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# The State of the Art of Digital Archiving in Romania

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The aim of this article is to put into perspective the efforts of more than 150 years of attempts to create archaeological repertoires and archives at a national level in Romania that correspond to changing needs through time. Along with technological advances, centralisation and digital archiving have provided the prerequisites for the creation of a national archaeological repertoire that contains, as far as possible, all the information available for each individual site, and being associated with resources that can be found in other databases, making it a dynamic tool that is continuously updated. Other databases are featured as they make up the digital record of the archaeological heritage in Romania and provide content to the national archaeological repertory. Future plans regarding the improvement of all these databases are presented.

## 1. Introduction

The recognition of the need to create a repertoire of archaeological sites in Romania dates back to the 19th century. The first attempt was made by Alexandru Odobescu, who sent rural teachers a questionnaire consisting of six questions, asking them to record information such as typology, description, toponymy, as well as legends about places of ancient significance or the discovery of objects at such sites (Odobescu [1989](#) I, 96–99, 374–375; Dobre [1986](#) 46–52; Şandric [2016](#) 282). Alexandru Odobescu received over 1600 responses, and in 1871 he sent a report to the Ministry of Religion and Public Instruction entitled *Notes on the localities marked by ancient remains in Dorohoi county* (Odobescu [1871](#) 825–27; Odobescu [1887](#) II, 157–232; Odobescu [1908](#) 118–66; Şandric [2016](#) 282), followed seven years later by another more extensive report titled *Antiquities of the Romanaţi County* (Odobescu [1878](#) 407–82; Şandric [2016](#) 282).



In 1892, the *Law for the Preservation and Restoration of Public Monuments* was adopted, which, through its *Regulation* (Monitorul Oficial, no. 239 din 28 ianuarie 1893, 6851–585), established the requirement to record historical monuments, and which included both buildings and archaeological sites from prehistory up to the end of the 18th century (Şandric [2016](#) 282). The records of the archaeological sites were also created via questionnaires sent to village teachers and priests (Şandric [2016](#) 282). As a result of these efforts, on June 1, 1897, the first official list of historical monuments was published, the *Inventory of Public and Historical Monuments in Romania* (Urechia *et al.* [1897](#) 878–98), which included 534 public monuments and 63 historical monuments. The archaeological sites were mostly added by Grigore Tocilescu (Şandric [2016](#) 282–83).

During the early years of the communist regime, starting in 1949, the Institute of History and Philosophy of the Academy of the Romanian People's Republic began the project of creating a national archaeological repertory that aimed to include information on archaeological discoveries from the Palaeolithic period until the foundation of the Romanian Countries (Comşa [1984](#) 215; Şandric [2016](#) 283). The Archaeological Repertory of Romania was thought of as a scientific tool that would lay the foundations for the future archaeological map of the country (Păunescu [2003](#) 109; Şandric [2016](#) 283). Unfortunately, this project was not completed, but part of its results have been used over time, with updated content where research has brought new information in the form of county archaeological repertoires adding introductions and in some cases annexes in the form of general or detailed maps (Păunescu [2003](#) 117, n. 10; Şandric [2016](#) 284). Thus, from 1973 until the present, 17 repertoires have been published, in some cases in several editions, for the counties Alba (Moga and Ciugudean [1995](#)), Bihor (Sever [1974](#)), Breşov (Costea [1995](#); [1996](#); [2004](#)), Botoşani (Păunescu *et al.* [1976](#); Şovan [2013](#); Şovan [2016](#)), Caraş-Severin (Luca *et al.* [2004](#)), Cluj (Crişan *et al.* [1992](#)), Covasna (Botond *et al.* [1998](#)), Dâmboviţa (Olteanu [2002](#); Olteanu *et al.* [2003](#)), Harghita (Bato *et al.* [2000](#)), Hunedoara (Luca *et al.* [2005](#); [2010](#)), Iaşi (Chirica and Tanasachi [1984](#); [1985](#)), Vaslui (Coman [1980](#)), Maramureş (Kacsó [2011](#)), Mureş (Lazăr [1995](#)), Sălaj (Luca and Gudea, [2010](#)), Sibiu (Luca *et al.* [2003](#)), and Banat region (Luca *et al.* [2006](#); Luca [2010](#)).

## 2. The National Archaeological Repertory (RAN)

More than 50 years after the initiation of the Romanian Archaeological Repertory (RAR) project, in 2001 the opportunity arose to bring to fruition the results of 24 years of work of the archaeologists involved in this project. Under the umbrella of the European project Archaeological Records of Europe – Networked Access ([ARENA](#)), the Institute for Cultural Memory (CIMEC – now the Digital Heritage Department within the National Institute of Heritage) initiated a partnership with the 'Vasile Pârvan' Institute of Archaeology to digitise the RAR archive and put it online, with the purpose of accessibility and utility for the completion of [RAN](#) (Oberländer-Târnoveanu [2002](#) 208–10; [2004](#); Şandric [2016](#) 285). Unfortunately, only 40% of the documentation that makes up the RAR could be digitised, representing 5522 related records of 4621 localities (Oberländer-Târnoveanu [2002](#) 209; Şandric [2016](#) 286).



