially, glass was applied as a decorative coloured layer on the surface of beads (the typical turquoise faience). Later, small glass beads and buttons were produced, which partly replaced precious stones. From the 7th century BCE on, vessels produced in Egypt have been preserved – they were made either by moulding or core forming. In mid-1st-century BCE Jerusalem, the revolutionary method of glass blowing was discovered. This discovery made glass more widely available.<sup>1</sup>

The finds of glass dated from the 9th to 10th centuries CE can be divided into three basic groups: sodium-calcium-silica ( $\text{Na}_2\text{O-CaO-SiO}_2$ ), potassium-calcium-silica ( $\text{K}_2\text{O-CaO-SiO}_2$ ) and sodium- or potassium-silica-lead ( $\text{Na}_2\text{O/K}_2\text{O-SiO}_2\text{-PbO}$ ). The group  $\text{Na}_2\text{O-CaO-SiO}_2$  can be further divided based on the flux used: to natron and soda plant-ash glass.<sup>2</sup>

The provenance of glass can be ascertained based on its chemical composition and by determining the input raw materials – glass forming substances ( $\text{SiO}_2$ ) and alkaline flux. The first raw materials for the manufacturing of glass were the sand from the Mediterranean Sea and alkaline raw materials (natron or plant ash). Natron is a natural mineral mixture of sodium salts ( $\text{NaHCO}_3$ ,  $\text{Na}_2\text{SO}_4$ ,  $\text{NaCl}$  and others), which has been used for the production of glass since around the 4th century BCE.<sup>3</sup> Natron glass is typical for a high proportion of  $\text{Na}_2\text{O}$  (13–20 wt%) and the content of  $\text{CaO}$  around 5–9 wt%. The contents of  $\text{K}_2\text{O}$  and  $\text{MgO}$  are very low, under 1.5 wt%. Coastal sand contained  $\text{SiO}_2$  and  $\text{CaO}$  (5–10 wt%) as well as other admixtures (e.g.  $\text{Al}_2\text{O}_3$ ,  $\text{Fe}_2\text{O}_3$  contained in feldspars,  $\text{ZrO}_2$  and  $\text{TiO}_2$ ).<sup>4</sup> Due to the presence of Fe (iron ions) in the raw materials, the melted glass had mostly a greenish tint. The glassmakers learned to suppress the greenish tint by means of manganese (Mn) oxide and antimony (Sb) oxide ( $\text{Sb}_2\text{O}_3$ ), which refined the glass at

<sup>1</sup> See Glass of the Romans.

<sup>2</sup> Černá – Hulínský – Gedeon 2001.

<sup>3</sup> Shortland et al. 2006.

<sup>4</sup> Brems et al. 2012.

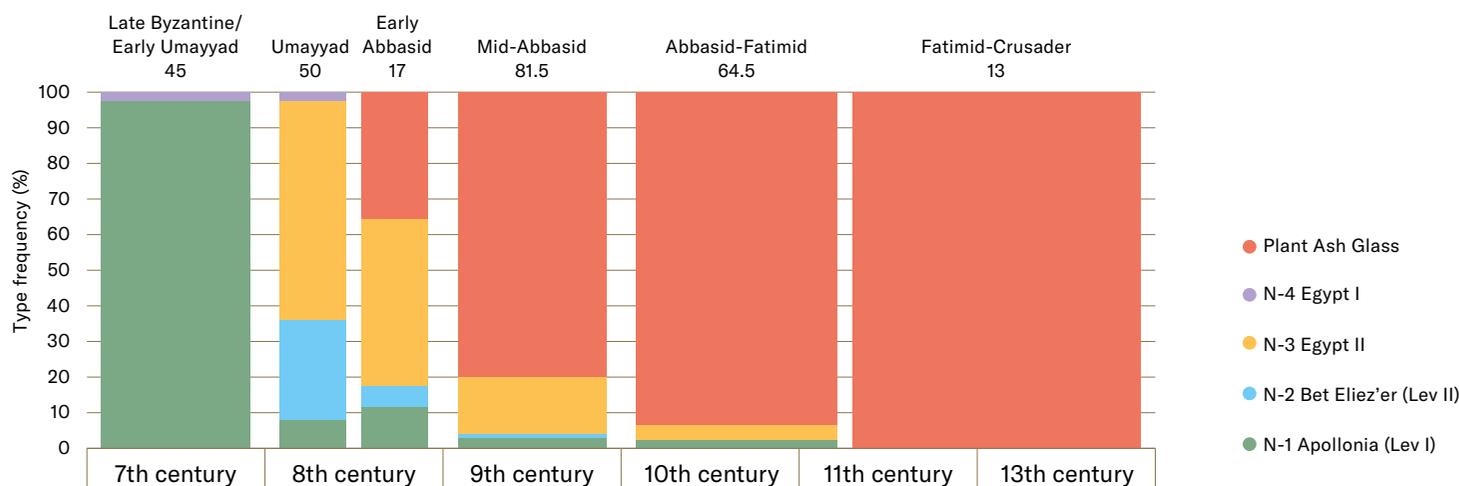


Fig. 250 Chronological development of natron glass production. Byzantine-Islamic transition after Matt Phelps et al. 2016.

the same time.<sup>5</sup> In specific oxidation-reduction conditions during melting, their various shades sometimes resulted in colourless glass. When very clean quartz pebbles were used instead of sand, it was not necessary to decolour the glass. Natron glass was also intentionally coloured, mostly using copper and iron<sup>6</sup>. The finds of Great Moravian glass can be categorised into the so-called Egypt 2 group, which was produced before mid-10th century CE.<sup>7</sup>

As a result of political changes and the changes in trade routes<sup>8</sup>, the production of natron glass in Egypt and the Near East stopped<sup>9</sup> at the end of the 8th and beginning of the 9th centuries CE.<sup>10</sup> Gradually, ash from seaweed or steppe plants was introduced as flux (halophytic plants of the *Chenopodiaceae* family)<sup>11</sup>. Such material is called soda ash-glass or soda plant ash glass). The ash was the source of CaO, K<sub>2</sub>O and MgO (over 1.5 wt%) in the glass. Natron, soda-ash and lead glass were produced in Egypt (source of natron), Near East (Phoenicia, Mesopotamia – now Iran, Iraq), the Levant (Syria – source of plant ashes) and Southern Europe (Turkey, Greece, the Balkans and Italy)<sup>12</sup>, Fig. 250.

The production of potassium-calcium-silica glass (K<sub>2</sub>O-CaO-SiO<sub>2</sub>) began as late as the end of the 8th century CE in Western Europe, to the north-west of the Alps (Paderborn, 776 CE, Western Germany).<sup>13</sup> Its production gradually expanded to the east. Initially, batches consisted of two basic raw materials (ash and sand).<sup>14</sup> Sand or quartz pebbles were used as sources of SiO<sub>2</sub>. The main source of alkali was ash from trees (beech and probably spruce) and fern in what is now England.<sup>15</sup> Beech ash contains mainly CaO and K<sub>2</sub>O, approximately

in the 2:1 weight ratio. The amount of Na<sub>2</sub>O is negligible. Beech ash was the source of a rather large amount of Fe and Mn. The glass that is subsequently produced is characterised by a deep green to greenish colour. According to Wedepohl,<sup>16</sup> this type of glass could be divided into sub-groups based on chemical composition and possible manufacturing dates as follows: early wood ash (EWA), wood ash (WA), early wood ash lime (EWAL), wood ash lime (WAL) or mixed-alkali (MA).

The amount of glass produced in ancient times was very small. It was difficult to achieve a temperature sufficient to melt glass (at least 1200°C) in a simple furnace. A batch was melted in several stages and the melting lasted from tens of hours to several days. In the first phase, after several hours of melting, raw materials created a heterogeneous mixture of alkali silicates, which by no means resembled glass. After cooling, the melted mixture was homogenised by crushing and, after re-melting, transparent glass was produced. Given the conditions, it would have been almost impossible to melt glass without the homogenisation of the melted batch. Primary glass production was centralised in several places (e.g. in Bet She'arim, Israel).<sup>17</sup> Here, the melted glass was formed into ingots (lumps of glass), which were sold for secondary processing, i.e. re-melting and forming the final product (beads, buttons, goblets, glasses, bottles, window glass and other items). For the secondary processing of ingots, lower temperatures (around 900°C) sufficed. The collection and recycling of broken glass was widely practiced.<sup>18</sup> Glass made in ancient Rome was re-melted and became part of new products. The remains of a furnace for the secondary processing of glass were found near Bratislava, Slovakia, in Devínska Kobyla.<sup>19</sup> However, it is highly probable that the glass products found at the sites studied here were shaped in the countries of their origin.

5 Hoffmann Barfod et al. 2018.

6 The presence of Cu or a higher concentration of Fe documents the efforts to tint the glass blue or blue-green.

7 Schibille et al. 2019.

8 Phelps et al. 2016.

9 Shortland et al. 2006.

10 Gratuze – Barrandon 1990.

11 Wedepohl – Simon – Kronz 2011.

12 Cagno et al. 2012.

13 Wedepohl 2010.

14 Henderson 1985.

15 Jackson – Smedley 2008.

16 Wedepohl – Simon 2010.

17 Freestone 2005.

18 Ibid.

19 Farkaš – Turčan 1998.

## 3.9.2 excursus

# Nature of the Finds From Mikulčice and Other Great Moravian Sites

– Dana Rohanová

Chemical analysis of 31 glass fragments excavated in Mikulčice showed that glass was brought to the site from many production areas.<sup>1</sup> The first and most numerous group (21+5)<sup>2</sup> consisted of natron glass, the provenance of which can be ascertained based on typology; this group includes both ancient (5 pieces) and Great Moravian (3 pieces) vessels. The second group, which is less numerous, consists of soda-plant ash glass (8 fragments)<sup>3</sup> and two fragments that represent potassium-calcium glass (a bottleneck and a smoother). The present text provides connections between the chemical composition of glass found in Mikulčice and the glass finds from other important Great Moravian sites such as Pohansko near Břeclav, Bojná and Uherské Hradiště – Sady. The comparison of the Moravian finds to the glass vessels excavated in Kolín in Central Bohemia and the window panes from Zalavár (Hungary) is also noteworthy. The finds of natron glass in Mikulčice come from at least four production areas (Fig. 251 – ratio of the CaO/Na<sub>2</sub>O oxides).

The largest group of products includes drinking glassware – globular and funnel beakers (red points). From the point of view of chemical composition, they are very close to the buttons, one of the beads, amorphous waste and probably also window glass made from mosaic stone.<sup>4</sup> Window panes are a slightly different natron glass group (green points) with a higher proportion of CaO and a lower proportion of Na<sub>2</sub>O. The different origin of the types of glass is confirmed by the proportions of SiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub>, which are closely linked with the sources of sand. The presence of Sb in some of the vessels and most beads indicates Roman-era (ancient) glass.<sup>5</sup> This was ascertained in seven of the artefacts (a vessel, button and other unidentifiable pieces of glass). Some of the glass samples with a content of antimony (Sb) also contained tin (Sn), which may indicate their origin in the era of the Byzantine Empire.

Natron glass from other sites (Pohansko near Břeclav, Bojná and Kolín) was manufactured in several partially overlapping production areas, for instance, Mikulčice and Uherské Hradiště – Sady<sup>6</sup> (Fig. 252), which is evident in the ratio of SiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub> that come from sands.

The pieces of glass found in Devínska Kobyla near Bratislava (West Slovakia), where a 9th-century glassmaking workshop was discovered<sup>7</sup>, were manufactured in a different milieu (see Fig. 252 in the top left graph). The beaker with net decoration and a bowl found in Kolín were made from natron glass with a higher ratio of CaO (8.4–9.0 wt%), similarly to the window glass from Zalavár.<sup>8</sup>

The window natron glass excavated in Mikulčice is similar to the group of natron glasses from Zalavár. Based on chemical composition (see Fig. 253), window glass from Zalavár can be divided into two groups – those with a higher or lower proportion of CaO.

This indicates that they may come from two different production areas.<sup>9</sup> The window glass from Mikulčice could be placed approximately in the same group (the content of CaO is approximately in the middle of the two values, but this small disproportion can be associated with the type of analytical method used). The composition of the window glass from Sady is similar to glass with a higher content of CaO.

The manufacturing of natron glass was widespread and practiced for millennia. Because of a very similar chemical composition<sup>10</sup> and possible recycling, it is not easy to distinguish their places of origin. Based on a comparison with literary data,<sup>11</sup> it is possible to categorise the glass finds as Egypt 2 or Levantine 1 natron glass. In the Carolingian-era San Vincenzo al Volturno in Central Italy, glass with 13–19 wt% of Na<sub>2</sub>O and 6–8 wt% of CaO was made, which was very similar to the glass found in Mikulčice – however, the content of Al<sub>2</sub>O<sub>3</sub> was higher, up to 2.5 wt%,<sup>12</sup> which indicates a different source of sand.

In Mikulčice, the soda-ash glass finds included mostly bottles and beads, which suggests that glass was more available and started to be used even for goods that were less luxurious. At least two production areas – with different proportions of CaO – are also assumed here. The beads found in Pohansko near Břeclav<sup>13</sup> were mainly made from soda plant-ash glass. One of the fragments from soda-plant ash-glass found in Mikulčice was a vessel base, which typologically corresponds to later Venetian production (approximately 12th–13th century), which was clearly confirmed by its chemical composition (see Fig. 254, yellow triangle). This find shows that Venetian glass was later made from raw materials that came from completely different places.

1 SEM/EDS analyses were measured using a Jeol JSM 6510 electron microscope equipped with the EDS SSD Inca detector (Oxford Instruments). The glass samples were cast in resin, grounded with abrasive papers (SiC 120, 400 and 1200), polished with diamond paste (3 and 1 µm) and polished under ethanol. The back-scattered electrons (BSE), which provide chemical and topographic contrast, were used. The measurement was made at an accelerated voltage of 20 kV at the low vacuum (30 Pa). Three places were analysed at each sample. A detailed table of the chemical analyses will be published later in a journal focusing on glass technology.

2 Analyses of five fragments of waste glass were published by Himmelová 1995, 106, Pl. 3.

3 For a closer explanation regarding different types of glass, see Excursus 3.9.1.

4 Schibille – Freestone 2013.

5 Neri et al. 2019.

6 Wedepohl 2012.

7 Farkaš – Turčan 1998.

8 Košta – Sedláčková – Hulínský 2011.

9 Szóke – Wedepohl – Kronz 2004.

10 Natron glass was produced from sand and natron with the following ratios of raw materials (ascertained by calculation): 100 kg of sand for 50 kg of natron.

11 Phelps et al. 2016.

12 Schibille – Freestone 2013.

13 Přichystalová – Štelcl – Vávra 2014.

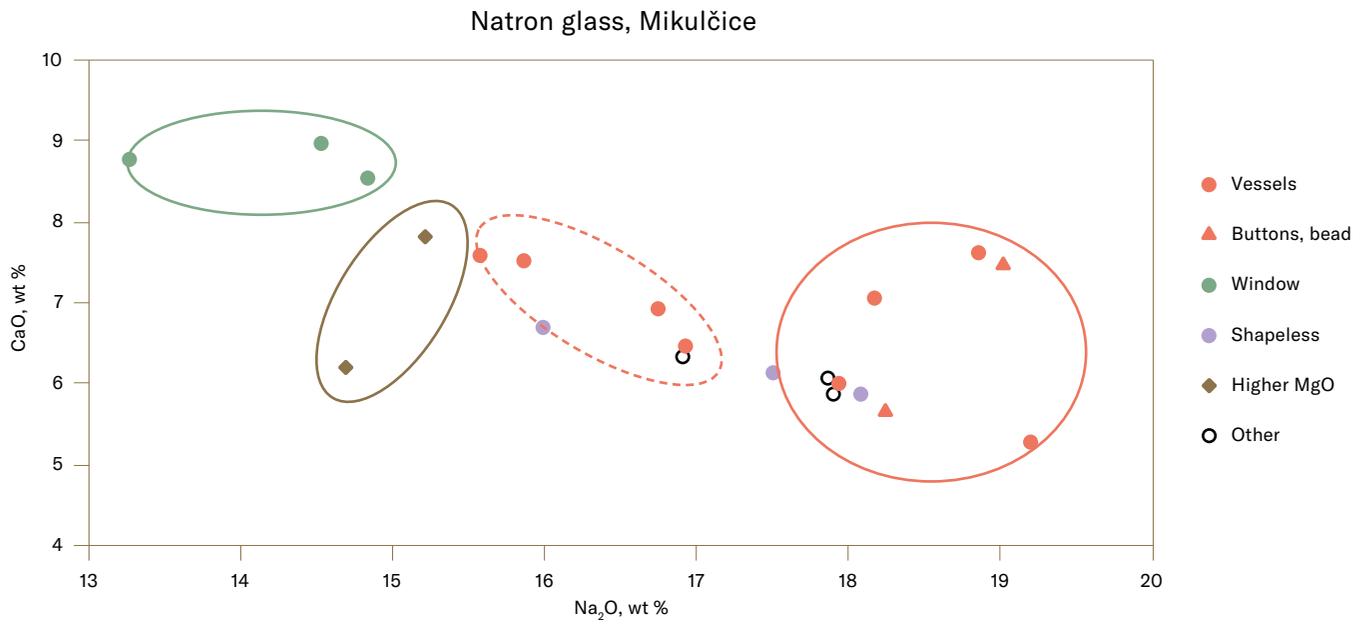


Fig. 251 The CaO/Na<sub>2</sub>O mass ratios in the natron glass finds from Mikulčice. The production areas are linked both with the chemical composition and the type of product.  
Red dots - vessels; green dots - window panes.

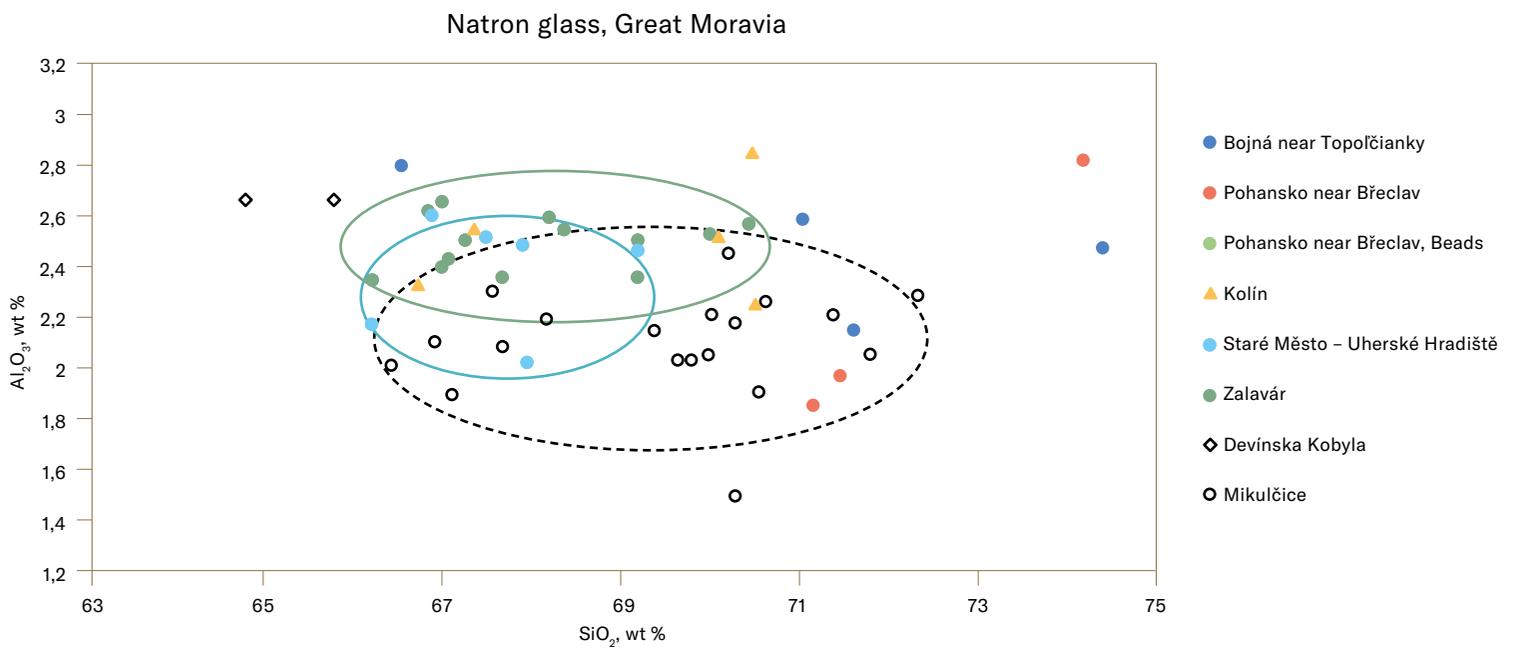


Fig. 252 The ratios of the Al<sub>2</sub>O<sub>3</sub>/SiO<sub>2</sub> oxides define Mediterranean coastal sands. The natron glass found in various parts of the Great Moravian Empire (Mikulčice, Pohansko near Břeclav) and in Eastern Bohemia (Kolín) clearly come from several production areas.

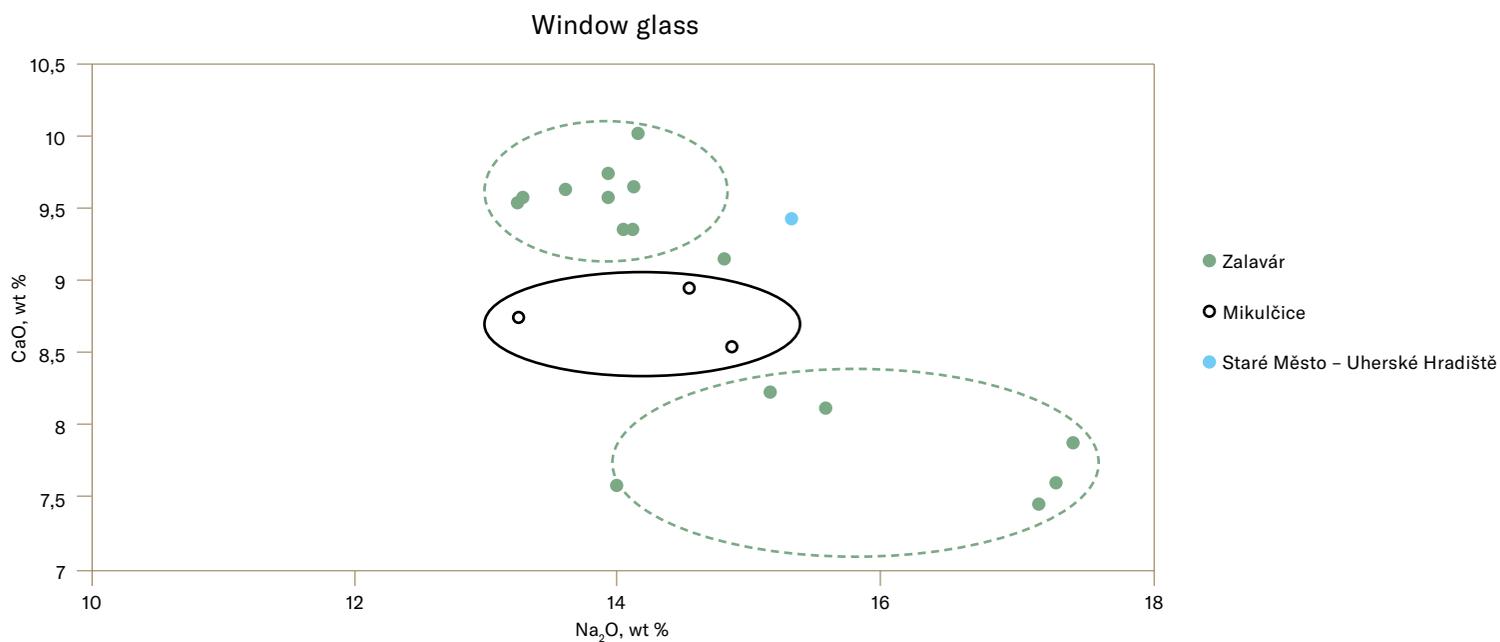


Fig. 253 The CaO/Na<sub>2</sub>O mass ratio in the window glass from Mikulčice and Uherské Hradiště - Sady. The relatively widely represented finds of window glasses from Zalavár were chosen for comparison.

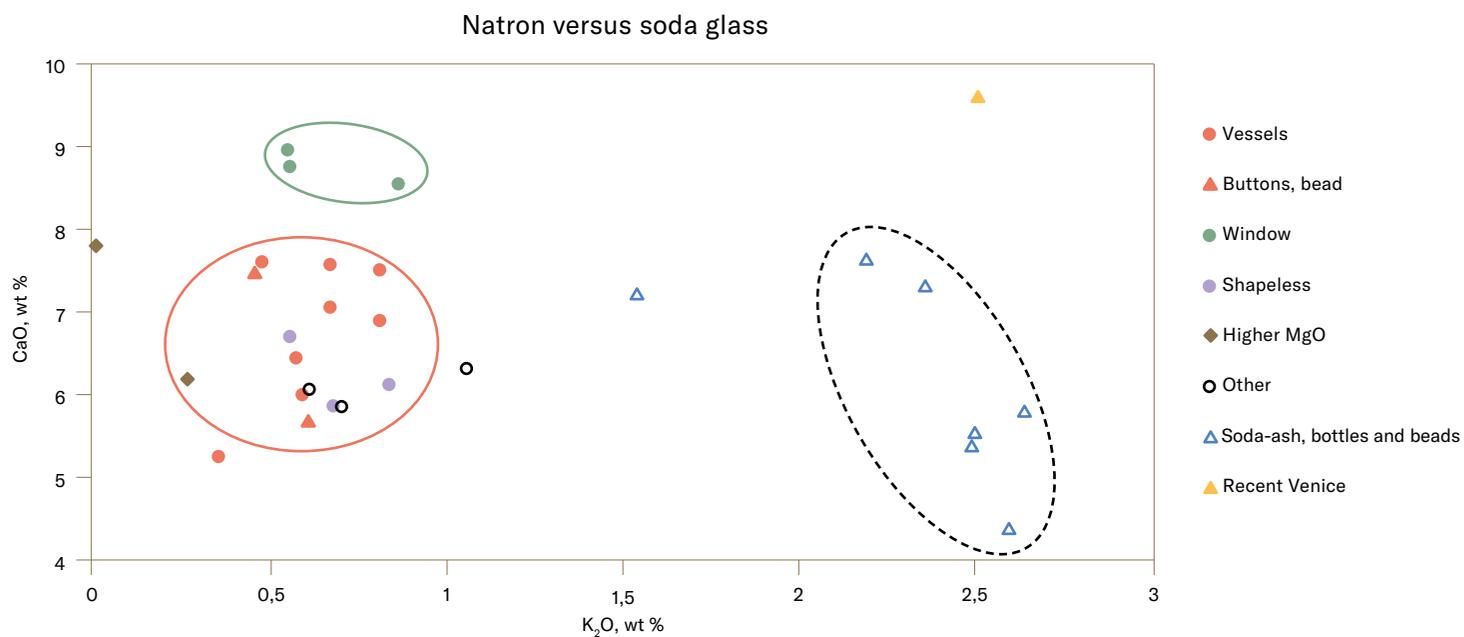


Fig. 254 Comparison of the chemical composition of the natron glass and soda-plant ash glass. Venetian glass lies outside of both the sets.

Red and green circle - natron glass; dashed gray circle - soda-plant ash glass; yellow triangle - Venetian glass.

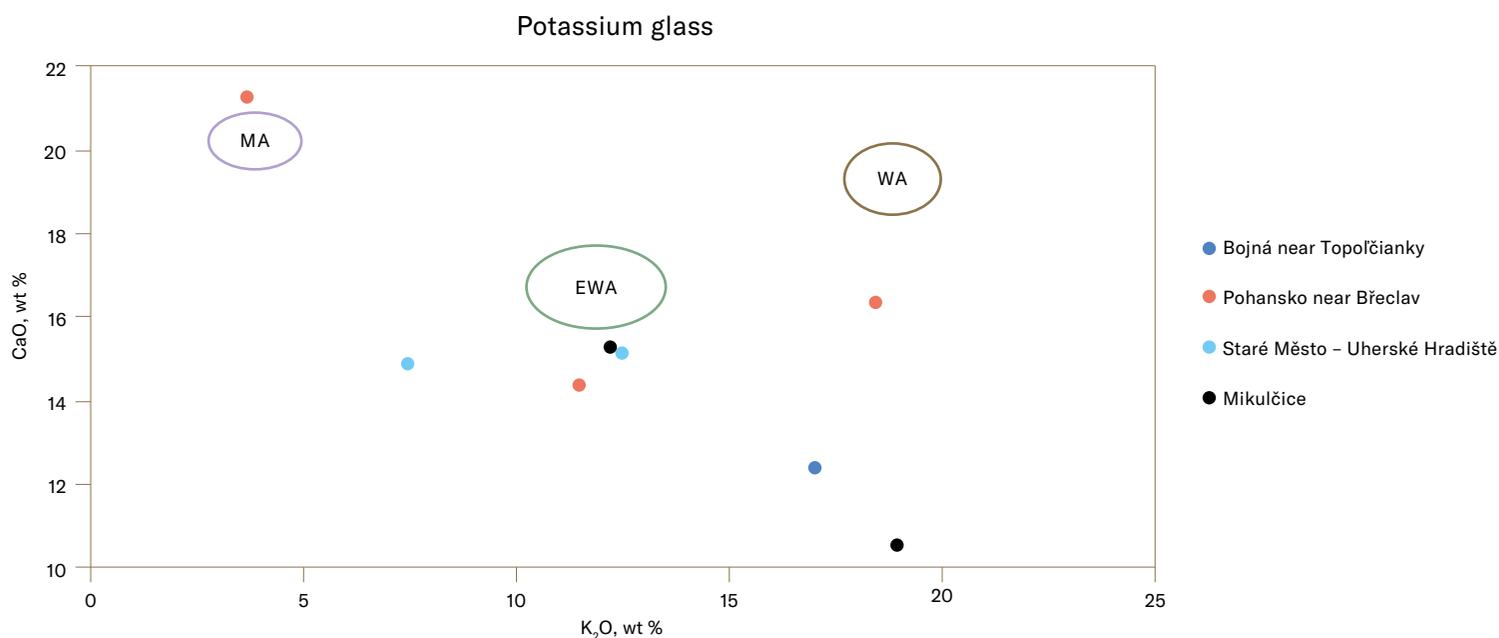


Fig. 255 The CaO/K<sub>2</sub>O ratio in potassium-calcium glass. The large variability in the composition is related to the ash used and also with the ratio of raw materials in the glass batch (i.e. raw materials prepared for melting). Potassium glass comes from the Northern Alps – Western Europe.

MA – mixed alkali, EWA – early wood ash, WA – wood ash.

Apart from the natron glass beads and a button, so-called mixed-alkali glass<sup>14</sup> (a blue bead, analyses)<sup>15</sup>, which may be of pre-historic origin (14th–1st century BCE), was found in Bojná near Topolčianky.

While the composition of natron and soda-plant ash glass is well defined, in calcium-potassium glass the CaO/K<sub>2</sub>O ratios differ to a large extent (Fig. 255). This means that the glass was produced in more places and the glassmakers used locally available types of plant ash: beech, spruce or fern. The bottleneck found in Mikulčice corresponds well with the group of early wood-ash glass.<sup>16</sup> Similar glass was found in Pohansko near Břeclav, Uherské Hradiště – Sady and Bojná. The composition of the smoother found in Pohansko near Břeclav is close to the wood-ash glass group, while the composition of the smoothers from Mikulčice and Bojná is slightly different, which is why they cannot be included in this group. In Pohansko near Břeclav, glass of the mixed-alkali (MA) type was found, which could possibly be as recent as the 15th to 16th century.<sup>17</sup>

The wide variety of the chemical composition of the Carolingian-era Great Moravian finds shows that the different types of glass were definitely imported to the Great Moravian territory from many production areas specialised in certain kinds of products.

The compositions of both types of soda glass<sup>18</sup> are similar to the types produced as early as in Roman times.<sup>19</sup> Natron glass imported from Egypt and Southern Europe was mainly represented by beakers and bowls (15 pieces in total), window glass (20 pieces), beads (10 pieces) and two lamps. Beads (9 pieces) and bottles (3 pieces) were made from plant ash glass. Potassium-calcium glass brought from Western Europe is represented by a hollow vessel, three smoothers and three bottles. Only a single artefact made from the K<sub>2</sub>O-PbO-SiO<sub>2</sub> glass with lead (Pb) content was analysed: a lamp, which might have been imported from Southern Europe, Egypt or what is now Russia.<sup>20</sup> Local production of vessels or beads from recycled glass seems improbable, despite the clear relation of the chemical composition of the glass (three well defined types) with the product types. Secondary reworking can be tentatively assumed only in simpler types of products, such as beads (see Devínska Kobyla). Other possible glass re-melting on Czech territory in the Great Moravian times could be confirmed only by future finds of production features or crucibles with the remains of specific types of glass. This possibility is assumed, for instance, at the Great Moravian agglomeration Staré Město – Uherské Hradiště.

14 Henderson 1988.

15 Hartmann et al. 1997.

16 Wedepohl – Simon 2010.

17 Ibid.

18 Obviously, a single technology (a strictly given ratio of raw materials) was adhered to in soda glass production, which is why it is now difficult to accurately identify their original source by means of the analysis of the majority oxides. To identify a site, very precise analyses of minority glass components is necessary.

19 Hoffmann Barfod et al. 2018: The decolourisation of glass by means of antimony and/or manganese oxide was practiced as early as the Hellenistic period.

20 Černá – Hulínský – Gedeon 2001.

### 3.9.3 excursus

## Glass of Secular Versus Ecclesiastical Elites in Great Moravia

— Hedvika Sedláčková

Glass finds dated to the Great Moravian period are known from Mikulčice as well as several other major settlements – the nearby Pohansko near Břeclav and the more remote Bojná near Topolčianky in Slovakia. Almost identical shapes of drinking vessels were used in the two latter sites, particularly a funnel and globular beakers, although on a smaller scale than in Mikulčice. Vessels with the specific net decoration made from applied trails have been documented in all three of the sites; they were known as whole artefacts from Pohansko near Nejdeč and Kolín in Bohemia. Despite the identical decoration, which suggests a single production centre, the composition of the natron glass in these artefacts reveals that different raw material sources, especially sand, were used and that they were at least produced in different glassmaking workshops.

In Pohansko near Břeclav and Bojná, products from wood-ash glass in the form of smoothers have been found, which points to contacts with the same production area in the western part of the Carolingian Empire. Only window glass has not been found there. Only beads were made from soda-rich plant ash glass.

An important assemblage of drinking vessels and window glass was obtained thanks to archaeological excavations in the 1950s/1960s in Uherské Hradiště – Sady, 40 km from Mikulčice. The remains of a Christian site of a central character were studied there. According to Galuška, its beginnings date to the end of the 8th and beginning of the 9th centuries, when a church with a cross-shaped ground plan was built there by priests from Bavaria and Aquileia. The author also assumes that sometime between 864 and 869, the western part of the church – a Byzantine-type narthex – was reconstructed, probably in connection with the activity of the Byzantine mission of the brothers Constantine and Methodius. The narthex may have served as a church school. Perhaps after 873, after Methodius's return from Rome, a chapel was built on the side of the church.<sup>1</sup> At least in the final construction phase, the building of the church was complemented by windows with the same silver stained panes (Fig. 256) that were manufactured and used in Zalavár.<sup>2</sup> Additional and larger fragments of window pane with figural decoration (part of a face) and with fragments of inscriptions in capital letters were preserved in Church of St Hadrian at Zalavár.<sup>3</sup> The latest find so far is a fragment dated between the 9th and 11th centuries excavated in the San Lorenzo Church in the Venice Lagoon. It contains a figural scene, of which only a part of a face has been preserved.<sup>4</sup>

The influence of Western Europe and Byzantine Empire was manifested in church architecture and the presence of the educated ecclesiastical elites was probably reflected by the composition



Fig. 256 Uherské Hradiště – Sady, church complex. Window pane with three original grozed edges and silver stained reddish-brown decoration on the inside of the pane (23 × 23 × 2.5 mm).

