

Centuries of Transformation

Settlement Structures in the Central Parts of the Carpathian Basin in the 8th–11th Century

Detailed Research Plan
for the OTKA-grant No. 104533.

I. The history of research, open questions. The principal investigator's previous work leading to the project

The archaeology of the 8th–11th c. in Hungary was created as the investigation of cemeteries and grave goods. Therefore the first explorations of settlement structure, carried out already from the turn of the 19th–20th c., were based on the analyses of some place names, as well as on the projection of some data of the later written sources, mainly onto the 11th c. In spite of the unfavourable beginnings, in the last fifty years a dataset could be collected by the early medieval settlement archaeology of the central parts of the Carpathian Basin that can also be used for the solution of questions associated with settlement structure and settlement pattern.

Settlement archaeology is a complex field of research, to be built up of several complete parts. Already from the 1950ies two major approaches can be observed in the Hungarian settlement archaeology. Besides an analysis of the inner structure of early medieval village-like settlements, there was also a need for the mapping and description of the settlement pattern already from the very beginning of this branch of archaeological science, but unfortunately with much less intensity. The natural geographical conditions probably influencing settlement have been of primary interest both in the evaluation of single settlement excavations and in the reconstruction of settlement pattern.

1. The history of the research of the inner structures of early medieval settlements

One of the major deficiencies of the 8th–11th c. settlement archaeology in Hungary as carried out from 1952 is the rarely implemented analysis of the question of settlement structure. (The history of this branch of archaeology was summarized in MÉRI 1952, 49–56; KOVALOVSKYI 1985, 41–49; TAKÁCS 2010, 1–4). In this respect the settlement archaeology of Hungary has fallen behind not only the medieval settlement archaeology of the English or German speaking countries but also the investigations carried out in Slovakia (BÜCKER 1997, 311–322; SCHREG 2011, 301–320; HABOVŠTIAK 1961, 451–481; RUTTKAY 1997, 8–15; ŠALKOVSKÝ 2011, 427–428). Before the end of the 1980ies the small-scale extension of the single excavations represented the major obstacle in the formulation of questions connected with settlement structures. Concerning these questions only a little progress was made from the end of the 1980ies, after the start of several campaigns of large-scale rescue excavations. Nowadays a discrepancy can be observed between the volume of the fieldworks and their evaluation.

It is characteristic of this research field that even in 2011, the main point of reference concerning the diffused character of the settlements of the 11th–13th c. is the epochal study of István Méri from 1952 (MÉRI 1952, 49–67), and that the first site plan of an excavated village-like settlement from the Avar times was published in 1973, in the monographic evaluation of the site Dunaújváros by István Bóna (BÓNA 1973, ground plan 4), and the second plan of this character only in the 1990ies (VIDA 1996). Meanwhile, concerning the Avar Age, progress was made in the separation of single living units, e.g. in the publication of the site of Győr – Bokányi D. Street (TOMKA 1988, 52). Concerning the so-

called Árpád Age (i.e. the 11th–13th c.) the publication of several excavations of the 1960ies and 70ies (KOVALOVSKZI 1980, picture 5; KOVALOVSKZI 1986, site plan) verified the thesis of István Méri that although village-like settlements were generally of a large extension, the houses stood densely only at a few spots within the settlement. However, due to the problematic dating of single objects, in the case of several sites it cannot be decided whether this “density” of the objects is the consequence of a cluster-like disposition of many features used at the same time, or the graphic reflection of several objects with a different chronology on a single ground plan.

After the second half of the 1980ies, as rescue excavations of huge dimensions started, the investigation of early medieval settlement structures was no longer inhibited by the scale of fieldwork but by the lack of published site plans. Only few publications of the 1990ies contained a site plan of the excavated area (e.g. TAKÁCS 1996, 217). The vast majority of the researchers were publishing analyses connected to the problems of the houses of the so-called Grubenhau-type (also the principal investigator of the present project: TAKÁCS 1993, 146-172; TAKÁCS 1996, 199–202; TAKÁCS 2006, 537–565). In the past decade it has become a practice to publish the site plans of the excavations in the catalogues of exhibitions dealing with rescue archaeology, to illustrate the immense scale of the archaeological campaigns (e.g. TARI (ed.) 2006, 38, 40, 41, etc.). However, the data included in these site plans were, apart from very few exceptions, generally not further analysed. The process of the publication of the site plans can only have a positive influence if the different settlement phases are marked on them. Lacking the separation of certain chronological phases, one cannot give a proper analysis either of the settlement structure, or of the development of the settlement pattern.

