PotWeb: museum documentation - a world vision

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SUMMARY

This paper demonstrates how an English museum is seeking to make its most abundant heritage resource – pottery – accessible world-wide, 24 hours a day. The project, code named PotWeb (www.PotWeb.org) is designed to benefit a wide range of enquirers and to encourage them to visit the collections in person.

INTRODUCTION TO THE RESOURCE

The City of Oxford, England, is a major tourist destination: 5,000,000 visitors explore its university, colleges and other attractions each year, some 300,000 visitors visit the Ashmolean Museum each year. Among them in March 2000 were members of the Medieval Pottery Research Group celebrating their 25th anniversary. They will remember the welcome extended by the director of the Ashmolean, Dr Christopher Brown, one evening. He introduced them to PotWeb for the first time (this was not in his briefing notes) and confirmed the museum's committed support for the project.

The Ashmolean and its world-class collections are a key attraction in Oxford. The museum is a department of the University, within which the collections are divided between three research departments, Antiquities, Eastern Art and Western Art, each with important ceramic collections. Keepers have professorial status within the university, and Assistant Keepers have lecturer status. The Assistant Keepers, in consultation with the respective keepers, manage most of the curatorial operations.

Origin of the museum

The Ashmolean Museum of Art and Archaeology is Britain's oldest public museum, established in 1683 to house Elias Ashmole's foundation collection (MacGregor 1983, 2001b). Located at the heart of a major tourist city, the museum provides the citizens of Oxford and their numerous visitors with access to collections of national and international importance, free of charge and with no direct or indirect cost to the local community. The founder, Elias Ashmole, studied at Oxford during the English Civil War (AD 1640s) alongside many distinguished scholars, including Robert Boyle and his assistants Robert Hooke and John Dwight, pioneering scientists of the 17th century; but Ashmole himself is chiefly remembered for not paying his college bills! His vision for the museum was to provide public access. This theme has been taken up in 21st century format by PotWeb, a project for museum documentation with a world vision. Before considering the methodology of the project, it may be helpful to summarise the intellectual content of what is now Ashmole's legacy.

Ten millennia of ceramics

Many of the museum's ceramic collections are among the finest of their type in the world, designated as of 'outstanding importance' by England's Museums, Libraries and Archives Council. These wide-ranging but insufficiently appreciated collections include ceramics spanning some 10,000 years. This material, ubiquitous among the civilisations of the past, combines practical purpose and artistic expression.

For the earlier civilisations, the museum houses the

original type series from which the ceramic chronology of Ancient Egypt was established by Flinders Petrie in the 19th century, including pots with delightful scenes from the River Nile (*c.* 4000 – 3000 BC) and the best collection of Nubian pottery in the world. A subsequent phase of collecting was by the archaeologist Arthur (later Sir Arthur) Evans, who resigned his directorship of the museum in 1908 in order to concentrate on excavating the Palace of Minos at Knossos. A superb Greek collection extends from the Neolithic to Hellenistic and Classical periods and is represented by a wide range of vessels for wine drinking, decorated with scenes of sporting and everyday life. Roman ceramics include Mediterranean fineware and Arretine and North African slipware, as well as local pottery from an important industry centred on Oxford itself. Post-Roman ceramics include a range of Anglo-Saxon burial urns from East Anglia and the Upper Thames Valley of the 5th to 7th centuries AD, with the occasional imported Frankish or Rhenish wares from the Continental Europe. Vessels from the most accomplished medieval ceramic industry of England, the Brill/Boarstall potteries in Buckinghamshire present a very powerful display in the Medieval and Later Gallery. These date from the 13th to the 16th century AD.

The Ashmolean has an outstanding collection of the art of the European Renaissance potter, assembled by the Victorian scholar C D E Fortnum. The collection of English Delftware is one of its jewels, with decorative motifs often reflecting contemporary social history. Social drinking seems to have been the niche filled by the German stonewares which were imported in Britain in large quantities from the late 15th century. They made a big impact on Oxford taverns and inns, reflecting the rise in popularity of ale houses in the 17th and 18th centuries. From the Orient, the museum has one of the finest collections of Japanese export porcelain in Britain and one of only two collections of pre-export porcelain from the first half of the 17th century. The Chinese collection is particularly strong in the Greenwares, (the finest collection outside China) and other ceramics of the 3rd to 12th centuries AD, with an extensive collection of later porcelain.

Reitlinger's legacy to the Ashmolean of over 2000 pieces of pottery included a remarkable collection of Islamic pottery. His interest was stimulated by two expeditions to Iraq, sponsored by the University of Oxford in the 1930s.

THE POTWEB PROJECT: ACCESSING A TREASURE-HOUSE OF DESIGN

'Public access is the most potent item on everyone's agenda' (MacGregor 2001a).

