

Martin Kuna et al.

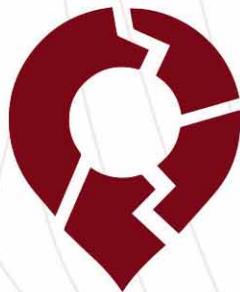
Structuring archaeological evidence



Structuring archaeological evidence

The Archaeological Map of the Czech Republic
and related information systems

Martin Kuna et al.



Prague 2015

Structuring archaeological evidence

The Archaeological Map of the Czech Republic
and related information systems

Martin Kuna,

*Jan Hasil, David Novák, Ivana Boháčová, Lucie Čulíková, Peter Demján,
Dagmar Dreslerová, Martin Gojda, Iva Herichová, Dana Křivánková,
Olga Lečbychová, Jan Mařík, Jana Maříková-Kubková, Michal Panáček,
Jaroslav Podliska, Adéla Pokorná, Jaroslav Řihošek, Eva Stuchlíková,
Marek Suchý, Jan Válek, Natalie Venclová, Libuše Haišmanová*

Institute of Archaeology of the Czech Academy of Sciences, Prague, v. v. i.
PRAGUE 2015



Contents

Foreword *Martin Kuna* / 7

1 Archaeological heritage recordkeeping in the Czech Republic / 11
Martin Kuna

2 Archaeological Map of the Czech Republic / 25
*Martin Kuna – Jan Hasil – Dana Křivánková – David Novák
– Olga Lečbychová*

3 Internet Database of Archaeological Fieldwork / 69
Jan Mařík

4 Digital Archive of Bohemian archaeology / 79
Martin Kuna – Dana Křivánková

5 Archive of Aerial Photographs / 89
Martin Gojda – Lucie Čulíková

6 Down to the trenches: the Integrated Information System of Archaeological Sources of Prague – an adjustment to the AMCR for urban archaeology / 99
Ivana Boháčová – Jaroslav Podliska – Jan Hasil

7 Calciarius – the geoinformation system of traditional lime resources and technologies in the Czech Republic / 115
*Jan Válek – Eva Stuchlíková – Jana Maříková-Kubková – Iva Herichová
– Jaroslav Řihošek – Marek Suchý – Michal Panáček*

8 Archaeobotanical Database of the Czech Republic / 129
Dagmar Dreslerová – Adéla Pokorná

9 VITREA – database of chemical analyses of archaeological glass / 135
Natalie Venclová

10 Application of AMCR data in the study of prehistoric settlement patterns / 141
Dagmar Dreslerová – Peter Demján

11 Past settlement of Bohemia according to archaeology. A critical view / 163
Martin Kuna

12 On the landscape's memory and the path to it / 195
Martin Kuna

13 Future visions – from information systems to a virtual research environment / 209
David Novák – Jan Hasil – Martin Kuna

Glossary / 231

Abbreviations / 236

References / 239

Main web sources / 249

Authors / 252

From the IAP Archive... / 10, 24, 68, 78, 88, 98, 114, 128, 134, 140, 162, 194, 230, 255
compiled by Libuše Haišmanová



3 Internet Database of Archaeological Fieldwork

Jan Mařík

The Internet Database of Archaeological Fieldwork (IDAF, in Czech “Internetová databáze archeologických výzkumů” – IDAV) represents an unofficial branch administrative system – a state-wide register of fieldwork with anticipated archaeological excavations. Licensed organisations are, by means of the IDAF, informed about intended fieldwork, and they can also register their own archaeological projects in the database. Subsequently, the organisations inform the Institutes of Archaeology of the Czech Academy of Sciences of the commencement and conclusion of their field activities. The system was launched in 2009 and is administered by the Institute of Archaeology of the Czech Academy of Sciences, Prague. The Archaeological Map of the Czech Republic will include the IDAF system as an integral part (in the form of ‘project’ evidence) in 2016.

The IDAF is available at <http://idav.cz> and further information on the system at <http://www.arup.cas.cz/?cat=592> (both in Czech).

