

State of research and research possibilities of early medieval pottery from the Prague production zone

Ivana Boháčová^a

The current aim of the study of pottery from the Prague production zone is a detailed understanding of the changes in the pottery in connection with chronology and an explanation of the essence and causes of these changes while also capturing similarities and differences within the studied region. Accomplishing these goals will require a detailed evaluation of a larger number of pottery collections from key stratified contexts, i.e., from specific, chronologically well-defined contexts which were, for example, unaffected by post-depositional processes, created in clearly demarcated intervals or allowing an absolute chronology to be established for the events that they document. A comparative online database of pottery from the Prague production zone created for this purpose should speed up the flow of information on key reference collections from the studied area.

KEY-WORDS: early Middle Ages, archaeology, pottery, Prague, chronology, Ceramic Reference Collection

INTRODUCTION

As a basic archaeological source, pottery has long been a subject of study from various points of view and using a range of different methods. Pottery can be used to study a wide variety of subjects and phenomena, from learning about pottery as part of a living culture to questions concerning raw materials, technology, distribution and exchange, up to interpretations of post-depositional processes and their chronology. In this article, the early medieval pottery from Prague, the historical centre of Bohemia, is considered from the perspective of the evidence it can provide on socio-economic issues and transformation taking place in Bohemia between the second half of the ninth century and the beginning of the High Middle Ages. The core research was conducted on pottery from stratified layers in the historic centre of the city of Prague,

^a Institute of Archaeology of the Czech Academy of Sciences, Prague, v. v. i., 4 Letenská St., 118-01 Prague 1, Czech Republic; bohacova@arup.cas.cz

discussed subsequently in a comparative study of key pottery collections from other historically known Přemyslid dynasty centres (Boháčová 2011).

In the case of pottery from the Prague distribution zone, the objective was to trace the qualitative changes in pottery over time in a specific micro-region, that is, central Bohemia, which is linked to the emergence of the early Přemyslid state. Pottery from various parts of this area reveals striking qualitative changes of specific attributes over time, indicating a concentration of manufacturing in specialised workshops in the Prague agglomeration or its immediate surroundings. These changes have been recorded throughout the entire historical centre of Bohemia. Considering that the evidence of stratification and other related sources indicate the synchronous nature of these changes in the studied area, pottery could be a possible source of data on many socio-economic issues of the period, including the conditions that led to the establishment of the early state.

There are still large gaps in our knowledge of this pottery and its development despite the existence of an extensive body of high quality data. This is because the data is not accessible. Moreover, not all of the results are accepted without reservation and in the long run it has proved impossible to achieve a consensus even on how to present and describe this pottery, not to mention the choice of documentation and analytical methods, which remain of marginal importance. However, the use of additional sources and a comparative study of the evidence provided against existing data will be essential to verify and expand current knowledge on the subject. Building a comparative database of reference collections is one possible way of resolving this research quandary. Being easily accessible, it would greatly facilitate the exchange of information between researchers from different disciplines, providing regularly updated and most importantly standardized (to the degree that is essential) data on fabrics, find contexts and chronology.

MEDIEVAL POTTERY FROM PRAGUE AS A SOURCE

The pottery assemblages from the earliest stratified contexts in the historical centre of Prague are consistent with assemblages from sites with long-term intensive development characterised by a bipolar development of the cultural layer. Interest is limited in this case only to pottery from the period of natural deposition, which ended in left-bank Prague generally in the course of the first half of the thirteenth century. The thickness of these layers depends on individual site morphology and exposure, fluctuating in the studied area from several centimetres up to several metres thick, the latter occurring exceptionally on the slopes of the Hradčany promontory.

Pottery from the said age is heavily fragmented, the sherds in the collected assemblages seldom exceeding from 5 to 15 cm² and intact vessels being rare. The size of

individual collections is dependent on the excavation scope, but also and perhaps primarily on the find context and its origin. Numbers of potsherds range between several to hundreds and even thousands. The assemblage composition depends both on the character of the find context and on the intensity of post-depositional processes and their nature. In the case of pottery from the earliest phase of early medieval development in Prague, it comes from mostly fragmentary cultural layers or terrain with numerous and substantial developmental gaps. The distinctive and varied morphology of the Hradčany and Malá Strana areas strongly impacted the formation of the cultural layer in left-bank Prague with parts of the district being subjected to spontaneous human activities as well as erosional processes. It should also be kept in mind that the construction of the royal residence and the vast system of fortifications necessitated large-scale landscape modification and the movement of considerable amounts of soil. Even so, the deposition of the cultural layer in this part of Prague is regarded as natural because relocation concerned only parts of the layer locally and the soil was never removed. In contrast, the historical centre of Prague on the right bank, which was settled later, has yielded pottery only from the latest phase of the early Middle Ages and later, and for these periods sustained accumulation processes were more typical.

Collections from key stratified positions were chosen for detailed pottery analysis. These included positions that: 1) represented natural accumulation without later intervention; 2) were sealed from bottom and top with chronological dating evidence for the time of the sealing; 3) were linked to absolute chronology dating (from the nature sciences, art history, clearly associated reports from written sources). Collections from the fill of features excavated in Prague were mostly of minimal testimonial value for pottery analysis. One exception was a small number of uncontaminated fills of features from the earliest settlement horizon dug into the subsoil, or entirely rare features producing artifacts from the period of use.

The basic developmental phases of early medieval pottery from the period between the second half of the 9th century and the first half of the 13th century are known and have been described thanks to the long-term study of early medieval pottery from stratified contexts in the historical centre of Prague. Recent decades have witnessed the development of the exact sciences and, thanks to the systematic search for support in the effort to refine the chronology of individual pottery horizons, not only to a more precise dating for specific pottery types, but also to a significant shift of the entire later part of the early medieval Prague pottery sequence deeper into the past. Two factors play an important role in refining the pottery chronology. The first is the fact that the historical left-bank centre provides the possibility for the repeated verification of the same find context at multiple locations (the origin and the development of the fortification of both castle and suburb, preserved complexes of historical features, churches). Second is the occurrence of early medieval Prague pottery throughout central Bohemia. Large collections enabling a comparative study of pottery development linked to

absolute dates come from fortified sites, be they historically known centres or merely archaeologically confirmed locations. The study of pottery from Prague is based today primarily on an analysis of fabrics and pottery morphology. Detailed research, which unfortunately includes only limited and unsystematic exact documentation and analytical methods, is increasingly focused, apart from chronological issues, on the study of the organisation of production, distribution and exchange of pottery and the inherent changes over time. Due in part to the nature of the find collection, the morphological variety of the vessels and their functional use remain an entirely marginal subject for this period.

