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A matter of Prague Early Medieval pottery chronology

ANNOTATION

The interpretation of archaeological excavations with Early Medieval contexts in Central Bohemia has problems relating to vessel description and chronology. This region is generally connected with pottery types used in the central Prague area. The long lasting intensive settlement at Malá Strana yielded numerous detailed stratigraphies, which form a basis for the relative chronology depicted in sections on a pottery-stratigraphical chart for each excavation. For this article only such research excavations were selected, which included a stratigraphy with absolutely datable finds. A long lasting aim for linking the relative pottery chronology with absolute dating leads to its comparison with dendrochronological and the radiocarbon method. The need for a detailed orientation in the Early Medieval pottery is given by the use of pottery fragments as an omnipresent phenomenon also in connection with so called large history around the outset of the Bohemian state.

SUMMARY

Analysis of large pottery assemblages from rescue excavations at Prague Malá Strana is associated with three problematic spheres: 1) terminology, 2) selection of data criterion for a relative chronology sequence, 3) anchoring the relative chronology in absolute time. Terminological problem covers mainly pottery categories as groups of pottery artefacts based on similar characteristics. The author uses following categories:

Pottery form – routine technological characteristics

Pottery sub type and version – pottery type in more detailed segmentation

Pottery type – identical shape within a single (identical) pottery form. For example white type of collar like rim, Prague type of the chalice like rim, archaic type of the large up drawn rim...

Pottery range – category for occurrence of various shapes within a single form; composes of types within the same form.

Pottery super type – category for the same shape within different pottery forms; composes of types with the same shape; differs from the order category by a disproportional lower number of specimen.

Pottery order – identical basic rim shape independent on technology (on various pottery forms).

Pottery complex – identical basic tendency of the rim shape independent on technology, it can include several orders or their parts. Enables to cover so far undefined shapes of a common trend.

Dating criteria for the Malá Strana pottery assemblage are given by the fragmentary character of assemblages coming from settlement sites only. Chronologically sensitive changes, which can be used as dating criteria, occur in rim shapes, decoration and technology. Currently the most used criterion is the modification of the rim section since the rim shapes are highly variable and their drawing is the most comprehensive and favourable. The definition of the datable characteristics of the stratified fund from Malá Strana is based on the search for the outset of new features, not defined in advance. Pottery horizons are not based on comparison of morphological and technological feature types defined in advance, but on mutual comparison of stratigraphy and on the identification of chronologically limited but spatially spread features penetrating through large number of stratigraphy, i. e. identification of fashion fluctuations and the emergence of technological innovations. Application of this method requires an abundance of comparable vertical stratigraphy, accurately excavated and analysed, a criteria that the Malá Strana assemblage fulfils. Unfortunately the other condition for this application is missing, namely finance for the analysis of large ceramic assemblages with 2-4 thousands of fragments in average. Relative chronology is based on the analysis of the vertical stratigraphy of a trench or excavation. The result projects into "the pottery-stratigraphical chart" of the trench. As expected, none of the diagrams created so far covers a complete development line of the Malá Strana Early Medieval pottery.

The third sphere of questions is anchoring the relative chronology of Early Medieval pottery, or its sections, in absolute time. Direct sources of absolute data are included in the excavated superpositions – coin finds, timber constructions (dendrochronology, 14C) or organic material (14C). Written evidence as indirect source has a very limited use for the Early Middle Ages. Legible coins are missing in the Early Medieval assemblages from Malá Strana. Absolute data is supplied by dendrochronology and radiocarbon dating. Timber sheets can be archived in a dry form, the samples ought to be tied up by string around their perimeter in order to prevent concentric cracking (around the annual rings). Cracks coming from the centre to the edge do not damage the sample. The string has to be tightened up after two weeks as shrinkage occurs. The assemblage for dendrodating from Malá Strana was achieved in 1991-1997. Discarding the samples after their analysis in 1993-1995 (when both standards were not established yet) and their transformation into a simple computer record of the measured data brought severe problems. Dendrochronology of the timber from Malá Strana has been intensively pursued for a long period by J. Dobrý. The value of the gained data depends on the extent of the timber dressing, i. e. the shape of the wood (a log, a semi pole, plank, ...).

The dendrochronological data of 10 timber samples were controlled by radiocarbon dating in Poznań in Poland; each sample of three annual rings. The achieved data supplied a wide time range for each sample, which included the dendrochronological date (Fig. 1). The top and bottom dating range of 14C dating can exclude a possible mistake on behalf of dendrochronology. The reliability degree was tested on two samples of annual rings with an interval of 10 years, sampled from a plank no. 211 – the radiocarbon method supplied basic data in an interval of 40 years (1190 and 1230 BP). The tree as a unit does not provide a single radiocarbon date but each annual ring has its own dating. This significantly questions the use of radiocarbon dated charcoal (f. e. from a 150 years old tree) for a detailed chronological classification of other early medieval entities (mortar, slag), since chronological underestimation is more or less inevitable. Therefore it is advisable to use for C14 dating botanical material with the shortest life existence – leaves, grass and herbs, in emergencies thin twigs and moss. The radiocarbon dating cannot be considered indisputable as indicated by a single sample from Malá Strana tested in two laboratories with different results (excavation Prague 1 - Malá-Strana, Mostecká no. 279/III, excavation number 18/00: Gröningen 1155±40 BP – 783–965 A.D.; Poznań 1115±30 BP – 833–1014 A.D.).