3.1. INTRODUCTION

The State Institute of Archaeology founded in Prague in 1919 (cf. Chapter 1) was charged with the task of conducting research and protecting archaeological heritage. The Institute should be the organisation coordinating all activities connected to archaeology, with the privileged position of conducting archaeological fieldwork and recording the results. The Institute has maintained this rather unique position with essentially only small adjustments up to the present time. In the meantime, however, major new tasks, mainly in the sphere of academic research in archaeology, have arisen; particularly since 1953, when the Institute became part of the Czechoslovak Academy of Sciences (abbreviated ČSAV in Czech, CsAS in English). Besides the Institute in Prague, an independent Institute of Archaeology was established within the CsAS structure in Brno in 1983. The newly established Institute took charge of the coordination of archaeological heritage care in the historical regions of Moravia as well as Czech Silesia. On the other hand, the Institute of Archaeology in Prague has retained the task of caring for the region of historical

Bohemia. In 1993, the Academy of Sciences underwent significant reorganisation. Both Institutes exist within the CAS (today the Czech Academy of Sciences) up to the present time and they share their responsibilities according to the given territorial principle.

According to Act No. 20/1987 Coll. on state landmark conservation (known also as the Monument Act), all activities that could threaten archaeological finds in their original settings should be announced to the Institutes of Archaeology CAS (hereafter IAP for the Prague Institute and IAB for the Brno Institute). Based on such information, rescue archaeological excavation should be conducted by the IAP/IAB or the IAP/IAB should transfer it to one of the licensed organisations authorized to conduct archaeological fieldwork. The licensed organisation is obliged to announce the initiation and the conclusion (completion) of the excavations and to subsequently deliver the corresponding "excavation report" (i.e. final report in a standardized structure) to the appropriate Institute of Archaeology (IAP, IAB).

However, until recently this system has not been respected consistently in practice. Among the most significant deficiencies is the fact that the central institutions have always lacked sufficient financial as well as personnel capacities that would enable them to truly supervise field archaeology. Furthermore, the situation became even more complicated in this respect after the year 1989, when many new organisations authorized to conduct archaeological fieldwork were established. Unlike the 1980s, when archaeological fieldwork was concentrated in a few institutions, approximately one hundred licensed organisations exist today and the activities of some of them essentially have the characteristics of "commercial archaeology", even though, officially, archaeological fieldwork represents a field in which business activities are restricted by the law. Some developers prefer direct communication with regional archaeological institutions, i.e. with some of the local licensed organisations. Even though this practice, in fact, violates the law, it needn't immediately damage archaeological heritage. On the other hand, significant problems occur when the law is also violated by a licensed organisation authorized to conduct fieldwork when this organisation ceases to report the commencement of excavations or to deliver the concluding report on the excavation's results (excavation report). A whole range of information of fundamental importance not only for scientific research but also for e.g. landscape/urban planning can remain concealed or, in worse cases, completely lost. Thus, the absence of input data on the intended intention as well as on ongoing archaeological fieldwork poses, in fact, a more substantial risk to archaeological heritage than construction companies that unintentionally or even intentionally destroy archaeological sites.

Paradoxically, there have been hundreds of cases in which the Institutes of Archaeology CAS have obtained only reports on fieldwork without any prior information on their commencement or they have learned about these excavations from annual reports presented by the licensed organisations or, in worse cases, from the media. Thus, significant input data on conducted archaeological fieldwork and on actions initiating them have been missing in information systems, which was created in the last twenty years by both Institutes of Archaeology CAS.

To rectify the above-mentioned problems, an internet portal registering all intended archaeological fieldwork was established. The system was created by the Department of Information Resources and the Department for the Protection of Archaeological Monuments of the IAP in 2008. Besides the actual records of archaeological fieldwork, the system should facilitate not only communication between the Institute of Archaeology and the licensed organisations but also the sharing of information that had been, until that time, delivered by post or at meetings of regional archaeological commissions that met at intervals of several weeks or even months.

3.2 BASIC FEATURES OF THE DATABASE

The basic unit of the *Internet Database of Archaeological Fieldwork* (IDAF) represents the so-called archaeological project, a field activity recorded by the IAP or other organisation in the preparation phase on the basis of an announcement by the developers. Each entry includes basic information about the site (designated by district, cadastre, plot or land number, street name or other local toponyms), date of the intended fieldwork and also a brief description of the intended fieldwork. The fact that an archaeological event occurs on a cultural monument site – an important piece of information for the National Heritage Institute, can be marked in a special field of the database. The database also enables electronic file attachments, including documentation such as maps, plans or e.g. construction project. The contact data of the notifier (developer) are also recorded in the IDAF; however, at the moment a licensed organisation registers the appropriate project they become hidden from other users in order to protect personal data. Subsequently, each archaeological project can be “reserved” by one of the licensed organisations; thus, the organisation makes its intention to conduct the rescue archaeological fieldwork on the given site public and initiates negotiations with the developer.

