Archaeology *Sans Frontières*

The modern political and cultural boundaries that straddle the map of the world tend to be recent phenomena. While disparate heritage agencies and research projects have different traditions of preserving, studying and presenting the historic environment, this diversity misrepresents the past. Modern boundaries risk perpetuating unhistorical divisions between populations who moved freely across the borders that we now police.

Archaeologists have thus to look beyond the modern political map, but this is more easily said than done. Because different national and local agencies have their own traditions of recording and interpretation, their records seldom compare easily. The problem is all the more evident as information technology makes it possible to swap and exchange information with ease. In the UK, academic archaeology has always had a broad, internationalist view. Given that the ADS exists to support that community wherever it may work, the problem of reconciling data sets from these diverse heritage management organisations lies squarely on our shoulders.

This issue of ADS NEWS looks at a number of innovative projects which are helping to put the "world" in the World Wide Web. The European Union is funding an exciting research project called ARENA, with partners in six (very) different European countries. The ADS is also a partner in a broader EU project on digital preservation called ERPANET - supporting and extending our mission for long-term preservation. Archaeological research is brought into focus with a new data set of palaeolithic tools - among the earliest and most universal forms of human creativity. Finally, a developing partnership with the University of California at Berkeley gives a taste of how the ADS is collaborating with organisations far beyond these shores to support research locally. These efforts are supported by a developing technical infrastructre, such as the launch of HEIRPORT - a new Z39.50 portal for the historic environment - and our new strategic relationship with UKDA to acquire deep storage facilities.

Archaeology is a worldwide discipline: read on to find out how ADS is rising to that challenge.

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ArchSearch NEWS; the online catalogue of the ADS

A subset of the South Gloucestershire Sites and Monuments Record (SMR) has been added to the ADS catalogue courtesy of South Gloucestershire Council. Too late for this dataset perhaps but Exegesis SDM Ltd have just added an ADS metadata export facility to their popular database package which is used by many SMRs. With this exciting development it is hoped that other SMRs will take the opportunity to make their data available online through the ADS.

An update of the West of Scotland SMR has been supplied to us from the West of Scotland Archaeology Service (WoSAS). This reload not only updates information since the original version was deposited, but also includes links to WoSAS's own online sites and monuments record, which ultimately wil provide considerably more text and images to support most records. The Vernacular Architecture Group (VAG) Dendrochronology Database has now also been updated to include more recent dates from their journal Vernacular Architecture. A further batch of out-of-print Research Reports has been cleared and released for online access by the Council for British Archaeology (CBA). The latter includes Professor Barry Cunliffe's Danebury volumes and for those with an interest in death and burial the volumes covering the excavations at Christchurch, Spitalfields.

At the time of writing a pilot version of ArchSearch II (described in a previous newsletter) is undergoing testing and a release version should be ready in the very near future. The new architecture includes a complete overhaul of hardware, software and even data structures. User evaluation has identified the priorities for new forms of searching. A further round of user evaluation is planned once the new system is functioning.

ArchSearch News is brought to you by the ADS Technical Team: Tony Austin, Jo Clarke and Keith Westcott. Email email

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ARCHway: table of contents service for archaeology journals

The ARCHway project (described in Issue 8 of ADS News) involved a consortium of over twenty university, museum and private libraries led by University of York with technical assistance from the ADS. The Archway "Journal Locator" and pilot Table of Contents (TOC) service were launched on the 20th March. The Locator provides integrated online access to holding information of the partner libraries and covers over 2,300 journals likely to be of interest to the archaeological researcher. The TOC pilot service provides online access to the author, title, page, volume, and year information for articles published in 13 journals including the Antiquaries Journal, Archaeologia, Medieval Archaeology and the Proceedings of the Prehistoric Society. It is hoped to expand this service in a future project.

http://ads.ahds.ac.uk/catalogue/ARCHway.html

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Computer museum: taking preservation to the limit

The ADS's collection of redundant computers, their peripherals, software and manuals continues to grow through the generosity of our community. Recent additions include a mid 1980s ACT Sirius 1 computer in perfect working order and a currently not-so-healthy Victor computer with hard drive. Both were kindly donated by the Clwyd-Powys Archaeological Trust (CPAT). These are not just static`exhibits' but may have to earn their keep in the future should data come to light that was generated on such machines.

These machines form the very last line of defence for digital data: migration is a much more cost effective and practical method of preservation. The computer museum exists to cover all eventualities.

In this issue ...