A visionary initiative was taken by the Ministry of Culture in the 1990s when, in order to solve the problem of accessibility and compiling the [List of Historical Monuments](#) (LMI) completed in 1992, it assigned CIMEC to register the LMI in a database that would allow quick retrieval of the information and an effective update (Oberländer-Târnoveanu [2013](#) 21; Şandric [2016](#) 289). Between 1993 and 1999, 4000 archaeological sites were registered in the database created for this purpose, representing exclusively the sites registered in the LMI, thus becoming the core of the RAN database (Oberländer-Târnoveanu [1996](#) 47; [2013](#) 22; Şandric [2016](#) 289-90).

The RAN database was established through the publication on 30 January 2000 of [Ordinance no. 43](#) regarding the protection of the archaeological heritage and the declaration of some archaeological sites as areas of national interest (OG 43/2000) is the first piece of legislation focused on archaeological heritage and aimed at imposing a protection regime over sites and artefacts, regulating both the obligations of professionals, of central and local public authorities and of citizens). This led to the ratification by Romania of the European Convention for the Protection of the archaeological heritage (Valletta, 16 January 1992. Moreover, a large part of the provisions of the Valletta Convention can be found in the Ordinance which stated that it should be administered by CIMEC ([Order of the Minister of Culture](#) (OMC) no. 2458 of 21 October 2004). Completing and updating the RAN is done by using information from various documentary resources, such as requests for authorisation of archaeological research, research reports, published repertoires, and documents from the archives of institutions holding archaeological heritage. The RAN became a tool for the protection of archaeological heritage and a scientific resource (Şandric [2016](#) 290).

The RAN database was based on the minimum data standard for archaeological sites and monuments *Core Data Standard for Archaeological Sites and Monuments* (Thornes and Bold [1998](#)) and followed a series of specifications for national databases to record archaeological sites and monuments such as that used in Denmark ([Det kulturhistoriske Centralregister](#), DKC), France (DRACAR - subsequently replaced by PATRIARCHE in 2002. For a full discussion of the two systems and the transition from one to the other see Cottenceau and Hanois [2002](#) 53-60), Great Britain (MONARCH Heritage Database Management System, now [HER](#)) and the Netherlands ([ARCHIS](#)).

The RAN database has undergone substantial updates over the years, both in terms of content and improvements in form and function. If initially the database content was based on the quantity of information, later the careful selection of sources was preferred, as well as improvements in information quality, such as exact location, the description of the components, research, bibliography and images. Within the database, each archaeological site is identified by a unique code known as the RAN code and consists of the [SIRUTA codes](#) (a unique numeric identifier for an area of Romania assigned by the National Institute of Statistics) of the nearest locality within the radius of the site location, to which is added a serial number assigned following an entry in the database (Şandric [2016](#) 295-96).

When consulting the RAN database, searches for archaeological sites can be by RAN or LMI codes. If the user does not know any of these codes, the search can



also be carried out by selecting from a list of 11 criteria: site category, site type, site components, SIRUTA code, county, commune, locality, era, date, registration status or just sites illustrated with images. Each criterion corresponds to a list of selection terms to refine the search and the result can be as precise as required. Thus, the site category criterion corresponds to a *settlement, fortification, cult building*, etc. The site type criterion corresponds to an *urban complex, mining operation, wreck*, etc. The site component criterion corresponds to *altar, basilica, kiln*, etc., and so on.

The way to display the site file online in the RAN database is in the form of a report where information about the site can be found, such as the location on the Romanian map, RAN code, name of the site, address (if any), name and type of hydrographic landmark, geomorphology, description, discoverer, site surface, finds, research, bibliography, etc. (see for example, the [Archaeological Site at Isaccea](#) - Noviodunum - La Pontonul Vechi (Noviodunum), RAN code 159696.05). The same page will display all the images associated with the archaeological site entered in the RAN database, as well as those from the [Chronicle of Archaeological Research](#) associated with the RAN database (Fig. 1).



Figure 1: Archaeological site file as is displayed online. ©Institutul Național al Patrimoniului.