2. Researches in the field of settlement topography – the first steps of the landscape archaeological approach

The previously outlined unfavourable state of the research of early medieval settlements could have changed in the second half of the 1950ies as archaeological topography was raised to the level of a scientific research field in the archaeology of Hungary. The field survey of Júlia Kovalovszki in the outskirts of the town of Szentes in Eastern Hungary is to be named in the first place, also because of the fact that she emphasized the importance of the factors of natural geography and hydrography in the reconstruction of the early medieval settlement history of the given region (KOVALOVSKZI 1957). Similar considerations are to be found in the numerous volumes of the project *Magyarország Régészeti Topográfiaja* (The Archaeological Topography of Hungary), with the first volume published in 1965. (The image of the series was defined by the volumes MRT 1, MRT 5, MRT 6, MRT 8.) Besides the results, one also has to keep in mind that in this time it was forbidden to publish topographical maps of a sufficiently large scale, therefore the publication of the field observations was only possible in a rough form. On the maps the located sites were represented by dots instead of outlining their shape, and this procedure wiped out all the differences that would have been needed for the reconstruction of a more detailed settlement pattern. It was only in 1980, in the study of Béla Miklós Szőke, that the first maps were published within the framework of the above mentioned project, where the settlement pattern of the 8th–9th or the 10th–11th c. was presented by the real shape of the extension of every single settlement unit (SZŐKE 1980, 181–203).

Similar problems arose in other analyses of archaeological topography carried out besides the project “The Archaeological Topography of Hungary”. In spite of this obstacle, some important conclusions have been formulated. Ilona Valter was the first to carry out the reconstruction of the 11th–13th c. settlement history of the region of Bodrogek (NE Hungary), without a computer but applying the

geoinformatical approach (VALTER 1964, 131–141; VALTER 1974, 1–55). From the 1970ies several Hungarian researchers have made efforts to analyse the medieval settlement history of various smaller or larger geographical regions, based on data collected with the method of archaeological topography. András Pálóczi Horváth presented the topographical development of the villages of the region of Nagykunság – in spite of the unfavourable legislative regulations concerning topographical maps (PÁLÓCZI HORVÁTH 1986, 97–170). Contrary to what might be expected, his results have hardly been recognized, perhaps also due to the fact that they were published in a volume hard to obtain. József Laszlovszky described another type of the development of settlement pattern collected in the survey of a geographical region near the river Tisza, which, though situated in the vicinity of Nagykunság, is very different concerning its natural geography (LASZLOVSZKY 1983). Further topographical analyses have brought to light a bulk of data showing the existence of settlement units smaller than the “average” village-like settlements even in the Early Middle Ages (JANKOVICH 1985, 285–286; MIKLÓS 1985, 237–238; LASZLOVSZKY 1986a, 131–151; LASZLOVSZKY 1986b, 227–255).

The topographical investigations of the last two decades were affected by several unfavourable tendencies. Due to an increasing lack of finances, the project of The Archaeological Topography of Hungary was gradually terminated, and the publishing of the halfway or completely finished manuscripts has become the most important task. Other researches of topographical character were carried out in a goal-oriented way, i.e. as parts of rescue excavations before building activities, and their scientific evaluation was often not completed.

In spite of the unfavourable tendencies, some scientific projects have been completed, mostly as parts of an MA-thesis or a PhD-dissertation. Marianna Bálint reconstructed the medieval settlement history of the region called Dorozsma-Majsai Homokhát in the southern parts of the Danube-Tisza Interfluvium not only on the basis of the archaeological material collected on field survey, but also by using the approaches of landscape archaeology (BÁLINT M. 2007). András Pálóczi Horváth gained an OTKA-grant on the turn of the third millennium in order to achieve the reconstruction of the microenvironment of several medieval sites (PÁLÓCZI HORVÁTH 2001–2004, 73–92).