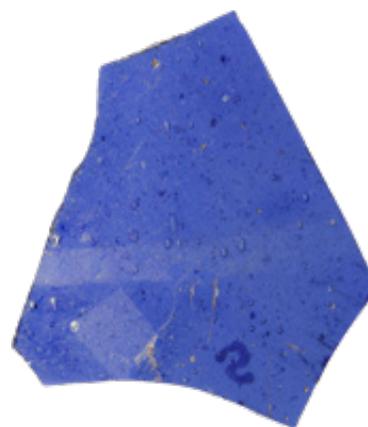


Fig. 257 Uherské Hradiště – Sady, church complex. Vessel type cannot be unanimously ascertained based on this small fragment (22 × 19 × 0.8 mm); most probably it comes from a larger cylindrical beaker.

1 E.g. Galuška 2008b.

2 Wedepohl 2012, Analysis No. A 01.

3 Szóke – Wedepohl – Kronz 2004.

4 Vaghi – Verità – Zecchin 2004.



Fig. 258 Uherské Hradiště – Sady, church complex. Two fragments, probably from the same vessel, found in House II at a settlement built at the beginning of the second half of the 9th century. Part of a handle on one of the fragments suggests it was a hanging lamp.

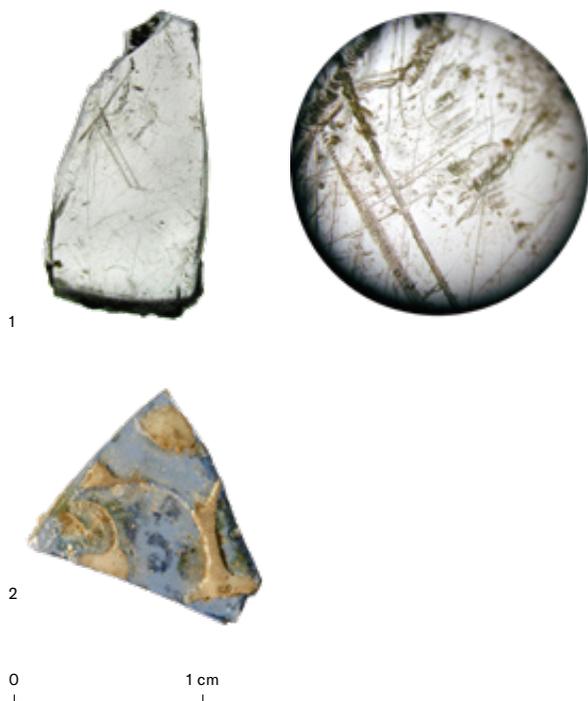


Fig. 259 Fragments of unusual shaped vessels from potassium-glass. 1 – Uherské Hradiště – Sady, church complex, Feature X, a fragment of a small conical bottle neck with an engraved “X”, above the top left line there is a small engraved cross on the right; 2 – Uherské Hradiště – Sady, church complex, Grave 66, fragment of blue early wood-ash glass coloured by means of Roman *tesserae*, found in the backfill of the later grave.

and range of glass: a total of 30 fragments – 25 vessels, 3 fragments of window glass and one from a *tessera*. The finds come from the church, the chapel that was constructed later at its northern side, the interior graves in the church, the settlement features to the north of the church and the wooden palace south of the church. A few fragments were found as intrusions in later graves from the 10th to 13th centuries – a time when burying continued at the site after the demise of the centre at the beginning of the 10th century.

A fragment of a larger, probably cylindrical vessel from blue natron glass coloured by copper and cobalt<sup>5</sup> was unearthed at the oldest part of the church complex. Geometrical decoration, originally inlaid with gold foil, was preserved as a negative imprint on its outer side (Fig. 257). The preserved part of the decoration matches the usual geometric decoration on other vessels.<sup>6</sup> The decoration technique differs from the one used in Hellenic and Roman vessels, where gold foil was sealed between two layers of glass. The fragments from the end of the 8th and the 9th centuries often contain only gently roughened facets where decorative motifs used to be, where the foil was probably attached with an adhesive.<sup>7</sup> Apart from San Vincenzo al Volturno and Sady, vessels decorated with gold foil are known to have been found in 13 sites in North-West Europe and Sweden. Fragments of vessels with this decoration, which included funnel and cylindrical beakers, occurred at several sites.<sup>8</sup> Their production has been documented in the older glassmaking workshop in San Vincenzo al Volturno, which was active approximately between 808 and 820. However, the finds from Europe date between 700 and 900, and most often to the late 8th century, which makes production in other workshops probable.<sup>9</sup>

The hanging lamp with a part of a handle found in House II might come from an older period – perhaps the mission of the Bavarian and Aquileian episcopate. Its remains are made up of fragments of colourless natron glass with streaks of dark red glass coloured with copper (Fig. 258).<sup>10</sup> Lamps with three handles were among the basic models of Byzantine glass; they had the shape of a cup with a disc-shaped foot,<sup>11</sup> which was not preserved in this case. Among other finds excavated in the house are a lead cross pendant with the Greek inscription *ZOE - IESUS - CHRISTOS - NIKA - FOS*,<sup>12</sup> a leaf-shaped pendant and iron and bone *styli* – writing utensils.<sup>13</sup>

Documents of other vessels, most of them of rather unusual shapes – come from the second half of the 9th century. At that time, artefacts from early wood-ash glass and lead glass began to appear in Sady. The first group contains a fragment of the neck of a small bottle with an engraved “X” and a small cross above the upper edge of the letter (Fig. 259: 1).<sup>14</sup> It is highly probable that this is the first letter of the name *XPICTOYC*. It was excavated in House X at a settlement constructed shortly after the mid-9th century as a part of the economic hinterland of the ecclesiastical area. The house was first interpreted as a smithery. The bottle was made from clear uncoloured early wood-ash glass with a high content of Na<sub>2</sub>O.

5 Wedepohl 2012, Analysis No. 08.  
6 E.g. Paderborn and Dorestad: Baumgartner – Krueger 1988, 66, 68, Cat. Nos. 7, 10; San Vincenzo: Stevenson 1997, Fig. 7: 1.  
7 Baumgartner – Krueger 1988, 65.  
8 Pöche 2005, 35, 36, Fig. 14.  
9 Stevenson 1997, 134.  
10 Wedepohl 2012, Analysis No. A 06.  
11 Antonaras 2007, 52, Fig. 5: 2b.  
12 Hošek 1965, 140.  
13 Galuška 1996, 140.  
14 Wedepohl 2012, Analysis No. A 05.

Other fragments found in the feature come from a bowl-shaped lamp and a thin flat pane.<sup>15</sup> A very similar “X”, also with a small cross, was located on a metal cross found in House II.<sup>16</sup>

Another example of a potassium-glass vessel is the fragment of blue glass with applied opaque white glass decoration with an architectural motif resembling arcades (Fig. 259: 2). It was found in the backfill of a young girl Grave 66 in close proximity to the chapel. The decorative motif is interpreted as a column with a base and an arcade.<sup>17</sup> No analogy has been found for its decoration and the composition of the white glass with a high content of Pb and Sn.<sup>18</sup> Based on the current state of knowledge, both the vessels were manufactured in the western part of the Carolingian Empire.

On the top of the list of documents of unique vessels are two fragments: part of a lamp foot and a fragment made from blue glass coloured with copper. The lamp foot was found in the most prominent Grave 12/59 in Uherské Hradiště – Sady, which was situated in the chapel in the north part of the church. In the last third of the 9th century, a deceased man (45–50) was buried together with gold *gombíky* (spherical hollow buttons) in a coffin with metalwork in a tomb lined with sandstone plates with lime plaster and figural paintings.<sup>19</sup>

His grave contained a funerary offering: a fragment of a lamp from unusual clear deep pink lead glass with a low content of Ca, for which there is no analogy in contemporary Europe (Fig. 260: 1).<sup>20</sup> The unusual colour of the glass offers an interpretation that the fragment was supposed to symbolise blood and eternal life.

The second fragment was found in the backfill of Grave 26 outside the church.<sup>21</sup> It comes from a silver stained vessel from blue natron glass coloured with Cu (Fig. 260: 2).<sup>22</sup> In Europe – Zalavár, the Venice Lagoon and Sady (Fig. 256), only silver stained window panes have been found, not vessels. The production of stained glass is assumed to have been in Egypt, Syria and possibly also in Mesopotamia in the period between the 8th and 12th centuries. This type of decoration was applied primarily on vessels,<sup>23</sup> however, in Europe, only glass panes with this decoration have been found.

The category of shapes that were unusual in Europe beyond the Alps includes lamps. However, they were common in Sady. Clear and blue fragments of the feet of goblet-shaped lamps were found in the wooden palace, in Feature VIII – the well – and a later Grave 5 (Fig. 261: 2, 3). They also include the fragment of pink glass from Grave 12/59 and probably fragments of lamps with handles and melted-in streaks of red glass from House II. More fragments come from the rims and bodies of these vessels. Between the late 4th and the 9th century, goblet-shaped lamps were among the basic types of Byzantine glass in the Mediterranean, especially in its eastern and central parts (Fig. 261: 1). In the 9th century, their feet began to be found in the material from the glassworks in San Vincenzo al Volturno<sup>24</sup> and among the finds from the Farfa abbey.<sup>25</sup> Apart from Sady and probably also Mikulčice, only five items have been

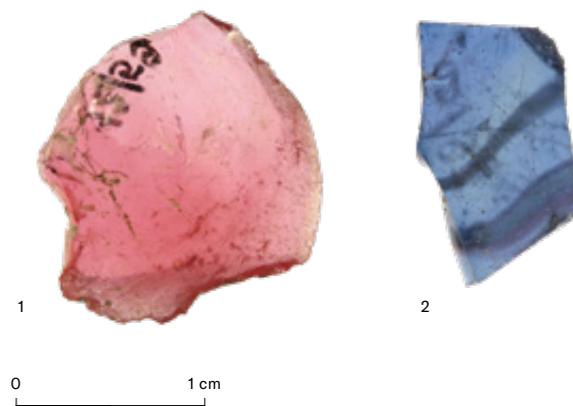


Fig. 260 The top documents of unique vessels from Uherské Hradiště – Sady are two fragments: part of a lamp foot and a fragment made from blue glass coloured with copper.

1 – Uherské Hradiště – Sady, church complex, a discoid base of a goblet lamp was inserted into the most prominent Grave 12/59 inside of the chapel where the man with gold *gombíky* was buried; 2 – Uherské Hradiště – Sady, church complex. A fragment of a silver-stained vessel is an intrusion in the backfill of later Grave 26.

documented north of the Alps. Some of the fractions found in Sady possibly come from bowl-shaped lamps which – similarly to the previously described type – were used mainly in the church milieu.<sup>26</sup>

According to available evidence, the finds show substantial differences between the glass found in Sady and at other Great Moravian sites. The differences are confirmed by the proven fact that no Sady fragment comes from a funnel or globular beaker that were most common at that time; also, no smoothers were excavated there.

The differences in the glass assortment can be interpreted in several ways. One is the presence of luxury glass vessels as early as before the mid-9th century, which documents older contacts with areas where glass was made, or more precisely, where it was used. This was probably mediated by the priests from Bavaria and Aquileia. According to the present state of research, these contacts can be traced to San Vincenzo al Volturno. Another level at which the differences can be explained is the assortment of early wood-ash glass produced in the west part of the Carolingian Empire and documented as being from the second half of the 9th century both in Uherské Hradiště – Sady, Mikulčice, Bojná and Pohansko near Břeclav. The artefacts found in Mikulčice, Bojná and Pohansko near Břeclav – the seats of secular elites – have a more practical character (bottles, smoothers). On the other hand, at least the small bottle with the Christogram from Sady symbolises the church milieu – hypothetically, it might have served as a holy water or oil container. The finds of lamps – which undoubtedly have their origin in the sphere of Byzantine glass – have a special position. Their presence in Europe is virtually limited to Sady and possibly also Mikulčice, which makes it possible to hypothesise about a direct connection with the Cyrillo-Methodian mission, more precisely with Bishop Methodius and his assumed residence at both the sites.

15 Galuška et al. 2012, Fig. 7: 11–14.

16 Hošek 1965, 140.

17 Galuška et al. 2012, Fig. 8: 17, Pl. 2: A 04.

18 Wedepohl 2012, Analysis No. A 04.

19 Galuška 1996, 134.

20 Wedepohl 2012, Analysis No. A 02.

21 Galuška et al. 2012, Fig. 8: 15, Pl. 2: A 03.

22 Wedepohl 2012, Analysis No. A 03.

23 Whitehouse – Pilosi – Wypiski 2000, 85–96; Carboni 2001, 208–221, Cat. Nos. 102–109.

24 Stevenson 1997, Fig. 6: 2, 7: 2.

25 Newby 1991, 35.

26 Antonaras 2007, 51–54.



Fig. 261 Uherské Hradiště – Sady, church complex. Most of the finds – 11 glass fragments – come from the 36 m long wooden palace, which stood to the south of the complex of stone church buildings in the second half of the 9th century. Among them are fragments of both rims and bulbs from what was originally a bowl-shaped lamp. 1 – A complete goblet-shaped lamp from Thessaloniki, Greece; 2 – Uherské Hradiště – Sady, without Inv. No., the fragment of a discoid foot (Ø 5.2 cm) with a hollow ring around the rim comes from a goblet-shaped lamp from greenish glass; 3 – Uherské Hradiště – Sady, without Inv. No., another fragment of a goblet-shaped lamp from dark blue glass was found as an intrusion in later Grave 5 south of the church.



Pot of the Mikulčice ceramic group is a representative of the most advanced production type of vessels from Mikulčice.

# 3.10

## Ceramic Vessels

– Marian Mazuch

Besides animal bones, the most common archaeological find is undoubtedly pottery, respectively sherds of fired clay vessels. From the Neolithic, the time of the first farmers, clay vessels became an important part of the lives of each population. The material used to make them could be easily obtained and even firing the pottery, which made the walls of the vessels durable and impermeable, was an undemanding process. It is clear that throughout history, including early medieval times (the Slavic milieu being no exception), vessels were also made from other materials. The elites used often metal and glass, while the common people used wood. However, what is important for archaeology and what makes pottery sherds such a common and frequent find during fieldwork is that fired clay remains unchanged in the ground for hundreds and thousands of years. Moreover, ceramic pots were fragile and easily broken so created the large number of potsherds collected at a site. On the other hand, it was not difficult to make the pottery again when needed. These are all reasons why archaeological depositories are primarily filled with fragments of ceramic vessels.

As tends to be the case in every era, people like to decorate and vary their products. This is why, like with jewellery and clothing, vessels were made in different shapes and decorated in a variety of ways. In addition to their practical function in household furnishings, they also served an aesthetic purpose. Pottery is most often found at settlements, as evidence of the daily activities of the people who lived there (as part of house furnishings or more frequently as broken pots in waste pits). They are also found in funerary contexts as grave goods where they accompanied the dead on their journey to the afterlife, probably as containers for food and liquids. The majority of the buried items, especially if made from organic material, have not been preserved. However, as “grave pottery” was intentionally deposited in the grave and then buried, it is often preserved almost intact.

The range of shapes throughout the ages comprised everything that can be imagined. From large vessels (storage jars), pots, jugs and bowls, beakers, cups and so on. They were decorated by engraving the unfired clay, puncturing the patterns, creating imprints (for example, using fingers as well as cords), or by applying moulded decor that stands out from the surface of the pot, and even by painting them. The potter’s wheel, introduced into our territory by the Celts, significantly speeded up pottery production and enabled potters to create ceramics that were of a higher technological quality than vessels made by hand (regular walls, finished surface).

### Unusual uniformity

A single-plate hand-powered wheel was used to make pottery in the Great Moravian period, as the knowledge of a two-plate foot-powered wheel introduced by the Celts, and still known today, was forgotten back then. This technology enabled pottery to be made with the potter turning the wheel with one hand and shaping the walls or rim of the vessel with the other, and also to easily decorate a pot as it turned at greater speed (using various templates, gravers or combs). This is evident from the pots themselves and a detailed analysis of the technological traces on the inner and outer sides.

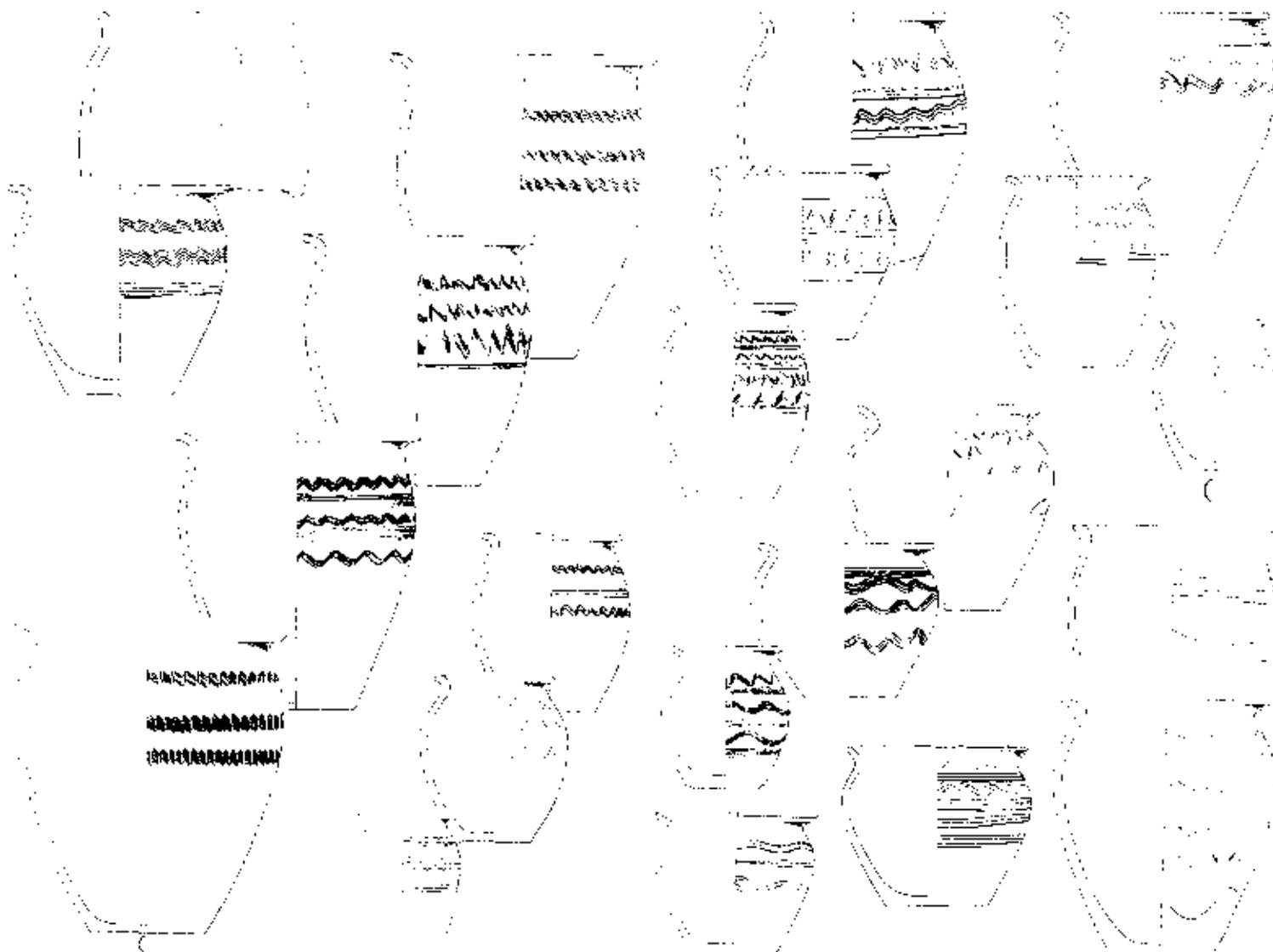
However, of interest is that the minimal variety of different pottery shapes was sufficient for the Slavs.<sup>1</sup> From when they first arrived in our territory, and during the Great Moravian period focused on here, Slavic potters essentially only made pots. Although these were vessels of varying sizes (at settlements, usually medium-sized pots, 15–30 cm high; in graves, mostly smaller pots), they lacked any sort of detail: handles, spouts, etc. The majority of the pots had an S-shaped profile and perhaps as much as 99% of fired ceramics were made in this way (Fig. 262). Bowls occur in the 9th century in only exceptional cases, and bottle shapes, respectively vessels with a very narrow neck, are very rare. Why it was like that when most prehistoric cultures produced a whole range of different types of vessels, remains a mystery to early medieval archaeology. Perhaps the types of vessels that were lacking, such as bowls or plates, were rather made from wood.

Similarly, like the shapes of the pots, the decoration was limited almost exclusively to incised motifs, mostly in bands under one another. There are just three of these motifs and they repeat or alternate on the pots. Wavy lines<sup>2</sup>, horizontal lines and oblique punctures were made using a wood or bone graver. Although examples of decoration made using a simple graver have been found, most pots from this period were decorated using a comb tool with varying numbers of teeth. This enabled the potters to cover the vessel surface relatively quickly and aesthetically with multiple evenly spaced wavy lines or bands of lines and punctures. The wavy lines were usually inclined to one side or the other, which may be due to the pot rotating on the wheel or because the potter was left or right-handed. Pots also often featured unsuccessful decorations, probably made by an inexperienced potter or a child.

Even the ceramic material used for the vessels was similar in the majority of cases. The clay was mostly sharpened with medium-grained quartz sand, less frequently mica, or grains of limestone.

1 For a general insight into Slavic pottery, see e.g. Staňa ed. 1994; Poláček ed. 1995; Brather 2000.

2 It is known that this motif occurred earlier on certain Germanic pots. To the problematic slavinity (i.e. Slavic character) of lines, see more in Macháček 2001b.



Fine pottery occurred only in exceptional cases, sometimes further smoothed on the surface. The graphite ware is also evidenced, although this type of pottery started to appear more significantly in Moravia from the second half of the 10th century and en masse from the beginning of the 11th century.

#### Most advanced Great Moravian ceramic ware

The striking uniformity of Great Moravian pottery in terms of the above-mentioned characteristics makes it very difficult to objectively sort and assign it to units defined in terms of chronology or by region or distribution (Fig. 262).<sup>3</sup> One reason for this is that a great deal of the pottery is home-produced and thus has no distinct common attributes that would enable it to be reliably sorted and assigned to specific units. In archaeology, these are most often referred to as ceramic groups and can further be divided into ceramic types.<sup>4</sup>

<sup>3</sup> For the characteristics of the whole complex of Mikulčice pottery, see Poláček 1995.

<sup>4</sup> L. Poláček (1995) presents his "new" types of Mikulčice pottery as products of specific pottery workshops.

Fig. 262 Example of usual pre-Great Moravian and Great Moravian ceramic vessels from Mikulčice.



Fig. 263 BCG type vessels from Mikulčice.

Homemade pottery is essentially always unique, as is the case with everyday used folk objects.

However, there are groups of vessels that show clear signs of having been manufactured in a workshop and bear the characteristics of typological unification that often extend beyond the boundaries of the individual sites and regions. This sets them apart from the typical “grey” Great Moravian pottery. From a certain perspective, they can be viewed as standardised products. In Great Moravia, such pottery from what probably were professional workshops is particularly comprised of the so-called Blučina ceramic group (BCG) and the Mikulčice ceramic group (MCG).<sup>5</sup>

BCG vessels are particularly characterised by their distinctive decoration with high wavy lines and helices (Fig. 263). In contrast, MCG pottery is typical for its distinctive S-shaped curving rim ending in a groove (Fig. 264; 265; for more details, see Excursus 3.10.1).

5 For definitions and a summary of the two groups, see Mazuch 2013. BCM was first described by J. Poulik (1948); questions of the regionality of the Great Moravian pottery and their differentiation have been explored by Z. Měřinský (1990) and J. Macháček (2001b); for a general view of early medieval pottery, see e.g. Boháčová 1995.

The technological standard of MCG and BCG pots is far higher than that of standard Great Moravian pottery. The pots have regular and relatively thin walls, with the surface outside, around the top and are well finished inside. The sherd is also well fired.

Of interest is the difference in the distribution of these two ceramic groups.<sup>6</sup> MCG is concentrated more around Mikulčice and Pohansko near Břeclav (the most distant place it occurs is near Senica in Slovakia, 25 km to the south-east of these sites). BCG occurs in abundance in South Moravian cemeteries and central fortified settlements (the rural settlements from the Great Moravian period have not yet been properly studied), and, in a small percentage of cases, in the North Moravia and towards the south-east, even as far as the River Ipeľ in Slovakia (150 km from Mikulčice as the crow flies); towards the west, several pots have been discovered as far away as 80 km from Mikulčice. It is unusual that both these groups almost do not occur at all in the region of the Great Moravian

6 Mazuch 2013, 91–94.

centre of Staré Město near Uherské Hradiště. This is either due to rivalry among pottery makers or traders or is proof of a power differentiation inside Great Moravia.<sup>7</sup>

Besides these two ceramic groups, it is also important to mention a third distinct group, the Morava River ceramic group (MRCG), although this has not yet been defined and analysed in the same manner as the two previous groups (Fig. 266). In general, this pottery, unlike BCG and MCG, occurs mainly around the Great Moravian centre of Staré Město near Uherské Hradiště, although in exceptional cases it has also been found in Mikulčice and Pohansko near Břeclav. This, albeit sporadic, occurrence in these centres set it apart from the BCG and MCG groups. MRCG has a specific material composition, which produces light grey shades after it is fired. This makes it stand out and is very easily distinguishable among the ceramics found in Mikulčice. Another typical attribute of Morava River pottery is the limited decoration all over the vessel, often done using a simple graver.<sup>8</sup>

Due to the excellent craftsmanship of the vessels and their broad geographical distribution, the above mentioned ceramic groups may be associated with specialised potter's workshops or individual highly skilled potters. Virtually nothing is known about the localisation of these workshops, how they were organised, the volume of pottery they produced, their internal order or relations

with other workshops, and the same is true of the potters themselves. The finest pottery in these groups was likely made in or very near to the strongholds. The concentration of the population there meant that there was a strong demand for quality goods and thus also the customers to buy them. The question remains as to whether the craftsmen came to the central stronghold themselves or whether they were deliberately brought there by the ruling elites.

In early medieval times, in the conditions of Great Moravia as a presumed early state with a rigid structure of power centres and both internal and long-distance trade, it can be assumed that there were major differences in the quality of the craftsmanship between the centres and the hinterlands or peripheral areas. The crafting skills of the potters working in specialised workshops in strongholds certainly far outweighed the abilities and the capacities of potters working independently in rural settlements. It can be assumed that there was a difference in the potters' technological know-how as well as in the technical equipment used in the workshops. Granting the existence of specialised pottery workshops, it can be justifiably presumed that numerous potters worked there and used ancillary manpower. It is easily possible that another adequately trained person assisted the potter and helped to turn the wheel turn so the potter could use both hands to shape the vessel.

It is almost impossible to find archaeological proof of a potter's workshop. We possess certain evidence in the form of potter's kilns, as evidenced by two Great Moravian finds. An entire battery of 9th-century kilns was discovered at Nitra-Lupka (Slovakia), which

7 For the first mention of this, see Měřínský 1990.

8 For the most detailed study of MRCG ceramics to date, see Galuška 1995.



Fig. 264 MCG type vessels from Mikulčice.



Fig. 265 Detail on the rim ending of a MCG vessel in a groove.

contained the remnants of pots belonging to the BCG group.<sup>9</sup> Discovered in Uherské Hradiště – Sady, near an important sacral area, was a potter's kiln,<sup>10</sup> which was used to fire yellow smoothed pottery referred to as pottery of ancient shapes (see Excursus 3.10.2). However, in Mikulčice, despite extensive archaeological fieldwork, no evidence has yet been found of pottery production. It can be assumed that the production activities associated with fire were deliberately sited outside the central part of the stronghold for safety reasons. Potter's workshops probably operated somewhere in the extramural settlement near the raw materials.

#### Did the Great Moravian elites have tableware pottery?

The quality of the pottery produced at the Great Moravian centre of Mikulčice certainly exceeded that of contemporary pottery produced in the broader surroundings of the centre or the peripheral regions of Great Moravia. However, it is difficult to determine if this higher quality was the result of workshop specialisation or a reflection of the demand for better quality goods due to the concentrated presence of the higher-ranking echelons of society. When comparing the fortified core of the agglomeration with the extramural settlement, it appears that the quality of the pottery goods in both zones of the Mikulčice agglomeration was essentially

<sup>9</sup> Chropovský 1959; 1962.

<sup>10</sup> Hrubý 1965a.



Fig. 266 MRCG type vessels from Mikulčice.

the same. Rural settlements in the more distant surroundings of the stronghold have only been subject to scant research, so it is difficult to make a similar comparison. A comparison of grave pottery from the centre with that from rural cemeteries is also unconvincing: the occurrence of ceramic in graves in the central, often church cemeteries, is minimal compared to rural burial grounds. This is because the food and drink in the vessels were evidently the first commodities that bothered followers of emerging Christianity. Moreover, grave pottery as a whole had certain specifics: it generally comprised smaller pots, more massive structures and more archaic forms overall. It is possible that the pots were specially made or selected for this purpose. However, the advantage of grave pottery over pottery from settlements in terms of our archaeological understanding is that entire vessels have been preserved. In isolated cases, we have encountered the above-mentioned pottery of ancient shapes in graves, both in centres and in rural cemeteries.

Among the Great Moravian assemblages, pottery of ancient shapes or “smoothed yellow pottery” constitutes the only distinct group in terms of technology and shape (Fig. 267). It occurs very sporadically, but relatively regularly in cemeteries and central settlements. Due to the intact vessels found in graves, we know of small two-handled amphorae, bottles, jugs and flasks (flat bottles). These goods are characterised by their fine smooth clay surface and colours ranging from beige through to yellow or ochre. In any case, this was special pottery suitable for storing liquids, which matches our idea of “tableware”. The settlement material is fragmentary: in Mikulčice it comprises approximately 400 fragments, which is an estimated 0.2% of all the pottery found at the site. The find of a potter’s kiln containing this pottery from Uherské Hradiště – Sady corresponds

to the picture resulting from later analyses.<sup>11</sup> A comparison of the finds from Moravian, Austrian and Hungarian sites shows that this pottery, previously thought to have been imported from the Mediterranean, must have been produced in numerous places in this Danube region, in specialised, possibly monastery workshops. It is possible that this pottery (or its specific content) was traded outside the region.

Therefore, it appears that pottery, although the most commonly discovered artefact at Great Moravian sites, did not have a more prominent role in the preferences of the elites. Only pottery of ancient shapes possessed the quality of “tableware”. Representative tableware was likely comprised of vessels made from a different material, such as glass, horn or metal. However, in the case of exceptional artefacts, moreover, those with artistic value, it is possible that they “disappeared” during the turbulent demise of the centre in the form of spoils or hidden valuable property. The chance of discovering them is therefore markedly less than in the case of normal artefacts.

So what can we conclude from the study of ceramic vessels in connection with the representation of the Great Moravian centres? It is likely that the same everyday pottery was widely used by the elites as in other parts of 9th-century Moravian society. The only exception may be the smoothed yellow clay pottery, i.e. amphorae, bottles and jugs referred to as pottery of ancient shapes. These were specific goods that can most probably be connected to the Great Moravian elites.

11 Herold 2008.



Fig. 267 Smoothed yellow pottery (pottery of ancient shapes) vessels from Mikulčice and its hinterland.

### 3.10.1 excursus

## Great Moravian Ceramic Groups – Blučina and Mikulčice

– Marian Mazuch

All ceramic vessels can be assessed and classified according to two basic aspects: morphological (the shape of the vessel, the profiling of the rim, the decoration) and technological (pottery class characterised by the material, the firing and the overall quality of the craftsmanship).<sup>1</sup> These features are collectively referred to as ceramic attributes.

The morphological attributes of vessels cannot be separated from their technological properties, or the quality of their design, even though in formal terms this often occurs. An example of this is the decoration created with the varying degrees of skill and experience of its maker; this is then reflected in the final appearance of the vessel. A high and often strongly sloping wavy line is an expression of the potter's highly skilled craftsmanship and its

specific shape may reveal his personal style. Likewise, the maker's signature style may be reflected in the overall form of the vessel, i.e. in the shape of the base, walls, neck and rim of the pot.

Vessels categorised as part of the Blučina ceramic group (BCG) and Mikulčice ceramic group (MCG), similar to the Morava River ceramic group (MRCG), are the most advanced forms of Great Moravian pottery. These vessels are characterised by their precise tectonics, uniform wall thickness and the quality of their surface finish. This indicates complete mastery of the production technology, with the vessels thrown on a single-plate potter's wheel and fired in two-chamber kilns. They are also characterised by the routine mastery of the morphological elements - the typical rim profiling, which was more complex yet occurred en masse, as well as the regularity in the design and style of the decoration. The quality can be described as higher when compared to other common pottery.

1 Bubeník – Frolík 1995, 129–130.

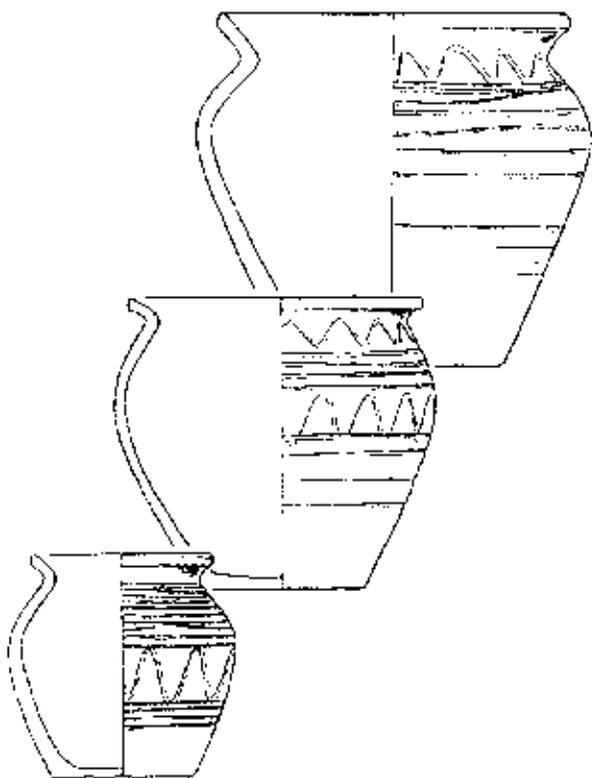


Fig. 268 BCG type vessels from Mikulčice.

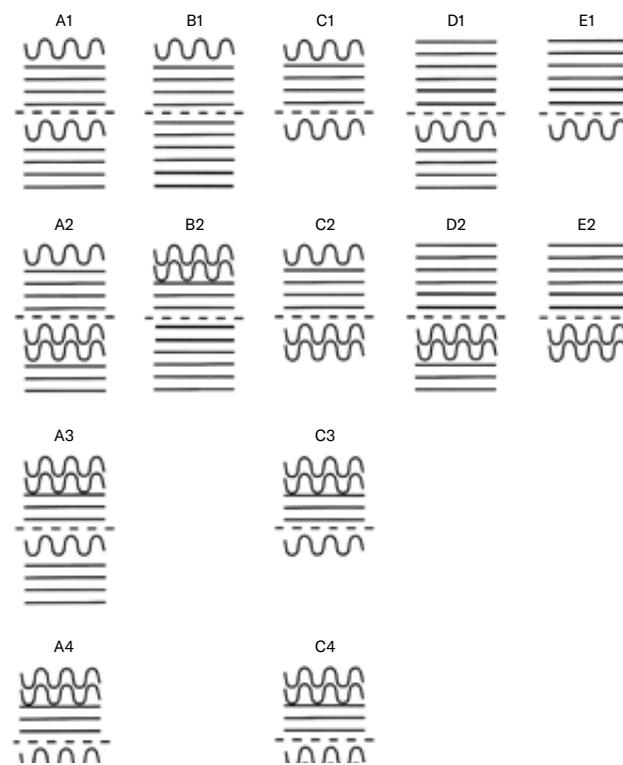


Fig. 269 Decor types of BCG pottery.