Perhaps the most significant improvement to the RAN database was the [National Cultural Heritage Map Server](#) created in 2005. Through this application, the archaeological discoveries recorded in the RAN acquired a spatial dimension by displaying them in a cartographic format (Șandric [2016](#) 289). The application allows the creation of various thematic maps using specific GIS tools by combining the user's choice of geographical and topographic elements with cultural ones. The map server uses the free services provided by ArcGIS Online, Google and Bing, as well as orthorectified vertical aerial images, editions 2010-2012 and 2014-2016, which cover the entire surface of Romania, as well as topographical maps at scale 1:20000 (Drawn Master Plans) or the third Habsburg elevation at scale 1:200000. All these data provide a geographical, topographical and administrative background on which the contents of the cultural databases (RAN, [Chronicle of Archaeological Research](#), Guide to museums and collections) are overlaid. Later additions include the Archive of the Archaeological Repertory of Romania, burial mounds from the Dobrogea region and places of worship in Romania. They can all be consulted through the digital map and/or through their own advanced search functions available online (Șandric and Oberländer-Târnoveanu [2006](#) 1; Șandric [2016](#) 292-93) (Fig. 2).

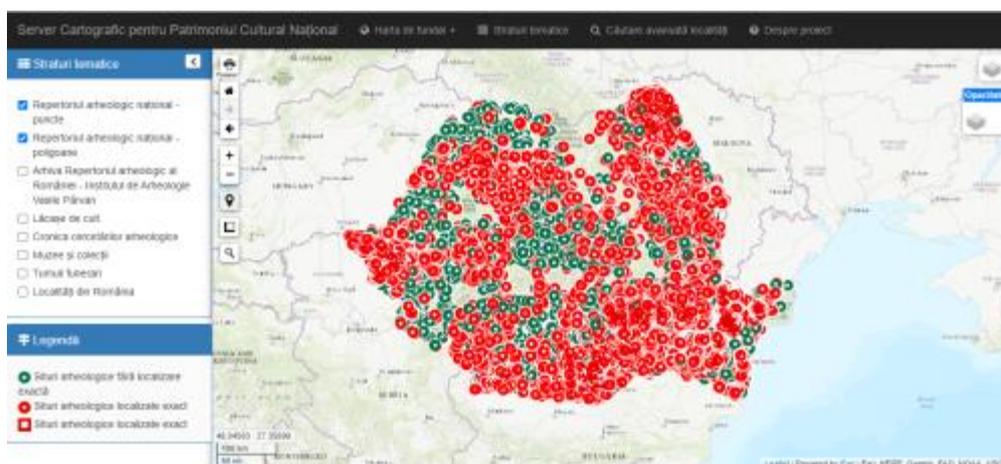


Figure 2: National Cultural Heritage Map Server with all the content on the left side. ©Institutul Național al Patrimoniului.

Initially, the spatial display of the archaeological sites was extremely difficult owing to the absence of exact geographic coordinates, the ambiguity of descriptive landmarks, the impossibility of identifying toponyms on the topographic maps that we had access to, and the quality of the maps annexed to the county repertoires which were, with few exceptions, some general sketches in which the sites could barely be located (Păunescu *et al.* [1976](#); Kacsó [2011](#) 13–87; Șandric [2016](#) 293). This problem has been overcome, and today more than 16,400 sites are located by precise point-type geographic coordinates, which represent approximately 68.3% of the total of over 24,000 (Fig. 3) and 10,700 sites are delimited by polygons, representing 44.6% of the total (Fig. 4). Unfortunately, this still leaves a further 7600 (31.7% of the total) that are in the process of being identified and located.

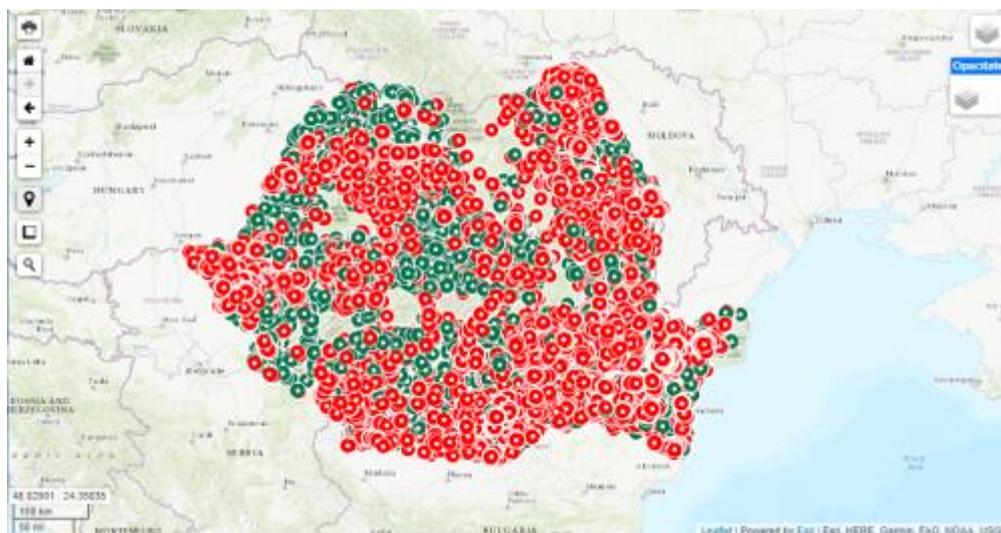


Figure 3: Spatial distribution of all archaeological sites in the National Cultural Heritage Map Server. The red dots represent the exact location of the sites, while the green dots represent the archaeological sites without exact location. ©Institutul Național al Patrimoniului.

