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Hinterlands of Early Medieval Central Places in Bohemia

Archaeological and Historical Sources

Jan Mařík

Abstract

The main objective of this paper is to determinate the extent of the economic hinterland of Early Medieval Bohemian strongholds on the basis of spatial analysis of the archaeological evidence and written sources. For this purpose, four Early Medieval centres in Litoměřice, Libice nad Cidlinou, Prácheň and Stará Boleslav were selected. As a background to the spatial analyses, the mapping of Early Medieval archaeological finds and princely donations to ecclesiastical institutions was used.

Keywords: Early Middle Ages; hinterland; Bohemia; stronghold; spatial analysis.

1. Introduction

Early Medieval fortified settlements are traditionally considered to have been the centres of political power and administration, as well as the hubs of religious and economic life of the society. Characteristics such as a rather high population density, evidence of specialized non-agricultural production, and the presence of a social elite presume that the hinterland satisfying the centre's demands for food, raw materials and, indeed, services was essential for each stronghold's existence (cf. Dresler – Macháček 2008).

The origins of the terms 'centre' and 'hinterland' can be traced back to the economic geography of the first half of the 20th century. Archaeology has adopted these terms and considerably adjusted them to suit its demands. By doing so, their meaning has shifted beyond the sphere of economy. According to Moździoch (1999; 2002, 208–220), strongholds were centres of trade (exchange), cult activities, information exchange, and government. Gringmuth-Dallmer (1999) reduced their functions only to those that can be archaeologically attested: government, defence, trade, handcraft production, and cult. For pre-industrial centres Sjöberg (1965, 87–91) cites the following functions: political (administrative and military), economic, religious, and educational. Unlike Gringmuth-Dallmer, Sjöberg excludes the idea that a centre could fulfil just one of the above-mentioned functions even though some of them can predominate.

On the other hand, archaeologists have not invented for their purposes any new definition based on original theoretical background (Bahn 2007). Central place theory (CPT) was invented by German geographer Walter Christaller in 1933. Interconnections he defined for towns located in southern Germany were based mostly on economic bases. The main factors conditioning the application of CPT include the

rational considerations of consumers and closed economic system. Settlement growth based crucially on economic factors is generally followed by the appearance of smaller commercial centres distributed evenly throughout a landscape lacking distinct natural barriers (Crumley 1979). The term hinterland (germ. *Hinterland*, *Umland*) was for the first time applied by geographers in the first half of the 20th century (Allix 1914; Van Cleef 1941). Originally, the term *hinterland* was designed to describe territories – a mainland located *behind* a port (*back country*). Generally speaking, it was an area subordinated to a centre with the main emphasis laid on economic interconnections between the centre and its hinterland.

The archaeological approach to CPT defines the position of a centre within a settlement pattern on the basis of the functions the centre fulfils (Gringmuth-Dalmer 1999). *If* we are more or less able to identify these functions on the basis of archaeological evidence in the centre itself, seeking reflections of these functions in the supposed hinterland, we may find ourselves on very dubious ground. The cognitive possibilities of archaeology are in this respect considerably limited; and, thus, some parts of the hinterland can remain completely invisible (Thomas 1997). Archaeological evidence enables us to describe mainly economic structures in the close vicinity of the sites, to trace the provenance of mineral raw materials, and rarely also to observe the distribution of specialized products in a rural environment (Müller-Wille 1988; Willroth 1993). However, identifying services granted to the centre by inhabitants of its hinter-

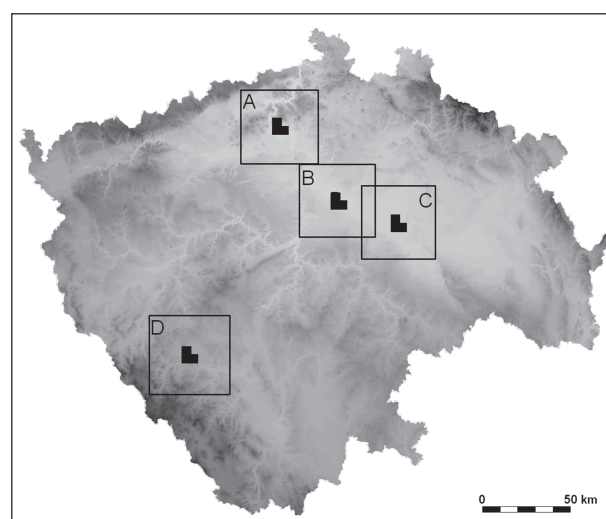


Fig. 1. Selected sites with marked extent of spatial analyses. A – Litoměřice, B – Stará Boleslav, C – Libice nad Cidlinou, D – Prácheň.

land are completely beyond the scope of archaeological evidence (Klápště 2005, 296–315).