STATE OF RESEARCH ON MEDIEVAL POTTERY FROM PRAGUE

Researchers have generally accepted the following basic development characteristics of Prague pottery:

1) a rapid development of vessel morphology (rims) at the end of the Middle Hillfort period (first half of the 10th century) and during the Late Hillfort period (from the middle of the 10th to the end of the 12th century); 2) a close relationship between morphology (and often decoration types) and the ceramic matrix; 3) the relative sequence of a small number of basic defined types (Figs 1 and 2); 4) a general link between the relative sequence and timeline; and 5) beginning in the 1990s, a significant shift in the absolute dating of the latest early medieval pottery (pushed back by 100–150 years).

These characteristics are based on the latest processing and revision of the findings of earlier archaeological excavation, clearly demonstrating the indefensibility of an earlier chronological concept which placed the primary occurrence of the latest horizon of Late Hillfort pottery in the thirteenth century.

The current study of pottery from Prague is impeded by a range of factors, the first being a mostly individualistic approach ('personal' chronology tied directly to absolute dates with the possibility for their revision, personal typology). The second factor is the lamentable state of publication of key reference collections, which, once presented, could verify or refine current views on the pottery development, e.g., stratified contexts dated by coins and other significant assemblages. Moreover, interdisciplinary cooperation is mostly based on random personal contacts, not on the professional abilities of the parties involved. Prague archaeology lacks the appropriate experts with an interdisciplinary focus and is unable to take advantage of the results of frequently costly analyses for comparative studies. A new general problem is the rising wave of new archaeological organisations lacking any experience with the Prague environment and with research on urban agglomerations as such. The specific situation of investigating major European cities requires a systematic solution for processing Prague's vast and

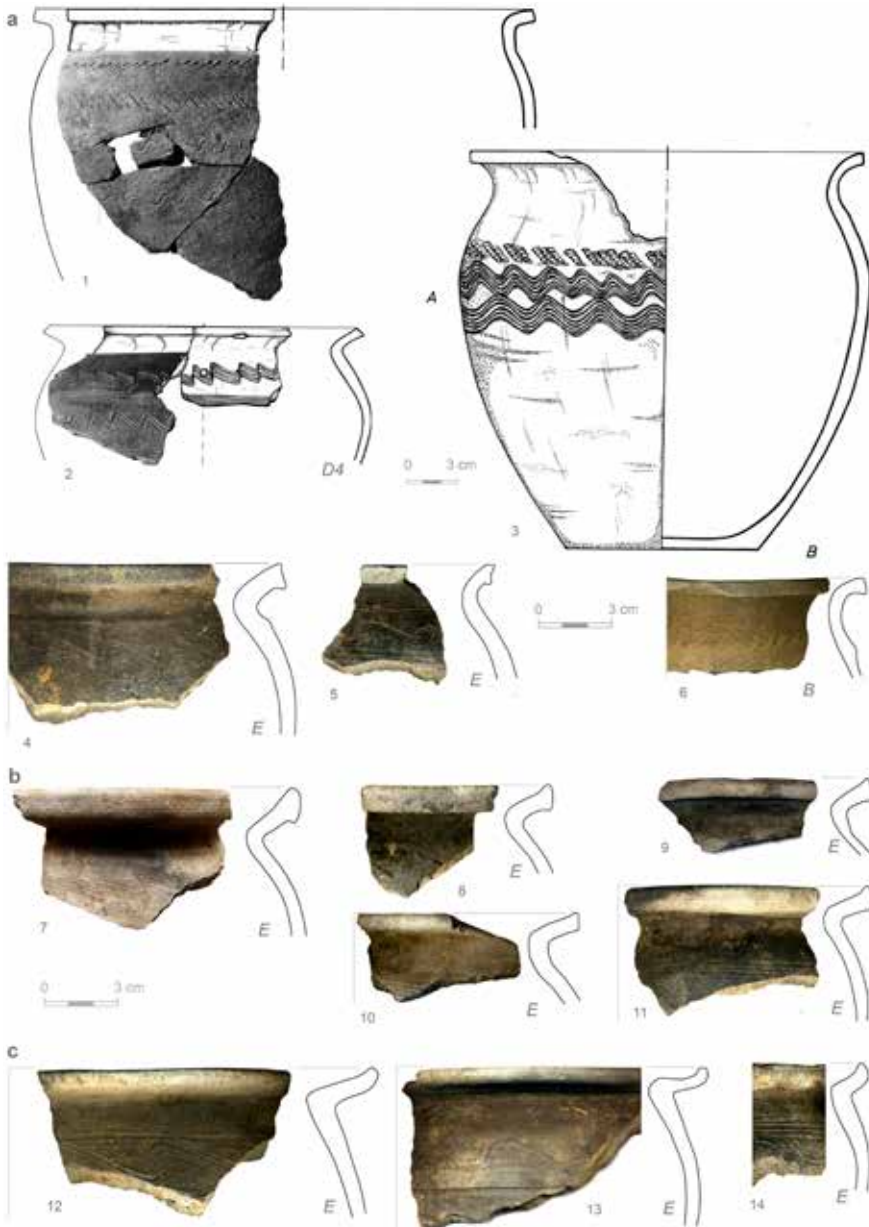


Fig. 1. Development of pottery from Prague between the second half of the 9th century and the first half of the 10th century (Middle Hillfort Period). Selection of representative pottery types from the find collection of Hradčany for specific defined pottery horizons. a – horizon A; b – horizon Bo (10, 11?); c – horizon B1. The letters in *italic* indicate the vessel matrix