The updating and creation of new content in RAN is based on the sources mentioned in OMC no. 2458, 21 October 2004, to which, over time, national and international programs and projects have been added, such as the National Program



for the Implementation of a Geographical Information System for the Protection of Immovable National Cultural Heritage (archaeology and historical monuments) – [eGISPAT](#), the [LIMES National Program](#), the project *Archaeological Repertoire of Botoșani county*, which had two editions (Șovan [2013](#) - appeared in the form of a volume and an [online map application](#); Șovan [2016](#) – this [second edition](#) was published exclusively online), the European projects *European Landscapes: Past, Present and Future* (Musson and Horn [2007](#)) and 'ArchaeoLandscapes Europe' ([ArcLand](#)) the historical and archaeological studies contained in the General Urban Plans (PUG) of each Unit Territorial Administration from Romania. The latter form the basis of the PUG, drawn up for a maximum period of 10 years, after which new studies will be carried out. They can be accessed online from the [Territorial Observatory GIS application](#), managed by the Ministry of Development, Public Works and Administration.

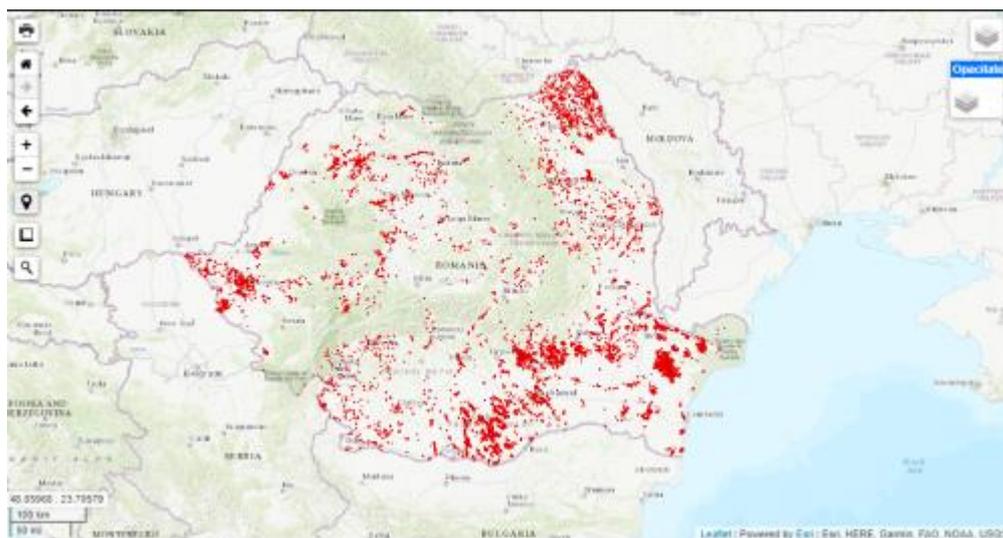


Figure 4: Spatial distribution of all archaeological sites delimited by polygons in the National Cultural Heritage Map Server. ©Institutul Național al Patrimoniului.

### 3. Chronicle of Archaeological Research in Romania (CCA)

The database is necessary for the centralised dissemination of archaeological research reports carried out annually in Romania. Between 1952 and 1973, archaeological research reports were published in the journal *Materials and Archaeological Research regarding the Ancient History of the P.R.R. (MCA)*, edited by the Institute of Archeology of the Academy of Social and Political Sciences (Șandric and Nicolae [2006](#)). This task was taken over for a short time, until 1981, by the magazine *Dacia*, where the annual reports of archaeological research were published in summary, and from 1988 the journal *Studii și Cercetări de Istorie Veche și Arheologie (SCIVA)* took over, where only the reports of the research teams of the Institute of Archeology in Bucharest and their collaborators were published (Barnea [2000](#) 3; both *Dacia* and *SCIVA* are publications of the Bucharest Institute of Archaeology, today the 'Vasile Pârvan' Institute of Archeology of the Romanian Academy).