The following text attempts to compare predictabilities of both archaeological evidence and written sources in relation to the issue of central places and their economic hinterland. The term economic hinterland applied in this text relates to a certain territory that satisfied or might have satisfied the demands fundamental for the existence of the centre. This hinterland is anticipated to be placed in the immediate vicinity of the centre, and is manifested in archaeological evidence mainly by concentrations of settlement and other activities, and in the case of written sources by a concentration of sites that are mentioned in them in connection with the given centre.

2. Analysed sites

For this purpose, four archaeological sites (Libice nad Cidlinou, Litoměřice, Stará Boleslav, Prácheň) with a sufficiently dense distribution of archaeological activities present in their surroundings (up to 20 kilometres) were selected. Archaeological excavations enable us to determine distinct clusters of Early Medieval settlement that are independent of the extent of archaeological activities conducted in the given area. The presence of preserved written sources formed a second criterion essential for the selection of these sites. The main source of information represents deeds featuring donations to monastic possessions of newly established chapter houses. The above mentioned selection of sites is based on the presumption that those donations from the surroundings of previous princely property reflect settlement structure and herewith also economic hinterland of these localities.

2.1. Libice nad Cidlinou

This stronghold was founded at the junction of the Elbe and Cidlina Rivers in the eastern part of Central Bohemia. On the basis of archaeological evidence its beginnings can be dated to the turn of the 10th century (Mařík 2008a). Thanks to its favourable position on the long-distance trade route, Libice became in the 10th century an important regional centre. Long-term archaeological research has enabled mapping of the entire appearance of this settlement agglomeration including not only the very densely inhabited range of the stronghold itself (c. 24 ha) but also a series of settlements and burial grounds concentrated within a distance of 1.5–2 kilometres. The earliest written references regarding the stronghold date from the second half of the 10th century and are connected with the Slavniks noble family, which was among other activities engaged in running its own mint independent of the Přemyslid princely power. This development phase was violently terminated in the year 995 when the majority of the Slavnik family was massacred. At the beginning of the 12th century the stronghold appeared in written sources as one of the administrative centres of the Přemyslid castle organisation, and it is mentioned for the last time in the year 1130. However, none of these sources testify anything concerning the mutual relationship between Libice and the land encircling it. We do have at our disposal a very late reference in a deed from the year 1227 in which Libice is cited among other sites as the property of the St. George cloister at Prague Castle (CDB II, 422, no. 378). Libice is mentioned there at the beginning, followed by another six sites in its immediate surroundings. Despite the great age of the document, it seems highly plausible to presume that this deed reflects earlier economic structure.

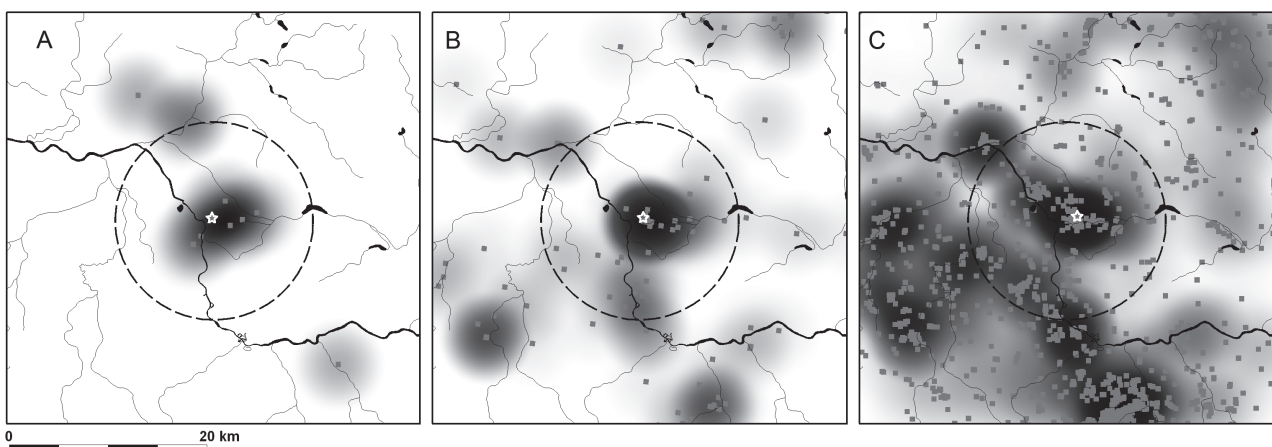


Fig. 2. Libice nad Cidlinou. A – written sources, B – archaeological evidence (Early Medieval period), C – archaeological evidence from the entire Archaeological database of Bohemia (ADB).