Technology, material and population ecology: a new AHRB Archive

Over the last few months ADS staff have been working with Dr Gil Marshall of Southampton University to create a digital archive for an AHRB - funded research project - "Lower Palaeolithic Technology, Raw Material and Population Ecology". In this article Dr Marshall describes the archive and how it was created. This archive is the first ADS collection to be made available using ColdFusion, one of the new software tools acquired to enhance the catalogue architecture.

This archive, soon to be fully operational, forms the primary dataset of a Southampton-based study into Acheulian biface technology at the continental scale. The study was funded by the AHRB and directed by Clive Gamble of the Centre for the Archaeology of Human Origins (CAHO) at Southampton, and Derek Roe of the Baden Powell Institute for Palaeolithic Research in Oxford. The dataset was generated by Gilbert Marshall from CAHO.

The aim of the project was to collate metric and descriptive data from a large number of biface assemblages from the South of Africa to the North of Europe. Analyses of this type wouldtypically involve manually measuring and describing artefacts. Although perfectly acceptable, it was decided that a useful by-product of this research would be a database of digital images of all the artefacts included. With the development of digital photography and storage capacity this is now perfectly feasible.

Practically, this involved bifaces being described and photographed but not measured. The photographs themselves were used to provide the measurements, a process automated using software developed at Southampton in collaboration with Computer Science. The visual, metric and descriptive archive can be interrogated for a total of 3556 bifaces, images viewed and measurements downloaded. The archive provides a useful tool for both teaching and research, and it is hoped that it can be expanded further by the addition of more collections.

Exemplars from the bifaces archive. The top image is a side view of a handaxe from Olduvai Gorge in Tanzania. Olduvia is the location of many of the most important finds from early prehistory. The lower image is frontal view of a flint tool from Boxgrove, the most productive, and perhaps most famous palaeolithic site in Britain for many years. Each of the 3,556 tools was recorded in detail to allow for detailed statistical analysis. The measurements, were derived from images that give different views of the surfaces and edges of the artefacts. Both images and measurements are included in the archive.

Dr Gilbert Marshall, Centre for the Archaeology of Human Origins, University of Southampton,
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TimeMapping Time Travels: The Electronic Cultural Atlas Initiative Infrastructure for Collaborative Research

Readers of the ADS conference list will have noted some pretty unusual destinations in the last 2 years,followed by the cryptic letters "ECAI" - the Electronic Cultural Atlas Initiative. In this article, Dr Caverlee Cary explains the thinking behind ECAI and describes how ECAI, AHDS and ADS are collaborating to their mutual benefit.

Mankind may be separated by the boundaries of time and space, but for the Electronic Cultural Atlas Initiative (ECAI), time and space do not divide but unite. Specifically, time and space are the crucial metadata elements by which ECAI is cataloguing the work of several hundred affiliates working on digital humanities and social science research projects.

The last issue of this newsletter featured an item on "point-and-click" mapping and linked resources. ECAI adopts a similar approach. Users can seek resources through the intuitive immediacy of a clickable map.

ECAI is working to take this one step further: to "drill down" to the data level across globally distributed databases. ECAI allows users to locate any resource linked through registered spatio-temporal metadata and visualize query results on a map-based interface. This infrastructure for data sharing allows collaboration across boundaries of time, place, and discipline.

Archaeologist Ian Johnson, of the Archaeological Computing Laboratory, University of Sydney, is author of the core elements of ECAI's technical architecture: the ECAI Metadata Clearinghouse and ECAI's time-enabled GIS software, TimeMap. TimeMap functional metadata, the key to interoperability across datasets, allows users to query remote servers and extract selected data, enabling users creatively to author customized maps.

The Archaeology Data Service - with its partners in the Arts and Humanities Data Service - is working with ECAI on issues of data interoperability. ADS has played an increasingly important role in ECAI since its initial participation in the semi-annual ECAI meeting at the British Library in June 2000. Not only ADS standards and good practice guides, but ADS participation in training programs featuring ECAI technology are current areas of shared interest.

ECAI, based at the University of California, Berkeley, under the direction of Professor Lewis Lancaster, has a worldwide membership of several hundred scholars and information technology specialists.

A screen shot of ECAI in action: Map included in ECAI Electronic Publication on the Sasanian empire, showing TimeMap data layers.

Dr Caverlee Cary, The Electronic Culutral Atlas Initiative. For enquiries about ECAI contact: ecai@socrates.berkeley.edu or visit the ECAI web site at http://www.ecai.org/

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Archaeological Records of Europe Network Access (ARENA) Project: a new departure for ADS

No information provider is an island, and the ADS sails in international waters. Metadata standards such as Dublin Core and communications protocols such as Z39.50 are developed on a cross-disciplinary international basis and if ADS is to work effectively at national level it also needs to be aware of, and participate in, international initiatives.