In Hungary the investigations of the questions of environmental and landscape archaeology begun on a larger scale around the turn of the millennium, see the works of András Pálóczi Horváth, Csilla Zatykó, József Laszlovszky and Miklós Rácz, etc. (PÁLÓCZI HORVÁTH 2001–2004, 73–92; ZATYKÓ 1997, 36–44; ZATYKÓ 2010, 839–852; LASZLOVSZKY – RÁ CZ 2005). These publications contain analyses of questions that are yet to be formulated concerning early medieval settlement archaeology.

We have enumerated some studies connected with topography and landscape archaeology in order to show the importance of these two branches of archaeology dealing with the Árpád Age, i.e. the 11th–13th century, an epoch, where settlement archaeology is much more implemented in the research of the material culture than in the archaeology of the 8th–10th c. Concerning the central parts of the Carpathian Basin, the archaeology of the centuries at the turn of the first to the second millennium can – as already mentioned – even today be characterized as that of cemetery analyses. It is therefore to be emphasized with great accent that there are some impulses for the reconstruction of the historical landscape from other directions. In the publications dealing with the so-called funeral archaeology, some researchers have not only described the elements of the natural geography of one single site but have also discussed the issues of landscape archaeology. Already in 1971 Péter Tomka pointed out the importance of the elements of natural geography and particularly of the areas covered by water in an

overview of the history of Kisalföld in the Avar times, written on the basis of the evaluation of cemeteries (TOMKA 1971, 133–135). In 1980 Csanád Bálint emphasized a totally new aspect, the importance of the different types of soil in the distribution of specific types of cemeteries of the 10th c. in the central and southern parts of the Carpathian Basin (BÁLINT Cs. 1980, 35–52). The complex paleovegetational investigations in the marshland near the village of Bátorliget in North-Eastern Hungary under the guidance of Pál Sümegei (SÜMEGI – GULYÁS (ed.) 2004) drew the attention to another important aspect that had not been recognized earlier: the localization of a fish-pond already existing in the 10th c. pointed not only to the problems connected with environmental and landscape archaeology, but the need to reconsider the previously declared concepts about the way of life of the different communities of the Early Middle Ages (TAKÁCS 2004, 268–272).

A change of attitude is thus required in early medieval settlement archaeology, and this calls for a multidimensional approach.

3. The former analyses of the principal investigator

The submitter of the present application, Miklós Takács has published observations on the issues of the settlement structure of early medieval village-like settlements since the beginning of the 1990ies. His conclusions were based on the evaluation of large scale rescue excavations of the region of Kisalföld in Western Hungary, where he personally took part in the fieldworks. In 1993 he could support the thesis of István Méri on the diffused structure of single settlements with new examples (TAKÁCS 1993, 221–240), from 1995 he has dealt with the question of the influence of the trenches on the inner structure of the settlements several times (TAKÁCS 1995, 38–39; TAKÁCS 1998, 189; TAKÁCS 2010, 16–18). In 1998, in a lecture held in Ireland he tried to systematize early medieval nucleated settlements, i.e. settlements of an extension smaller than an average village-like settlement (TAKÁCS 2000, 181–191). In 2005, at a conference in the Czech Republic he spoke about the problems connected with the separation of village-like settlements serving the needs of central places (TAKÁCS 2005, 53–70). The common weak point of all his conclusions dealing with settlement structure lies in the fact that he usually described specificities based on the results of one single excavation, and therefore it remained unclear whether the respective observations can be generalized or not. The approach of the submitter of the present application was largely influenced by his participation at the conferences of the international association RURALIA dealing with the problems of medieval rural archaeology. Here he could obtain information on the analyses of settlement pattern in Western Europe, and he could also inform the foreign colleagues about the state of the research of early medieval villages in Hungary.

4. Conclusions to be drawn from former investigations

One can draw the following conclusions from the research situation outlined above. Concerning data collection one can summarily emphasize the specific duality of the research at the beginning of the second decade of the 21st c., deriving from an immense quantity of data from excavations and a simultaneously scarce number of publications containing only a fraction of the existing data. This situation minimizes the possibility of formulating well-grounded conclusions. The only way to step forward would be the publication of at least a part of the excavations, i.e. of those, where the extension of the fieldwork, as well as the number of excavated items allow for the analysis of settlement structure and settlement pattern.