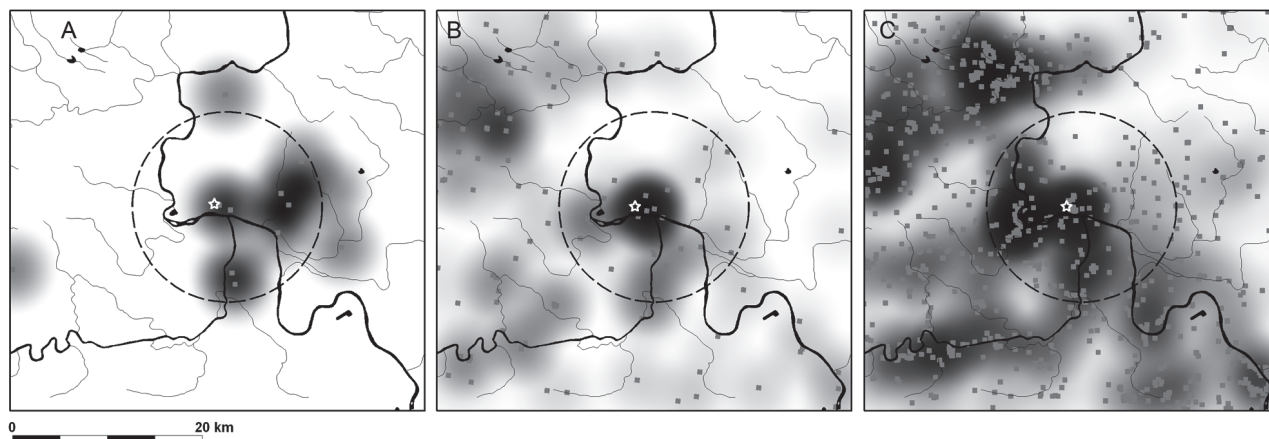


Fig. 3. Litoměřice. A – written sources, B – archaeological evidence (Early Medieval period), C – archaeological evidence from the entire ADB.

2.2. Litoměřice

The stronghold in Litoměřice located at a strategic point above the junction of the Elbe and Ohře/Eger Rivers at the foot of the Bohemian Highlands was probably founded at the turn of the 10th century. As in the case of the Libice stronghold, the fortified *Dómské návrší* was encompassed by a mosaic of settlements and burial grounds spreading up to a distance of 1.5 kilometers. In the case of Litoměřice, results of systematic archaeological activities (Zápotocký 1965) are rarely supplemented by written sources. The Přemyslid Duke Spytihněv II (1055–1061) founded a collegiate chapter house there in the year 1057 (CDB I, 53–60, no. 55). Unlike the other three observed sites, Litoměřice did not lose its position as an important centre during the 12th century, and a royal town was established between the years 1219–1228 in place of the previous stronghold (Tomas 1966).

The original deed mentioning property donated to the chapter house by the Duke has not survived. However, there are altogether three versions (A, B, C) of it that differ from each other mainly in the enumeration of sites and services that were subjects of the donation. Version A was used as a basis for spatial analysis as it at least probably differs from the original donation deed, and, thus, reflects most reliably the original princely property in the vicinity of the stronghold (Tomas 1966; Petráček 2002, 52).