A major grant from the European Commission under the Culture2000 programme is allowing the ADS to take the lead in one such partnership. The ARENA (Archaeological Records of Europe- Network Access) Project is a three-year project which aims to extend online access and digital preservation of European archaeological archives. The project, which started in late December 2001, is now in its initial phases. The ADS has signed a cooperation agreement with the National Museum of Denmark, the Norwegian Museum Project in Oslo, Fornleifastofnun Islands in Reykavik, CIMEC (The Institute for Cultural Memory), in Bucharest, Romania, and Poznan Archaeological Museum, in Poland.

Though the partners each have shared interests, they also bring different strengths. The National Museum of Denmark has a formidable reputation for public involvement using new technologies, while the Musem Documentation project has gained considerable experience of structured mark-up, in particular XML. The Archaeological Museum in Poznan and CIMEC in Romania, who were partners in the ArchTerra project, have developed expertise of multilingual computing, while the Fornleifastofnun Islands in Reykavik bring a broad knowledge of cultural management beyond the bounds of conventional heritage management. The ADS, in turn, has expertise in digital preservation and interoperability.

The partners will undertake various activities in order to share best practice and develop training, including the organisation of European workshops in digital preservation, as well as providing online access to a number of significant archaeological archives. We will collaborate on several research projects, including the development of a European map-based search engine, and investigation of XML as a web mark-up language for archaeological archives.

Stop Press ... European Project Officer Appointed

Jon Kenny has been appointed as European Project Officer and will be writing more about ARENA in future editions of ADS News. The first points in Jon's workplan are setting up a joint meeting of the partners, and a conference session on digital data at the next meeting of the European Association of Archaeologists in Thessaloniki in September. Jon, previously a project officer with the York Archaeological Trust, is a graduate of the University of York and has completed a PhD at the University of Lancaster. In time, he will collaborate with assistants in each of the partners, but he will ultimately be responsible for co-ordinating their activities, and reporting back to the EC on the completion of the various work packages.

Dr Julian Richards

For enquiries about ARENA, contact Jon Kenny [email](#)

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ERPANET - Electronic Resource Preservation and Access Network

The challenges of digital preservation reach into many different sectors, not just the research community. As the use of digital technology increases generally, so the need for research and expertise in digital preservation becomes more pressing in areas as diverse as government, industry, health services and commerce, as well as in museums, libraries and archives. The ADS is a partner in a new international coalition called "ERPANET" which aims to expand and disseminate knowledge in digital preservation. Here the project leaders describe ERPANET and what it hopes to deliver over the next three years.

The European Union-funded ERPANET Project will establish an expandable European Consortium, to make viable and visible information, best practice and skills development in the area of digital preservation for cultural heritage and scientific objects. ERPANET brings together a wide variety of partners from many different sectors. These include memory organisations (such as museums, libraries and archives), computer and software industries, research institutions, local and national government agencies, organisations in the entertainment and creative industries, as well as partners in the commercial sector (including partners from pharmaceutical and petro-chemical companies, and financial institutions). The dominant feature of ERPANET will be the provision of a virtual clearinghouse and knowledge base on state-of-the-art developments in digital preservation. ERPANET will work to disseminate its expertise among participating individuals and institutions.

ERPANET is concerned with addressing the lack of awareness, fragmentation of knowledge and shortage of skills amongst the stakeholders about how to handle existing digital preservation problems, and how to plan effectively for the future so that experience can inform practices. It aims to tackle the lack of identification and focus on preservation of cultural heritage and scientific objects through nine core objectives. These range from identifying and raising awareness of information about the preservation of digital objects to the provision of enquiry and advisory services on preservation issues, practice, and technology. The dominant feature of ERPANET will be the exchanging of knowledge about state-of-the-art developments in digital preservation and the transfer of expertise among individuals and institutions. More specifically ERPANET will deliver a range of complementary services (e.g.content creation, advisory service, training and thematic workshops and fora), both to the information creation and user communities. It will make accessible tools, knowledge, and experience to create a network that will foster communication and development throughout Europe in the area of digital preservation and access.

ERPANET was launched in November 2001, and is currently completing its start-up phase. The first Advisory Committee meeting in April will bring together key figures from public and private sectors to help guide the project. Among the first activities that the partners are planning is a seminar for digital preservation experts in Toledo in June, focussing attention on digitisation and preservation. This will include discussions on content-based image retrieval, quality assurance and data migration. It is hoped that the ERPANET and ARENA projects - which have complementary aims and objectives - will be able to support each other with joint activities.