In the course of the archaeological excavations, the archaeological organisation fills in the name of the excavation’s chief archaeologist and the commencement and conclusion dates of the fieldwork. When a report regarding the fieldwork’s results (the so-called excavation report) is delivered to the IAP/IAB, the project is labelled as archived and, thus, concluded. When entered in the IDAF, each project acquires a number – a unique identifier, which can also be used to link the excavation report and other types of data.

The IDAF is fully accessible only to registered users. This restriction was mainly caused by an attempt to protect the database against undesirable interventions that could damage ongoing archaeological fieldwork. All registered users are entitled to view and search the data; however, only the workers of the Institutes of Archaeology or organisations authorized to conduct archaeological fieldwork have the right to enter and/or reserve new archaeological projects. The IDAF enables searching archaeological projects according to almost all available criteria such as geographical areas of interest (regions, districts and cadastres), licensed organisations, etc. Selected

archaeological events can be exported in the CSV format. The database also provides a user-friendly possibility to send an e-mail when a project from the area of interest of a given licensed organisation is entered.

3.3 USERS AND THE DATABASE DEVELOPMENT IN 2008-2014

The trial run of the IDAF was launched in mid-2008, when the database was used exclusively for the in-house purposes of the IAP. The plan to create a unified system of evidence of archaeological fieldwork had been gradually introduced to licensed organisations, who became subsequently involved in the IDAF in 2009, the users were mainly private organisations who saw the database as a unique source of information on construction and other activities in areas with archaeological finds.

The IDAF trial run lasted until October, 1st 2010, when the IAP permanently terminated the forwarding of information on construction plans by post. In the course of the more than two-year-long trial run, small errors were corrected, load tests were launched and, last but not least, based on hands-on experiences, rules for database usage were created. The relatively long trial run was mainly caused by the fact that there were no legal measures that would force the licensed organisations to use the IDAF. Thus, it was necessary to convince all potential users to use the system voluntarily. Major reservations about the IDAF came from the representatives of museums founded by regions or cities, who feared that “public” announcements of construction plans on an internet portal could jeopardize their fieldwork goals from the side of non-state organisations in regions where they had been traditionally active. In the end, the practical advantages of the IDAF such as simplification of communication with the IAP/IAB as well as easier access to information outweighed any initial distrust. It must be admitted that there have been certain arguments between state and private organisations regarding the right to conduct archaeological fieldwork, but compared to the total number of recorded IDAF projects, the frequency of such problem situations is negligible.

One of assumptions of the IDAF creators – namely the fear that the IAP/IAB originally obtained only a small portion of information on intended and conducted fieldwork, was confirmed by the very practice of the IDAF. Since the year 2011, when the major group of IDAF users was stabilised, the IAP has been recording only 40% of all announcements (Fig. 3.1), while other licensed organisations receive the remaining majority (that was previously not centrally recorded).

In course of the year 2010, the IDAF began to be used by organisations covering almost 90% of all archaeological fieldwork in Bohemia (Fig. 3.2). This state of affairs remained with only a slight increase until 2014, when the last resisting licensed organisations were also persuaded to join the system. Currently, the IDAF is used by almost 300 registered users, who come partly from 61 organisations authorized to conduct archaeological fieldwork (they actively register entries), partly from state administration, students of archaeology and amateurs interested in archaeology (Fig. 3.3).