2.3. Prácheň

The stronghold of Prácheň is located in western Bohemia on the upper stream of the Otava River. The earliest written reference dates back to the first half of the 11th century (Sláma 1986, 93). The beginnings of the stronghold can

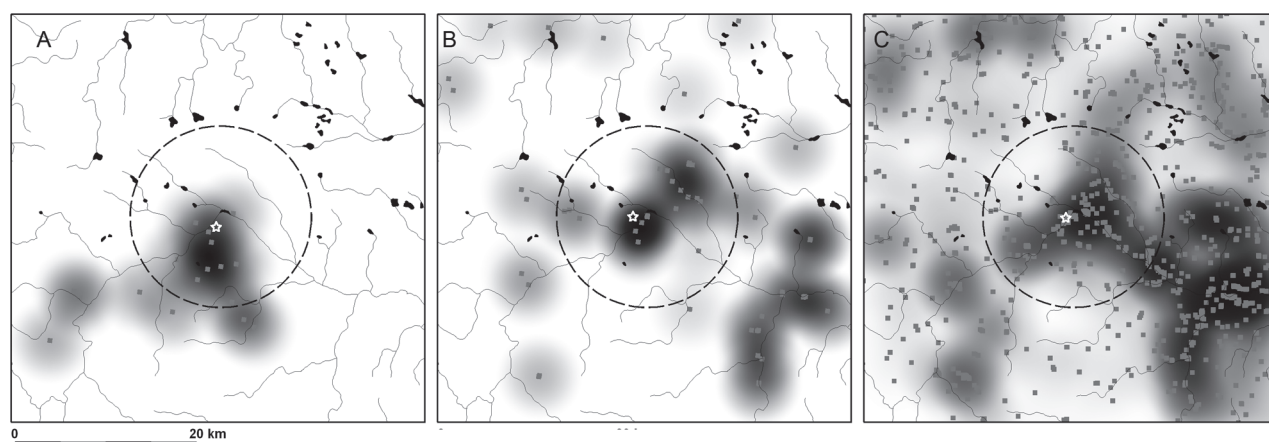


Fig. 4. Prácheň. A – written sources, B – archaeological evidence (Early Medieval period), C – archaeological evidence from the entire ADB.

be similarly dated on the basis of archaeological evidence yielded from excavations conducted on its fortification system (Braun – Klápště 1978). Donations from Duke Břetislav I to the Benedictine cloister at Břevnov from the year 1045 (CDB I, 352–354, no. 379) also date to the same period. At the turn of the 12th century the stronghold transformed itself into the administrative centre of the Přemyslid castle organization. The fall of the stronghold can be dated to the 13th century, when the regional centre function was taken over by the nearby town of Horažďovice.

2.4. Stará Boleslav

The stronghold of Stará Boleslav was founded at the turn of the 10th century on the north-eastern edge of the primary domain of the Přemyslid dukes, which covered approximately the area of present central Bohemia to an extent of 3000 km² (Sláma 2009). It is assumed that Stará Boleslav and another four similar border strongholds (Lštění, Tetín, Mělník, Libušín) were founded by Duke Spytihněv I (894?–915). The earliest written references are connected with the murder of Duke Wenceslas by his younger brother Boleslav in the year 929 (935 eventually). The stronghold lost its original significance as a border fortress in the 10th century when the Přemyslid power broadened its influence over the entire area of Bohemia. Long-term archaeological research corroborated that the settlement of the 10th and 11th century was concentrated only within the fortified area of the stronghold itself; nevertheless, unlike Litoměřice and Libice, the existence of a settlement agglomeration has not been proven. Duke Břetislav I (1035–1055) founded a collegiate chapter house at Stará Boleslav as an act of contrition for the plundering of Poland in the year 1039. The property of the collegiate chapter was certified by a donation deed (CDB I, 358–362, no. 382) from the second quarter of the 11th

century (Petráček 2002, 59). The foundation of the chapter house and donation of princely property represented a fundamental change in the further development of the stronghold (Boháčová 2008). The stronghold at Stará Boleslav certainly lost its position as an administrative centre, and, as part of ecclesiastical property, remained primarily a place of pilgrimage. The loss of sovereign's interest regarding further development of this site let us presume that the localities mentioned in the donation deed represent most, or even all, of the property within the hinterland of the previous stronghold.