In order to fill the void, since 1994 [CCA](#) has appeared annually and initially with a limited circulation (Barnea [2000](#) 3; [CCA 2022](#)). The first volume comprised 272 reports containing summary descriptions of the archaeological research carried out between the years 1983-1992, a period that lacked centralisation of such reports (Oberländer-Târnoveanu [2013](#) 30). To present the results of archaeological research in an easily accessible manner, the volumes covering the 1999-2011 campaigns were accompanied by mobile applications on CD-ROM, developed by CIMEC specialists, which included additional illustration, statistics, indexes of archaeological sites, of localities or chronological indexes and maps (Oberländer-Târnoveanu [2013](#) 30).

At the same time as the first volume, CIMEC designed a database created on the Microsoft Access 2.0 platform that was meant to centralise all the archaeological survey reports published in paper format and to make information retrieval much easier. Starting from 2000 until 2012, interactive online applications were created for each volume of the CCA where the research reports, illustrations, indexes, list of abbreviations, statistics, maps, appendices, the entire volume in pdf format (which could also be downloaded), summaries of research reports in English and any other information relevant to the archaeological community could be found. These applications were in reality also newsletters in which legislative topics, national research programs, as well as general evaluations of archaeological research in Romania were discussed, totalling 2654 archaeological research reports corresponding to the campaigns between 1999-2011 (to observe the evolution of these applications, use the link to the first accessible edition from [2000](#) and the last from [2012](#)).

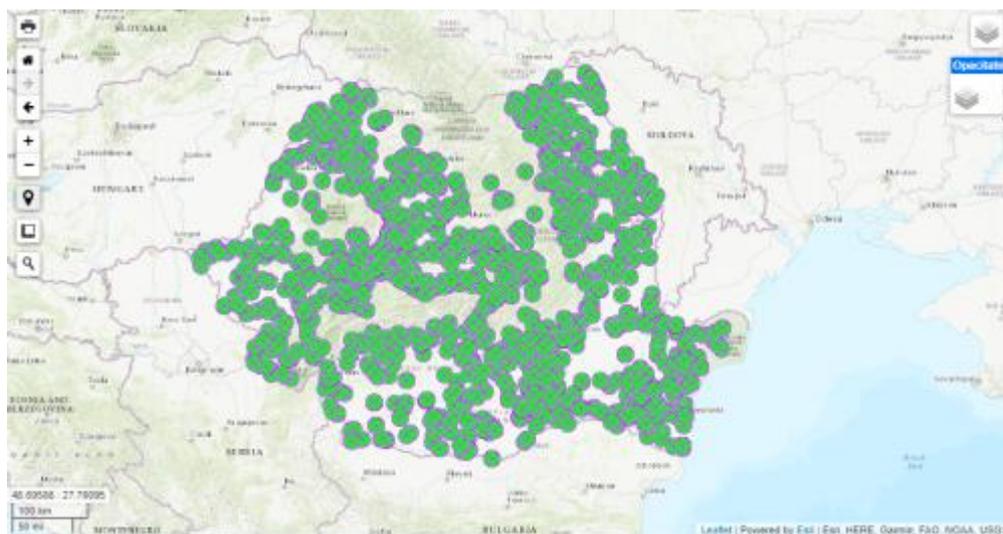


Figure 5: Spatial distribution of all archaeological sites with archaeological research reports published in CCA. ©Institutul Național al Patrimoniului.

In 2005, a new database was developed for online access, which included all the archaeological reports published in the 28 volumes of the CCA. The web interface allowed users to filter information according to their needs e.g. searches by campaign year, county, locality, institutions, era, period, site categories and types, people, or by certain descriptors. The database was constantly updated and included additions or, where appropriate, corrections made to certain unclear or erroneous



information contained in the research reports published in the volumes (Oberländer-Târnoveanu [2013](#) 29; CCA [2022](#)). Since its launch the database has been connected to the Cartographic Server where each report is spatially assigned to the locality where the research was carried out, an assignment done through the SIRUTA code (Fig. 5). In 2012, the database was improved to enable the addition of any images that accompanied the archaeological reports (Oberländer-Târnoveanu [2013](#) 29), and in 2022 the interface was changed again to be more user-friendly for public access, as well as giving easy access to the printed volumes that can be downloaded in pdf format.

Today, the database contains, in addition to reports and images, indexes of localities, toponyms, institutions, persons, periods, eras, site types and categories, and bibliography (Oberländer-Târnoveanu [2013](#) 30). In 1999, there were 4300 reports posted online (Oberländer-Târnoveanu [2013](#) 29), whereas at present there are 5715 registered. In 2012, there were 16,600 images attributed to 1800 reports whereas today there are 22,105 images corresponding to 2927 reports. This makes CCA one of the most important sources for RAN enrichment.