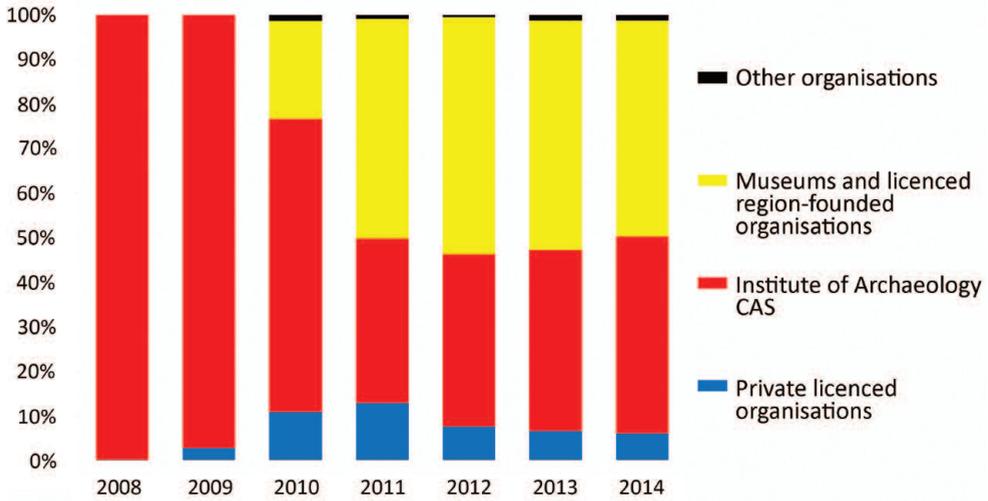


Fig. 3.1 Number and share of the IDAF records according to various types of licensed organisations. Construction or other activities requiring actions in areas with archaeological finds are registered.

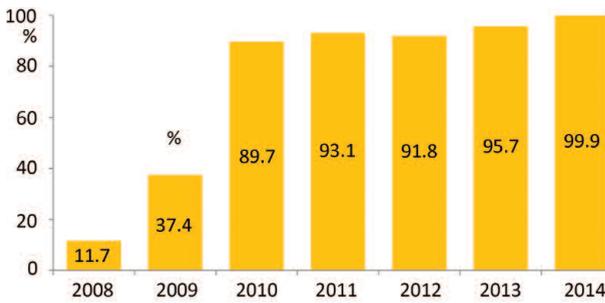


Fig. 3.2 Share of fieldwork registered in the IDAF database conducted in Bohemia and its development in years 2008-2014.

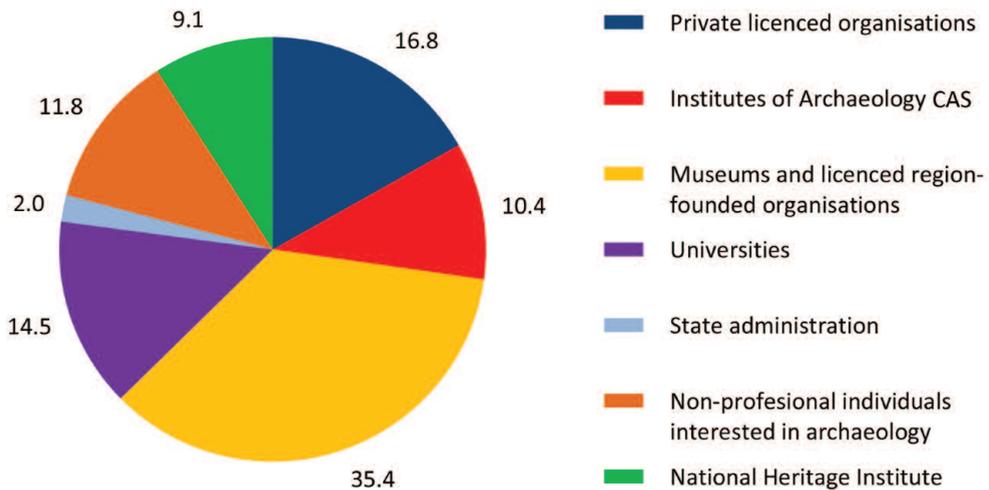


Fig. 3.3 Structure of the current IDAF users (2015).

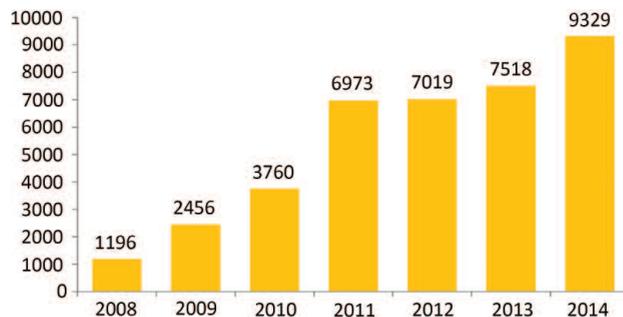
The fact that the IDAF covered only the historical area of Bohemia represented one of the major weaknesses of the database. However, the situation changed in the year 2009, when the Institute of Archaeology CAS in Brno (IAB) launched the *Digital Archive and Evidence of Archaeological Excavations* system that incorporates, among other things, records of ongoing archaeological excavations as well as announcements of construction and other plans in areas with archaeological finds. Due to the fact that the structure and technical solution of both Bohemian and Moravian databases is essentially the same, it was possible to create the common portal with information on archaeological fieldwork throughout the entire area of the Czech Republic (CR).¹