3. Spatial analysis of archaeological evidence and written sources

Mutual relations between centers and their hinterlands have been observed mainly in the sphere of various spatial relations. The main attention has been focused on concentrations of archaeological evidence and on sites mentioned in written sources as princely donation to ecclesiastical institutions. Data from the Archaeological database of Bohemia (ADB), the central database of archaeological excavations and finds for Bohemia, which is administered by the Institute of Archaeology of the Academy of Sciences of the Czech Republic, Prague, v.v.i. (cf. Kuna et al. 2004, 421), served as the basis for the mapping of archaeological evidence, and they were supplemented and specified by the following detailed regional studies: Libice (Mařík 2009, 145–156), Litoměřice (Zápotocký 1965), and Stará Boleslav (Boháčová 2008). Only those archaeological excavations that yielded finds datable from the Middle (c. 800–950 A.D., labelled with RS3 in ADB) to the Late 'Hill-fort' periods (c. 950–1150/1200 A.D., labelled with RS4 in ADB) were taken into consideration. The entire bulk of archaeological excavations conducted in the observed territories constituted the third map layer that formed

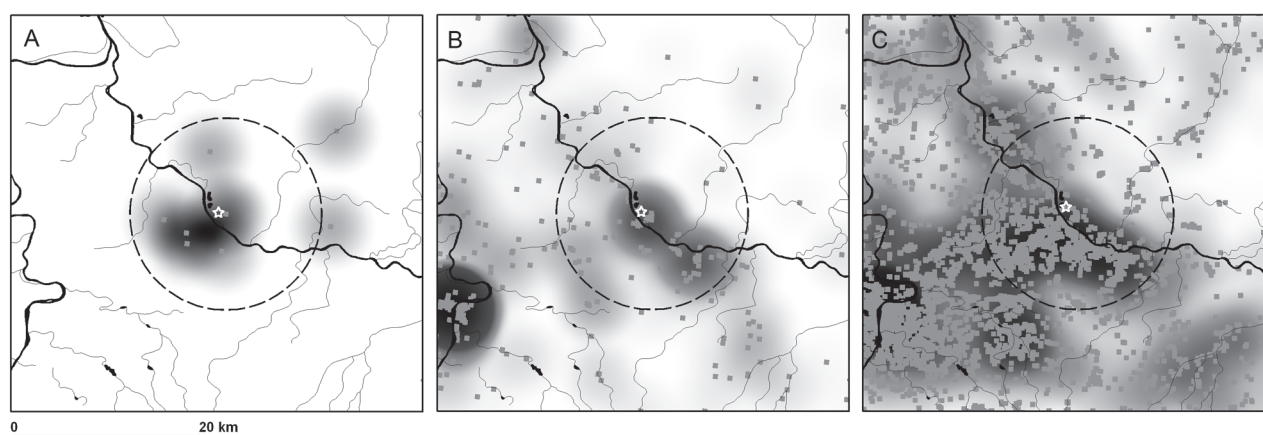


Fig. 5. Stará Boleslav. A – written sources, B – archaeological evidence (Early Medieval period), C – archaeological evidence from the entire ADB.

the basis for spatial analysis. These data played a key role in the evaluation and interpretation of the extent of the Early Medieval settlement. In the case of spatial correspondence between concentrations of Early Medieval archaeological finds in the given territory and the intensity of conducted archaeological activities there, the results of spatial analyses could not be considered entirely credible.

Map bases were displayed within the GIS environment of GeoMedia Professional 6.1 software, and clusters of the evaluated phenomena were visualized by GeoMedia Grid 6.1 software. Analysis of the density of archaeological activities and sites mentioned in written sources was uniformly conducted for all sites within general grid measuring 50×50 m by density, used defined ban with 5 000 m approach. Instruction command 'density' – an interpolation function that uses kernel density estimation to generate density maps – was applied for visualization. Kernel density estimation is a way of estimating probability density functions of a random variable. This analysis clearly showed that the evaluated phenomena such as the concentration of Early Medieval archaeological finds and princely donations do not distinctively exceed a distance of 10 kilometers. On account of this determination, a circle of 10 kilometers radius was outlined encircling each of the observed centres. Such circles can be taken as an arbitrarily determined area (cf. Klápště 1999) where economic hinterland of the selected centers can be expected.

4. Discussion

The results of spatial analyses allow us to anticipate that a substantial portion of economic activities connected with the evaluated Early Medieval centers was concentrated within a perimeter of 10 kilometers. Considering the facts that the above-mentioned sites underwent relatively different historical development and that their position within the settlement patterns was not equivalent, it seems possible to assume that the limiting factors conditioning the settlement structure were the communications and transport facilities enabling access to the centre within a one-day-journey range. This assumption is corroborated by an example dating to the High Medieval Ages. A perimeter measuring 11 kilometres corresponding to a length of one Czech mile was quite successfully applied as an arbitrarily determined area for the study of economic regions of High Medieval middle ranking towns (Klápště 1999). Similar settlement structure was also reconstructed for the vicinity of the Břeclav-Pohansko stronghold, where increased settlement concentration can be observed within an 8–10 kilometres perimeter (Dresler – Macháček 2008).