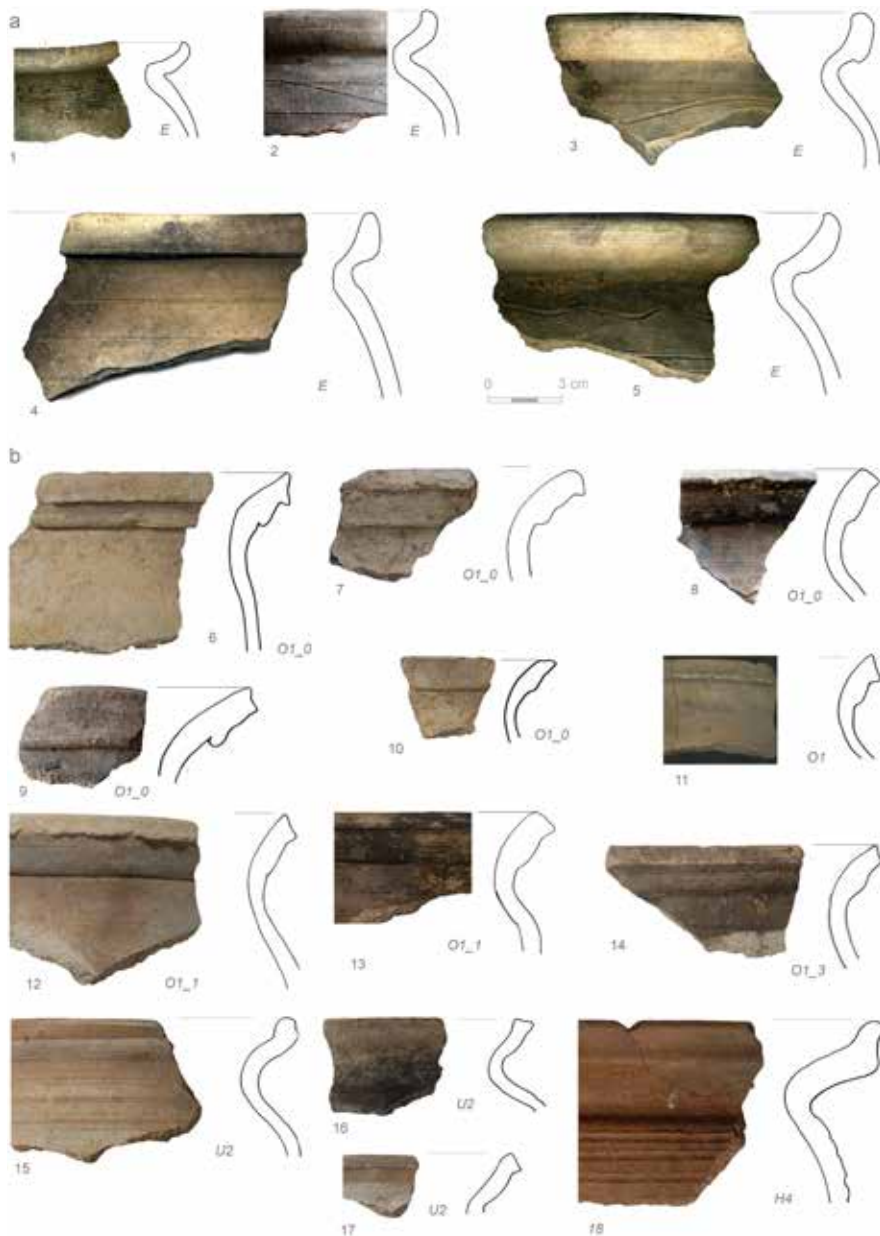


Fig. 2. Development of pottery from Prague between the second half of the 10th century and the beginning of the 13th century. Selection of representative pottery types from the find collection of Hradčany for specific defined pottery horizons (Late Hillfort Period 1 and 2). a – horizon B1/B2 (1); horizon B2 (2–5); b – horizon C, typologically and technologically differentiated pottery horizon with trussed rims. The letters in *italic* indicate the vessel matrix

rich archaeological find collection which, however, is not a top priority for objective reasons. These factors hinder a long-term comprehensive study of Prague pottery in all of its aspects, including a basic synchronisation of the development of the Prague agglomeration as a whole.

METHODOLOGY, OBJECTIVES, RESULTS AND CURRENT ISSUES IN THE STUDY OF POTTERY FROM THE LEFT-BANK OF THE HISTORICAL CENTRE OF PRAGUE (PRAGUE-HRADČANY)

Based on the study of selected collections from Prague-Hradčany (the Přemyslid castle and its Hradčany suburbs), key *pottery horizon* definitions for pottery from Prague between the second half of the 9th century and the first half of the 13th century were refined and further subdivided in several cases. Collections found in multiple locations beneath the first wood-and-earth rampart, as well as pottery from the body of the wall were chosen as being of key importance for the study of the earliest pottery from the Prague Castle. Support for an understanding of the development that followed was provided by a lone find context that captured a stratified cultural situation in a recessed part on the inside of the wall linked to a date in the absolute chronology. The next pottery development stage was captured in collections of finds from a later expansion of the transverse wall of the acropolis. These collections were studied macroscopically, paying special attention to identifying classes of the ceramic matrix, vessel morphology and links with employed decorative elements. Two chosen reference collections were studied in detail (Fig. 3), whereas other collections were subjected to comparative study. The results were used to establish basic pottery horizons which were gradually linked to absolute dates and, for the first time in Bohemia, to a series of dendrochronology dates from a structure dividing the earliest part of the stratified layers from the wall body (Dvorská and Boháčová 1999). This led to a refinement of the chronology of primarily the earliest part of the sequence prior to the emergence of advanced and unified Late Hillfort pottery with *calyx-shaped rims* (in the 930s and 940s). The problem that persists is refining the chronology and gaining a more detailed understanding of the development of this dominant type of pottery in a period until at least the middle of the 11th century. Systematic attention was also paid for many years to the latest phase of early medieval pottery, that is, the pottery horizon with *trussed rims* (for a division of the horizon, see Hrdlička 1993; Fig. 2: b). Although certain sub-variants in its development were confirmed and even newly identified, no support for refining its chronology was found at Hradčany (cf. Budeč-Bartošková 1999). The latest defined horizon, which extends already into the High Middle Ages, also has no clear link to dates in the absolute chronology. Support for its placement in the Prague sequence has been found only at the short-term site of Sekanka (Richter 1982), which is outside, but not far from Prague territory.