Project aims

The museum's objectives in PotWeb (www.PotWeb.org) are threefold:
- to mobilise these ceramic collections (amounting to many tonnes of material) in a manner both dynamic and genuinely useful
- to transform the level of access to this important but currently somewhat exclusive body of material by presenting the salient features of every significant vessel on the project's website
- to provide an 'information gateway' to individuals who might otherwise find the museum intimidating on cultural, racial or social grounds.

The aim is to share the resource with the widest possible audience, including other museums, and we see the Internet as the most efficient and economic medium by which to achieve this. To this end, PotWeb is dedicated to broadening understanding of ceramics in the worlds of art and archaeology by the use of innovative methods. It makes the collection available to a worldwide audience and will develop to the full its educational and research potential.

Project team

PotWeb is directed by Arthur MacGregor, curator of the Medieval and Later collections. The project's co-ordinator (2000-2003) is Maureen Mellor, an independent ceramic consultant. Information technology expertise is provided by the museum's Information Technology Manager, Jonathan Moffett. The project photographs have been specially commissioned from a freelance photographer, Jeremy Haslam, who has used traditional photographic media in order to record maximum detail and generate transparencies which will be available for further literature on ceramics.

Project history

The concept of PotWeb was born in the 1996 when the Department of Continuing Education was devising a new course to teach applied archaeology to students. These students had already completed several modules of study for the Certificate of British Archaeology. One of the authors, Maureen Mellor, started to look around for teaching aids to help the students fix information and write their assignments. Such students often lead busy lives during the day, do not necessarily have access to relevant libraries and do much of their research in the evenings and at weekends. There were few virtual collections online and none dedicated to ceramics. Near the department of Continuing Education lies the Ashmolean where Maureen Mellor was researching a handbook *Pots and People,* Ashmolean, 1997. In addition to the public displays, a rich resource lay hidden away in cupboards and basement stores, with the supporting paper archives often stored well away from the material culture. Amongst this documentation were gems of information about the people who had made, designed, collected or

excavated this material, as well as details of where the pots were found or located or otherwise acquired.

The project design evolved within the Department of Antiquities to include a database to help manage the department's collections and Arthur MacGregor and Maureen Mellor explored a number of possible partnerships to help turn this concept into a reality. It was not until the appointment of Dr Christopher Brown in 1998 that the project was awarded a 'seed corn' grant from the University, matched by one from the museum. These were then supplemented by a grant from the British Academy, local charitable trusts and private individuals. In May 2000, a small development group was appointed, each member reflecting a different audience: a business man with an interest in archaeology, a specialist in early English pottery and publisher, an Oxford College development officer and the director of a contemporary gallery and potter. A more formal fundraising mechanism was devised and a glossy leaflet on the project was printed and distributed within the museum, at conferences, in local public places and sent out in museum mailshots. The number of website 'hits' began to be recorded each month and a steady growth can be seen throughout 2000 to 2003.

Project structure

OBJECT-BASED RESEARCH, LEARNING AND TEACHING RESOURCE

The project builds upon the results of 150 years of historical and archaeological research in Oxford. To mobilise this extensive, intractable and, at present, largely inaccessible body of material a comprehensive computerised database is under development. It contains over 5,000 records of vessels or sherd families (Orton, Tyers and Vince 1993), ranging in date from the 1st century AD to studio pots of the 20th century. When completed the database will contain more than 20,000 complete vessels and thousands of sherd families. In 2003 a fabric reference collection was made available in the Museum: this ceramic resource for the post Roman period is curated by the Antiquities department and is available for consultation by scholars, students and the interested public.

Project methodology

MUSEUM DOCUMENTATION AND ACCESS

The project establishes an authoritative data standard for museum documentation by examining paper archives; accessioning vessels; sorting sherds into sherd families; cataloguing and recording details on paper and carrying out literature search for published references and data logging. The ceramics database is enhanced with descriptive and contextual information for the benefit of generalists and specialists alike and feeds into the online Catalogue. In

future it will be used to improve the management of the Museum's collections.

ELECTRONIC PUBLISHING - THE ONLINE CATALOGUE

Building on the above tasks, PotWeb provides primary images which are held as photographic transparencies and presented on the website in JPEG digital format. In the project archive they are held as TIFF files.