A comparison of written sources and archaeological evidence can provide an interesting insight into the study of the mutual relationship between the centre and its hinterland. However, performed spatial analyses clearly show that only their combination can yield a picture that approaches historical reality.

It is impossible to avoid economic issues when dealing with interrelations between centers and their hinterlands. Two contradictory factors play key roles in our understanding of the form of mutual economic relations. On the one hand there is the demand of the centre to sustain people that are not immediately involved in the subsistence process connected with agricultural production; on the other hand, there is the ability of the centre to produce a sufficiently large surplus that is capable of satisfying this demand.

It is beyond doubt that Early Medieval strongholds were, in fact, sites where a certain part of society not involved in agricultural production tended to concentrate itself. This exclusive part of society included people from the top echelon of society such as members of the ruling family or their representatives in the form of administrators (wardens), and eventually also the clergy. Beside this relatively limited group of people are members of the Duke's retinue and craftsmen. In spite of the fact that a series of artifacts deriving from specialized workshops was discovered at strongholds dated to the 10th and 11th centuries, the places of their manufacture, i.e. the workshops themselves, are missing from archaeological evidence with only several exceptions (iron and precious metal working) (Frolík – Smetánka 1997, 102; Boháčová 2008). Likewise, we are lacking reliable evidence from Bohemian strongholds of the mass-production of craftsman artifacts as is known, for example, from northern European trade emporia. Thus, it can be presumed that the majority of specialized craftsmen that were subjects of princely donations were more or less independent of the redistributive mechanisms at the centre (cf. Klápště 2005, 305). The idea of relatively low demands of the centre on the hinterland's production corresponds well to the reconstruction of settlement patterns in the economic hinterland of the stronghold. Model visualizing demands of Early Medieval agglomeration and the potential of the land to fulfil these demands was created for the stronghold at Libice nad Cidlinou. The results of that analysis clearly show that in the extreme case all demands on arable land, pasture, and sources of timber and firewood can be covered within a perimeter of 4.2 kilometres from the stronghold (Mařík 2008b).

As far as evaluated sites are concerned, the number of donated villages in their vicinity varies between six and ten (10 villages for Prácheň, 7 villages for Libice, 6 villages for Stará Boleslav, and 7 villages for Litoměřice). Even if the number of villages doubled according to the archaeological evidence, they would still only be able to cover a small portion of the inhabitants of densely populated agglomerations such as Litoměřice (1000 inhabitants; Klápště 2005, 340) or Libice (600–900 inhabitants; Mařík 2008b).

In the case of Early Medieval Czech strongholds it seems highly plausible to assume the existence of more diversified sources whereby the centre itself is not the exclusive consumer of products but participates in some way in their production. Thus, the interrelations between a centre and its hinterland can be defined as well-balanced (Clarke – Ambrosiani 1991, 7, 129; Brather 2001, 141).

5. Conclusions

This paper attempts to compare the predictabilities of both archaeological evidence and written sources. Thus, its main objective is to determine the extent of the economic hinterland of Early Medieval Bohemian strongholds on the basis of spatial analysis of the above-mentioned data. For this purpose, four archaeological sites (Litoměřice, Libice nad Cidlinou, Prácheň and Stará Boleslav) where both types of evidence are available were selected. As a background to the spatial analyses, the mapping of Early Medieval archaeological finds and princely donations to ecclesiastical institutions was used. It was further presumed that these donations located in the vicinity of previous princely property reflect settlement structure and herewith also the economic hinterland of the evaluated sites.

Spatial analyses of the obtained data within the GIS environment clearly demonstrated that Early Medieval archaeological finds as well as the locations of sites mentioned in the written sources do not extend beyond a perimeter of 10 kilometres from the stronghold. Some general conclusions considering mutual economic relationships between Early Medieval centres and their hinterlands can be drawn on the basis of these observations. In the process of evaluation, the following factors were taken into consideration: evidence of the presence of specialized production, ascertained settlement structures encircling the strongholds, and also estimations of the number of people inhabiting the observed strongholds. On account of the above-mentioned factors, it is possible to conclude that the evaluated Early Medieval strongholds had to participate in a substantial way in the agricultural production that satisfied its demands.

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