The results of the study of pottery from Hradčany were published in the 1990s (Boháčová 1996a; 1996b). Subsequent analyses of pottery, including ceramics from other Přemyslid localities, led to the first synchronisation of their development

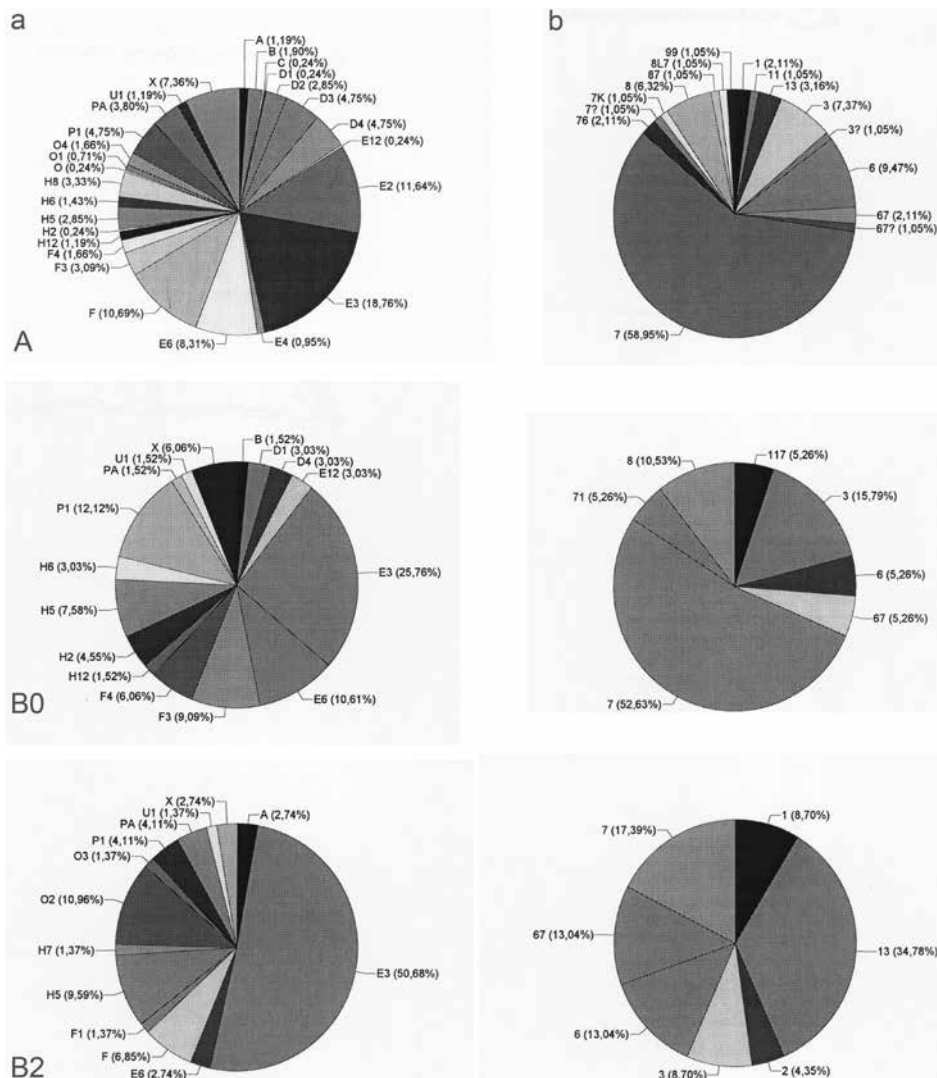


Fig. 3. Development of the presence of pottery classes (a) and decoration (b) in reference collections linked to stratigraphy (horizons A: 421 pcs, B1: 66 pcs and B2: 73 pcs). E3 (=E) *grey ware*, which is typical especially of pottery production in Prague in the late phase of the early Middle Ages (see Figs 1–2 and 7)

(including left-bank Prague); these were then verified and deepened (Boháčová 2003; 2008; 2009), laying the groundwork for a more generalized approach. The conclusion is that significant qualitative change in pottery production during the course of the early Middle Ages in the historical centre of central Bohemia took place in three distinct waves, reflecting socio-economic processes related to the emergence and subsequent consolidation of a central power, the Přemyslid state (Boháčová 2011; 2013).

Qualitative change in pottery production has been recorded macroscopically, but the theory of the development of this pottery has not been precisely defined and still needs refinement and verification. Firstly, there are specific points of the theory, like the emergence of *rims with a collar-shaped indentation*, which are based on a single find context and are not supported with sufficiently strong arguments (this point was challenged: Čiháková 2012: 103–106; although with flawed argumentation, especially in the case of pottery type identification). Secondly, existing knowledge of pottery development is uneven and has many gaps, for which sources are still missing. Verifying the general validity of the hypothesis concerning the association of qualitative pottery development with socio-economic issues is possible only through a comparative study of pottery from important stratified sites in Prague and its surrounding area.

In addition to verifying basic pottery development and systematically refining its connection to absolute dates, the present study was aimed at a detailed understanding of the technological process, its transformation and the links between specific types of pottery and the raw material used in its production. Exact science methods (considerably limited by their cost) were applied to the analysis of a small number of samples of representative pottery types from the individual pottery horizons (Boháčová and Kašpar in press; Gregerová 2012). Agreement between their testimony was sought and the testimonial value of available macroscopic studies was verified, although so far the results are on a documentation level, rather than analytical, due to the small number of petrographic and especially chemical analyses. To date, the sole unequivocal result of the analyses is the provenancing of the raw material for the production of a dominant typical group of late medieval Prague pottery. This *grey ware*, which is a quality-fired, medium-tempered, medium- to thin-walled pottery (matrix symbol E, E1–E4, E12, O1, O4 in the figures) was made of clay coming from deposits in an unknown location in the Prague Basin.

Given the predictably diverse origin of pottery used in medieval Prague and the described character of the pottery collections from the city, it is clear that even in this case research will require sources from additional sites at which pottery from the Prague sequence occurs along with local production. The first results in this direction were provided by an analysis of pottery from Přemyslid Stará Boleslav (Boháčová 2003), where pottery from a local and the Libice production zone was identified and verified using exact methods (Fig. 4).