Seamus Ross, Niklaus Bütikofer, Mariella Guercio, Hans Hofman and Peter McKinney

The principal ERPANET partners are HATII at the Universty of Glasgow, Rijksarchiefdienst, The Netherlands, Institute for Archival and Library Science, Università degli studi di Urbino, and the Schweizerisches Bundesarchiv in Switzerland. It is funded through the EU's Information Society and Technology Directorate. For more information about the project visit http://www.erpanet.org/. If you would like to attend the seminar in Toledo, or would be willing to present your work to other experts in the field, please contact Pete McKinney, ERPANET Co-ordinator at P.McKinney@hatii.arts.gla.ac.uk

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Launch of HEIRPORT at the British Archaeology Awards

Readers will be familiar with news of HEIRPORT and HEIRNET. In 2001, the ADS worked with fellow members of the HEIRNET consortium, the RCAHMS, the Portable Antiquities scheme and SCRAN, to develop a single web-gateway to heritage databases. HEIRPORT, developed by the ADS with the University of Kent and Systems Simulations Ltd., allows users to search separate databases at the same time.

Each year the start of the competition for the British Archaeological Awards is marked by an evening of lectures at the British Museum. This year the occasion also marked the launch of HEIRPORT.

The last six months saw technical teams in York, London and Edinburgh working hard to enable HEIRPORT's target databases at the ADS, the Portable Antiquities scheme, SCRAN and the RCAHMS. It was with great pleasure that the ADS and HEIRNET took the opportunity to celebrate their achievements by launching the proto type web gateway at the BAA lectures.

Alison Sheridan, Tam Dalyell, JD Hill, Julian Richards, David Breeze and Nina Crummy after the launch

The evening started with a welcome from David Breeze, the BAA chair. Julian Richards introduced HEIRPORT which was then officially launched by Tam Dalyell MP. Tam Dalyell described HEIRPORT as an important and imaginative development and spoke of his personal interests in researching the historic environment. Alison Sheridan, JD Hill and Nina Crummy then each went on to give interesting and enjoyable lectures about recent discoveries. The evening concluded with a wine reception.

The launch of HEIRPORT also marks the next phase in its development. We hope to be able to bring you more news in future about access to additional databases and additional services.

Kate Fernie (email)

For more on either HEIRNET or HEIRPORT, contact Kate at the email address given or visit the HEIRNET web site at http://www.britarch.ac.uk/HEIRNET

Julian Richards, Director of the ADS, introduces HEIRPORT prior to its launch by Tam Dalyell MP at the Britiah Archaeology Awards lectures at the Britiah Museum.

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New Partnership for Deep Storage: Taking the Long View for Digital Data

The Arts and Humanities Data Service (AHDS) has recently negotiated a deep storage facility with the UK Data Archive (UKDA) as part of its long-term preservation strategy for digital data. Deep storage facilities will greatly enhance the ADS's ability to ensure the secure, long-term preservation of data, and provide a mechanism by which collections can be preserved through all eventualities. The long-established UKDA is one of the the largest digital archiving organizations in the United Kingdom, focussing its collections on economic and social science data sets. This trusted data repository, which was founded in the 1960s, is home to numerous important digital datasets, including data from government and university research studies in the UK and further afield.

The ADS, with its partners in the AHDS, is currently testing this facility before depositing data collections for preservation. Data integrity is ensured through the use of md5sum checksum scripts at both ends of any file transfer operation. The facility also provides easy but controlled access to the ADS technical team for the long-term curation - specifically refreshment and migration - of data deposited there. Once into the UKDA system the data becomes part of a rigorous back- up strategy with multiple copies of data held at multiple sites. This greatly enhances the ADS's own rigorous preservation and back-up regime.

Tony Austin [email](#)

For more information about the UK Data Archive, point your browser at http://www.data-archive.ac.uk/

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Guides to Good Practice

- Archiving Aerial Photography and Remote Sensing Data
- Digital Archives from Excavation and Fieldwork
- GIS Guide to Good Practice
- Geophysical Data in Archaeology

... with guides from our sister services on: Digitising History, Creating and Documenting Electronic Texts, Creating Digital Performance Resources, Creating Digital Resources for the Visual Arts. All guides are freely available online at:

http://ads.ahds.ac.uk/project/goodguides/g2gp.html

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The Archaeology Data Service (ADS) is part of the **Arts and Humanities Data Service**, and resides at the **University of York**. It is jointly funded by the Joint Information System Committee and the **Arts and Humanities Research Board**. The ADS collects, describes, catalogues, preserves and provides user support for digital resources created during archaeological research. The ADS promotes standards and guidelines for best practice in the creation, description, preservation and use of spatial information to the AHDS. Where appropriate archival bodies already exist, the ADS collaborates to promote greater use of these existing services.

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