BCG vessels are characterised by two basic ceramic elements – the most conspicuous is their specific decoration, as well as the technological level of the craftsmanship.<sup>2</sup> The decoration features a combination of distinctive, often high waves and helices always made with a simple graver (Fig. 268). In other words, a motif that essentially does not occur in other contemporary pottery material in Moravia so was a novelty in the Middle Hillfort period. The type of graver used – a simple one for BCG and a comb graver for MCG – is the fundamental difference between the two groups. The type that most frequently appears from the various combinations of ornamental decors is type A (on around half the vessels). Type A together with type D form the decoration on almost three-quarters of all vessels analysed to date (Fig. 269). The shapes of the vessel rims are more complex than normal contemporary production. Apart from a few exceptions, BCG pottery features six types of rims (Fig. 270), the most common being rim types 1 and 2 (found together on almost three-quarters of all the vessels in this ceramic group). Most BCG vessels are fired to darker shades of grey, even black, often featuring irregular orange-and-red spots. The material used is somewhat finer, with only a slightly knobbled or almost smooth surface.

The most characteristic feature of MCG vessels is the peculiar rim (Fig. 271).<sup>3</sup> It tends to be squeezed into a distinctive S-shape, and together with parts of the neck is often modified on the outside and sometimes on the inside using a template. However, the rim mostly ends in a typical groove. In some cases, this groove is only lightly marked, while in others it is highly noticeable although, some vessels lack this groove. Even so, all these shapes can be classed as MCG, based on other typical attributes, such as the above-mentioned modification of the rim and neck using a template or decoration made solely using a comb graver (Fig. 272). The decoration of MCG vessels is characterised by alternating ornamental bands of wavy and horizontal lines. The decor usually starts below the neck with a number of wavy lines, under which there are other wavy lines or bands of horizontal lines engraved with a comb. The waves mostly tend to be low – again in contrast with BCG. In the vast majority of cases, the pottery material is tempered with medium-grain sand to create a knobby surface in colours ranging from light-beige through to grey-brown, with numerous pink to orange spots.

The technological level of MCG vessels is considerably higher than the other Great Moravian pottery from Mikulčice. In terms of all the pottery made during the peak phase of Great Moravia – except for the specific phenomenon of the pottery of ancient shapes – MCG ceramics clearly show the best quality craftsmanship. The shaping of the vessel walls is regular; compared to other pottery (including BCG), the sherd is relatively thin-walled. In contrast, the surface finish is less perfect in comparison with BCG: the surface on the outside often tends to be corrugated or bumpy and sometimes there are visible traces left by the fingers where the walls were squeezed in places. This phenomenon indicates a certain degradation, which may be likened to the features accompanying mass production. The vessel walls naturally become thicker as the volume increases, although even large and “giant” MCG vessels tend to have relatively thin walls. The overall proportional balance (the size and design of the rim, the thickness of the base, the transition of the neck) indicate a perfect mastery of the production technology.

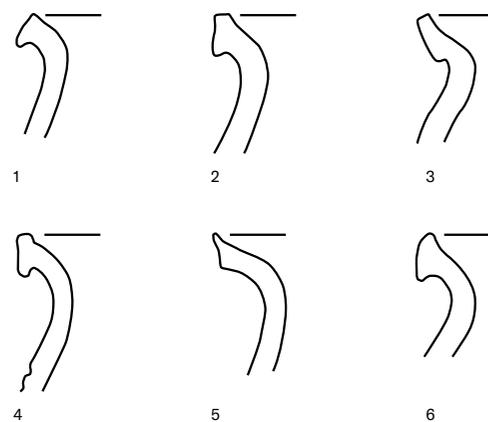


Fig. 270 Rim types of BCG pottery.

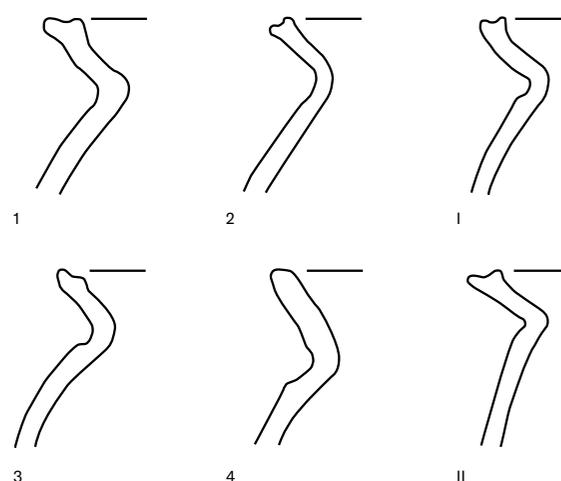


Fig. 271 Rim types of MCG pottery from Mikulčice (rim ending types 1–4, rim form I–II).

Clear differences in the technological level of pottery production are evident between settlement vessels and grave vessels. Unlike the vessels used in the living culture of Great Moravian settlements for practical purposes such as cooking and storing food, “grave pottery” primarily means pots for the food offerings that accompanied the deceased on their journey to the afterlife.<sup>4</sup> Besides the technological design, there is also a difference in the size of the vessels (vessels from graves tend to be much smaller on average) and in their overall proportions. Given the narrower neck, it appears that liquids were more commonly deposited in graves, while settlement pottery tends to have a broader neck, which is more practical for cooking purposes. With regard to the functional significance of the two groups, one important consideration should be mentioned. More than 70% of the MCG vessels found at settlements have a broad neck, while the figure is only around 40% for BCG vessels. Does this mean that BCG pottery was more often used as tableware?

<sup>2</sup> The characteristics of BCG are based on an analysis published in Mazuch 2013, 45–47.

<sup>3</sup> The characteristics of MCG are based on an analysis published in Mazuch 2013, 61–67.

<sup>4</sup> For these and the following differences, see Mazuch 2013, 90–91.

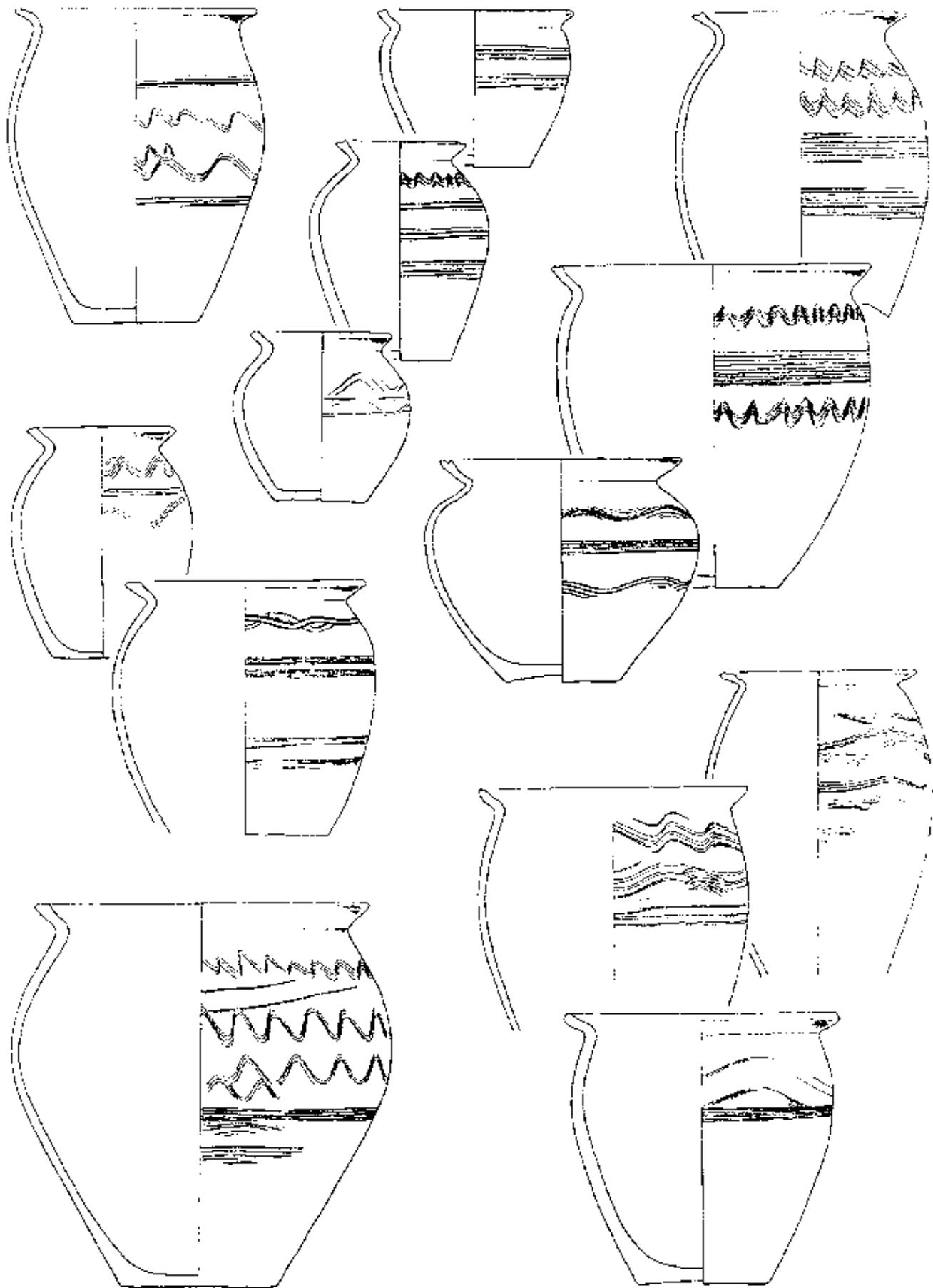


Fig. 272 MCG type vessels from Mikulčice.

## 3.10.2 excursus

# Uherské Hradiště – Sady: Kiln for Firing Tiles and Pottery of Ancient Shapes<sup>1</sup>

– Luděk Galuška, Jakub Langr, Lucie Valášková

Besides the remnants of sacral buildings and graves, the archaeological excavations conducted at Výšina sv. Metoděje (St Methodius's Height) in Uherské Hradiště – Sady from 1959 to 1965 also yielded settlement features, some of which contained finds indicating highly specialised production activities. These primarily include the find of a pyrotechnical production feature in the form of a vertical kiln for firing ceramic products. Together with the pit in front of the kiln, the feature was approximately 3.8 m long.<sup>2</sup> It was discovered in 1963 while excavating a test pit some 100 m to the west of a group of church buildings at 195 m AMSL (Fig. 273). The feature was situated at a terrain break of the site and is sunken into the western slope of the Sady promontory in the W-E direction.

The pit in front of the kiln was laid out in the shape of a pentagon with a slight deviation to the north and measured 185 × 160 cm at a depth of 75 to 100 cm. A tunnel about 60 cm long, 50 cm wide and 35 cm high entered the pit from the east, which was actually already part of the kiln; this is where wood was fed to the furnace to heat the kiln. The dome-shaped kiln itself consisted of two main vertical parts separated by a grate. The lower part, a circular furnace, measured 130 × 117 cm and was 45 cm high. The preserved upper part – the firing chamber – was 114 cm long and 95 cm wide, the preserved height was 64 cm. The grate that separated the two parts and whose middle part eventually collapsed into the furnace, was around 115 cm in diameter and 10 to 12 cm thick. There were vents made in it, 6 to 7 cm wide. The walls of the sunken kiln as well as those of the tunnel and the grate, were heavily marked by fire to a depth of 25 or 30 cm, indicating that very high temperatures were used during the firing process. One important find in terms of the context is that there were numerous unfired fragments of the so-called pottery of ancient shapes (for more, see Essay 3.10 and Excursus 3.10.1) and fragments of fired roof tiles both among the collapsed middle part of the grate in the furnace and in the preserved parts around its perimeter. This implies that the kiln was apparently destroyed during the production process and that at that moment it was being used to fire vessels of yellow pottery of ancient shapes along with roof tile components. Both were made from fine ceramic material with no medium or coarse sand mixed in. In the case of the building ceramics, i.e. the roof tiles, these comprised 136 fragments of *tegulae* (flat tiles), as well as *imbrices* (semi-cylindrical roof tiles) and decorative ridge tiles (Fig. 274). They also include as yet unclassified items, probably parts of floor tiles (?).

In terms of Hrubý's system of classifying roof tiles from Uherské Hradiště – Sady, these pieces belong to Group 5.<sup>3</sup> However, it is remarkable that there are no tiles at all from this group among the finds from the church buildings of the Sady sacral complex, which is situated less than 100 m away. There, in contrast, the majority of the building remains and finds from the backfills of the grave pits are clearly Hrubý's Group 1 roof tiles (original pieces from the time of ancient Rome) and Group 2 (Great Moravian imitations of those ancient products).<sup>4</sup> As far as Great Moravian pottery of ancient shapes is concerned, a total of 140 fragments of this type of pottery come from the Sady kiln. They are predominantly undecorated body and base sherds, but also include handles and the rims of bowls and other vessels. Besides these, the backfill of this feature with the kiln has also yielded 104 pieces of conventional Moravian-type ceramic pottery from the 9th century; although the location where they were found indicates that they came there later, after the destruction of the kiln.

There is no doubt that the discovery of this early medieval feature with a kiln for firing roof tiles and pottery of ancient shapes in Uherské Hradiště – Sady is at the very least the only one of its kind in Central Europe.<sup>5</sup> However, in relation to the nearby sacral complex, we can see no difference between the fragments of roof tiles found there and the pieces from the kiln grate, i.e. from the time of the last firing process, apparently unfinished. The explanation for this could hypothetically relate to determining the time (and particularly for how long) the Sady kiln was in use. After all, it is suggested that the excavated kiln, which was probably not used for a very long time, could have been built on the site of an earlier predecessor, i.e. an even older kiln.<sup>6</sup> In connection with this, we cannot completely rule out the possibility that the users of the presumed earlier kiln could have made *tegulae* and *imbrices* from material typical for Hrubý's Group 2, and after producing what was needed by the builders of the Sady sacral buildings, attempted something new: to make the same *tegulae* and *imbrices* (and possibly also floor tiles) from a material, which until then had only been used to produce pottery of ancient shapes. Although this is only a hypothesis, it is not an impossible one. Otherwise, this issue does only concern the Sady sacral complex, as some of the Hrubý's Group 1 and 2 roof tiles were also used on other sacral and profane buildings in the Staré Město near Uherské Hradiště settlement agglomeration – Veligrad, e.g. on the church

1 The collection of finds from the Sady pottery workshop is currently undergoing comprehensive evaluation, the results of which will be published in part III of the trilogy entitled "Uherské Hradiště–Sady. 500 let křesťanství ve střední Evropě" [Uherské Hradiště–Sady: 500 Years of Christianity in Central Europe]. This study was funded by the Ministry of Culture as part of institutional funding for the long-term conceptual development of the Moravian Museum research organisation (DKRVO, MK000094862).

2 Hrubý 1965a, 41–46.

3 Hrubý 1970b, 95–102.

4 The finds of the first and second group comprised 875 and 771 pieces respectively (Hochmanová-Vávřová 1965, 135; Galuška 1996, 40–41).

5 Cf. for instance, Herold 2007; Krekovič 2007.

6 Hrubý 1965a, 41–46; Varadzin 2010, 68.



Fig. 273 Position of the kiln for firing tiles and pottery of ancient shapes in the slope below the complex of church buildings in Uherské Hradiště - Sady (yellow point).

A-F - Church complex; G - log houses; H - wooden hall building.

at Staré Město - Na Valách, on the palace-type building at Staré Město - Na Dědině (they were also found here during excavations of the rotunda of St Michael the Archangel). One must also bear in mind that they were as well found on the last Staré Město architecture from the time of Great Moravia, at Na Špitálkách site, where Josef Poulík initially considered the fragments of fired roof tiles to be paving tiles.<sup>7</sup>

7 Cf. Galuška 2011a, 97-127.



0 3 cm

Fig. 274 Decorative ridge tile from the ceramic kiln in Uherské Hradiště - Sady.

### 3.10.3 excursus

## “Thick-Glazed” Pottery Find

– Lumír Poláček

Leaving aside polished yellow pottery (also known as pottery of ancient shapes), which was at least partly produced in local workshops (see Excursus 3.10.2),<sup>1</sup> the findings of pottery of demonstrably foreign origin in Mikulčice tend to be an exception. These are comprised of mere individual specimens, such as several fragments of a Byzantine amphora and a fragment of pottery with a “thick glaze” from the region of Rome (Fig. 275).<sup>2</sup> How these unique finds reached early medieval Mikulčice is questionable. If they arrived via trade, then it was probably as packaging for goods rather than as the traded commodity; or possibly as part of a gift. Although we can trace the origin of some weapons, glass artefacts and handicrafts to the Rhineland, there is still no evidence of local Rhineland pottery found in Mikulčice, e.g. relief band amphorae, Badorf or Pingsdorf ware, or other mass-distributed commodities

1 Herold 2008.

2 Poláček 2007b, 508.

of Frankish origin (Tating jugs, grinding stones from basaltic lava, etc.). Therefore, archaeological evidence of long-distance trade in Mikulčice is relatively scarce.<sup>3</sup>

An example of pottery of foreign origin, which is documented by a single fragment from 66-years-long research, is the so-called “thick-glazed” pottery. This type of pottery was widespread in the late 8th to 10th century, especially in Rome and the Latium regions. The vessels – jugs, pots, and lids – had a thick lead glaze applied to the surface and were decorated with grooves, strokes or clay strips. The pots, and especially the jugs, often have a spout formed by curving or narrowing part of the vessel rim or formed as a separate tube applied below the rim.<sup>4</sup>

The Mikulčice find comes from the 1964 excavation of a silted-up riverbed outside the fortification on the western side of the stronghold, from a depth of 260 cm below the surface (excavation Channel 0).<sup>5</sup> It is a fragment of the rim and part of the body of a globular jug with a cylindrical spout. The glazed surface of the vessel is covered with clay plastic “dots” of about 1 cm in size. The artefact found in the river sand sediments could have been brought by water, but it is more probable that it is connected to the waste context, which is commonly found in the natural fill of the riverbed in front of the fortification.

A relationship between Mikulčice, respectively Mojmirid Moravia, with the Apennine Peninsula (particularly the area of Rome) can be assumed based on written reports. The links between the Middle Morava River valley and Rome must have been quite lively, especially in connection with envoys, diplomatic and trade routes to Venice and from there to Rome or by sea to the Byzantine Empire and the whole of the Eastern Mediterranean.<sup>6</sup> Finds of Byzantine coins suggest the course of the ground route was between the Danube and the Adriatic region along the Amber Road east of the Alps.<sup>7</sup>

3 Poláček 2007b, 506–511.

4 De Luca 1999.

5 Klanica 1964, Pl. 44; for excavation of “Channel 0”, see Poláček 2014a, 19–30. The artefact was later classified as thick-glazed pottery ware (Poláček 2007b, 508, Fig. 6B).

6 Tůma 1985.

7 McCormick 2001, 369–384.

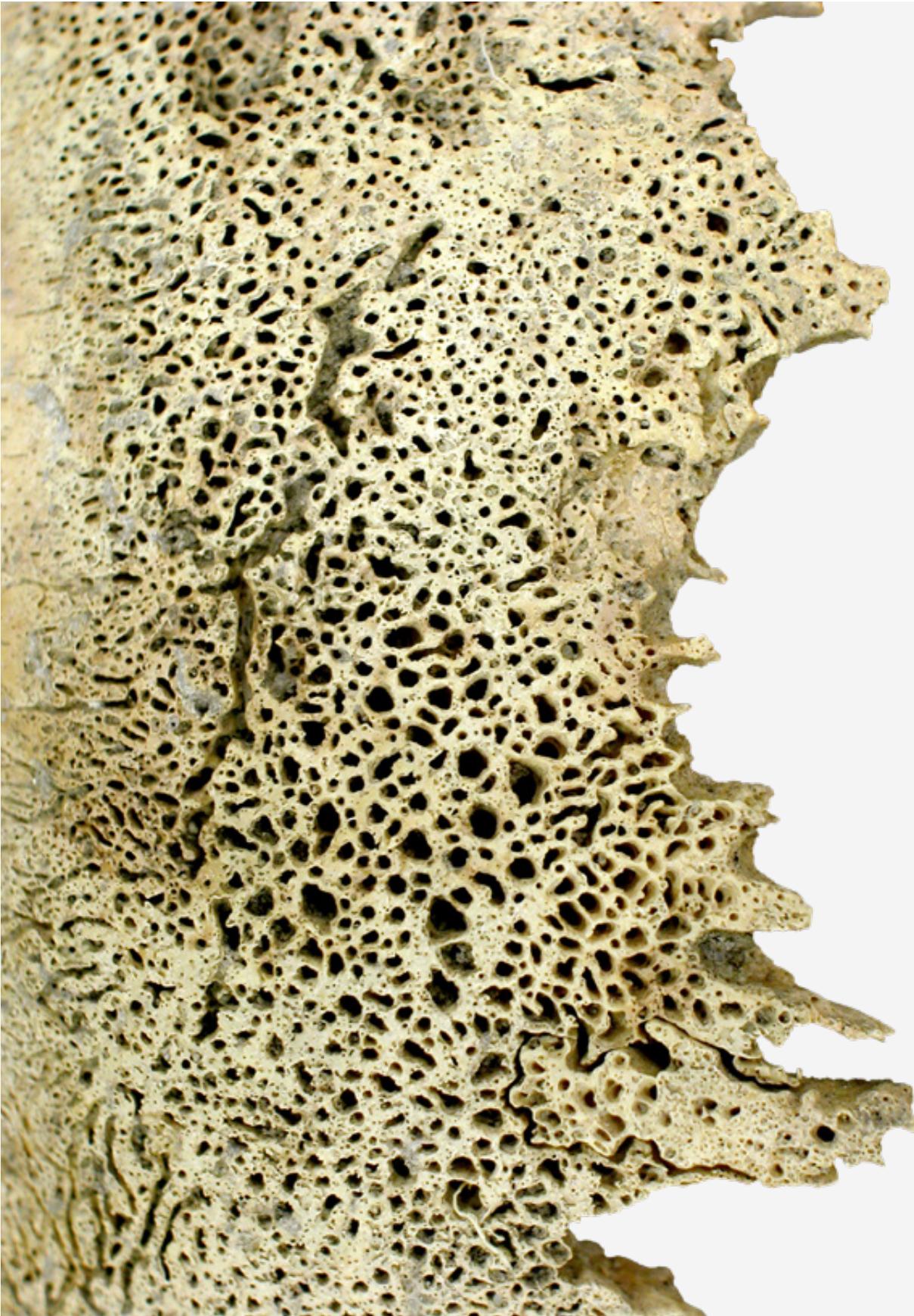


Fig. 275 Fragment of the “thick-glazed” jug found in Mikulčice, originating from the area of Rome.



# Life, Death and Health: Read From the Bones

4



Porotic lesions on the cranial vault, the posterior part of the parietal bones, are often associated with anaemia (*porotic hyperostosis*). It is one of the indicators of non-specific stress events during the period of human ontogenesis.

# 4.1

## The Anthropological, Demographic and Health Consequences of Living in Early Medieval Great Moravia

– Petr Velemínský, Šárka Bejdová, Lucie Bigoni, Hana Brzobohatá, Sylva Drtikolová Kaupová, Petra Brukner Havelková, Alexandra Ibrová, Vladimír Sládek, Petra Stránská, Jana Velemínská, Eliška Zazvonilová, Jaroslav Brůžek

Almost half a century has passed since the 1976 publication of Milan Stloukal and Luboš Vyhnánek's book "Slované z Velkomoravských Mikulčic" (The Slavs of Great Moravian Mikulčice), which focused on the palaeodemographic analysis of diseases and injuries. Since then, new paradigms have been introduced in the anthropology of past populations and there have been significant changes in the approach to and the concept of the processing of burial grounds. The selection of assessed biological traits has changed and broadened, and evaluation methodology has been modified. Fundamental changes in the research subject and objectives are linked to the definition of bioarchaeology.<sup>1</sup> Based on archaeological sources, bioarchaeology deals with issues connected to human development and adaptation to living conditions. It therefore considers marks on the human skeleton and indicators that are conditioned by the quality of the natural environment, nutritional quality and the character and degree of human physical activity. Bioarchaeology is an inter-disciplinary integration of the approaches of a number of social and natural sciences.

Modern bioarchaeology has its roots in an earlier bio-cultural approach with an emphasis on archaeological contextualisation.<sup>2</sup> It studies the effects of the lifestyles of past populations, human behaviour and environmental influences on skeletal biology, and more precisely on state of health and morphology.<sup>3</sup> The life cycle theory is a conceptual framework used in different disciplines of biology and the social sciences. Studies focusing on life cycles applied to the analysis of the bone tissue morphology of past populations lead to an understanding of the impact of growth, diet, physical activity, physiological or physical load and ageing on the skeleton.<sup>4</sup>

This is why anthropological studies of recent decades sought to obtain information on the way of life of the Great Moravian population, i.e. to establish to what extent the quality of living conditions, and indirectly the socioeconomic structure of their society, was reflected in the human skeleton.

A wide variety of studies have brought new findings about the population of what is presumed to have been the first state formation in what is now the Czech Republic – Great Moravia.<sup>5</sup>

A significant proportion of these studies have focused mainly on the strongholds at Mikulčice<sup>6</sup> and Pohansko near Břeclav.<sup>7</sup> Biological traits have often been assessed in the context of the socioeconomic stratification defined by the conclusions of archaeological studies.<sup>8</sup> One of the criteria of social classification was the position of the

burial ground within the settlement agglomeration, or more precisely stronghold. In the case of the Mikulčice settlement agglomeration, the assessment of the biological characteristics and comparison of population was based on the division of the agglomeration into a fortified core (acropolis and outer bailey<sup>9</sup>), suburbium (extramural settlement) and hinterland. It was based on the hypothesis that the elites were buried at the acropolis, members of the middle class, such as craftsmen, were buried mainly in the suburbium, and peasant farmers were buried in the hinterland. The second criterion for the classification of the buried individuals into social groups was the character and richness of grave goods. It was assumed that weapons, equestrian equipment, gold, and gilded and silver jewellery indicated a higher social status of the individual.

The following text is also a partial summary of the conclusions of anthropological research into the Great Moravian population over the last two decades. These are thus more than just the conclusions of studies of the biological diversity and variability of the Great Moravian elites.

### From infancy to death: growth, body size and nutrition

Human life can be divided into categories with imprecise boundaries that are based on the estimate of an individual's age at death. Today, in the modern industrialised world, age is conceptualised as a chronological phenomenon that is manifested in the process of growth, development, maturation, and senescence. Although ageing is often perceived as an universal process, people grow up and age in different cultural and natural environments; thus, the age reached in each social group is the main force that structures the society. Different cultures divide the life cycle into a series of stages, with certain social attributes or expectations suitable for each.<sup>10</sup>

Empirical life tables, where the individuals are categorised into age cohorts and the process of dying out is studied, are used for the monitoring of the demographic profiles of past as well as modern populations.<sup>11</sup> The primary functions are the remaining life expectancy at age  $x$  ( $e_x$ ) and the probability of dying at age  $x$  ( $q_x$ ), which measure the relative intensity of deaths. Life tables can be created only under certain conditions, which cannot be met in palaeodemography. These include primarily the completeness and representativeness of the skeletal sample and the stability and stationariness of the population.<sup>12</sup> For many reasons, no remains

1 Larsen 1997.

2 Buikstra – Beck eds. 2017.

3 Larsen 2002.

4 Agarwal 2016.

5 See e.g. Pouлік 1976.

6 Velemínský – Poláček eds. 2008.

7 Sládek – Macháček 2017.

8 Poláček 2008d; Macháček 2010; Garcin et al. 2010; Havelková – Hladík – Velemínský 2013; Bigoni et al. 2013.

9 In the fortified core of the settlement, the burial grounds were at the acropolis, while the outer bailey was a purely residential area.

10 Agarwal 2016.

11 Hoppa – Vaupel eds. 2008.

12 Chamberlain 2006.

of children and old people have been found at the cemeteries, which makes the mortality profile of the researched population and the values of the demographic parameters strongly skewed. For that reason, model life tables are used for palaeodemographic purposes.

The demographic data from empirical tables concerning specific skeletal assemblages are used particularly for non-demographic purposes: to determine whether certain age groups are missing or over-represented on the burial ground. Such information may serve for archaeological interpretation, the identification of demographic crises and the assessment of the assemblage's representativeness for subsequent bioarchaeological analyses.

Due to the accuracy and reliability of adult age at death estimations, the traditional concept of ten-year age classes can be abandoned, with individuals classified into three broad age categories instead: young adults under 30 years, adults from 30 to 60 years and older individuals over 60 years. The over 60 age group has often been absent from previous studies – for such reasons as the use of age-estimation methods underestimating the number of the oldest individuals, taphonomic processes and the high variability of the ageing process, all of which have often led to the incorrect presumption that people did not live this long in the past. Equally, it is not realistic to presume that the data employed in traditional demography – such as age at death, life expectancy, average number of children per woman and family size etc. – can be obtained. Such data would, given the possibilities for estimating age at death in past populations, be imprecise or even misleading, yet still appear in the life tables of modern studies. The palaeodemographic studies published to date have stated that most of the adults buried at Mikulčice were in the 30–50 age group, with the usual absence of children under 1 year of age and most sub-adults being in the 2–5 and 12–14 age groups.<sup>13</sup> This does not, however, mean that empirical data concerning age at death can be considered mortality data. There are some generally applicable rules of the mortality rate, which are used to ascertain whether sets of empirical values correspond to the expected mortality or differ significantly. The highest mortality is typical in the first year of life, after which it drops significantly, and the lowest mortality is typical for adolescence. It then rises to culminate in middle age, and ends around an age of approximately 100 years. New findings concerning the accuracy and reliability of age estimates based on skeletal morphology prove that actual demographic parameters, such as life expectancy, cannot be estimated; they can only be used to ascertain whether a certain assemblage is a whole with the mortality patterns of archaic populations. Thus, it is unjustifiable and meaningless to use the percentages of the number of deceased in each age group in archaeological bone assemblages and to compare them across various burial grounds.

The assessment of the Great Moravian bone assemblages used recent methods that allow the identification of old individuals. Approximately 8.5% of the individuals found in the Mikulčice assemblages from the acropolis and suburbium were over 60. The empirical mortality rates obtained from the Mikulčice cemeteries are comparable with the theoretical values in Ledermann's life tables for archaic populations.<sup>14</sup> The values of life expectancy at birth ( $e_0$ ) were set as 25 and 35 years. These correspond with the expected reproductive ability of the given population and a lower life expectancy in comparison with the modern day.

Compared to the theoretical mortality in archaic populations, the Great Moravian assemblages from Church 3 (three-nave basilica) and Church 6 show a slightly higher percentage of non-adults in the age categories 5–9, 10–14 and 15–18 years (Fig. 276).

This might result from, amongst other things, higher fertility, which is reflected in a higher mortality. By contrast, the category of younger adults (20–29 years) is at the lower limit of the variation range compared to the theoretical model of mortality with a life expectancy at birth ( $e_0$ ) of 25 to 35 years – this is more pronounced at the cemetery near Church 3 than near Church 6. There is a greater occurrence of individuals in the adult (30–59 years) category near Church 3.<sup>15</sup>

This difference may reflect the immigration of new inhabitants into the Mikulčice power centre. In none of these cases, however, was a statistically significant difference in the mortality of men and women across age groups observed (Fig. 277; 278). Overall, it is possible to assess the two burial grounds mentioned earlier as being almost equal, with natural mortality and without significant demographic anomalies. Thus, they can both be used for further bioarchaeological analysis without limitations.

### From early childhood to adolescence

The monitoring of the growth and development of children in archaeological assemblages is very problematic.<sup>16</sup> The problem is that the deceased do not represent the living and surviving individuals in the population. Growth is usually assessed based on the measurement of the length of the diaphyses of the long bones. The pioneering 1978 study by Stloukal and Hanáková is still valid and used.<sup>17</sup> One of the most significant changes an individual faces in the first years of life is undoubtedly weaning and the transition to solid food. Using isotopic analysis of dental tissues (dentin), the weaning process in past populations can to a certain extent be reconstructed.<sup>18</sup> Research into the Great Moravian population in this area shows that in Mikulčice, the weaning age was rather varied – some infants were completely weaned as early as during the second year of life, while others received significant quantities of maternal milk after turning three. In the comparative assemblage containing samples from Mikulčice hinterland (the Josefov and Prušánky cemeteries), a clear pattern was observed: the majority of infants were weaned during their third year of life. Research to date cannot answer the question as to whether the more varied approach of the Mikulčice women was linked to the presence of elites, who might have had behavioural standards different to those of the majority population. An important role might have been played by other factors, such as religious rules or the proportion of migrants.<sup>19</sup> This question might be answered by ongoing follow-up research focusing on dietary changes in the first years of life in a larger set of individuals, which uses a more sensitive methodology.

The weaning period is indirectly indicated by linear enamel hypoplasia (LEH) (Fig. 279). These defects are explained by growth arrest and the mineralisation of dental enamel<sup>20</sup> as a result of a stress

15 Stloukal – Vyhnanek 1976; Zazvonilová – Velemínský – Brůžek 2020.

16 Garcin et al. 2010; Mays 2018.

17 Stloukal – Hanáková 1978.

18 Beaumont et al. 2013.

19 Kaupová et al. 2014.

20 E.g. Goodman – Rose 1990; Goodman et al. 1988.

13 Stloukal 1989; Velemínský et al. 2005.

14 Ledermann 1969.

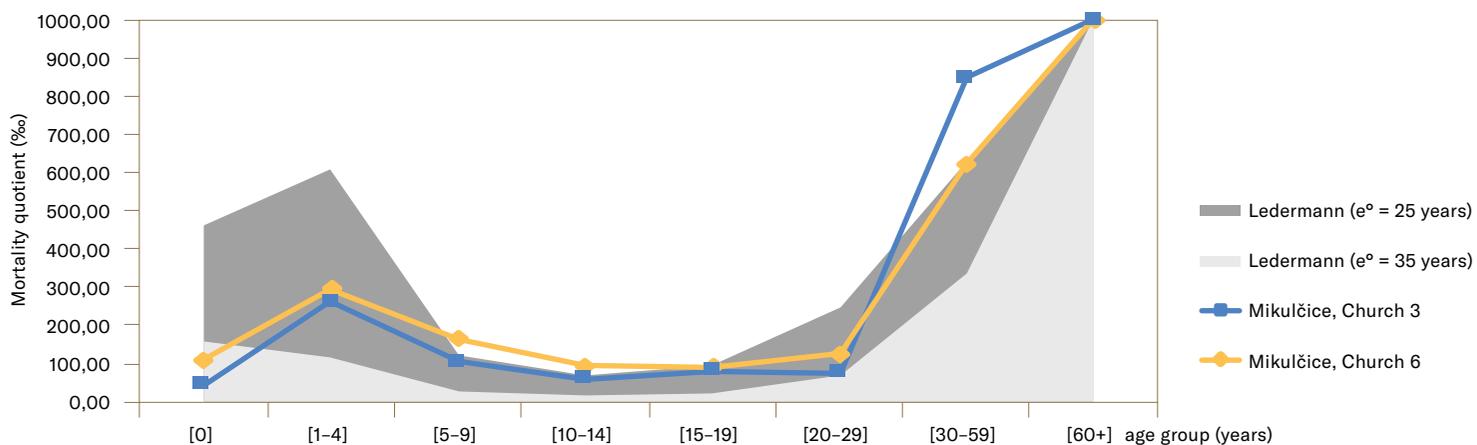


Fig. 276 Mortality coefficients of the populations buried near Churches 3 and 6 at Mikulčice and a comparison with the mortality curves of archaic populations after Lederemann (1969), with a 95% probability level for a life expectancy of 25–35 years.