3.4. IMPACT OF THE IDAF ON ARCHAEOLOGICAL HERITAGE CARE

One of the intended benefits of the IDAF is to provide better access to information on activities threatening archaeological heritage as well as on ongoing archaeological fieldwork. Based on past experience, it seems obvious that information concerning such activities often remained in regions where these excavations were carried out. This fact was already fully corroborated shortly after the launch of the *Database*. In the last five years (2003-2007) prior to the launching of the IDAF, the IAP annually obtained about 2,400 reports on fieldwork results. In 2011, the number of archaeological projects recorded in the IDAF increased and reached almost 7,000, a figure that remained steady until 2013 (cf. Fig. 3.4). The significant increase that occurred in the following year (2014) can probably be connected with the resumption of construction activities following the previous crisis years. Paradoxically, the annual average of delivered excavation reports in this crisis period (2008-2013) reached the number of 4,200.

Despite the significant increase in numbers, a difference has remained between primarily recorded archaeological events (approx. 7,000) and the number of fieldwork projects that have delivered excavation reports (reports on fieldwork results). This difference can be caused by several factors. In some cases, rescue archaeological excavations were probably not conducted, for example, because of the insuffi-

Fig. 3.4 Number of archaeological events recorded in the IDAF in the years 2008-2014.



¹ <http://www.idav.cz>.

cient capacity of the appropriate licensed organisation or because a certain group of licensed organisations simply ignored data from the IDAF. However, the majority of these cases represent fieldwork with negative results (no finds). In these particular cases, licensed organisations often, though improperly, neglect their obligation to deliver the excavation report.

From the viewpoint of long-term and systematic archaeological heritage care, the IDAF provides rare information regarding capacity possibilities as well as the quality of work, up to a certain degree, of those licensed organization that are systematically working in particular regions. Moreover, it is interesting to compare the number the issued building permits/announcements and archaeological projects recorded in the IDAF.

Based on past experiences and analyses carried out on regional samples, we can assume that approximately one-third of all construction activities may, in fact, represent a threat of possible damage to archaeological sites. The remaining part represents construction activities, for example, attic conversions, window replacements, insulation of concrete high-rise buildings, etc., that do not require the presence of an archaeologist. This type of building activity dominates mainly in the area of highly urbanized Prague with a relatively low share of archaeologically supervised construction. On the other hand, conditions in all other regions are essentially comparable. A rather significant deficiency in archaeological work can be observed, for example in the Karlovy Vary Region, where only five archaeologists are employed. In contrast, the irresponsible approach of several archaeological departments in district-founded museums caused the rather low coverage in the South Bohemian Region (Tab. 3.1).

The results of the above-mentioned analyses are frequently used by the IAP/IAB for issuing statements regarding applications for new authorizations approving archaeological fieldwork. Thus, the Institutes can easily identify weak areas in archaeological heritage care and competently decide to reinforce some regions,

Tab. 3.1 *Covering of construction activities by organisations licensed to conduct archaeological fieldwork in the year 2014.*

Regions of the Czech Republic (Bohemia)	Building permits	IDAF	Share (%)
Prague	5273	402	7.62
Central Bohemia	15098	3904	25.86
South Bohemia	6271	615	9.81
Plzeň	4973	822	16.53
Karlovy Vary	2498	132	5.28
Ústí nad Labem	4581	631	13.77
Liberec	3089	874	28.29
Hradec Králové	3626	1099	30.31
Pardubice	4068	1163	28.59
Total (average)	49477	9642	18.45

initiate negotiations to rectify the current state of affairs or, as a last resort, to submit a proposal to the Ministry of Culture of the CR regarding the revocation of authorization. On the other hand, this system can protect those regions with a sufficient level of archaeological heritage care against undesirable competitive pressure.