## 4. Mobile Assets Classified in the Mobile National Cultural Heritage

The [digital inventory activity of mobile assets](#) classified as cultural heritage began in 1998, and was legislated in 2000 by Law 182 of 25 October 2000 covering the protection of mobile national cultural heritage. A cultural asset is evaluated based on its historical-archaeological importance, artistic documentation, etc., at the end of which it is determined whether it can be part of the national cultural heritage (see Oberländer-Târnoveanu [2002](#) 32). Law 182 regulates the procedure by which cultural objects, owned by various public or private institutions (e.g. museums, libraries, parishes, monasteries, archives, universities) enter the national cultural heritage in one of the Fund (Cultural assets of great value for Romania) or Treasury (Cultural property of exceptional value to humanity) categories through an Order signed by the Minister of Culture. After the issuance of the Order, the documentation that served as the basis of the classification, as well as the act issued by the Ministry of Culture, are sent to the National Institute of Heritage, which is legally obliged to enter all this information into the classified mobile national cultural heritage database and to archive the documentation in paper form. Entering information into the database is done by migrating data from the program for the record of mobile patrimony, DOCPAT (Documentation of Mobile Cultural Heritage and Documentary Archives), used to record mobile cultural heritage (object files) and documentary archives in museums, photo archive, video archive and others. The program was created, developed and distributed by INP to owners of property collections for the purpose of the computerised (or now less frequently manual) recording of cultural assets.

Entry in the mobile national cultural heritage also enforces a special regime of protection, conservation and restoration as well as exposure. Thus, the database offers the best perspective on the national cultural heritage and, at the same time, it is the largest online catalogue of cultural goods in Romania. It is the only interface to



classified public and private collections accessible to the public, along with descriptive information and ranking orders. It represents a model of good practice for the inventory of heritage and the online dissemination of cultural goods by allowing access to images of the objects and making it possible to select according to different criteria.

The inventory currently contains 93,197 mobile cultural assets and, as expected, the largest share is numismatic (19,834), followed by archaeology (17,358).

## 5. ProEuropeana - Digital Library of Cultural Publications

[ProEuropeana](#), the digital library began as a small project of CIMEC from the desire to facilitate access to scientific literature resulting from historical and archaeological research carried out in Romania. The project gradually evolved in three stages, today reaching a digital library in the true sense of the word.

The idea of a digital library appears in the context of the development of the European [ARENA project](#) (2001-2004) when the digitisation of some documents from the historical archive owned by the Bucharest Institute of Archeology, which would have been digitally preserved and disseminated online, was discussed. The first stage in the creation of this library took place between 2005-2006 when the periodicals *Dacia* and *Materiale și Cercetări Arheologice* were partially indexed. The second stage took place in 2007 when 31 study books and articles on prehistory, epigraphy and ancient history signed by the founder of the modern archaeological discipline, Vasile Pârvan, were digitised and exhibited online (Andrei et al. [2021](#) 103). Between 2008 and 2010, the digitisation process continued, with various publications in the field of archaeology and history selected without any specific strategy. From 2011, the digitisation focused mainly on periodical publications edited by county or local museums, with the aim of making accessible recent scientific studies dedicated to some local subjects but which also substantially complete a wider picture of an era, concept or archaeological, historical, museographic issues or memoirs (Andrei et al. [2021](#) 104).

Today, ProEuropeana contains almost all the museum periodicals in Romania, but also those edited by the research institutes of the Romanian Academy in the field of socio-human sciences and totals 2725 publications (2425 books and 300 journals), of which 735 belong to the field of archaeology (619 books and 116 journals).

ProEuropeana offers the possibility of direct access to articles from periodicals or sections from books, the publications being divided into structures thus allowing a refined search. Searching the contents of the library can be done by several sets of criteria that can be combined, but also by a single search by a keyword. This cultural resource, along with the CCA, is an important source for enriching the content of the RAN. Thus, the most important studies on archaeological research in Romania are in the same place, and the publications found here can be linked to the *bibliography* section of the RAN database.



## 6. Prospects

This article has summarised the current state of the databases that create the digital record of the archaeological heritage in Romania. We are still far from what we want these to look like, but future prospects are aimed at bringing improvements to meet our current needs, as well as those of specialists and the general public.

In this regard, we intend to make improvements to the RAN database regarding the recognition of the site code, which, when entered manually, can generate errors. A solution that we have in mind is the automatic generation of unique codes by referring to the spatial location of the site. At the same time, the search functions need to be improved to get much more refined results. The classified mobile national cultural heritage database will be linked to the RAN database in order to be able to link the archaeological objects to the site they come from. For the Digital Library, we aim to continue to improve its content with new archaeological publications that we can associate with the bibliography in the RAN database. At the same time, the online interface must be improved to be more user friendly.

The short and long-term plans therefore are focused on improving these projects so that users can make the most of the cultural resources available to them.

## Bibliography

Andrei, V., Şandric, B., Miu, C., Borlean, O., Tufaru, M. and Ghemuţ, F. 2021 'Good practices in the ProEuropeana Digital Library <https://biblioteca-digitala.ro/>' in M. Dascălu and B. Şandric (eds) *Heritage in the Digital Era. Cases and Best Practices from Romania*, Bucureşti: ProUniversitaria. 99-110.