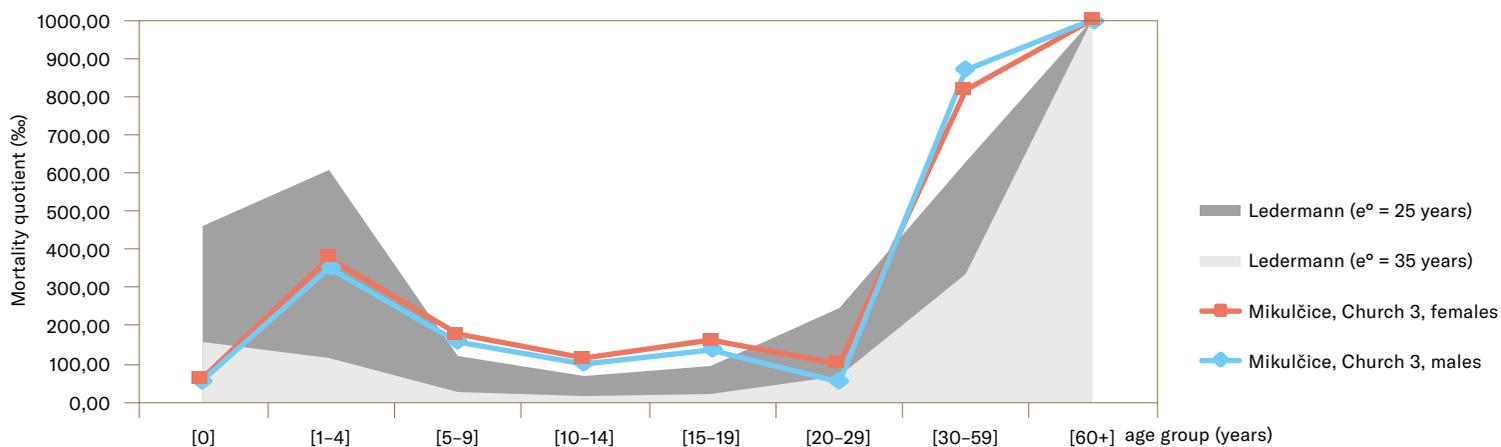


Fig. 277 Mortality coefficients of the population buried near Church 3 at Mikulčice stronghold and a comparison with the mortality curves of archaic populations after Lederemann (1969), with a 95% probability level for a life expectancy of 25–35 years.

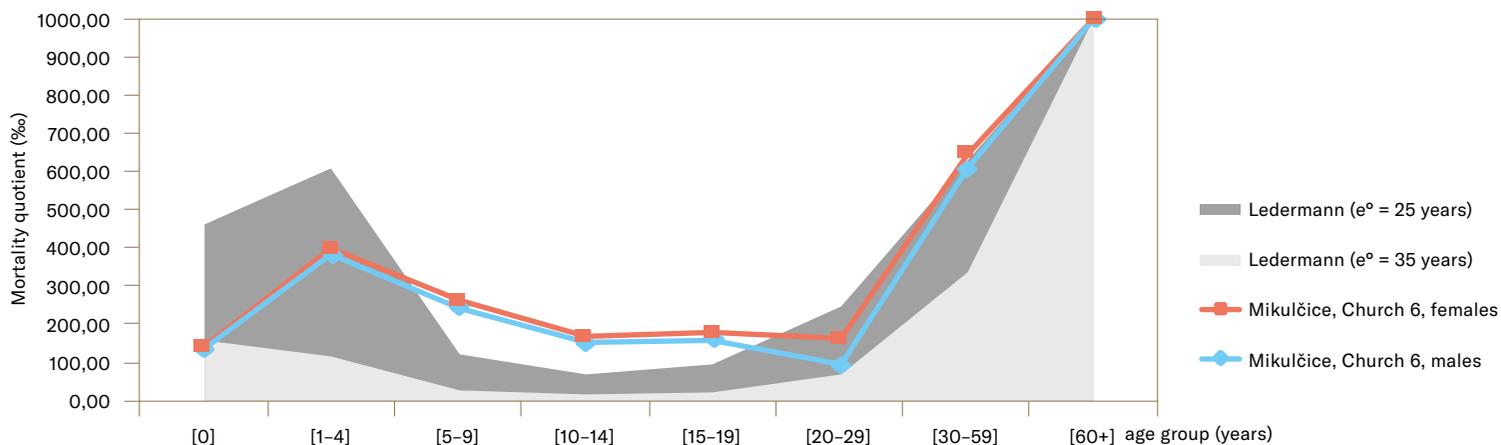


Fig. 278 Mortality coefficients of the populations buried near Church 6 at Mikulčice and a comparison with the mortality curves of archaic populations after Lederemann (1969), with a 95% probability level for a life expectancy of 25–35 years.

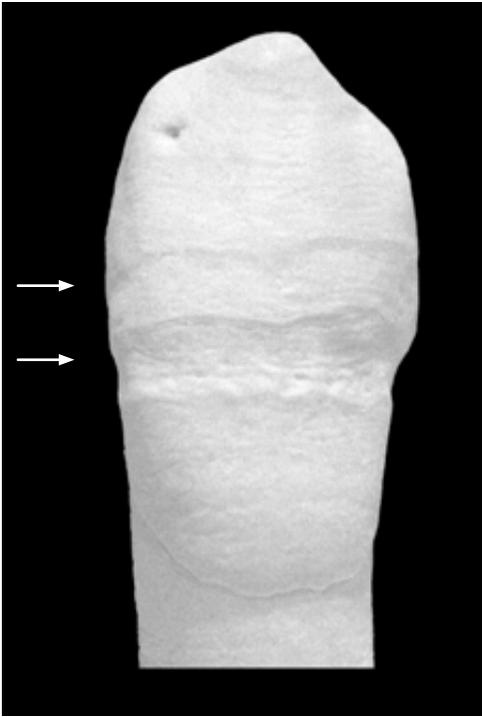


Fig. 279 Linear enamel hypoplasia (LEH) of the maxillary central incisor (tooth cast).



Fig. 280 Harris lines in both tibia.  
4-5-year-old child, Mikulčice, Grave 473 near Church 3.



Fig. 281 Linear enamel hypoplasia (LEH) of the maxillary central incisors.  
9-11-year-old child, Mikulčice-Kostelisko, Grave 1956.



1



2

Fig. 282 Cribra orbitalia are an analogous indicator of non-specific stress situations in childhood during the period of ontogenesis. They are often taken to be expressions of anaemic syndrome caused by problems in hemoglobin production due to iron deficiency. These are porous to trabecular changes, lesions in the upper ceiling of the orbits.

1 – Clear porous to grooved lesions in the orbits of a 9–10-year-old child, Mikulčice, Grave 337 near Church 3; 2 – cribrous lesions in the orbital ceiling of a younger female, Mikulčice, Grave 288 near Church 2.

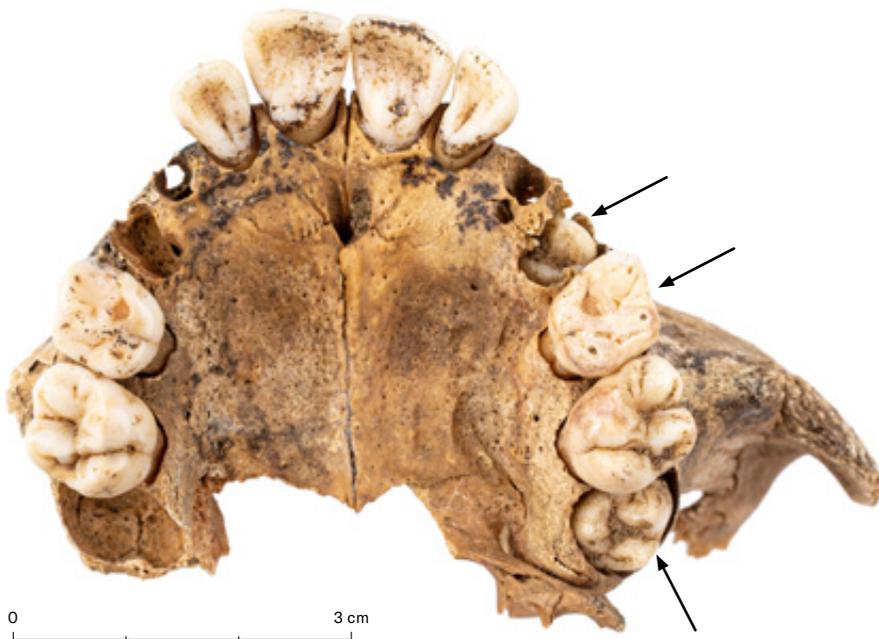


Fig. 283 Development of maxillary dental arch – state in a 9–11-year-old child. In the left dental arch, first premolar and second molar crown germs are visible, while the second deciduous molars are still visible.

Mikulčice-Kostelisko, Grave 1956.

event in infancy.<sup>21</sup> In the Great Moravian populations at Mikulčice site, the LEH defects originated typically between the second and fourth/fifth year of life regardless of the individual's socioeconomic status in the agglomeration.<sup>22</sup> This reflects the period of weaning off mother's milk. The lower canines and upper incisors (Fig. 281) were the most susceptible to LEH.<sup>23</sup>

Since many studies of historical and contemporary populations have confirmed a relationship between poor nutrition and a higher incidence of LEH, we would have expected the rural group from the Mikulčice hinterland to show a higher frequency of LEH, but the opposite is true: the well-situated Mikulčice population from the acropolis exhibited a statistically significantly higher frequency of LEH.<sup>24</sup> Another study has observed a similar situation in an analysis of LEH in late medieval samples from Denmark and Lithuania.<sup>25</sup> On the other hand, the frequency of the LEH defects and events was significantly lower in the Mikulčice settlement agglomeration than in the Great Moravian population from Rajhrad, which may be explained by differences in socioeconomic status.<sup>26</sup>

Harris lines, which occur in the metaphyses of the long bones, are an analogous indicator (Fig. 280). They too are a result of a temporary interruption to the growth of the bone body caused by non-specific stress situations (Fig. 282), such as malnutrition.<sup>27</sup> Unlike the dental LEH defects, Harris lines can be absorbed and disappear. Their absence in adulthood therefore does not mean that they did not exist in childhood. In the case of the Mikulčice population, most of the Harris lines in all of the bones were formed more or less in the same period of ontogenesis. In the case of tibia, the most productive period for line formation was the period between the first and third year of life.<sup>28, 29</sup> No differences were found between individuals from the acropolis and the suburbium.<sup>30</sup>

### Pubertal development in the early medieval population of Great Moravia

Adolescence and puberty, is a dynamic period in an individual's development that is associated with a rapid increase of body height, and changes of body shape and composition in relation to sex. It is an important transition between childhood and adulthood. Growth acceleration culminates with peak height velocity (PHV). There is then a gradual slowdown of growth and a deceleration phase, which is associated with menarche in girls. First menstruation (menarche) occurs approximately 1-2 years after PHV.

The most reliable physiological parameter to estimate the age of sub-adult individuals is the mineralisation of dentition (Fig. 283), which is only marginally affected by the quality of diet and the environment, and is not subject to hormonal changes. The only exception is the mineralisation of the root of the permanent canines and the lower premolars on the permanent dentition, which is influenced by hormones and which - together with skeletal indicators - informs us about the course of puberty and the age of first menstruation. Unfavourable external conditions shift reproductive

abilities to a later age. The possibilities for tracing pubertal phases have successfully been shown on identified skeletal material.<sup>31</sup> In the Palaeolithic, 20,000 years ago, menarche is assumed to have occurred between 7 and 13 years of age, and after the introduction of agriculture, between 9 and 14 years. In the assemblages from Great Moravia, where socioeconomic differences are assumed, the onset of puberty was determined to have been between 10 and 12, and the first menstruation at 13 years. This data corresponds to the data on puberty in modern children. However, puberty in Great Moravian youth lasted longer by comparison - until 18 or even 20 years of age. The course of puberty in girls and boys in the Middle Ages corresponds with the different physiological development of the two sexes known from the present day, where girls start puberty 1-2 years earlier than boys. The timing and course of puberty accord with the conclusions of a study of a large sample of individuals from medieval England.<sup>32</sup> In line with that are the findings of Spanish authors, who have described a longer period of puberty in a medieval assemblage from Murcia.<sup>33</sup>

### Socioeconomic status as reflected by isotopic dietary reconstruction

Using stable isotopes of carbon ( $\delta^{13}\text{C}$ ) and nitrogen ( $\delta^{15}\text{N}$ ) it is possible to estimate the proportion of different food groups in the diet of particular individuals.<sup>34</sup> In research into the Great Moravian population, the relevant food groups are C3 plants (the majority of plants of the temperate zone, including most cereals), C4 plants (millet consumed in the form of millet porridge), animal products (meat and milk) and fresh-water fish.<sup>35</sup>

Reconstruction has shown that the Great Moravian diet was based on C3 plants supplemented by animal products and millet. Although the consumption of fish by some individuals cannot be ruled out, in the scope of the whole population fish played at most a supplementary role in the diet. The consumption of millet is often associated with lower socioeconomic classes; however, in the Great Moravian population millet was consumed in similar amounts by the inhabitants of the centres and the hinterland, regardless of their socioeconomic status.<sup>36</sup>

On the other hand, the proportion of animal products in the diet is a factor that is directly linked to an individual's socioeconomic situation. Variability of access to animal products was observed at several levels. The inhabitants of the hinterland consumed less animal products than the people from the fortified centres.<sup>37</sup> Differences were also found between different cemeteries within Mikulčice: the dietary composition was similar in the population of the acropolis and the group buried near Church 6, while a lower proportion of animal products in the diet was ascertained at the Kostelisko burial ground.<sup>38</sup> Finally, members of the elites buried both at the acropolis and near Church 6 consumed more animal products (Fig. 284). Specifically, this trend was more obvious in men, especially those buried at the acropolis.<sup>39</sup>

21 E.g. King - Humphrey - Hillson 2005.

22 Trefný - Velemínský 2008.

23 Zahradníková 2012.

24 Trefný - Velemínský 2008.

25 Palubeckaitė - Jankauskas - Boldsen 2002.

26 Zahradníková 2012.

27 E.g. Grolleau et al. 1997; Alfonso-Durruty 2011.

28 Byers 1991.

29 Velemínský et al. 2005.

30 Havelková-Zitková et al. 2009.

31 Henderson - Padez 2017.

32 Lewis - Shapland - Watts 2016a; 2016b; Pospíšilová 2017.

33 Doe et al. 2019.

34 Fernandes et al. 2015.

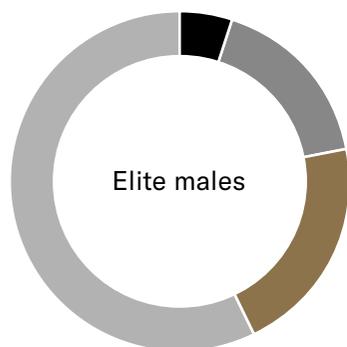
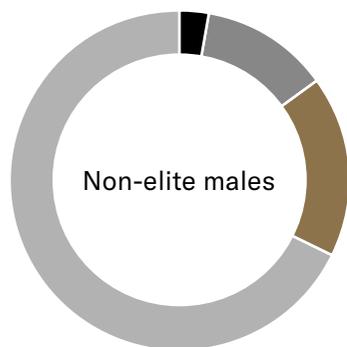
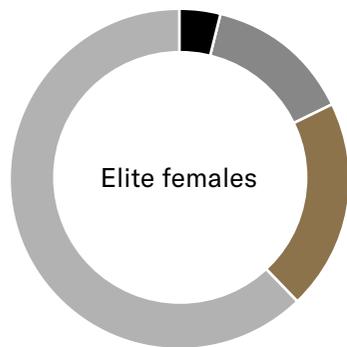
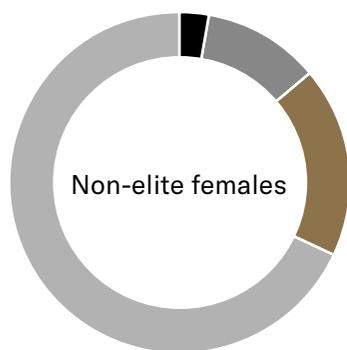
35 Kaupová et al. 2018.

36 Ibid.

37 Ibid.

38 Jílková et al. 2019.

39 Kaupová et al. 2018.



- C3 plants
- C4 plants
- Terrestrial animals
- Freshwater fish

Fig. 284 Proportions of isotopically different food groups in the diet of the population of the Mikulčice acropolis, in relation to sex and socioeconomic status.

### A different nutritional perspective – bone and tooth morphology

The function of the masticatory muscles is reflected in the shape of the mandible and influences its growth. Significant differences in the shape of the mandible were found both between sexes and between population groups from the Mikulčice acropolis and suburbium. The main shape differences were located at the insertions of the masticatory muscles (Fig. 285).

Moreover, changes in the shape of the mandibles in the group from the Mikulčice acropolis suggest that people here had to chew tougher food more often. The asymmetry of the mandibles documents a preference for chewing on the right side in the whole group (Fig. 286). In the Mikulčice population, no differences were found in the values of dental wear on the hard tissues of the dentition.<sup>40</sup>

Alimentary differences were also studied in terms of the thickness of dental enamel. This is an important structural characteristic of a tooth: not only is it a plastic evolutionary trait,<sup>41</sup> but it also selectively responds to changes of subsistence strategy and the load of the masticatory muscles.<sup>42</sup> Previous studies have shown that enamel thickness is connected to the subsistence strategy and is a result of the interaction between the individual and the environment.<sup>43</sup>

Internal dental structure was analysed from microCT images. With the help of segmentation software it was possible to create 3D surface models, in which the differences in enamel thickness are visualised using a relative colour scale. The results indicate that there is a link between enamel thickness and type of diet (especially the proportion of animal proteins and millet). The differences in enamel thickness are not statistically significant; however, they do follow the same trend as the values from the geochemical (isotope) analyses. These correlations are also observable at the individual level; 3D topographic models of enamel thickness allow us to observe the differences in its distribution (Fig. 287).

The research into the nutrition of the Mikulčice elites proved that the thinnest average enamel thickness and the highest consumption of animal protein were present in this group. Historically interesting findings have been yielded by analysis of the correlation between enamel thickness and nitrogen and carbon isotopes, which showed a negative correlation for both. This supports historians' assumptions that in Great Moravia millet was consumed in the form of porridge.<sup>44</sup>

### Body size and appearance of the inhabitants of early medieval Mikulčice

Body size is one of the most important indicators of both long- and short-term changes in the life of an individual. It is described by stature and body mass or weight (body mass index). These two parameters also reflect genetic, environmental, geographical, economic and social indicators in the society where the individual lived. One of the first pieces of biometric data recorded about an individual, body height, is still among the most frequently recorded parameters. While body weight can change greatly as a result of fashion or alimentary habits, body height is considered a more or less stable

40 Ibrová et al. 2017.

41 Horvath et al. 2014.

42 Mahoney 2013.

43 Le Luyer et al. 2013; Le Luyer – Rottier – Bayle 2014.

44 Ibrová et al. 2019.

identification trait for adult individuals. In reality, however, the body height of an adult individual varies during the day, fluctuating in the range 1.5–2 cm as a result of pressure applied to the intervertebral discs.<sup>45</sup> Loss of water in the intervertebral discs, changes in the vertebrae and other factors also cause body height to decrease with age.<sup>46</sup> The fluctuation of body height is relatively small; but the estimation of body height from skeletal remains is not free from errors.<sup>47</sup> Despite all this, stature is considered a sufficiently robust osteobiographic indicator for both individuals and populations.<sup>48</sup> Body height reflects the social status of an individual and is also a valuable indicator of living conditions in their society. Some of the factors that influence adult stature belong to the postnatal period, and others to adult life and ageing.

Similarly, body weight reflects diet and health in the period of postnatal development. However, unlike stature, body weight is more sensitive to changes in adulthood. For past populations, body height and body weight can be estimated accurately only from very well-preserved skeletal remains. Estimates of body size apply mathematical and anatomical, often population-specific, methods.<sup>49</sup> The anatomical model, based on direct measurements of the most important parts of the skeleton, is preferred, but often cannot be applied because the skeleton is insufficiently preserved. This is why population-specific methods for estimating body height and body weight have been designed specifically for the early medieval period – they increase the reliability of estimates and allow comparison of the development of body size with early medieval populations in other parts of Europe.<sup>50</sup>

The development of average stature in the adult population at the end of the Pleistocene and in the Holocene is illustrated in Fig. 288: 1, 2. The average body height in these periods ranged from the lowest stature typical of the first farmers of the Neolithic to the highest values typical of the hunters and gatherers of the Upper Palaeolithic.<sup>51</sup> The average stature of early medieval people was one of the highest in the Holocene – only the hunters and gatherers and people of the Upper Palaeolithic were taller. Early medieval men (Mikulčice, Pohansko near Břeclav) had an average body height of 169–171 cm and women 156–158 cm.<sup>52</sup> In some aspects, the body height of the early medieval population is comparable with modern-day people of lower socioeconomic status.

The average body weight of early medieval men was 70 kg and of women 58 kg.<sup>53</sup> On average the body weight of the early medieval people was among the highest of all agriculturally active periods – it was again higher only in the hunter-gatherer populations of the Upper Palaeolithic. The average body weight of early medieval people was even higher than the estimated body weights obtained from a modern low socioeconomic status data set (Fig. 289).

A comparison of body size shows that the people of the Early Middle Ages reacted optimally to the environment.

The individual in Grave 153 buried within the second church at Pohansko near Břeclav may serve to exemplify optimal environmental response in the Great Moravian period. He had one of the

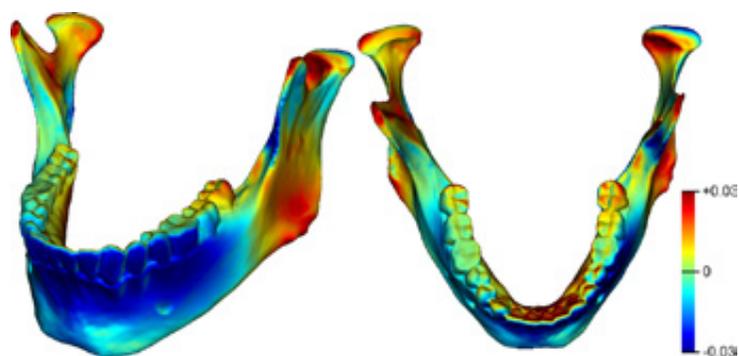


Fig. 285 Relative shape differences between the groups from the acropolis and suburbium.

Red indicates the local prominence of these areas in individuals from the acropolis, as compared with those from the suburbium. The model shows protrusion of the areas most affected by the insertions of the masticatory muscles.

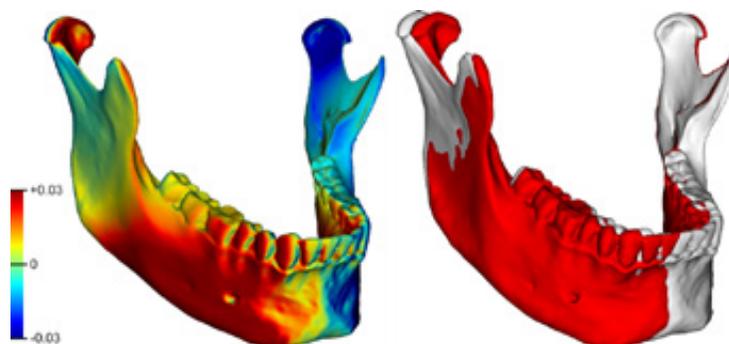


Fig. 286 Direction of jaw asymmetry. The model was created by comparing asymmetric jaws with average symmetrical jaws.

In the colour map, red indicates a local prominence of these areas in individuals from the acropolis compared with those from the suburbium. In the red-white model, red indicates an asymmetric jaw and white a symmetrical jaw.

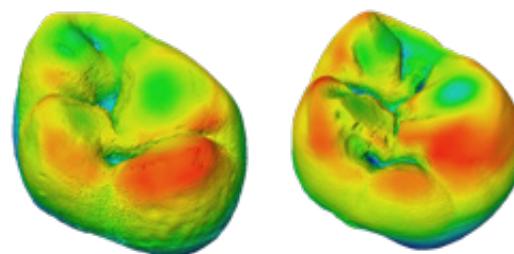


Fig. 287 Models of upper molars showing the distribution of enamel in individuals from the given group with average enamel thickness in the group.

Left – Great Moravian elites, right – inhabitants of economic hinterland. Red indicates areas with thicker enamel while blue indicates areas with the thinnest enamel.

45 Reilly – Tyrrell – Troup 1984; Sjøvold 2000.

46 Floyd – Jayasinghe – Dey 2017.

47 Ruff et al. 2012; Cardoso – Marinho – Albanese 2016.

48 Gowland – Walther 2018.

49 Auerbach – Ruff 2010; Hanson 1992; Niskanen – Ruff 2018; Ruff 2018.

50 Sládek et al. 2015; Vercellotti et al. 2009.

51 Sládek et al. 2017.

52 Dobisíková – Katina – Velemínský 2008; Sládek et al. 2015.

53 Sládek et al. 2017.

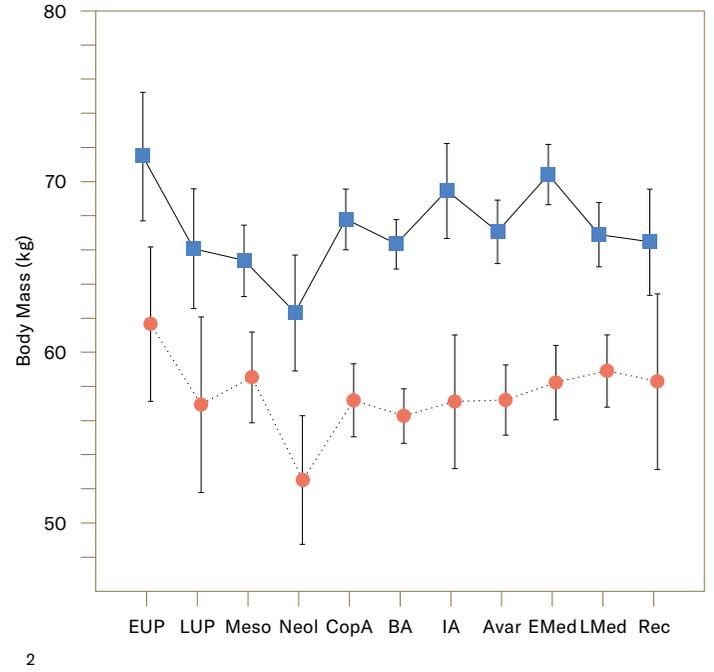
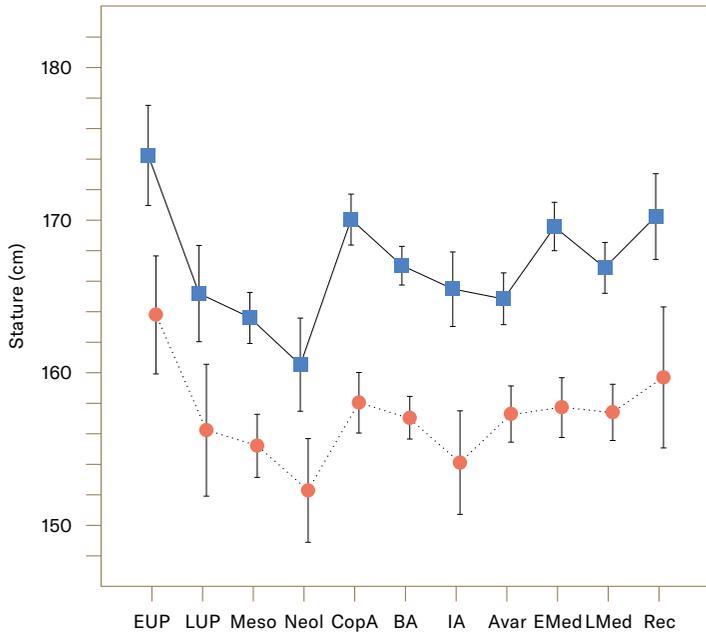


Fig. 288 Development of average stature and body mass in populations of European hunter-gatherers and Holocene agriculturalists in Central Europe.

1 - Average stature; 2 - average body mass. A solid blue square indicates the average value for males and the red circle for females. Abbreviations: EUP - Early Upper Paleolithic; LUP - Late Palaeolithic; Meso - Mesolithic; Neol - Neolithic; CopA - Eneolithic; BA - Bronze Age; IA - Iron Age; Avar - Avars; EMed - Early Medieval; LMed - Late Medieval; Rec - Recent.

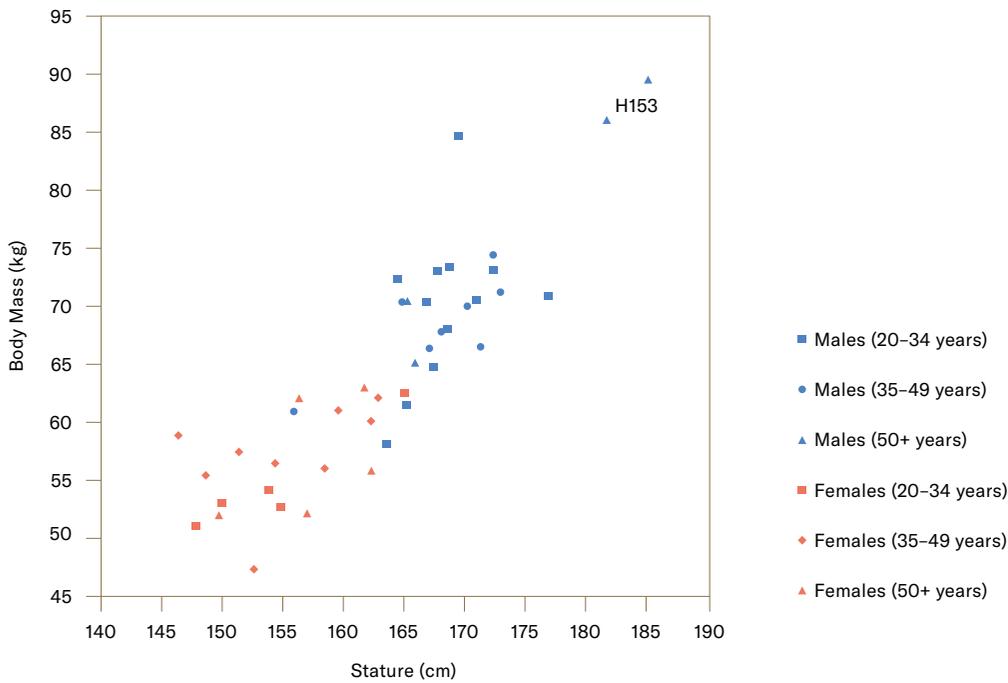


Fig. 289 Height and weight in the Great Moravian population buried near the second church at Pohansko near Břeclav, divided by age and sex.

The graph includes the burial of the socioeconomically most significant individual from Grave 153 (H153), interred in the most prestigious location within the church.

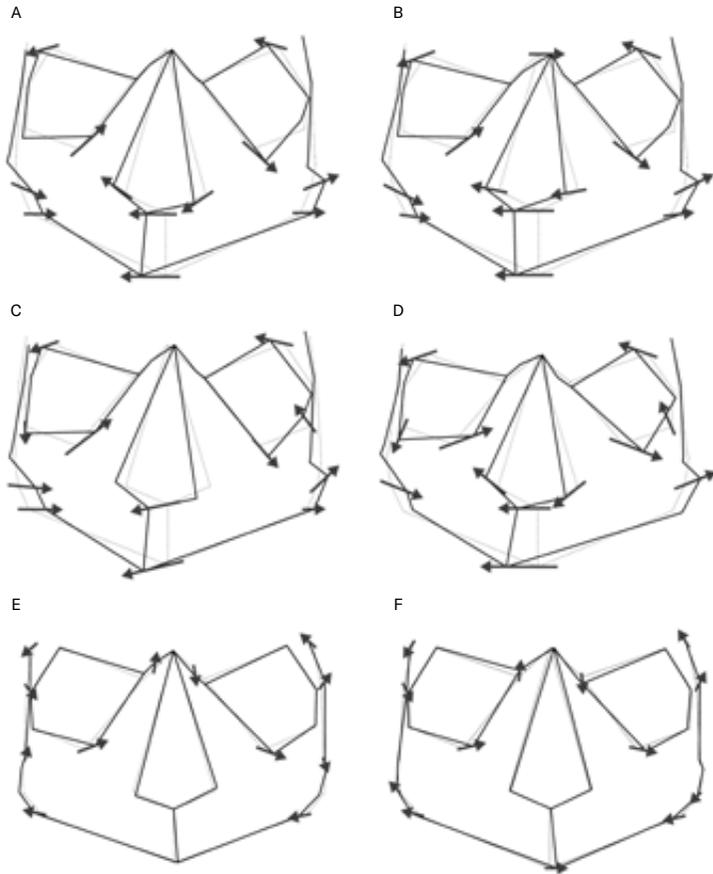


Fig. 290 Directional asymmetry (DA) changes in the shape of the upper face.

The Mikulčice samples (A–D) were similar in terms of DA. Mid-sagittal and lateral points of the upper face rotated clockwise. The right side of the upper face narrowed relatively in the right-left direction, especially in the lower part. Likewise, the facial arch was comparatively higher on the right side. The margins of both orbits rotated counter-clockwise. The right orbit was relatively lower and wider, whereas the left was more rounded. Upper face DA in the Pachner Collection (E, F) was far less expressed than in the Mikulčice samples. The Pachner Collection exhibited an opposite tendency in the rotational shape of the mid-sagittal plane and in the shape of the upper face, but a similar tendency in orbital DA.

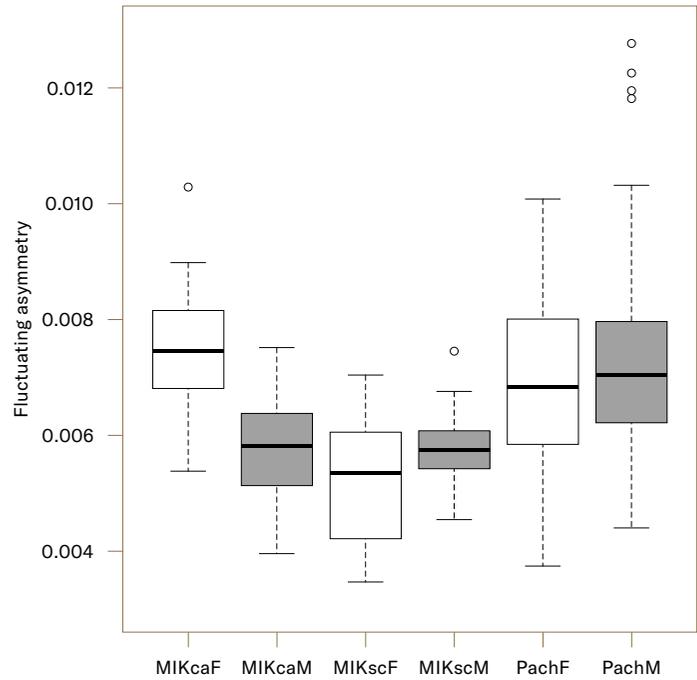


Fig. 291 Comparison of fluctuating asymmetry (FA) between samples, shown for the upper face.