3.5. THE FUTURE OF THE IDAF

As was already stated above, the creation of the IDAF was required mainly for practical reasons. On the other hand, unified evidence of archaeological fieldwork as well as other customs well-established in the archaeological heritage care are not supported by the valid law and adherence to the given rules is often based on mutual agreement. Act No. 20/1987 Coll. on state cultural landmark preservation was created in a completely different political and economic system, and sometimes it no longer corresponds to current reality. The most explicit example of this discrepancy represents private licensed organisations that were not rejected by the Act; nevertheless, lawmakers definitely could not have anticipated their emergence. The economic transformation and the emergence of the free market after 1989 represented the main changes in the social environment. In the figurative sense, rescue archaeological fieldwork became goods and even the subject of business competition. Rules that have been established in the course of the more than twenty five years of the Act's validity have had, in most cases, a beneficial effect on archaeological heritage care. However, according to the Act, these rules are difficult to enforce and can be violated essentially with impunity. The current system of archaeological heritage care can be regarded, from a legal point of view, as extremely fragile and unsustainable in the long-term perspective. Even though many attempts have been made to amend the law or to draft entirely new legislation, they have not been successful for various reasons.

So far, the latest national heritage protection bill, which has been prepared since 2012, also incorporates, to a certain degree, the concept of central evidence of archaeological fieldwork in the form of a so-called register of interventions ("evidence zásahů" in Czech). This information system will be administered by the National Heritage Institute, while the Institutes of Archaeology CAS will keep records of the results of fieldwork. Unlike the IDAF, the register of interventions should provide complex evidence of all processes and legal acts related to archaeological fieldwork.

Among other things, the forthcoming law newly establishes the obligation to create a "project" (in the sense of a written plan for the fieldwork) prior to the commencement of excavations, specifies the form of excavation reports and, last but not least, determines forms for the quality supervision of reports. In both the IDAF and the register of interventions, the fundamental information that is entered represents the announcement of construction or other activities in "areas with archaeological finds". Based on experience with the IDAF, entries recording a particular construction and other activities will not be input centrally, but by more than 200 municipal authorities. However, approval of the new law is scheduled for the year 2018 at the earliest.

The aim to create new evidence of archaeological projects was, to a certain degree, formulated concurrently with preparations of the *Archaeological Map of the CR* information system that should incorporate similar records. Even though this dichotomy will naturally produce certain complications, the main objective still remains: to ensure an ongoing system of data collection regardless of which computer system it will be performed on. It is obvious that the register of interventions cannot be launched before 2018/2019 at the earliest, regardless of whether the new law is approved or not. Thus, it is of extreme importance to ensure the continuation of the internet database functions, be it in the form of the IDAF or the AMCR.

Structuring archaeological evidence

The Archaeological Map of the Czech Republic
and related information systems

*Martin Kuna, Jan Hasil, David Novák, Ivana Boháčová, Lucie Čulíková, Peter Demján,
Dagmar Dreslerová, Martin Gojda, Iva Herichová, Dana Křivánková, Olga Lečbychová, Jan
Mařík, Jana Maříková-Kubková, Michal Panáček, Jaroslav Podliska, Adéla Pokorná, Jaroslav
Řihošek, Eva Stuchlíková, Marek Suchý, Jan Válek, Natalie Venclová, Libuše Haišmanová*

*Translation by Petra Maříková Vlčková
Revision by David J. Gaul, Trada, s. r. o.*

*Published by the Institute of Archaeology of the Czech Academy of Sciences, Prague, v. v. i.,
Letenská 4, 118 01 Praha 1, Czech Republic*

*Managing editor: Filip Laval
Cover design: Zdeněk Mazač
AMCR logo: Petr Kincl
Graphic design and layout: Kateřina Vlčková
Printing: Helvetica & Tempora, s. r. o., Pod Kaštany 246/8, 160 00 Praha 6, Czech Republic*

First edition, 2015

ISBN 978-80-87365-88-5

Orders – Objednávky – Bestellungen:
Institute of Archaeology of the Czech Academy of Sciences, Prague, v. v. i., Letenská 4,
118 01 Praha 1, Czech Republic
Fax: +420 257532288, knihovna@arup.cas.cz

The book is available for purchase in the library of the Institute of Archaeology CAS in Prague.

Česká verze textu je k dispozici na <http://www.archeologickamapa.cz>.