Concerning the processing of the data, it is a fact that two complementary ways of analysis have been present in the settlement archaeology of Hungary from the 1960ies. Some researchers – following the footsteps of István Méri – have been trying to reconstruct the inner structure and the extension of village-like settlements, while the exponents of the other direction have been collecting data on the extension of medieval villages, as well as their relation to the other villages of the vicinity or their attitude towards the natural environment with the methods of settlement topography. The integration of these two ways of analysis could produce valuable result.

II. Project aims and objectives, the main research questions

1. The goal of the project

The main objective of the project is to unite the two research trends mentioned above, in an interdisciplinary context. Due to the scale of the prior excavations of the last two decades, the excavated 8th–11th c. settlements extending over several hectares already provide a basis for further analyses, for establishing similarities and differences concerning settlement structure, and for showing the presumable settlement hierarchy. The aim is to interpret the given settlement structures in a broader context (in relation to chronology, environmental and landscape archaeological data and settlement pattern), then to compare them with other settlement structures examined in the same context.

For an understanding of early medieval settlements in their factual complexity it is necessary to collect geomorphological, paleoclimatological, geohydrological, soil analytical and paleovegetation results, i.e. to determine the ecological potential of the respective microregions by adopting a range of so-called on and off site investigation techniques. The research group also aims to explore the utilization of the raw material resources of the microregions, specifically by analysing the minerological composition and the geological origin of ceramic and stone findings. Summarising these factors, with the help of SCA (site-catchment analysis), we will try to examine human interaction with and adaptation to ancient landscape. Our eventual aim is to study the given settlement structures and settlement patterns and to show their “sphere of interest and influence” in this context. We will consider all the factors that may have played a role in the development of the given types of settlement structure: for instance the estimated size (extension and the number of households) and the function (agricultural and industrial activity) of medieval settlements, their geographical and strategic position, the distance from the centres, neighbouring settlements, routes and possible raw material resources.

2. The main research questions

The research programme focuses on four archaeological problems and one historical research question. The archaeological questions are directly connected with the investigated archaeological material, the analysis of which is indispensable for the best possible reconstruction of the settlement pattern in the central part of the Carpathian Basin in the 8th–11th c. The historical question also requires reconsideration based on archaeological methods and data.

The three topics directly based on the interpretation of archaeological material in the central part of the Carpathian Basin are the following:

1. The creation of a classification of early medieval settlement structures and the analysis of their temporal changes.
2. The study of the relationship between the investigated sites and their microregions with the help of the environmental archaeological approach.

3. The investigation of the structural parameters of settlement patterns in which the analysed sites are located by a landscape archaeological approach, and the exploration of how a particular society used the available resources in its region.

Our fourth research task is to carry out complex comparative analyses between the Northern Balkan Peninsula (Northern Croatia and North-Eastern Bulgaria) and the central part of the Carpathian Basin. The main question is what similarities or differences can be shown between the early medieval settlement structures and the interaction between the rural settlements and their microregions in the two territories.

The research should also deal with an important historical question:

The historical question is based on the hypothesis that there are differences between the ways of the sedentarization and the settlement structures of the various communities in the early medieval Carpathian Basin. We believe that structural changes may have been eventuated in these centuries, specifically because of the collapse of the Avarian Khaganate at the end of the 9th c., the Hungarian Conquest between 894 and 900 and the foundation of the Hungarian State in 1000 or 1001.

III. Applicable methodology

1. Methodological strategy

Implementing a new research trend in the Hungarian early medieval settlement archaeology in larger scale, we wish to integrate the data available from various types of data collection („traditional” archaeological, topographical, remote sensing, geoarchaeological, sedimentological, paleoecological and raw material analysis) in one system, following Western European research standards.

Our research strategy will be realized on more levels. On the first level of research we will work in the following two steps: Firstly, we will study the inner structure of early medieval village-like settlements in the microregions under consideration (in the microregions of Celldömök, Győr (NW Hungary), Kecskemét (Central Hungary), Nyíregyháza (NE Hungary)), with a so-called “pilot-site” in each of these regions. To create the horizontal stratigraphy it is necessary to separate the settlement phases with the help of ceramic chronology, which has significantly improved in the last three decades, thanks to the developments in ceramic research (for a new overview of this branch of researches see TAKÁCS 2009, 223–252). In the second step we plan to map the settlement pattern of the above mentioned microregions.