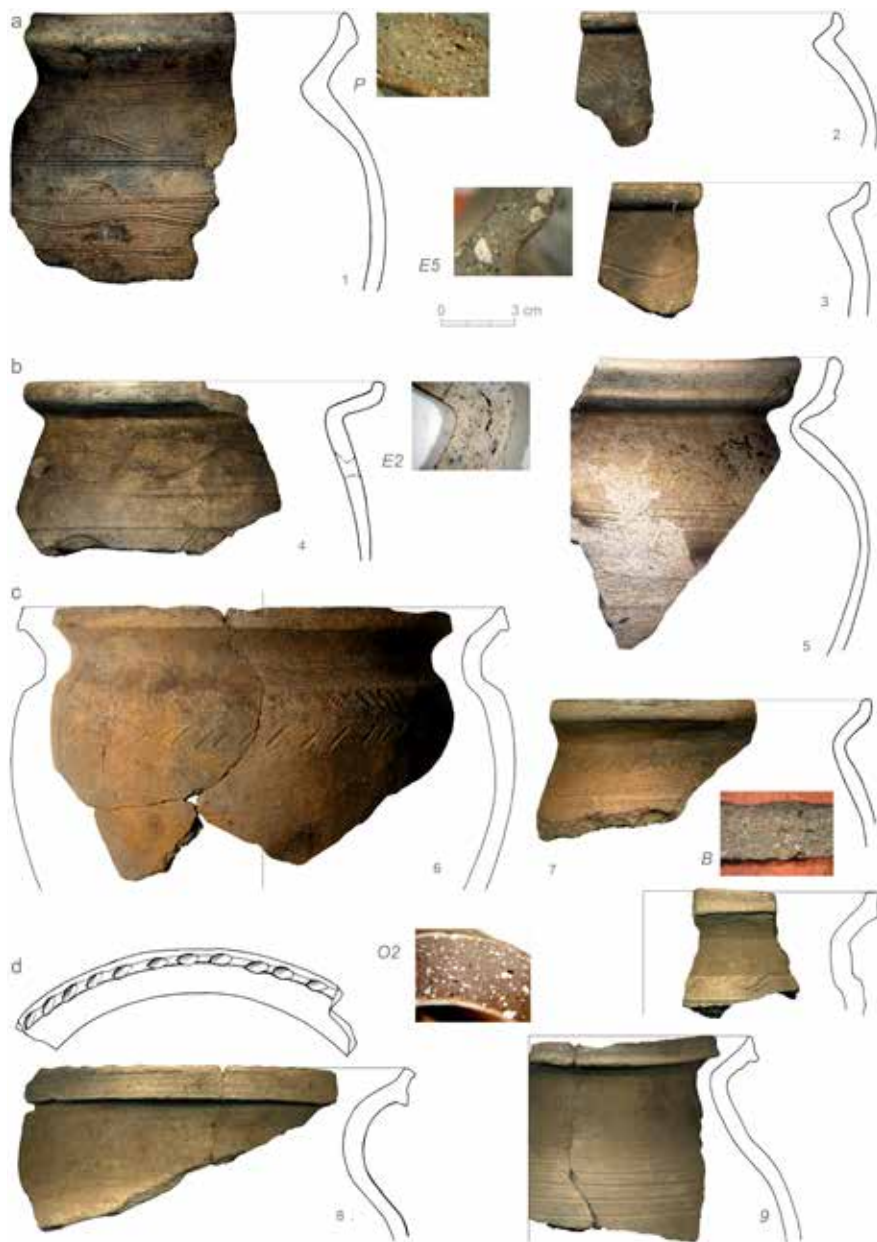


Fig. 4. Samples of pottery from regional production zones. 1 – Stará Boleslav: a – local production of the Middle Hillfort period (with petrographic and chemical evidence); b – production from the Prague zone (?) of the Middle Hillfort period; c – production of Libice on the Cidlinou zone (c: 7 with petrographic and chemical evidence) of the Middle Hillfort period; d – local production of the Late Hillfort Period (with petrographic and chemical evidence; after Boháčová 2003)

CURRENT POSSIBILITIES FOR STUDYING EARLY MEDIEVAL AND EARLIER HIGH MEDIEVAL POTTERY FROM THE PRAGUE PRODUCTION ZONE

Still missing from the study of pottery from Prague is the important link between data on pottery from the historical city centre and from its immediate surroundings as a whole. Although some of the conclusions were confirmed by an analysis of stratified contexts outside of Prague, further progress in research is dependent on comparing the results with the evidence from other key pottery collections. In the current situation of Prague archaeology and its continually increasing collection of finds, the sole viable and possible form of disseminating information among researchers is an online, editable comparative database of pottery from the Prague production zone. This should increase information flow concerning key reference collections from the studied area, giving access to descriptions and analyses and enabling a basic comparison of the collections, thus facilitating the development of descriptive systems and interdisciplinary studies.

The concept of the database is based on the availability of information, which is easy to use and complemented with simple and adequate graphic presentations of selected collections with exceptional testimonial value from Prague and its hinterland, and their find context. The aim is to bring together in one place all the relevant information for pottery research, such as descriptive systems, professional assessments, etc. These can be either directly accessible for professional use while respecting established copyrights or at least recorded by the system in the form of bibliographic references. At the same time, the database should be an open system that presents pottery horizons defined by date and with well-grounded definitions. It is built as part of the online Integrated Information System of Prague Archaeological Sources (NAKI program project DF13P01OVV014 for 2013–2017, funded by the Ministry of Culture of the Czech Republic), the goal of which is to provide access to information on archaeological sources in GIS to the research community. The primary objective of the project is to facilitate the evaluation of the extensive archaeological collections from Prague, including pottery, which is a basic archaeological source, in broader contexts and on a wider scale corresponding to the cadastral map, as well as smaller scales. This system is constructed to be used with data from any archaeological site the study and evaluation of which requires spatial data in a relevant degree of detail.