The pottery-stratigraphical charts present assemblages with absolute data and their position within the scheme of the action. Their comparison yielded information about the period of use of the pottery order with the collar like and chalice rims, however verification with higher number of cases of identical combination is desirable.

Fig. 1. Prague-Malá Strana. Accordance of the radiocarbon (**grey**) and dendrochronological (**green**) dating of a section of the dated annual rings from the timber from the excavation 26/96, 6/01, 2006/12.

Fig. 2. Prague 1-Malá Strana, Mostecká No. 279/III, excavation 18/00. C14-dating of seeds from a layer with a pottery assemblage I. The pottery-stratigraphical chart monitoring the development of the site is given in an interpretation level of stratigraphy and trenches in a higher, second order signed as the stratigraphical complex.

Fig. 3. Prague 1-Malá Strana, Mostecká No. 279/III, excavation 18/00. C14-dating of a single sample pursued in two laboratories: Gröningen and Poznań.

Fig. 4. Prague-Malá Strana. Upper Malostranské square Plot No. 993, excavations 14/96 and 2007/19. The lower, earliest part of the pottery-stratigraphical chart. Radiocarbon dating for the Early Hillfort period context with pottery in a red frame. The red data 68% of probability, red-black data 95% probability.

Fig. 5. Prague 1-Malá Strana, Tržiště No.259/III – the Hartig Palace, excavation 12/93. Three timbers from a single construction, stored in a depositary, yielded 1 dendro date (**green**) and 2 C14-dating (**red**). Only the later section of the radiocarbon dating result is stated. Pottery-stratigraphical chart is given in the interpretation level of stratigraphical units in the level of the lowest, first order signed as stratigraphical step.

Fig. 6. Prague 1-Malá Strana, Josefská Plot No.1033 + Mostecká Plot No.1035, excavation 26/96, trench III; Malostranské square No. 271/III, excavation 6/01. Pottery-stratigraphical chart is given in the interpretation level of stratigraphical units in the level of the lowest, first order signed as stratigraphical step (SK). The stratigraphy on the excavation 6/01 was completely without finds; it is however an important dendrochronological parallel to the results from the trench III, excavation 26/96.

Fig. 7. Prague-Malá Strana, excavation 26/96. Decoration within individual stratigraphical units SK of the trench III – data for the pie diagram in the **Fig.6**. Three various characteristics of the decoration- ratio of a) the instrument used (comb, single point stylus, two point stylus), b) decoration motives independent on the instrument, c) basic motives depending on the instrument.

Fig. 8. Prague 1-Malá Strana, Valdštejnské square Plot No. 1021, excavation 21/97. Dendrochronological dating of a fir log in the context of a fragment of pottery order with the collar like rim in a red frame.

Fig. 9. Prague 1-Malá Strana, Malostranské square Plot No. 258/III, excavation 8/90, trench XXIII. Pottery-stratigraphical chart monitoring the development of the site is given in the level of the layers. The timber, which closes the bottom part of the stratigraphy, has much earlier date of felling than the period when the stratigraphy was laid.

Fig. 10. Prague-Malá Strana, excavation 26/96, trench III. List and dendrochronological dating of the timber construction components. L/S – horizontal x vertical construction component; **K/F/P** – log x board x plank; **A** – fir, **Q** – oak, **Pi** – pine.

Fig. 11. Prague 1-Malá Strana, Josefská Plot No.1033 + Mostecká Plot No.1035, excavation 26/96, trench III. Renewed and repaired underlay timber constructions of a corduroy road or a public space paving. Earlier constructions are damaged by later alterations. **A** – sequence of the alterations; the latest of them is stratigraphical unit SK 19. Foundations of SK 16 are made of wattle below the ground. **B** – The construction process of a timber brace SK 19 phased into three steps SK 19A-C. Drawing of SK 19D depicts an originally underground construction of a log frame without two levels of the grillage.

Fig. 12. Prague 1-Malá Strana, Valdštejnská No.154/III – the Kolowrat Palace, excavation 3/05. C14–dating of palaeobotanical macroremains from Vltava flood sediments. The **red** data 68% probability, **red-black** data 95% probability, blue date covers the floods in an interval mentioned in the written evidence – **underlined** are chronicles of the period, **not underlined** is written evidence from the 16th century. Pottery-stratigraphical chart is given in the interpretation level of stratigraphical units in the level of the lowest order signed as stratigraphical step; the number corresponds with the most significant layer of the stratigraphy.

Fig. 13. Fragments evoking a question whether the thin horizontal bunches of lines were in the 10th century performed by a comb, as is generally interpreted, or by a single pointed stylus under a fast rotation.

English by Linda and Patrick Foster