Statistically significant differences between samples were found. The highest mean FA values were attained in the cranial base, with intermediate values in the vault, and the lowest in the upper facial region. Mikulčice acropolis females exhibited significantly higher FA compared to other Mikulčice samples; their FA values were similar to the highly stressed Pachner Collection. Mikulčice suburbium females exhibited significantly lower FA than the Pachner females. For males, no differences were found.

highest social statuses and thus possibly represents the physical parameters typical of early medieval elites. The importance of social status in the development of body size is further supported by the fact that individual from Grave 153 was both the tallest (185 cm) and heaviest at this burial ground.<sup>54</sup> The high values of body size might be traits typical of early medieval elites. The question remains as to the reason for the higher body size in elites. It might have been a consequence of better nutrition and care during growth. Larger body size might also have been an indicator of retaining elite position in early medieval society, and thus determined genetically.

Other indirect evidences of favourable living conditions in early medieval Mikulčice fortified core and extramural settlement were acquired using 3D display technologies and geometric morphometric techniques enabling shape analysis of selected

bones. Comprehensive shape exploration over whole digitised bony surfaces of human tibiae showed strong sexual dimorphism expressed both in articular ends and also in whole 3D surface data.<sup>55</sup> In general, the sex-specific tibial morphologies (more robust male bones, with relatively larger extremities) could be caused by non-identical mechanical environments and differences in size and proportionality in the male and female body. In view of the fact that stronger sexual dimorphism is expressed in populations experiencing better living conditions,<sup>56</sup> well-pronounced sex-based divergence in Mikulčice tibiae (compared to chronologically distinct samples) indicates high quality of life.

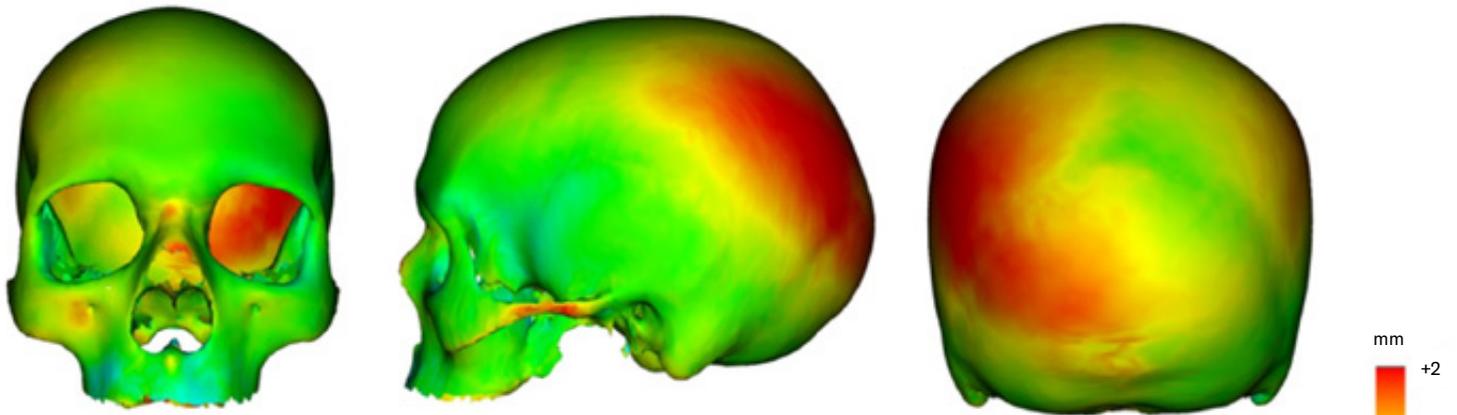
Despite the rapid development of experimental and genetic techniques, study of the skull has remained an integral part

54 Macháček – Sládek 2019.

55 Brzobohatá et al. 2014; 2016.

56 Gray – Wolfe 1980.

## Grave localisation



## Grave goods

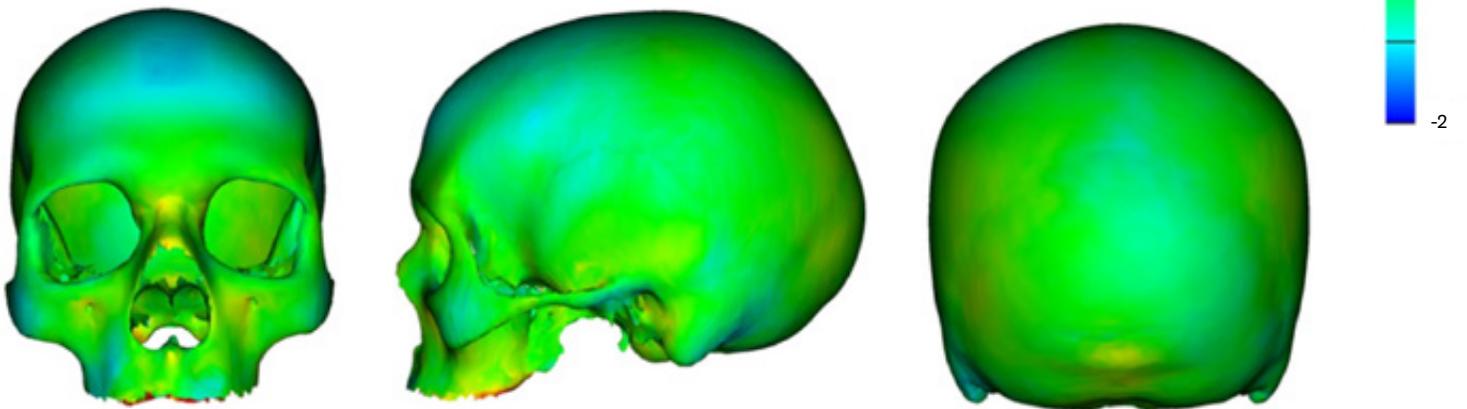


Fig. 292 Shape and size differences in the skull morphology between individuals buried at the acropolis and in the suburbium (top line), and between individuals buried with luxurious grave goods and without grave goods (bottom line).

Red and dark blue indicate the locations with the greatest differences between the groups of individuals; green indicates locations with no changes in shape and size. Red indicates areas that are more prominent in the individuals buried at the acropolis (top line). Blue indicates locations that are prominent in the individuals without grave goods (bottom line). Greater differences are apparent between individuals divided on the basis of grave localisation.

of research into modern and past populations. It is an important analytic method in palaeoanthropology, as well as historical and forensic anthropology. Indirectly, it also informs archaeology, history and other related sciences. It is generally accepted that the size and shape of the skull are strongly controlled by genetic mechanisms.<sup>57</sup> The study of skull morphology can therefore answer questions of intra- and inter-population variability.

Earlier research indicated that the Slavic populations of the High Middle Ages had shorter and wider skulls than modern people, while the height of the skull and the facial parts were identical.<sup>58</sup> Our research comparing the Mikulčice Slavs and the modern population observed the same trend, but found even larger cranial widths in both sexes. As assumed, pronounced sexual dimorphism

57 See, for instance, Johannsdottir et al. 2005.

58 Blajerová 1980.



Fig. 293 Reconstruction of the possible habitual activities of Slavic females and males.

1 - Harvesting; 2 - construction of monoxylon; 3 - carpentry; 4 - blacksmiths; 5 - carrying water; 6 - ploughing; 7 - pottery; 8 - fishing; 9 - grinding the grain; 10 - spinning and weaving.

of the linear dimensions – with the exception of the height of the occipital bone – was found in the Mikulčice Slavs. In men, the nasal bones protruded more from the anterior part of the cranial base, and in women, there was a typical forward proclination of the upper alveolar ridge and upper incisors.<sup>59</sup> Detailed craniometric comparisons were carried out separately for men and women. Among the most typical microevolutionary changes were the development of neurocranial globularity, reduced facial convexity and invariable facial height. All of these changes took place during the last thousand years, and correspond to the micro-evolutionary secular changes described in the current North American population.<sup>60</sup> The basic dimensions of the mandible have been changing since the Early Middle Ages: its body keeps shortening while the height of the mandibular ramus is increasing.<sup>61</sup>

Variability in the shape of the skull is best documented by geometric morphometrics. When studying the lifestyle of medieval populations, skull asymmetry is of great importance as it indicates an asymmetrical load of the masticatory apparatus, and is thus able to expose differences in dietary habits. It also reflects the level of environmental stress and therefore the adaptation of skeletal structures to external influences.<sup>62</sup>

The question remains as to how significant the socioeconomic differences between the acropolis and suburbium at Mikulčice were. We have attempted to answer this question by determining the extent of skeletal asymmetry. To accomplish this we chose the shape of the craniofacial skeleton.<sup>63</sup> Skeletal asymmetry is associated with various stresses occurring during the lifetime and is assumed to reflect the socioeconomic structure of the population: the higher the stress, the more pronounced the asymmetry. We have concentrated on fluctuating and directional asymmetries. Fluctuating asymmetry is the result of stress during development and growth, and is thus primarily an indicator of the developmental stability of the organism,<sup>64</sup> while directional asymmetry is mainly influenced by biomechanical loading associated with asymmetrical chewing and is thus associated with the diet and subsistence adaptation.<sup>65</sup>

Based on the craniofacial directional asymmetry found (Fig. 290), a higher biomechanical load of the jaws of individuals from the suburbium was determined, caused by tougher and coarser food, such as cereals – which contrasts with the findings relating to the inhabitants of the acropolis, whose diet contained a higher proportion of meat.

Craniofacial fluctuating asymmetry (Fig. 291) also reflects environmental stress and increasing population variability. In Mikulčice, no significant differences were found in this respect between the men from the acropolis and the suburbium, while in women the differences were significant. The women from the acropolis showed a higher fluctuating asymmetry where the values were similar to those of a comparative set of highly stressed 20th-century individuals of the lower social class.<sup>66</sup>

The high degree of asymmetry – and hence stress – in the women from the acropolis is surprising because they were supposed to have been members of the highest social class. This suggests that

they might not necessarily have enjoyed the assumed privileges. This might be explained by patrilocality and patrilinearity – and thus a foreign, non-Great Moravian, origin of the women buried at the acropolis. The men from higher early medieval social classes probably entered into politically advantageous marriages, the brides often coming from distant regions. These assumptions are supported by the results of a study of general skull morphology.<sup>67</sup>

The richness of objects buried as grave goods also reflects the socioeconomic status of an individual, and can thus help divide the Mikulčice population.<sup>68</sup> However, this criterion did not prove as good as indicator of individual status in the case of facial morphology, because the morphology did not reveal any significant differences at the Mikulčice agglomeration between individuals buried with luxury grave goods and those without them (Fig. 292). A certain doubt about the suitability of grave goods as an indicator of social status also arises from the fact that weapons, vessels and other funerary offerings were lacking in the 9th-century graves from otherwise richly equipped cemeteries. This phenomenon is probably linked to Christianisation and the Christian mode of burial, which became more and more common and which forbade the placing of funerary offerings in graves. Thus, it might well have been the case that even an individual with high status was buried without rich grave goods.<sup>69</sup>

### The state of health of the inhabitants of Great Moravian Mikulčice

Growth during childhood and adolescence, as well as nutrition and physical load in adulthood, are linked to subsistence, and find reflection in the health of individuals and entire populations. The Great Moravian population from Mikulčice was assessed more systematically – on an epidemiological level where three indicators of health were included: dental health status, the occurrence of degenerative productive changes of articular connections and the incidence of traumatic injuries. Osteoporosis was assessed as an additional indication of bone metabolism. Other diseases and pathologies were evaluated only by way of case reports.<sup>70</sup>

### Musculoskeletal activity and its manifestations

Both upper and lower limbs are used asymmetrically. The biomechanical loading on the legs but it is not so markedly asymmetric, therefore the side asymmetry of the lower limb is less pronounced than that of the upper limbs. It means asymmetry between the right and the left side is more pronounced on the upper limb bones.<sup>71</sup> While the lower limb asymmetry favours the left side, the upper limb asymmetry is more pronounced on the right side.<sup>72</sup> This pattern is because of the direct association of the upper limb with the neurophysiological process resulted in right dominated handedness among human groups – approximately 85% of people have a dominant right hand.<sup>73</sup> The association between

59 Velemínská et al. 2008.

60 Jantz – Meadows Jantz 2000; Wescott – Jantz 2005.

61 Bejdová et al. 2013; 2017; 2018.

62 Graham et al. 2010; Ruff 2008.

63 Bigoni et al. 2013.

64 Palmer – Strobeck 2003; Quinto-Sánchez et al. 2017.

65 Le Huray – Schutkowski 2005; Gomes et al. 2011.

66 Pachner 1937; Bigoni et al. 2013.

67 Bigoni et al. 2013.

68 Poláček 2008d.

69 See, for instance, Měřínský 2006.

70 E.g. Stloukal – Vyhnaněk 1976.

71 Auerbach – Ruff 2006; Kujanová et al. 2008.

72 Schultz 1937; Kujanová et al. 2008.

73 Papadatou-Pastou et al. 2020.

the neurophysiological process and sensitivity of the upper limb bones also enable reconstruction of the manipulative behaviour and subsistence changes among past human groups.<sup>74</sup>

As expected, the study about a limb bones asymmetry of the individuals from Mikulčice revealed that the bones of the upper limbs were more robust on the right side while the bones of the lower limbs were more robust on the left side.<sup>75</sup> This shows that the inhabitants of Mikulčice experienced a significantly asymmetrical load on the limbs. The most prominent directional asymmetry was observed in the humerus. However, the limb asymmetry in the inhabitants of Mikulčice was less pronounced than that in Prague poor from the beginning of the 20th century. The acropolis/suburbium differences were greater among women than among men.

The very low values of the fluctuating asymmetry of the long bones have shown that the inhabitants of Mikulčice – both from the acropolis and the suburbium (i.e. also the assumed lower classes) – lived in good conditions with a lower developmental and environmental stress compared to, for example, the representatives of the lower social class from the beginning of the 20th century.<sup>76</sup>

One of the ways of reconstructing at least some of the activities carried out by Great Moravians (Fig. 293) is to look closely at the entheses – sites on the skeleton where tendons and muscles are attached.

During repeated or excessive load, not only do muscles get stronger, but the area where they are attached to bones changes appearance and character.<sup>77</sup> These are called enthesal changes (EC)<sup>78</sup> and may have different forms of manifestation, including bone proliferation or resorption. However, physical activity may be only one of the factors affecting EC development: such changes are also associated with advanced age and certain diseases (e.g. DISH, spondyloarthropathies). ECs of such origin must be eliminated during the reconstruction of activities. The aim of recording EC occurrence<sup>79</sup> was to reveal differences in the degree of physical load among individuals with different social statuses within the Mikulčice settlement agglomeration. Statistically significant differences in the occurrence of ECs were proven by comparison of the individuals buried at the Mikulčice acropolis and its hinterland (Prušánky, Josefov). One of the principal findings was that ECs have a completely different occurrence in men and women. More changes, mainly in the upper limbs, were found in the men buried in the Mikulčice hinterland, where physically demanding activities connected with agriculture, fishing and building are assumed (Fig. 294; 295). Women from the Mikulčice acropolis were also statistically significantly different from those buried in the hinterland – but in a completely different way. In women buried at the acropolis, the muscle/tendon attachment sites were statistically significantly more loaded than in those buried in the farming hinterland – this especially concerned the entheses of the lower extremities (Fig. 296; 297). Surprisingly, more pronounced ECs were more frequently found in the group of women where a higher social status – and thus less physically demanding work – was assumed.<sup>80</sup>



Fig. 294 Enthesal changes in the area of the attachment of the *musculus pectoralis major* in a male older than 50 years, Mikulčice, Grave 186 near Church 2.

1 – Changes on the anterior side of the humerus; 2 – changes in the area of the *tuberositas radii* on the anterior side of the *radii*.

74 Sládek et al. 2016.  
75 Kujanová et al. 2008.  
76 Ibid.  
77 Benjamin et al. 2006.  
78 Villotte et al. 2016.  
79 Villotte 2009.  
80 Havelková et al. 2011.



Fig. 295 Enteseal changes in the area of the lateral condyle and body of both humerus bones in a female older than 40 years, Mikulčice, Grave 615 near Church 3.

1 - Left humerus with degenerative changes of the elbow joint (osteophytic edge of the trochlea of humerus); 2 - anatomical variety, a hole in the right olecranon fossa (*foramen olecrani*) in the right humerus.



Fig. 296 Degenerative and enthesal changes of a male older than 40 years, Mikulčice, Church 6, Grave 77/VI.

1 - Degenerative changes of the hip joint, the osteophytic edge of the acetabulum of the right pelvis; 1, 2 - enthesal changes in the area of the ischial tuberosity (*tuber ischiadicum*).

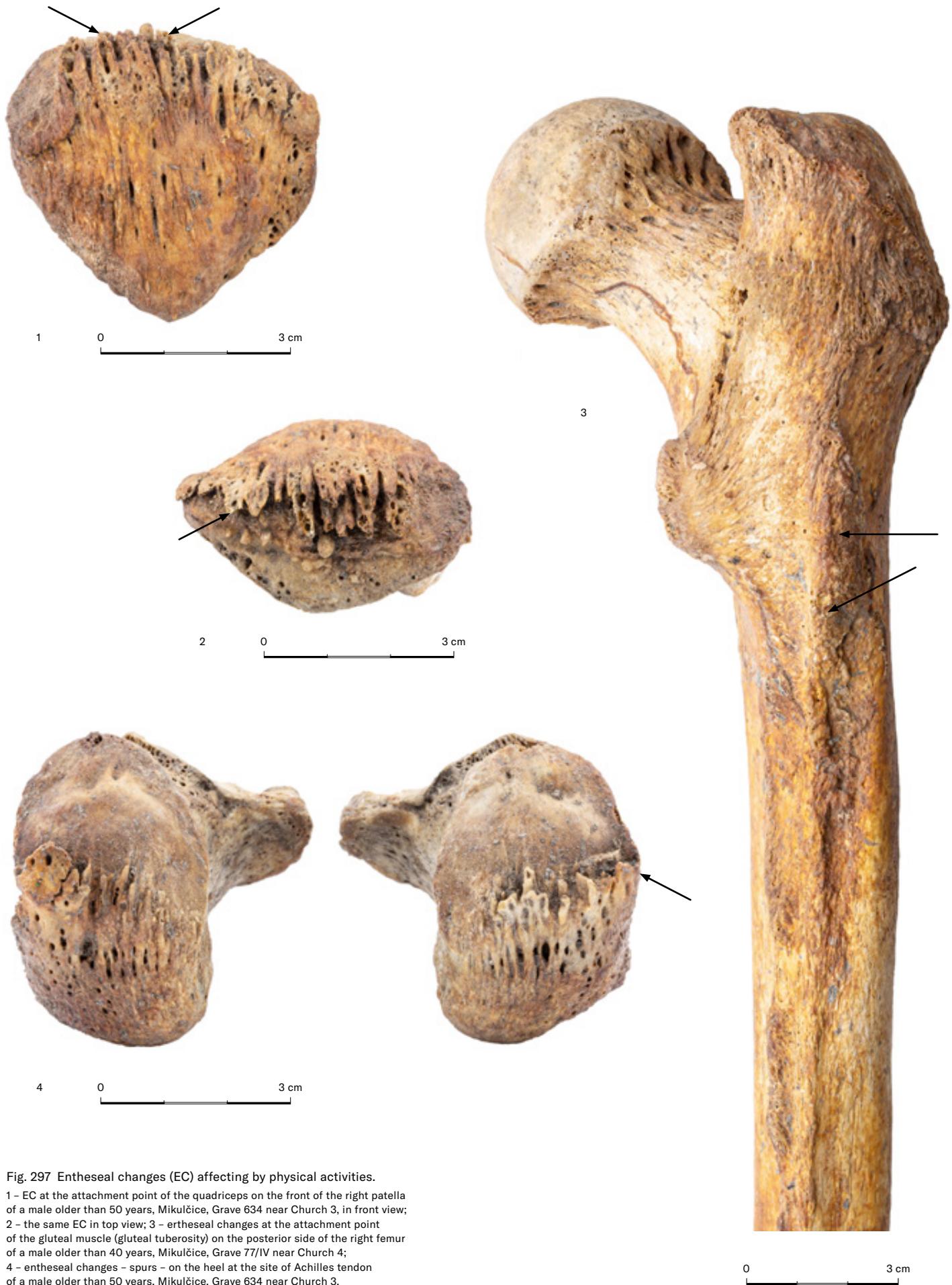


Fig. 297 Enteseal changes (EC) affecting by physical activities.  
 1 - EC at the attachment point of the quadriceps on the front of the right patella of a male older than 50 years, Mikulčice, Grave 634 near Church 3, in front view;  
 2 - the same EC in top view; 3 - enteseal changes at the attachment point of the gluteal muscle (gluteal tuberosity) on the posterior side of the right femur of a male older than 40 years, Mikulčice, Grave 77/IV near Church 4;  
 4 - enteseal changes - spurs - on the heel at the site of Achilles tendon of a male older than 50 years, Mikulčice, Grave 634 near Church 3.

## Dental health

Dental health is influenced not only by genetic predisposition and age but also the quality of nutrition, its processing and diseases - which are linked with the socioeconomic status of a population group. The state of dental health thus indirectly reflects the living conditions of the Great Moravian population. Among the inhabitants of the Mikulčice settlement agglomeration the frequency of cariosity (F-CE) was more or less the same in both sexes. Generally, more women than men were affected with caries, while the frequency of caries usually increased slightly with age. Caries caused a significant increase in the intravital loss of teeth (Fig. 298: 1). This is in accordance with the findings of other studies, and is probably linked with the critical stages of a woman's life - pregnancy and lactation.<sup>81</sup>

Statistically significant differences in the health of dentition were found between older individuals from different social groups from the stronghold and the hinterland.<sup>82</sup> The adults from the Mikulčice stronghold (e.g. from Kostelisko) showed a lower intensity of cariosity and a lower proportion of intravital tooth loss than the individuals from the hinterland (Prušánky, Josefov). As regards the sensitivity of different teeth to the emergence of caries, not only the second molars, but also premolars and canines were affected in the upper jaw (maxilla), while mostly first and second molars were affected in the lower jaw (mandible) (Fig. 298: 2). In general, caries was more frequent in the mandible and anterior teeth were substantially less affected than posterior teeth.<sup>83</sup> The most frequent intravital losses are first molars (in the lower jaw) and second molars (in the maxilla). Lower jaws are more affected by intravital losses. Graves with rich grave goods usually contained remains with a lower number of dental caries lesions and intravital losses of teeth. These differences could be linked to a different diet, but also to different hygiene habits and therapeutic practices.



81 E.g. Hanáková - Stloukal 1987.

82 Stránská - Velemínský - Velemínská 2008.

83 E.g. Ibid.

Fig. 298 Dental health of Great Moravian population.

1 - Intravital loss of all mandibular teeth in a female older than 50 years, Prušánky, Grave 42; 2 - extensive osteitic nidus (abscess) in the area of the left upper molar (26-27) roots, extensive abrasion of the crowns of all teeth and intravital loss of an incisor (23) in an older female, Mikulčice-Kostelisko, Grave 2000.

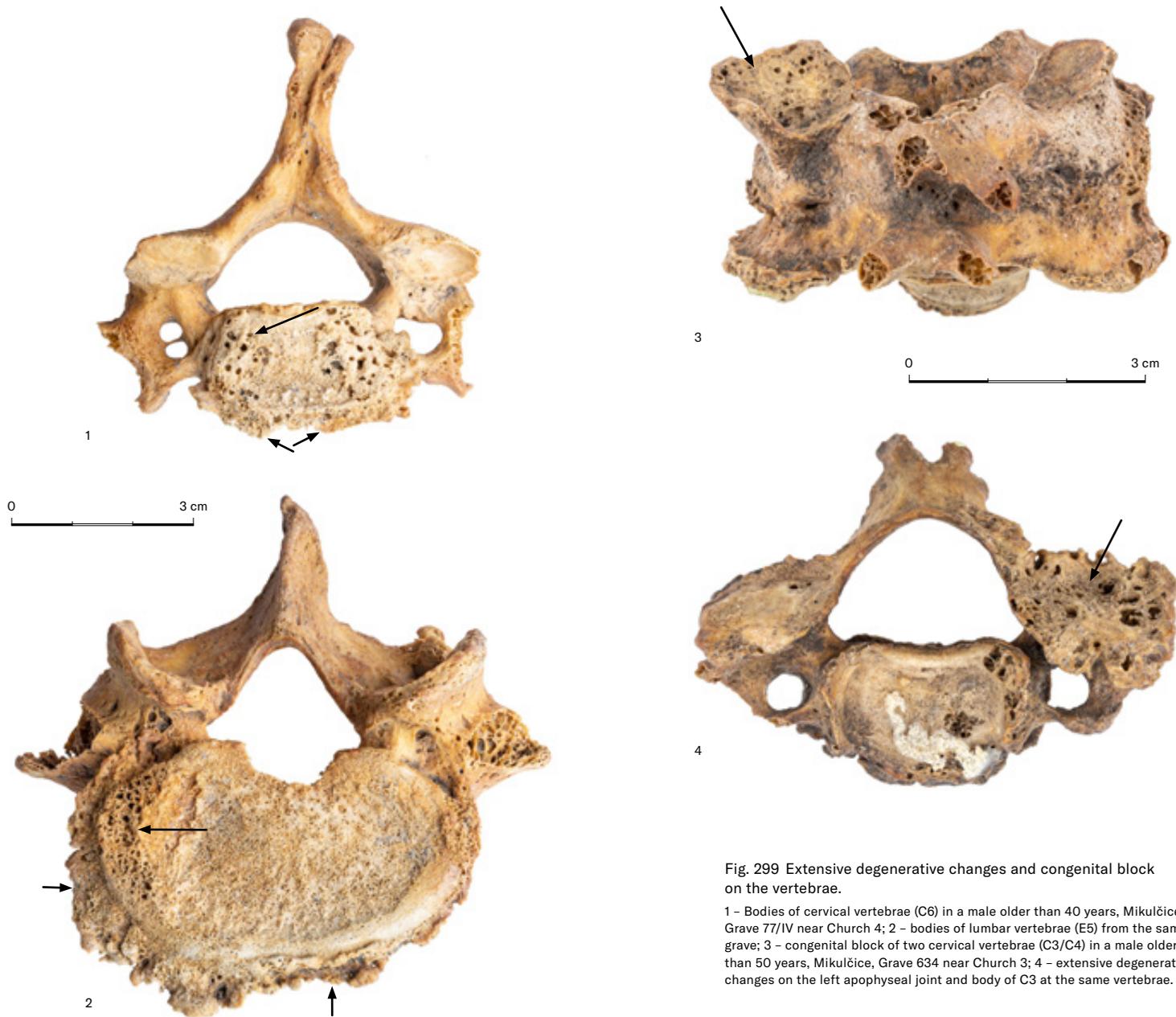


Fig. 299 Extensive degenerative changes and congenital block on the vertebrae.

1 – Bodies of cervical vertebrae (C6) in a male older than 40 years, Mikulčice, Grave 77/IV near Church 4; 2 – bodies of lumbar vertebrae (E5) from the same grave; 3 – congenital block of two cervical vertebrae (C3/C4) in a male older than 50 years, Mikulčice, Grave 634 near Church 3; 4 – extensive degenerative changes on the left apophyseal joint and body of C3 at the same vertebrae.

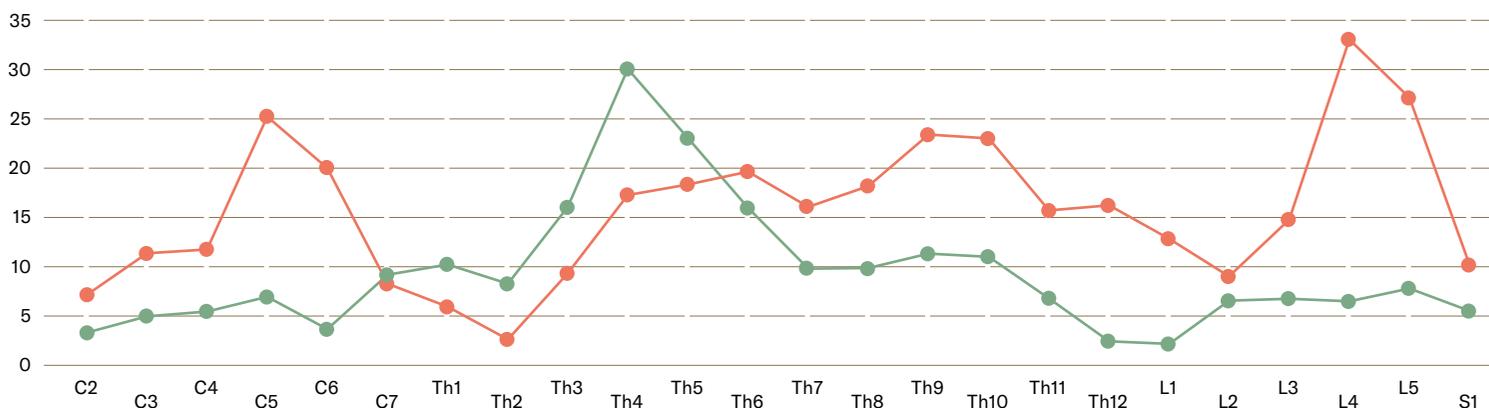


Fig. 300 The occurrence of degenerative productive changes in the bodies and apophyses of the joints and vertebrae. Red curve – changes of vertebral bodies; blue curve – changes of the apophyseal joints. Values in %.

## Degenerative joint changes

Among the disorders, which have been studied more widely are degenerative-productive changes of the spinal and appendicular joints (Fig. 299), this group of pathologies also serves for the evaluation of the health of the Great Moravian population.<sup>84</sup> At all the Great Moravian burial grounds, the greatest number of degenerative-productive changes of the vertebral bodies, i.e. spondylosis changes (*spondylosis*), have been found in the lower cervical (C4–C6), lower/central thoracic (Th6–Th11) and lower lumbar spine (L3–L5), which are subject to the greatest load. On the other hand, the smallest number of such changes has usually been observed in the second cervical vertebra (C2) and the transition of the cervical and thoracic parts of the spine (C7–Th2) (Fig. 300). Something different was found in the skeletons from the graves near Church 3 at the acropolis: the thoracic/lumbar segment of the spine (Th12–L2) was affected the most.<sup>85</sup>

In the vertebral apophyseal joints, degenerative changes were most frequently found in the thoracic segment of the spine. The fourth thoracic vertebra was affected the most frequently and most heavily. The upper thoracic segment of the spine is the most movable, which means the articular connections are exposed to a greater tension and load.<sup>86</sup> The incidence of degenerative changes at the articular connections – both intervertebral and apophyseal – was distributed at opposite sides in different segments of the spine. This corresponds to the different functional properties of these two types of joints. The incidence of degenerative changes of the spine is usually linked to sex of an individual.

The incidence of degenerative changes of all articular connections shows a significant positive correlation with age. These usually occur after 30 years of age in the thoracic and lumbar segments of the spine, later becoming more prominent particularly in the lumbar area (Fig. 301). In individuals over 50 years of age, degenerative changes in the form of *spondylosis* are usually found along the whole spine. Similar trends were identified at all the cemeteries of the Mikulčice settlement agglomeration. Generally, the lower thoracic spine and lumbar area are the most affected;<sup>87</sup> it can be assumed that the people there were exposed to similar environmental factors.

The appendicular joints that were most frequently affected by degenerative changes were the shoulder and the hip (Fig. 302–304). The incidence of osteoarthritic changes in appendicular joints was independent of sex with exception of knee joint (Fig. 305).<sup>88</sup>

## Bone Injuries

The last health indicator comprises bone injuries and fractures. With regard to the archaeological finds, it has generally been assumed that many of the men buried at the Mikulčice acropolis had experienced military conflict, served as warriors or been members of armed retinues. It was therefore hypothesised that the incidence of injuries and traumatic changes on their skeletons would be higher than in the common population (Fig. 306).<sup>89</sup> At the two largest cemeteries at the Mikulčice acropolis – those near Church 2 and Church 3 – the frequency of traumatic changes in the bones of the locomotive system were evaluated using the modified Judd method, which is suitable for the analysis of fragmented skeletal material.<sup>90</sup> We recorded a total of 50 fractures in about 8% of the individuals. Fractures were proved in 11% of men and less than 4% of women. Thus, the difference between the sexes was significantly different. Fractures of the clavicle were found most frequently (Fig. 307). The second most frequent fractures were in the forearms (Fig. 308; 309). The fracture incidence in the clavicle, scapula and upper limbs was significantly higher than the fracture incidence in the pelvis and lower limbs (Fig. 310). Most cases of traumatic change took the form of accidental rather than intentionally caused injuries. By no means did our results confirm the stereotypical idea that there would be more combat injuries on the skeletons of men buried at the Mikulčice acropolis.

Following the study of injuries, osteoporotic changes of the femur,<sup>91</sup> heel bone (*calcaneus*) and fourth lumbar vertebra were studied<sup>92</sup> using dual-energy X-ray absorptiometry (DXA). The presence of osteoporotic changes, which are positively correlated with age, makes fractures more likely to occur. A typical example is the fracture of the neck of the femur in older people, which can often cause even death. Compared with young and healthy modern individuals, the assessed individuals did not show an increased risk of fractures.<sup>93</sup> BMD (bone mineral density) indicators were assessed for the Mikulčice population: the values were higher than in the recent population, which seems to indicate that the people from the Great Moravian stronghold had better living conditions than the modern population. Men showed statistically significantly higher BMD values than women. The lowest average BMD was measured in women and men in the 35–50 age group; there is a difference here from the modern population, where the lowest BMD in women is usually measured after menopause, i.e. after the age of 50.

84 Stloukal – Vyhnaněk 1975; 1976; Stránská et al. 2002; Velemínský et al. 2005; Müllerová 2017.

85 Stloukal – Vyhnaněk 1976.

86 E.g. Busscher et al. 2009.

87 E.g. Stloukal – Vyhnaněk 1976; Velemínský et al. 2005; Müllerová 2017.

88 Ibid.

89 Pouлік 1975.

90 Judd 2002.

91 Likovský – Velemínský – Zikán 2008.

92 Kováčová 2012.

93 Ibid.



Fig. 301 Extensive degenerative changes (spondylosis).  
 1 - Spondylosis on the spine and on the thoracic vertebrae of a female older than 40 years, Bulhary, Grave 23; 2 - spondylosis on the three lumbar vertebrae of a juvenile male, Mikulčice-Kostelisko, Grave 1808.



Fig. 302 Degenerative changes of the elbow joint.

1 - Extensive degenerative alterations of the left elbow joint caused by an inflammatory process - the distal articular surface of the humerus and proximal articular surfaces of the radius and ulna - in a middle-aged male, Mikulčice-Kostelisko, Grave 1860; 2 - degenerative changes of the right elbow joint in a male over 50 years, significant osteophytic edges on the articular surfaces of the humerus, vertebrae and ulna, Mikulčice, Grave 479 near Church 3.



1



2



3



Fig. 303 Extensive degenerative changes to both hip joints in a female who died over the age of 40, Mikulčice-Kostelisko, Grave 678.  
 1, 2 - Presence of osteophytic edges in the acetabulum; 3 - ankylosis of the right sacroiliac joint. There is also ankylosis in the pelvis, and accretion of the right sacroiliac joint.



2

0 3 cm

Fig. 304 Extensive degenerative changes of the hip joint in a male older than 40 years, Mikulčice, Grave 193 near Church 2.  
1 - Extensive degenerative changes of the left hip joint; 2 - significant degenerative productive changes which led to this shape of femoral head.