DATABASE STRUCTURE AND STANDARDS

The database is conceived as five separate data classes independent of one another. They are composed of two types of reference collections: 1) **key pottery collections**, i.e., collections with extraordinary testimonial value (Fig. 5); and 2) **samples of local pottery**, drawn from a more or less defined selection of pottery typical of the selected

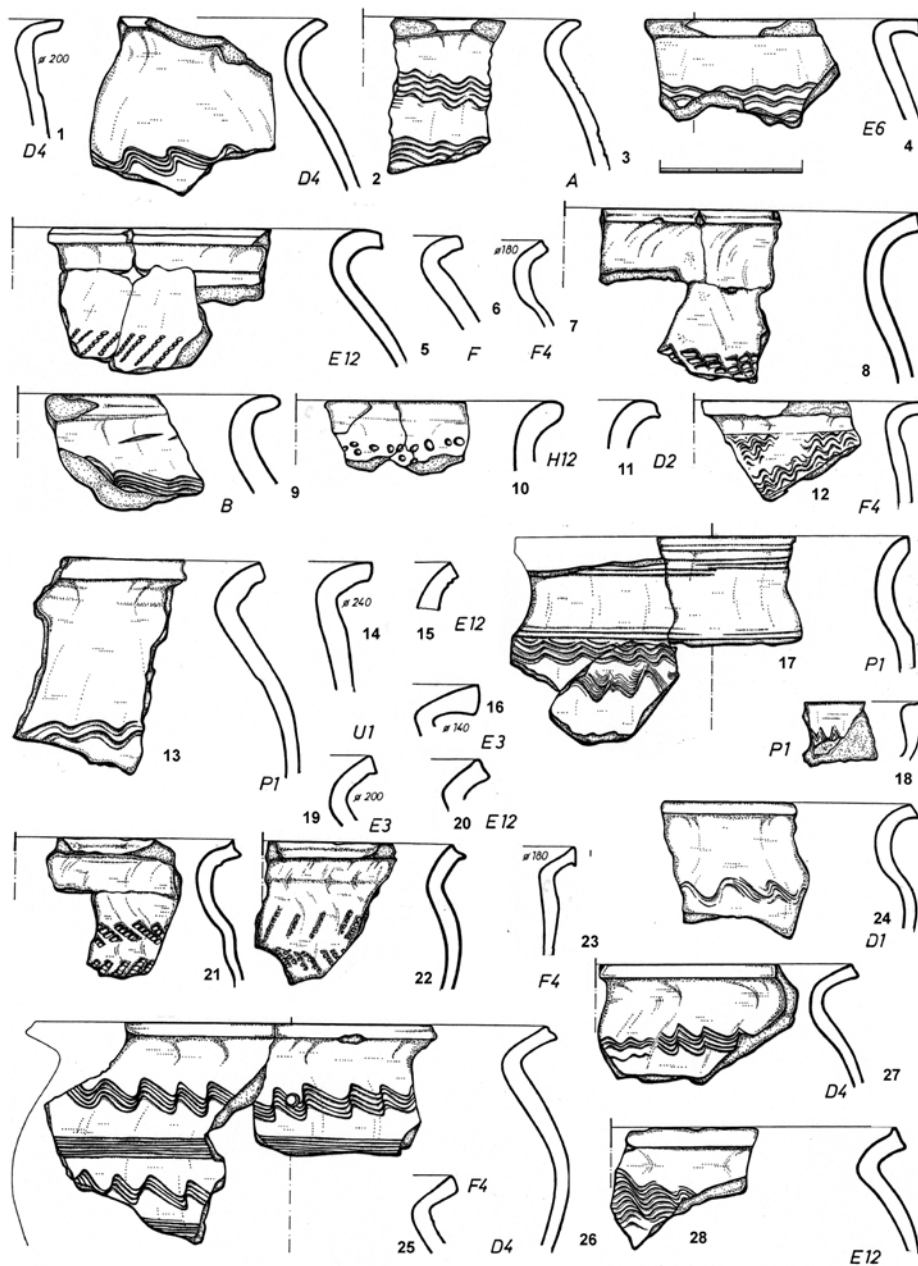


Fig. 5. Example of a reference assemblage: rim types and decoration from a stratified context in the body of a wall. *Terminus ante quem* for the assemblage: dendrochronological dating to 908–917 from the oak structure in the immediate overlying layer

sites (Prague, central Bohemia and possibly other relevant collections), sometimes older in terms of their dating (Fig. 6; Šolle 1966: Figs 32, 59, 60). Other (already interpreted) data classes are: 3) **defined pottery horizons**, which should be accompanied by documents supporting their chronology, and 4) **pottery classes**, which have been identified and which are represented by macro- and micro-images of the ceramic matrix of specific pottery vessel types (Fig. 7).

The database will also include information taken from another part of the Information System (**data class analysis**), providing links to results of existing exact analyses and bibliographies. The data class analysis will collect information from completed analyses that can be searched by the type of matrix and the type of analysis, and potentially also the results. These analyses have not yet been included in any specialistic