Barnea, A. 2000 'Cuvânt înainte' in M.V. Angelescu, C. Borş and I. Oberländer-Târnoveanu (eds) *Cronica cercetărilor arheologice din România*, Campania 2000, Bucureşti: CIMEC. 3.

Botond, B., Bărbulescu, M., Cavruc, V., Chirilă, E., Crişan, I.H., Crişan, V., Zoltán, S., Zsolt, S., Vasiliev, V. and Winkler, I. 1998 *Repertoriul arheologic al judeţului Covasna*, Serie monografii arheologice 1, with contributions by B. Attila, G. Cavruc, M. Dănilă and R. Tamás. Sfântu Gheorghe: Tipografia COVA-print

Bató, A., Bărbulescu, M., Cavruc, V., Chirilă, E., Crişan, I.H., Crişan, V. and Vasiliev, V. 2000 *Repertoriul arheologic al judeţului Harghita*, Sfântu Gheorghe: Carpaţii Răsăriteni.

Chirica, V. and Tanasachi, M. 1984 *Repertoriul arheologic al judeţului Iaşi*, Vol. 1, Iaşi: Academia de Ştiinţe Sociale şi Politice a R.S. România.



Chirica, V. and Tanasachi, M. 1985 *Repertoriul arheologic al județului Iași*. Vol. 2, Iași: Academia de Științe Sociale și Politice a R.S. România.

Coman, G. 1980 *Statornicie, continuitate: repertoriul arheologic al județului Vaslui*, București: Litera.

Comșa, E. 1984 'Istoricul Muzeului național de antichități – Institutul de arheologie, IV. Arheologie și muzeograie în perioada 1944 – 1956, *Studii și cercetări de istorie veche și arheologie* **35(3)**, 209–21.

Costea, F. 1995 *Repertoriul arheologic al județului Brașov*, Vol. 1. Cumidava XV-XIX, Brașov: Tipocart Brasovia.

Costea, F. 1996 *Repertoriul arheologic al județului Brașov*, Vol. 2. Brașov: Muzeul Județean de Istorie Brașov.

Costea, F. 2004 *Repertoriul arheologic al județului Brașov*, second edition, Brașov: C2design.

Cottenceau, A.M. and Hannois, P. 2002 'ARM and GIS in France. From Dracar to Patriarche' in L. García Sanjuán, and D. Wheatley (eds) *Mapping the Future of the Past. Managing the spatial dimension of the European archaeological resource*, Sevilla: Universidad de Sevilla. 53-60.

Crișan, I.H., Bărbulescu, M., Chirilă, E., Vasilev, V. and Winkler, I. 1992 *Repertoriul arheologic al județului Cluj*, Bibliotheca Musei Napocensis, 5. Cluj: Muzeul de Istorie a Transilvaniei.

Dobre, Al. 1986 'Chestionarul arheologic al lui Odobescu', *Revista de Etnograie și Folclor*, **31(1)**, 46–52.

Kacsó, C. 2011 *Repertoriul arheologic al județului Maramureș*, vol. 1, Baia Mare: Eurotip.

Lazăr, V. 1995 *Repertoriul arheologic al județului Mureș*, Târgu-Mureș: Casa de Editura Mureș.

Luca, S.A. 2010 *Descoperiri arheologice din Banatul românesc*, Repertoriu, Bibliotheca Brukenthal **46**, Sibiu: Altip.

Luca, S.A. and Gudea, N. 2010 *Repertoriul arheologic al județului Sălaj*, Bibliotheca Brukenthal **55**. Sibiu: Altip.

Luca, S.A., Pinter, Z.K and Georgescu, A. 2003 *Repertoriul arheologic al județului Sibiu. Situri, monumente arheologice și istorice*, Bibliotheca Septemcastrensis **3**, București: Editura Economică.

Luca, S.A., Țiprig, I.M. and Suciuc, C. 2004 *Repertoriul arheologic al județului Caraș-Severin*, Bibliotheca Septemcastrensis **4**, București: Editura Economică.



Luca, S.A., Roman, C., Diaconescu, D. and Suciu, C. 2005 *Repertoriul arheologic al județului Hunedoara*, Bibliotheca Septemcastrensis **14**, Alba Iulia: Altip.

Luca, S.A., Suciu, C. and Purece, S.I. 2006 *Descoperiri arheologice din Banatul românesc*, Repertoriu, Bibliotheca Septemcastrensis **18**, Sibiu: Altip.

Moga, V. and Ciugudean, H. 1995 *Repertoriul arheologic al județului Alba*, Bibliotheca Musei Apulensis **2**, Alba Iulia.