On the second level of research the first task is to study the village-like settlements from the same period. We plan to carry out 1. a comparative analysis of settlement structures in one microregion, 2. a comparative analysis of settlement structures in every investigated microregion, in both cases in the context of the settlement pattern. 3. The next research task at this stage is to follow up the chronological changes in settlement structure and settlement pattern both intra- and interregionally.

On the third level of research we plan to compare the peculiarities of the settlement structures and patterns in the central part of the Carpathian Basin and the North Balkan Peninsula, where similar environmental and landscape archaeological investigations have already been completed.

2. The implementation of the goals of the project

The implementation of the project will be realized in three steps on two levels, namely the recording, processing and analysis of both the archaeological and the interdisciplinary data.

Traditional archaeological part:

Data recording: Data gathering will be done in the field with non-destructive methods (field survey, remote sensing) at the following sites and in their microregions, concentrated in three regions in the central part of the Carpathian Basin: Celldömölk – Vulkán-fürdő, Sárvár – Faképi-dűlő, Lébény – Kaszás-domb, Lébény – Bille-domb, Ménfőcsanak – Szeles-dűlő M1, Ménfőcsanak – Szeles-dűlő, 86-os út from NW-Hungary; Kecskemét – Hetényegyháza (M5, site 68), Kecskemét, Peczek (RL 07), Kiskunhalas – Lidl, Kompolt – Kistéri-tanya, Solt – Erdélyi-tanya (51-es út, site 2), Sződ – Nevelek-dűlő, Tolna-Mözs, Községi-Csádés földek (TO-02), and Vecsés – site 36 from the central part of the Danube-Tisza Interfluve and the parts of Transdanubia close to the Danube; Hajdúnánás – Fekete-halom (M3, site 41), Hajdúnánás – Mácsi-dűlő (M3, site 47), Nyíregyháza-Mandabokor (M3, site 23), and Nyíregyháza-Rozsrétszőlő, Szelkő-dűlő (M3, sites 148/b, 214 and 215) from NE Hungary. The average extension of the 18 excavated early medieval village-like settlements is 3-4 hectares, the smallest is on 0,6 hectare, the biggest on 6 hectares. The number of the excavated features is more than 5000. These sites or their certain periods can be dated to the 8th-9th, 9th-10th and 10th-11th c.

Data processing: The first step will be the primary analysis of the above mentioned sites by studying the finds and their chronology, to establish the horizontal stratigraphy and visualize it with the help of GIS. Through these investigations we make an effort to reconstruct the sedentarization process and the temporal changes concerning the inner structure. The following questions of settlement topography need to be investigated: the microtopography of the acquisition of water, of the storage and preparation of food, as well as the localization of the parts of settlements connected with animal husbandry or with handicraft activity, finally the examination of possible traces of the separation of settlement parts used by smaller groups, e.g. families, of the establishment of plots of land.

Interdisciplinary part

Data recording and processing: The interdisciplinary research will include both environmental archaeological and archaeometrical work. The significance of interdisciplinarity lies on the one hand in the collection of various types of information (geoarchaeological, archaeobotanical, archaeozoological data, ceramic, metal and stone finds) from the excavated sites, on the other hand in off-site investigation (sedimentological research) and the collection of maps about the historical landscape to reconstruct the microregion to which the given site adapted. The recording and processing of interdisciplinary data will be carried out by invited experts.

Comparative analysis and synthesis: We wish to carry out our further research on the basis of the gathered and processed complex data. With the help of the collected and interpreted data it will become possible to eliminate the mistake of declaring far-reaching consequences and generalizations in an unfounded way. The basic task during the synthesis should be the comparative and contrastive analysis of the above mentioned data. The analysis will be carried out by applying GIS: integrating all the collected data in a single geographical information system we can visualize and analyse the settlement topographical regularities and irregularities.

IV. Expected results

The expected results of the research programme starting in 2013 and ending in 2016 can only be estimated in 2012. In view of the preliminaries and in the light of the chosen settlement patterns we may expect many results from this project.