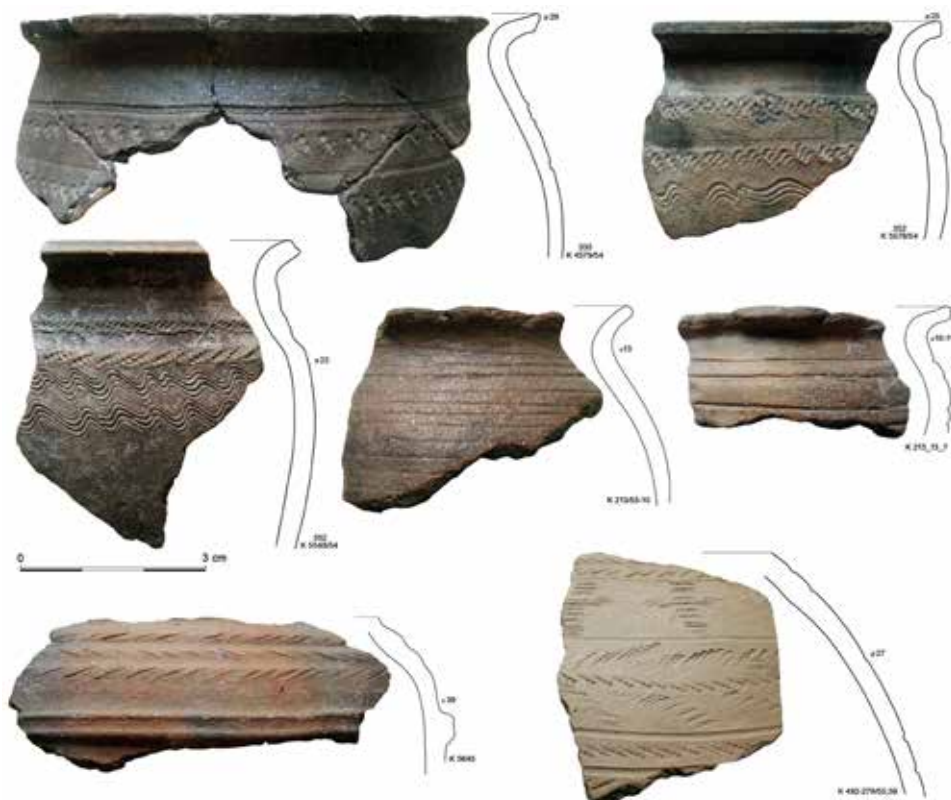


Fig. 6. Example of a reference assemblage: samples from Kouřim (central Bohemia, Kolín district; part of horizon B1; excavations of the Institute of Archaeology, Prague; after M. Šolle 1966).

The author thanks the Regional Museum in Kolín for providing the material

(maybe professional) records and some are not even publicly accessible. Each of the data classes will contain graphic and textual documents and their relevant metadata (Table 1). Basic common standards are assumed for the graphic data presenting pottery collections (resolution size, document, scale, documentation of vessel cross-section, documentation authorisation). Since the database is conceived as a working tool, it

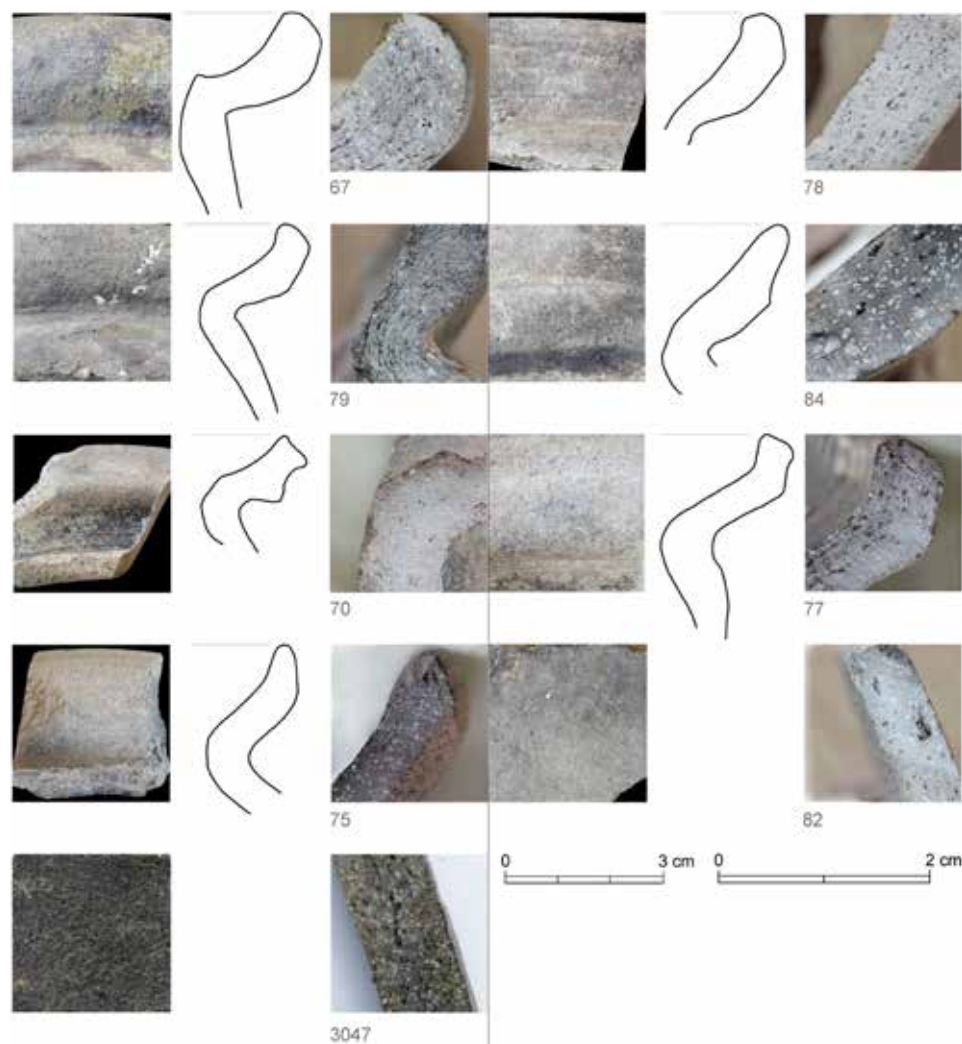


Fig. 7. Example of the presentation of defined pottery class representatives. Macro images of the ceramic matrix of the *grey ware* pottery with *calyx-shaped rims* from Prague

Table 1 Structure of data for the database categories: a reference pottery collection, pottery horizon and matrix.

Reference pottery collection (RPC) – data files	'Examples of data (a fiction)'	'Pottery horizon – data files (category of interpretation)'	Fabric – data files
site	Prague	pottery horizon – autor's indication	general description of pottery type (incl. morphology, decor)
zone of distribution	Central Bohemia	chronology	description of matrix
chronology – interval of finds dating	MHP-MHP/LHP1	comment on the find context	description of admixture
horizont of stratification /a period/ – autor's indication	D	chronology – first appearance	petrographic data (if any)
horizont of stratification – ceramic's type	FAP of calyx shaped rims	chronology – ending	chemical data (if any)
id of excavations	7777	indication of pottery types (PT)	raw material
charakter of RPC according to the find context	rempart inventory	description of innovation elements	
charakter of RPC (type of selection, sampler etc.)	selection of rim types	comment on the definition state	
specification of chronology: archaeological context	LHP1	comment on possible segregation	
specification of chronology: absolute data	after 900	synchronisation with another local pottery (if any)	
presented type of matrix	A, D, E, O	autorization	
summarization of complex	352 pieces/500 g	bibliography	
presented special type of pottery/of element	bottle/handle		
autorization			
bibliography			
links to the figures of pottery	www.prague-archeo-184	links to the figures of PT	links to the figures of pottery surface
links to the field documentation	www.prague-archeo-284	links to the data and the description of PT	links to the figures of pottery section
links to the special analyses records (if any)	www.prague-archeo-289		links to the figures of pottery microstructures (if any)
			links to the presentation (if any)
			links to the analyses (if any)