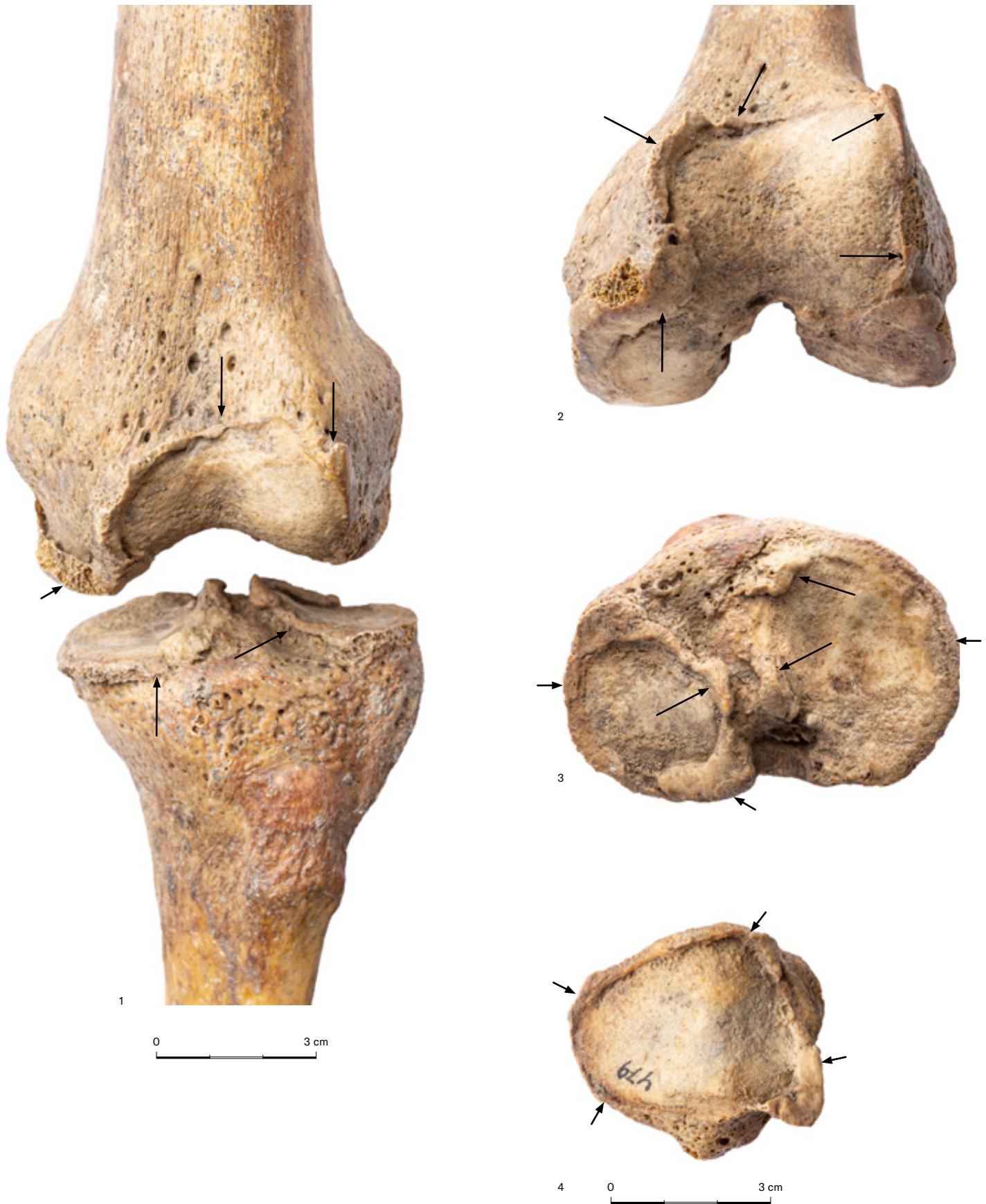


Fig. 305 Incidence of osteoarthritic changes in appendicular joints in a male older than 50 years, Mikulčice, Grave 479 near Church 3.  
 1 - Extensive degenerative changes of the knee joint; 2 - massive osteophytic edges at the articular surfaces of the lateral and medial condyles of the femur; 3 - massive osteophytic edges at the tibia; 4 - massive osteophytic edges at the patella.



Fig. 306 Healed fracture of the right part of the mandibular body of a middle-aged female, Mikulčice, Grave 1034.  
1 - Front view; 2 - side view.



Fig. 307 Healed fractures of the clavicles.  
1 - Healed fracture of the diaphysis of the left clavicle in comparison with the right clavicle of a male older than 50 years, Mikulčice, Grave 401 near Church 3; 2 - healed fracture of the diaphysis of the left clavicle of a male older than 50 years, Mikulčice-Kostelisko, Grave 2003.



1

0 3 cm

2



Fig. 308 Healed dislocated fracture of the diaphysis of the right radius of a male older than 50 years, Mikulčice, Grave 359 near Church 3.

1 - Anterior view; 2 - X-ray picture.



1

Fig. 309 Healed fractures of the diaphysis of the left ulnas.

1 - Post-traumatic pseudo-arthritis of the left ulna caused by a fracture of the diaphysis in a male older than 50 years, Mikulčice, Grave 479 near Church 3; healthy radius on the right; 2 - isolated fracture of the diaphysis of the left ulna in a male older than 40 years - anterior view, Mikulčice, Grave 77/IV near Church 6.



Fig. 310 Healed, dislocated fracture of the right femoral diaphysis in a male older than 40 years, Mikulčice, Grave 1195.  
1 - View of the posterior of a broken femur; 2 - comparison with the left side femur.

## Conclusions: What can be said about the elites?

Both archaeological and anthropological studies indicate that Great Moravian society was strongly stratified, with the social status of women and men differing, and the social statuses of individuals inhabiting the acropolis, the suburbium and the hinterland also differing.

Diet is one of the indicators of the socioeconomic status of early medieval societies. Research has shown that such socioeconomic differences originate as early as during childhood. At the acropolis and the suburbium, infants were usually weaned during their second and sometimes third year of life. On the other hand, the women in the hinterland breastfed longer, and generally weaned their infants during their third year. In general, however, children consumed less animal products than adults. In the case of individuals from the elite classes, the difference in childhood and adult diets was smaller but still noticeable. Children from elite families seem to have benefited to some extent from their elite status, but not as much as adults. These results cannot however be interpreted as clearly reflecting a lower social status of children in the Great Moravian society. A number of societies have strict cultural standards for children's diet. Mikulčice might have well been such a case: the fact that children's food differed in the proportion of animal proteins and contained more millet suggests so.

Despite the differences linked to socioeconomic status, the age of the onset of puberty was 10 to 12 years, the age of the first menstruation in girls was 13 years, and adolescence finished at a later age than today – at 18–20 years.

Differences in socioeconomic status are indirectly reflected by craniofacial fluctuating asymmetry and directional asymmetry. The latter is mainly influenced by biomechanical pressure associated with asymmetrical chewing, and is thus linked to diet and subsistence

adaptation. Examination of the lower jaws of individuals buried at the Mikulčice acropolis (where burials of the elites are assumed) and suburbium (middle class, craftsmen, and suchlike) has proven that the individuals from the acropolis had more strongly developed structures linked with the chewing of tougher food, such as meat. This suggests that members of the elites may have had greater quantities of meat in their diet in comparison to people from the suburbium. This is supported by the results of isotopic analyses. Significant differences between the different social classes were proven based on the state of dentition.<sup>94</sup> The adults from the Mikulčice stronghold showed a lower intensity of cariosity and a lower proportion of intravital tooth loss than the individuals from the hinterland (Prušánky, Josefov). Graves with rich grave goods usually contained remains with a lower number of dental caries lesions and intravital tooth losses. Again, these differences may be influenced by a different quality of diet or hygiene habits. A comparison of the musculoskeletal load of selected group of individuals who on the basis of archaeological material are presumed to be of a higher social class, i.e. an elites, confirmed previous findings from larger burial grounds. It means, men from the upper social classes showed a lower incidence of enthesal changes, and it can therefore be assumed that the work done by the elite males on a daily basis was not as physically demanding as the work done by others. The female members of the elites show a higher incidence of EC, with the differences obvious particularly on the lower extremities. Unfortunately, there are not enough sources concerning the everyday life of Great Moravian women, their actual status and related daily activities. Nonetheless, it has been proven that the women buried at the acropolis were significantly different from those buried in the rest of the agglomeration.

94 Stránská – Velemínský – Velemínská 2008.

## 4.1.1 excursus

# Geometric Morphometrics in Bioarchaeology

– Jana Velemínská, Šárka Bejdová

In the past hundred years, the methodology of biological anthropology has focused on the development of more effective tools that help gain new information in the area of human variability, adaptation, plasticity and evolution.<sup>1</sup> Research has also focused more on practical aspects, such as the application of anthropology in bioarchaeology. The traditional concept of morphometry has gradually been replaced by a new concept of morphometrics, as will be shown later.

Traditional morphometrics are suitable and fully satisfactory for the solution of many issues; however, in some cases the statistical assessment can be burdened by imperfections. The most frequent ones include the fact that many linear dimensions are measured unnecessarily because they are highly interdependent or correlated (such as the concurrent evaluation of several similar height measurements) while bearing the same biological information. Furthermore, there is no information concerning the spatial position of the metric data. Another problem is the measuring of dimensions that are not defined by clearly placed landmarks, but mathematically (e.g. the greatest width/length of the skull), which results in skewed information.

These shortcomings are limited by an approach called geometric morphometrics (GM). This is defined as the combination of geometry and biology.<sup>2</sup> It is a methodology for the collection, processing and analysis of shape variables, which retain the geometric information contained in two or three-dimensional data.<sup>3</sup> Computer tomography and 3D imaging in the form of photogrammetry (creating a 3D image based on photographs), laser or optical scanning provide an anatomical description of external, as well as internal, structures (Fig. 311), thus enabling us to follow issues across topics addressed by traditional morphometric methods.<sup>4</sup>

Most of the important biometric monitoring methods are based on the entering of the starting points of the measurements (landmarks) and subsequent multi-dimensional analyses of the measured dimensions. This methodology enables the use of standard analytical methods for the answering of unusual and specific questions, such as the relationship between the morphology of the human locomotor system and locomotion, nutrition, ageing, socioeconomic status or the reconstruction of the missing parts of bones.<sup>5</sup> When dealing with many issues, it is therefore more informative to work directly with landmark data than with all the dimensions between them, which can be measured or calculated. Landmark data allow the analysis of the form (size and shape at the same time), shape, and

size of objects or allometric relations – the relationships between the speeds of changes of different parts of a whole.<sup>6</sup>

On the basis of the statistical analysis of shape and the visualisation of shape changes, a procedure was standardised – so-called the Procrustes paradigm – which has been followed by countless morphometric studies.<sup>7</sup> This consists of a total of 4 basic methodological steps. The first step is the acquisition of landmarks; the second is the Procrustean analysis. The third step is the testing of hypotheses by means of multivariate statistical methods (e.g. MANOVA and the Hotelling's  $T^2$  test). The last step is the graphic visualisation of results.<sup>8</sup>

This procedure was used for the monitoring of subsistence-dependent changes in tibias. Using three-dimensional geometric morphometrics, we investigated whether anterior tibial curvature mirrors assumed diminishing lower limb loading between prehistoric and industrialised societies, and explored its shape in all three dimensions.<sup>9</sup> Among other assemblage, the medieval dataset includes the tibias of the Great Moravian population from Mikulčice. A series of 3D polygonal meshes were obtained via optical scanning of the skeletal datasets; 3D geometric models were then built using a semi-automatically generated mask, which defined the exterior bone edges precisely, before they were covered with a polygonal mesh surface. The results suggest that anterior crest curvature is a component of tibial design, which shows a consistent temporal trend accompanying the presumed decreasing mechanical forces exerted on the human lower limb. Given the timescale involved and the known phenomenon of declining mobility, such adaptive changes in bone geometry can be interpreted in terms of the diminishing biomechanical demands on the tibia under different living conditions (Fig. 312).

Further applications of GM methods have been used to answer questions of the bioarchaeology of the Great Moravian population in the Early Middle Ages. One such study focused on the relationship between the social status of the early Great Moravian population from the Mikulčice agglomeration and the morphology of the facial skeleton.<sup>10</sup> The issue investigated was whether the morphology of the facial skeleton of this population better reflected the socioeconomic classes based on grave location or the socioeconomic classes defined by grave goods. These individuals were divided on the basis of grave locations into two groups: the acropolis and the suburbium samples. The Mikulčice acropolis sample was presumed to comprise a higher socioeconomic class<sup>11</sup>

1 Mantini – Ripani 2009.

2 Bookstein 1991.

3 Slice 2005.

4 Adams – Rohlf – Slice 2013.

5 Bookstein 1991.

6 Klingenberg – Marugán-Lobón 2013.

7 Adams – Rohlf – Slice 2004.

8 Adams – Rohlf – Slice 2013.

9 Brzobohatá et al. 2019.

10 Bejdová et al. 2018.

11 Poláček 2008d.

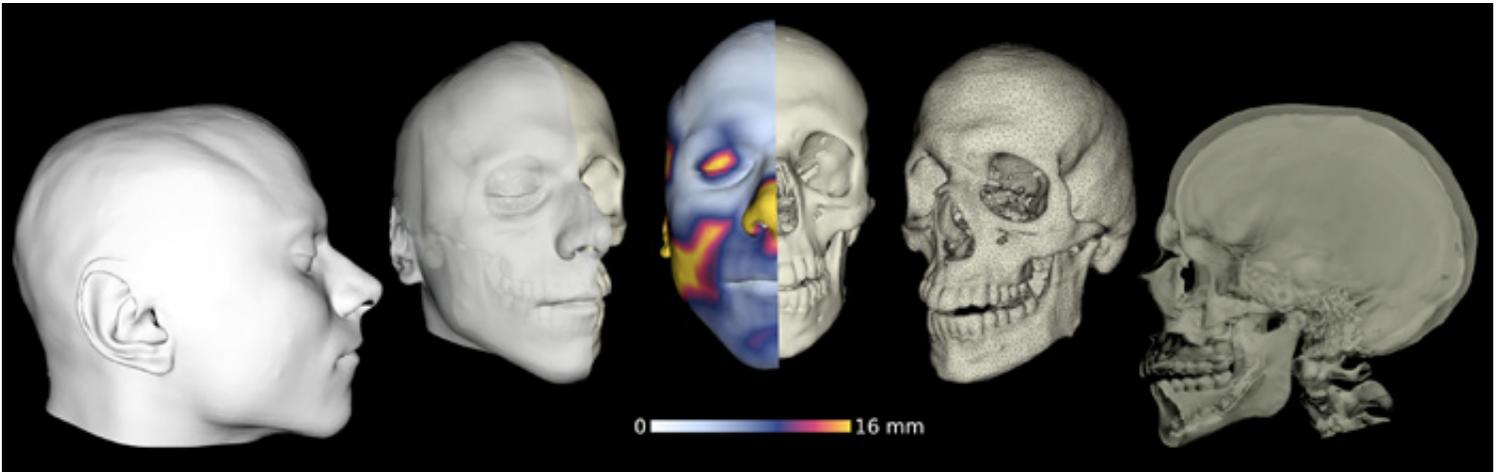


Fig. 311 Segmentation of the bone tissue based on a CT scan of a human head.

The illustration shows not only the development of bone segmentation and the separation of soft tissues from bones, but also the internal structure of the bone. The colour map shows the thickness of the soft tissues. This information is vital for facial reconstruction on the basis of the skull.

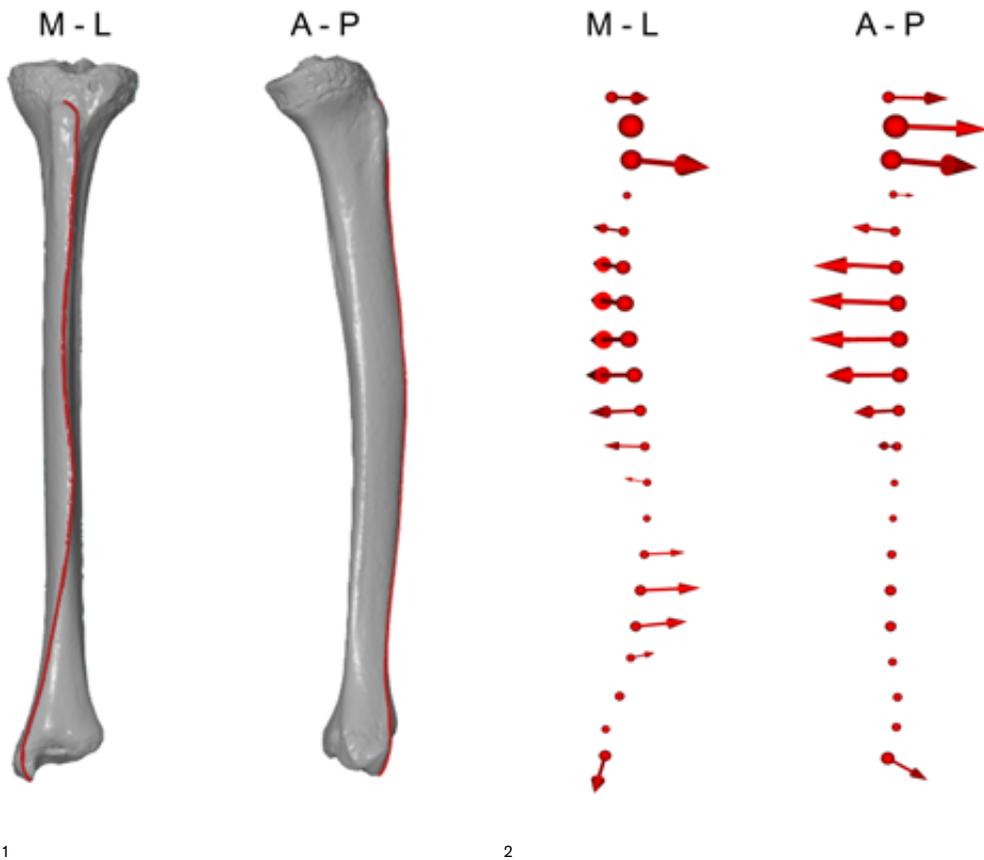


Fig. 312 Monitoring of subsistence-dependent changes in tibias. 1 – A curve placed on a 3D surface mesh of the left tibia in the anterior (left) and medial (right) view representing the anterior crest curvature; 2 – vector plots contrasting the curvature at the two extremes of the chronological range, lines indicate the direction of change from Eneolithic to the 21st-century tibias, the medio-lateral (M-L) and antero-posterior (A-P) planes of a human tibia.

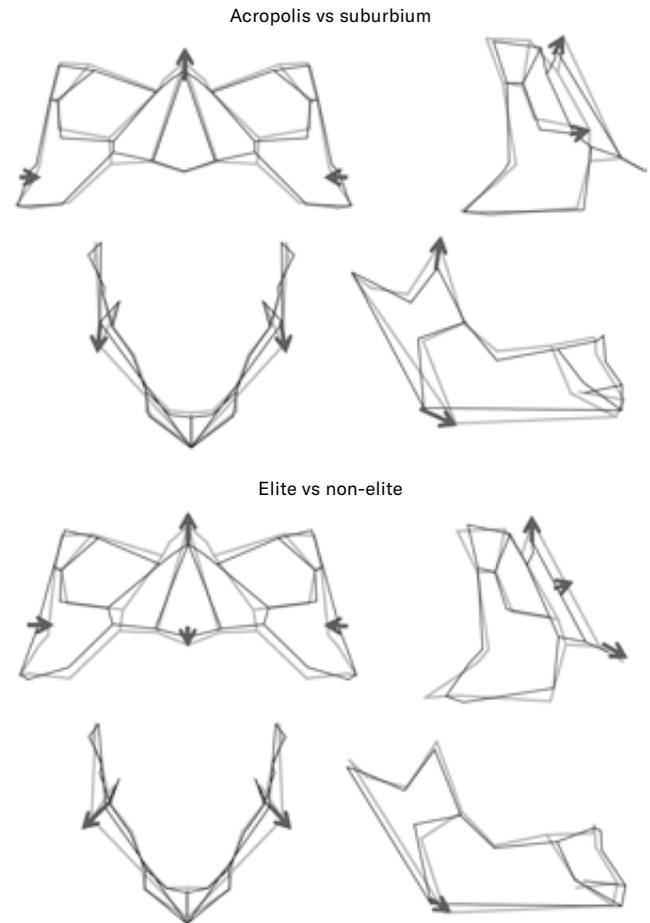
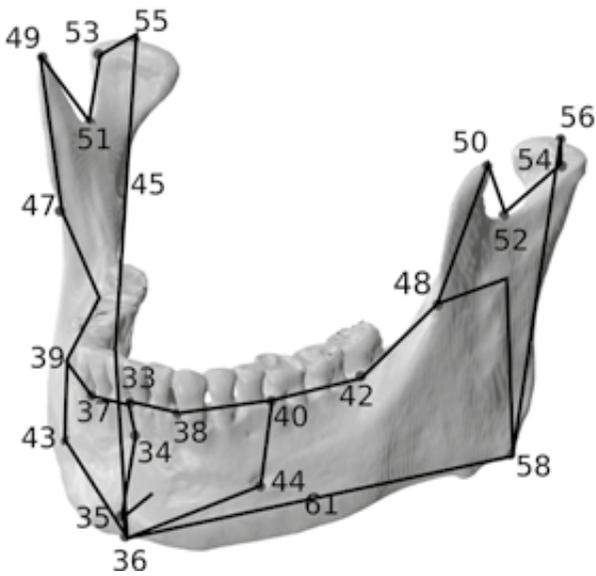
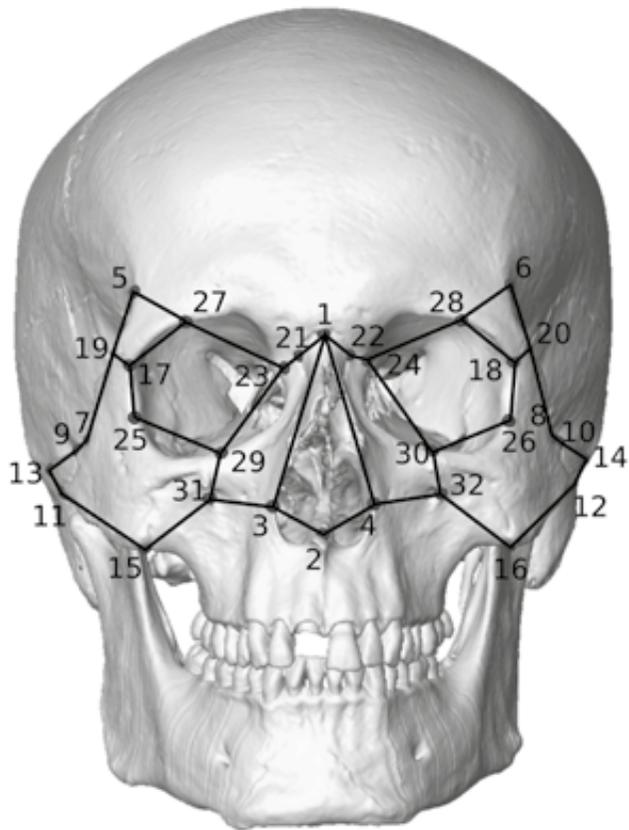


Fig. 313 Landmarks defined on the original 3D model of the upper face and mandible (left) and the shape differences between individuals from the acropolis and the suburbium, and between elite (with luxury grave goods) and non-elite individuals (without luxury grave goods) in the Great Moravian population (right).

Anterior and lateral views of the mean shape of the upper face and upper and lateral views of the mandible. The grey lines show the mean shape of the individuals from the acropolis and the elite individuals; the black lines show the mean shape typical for the suburbium and non-elite individuals. The morphological differences between the groups are magnified six times. Arrows indicate major morphological differences.

and the elite and non-elite individuals were defined by their grave goods. The elite individuals came from graves where some luxury grave goods occurred (gold, swords, silver earrings etc.) and were considered to be members of a higher socioeconomic class. The facial skeleton was divided into the upper face and mandible. Generally, individuals from the higher socioeconomic class have a narrower upper face, and a longer and more prominent nose. This could be caused by the combination of the influence of different living conditions and the different genetic background of investigated samples. Significant differences in the morphology of the mandible are localised in the areas that are most affected by the function of the masticatory muscles. This can be ascribed to different dietary patterns, and therefore different masticatory load<sup>12</sup> between elite and non-elite individuals (Fig. 313).

Another study dealt with the asymmetry of the skulls of the Great Moravian population of Mikulčice in comparison with the current Czech population.<sup>13</sup> The aims of this study were to analyse mastication preference using facial skeleton directional asymmetry and reconstruction of the differences between the subsistence patterns in relation to medieval social stratification, based on

<sup>12</sup> Lieberman 2011.

<sup>13</sup> Velemínská et al. 2019.

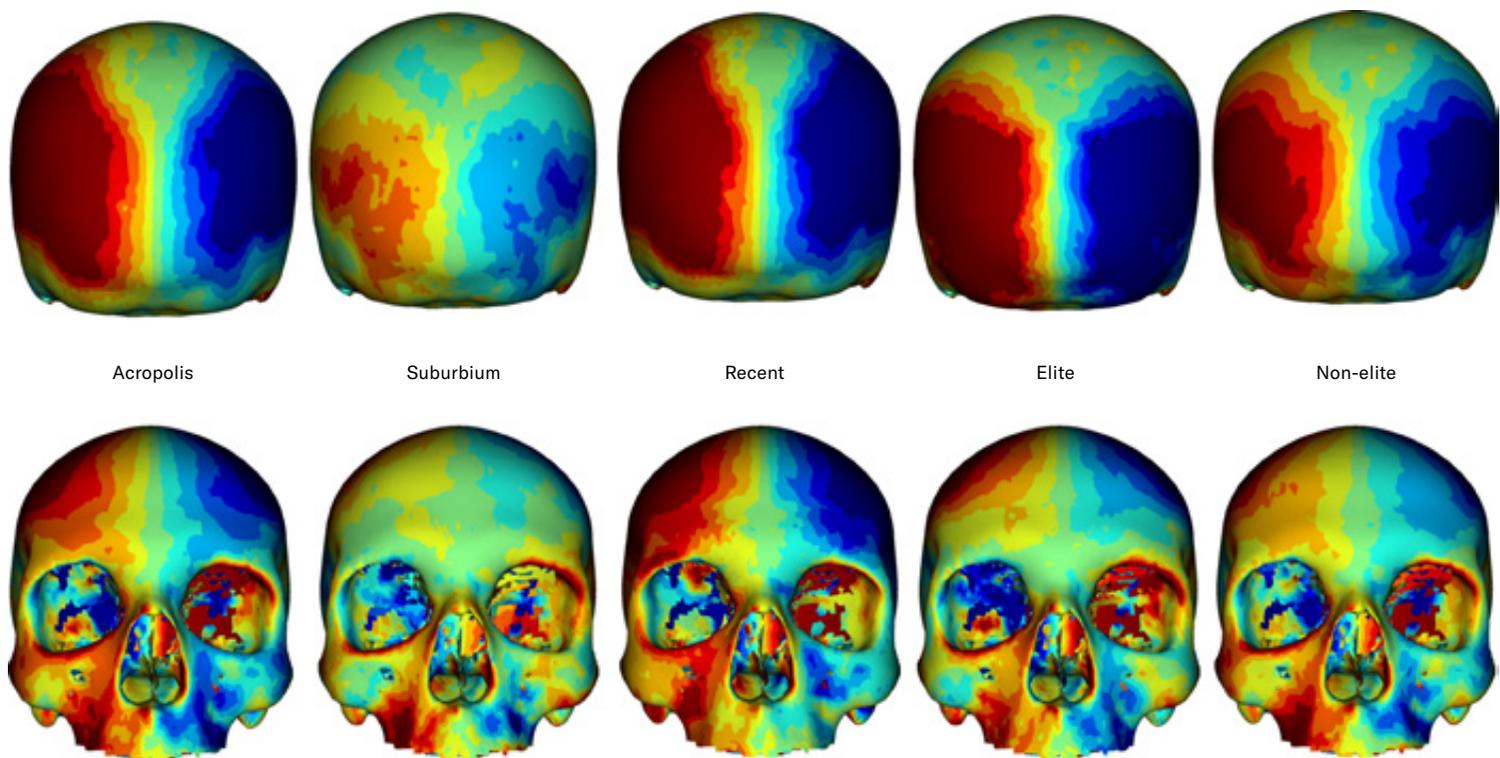


Fig. 314 Mean male cranial directional asymmetry in the Great Moravian population related to social stratification (individuals from the acropolis and the suburbium, and elite and non-elite individuals), and a recent sample (frontal and dorsal views).

Red areas, in front of their corresponding mirrored counterparts, suggest that they may be larger than the corresponding paired counterpart (positive values of asymmetry), while blue areas are smaller and are located behind the aligned mirrored counterpart (negative values of asymmetry).

grave localisation and grave goods. All the investigated population showed positive values of directional asymmetry on the right side of the facial skeleton, including the forehead. On the contrary, negative asymmetry is typical for the back right side of the skull. The positive values of asymmetry in the right part of the facial skeleton could be associated with preferred unilateral right side mastication. These results accord with Ibrová et al. (2017), where directional changes of mandibular landmarks supported a right side chewing preference.<sup>14</sup> Flattening on the back right side of the vault could be caused by neonates remaining in a supine position for prolonged periods. The right bulge of the frontal bone could be the result of the compensatory and adaptive growth of the brain in an antero-posterior direction (Fig. 314).<sup>15</sup>

The least directional asymmetry in both sides of the skulls was found in the sample of the Great Moravian population from suburbium. This means that acropolis nutrition was probably based

on tougher, fibrous material requiring heavier masticatory load. No relationship between grave goods and differences in subsistence was found (Fig. 314).<sup>16</sup>

Geometric morphometrics have a number of indisputable advantages: it allows observation of the geometry of objects, and the outputs of analyses are easy to visualise, be it in the form of morphing, graphs or coloured maps. In conjunction with 3D imaging, it helps create databases of virtual objects that can be analysed at any time later. It is possible to examine the internal structure of the object. This methodological approach has been introduced into other disciplines, such as archaeology, which has given rise to 3D databases of virtual fossils, skeletons and their parts, artefacts and graves. These digital repositories present a less expensive and novel solution to at least some aspects of the problems related to preservation and access by creating a centralised online resource that can include skeletal data.<sup>17</sup>

<sup>14</sup> Ibrová et al. 2017.

<sup>15</sup> Velemínská et al. 2019.

<sup>16</sup> Ibid.

<sup>17</sup> Okumura – Araujo 2019; Wrobel – Biggs – Hair 2019.

## 4.1.2 excursus

# Exotic Diseases in the Great Moravian Population

– Petr Velemínský, Jaroslav Brůžek



Changes in climate have always played an important role in both human life and health. Affecting subsistence, periods of warming and abrupt temperature drops change the relationship between humankind and nature. Substantial attention has been paid to re-emerging infectious diseases known from the past that are once again in the spotlight. Until recently, many of these have been considered exotic or eradicated because of vaccination. Bioarchaeology is able to study only those that leave marks on the skeleton; these are chiefly cases of malaria and diseases such as tuberculosis and leprosy, which are caused by bacteria of the *Mycobacterium* genus.

Leprosy, also called Hansen's disease, is caused by *Mycobacterium leprae* or *Mycobacterium lepromatosis*. It is a chronic, infectious disease that leads to peripheral nerve damage, muscular weakness and skin lesions, and which leaves marks on the bones. Very often it is accompanied by malformations in the facial part of the skull, more precisely in the area of the hard palate and the distal parts of the extremities: the atrophy of the tarsals, metatarsals and phalanges.

Its incubation period is about five years, although symptoms can appear from one to twenty years after infection. Leprosy is transmitted by direct contact with an untreated sufferer or by means of infectious aerosols. Although leprosy has been obliterated in many parts of the world, it is still endemic in a number of tropical countries in Asia, Africa and the Americas. Unfortunately, this infectious disease is not limited to modern populations. In the past, leprosy was a very common, globally spread disease.

Thanks to the combination of bioarchaeology, anthropology and molecular biology, we have information about the genotype variability of *Mycobacterium leprae* (*M. leprae*). Important studies based on the typing of single nucleotide polymorphism (SNP) have found that there are four genotypes of the current *M. leprae*, which are linked to different human populations. It can be assumed that the original predecessor of *M. leprae* was influenced by an evolutionary obstacle that reduced its variability, and *M. leprae* went on to evolve separately in various human populations. The bone changes induced by leprosy can be confused with other diseases, such as sexually transmitted syphilis. For this reason, the real cause of the deformations must be tested by aDNA analysis. The oldest known case of leprosy proved both by bone marks on the skeleton and aDNA testing comes from the Ustyurt plateau in Uzbekistan, and dates to the beginning of the first millennium CE.<sup>1</sup> In Europe, the original leprosy has disappeared, but some populations of red squirrel (*Sciurus vulgaris*) have remained to serve as its natural reservoir.

Fig. 315 Slight porotic changes of the hard palate and signs of inflammation of the nasal wall, Prušánky, Grave 188.

1 Blau – Yagodin 2005; Taylor et al. 2009.



Fig. 316 Lytic lesions on phalanges, Prušánky, Grave 188.



Fig. 317 Manifestations of lytic lesions on talar heads and necks, Prušánky, Grave 188.

Many studies have examined the genetic relations of *M. leprae* from archaeological finds using aDNA methods.<sup>2</sup> This synthetic study concluded that cases of type-3 leprosy have been identified in European countries such as Denmark, Britain, Hungary, Croatia and Turkey. The genotype of the 3K group has also been found in archaeological material from Roman-era Egypt, but also in Central Europe – in Croatia and the Czech Republic.<sup>3</sup> It is assumed that these finds' diversity reflects the past migration of the human populations. Unlike North-Western Europe, Central Europe was affected by the movement of peoples from Central Asia through the old routes, such as the so-called Silk Road. Subtype 3K belongs to the oldest existing lines of *M. leprae* and bears the characteristics of the most recent common ancestor (MRCA), which have not been found in other groups.

The leprosy find from the Great Moravian burial ground in Prušánky also belongs to the 3K subtype. The cemetery at the rural site of Prušánky contained Grave 188 – a possible case of leprosy in a sub-adult aged 12–14.<sup>4</sup> The skull shows atrophy of the anterior nasal spine and the premaxillary area, as well as marked changes to the piriform aperture (Fig. 315). *Cribra orbitalia* is also present. The hard palate shows slight porotic changes and the nasal side shows signs of inflammation. Inflammatory and destructive changes to the lower femur are visible: lytic lesions on phalanges (Fig. 316); bone destruction on the thumb; the taluses have signs of lytic lesions on the head and neck (Fig. 317); destruction and resorption of the joint. Limb changes are not leprosy specific. Powdered bone samples from the epiphyses of a radius and fibula, nasal scrapings and a rib were subjected to molecular analysis. *Mycobacterium leprae* DNA was detected and quantified from four different skeletal sites in individual 188. DNA extraction with N-phenacylthiazolium bromide (PTB) increased DNA recovery. The fibula had the greatest concentration of *M. leprae* DNA, followed by the nasal area and radial epiphysis, with a trace amount in the rib. This indicates a disseminated multi-bacillary (lepromatous) infection. The *M. leprae* from the fibula was further characterised by microsatellite analysis, and demonstrated a distinct molecular profile.<sup>5</sup>

Genetically confirmed cases of leprosy in early medieval Central Europe are also known from the 8th- to 9th-century burial ground at Radasinovci in Croatia.<sup>6</sup> A positive leprosy case from the Austrian site of Zwölfaxing has the same dating.<sup>7</sup> A new find from an early medieval burial ground in Pottenbrunn, Lower Austria, dates to the first half of the 9th century; this belonged to an approximately 25-year-old female.<sup>8</sup> Three positive cases of leprosy are known from the 10th- to 11th-century Hungary, one of which bears the 3K genotype. A number of other cases date to both earlier and later European history.<sup>9</sup> Of particular note is the find of two cases of leprosy from the Czech burial ground at Most, dated to the 12th century,<sup>10</sup> which completes the image of a disease common in the Czech lands.