Musson, C. and Horne, P. 2007 *EUROPEAN LANDSCAPES past, present and future*, Culture 2000 Project Ref. No. CH-A2-UK-2077 FINAL REPORT 1 October 2004-31 October 2007. <https://kar.zcu.cz/doc/gojda/EUROPEANLANDSCAPESlowres.pdf> [Last accessed: 29 April 2023].

Oberländer-Tarnoveanu, I. 1996 'Statistical view of the archaeological sites database' in H. Kamermans and K. Fennema (eds) *Analecta Praehistorica Leidensia 28: Interfacing the Past. Computer Applications and Quantitative Methods in Archaeology, CAA95 Vol. I*, Leiden: Leiden University. 47–50.

Oberländer-Târnoveanu, I. 2002 'Digital archiving in archaeology. Speaking about the past to the future', *Cultură și civilizație la Dunărea de Jos* **19**, 199–230.

Oberländer-Tarnoveanu, I. 2004 'Access to Romanian archaeological archives', *ADS Newsletter Online* **15**. <https://archaeologydataservice.ac.uk/library/browse/issue.xhtml?recordId=1200675> [Last accessed: 30 April 2023].

Oberländer-Tarnoveanu, I. 2013 'Patrimoniul arheologic național: politici, documentare, acces' in S. Musteață (ed) *Arheologia și politicile de protejare a patrimoniului cultural în România. Culegere de studii*, Chișinău-Iași: Arc. 13–42.

Odobescu, A. 1871 *Notițe despre localitățile însemnate prin rămășițe antice în districtul Dorohoi, Măgure, movile, cetăți de pământ și șanțuri, Tezaurul de la Concești și Biserice memorabile, cruci, siliști și alte ruine*, București: Monitorul Oficial.

Odobescu, A. 1878 *Antichitățile județului Romanați*, București: Tipografia Societății Academice Române.

Odobescu, A. 1887 *Scieri literare și istorice*, Vol. **2**, București: Editura Librăriei Socecu & Comp.

Odobescu, A. 1908 *Opere complete*. Vol. **3**, București: Minerva.

Odobescu, A. 1989 *Opere*, Vol. **5**, partea I, București: Editura Academiei.

Olteanu, G. 2002 *Repertoriul arheologic al județului Dâmbovița*, Vol. **1** (A-M), Târgoviște: Cetatea de Scaun.



- Olteanu, G., Cîrstina, O. and Căprăroiu, D. 2003 *Repertoriul arheologic al județului Dâmbovița*, Vol. 2 (N-V), Târgoviște: Cetatea de Scaun.
- Păunescu, A., Șadurschi, P. and Chirica, V. 1976 *Repertoriul arheologic al județului Botoșani*, Vols 1 and 2, București: Academiei Republicii Socialiste România.
- Păunescu, A. 2003 *Din istoria arheologiei românești pe baza unor documente de arhivă*, București: AGIR.
- Șandric, B. 2016 'Repertoriul arheologic al României. Istorie, evoluție, rezultate', *Patrimonium Banaticum* 6, 281-305.
- Șandric, B. and Nicolae, I. 2006 *Proiectul de indexare a revistei Materiale și Cercetări Arheologice* [dataset], București: Institutul Național al Patrimoniului [distribuitor] [http://cimec.ro/Arheologie/mca\\_rom.htm](http://cimec.ro/Arheologie/mca_rom.htm) [Last accessed: 30 April 2023].
- Șandric, B. and Oberlander-Tarnoveanu, I. 2006 'Server cartografic pentru patrimoniul cultural național', *CIMEC On-Line. Buletin informativ al Institutului de Memorie Culturală* 1(4), 1–2. <http://www.cimec.ro/cimeconline/Cimeconlinenr4/Cimeconline-no4-ro.pdf> [Last accessed: 30 April 2023].
- Sever, D. 1974 *Repertoriul monumentelor naturii, arheologice, istorice, etnografice, de arhitectură și artă din județul Bihor*, Oradea: Muzeul Țării Crișurilor.
- Șovan, O. 2013 *Harta Repertoriului Arheologic al Județului Botoșani*, <http://arcg.is/2bJUA8h>
- Șovan, O., 2016. *Reperotiul arheologic al județului Botoșani*, ediția a II-a. <https://www.cimec.ro/arheologie/repertoriul-botosani/images/repertoriului-arheologic-botosani-ed-II-2016.pdf> [Last accessed: 17 April 2023].
- Thornes, R. and Bold, J. 1998 *Documenting the Cultural Heritage*, Los Angeles: J. Paul Getty Trust.
- Urechia, V.A., Hașdeu, B.P. and Tocilescu, G. 1897 'Inventarul monumentelor publice și istorice din România', *Buletinul Oficial al Ministerului Cultelor și Instrucțiunii Publice* 4(92), 878–94.