Key: FAP – first appearance period; RPC – reference pottery complex; MHP – Middle Hillfort Period (c. 850-950); LHP – Late Hillfort Period (1 – c. 950-1050; 2 – 1050-1200); PT – pottery type. Version: January 2015

also assumes the possibility of using entirely standard work documentation. The condition for key pottery collections will be the publication of accompanying field documentation, making it possible to verify the find context. Searching the database will be possible by region (distribution sphere), site and the generally accepted chronology, as well as by chronological classification, taking into consideration the state of research on a given regional chronology and certain technological pottery characteristics. Although the database is not primarily focused on vessel typology, it will be built as an open database also from the perspective of possible descriptive categories, and it is assumed that a general system for the description of morphological types and the recording of metric data will gradually be designed and developed. Existing attempts to build a universally applicable system have touched on the problem of individual needs and access to descriptions, but also on objective causes such as divergent demands on the description of early medieval material, mostly potsherds representing simple pot-shaped vessels, and on the description of typologically differentiated and frequently reconstructable (thanks to being found in sealed contexts like pits or wells) pottery from the High Middle Ages and the early Modern period. Current imaging techniques and the possibility for comparison on the Internet nonetheless facilitate a quick transfer of relatively precise information, which is the primary condition for further possible advancement in knowledge of the pottery from Prague.

CONCLUSIONS

The study of medieval pottery from Prague calls for closer cooperation within and between disciplines. The foundations for a systematic study of pottery were laid during the first large-scale rescue excavations in the 1970s. Although knowledge of medieval pottery from Prague has expanded, the current state of research is not in line with the testimonial potential of the rich collection of finds that Prague archaeology possesses and which continues to grow exponentially. Under the current conditions of Czech archaeology, the sole effective solution that will prevent further aggravation of this situation is a generally accessible information system that will facilitate the exchange of basic information within and between disciplines, and thus encourage the study of pottery and other types of archaeological sources and their comprehensive analysis. There are numerous current tasks in this field. From a general point of view and from the perspective of priorities, the study of the Prague agglomeration offers the following subjects:

- 1 – further refinement of the typological content of pottery horizons;
- 2 – refinement of the absolute chronology of pottery horizons;
- 3 – study of qualitative changes in pottery and their clarification;

- 4 – study of sources of raw materials and their provenance; and
- 5 – study of distribution zones.

The first two thematic areas are important from the perspective of the essential synchronisation of development, especially in the Prague agglomeration, as well as and at the very least in central Bohemia. They are also pressing with regard to the integration of archaeological testimony into the current approach to a reconstruction of the past. The study of the next three subjects should help to clarify the striking agreement between the distinct qualitative changes that can be traced in early medieval Prague pottery and the individual stages of the building of the early Přemyslid state – be they manifestations of the society's economic growth or the centralised power of the ruler and the satisfaction of his needs.

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REFERENCES

- Bartošková, A. 1999. Zánikový horizont budečské akropole (Ke chronologii raně středověké keramiky). *Archeologické rozhledy* 51: 726–739.
- Boháčová, I. 1996a. Nejstarší horizonty Severního traktu Pražského hradu a jejich keramický inventář. In Z. Kurnatowska (ed.), *Słowiańszczyzna w Europie średniowiecznej* 1, 215–325. Wrocław.
- Boháčová, I. 1996b. Nejstarší stratifikovaná keramika a studium hradištního opevnění Pražského hradu. *Archaeologia historica* 21: 483–492.
- Boháčová, I. 2003. Keramika. In *Stará Boleslav. Přemyslovský hrad v raném středověku*. Mediaevalia archaeologica 5, 393–458. Praha.
- Boháčová, I. 2008. The archaeology of the dawn of Prague. In I. Boháčová and L. Poláček (eds), *Burg – Forburg – Suburbium. Zum Problematik der Nebenareale frühmittelalterlicher Zentren*. Internationale Tagungen in Mikulčice 7, 103–119. Brno.
- Boháčová, I. 2009. Pražský hrad a Malá Strana v raném středověku a problém synchronizace jejich vývoje. In S. Moździoch (ed.), *Stare i nowe w średniowieczu. Pomiędzy innowacją a tradycją*. Spotkania Bytomskie 6, 71–98. Wrocław.
- Boháčová, I. 2011. Prague, Budeč and Boleslav. The reflection of state formation in Early Medieval archaeological sources. In J. Macháček and Š. Ungerman (eds), *Frühgeschichtliche Zentralorte in Mitteleuropa*. Studien zur Archäologie Europas 14, 371–395. Bonn.
- Boháčová, I. 2013. Počátky budování přemyslovského státu a jeho centra – synchronizace výpovědi archeologických pramenů a jejich interpretace. *Archaeologia historica* 38: 7–25.
- Čiháková, J. 2012. Otázky chronologie pražské raně středověké keramiky. *Staletá Praha* 28: 91–120.
- Dvorská, J. and Boháčová, I. 1999. Das historische Holz im Kontext der archäologischen Untersuchungen der Prager Burg. In L. Poláček and J. Dvorská (eds.), *Probleme der mitteleuropäischen Dendrochronologie und naturwissenschaftliche Beiträge zur Talaue der March*. Internationale Tagungen in Mikulčice 5, 55–67. Brno.

- Gregerová, M. 2012. *Petrografická charakteristika a chemické složení keramických artefaktů Praha – Hradčany Loretánské nám.* [odborný posudek] Archeologický ústav AV ČR, Praha, v.v. i., čj. txt2012_497.
- Hrdlička, L. 1993. Poznámky k chronologii pražské středověké keramiky. *Archeologické rozhledy* 45: 93–112.
- Richter, M. 1982. *Hradištko u Davle. Městečko ostrovského kláštera.* Praha.
- Šolle, M. 1966. *Stará Kouřim a projevy velkomoravské kultury v Čechách.* Praha.