Archaeologists, palaeopathologists and geneticists, as well as historians, have greatly contributed to the understanding of medieval leprosy. According to Brenner, the reactions to leprosy in medieval Western Europe were complex and often contradictory.<sup>11</sup> Although leprosaria were founded as early as the 8th century, at first they were rather hospitals or hospices than places for the isolation of the infected. Only population growth and an increase in the number of the infected in the 13th century led to the establishment of leprosaria that stemmed from the need to isolate the sick and prevent the spread of the infection. Recent research has contested the predominant earlier opinion that lepers have always been excluded and stigmatised. Instead, they indicate that in the Early Middle Ages, there was a belief that lepers were chosen by God to be redeemed, and therefore they were the subject of sympathy and compassion. However, since the people and the disease varied biologically over time, it is difficult to ascertain whether medieval leprosy had exactly the same form as the current infection of *Mycobacterium leprae*.<sup>12</sup> Brenner quotes Tuati (1998), who argued that in the 13th century the leprosy was not linked with infectious transmission. Only as a result of the outbreak of bubonic plague, the so-called Black Death, from 1347 to 1350, when the fear of its spreading by “miasma” – noxious air – grew, did leprosy begin to be associated with infection. The idea of socially excluded people infected with leprosy originated as late as the 19th century, when leprosy was used as an argument for the segregation of indigenous people in the colonies. This image of leprosy has survived until the present day.

All notions of leprosy and its supposed infectiousness have been based on two recurring schematic opinions formulated in the Early Modern Period and strengthened during the periods of the Enlightenment, Romanticism and Positivism. Most European medical textbooks written before the years 1230–1240 provided no direct inspiration for the preventive segregation.<sup>13</sup> Related to this is the emergence of leprosaria, the existence of which can be traced back as far as the first millennium; however, they became more common later, in the 12th century. Leprosy was widespread in medieval Europe, and its incidence peaked between the 12th and 14th centuries; its occurrence declined until it disappeared completely from Europe in the 16th century.<sup>14</sup> What caused the disappearance of leprosy?

Blondiaux et al. have presented an unusual hypothesis, which says that its demise was caused by demographic factors.<sup>15</sup> They point out the possibility of lower fertility among males infected with leprosy, which frequently leads to infections of the internal genital organs. They state that leprosy patients died at a younger age, and that the mortality of female was higher than that of male. Their results showed a higher survival rate of individuals from higher social strata. However, information obtained by studying the skeletal remains from the leprosaria are insufficient, as they do not allow an exact demographic characterisation of those infected. Without this information, any conclusions about the decline of leprosy in Europe attributed to the selective impact of tuberculosis or to the secondary effects of the 14th century Black Death appear premature.<sup>16</sup>

2 Donoghue et al. 2018.  
3 Watson – Lockwood 2009; Donoghue et al. 2015.  
4 Donoghue et al. 2008.  
5 Ibid.  
6 Watson – Lockwood 2009.  
7 Donoghue et al. 2015.  
8 Gausterer – Stein – Teschler-Nicola 2015.  
9 Donoghue et al. 2018.  
10 Likovský et al. 2006.

11 Brenner 2010.  
12 Ibid.  
13 Touati 2017.  
14 Schuenemann et al. 2018.  
15 Blondiaux et al. 2016.  
16 Ibid.

The hypothesis of a period of overlapping leprosy and tuberculosis infection is supported by clear archaeological examples of dual infection – the simultaneous occurrence of the two diseases. This has been documented in 1st-century Israel, 4th–5th-century Egypt and 7th–11th-century Hungary and Austria.<sup>17</sup> A tuberculosis/leprosy cross-immunity hypothesis has been developed by Crespo et al.<sup>18</sup> The authors suggest that the ability of individuals to develop cross-immunity is based on biological, ecological and social factors, which should not be regarded as acting in isolation, but synergistically. Their complex multifactorial approach led to the conclusion that past populations do not represent homogeneous immunological landscapes, and therefore it is likely that leprosy in medieval Europe did not uniformly decline due to cross-immunity.<sup>19</sup> In retrospect, it may seem that competition between *Mycobacterium leprae* and *Mycobacterium tuberculosis* caused the decline of leprosy and its replacement by tuberculosis.

Therefore, let us briefly comment on the medieval occurrence of tuberculosis in what is now the Czech Republic. The disease caused by *Mycobacterium tuberculosis* is not as exotic as leprosy. Its presence in the Czech lands dates from the Eneolithic period, and the 9th- to 10th-century finds from the Great Moravian burial grounds at Mikulčice, Josefov and Pohansko near Břeclav also prove its existence. In the same period, tuberculosis was present in Bohemia, as shown by finds from Lahovice and Libice.<sup>20</sup> The significant decrease in the number of patients with tuberculosis, especially in the second half of the 20th century, which was undoubtedly linked to vaccination, treatment and prevention, gave the impression that tuberculosis was a matter of the past; in

recent years, however, an increase in the number of tuberculosis cases resistant to antibiotics has been recorded.<sup>21</sup> At the same time, vaccination has been in decline. Therefore, it cannot yet be claimed that tuberculosis has been eradicated. The future will show whether the balance between the host (humans) and the pathogen (*M. tuberculosis*) is maintained.

In the context of warming, malaria should also be mentioned. Research into the history of malaria and its impact on past human civilisations has advanced as a result of developments in the diagnostic techniques identifying malaria in human skeletal remains. The successful bio-molecular detection of the signature of malaria caused by *Plasmodium falciparum* using aDNA from skeletal remains is promising, but concerns a highly virulent form, which seems to not have existed in Central Europe. Similar attempts to detect signs of less virulent forms of malaria caused by *Plasmodium vivax* in early human remains have so far failed.<sup>22</sup> The spread of malaria in Europe in the Holocene mainly concerns *Plasmodium malariae*, a relatively benign form that causes a four-day fever.<sup>23</sup> There is evidence of the presence of endemic *P. vivax* in many wetland areas of England and the Netherlands in the 19th century. Malaria causes anaemic skeletal changes, such as *cribra orbitalia* and *hyperostosis porotica*. These changes have been observed more often in skeletons dated to the Great Moravian period.<sup>24</sup> In the context of climatic oscillations in the past, the existence of some diseases, which have disappeared or are unknown in this area, can be assumed. However, they could reappear in the near future in the context of current global warming and the migration of new mosquito species that act as vectors.

17 Donoghue et al. 2018.

18 Crespo – White – Roberts 2019.

19 Ibid.

20 Likovský et al. 2013; Vargová – Vymazalová – Horáčková 2017.

21 Polcová – Kopecká – Vasáková 2013.

22 Smith-Guzmán 2015.

23 Sallares 2006.

24 E.g. Stloukal – Vyhnánek 1976; Velemínský et al. 2005.

### 4.1.3 excursus

## Population of Great Moravia in the Context of Early Medieval Europe

– Jaroslav Brůžek, Petr Velemínský

Recently, a book entitled “The Backbone of Europe: Health, Diet, Work and Violence Over Two Millennia”,<sup>1</sup> was published that summarises information about the health of Europe’s population over the last 2,000 years in the context of prevalent socioeconomic conditions. The knowledge obtained through the application of a uniform methodology to more than 15,000 individuals from 16 present-day European countries, however, does not encompass any burial ground in the Czech Republic. Our study of the population of Great Moravia is therefore a good opportunity to assess the book’s results and to complement the overall picture of the life of the early medieval population in Central Europe.

The Early Middle Ages is a period that is closely tied, especially in its final phase, to a climatic shift to a warm period. The period from 950 to 1250 in Europe is referred to as the Medieval Climate Optimum. It was a highly turbulent period following the collapse of the Western Roman Empire, which was reflected in the transformation of the societies of the ancient world. After the period of the Germanic and Slavic migrations, and the invasions of Avars and Huns from the east, Vikings from the north, and Arabs from the south, the very first feudal states began to form in Europe, and Christianity became the dominant religion on the continent. There was a demographic revival and intensive trade began.

The paleodemography and health of the past populations are shrouded in ambiguity in terms of age-at-death assessment, which poses a problem well known to biological anthropologists. By no means we can derive life (mortality) tables from the age distribution of skeletons, since this could be affected by migration, fertility, and the selective nature of the archaeological record itself; nevertheless, the age distribution is at least roughly in line with what could be expected from credible model life tables<sup>2</sup> valid for pre-industrial populations.<sup>3</sup> In the pre-industrial period at the continental level, the population growth rate was probably low, and on this scale, the assumption of a stationary population is plausible. Yet, any particular society could differ from this stationariness in terms of increasing or decreasing its growth depending on variations in fertility and mortality. We know that a high birth rate, for instance, increases the relative number of deaths at an early age. We can compensate for these effects if there is archaeological or other information available for estimating the gross birth rate. The key question in the analysis of a burial ground is: to what extent is the group of buried individuals representative of the living population that the group came from? Unfortunately, the answer remains unknown in many

cases.<sup>4</sup> For these reasons, we have limited our conclusions to the statement that the mortality of the Great Moravian population corresponded to the state we know is valid for populations with a life expectancy at birth ranging from 25 to 35 years. By applying new methods at the Great Moravian burial ground at Mikulčice, we successfully identified old individuals over 60 years of age who had previously remained “invisible” in archaeological assemblages.

Such a population hints at an improvement in its health, which would manifest, for example, in better dental health.<sup>5</sup> As expected, the requirements of agriculture played a major role in (or rather, increased) the level of physical activity in both sexes. During the Early Middle Ages, both sexes were exposed to considerable physical demands that led to osteoarthritic changes. For the purpose of our discussion, we consider osteoarthritic changes an important record of physical activity and lifestyle. Due to the strong relationship with the degree of joint stress in particular, these changes are among the most informative variables that we have to evaluate workload and activity. In early medieval European populations, the osteoarthritic score for all joints and vertebral bodies was significantly higher in males than in females,<sup>6</sup> which we have also confirmed in the archaeological assemblages from the Mikulčice agglomeration.

As regards injuries, Djurić et al. were able to link the frequency of fractures in medieval Serbia with agriculture.<sup>7</sup> In medieval Poland, there are also significant differences in fracture prevalence between rural and urban communities in Giecz and Poznań-Sródka.<sup>8</sup> Our results show a greater frequency of fractures in men, but certainly did not confirm the established notion of a greater occurrence of combat injuries in male skeletons buried at the Mikulčice acropolis.

Also, the prevalence of enamel defects (Linear Enamel Hypoplasia – LEH) shows a growing trend in both sexes in European populations, which suggests worse health during the first millennium. Frequencies increased steadily in the subsequent period, up until the end of the pre-industrial era. From Antiquity to the Early Middle Ages, the situation deteriorated, especially in females.<sup>9</sup> Similarly high LEH frequencies as in medieval assemblages from Lithuania and Denmark<sup>10</sup> were observed in the acropolis population in Mikulčice. Interestingly, we observed survival to late age in both skeletons/individuals without enamel hypoplasia and in other assemblages of individuals with multiple hypoplastic defects. This suggests that their immune system was strong enough to survive

1 Steckel et al. 2018.  
2 Ledermann 1969 or Coale – Demeny 1966.  
3 Steckel et al. 2018.

4 Wood et al. 1992.  
5 Davis – McCormick 2008; Garcin et al. 2010.  
6 Williams – Meinzer – Larsen 2018.  
7 Djurić et al. 2006.  
8 Agnew – Betsinger – Justus 2015.  
9 Berezki et al. 2018.  
10 Palubeckaitė et al. 2002.

the “impairment”. However, the presence of hypoplasia is more frequently linked to premature death. A study of a set of skeletons from the Portuguese identified Coimbra collection concluded that early-age “stressors” (LEH) were strongly associated with death at a younger age, and that the socioeconomic milieu in which adults lived is responsible for most of these earlier deaths.<sup>11</sup> We also evaluated this relationship in a set of individuals from cemetery near Church 3 in Mikulčice. The dependence of longevity and presence of LEH was not proven using new life expectancy estimation methods that identify individuals over 60 years of age.<sup>12</sup>

The richness of artefacts buried with an individual as grave goods can be considered an indicator of that individual’s socioeconomic status. However, this criterion did not prove to be very indicative of individual status when examining the skull morphology of the Mikulčice population, since we found no significant differences between individuals buried with luxury artefacts and individuals buried without such items. Doubts about the use of grave goods as an indicator of social status had already been raised on the grounds of the absence of weapons, vessels, and other offerings in graves from the late 9th century at otherwise richly furnished burial grounds. This phenomenon was most likely due to advancing Christianisation and the greater intensity of the application of Christian burial traditions, which, unlike the pagan customs, forbid placing offerings in graves. Thus, even a member of high society could be buried without rich grave goods.

The Early Middle Ages were characterised by rural populations that lived off an economy of agricultural production. We can observe the best nutritional conditions in this period as opposed to later periods in many European regions. For many decades, diet and especially the trophic levels of human consumers have been evaluated using an analysis of stable isotopes isolated from the collagen of skeletal remains. Several attempts have been made to determine the relationship between differentiated access to food and social stratification by using the conventional interpretation of stable isotopic data (C, N) from archaeological skeletal sets. However, the raw data of  $\delta^{13}\text{C}$ - and  $\delta^{15}\text{N}$  ratios do not allow direct detection of different dietary regimes. The success of these studies is sometimes limited, since the correlation of biological characteristics and social status is not always strong. This requires special adjustments of the data, and only a modelling application can reveal more details. Czermak’s dissertation examined four early medieval burial grounds in Bavaria, where the remains of “common” people were buried in ordinary row burials, and the “apparent social elites” were buried at small, separate burial grounds. However, the ratios of stable collagen isotopes did not differ between the socially privileged and the commoners. There were only slightly increased  $\delta^{15}\text{N}$  ratios identified in individuals from richly furnished burials, and there was little difference between burials from the elite and common burial grounds. Limitations due to a small number of sets and inconsistent methodology, as well as the absence of reference data on fauna, prevent us from making direct comparisons across Central Europe.<sup>13</sup>

Nevertheless, we have obtained important results for understanding the diet of the Great Moravian population in the Early Middle Ages. The diet of children differed from that of adults: children ate more millet and less animal protein. We also discovered a significant relationship between isotopic nitrogen values and socioeconomic status in males, but not in females. Social differences in diet formed during childhood. The elite ate more animal protein than non-elite individuals. We also identified diachronic dietary changes, with an increased consumption of millet in both sexes and lower consumption of animal protein among males in the 11th century. It appears that social status determined the rate of consumption of animal protein far more in men than in women. These results confirm that Great Moravia was a highly socioeconomically stratified society.<sup>14</sup>

Body height and diet are mutually correlated, even though the interactions between an individual’s genetic potential and environmental data are highly complex and not additive. Body height in adulthood therefore depends on a number of parameters that are not easily detectable from the skeleton. In the Early Middle Ages in Central and South-Eastern Europe, we also observed the highest values for femur length,<sup>15</sup> which best correlates to body height. There is a spectrum of regression functions that allows us to estimate stature using limb length,<sup>16</sup> but body height estimates are relatively inaccurate proxies for assessing health. Therefore, biological anthropologists commonly use raw data on the length of the long bones.<sup>17</sup> Estimating anatomical body height on the basis of the entire skeleton is more accurate than regression analyses. In the Great Moravian population from Pohansko near Břeclav, the average body height of adult men was 167 cm with a range of 152 to 185 cm, and of adult women 155.5 cm with a range of 145 to 167 cm.<sup>18</sup> Approximately the same values are reported for the elite individuals from the Mikulčice acropolis, as determined by regression analysis,<sup>19</sup> where men had an average body height of 170 cm (ranging from 163 to 178 cm) while women were on average 161.5 cm tall (ranging from 156 to 166 cm). Differences in body height between different localities or between social groups are minimal and insignificant. However, if we compare the Great Moravian population with the recent, late 20th-century population, there are very significant differences in both sexes, where the differences are about 5 cm in men and 4.5 cm in women in favour of the recent population.

We can conclude by stating that “The Backbone of Europe: Health, Diet, Work and Violence Over Two Millennia”<sup>20</sup> by Steckel et al. points to the declining health of Europe’s population even from the Early Middle Ages. These indicators also show an average improvement in living conditions after the fall of the Roman Empire. In the research of Great Moravian populations of the Early Middle Ages, we have no opportunity to study diachronic changes in biological characteristics and health during previous periods. The results we have presented completely fit into the mosaic established on the European continent. Is this plausible?

14 Kaupová et al. 2018; Jílková et al. 2019.

15 Meinzer – Steckel – Baten 2018.

16 E.g. Sládek et al. 2015; Siegmund 2012.

17 Mays 2016.

18 Sládek et al. 2015.

19 Dobisíková – Katina – Velemínský 2008.

20 Steckel et al. 2018.

11 Roberts – Steckel 2018.

12 Zazvonilová – Velemínský – Brůžek 2020.

13 Jankauskas – Grupe 2018.

As Hugo Cardoso and Susana Garcia wrote, there is a traditional European notion of history that depicts the Middle Ages as the “Dark Ages”. This concept appears to originate in the perspective that the Middle Ages were dominated by religion combined with social decline, unscientific views, and hardship among rural populations. However, historians and archaeologists have already done a great deal to rectify this image.<sup>21</sup> According to the results of bio-archaeology, people in the Early Middle Ages lived in surprisingly favourable conditions and exhibited unexpectedly good health. Therefore, the currently prevalent view of the Early Middle Ages as the age of darkness is likely to give way; this period was not as dark on our territory as it seemed.

21 Cardoso – Garcia 2009.



# Figures References and Credits

Cover photo: J. Foltýn.

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## 1.1 Moravia Under the Mojmirid Dynasty in the 9th Century

Figure on the chapter opening page (without labelling): After Kouřil ed. 2014, 356, Fig. 130; photo by J. Foltýn.

Fig. 1. After Poláček 2018d, 133; modified by D. Kalhous, graphic design by Z. Tuka.

Fig. 2. Source: Württembergische Landesbibliothek Stuttgart (WLBS). Sig. Codb. bibl. fol. 23 [10] – 3v, 265 × 170 mm. [online]. [Accessed: 2020-06-02], available from: <http://digital.wlb-stuttgart.de/purl/bsz307047059>.

Fig. 3. Source: Universiteitsbibliotheek Utrecht. HSS: Hs 32 dl 1-2 Noc; 92 fol.: ill.; 330 × 255 mm. [online]. [Accessed: 2020-06-02], available from: <http://dspace.library.uu.nl/handle/1874/284427>.

### 1.1.1 Europe in the 9th Century

Fig. 4. After Kouřil ed. 2014, 356, Fig. 130; photo by J. Foltýn.

Fig. 5. After Videman 2015, 204, Fig. 6.

Fig. 6. After Geschichte ist alles; modified by D. Kalhous, graphic design by Z. Tuka.

Fig. 7. After Fried 2008, 122, Map 9; modified by D. Kalhous, graphic design by Z. Tuka.

Fig. 8. After Fried 2008, 123, Map 10; modified by D. Kalhous, graphic design by Z. Tuka.

Fig. 9. Source: Bibliothèque nationale de France. Département de Manuscrits. Latin 1. Fol. 423r. Biblia [Bible de Vivien, dite première Bible de Charles le Chauve] [online]. Gallica. [Accessed: 2020-06-02], available from: <https://gallica.bnf.fr/ark:/12148/btv1b8455903b/f853.item#>.

Fig. 10. After Talkingpointsmemo.com 2019; modified by D. Kalhous, graphic design by Z. Tuka.

Fig. 11. Source: E-codices 1, St. Gallen, Stiftsbibliothek. Cod. Sang. 1092: Plan of Saint Gall. 1 f. · c. 112 × 77.5 cm. [online]. E-codices. [Accessed: 2020-11-04], available from: <https://www.e-codices.unifr.ch/en/list/one/csg/1092>.

### 1.1.2 Frankish Integration of Other Peripheral Regions

Fig. 12. After Berg et al. 2012; modified by D. Kalhous, graphic design by Z. Tuka.

Fig. 13. After Dehio – Bezold 1887, Pl. 50.

Fig. 14. Source: E-codices 2, Sarnen, Benediktinerkollegium. Fragm. I. 1: Liber traditionum fuldensis. Parchment · 4 pp. · 15.5 × 10.5 cm [online]. E-codices. [Accessed: 2020-08-04], available from: <https://www.e-codices.unifr.ch/en/list/one/bks/Fragm-I-0001>.

Fig. 15. After Lanvallay et son histoire; modified by D. Kalhous, graphic design by Z. Tuka.

Fig. 16. Source: Bretagne est Univers, Musée de Bretagne, Rennes, Ille-et-Vilaine, France. Hauteur 38.7 cm, largeur 31.2 (fermé) cm, épaisseur 6.8 cm. [online]. [Accessed: 2020-05-28], available from: <http://www.collections.musee-bretagne.fr/ark:/83011/FLMjo131011>.

### 1.1.3 Written Sources

Fig. 17. Source: Slovak National Museum – Museum of History in Bratislava. Collection Fund, Evidence No. H 42965, Inv. No. UZ 5/97. Facsimile. Gospel Book of Cividale with the evidence of the name Svatopluk.

Fig. 18. Source: E-codices 3, Bern, Burgerbibliothek. Cod. 720.1. Annales Fuldenses (fragment) / f. 1v. [online]. E-codices. [Accessed: 2020-05-28], available from: <https://www.e-codices.unifr.ch/en/bbb/0720-1/1v/0/Sequence-42>.

### 1.1.4 Settlement Terminology in the Annales Fuldenses

Fig. 19. Author D. Kalhous, graphic design by Z. Tuka.

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## 1.2 In Search of Identity: The Mojmirid Dynasty, Moravians and the Nature of Power

Figure on the chapter opening page (without labelling): After Kouřil ed. 2014, 356, Fig. 129; photo by J. Foltýn.

Fig. 20. Author D. Kalhous, graphic design by Z. Tuka.

### 1.2.1 Carolingian Imports in Great Moravia

Fig. 21. 1 – After Kouřil ed. 2014, 460, Fig. 388; photo by J. Foltýn; 2, 3 – after Staňa 2006, Fig. 68.

Fig. 22. 1 – Photo by M. Bárta; 2 – photo by M. Bárta and M. Foltýn.

Fig. 23. 1, 2 – After Kouřil ed. 2014, 372, Fig. 168: 2, 3; photo by J. Foltýn; 3, 4 – After Kouřil ed. 2014, 368, Fig. 164: 2, 3; photo by J. Foltýn.

Fig. 24. After Kouřil ed. 2014, 387, Fig. 188: 1; photo by J. Foltýn.

### 1.2.2 The Frankish Aristocracy and Its Representation

Without figures.

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## 1.3 Church Organisation as a Bearer of New Culture and Innovations and Potential Support of Central Power

Figure on the chapter opening page (without labelling): Source: Slovak National Museum – Museum of History in Bratislava. Collection Fund, Evidence No. H 42981, Inv. No. UZ 22/98. Facsimile. Nomocanon – Great Moravian rule of law.

Fig. 25. After Fried 2008, 591, Map 19; modified by D. Kalhous, graphic design by Z. Tuka.

Fig. 26. Source: Slovak National Museum – Museum of History in Bratislava. Collection Fund, Evidence No. H 42979, Inv. No. UZ 4/97. Facsimile. Bulla Industriae tuae. Parchment, 24.3 × 33.5 cm.

Fig. 27. Source: Slovak National Museum – Museum of History in Bratislava. Collection Fund, Evidence No. H 42981, Inv. No. UZ 22/98. Facsimile. Nomocanon – Great Moravian rule of law. Parchment, 32.2 × 22 cm.

### 1.3.1 Early Medieval Sacral Area in Uherské Hradiště – Sady

Fig. 28. After Galuška et al. 2018, separately inserted plan.

Fig. 29. After Kouřil ed. 2014, 445, Fig. 349; photo by J. Foltýn.

### 1.3.2 Written Sources of Ecclesiastical History

Fig. 30. Source: Slovak National Museum – Museum of History in Bratislava. Collection Fund, Evidence No. H 42983, Inv. No. UZ 14/98. Facsimile. Uspenskij Sbornik. Parchment, 33 × 52 cm.

Fig. 31. Source: Slovak National Museum – Museum of History in Bratislava. Collection Fund, Evidence No. H 42975, Inv. No. UZ 17/98. Facsimile. The Papal letter to Methodius from 881.

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## 1.4. Basic Principles of the Great Moravian Economy

Figure on the chapter opening page (without labelling): Photo by M. Bárta.

Fig. 32. Authors M. Hlavica and R. Procházka, graphic design by Z. Tuka.

### 1.4.1 Market System

Fig. 33. Based on Procházka 2009, Table 1; Šalkovský 2015, Fig. 6; Macháček 2001b, Fig. 186; Dresler 2016, Fig. 197. Authors M. Hlavica and R. Procházka, graphic design by Z. Tuka.

### 1.4.2 Axe-Shaped Currency Bars

Fig. 34. Photo by J. Foltýn.

Fig. 35. Authors M. Hlavica and R. Procházka, graphic design by Z. Tuka.

Fig. 36. Authors M. Hlavica and R. Procházka, graphic design by Z. Tuka.

### 1.4.3 Decentralised Economic and Power Relations in Great Moravia

Without figures.

## 2.1 River Morava and the Central Great Moravian Agglomerations

Figure on the chapter opening page (without labelling): Photo by J. Šindelář.

Fig. 37. After Poláček 2018d, 65, Fig. 1.

Fig. 38. After Poláček 2018a, 12, Fig. 7; photo from the Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, Inv. No. M-FT-111242407.

Fig. 39. After Poláček 2018a, 17, Fig. 12.

Fig. 40. After Poláček 2018d, 63, Fig. 1; based on Havlíček – Poláček – Vachek 2003, Fig. 9.

### 2.1.1 Large-Scale Excavations of Silted-Up River Branches

Fig. 41. Photo from the Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno.

Fig. 42. After Poláček 2018d, 59, Fig. 4; photo from the Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, Inv. No. M-FT-101526400.

Fig. 43. After Poláček 2018d, 21, Fig. 2.

Fig. 44. Photo by O. Marek, Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, Inv. No. M-FT-111990803.

Fig. 45. Photo by M. Havelka, Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, Inv. No. M-FJ-111926306.

### 2.1.2 Settlement Agglomeration Staré Město – Uherské Hradiště

Fig. 46. After Galuška 2011b, Abb. 2, graphic design by P. Čáp, Z. Pavková and Z. Tuka.

### 2.1.3 Settlement Agglomeration Pohansko Near Břeclav

Fig. 47. Source: Quaternary geological maps from Czech Geological Survey (Česká geologická služba), graphics by P. Čáp, Z. Pavková and Z. Tuka.

Fig. 48. After Macháček 2007b, 30, Fig. 2.

### 2.1.4 Settlement Agglomeration Mosapurc/Zalavár, Hungary

Fig. 49. After Herold 2012, 71, Fig. 8.

Fig. 50. After Herold 2012, 70, Fig. 7 and after Zalavár Historical Memorial Park [online]. [Accessed: 2020-11-02], available from: <http://www.zalavarpark.hu/terkep.html>.

## 2.2 Settlement Agglomeration Mikulčice – Kopčany: Research, Topography and Settlement Development

Figure on the chapter opening page (without labelling): After Poláček 2018a; source: Vojenský geografický a hydrometeorologický úřad Dobruška, Ministerstvo obrany ČR (Military Geographical and Hydrometeorological Office in Dobruška, Ministry of Defense of the Czech Republic).

Fig. 51. After Poláček 2018c, 6–7; photo from the Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, Inv. No. M-FT-110511906.

Fig. 52. After Poláček 2018c, 9, Fig. 2.

Fig. 53. After Poláček 2018c, 11, Fig. 2.

### 2.2.1 Mikulčice Research Phases

Fig. 54. After Poláček 2018c, 114–115.

### 2.2.2 Settlement Development and Chronological Criteria

Fig. 55. Graphic design by Z. Pavková and Z. Tuka, partly after Poláček 2018c, 76, Fig. 2.

Fig. 56. After Poláček 2008b, 24, Fig. 3.

Fig. 57. After Poláček 2008b, 25, Fig. 4.

### 2.2.3 Settlement Complex Za Jazerom pri Sv. Margite in Kopčany

Fig. 58. After Baxa 2010, 137, Fig. 1.

Fig. 59. After Baxa 2010, 143, Fig. 6.

## 2.3 Island Stronghold

Figure on the chapter opening page (without labelling): Photo by L. Poláček.

Fig. 60. Graphic design by P. Čáp and Z. Tuka.

Fig. 61. After Poláček 2018d, 25, Fig. 3.

Fig. 62. 1 – After Poláček 2008b, 26, Fig. 1, author R. Procházka, drawing by R. Skopal; 2 – authors L. Poláček and R. Skopal, drawing by R. Skopal; 3 – after Hladík et al. 2014a, 121, Fig. 26.

### 2.3.1 Design of the Great Moravian Rampart in Mikulčice

Fig. 63. Reconstruction after Mazuch 2014, 63, Fig. 34, photo and visualisation by J. Šindelář, graphic design by Z. Pavková and Z. Tuka.

### 2.3.2 Acropolis Rampart (Excavation R 2012-I and II)

Fig. 64. After Mazuch 2014, 41, Fig. 20.

Fig. 65. After Mazuch 2014, 52, Fig. 30.

### 2.3.3 Outer Bailey Rampart (Excavation R 2012-III and R 2018)

Fig. 66. After Hladík et al. 2014a, 90, Fig. 17.

Fig. 67. Photo and 3D visualisation by J. Šindelář.

### 2.3.4 Building Material of the Great Moravian Rampart

Fig. 68. After Hladík – Mazuch – Poláček 2020, 88, Fig. 1, graphic design by Z. Tuka.

## 2.4 Princely Residence and Proto-Town

Figure on the chapter opening page (without labelling): Photo by J. Šindelář.

Fig. 69. After Poláček 2018c, 68–69.

Fig. 70. After Poláček 2008b, 34, Fig. 1.

Fig. 71. After Poláček 2018d, 59, Fig. 3.

Fig. 72. After Poláček 2018d, 41, Fig. 1.

Fig. 73. Graphic design by P. Čáp, Z. Pavková and Z. Tuka.

Fig. 74. Graphic design by P. Čáp, Z. Pavková and Z. Tuka.

### 2.4.1 Palace: Excavations in 1957 and 2010

Fig. 75. Photo by J. Škvařil, Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, Inv. No. M-FT-110803601.

Fig. 76. Graphic design by P. Čáp and Z. Tuka.

Fig. 77. Photo and 3D visualisation by J. Šindelář.

Fig. 78. Photo by L. Poláček.

### 2.4.2 Floor Backfills as an Evidence of Surface Buildings

Fig. 79. Photo by J. Škvařil, Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, Inv. No. M-FT-100927300.

Fig. 80. After Poláček 2018d, 81, Fig. 5, graphic design by P. Čáp and Z. Tuka.

Fig. 81. Photo by L. Poláček.

### 2.4.3 Residential Area Near Church 7 in the Suburbium and the Question of Courts

Fig. 82. Graphic design by P. Čáp and Z. Tuka.

Fig. 83. Photo by L. Poláček.

Fig. 84. Photo by J. Foltýn.

### 2.4.4 Evidence of the Main Road in the Vicinity of Church 6 in Těšícký Les

Fig. 85. After Poláček 2018d, 47, Fig. 3.

Fig. 86. After Poláček et al. 2019, Fig. 6.

### 2.4.5 Magnate Court at Pohansko Near Břeclav

Fig. 87. After Dostál 1975, 24, Fig. 3.

## 2.5 Ecclesiastical Centre and Place of Worship

Figure on the chapter opening page (without labelling): After Poláček 2018a, Fig. 22.

Fig. 88. After Poláček 2014b, 93, Fig. 2.

Fig. 89. 1 – After Poláček 2018d; 2–5 – after Koch 1998, 66–67, Fig. 8, 10, 16, 18.

Fig. 90. 1 – After Poláček 2018d; 2, 3 – after Dehio – Bezold 1887, Pl. 4, 40; 4 – source: Eglise Saint-Donat, Zadar. Plan, in: Wikimedia commons, the free media repository. [online]. 10:06, 15 November 2017 [cit. 2020-20-06], available from: <https://commons.wikimedia.org/wiki/File:ZadarPlan.png>; 5 – source: Plan de l'oratoire carolingien de germigny-des-Prés, in: Wikimedia commons, the free media repository. [online]. 22:50, 15 January 2009 [cit. 2020-20-06]. Available from: [https://commons.wikimedia.org/wiki/File:Plan\\_germigny\\_carolingien.svg](https://commons.wikimedia.org/wiki/File:Plan_germigny_carolingien.svg); 6 – after Untermann 2006, 149, Fig. 126, 1.

Fig. 91. After Poláček 2018a, Fig. 28, photo by J. Krejčí, Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, Inv. No. M-FT-110975315.

Fig. 92. After Poláček 2014b, photo by L. Poláček.

Fig. 93. After Poláček 2018d, 39, Fig. 3.

Fig. 94. After Poláček 2010, Fig. 5, graphic design by Z. Pavková and Z. Tuka.

Fig. 95. After Poláček 2010, Fig. 5, graphic design by Z. Pavková and Z. Tuka.

### 2.5.1 Revision Excavation of Mikulčice Churches in 2008–2013

Fig. 96. Photo by L. Poláček.

Fig. 97. Photo and visualisation by J. Šindelář.

### 2.5.2 Interior Graves of Church 3

Fig. 98. Photo and visualisation by J. Šindelář, graphic design by Z. Pavková.

Fig. 99. After Poláček 2020, photo from the Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, Inv. No. M-FT-100736400.

Fig. 100. After Galuška – Poláček 2006, drawing by R. Skopal.

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## 2.6. Specialised Craft Production

Figure on the chapter opening page (without labelling): Photo by J. Foltýn.

Fig. 101. After Eilbracht 1999, Fig. 2; slightly modified.

Fig. 102. After Armbruster 2002, Fig. 36.

Fig. 103. After Wolters 1987, Fig. 1, 2.

Fig. 104. 1, 3 – After Whitfield 2004, Fig. 7, 18; 2 – after Whitfield 1998, Fig. 3; slightly modified; 4 – after Brepohl 1999, Fig. 9. 1.

### 2.6.1 Fine-Metal Workshop Near Church 5

Fig. 105. Photo by J. Škvařil, Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, Inv. No. M-FT-111089109.

Fig. 106. After Klanica 1974, Fig. 28; graphic design by P. Čáp and Z. Pavková.

Fig. 107. Graphic design by P. Čáp and Z. Pavková.

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## 2.7 Food and Drink – A Reflection of Social Stratification

Figure on the chapter opening page (without labelling): Drawing by P. Dvorská, after Látková 2019, 57.

Fig. 108. Photo by M. Látková.

Fig. 109. Author M. Látková.

Fig. 110. Photo by M. Látková.

Fig. 111. Author M. Látková, graphic design by Z. Pavková and Z. Tuka.

### 2.7.1 Acquisition of Plant Material

Fig. 112. Photos by V. Šálek.

### 2.7.2 Occurrence of “Luxury” Crops in the Settlement Areas

Fig. 113. Author M. Látková.

### 2.7.3 Size or Shape? Grapevine Pips From an Archaeobotanical Perspective

Fig. 114. Scheme based on Mangafa – Kotsakis, 1996, modified by M. Havlíčková; photo by M. Látková.