1. As a minimal result: due to the sheer amount of data to be processed, the 19 excavation sites to be analysed by the members of the research team will provide a dataset that will advance the research of early medieval settlements, regarding settlement structure as well as chronological issues.
2. As a maximal result: the project team will succeed in surpassing the approach of analysing the results of single excavations and will be able to formulate results concerning early medieval rural settlement structures, with special regard to the chronological aspect, that allow us to draw well-founded general conclusions. Based on the results we hope to point out characteristics that may explain the inner structural specificities of early medieval village-like settlements and their integration into the narrower natural surroundings, and even offer information about the chronological aspect of the demonstrated features and characters. We will have a number of specific examples for the structure of village-like settlements in the 8th–11th c. This will also be helpful in identifying the defining and significant factors of the inner structure of early medieval settlements, or the factors influencing settlement hierarchy. Due to the other research questions we will also have more accurate information regarding the interaction between the settlements and their direct natural surroundings. Based on these data we will be able to offer a much more realistic image about the dynamic transformation of the early medieval settlement pattern of the Carpathian Basin than before. The comparison with regions of the Balkan Peninsula will hopefully serve to emphasize and more accurately understand the contrastive elements of settlement structure and settlement pattern.
3. The first results will be reported by the research team in 2014 and 2015, at a settlement archaeological conference in Hungary and abroad. At the end of the project in 2016, we will produce the manuscript of a volume of studies presenting the detailed final results of our research, not only concerning single settlement excavations but also through the integrated presentation of the lessons from the given sites.
4. As significant elements of the project regarding its social utility and utilization, with our geological and environmental research we may obtain data for conservation and landscape protection; furthermore our professional results may well be useful for archaeological parks concerning experimental archaeology in the form of reconstruction. For a wider range of utilization we wish to help with the organization of educational programmes for the general public, where we would present the newest scientific results with the help of e.g. geographic information and graphic tools in an interactive manner, in the form of informative 3D models, reconstruction drawings and maquettes. For the contact with the general public we would like to create an online surface, where we would provide information to the professional and the lay audience regarding the methods of settlement research.

V. Research infrastructure (personal and institutional background)

The receiving institution of the research project “Centuries of Transformation. Settlement Structures in the Central Parts of the Carpathian Basin in the 8th–11th Century” will be the Institute of Archaeology, Research Centre for the Humanities, of the Hungarian Academy of Sciences (Budapest, 49 Úri Str.).

A research team of ten researchers will accomplish this project. The principal investigator of the project will be Dr. Miklós Takács CsC. Team members will be Dr. Sc. Andrea Vaday, retired senior fellow of the former Archaeological Institute of the HAS, and eight young researchers, half of them present or prospective PhD students. The researchers are Rozália Bajkai archaeologist, Katalin Gherdán geologist, Mónika Mészáros archaeologist, Szabina Merva archaeologist, Ildikó Katalin Pap archaeologist, Zsolt Petkes archaeologist, Tibor Ákos Rácz archaeologist, Melinda Takács archaeologist. Half of the participating archaeologists will carry out their research on the basis of a

cooperation contract, at their own home institutions (Hungarian National Museum, National Heritage Centre; Directorate of Pest County Museums; Directorate of Vas County Museums). We would like to establish three work places with the help of this research program as a scholarship for Rozália Bajkai, Szabina Merva and Melinda Takács. Beyond their research activities connected with the evaluation of their settlement excavations, the members receiving a scholarship will also take part in the coordination of the project. They will organize the processing of one of the sites, the so-called “pilot” site of the selected region, particularly with regard to the continuous communication between the archaeological and scientific data collection and data processing.

We wish to implement interdisciplinary researches with cooperation contracts with various invited scientists. Some of the researches will be carried out by a research team lead by Professor Dr. Pál Sümegi, Head of the Department of Geology and Paleontology (University of Szeged, Faculty of Science and Informatics, Institute of Geography and Geology), another part will be done by a research team lead by Professor Dr. György Szakmány, associate professor (Eötvös Loránd University, Faculty of Science, Institute of Geography and Earth Sciences, Department of Petrology and Geochemistry; Hungarian Academy of Sciences, X. Section of Earth Sciences, President of the Subcommittee on Archeometry) and Dr. Mária Tóth (Institute for Geological and Geochemical Research, Research Centre for Astronomy and Earth Sciences, Hungarian Academy of Sciences), but we will follow an open door policy towards additional natural scientific researchers.

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