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## 2.8 Animal Products in Mikulčice Diet

Figure on the chapter opening page (without labelling): After Poláček 2018d, 91, Fig. 7, 8; photo by J. Foltýn.

Fig. 115. Author L. Kovačiková. The measurements of domestic pig bones from the Neolithic were defined by Albarella – Payne 2005.

Fig. 116. Author L. Kovačiková.

Fig. 117. Skeleton scheme after Helmer 1987, modified by L. Kovačiková.

Fig. 118. Author L. Kovačiková.

Fig. 119. Author L. Kovačiková.

Fig. 120. Author L. Kovačiková.

Fig. 121. Photo by O. Trojánková.

### 2.8.1 Bone Collagen Memory: Stable Isotope Analysis

Fig. 122. Author L. Kovačiková.

### 2.8.2 European Weatherfish: Cobitid Fish Documented by Willow Fish Traps, Not by Bones

Fig. 123. After Mazuch 2003, 373, Fig. 4; drawing by R. Skopal.

Fig. 124. Drawing by R. Skopal.

### 2.8.3 Introducing the Carp

Fig. 125. Photo by L. Kovačiková.

Fig. 126. Drawing by R. Skopal.

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## 2.9 Economic Hinterland of the Power Centre and the Question of Subsistence

Figure on the chapter opening page (without labelling): After Hladík – Mazuch – Poláček 2020, 11, Fig. 4, drawing by R. Skopal.

Fig. 127. After Hladík – Mazuch – Poláček 2020, 5, Fig. 1; author M. Hladík.

Fig. 128. After Hladík – Mazuch – Poláček 2020, 8, Fig. 1; author M. Hladík.

### 2.9.1 The Great Moravian Settlement in Mikulčice-Trapíkov

Fig. 129. After Hladík – Mazuch – Poláček 2020, 41, Fig. 2; author M. Hladík.

### 2.9.2 The Great Moravian Settlement in Mikulčice-Podbřežníky

Fig. 130. After Hladík – Mazuch – Poláček 2020, 37, Fig. 2; author M. Hladík.

### 2.9.3 From the Harvest to the Loaf

Fig. 131. Drawing by R. Skopal.

Fig. 132. Drawing by R. Skopal.

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## 3.1 Ninth- and Tenth-Century Swords in Moravia: Weapons, Top Smithery Products and Symbols of Power

Figure on the chapter opening page (without labelling): Reconstruction by P. Bárta, photo by T. Man.

Fig. 133. Drawing by J. Hošek.

Fig. 134. Photos by J. Hošek and J. Košta.

Fig. 135. Drawing by J. Hošek.

Fig. 136. Map by J. Hošek and J. Košta.

Fig. 137. Graphic design by O. Marek and P. Čáp.

Fig. 138. Photos by J. Hošek and J. Košta.

Fig. 139. Photo and drawing by J. Hošek.

Fig. 140. Drawing by J. Hošek.

Fig. 141. Photos by J. Hošek and J. Košta.

Fig. 142. Drawing by K. Urbanová.

Fig. 143. Photos by P. Dresler and J. Košta.

Fig. 144. Photo by J. Hošek.

Fig. 145. 1, 2 – Photos by J. Škvařil, Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, M-FT-100550200 and M-FT-100733000.

Fig. 146. Graphic design by J. Košta.

### 3.1.1 Early Medieval Sword Blade Design

Fig. 147. Photos and drawings by J. Hošek.

Fig. 148. Drawings by J. Hošek.

Fig. 149. Photos by J. Košta and J. Hošek.

Fig. 150. Drawing by J. Hošek.

### 3.1.2 Sword Blade Marks and Inscriptions

Fig. 151. Drawings and photos by J. Hošek.

Fig. 152. Drawings by J. Košta and J. Hošek.

Fig. 153. Photos by J. Košta and J. Hošek.

Fig. 154. Drawings and photos by J. Hošek and J. Košta.

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## 3.2 Ostentatious Spurs From Mikulčice

Figure on the chapter opening page (without labelling): Photo by M. Bárta.

Fig. 155. Graphic design by P. Čáp and Z. Pavková.

Fig. 156. After Bialeková 1977, Fig. 2.

Fig. 157. Photo by J. Foltýn.

Fig. 158. After Eggenstein et al. 2008, Fig. 34.1.

Fig. 159. Photo by J. Foltýn.

Fig. 160. After Wamers – Brandt 2005, 60; Eggenstein et al. 2008, Fig. Frontispiece; Pohle – van den Brink – Ayooghi eds. 2014, 46, 47.

Fig. 161. Photo by J. Foltýn.

Fig. 162. Photo by M. Fořt.

Fig. 163. Photo by J. Foltýn.

Fig. 164. Photo by M. Bárta.

Fig. 165. Photo by J. Foltýn.

### 3.2.1 Spurs and the Central-European Slavs

Fig. 166. Photo by J. Foltýn.

### 3.2.2 Grave Goods That Include Two Pairs of Spurs

Fig. 167. Photo by J. Škvařil, Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, M-FT-100550600.

### 3.2.3 Lead Spur Matrix

Fig. 168. Photo by M. Bárta.

Fig. 169. Cast made by M. Fořt, photo by M. Bárta.

Fig. 170. Drawing after Jelovina 1986, Pl. VI; photo by M. Bárta.

### 3.3 Earrings as Typical Representatives of the "International" Fashion

Figure on the chapter opening page (without labelling): After Kouřil ed. 2014, 409, Fig. 240; photo by J. Foltýn.

Fig. 171. After Dostál 1966, Fig. 8–10; modified.

Fig. 172. After Bosselmann-Ruickbie 2011, 250–251, Cat. No. 66b. Stored in the National Archaeological Museum in Athens, Stathatos Collection.

Fig. 173. After Papanikola-Bakirtzi ed. 2002, 432, Cat. No. 557. Stored in Kanellopoulos Museum, Athens.

### 3.3.1 Jewellery Making Tradition and the Value of Craftsmanship

Fig. 174. Photo by J. Foltýn.

Fig. 175. Source: The Khalili Collection of Islamic Art, no. JLY 2149 [online]. [Accessed: 2020-03-08], available from: <https://www.khalilicollections.org/collections/islamic-art/khalili-collection-islamic-art-pair-of-earrings-jly2149/>, cf. Spink – Ogden 2013, 142–143, Cat. No. 49.

### 3.3.2 Imports or Local Imitations?

Fig. 176. 1 – Photo by J. Špaček; 3 – photo by J. Foltýn; 2, 4–6 – after Kouřil ed. 2014, 408, Fig. 236, 237; 409, Fig. 240, 241; photo by J. Foltýn.

Fig. 177. Photo by J. Foltýn.

Fig. 178. 1 – After Großmähren 1967, Fig. 87; 2 – after Atanasov – Grigorov 2005, Pl. 4: 9; 3 – After Kiss 1977, Pl. XXX: 54/1.

Fig. 179. 1, 2, 4 – After Kouřil ed. 2014, 311, Fig. 36; 353, Fig. 125: 5; photo by J. Foltýn; 3 – after Demo 2014, 63; 5, 6 – after Henning 2007, Pl. 15: 187, 188.

Fig. 180. 1, 2 – After Korkuti – Komata 1985, Pl. IV, Cat. No. 396; 101, Cat. No. 387; 3 – after Petrinec 2009, 250, Fig. 112; 4 – after Milošević ed. 2000, 291, Cat. No. IV.184; 5 – after Dumitriu 2001, 114, Pl. 22: 6; 6 – after Jovanović – Vuksanović 1981, Pl. Y 243: 1; 7 – after Coșșa – Bichir 1960, Fig. 1.

Fig. 181. 1 – After Galuška 2013, Fig. 129; 2 – photo by J. Foltýn.

Fig. 182. 1 – After Baltoyianni ed. 1997, 177, Cat. No. 189; 2 – after Micheletto et al. 2014, 107, Fig. 14; 3 – after Sauer 2007, 44; 4 – photo by J. Foltýn; 5, 6, 7 – after Piteša 2014, 62, 65, 67; 8 – after Papanikola-Bakirtzi ed. 2002, 436–437, Cat. No. 567.

### 3.4 Luxury Finger Rings

Figure on the chapter opening page (without labelling): Photo by J. Foltýn.

Fig. 183. 1–6 – After Kouřil ed. 2014, 358, Fig. 135; 359, Fig. 138; 360, Fig. 140–142; photo by J. Foltýn.

Fig. 184. Photo by J. Foltýn.

Fig. 185. 1 – After Chropovský 1978, 63, No. 43; 2 – after Hrubý 1955, Pl. 55: 18; 3 – photo by J. Foltýn; 4 – after Kouřil ed. 2014, 360, Fig. 143, photo by J. Foltýn.

Fig. 186. 1, 2, 7, 8 – After Jovanović 1988, Fig. 6, 8, 12, 18; 3 – after Petrinc 2009, 281, Fig. 128; 4, 5 – after Kepeska 1996–1997, Pl. II: 8, 9; 6 – after Jovanović – Vuksanović 1981, Pl. Y239: 5; 9 – after Cetinić 1998, Pl. 19: 6; 10, 11 – after Papanikola-Bakirtzi ed. 2002, Cat. Nos. 594–598; 12 – after Demo 2009, Pl. 7: 1; 13 – after Delonga – Burić 1998, Fig. 16.

Fig. 187. 1 – After Tomičić 1996–1997, Pl. 11, 3; 2 – after Demo 2014, 74; 3 – after Jovanović 1988, Fig. 7; 4 – after Komar 2017, Fig. 17: 3; 5 – after Liwoch – Müller-Wille 2012, Fig. 10: h.

Fig. 188. After Hadjadj 2007, 108, No. 18.

### 3.4.1 Limited Reception of Mediterranean Jewellery in Great Moravia

Fig. 189. After Grigorov 2007, 186; modified.

### 3.5 Gombíky: Unique Symbol of the Great Moravian Elite

Figure on the chapter opening page (without labelling): Photo by J. Foltýn.

Fig. 190. After Ottenwelter et al. 2020, Fig. 8; drawing by G. Plítková, modified.

Fig. 191. Photos by M. Bárta, visualisation in equirectangular projection by J. Šindelář.

Fig. 192. Photos by J. Foltýn.

Fig. 193. 1, 2 – Photos by J. Foltýn; 3 – photo by M. Bárta; artefact stored in the Department of Archaeology and Museology, Masaryk University, Brno.

Fig. 194. 1, 2, 3, 6 – Photo by J. Foltýn; 4, 5 – after Baxa et al. 2010, 506–58; photo by E. Ottenwelter.

Fig. 195. Graphic design by P. Čáp, Z. Pavková and Z. Tuka.

Fig. 196. 1 – After Arbman 1940, Fig. 412, Pl. 93; 2 – after Ierusalimskaja – Borkopp 1996, 18; 3 – source: digitalised in the Yorck Project (2002) 10.000 Meisterwerke der Malerei (DVD-ROM) [online]. [Accessed: 2020-02-15], available from: [https://commons.wikimedia.org/wiki/File:Meister\\_der\\_Ikone\\_des\\_Erzengels\\_Michael\\_001\\_adjusted.jpg?uselang=cs#metadata](https://commons.wikimedia.org/wiki/File:Meister_der_Ikone_des_Erzengels_Michael_001_adjusted.jpg?uselang=cs#metadata); 4 – photo by S. Steidel, Archives of the Römisch-Germanisches Zentralmuseum, Archaeological research institute (RGZM), artefact stored in the Archaeological Museum Veliki Preslav; 5 – after Thomas ed. 2016, 47; 6 – after Thomas ed. 2016, 109.

Fig. 197. 1 – Photo by Š. Krupičková (artefact from the Hungarian National Museum Exposition) and M. Bárta, visualisation in equirectangular projection by J. Šindelář; 2, 3 – drawing after Bühler 2014, Pl. 18; photo by M. Bárta, visualisation in equirectangular projection by J. Šindelář; 4, 5 – after Ierusalimskaja – Borkopp 1996, 63, 75; photo by J. Foltýn.

Fig. 198. Photo by M. Bárta.

Fig. 199. 1 – After Ierusalimskaja – Borkopp 1996, 46; 2 – source: Wikipedia, Mosaics of Justinianus and Theodora, photo by P. Milošević [online]. [Accessed: 2020-04-26], available from: [https://en.wikipedia.org/wiki/Basilica\\_of\\_San\\_Vitale#/media/File:Mosaic\\_of\\_Justinianus\\_I\\_-\\_Basilica\\_San\\_Vitale\\_\(Ravenna\).jpg](https://en.wikipedia.org/wiki/Basilica_of_San_Vitale#/media/File:Mosaic_of_Justinianus_I_-_Basilica_San_Vitale_(Ravenna).jpg).

Fig. 200. Photos by M. Fořt.

Fig. 201. X-ray radiographs by E. Ottenwelter.

Fig. 202. Photos by M. Bárta, visualisation in azimuthal projection by J. Šindelář.

Fig. 203. Author Š. Krupičková.

### 3.5.1 Mikulčice Elite Jewellery: A Technical Study of Gombíky

Fig. 204. Photo by E. Ottenwelter.

Fig. 205. Photo by E. Ottenwelter and D. Janová.

Fig. 206. Author E. Ottenwelter.

Fig. 207. Photo by E. Ottenwelter.

Fig. 208. Photo by E. Ottenwelter, X-ray radiographs by L. Barčáková.

Fig. 209. Author E. Ottenwelter.

Fig. 210. Photo by E. Ottenwelter.

Fig. 211. Photo by E. Ottenwelter, X-ray radiographs by L. Barčáková.

Fig. 212. Author E. Ottenwelter.

### 3.6 Belt and Its Parts

Figure on the chapter opening page (without labelling): After Kouřil ed. 2014, 382, Fig. 180: 2; photo by J. Foltýn.

Fig. 213. 1 – Photo by J. Foltýn; 2 – after Kouřil ed. 2014, 378, Fig. 176: 3; photo by J. Foltýn.

Fig. 214. 1–12 – After Kouřil ed. 2014, 377–382, Fig. 175–180; photos by J. Foltýn.

Fig. 215. Photo by J. Foltýn.

Fig. 216. 1, 2 – After Kouřil ed. 2014, 390, Fig. 192: 1, 2; photos by J. Foltýn; 3–5 – after Kouřil ed. 2014, 383, Fig. 181: 1, 2, 3; photos by J. Foltýn.

Fig. 217. 1–4 – After Lutovský 1994, Fig. 2, 3; 5 – after Košta – Hošek 2008b, Fig. 6: a; 6–9 – after Košta 2004, Pl. XXXVIII; 10, 11 – after Klanica et al. 2019, Fig. 58: 3, 4.

Fig. 218. 1–7 – After Staňa 2006, Fig. 53: 54/1–4; 54: 71/5–7; 8 – after Robak 2018, Fig. 7, 8, 9; drawing by R. Skopal.

Fig. 219. After Hrubý 1955, Fig. 36.

### 3.6.1 Belts With Bird-Shaped Clasps as a Specific Symbol of the Mikulčice Elites?

Fig. 220. 1, 2 – Photo by J. Foltýn; 3 – after Knific 1999, Fig. 9: č. 3; 4 – after Zuyderwyk – Besteman 2010, Fig. 13.

### 3.6.2 Iconography of Lavish Strap-Ends From Mikulčice

Fig. 221. 1, 2 – After Werner 1977, Pl. 99: 2, 3. Both from Musée des antiquités nationales, Saint-Germain-en-Laye.

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### 3.7 Calf Straps

Figure on the chapter opening page (without labelling): After Kouřil ed. 2014, 388, Fig. 189: 1; photo by J. Foltýn.

Fig. 222. After Kouřil ed. 2014, 389, Fig. 190: 2, 3; photo by J. Foltýn.

Fig. 223. 1, 2 – After Profantová 2003, Fig. 49: 3–5/100; 3, 4 – after Galuška 1996, Fig. 95: 11–17; 5, 6 – after Kalousek 1971, Fig. 193: 2a, 2b, 3.

Fig. 224. After Kouřil ed. 2014, 376, Fig. 173: 1; photo by J. Foltýn.

Fig. 225. 1, 2 – After Kouřil 2005, Fig. 5: 4–6; 3–5 – after Klanica 2006a, I, Pl. 71: 2, 10.

### 3.7.1 Evidence of Calf Straps in the Frankish Empire

Fig. 226. 1, 2 – After Dannheimer 1998, Pl. 71: B/1, 2; 3, 4 – after Weis 1999, Pl. 8: C/7, 8; 5, 6 – after Groove 2001, Pl. 55: 5–7; 7–10 – after Fingerlin 1971, Pl. 98: 233/3–6.

Fig. 227. 1, 2 – Möslein 2002–2003, Fig. 7: 3 – after Bartel 2002–2003, Fig. 10.

Fig. 228. 1 – after Imhof – Winterer 2005, 115; 2 – after Wamers – Brandt eds. 2005, Fig. 6, 7; 3 – after Zachová 2010, 164; 4–9 – source: *Württembergische Landesbibliothek, Stuttgarter Psalter - Cod.bibl. fol.23* [online]. [Accessed: 2020-02-15], available from: <http://digital.wlb-stuttgart.de/purl/bsz307047059>, fol. 158v, 46v, 9r, 107v, 65v, 150v.

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### 3.8 Luxury Textiles From the Great Moravian Elite Graves

Figure on the chapter opening page (without labelling): Photo by M. Bárta.

Fig. 229. Photo by J. Šejbl.

Fig. 230. Photo by J. Šejbl.

Fig. 231. Photo by J. Škvařil; after Kostelníková 1973, Pl. 8.

Fig. 232. Photo by H. Březinová.

Fig. 233. 1 – Drawing by J. Bureš Vichová; 2 – photo by H. Březinová; 3 – drawing by R. Skopal.

### 3.8.1 Mikulčice Textiles – Textile Technological Survey

Fig. 234. Photo by M. Bárta.

Fig. 235. 1 – Photo by M. Bárta; 2 – photo by M. Bárta; 3 – photo by H. Březinová; 4 – photo by M. Bárta.

### 3.8.2 Samite – Weft-Faced Compound Twill: A Top Silk Product

Fig. 236. Photo by H. Březinová.

Fig. 237. 1 – Photo by H. Březinová; 2 – drawing by J. Bureš Vichová; 3 – photo by J. Grabmüllerová, Faculty of Textile Engineering, Technical University of Liberec.

### 3.8.3 Magic of Silk: Byzantine Silk Fabrics

Fig. 238. Photo from Prague Castle Archive, Metropolitan Chapter of the Saint Vitus, Gospel Book cim. 2.

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### 3.9 Vessels, Window Panes and Small Glass Artefacts in the Material Culture of the Mikulčice Elites

Figure on the chapter opening page (without labelling): Photo by M. Bárta.

Fig. 239. 1, 2 – Photo by M. Bárta.

Fig. 240. Photo from the Archive of the Institute of Archaeology, Czech Academy of Sciences, Brno, Freising Archive (Pohansko near Nejdek site).

Fig. 241. After Košta – Sedláčková – Hulínský 2011, esp. Fig. 1, 3 and 4, Pl. 1.

Fig. 242. 1, 2 – Photo by M. Bárta; 3 – after Galuška et al. 2012, 72, Fig. 7.4, Pl. A 01; 4 – after Galuška et al. 2012, 72, Fig. 7.8, Pl. A 05.

Fig. 243. Photo by M. Bárta.

Fig. 244. 1, 2 – Photo by M. Bárta.

Fig. 245. 1 – Photo by M. Bárta; 2 – photo by V. Iserhardt, photo from RGZM Bildarchiv Archive, object No. 33609, photo No. 2009\_01144.

Fig. 246. 1–4 – Photo by M. Bárta; 5 – photo by K. Pánová.

Fig. 247. 1 – Photo by M. Bárta; 2 – photo by K. Pánová.

Fig. 248. 1–6 – Photo by M. Bárta.

Fig. 249. Photo by M. Bárta.

### 3.9.1 Development of Glass Production Technology

Fig. 250. After Phelps et al. 2016, 65.

### 3.9.2 Nature of the Finds From Mikulčice and Other Great Moravian Sites

Fig. 251. Author D. Rohanová.

Fig. 252. Author D. Rohanová. Authors of the samples analyses from Kolín, Pohansko near Břeclav (beads), Uherské Hradiště – Sady, Zalavár and Devínska Kobyla are cited in the text.

Fig. 253. Author D. Rohanová.

Fig. 254. Author D. Rohanová.

Fig. 255. Author D. Rohanová.

### 3.9.3 Glass of Secular Versus Ecclesiastical Elites in Great Moravia

Fig. 256. Photo by S. Doleželová, see also Galuška et al. 2012, Fig. 9: 1.

Fig. 257. Photo by S. Doleželová, see also Galuška et al. 2012, Fig. 9: 2.

Fig. 258. Photo by S. Doleželová, see also Galuška et al. 2012, Fig. 9: 6.

Fig. 259. 1, 2 – Photo by S. Doleželová, see also Galuška et al. 2012, Fig. 9: 11, 10: 29; 1 (detail) – photo by K. Pánová.

Fig. 260. 1, 2 – Photo by S. Doleželová, see also Galuška et al. 2012, Fig. 9: 4, 10: 27.

Fig. 261. 1 – After Antonaras 2017, 84, Form 36, Cat. No. 165, illustrated in plate 6; 2 – photo by S. Doleželová, see also Galuška et al. 2012, Fig. 8: 1–14.

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### 3.10 Ceramic Vessels

Figure on the chapter opening page (without labelling): Photo by M. Bárta.

Fig. 262. After Poláček 1995, 141, Fig. 7; 145, Fig. 9.

Fig. 263. Photo by M. Bárta.

Fig. 264. Photo by M. Bárta.

Fig. 265. Photo by M. Bárta.

Fig. 266. Photo by M. Bárta.

Fig. 267. Photo by M. Bárta.

### 3.10.1 Great Moravian Ceramic Groups – Mikulčice and Blučina

Fig. 268. After Poláček 1995, 146, Fig. 10.

Fig. 269. After Mazuch 2013, separately inserted card No. 1.

Fig. 270. After Mazuch 2013, separately inserted card No. 3.

Fig. 271. After Mazuch 2013, separately inserted card No. 4.

Fig. 272. After Poláček 1995, 139, Fig. 5.

### 3.10.2 Uherské Hradiště – Sady: Kiln for Firing Tiles and Pottery of Ancient Shapes

Fig. 273. After Galuška 1996, 19, Fig. 6; modified by J. Šindelář and Z. Tuka.

Fig. 274. After Kouřil et al. 2014, Cat. No. 351; photo by J. Foltýn.

### 3.10.3 “Thick-Glazed” Pottery Find

Fig. 275. Photo by M. Fořt.

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### 4.1 The Anthropological, Demographic and Health Consequences of Living in Early Medieval Great Moravia

Figure on the chapter opening page (without labelling):  
Photo by J. Likovský.

Fig. 276. After Zazvonilová – Velemínský – Brůžek 2020; modified.

Fig. 277. After Zazvonilová – Velemínský – Brůžek 2020; modified.

Fig. 278. After Zazvonilová – Velemínský – Brůžek 2020; modified.

Fig. 279. Photo by P. Trefný.

Fig. 280. X-ray by A. Dekojová and J. Likovský.

Fig. 281. Photo by M. Bárta.

Fig. 282. Photo by M. Bárta.

Fig. 283. Photo by M. Bárta.

Fig. 284. Average values based on the FRUITS food reconstruction model; Fernandes et al. 2015.

Fig. 285. After Ibrová et al. 2017; modified.

Fig. 286. After Ibrová et al. 2017; modified.

Fig. 287. After Ibrová et al. 2017; modified.

Fig. 288. After Sládek et al. 2018; modified.

Fig. 289. After Sládek et al. 2018; modified.

Fig. 290. After Bigoni et al. 2013; modified.

Fig. 291. After Bigoni et al. 2013; modified.

Fig. 292. After Bejdová et al. 2018; modified.

Fig. 293. After P. Major in Váňa 1983; modified.

Fig. 294. Photo by M. Bárta.

Fig. 295. Photo by M. Bárta.

Fig. 296. Photo by M. Bárta.

Fig. 297. Photo by M. Bárta.

Fig. 298. Photo by M. Bárta.

Fig. 299. Photo by M. Bárta.

Fig. 300. After S. Müllerová 2017; modified.

Fig. 301. Photo by M. Bárta.

Fig. 302. Photo by M. Bárta.

Fig. 303. Photo by M. Bárta.

Fig. 304. Photo by M. Bárta.

Fig. 305. Photo by M. Bárta.

Fig. 306. Photo by M. Bárta.

Fig. 307. Photo by M. Bárta.

Fig. 308. Photo by M. Bárta, X-ray picture by M. Jantač.

Fig. 309. Photo by M. Bárta.

Fig. 310. Photos by M. Bárta.

#### 4.1.1 Geometric Morphometrics in Bioarchaeology

Fig. 311. Authors J. Velemínská and J. Dupej.

Fig. 312. After Brzobohatá et al. 2019; modified.

Fig. 313. After Bejdová et al. 2017; modified.

Fig. 314. Author J. Velemínská.

#### 4.1.2 Exotic Diseases in the Great Moravian Population

Fig. 315. Photo by J. Likovský.

Fig. 316. Photo by J. Likovský.

Fig. 317. Photo by J. Likovský.

#### 4.1.3 Population of Great Moravia in the Context of Early Medieval Europe

Without figures.

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# List of Contributors

**Peter Baxa**

Regional Monuments Board –  
Regional Centre Bratislava  
Leškova 17  
SK-811 04 Bratislava  
[peter.baxa@gmail.com](mailto:peter.baxa@gmail.com)

**Šárka Bejdová**

Charles University, Faculty of Science  
Department of Anthropology  
and Human Genetics  
Laboratory of 3D Imaging  
and Analytical Methods  
Viničná 7  
CZ-128 44 Prague 2  
[bejdova@natur.cuni.cz](mailto:bejdova@natur.cuni.cz)

**Lucie Bigoni**

National Museum, Natural History  
Museum Department of Anthropology  
Cirkusová 1742  
CZ-193 00 Prague 9  
[lucfia@volny.cz](mailto:lucfia@volny.cz)

**Helena Březinová**

Czech Academy of Sciences,  
Institute of Archaeology, Prague  
Letenská 123/4  
CZ-118 01 Praha  
[brezinova@arup.cas.cz](mailto:brezinova@arup.cas.cz)

**Petra Brukner Havelková**

National Museum, Natural History  
Museum Department of Anthropology  
Cirkusová 1742  
CZ-193 00 Prague 9  
[petra.havelkova@nm.cz](mailto:petra.havelkova@nm.cz)

**Jaroslav Brůžek**

Charles University, Faculty of Science  
Department of Anthropology  
and Human Genetics  
Laboratory of 3D Imaging  
and Analytical Methods  
Viničná 7  
CZ-128 44 Prague 2  
[Yaro@seznam.cz](mailto:Yaro@seznam.cz)

**Hana Brzobohatá**

Czech Academy of Sciences,  
Institute of Archaeology, Prague  
Letenská 123/4  
CZ-118 01 Praha  
[brzobohata@arup.cas.cz](mailto:brzobohata@arup.cas.cz)

**Sylva Drtíková Kaupová**

National Museum, Natural History  
Museum Department of Anthropology  
Cirkusová 1742  
CZ-193 00 Prague 9  
[sylva.kaupova@nm.cz](mailto:sylva.kaupova@nm.cz)

**Luděk Galuška**

Moravian Museum,  
Centre for Slavonic Archaeology  
Velehradská třída 537  
CZ-686 01 Uherské Hradiště  
[lgaluska@mzm.cz](mailto:lgaluska@mzm.cz)

**Matej Harvát**

Slovak Academy of Sciences,  
Institute of History  
Klemensova 19  
SK-814 99 Bratislava  
[histry@savba.sk](mailto:histry@savba.sk)

**Marek Hladík**

Czech Academy of Sciences,  
Institute of Archaeology, Brno  
Archaeological Base Mikulčice-Trapíkovo  
CZ-696 19 Mikulčice 736  
[hladik@arub.cz](mailto:hladik@arub.cz)

**Michal Hlavica**

Czech Academy of Sciences,  
Institute of Archaeology, Brno  
Čechyňská 363/19  
CZ-602 00 Brno  
[hlavica@arub.cz](mailto:hlavica@arub.cz)

**Jiří Hošek**

Czech Academy of Sciences,  
Institute of Archaeology, Prague  
Letenská 123/4  
CZ-118 01 Praha  
[hosek@arup.cas.cz](mailto:hosek@arup.cas.cz)

**Alexandra Ibrová**

Charles University, Faculty of Science  
Department of Anthropology  
and Human Genetics  
Laboratory of 3D Imaging  
and Analytical Methods  
Viničná 7  
CZ-128 44 Prague 2  
[ibrovaa@natur.cuni.cz](mailto:ibrovaa@natur.cuni.cz)

**David Kalhous**

Masaryk University, Faculty of Arts  
Department of Auxiliary Historical  
Sciences and Archive Studies  
Arna Nováka 1  
CZ-602 00 Brno  
[david.kalhous@phil.muni.cz](mailto:david.kalhous@phil.muni.cz)

**Jiří Košta**

National Museum, Historical Museum  
Department of Prehistory and Classical  
Antiquity  
Vínohradská 1  
CZ-110 00 Prague 1  
[jiri.kosta@nm.cz](mailto:jiri.kosta@nm.cz)

**Pavel Kouřil**

Czech Academy of Sciences,  
Institute of Archaeology, Brno  
Čechyňská 363/19  
CZ-602 00 Brno  
[kouril@arub.cz](mailto:kouril@arub.cz)

**Lenka Kovačiková**

University of South Bohemia in České  
Budějovice, Faculty of Science  
Laboratory of Archaeobotany  
and Palaeoecology  
Branišovská 1645/31a  
CZ-370 05 České Budějovice  
[lenka.kovacikova@gmail.com](mailto:lenka.kovacikova@gmail.com)

**Šárka Krupičková**

Czech Academy of Sciences,  
Institute of Archaeology, Brno  
Čechyňská 363/19  
CZ-602 00 Brno  
[krupickova@arub.cz](mailto:krupickova@arub.cz)

**Jakub Langr**

Moravian Museum,  
Centre for Slavonic Archaeology  
Velehradská třída 537  
CZ-686 01 Uherské Hradiště  
[jlangr@mzm.cz](mailto:jlangr@mzm.cz)

**Michaela Látková**

Czech Academy of Sciences,  
Institute of Archaeology, Brno  
Archaeological Base Mikulčice-Trapíkovo  
CZ-696 19 Mikulčice 736  
[latkova@arub.cz](mailto:latkova@arub.cz)

**Jiří Macháček**

Masaryk University, Faculty of Arts  
Department of Archaeology  
and Museology  
Komenského nám. 2  
CZ-602 00 Brno  
[machacek@phil.muni.cz](mailto:machacek@phil.muni.cz)

**Marian Mazuch**

Czech Academy of Sciences,  
Institute of Archaeology, Brno  
Archaeological Base Mikulčice-Trapíkovo  
CZ-696 19 Mikulčice 736  
[mazuch@arub.cz](mailto:mazuch@arub.cz)

**Estelle Ottenwelter**

Czech Academy of Sciences,  
Institute of Archaeology, Prague  
Letenská 123/4  
CZ-118 01 Praha  
[ottenwelter@arup.cas.cz](mailto:ottenwelter@arup.cas.cz)

**Lumír Poláček**

Czech Academy of Sciences,  
Institute of Archaeology, Brno  
Čechyňská 363/19  
CZ-602 00 Brno  
[polacek@arub.cz](mailto:polacek@arub.cz)

**Rudolf Procházka**

Czech Academy of Sciences,  
Institute of Archaeology, Brno  
Čechyňská 363/19  
CZ-602 00 Brno  
[prochazka@arub.cz](mailto:prochazka@arub.cz)

**Dana Rohanová**

University of Chemistry and Technology  
Prague, Faculty of Chemical Technology  
Department of Glass and Ceramics  
Technická 5  
CZ-166 28 Praha 6  
[dana.rohanova@vscht.cz](mailto:dana.rohanova@vscht.cz)

**Hedvika Sedláčková**

Archaia Brno, Registered Institute  
Bezručova 15  
CZ-602 00 Brno  
[hedvika.glass@seznam.cz](mailto:hedvika.glass@seznam.cz)

**Vladimír Sládek**

Charles University, Faculty of Science  
Department of Anthropology  
and Human Genetics  
Bone Tissue Anthropology Laboratory  
Viničná 7  
CZ-128 44 Prague 2  
[sladekv@yahoo.fr](mailto:sladekv@yahoo.fr)

**Petra Stránská**

National Museum,  
Natural History Museum  
Department of Anthropology  
Cirkusová 1742  
CZ-193 00 Prague 9  
[petra.vinohrady@seznam.cz](mailto:petra.vinohrady@seznam.cz)

**Šimon Ungerman**

Czech Academy of Sciences,  
Institute of Archaeology, Brno  
Čechyňská 363/19  
CZ-602 00 Brno  
[ungerman@arub.cz](mailto:ungerman@arub.cz)

**Lucie Valášková**

Moravian Museum,  
Centre for Slavonic Archaeology  
Velehradská třída 537  
CZ-686 01 Uherské Hradiště  
[lvalaskova@mzm.cz](mailto:lvalaskova@mzm.cz)

**Jana Velemínská**

Charles University, Faculty of Science  
Department of Anthropology  
and Human Genetics  
Laboratory of 3D Imaging  
and Analytical Methods  
Viničná 7  
CZ-128 44 Prague 2  
[velemins@natur.cuni.cz](mailto:velemins@natur.cuni.cz)

**Petr Velemínský**

National Museum,  
Natural History Museum  
Department of Anthropology  
Cirkusová 1742  
CZ-193 00 Prague 9  
[petr.veleminsky@nm.cz](mailto:petr.veleminsky@nm.cz)

**Eliška Zazvonilová**

Charles University, Faculty of Science  
Department of Anthropology  
and Human Genetics  
Laboratory of 3D Imaging  
and Analytical Methods  
Viničná 7  
CZ-128 44 Prague 2  
[eliskazazvonilova@gmail.com](mailto:eliskazazvonilova@gmail.com)



Lumír Poláček et al.

# Great Moravian Elites From Mikulčice

Main author: Lumír Poláček

Co-authors in alphabetical order: Peter Baxa, Šárka Bejdová, Lucie Bigoni, Helena Březinová, Petra Brukner Havelková, Jaroslav Brůžek, Hana Brzobohatá, Sylva Drtikolová Kaupová, Luděk Galuška, Matej Harvát, Marek Hladík, Michal Hlavica, Jiří Hošek, Alexandra Ibrová, David Kalhous, Jiří Košta, Pavel Kouřil, Lenka Kovačiková, Šárka Krupičková, Jakub Langr, Michaela Látková, Jiří Macháček, Marian Mazuch, Estelle Ottenwelter, Rudolf Procházka, Dana Rohanová, Hedvika Sedláčková, Vladimír Sládek, Petra Stránská, Šimon Ungerman, Lucie Valášková, Jana Velemínská, Petr Velemínský, Eliška Zazvonilová

Editorial project managers: Šárka Krupičková, Lumír Poláček

Production project managers: Klára Matulová, Martina Kudlíková, Hedvika Břínková

Translation and proofreading: Tereza Pohořelická Bartošková, Milan Rydvan, Zuzana Novotná, CHICORY, s.r.o., Paul Michael Simpson, Michael FitzGerald, Sean Mark Miller, Alastair Millar and Klára Matulová

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Czech Acad Sci, Brno





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The Mikulčice site and the results of its long-term research represent a phenomenon that is essential for understanding the lifestyle and identity of the highest social classes of Mojmirid Moravia. No other 9th-century archaeological site in the north of the Middle Danube provides such concentrated evidence of power, wealth and Christian faith as Mikulčice. This book presents a new, multidisciplinary approach to the study of the Great Moravian elites.