PotWeb's photography

One of the aims of the PotWeb project is to photograph ceramics from the Museum collections in such a way as to generate images which are suitable for presentation on the website. In order to achieve this, a photographic set-up or system has been developed which is both portable and flexible in use. This consists of two independently switched lighting units, each comprising a large aluminium reflector fixed to a standard portable table-lamp, fitted into the top of a tripod photographic stand. Each light provides illumination from a 500W photographic bulb of the correct colour balance for Fujichrome 64T transparency film. By this means the angle and intensity of lighting, from two different directions, can be easily adjusted and modified. The whole system is therefore ideally suited to being set up in temporary locations – often in galleries when the museum is closed. The preferred background for many ceramic and glass objects is black flock paper. This absorbs rather than reflects or scatters unwanted light and eliminates shadows. It highlights and concentrates attention on the object itself in the final image. With this basic equipment it has been easy to set up a temporary photographic studio on a table, either in the galleries or behind the scenes in the storeroom. A camera and light tripod complete the ensemble.

At an early stage in the project we chose between using conventional camera and film and using a digital camera. The digital camera would allow images to be downloaded straight to a computer and the website and would score in some ways for convenience. A conventional camera, however, offered many – and some crucial – advantages

a) it could be achieved using available expertise and equipment. (a Nikon FM2 camera, Nikkor 28-50 zoom lens, and Nikkor micro lens);

b) it would allow the greatest freedom in the choice of exposure and camera aperture, the choice of lens (standard, zoom or micro), and, importantly, the use of a polarising filter;

c) it would also allow the use of a film type to suit a light source of the appropriate colour temperature – both readily obtainable from photographic suppliers.

The cost of acquiring digital equipment which could match these specifications would have been prohibitive at the time (2000) (probably around £5,000). A further consideration was that the amount of information (in grain size) on a normal high-resolution 35mm film (64 ASA) far exceeded

the resolution (in pixels) of an image which it is possible to obtain except with the most expensive digital equipment and/or the largest file sizes. The digital scanning of a transparency therefore allows more flexibility in image formation than the use of an image from a digital camera. It can create high resolution images, with little extra time involved and, ultimately, at great saving in equipment costs.

It was found that the most efficient way to capture the final image for viewing on the PotWeb website was to scan the transparency to the final size and resolution required. A series of graduated image sizes was chosen to provide a proportional representation of the real sizes of the vessel as screen images. Once this was decided (partly through trial and error), it was comparatively easy to establish the final scanned image sizes from the heights (or widths, in the cases of flat vessels) of the vessels recorded on film. This process depends on the dimensions of each vessel being recorded on a list of the PotWeb identity numbers, with the museum reference numbers (accession numbers) and brief descriptions of the pots. This numbered master list is then used as a basic reference for the transparencies, so that each can be scanned to the appropriate size using this information. The 'thumb-nail' images which appear in the pages of the site are then reduced from these larger images (Fig. 1). At present it is not planned to produce images larger than those appearing with the descriptions of individual pots. This could of course be done, although its would require the original transparencies to be re-scanned with the intended size in mind. The scanning and manipulation of the images for web presentation is an important aspect of the total process. Adobe Photoshop is used extensively to re-size and modify images and to eliminate unwanted elements such as dust specks, highlights, and supports used as props for sherds or incomplete pots. Prominent cracks in restored pots can easily be either blended with the background or eliminated – not so much to create an illusion of completeness, but rather to tone down striking contrasts which might distract the eye from the overall image of the vessel. In this way it is possible to present images which give the maximum amount of information about the pots themselves, including colour and surface texture, while at the same time having optimum clarity and impact when viewed on the screen.

The use of film means that the original transparency, rather than the scanned digital image, remains the most important secondary archive (the primary remains the artefact itself). Since the scanned images are small in both size and resolution (72 dpi TIFF format), the original transparency would be the source from which images suitable for paper publication would be derived for the lifetime of the photographic medium– scanned at probably 300 dpi in CMYK mode. These digital images would then be used as source material for illustrations for books, cards or posters, or for CD presentation.

PotWeb, the product

The online catalogue will revolutionise the accessibility of the museum's rich and varied collections, since they will be universally available through the internet. Many items from the reserve collections will be presented for the first time.

The online catalogue creates a visual thesaurus, an invaluable guide for archaeologists, historians and collectors using it as a reference tool, for craftsmen and designers seeking inspiration and for an interested public. In addition to full details of the vessels themselves, PotWeb will provide information on the contexts in which they were produced, traded, utilised and collected, combining a valuable dimension of social history with the archaeological data. This will bring the museum to a world-wide audience. Eventually links with other museums will create a unique global resource.

The website begins with a homepage and the online catalogue contains thumb-nail images (Fig. 1) with recommended name for the form, a standard image with the common name of the ware, its height and/or diameter, specific date and contextual information with references to publication and collection history (Figs 2a–d and 3a–d). Where appropriate, detailed images of decorative motifs (Figs 4, 4a–d).

PotWeb as an interactive educational package

The online catalogue will be linked to a series of study modules which each represent some 15 to 30 minutes of study. This will develop the use of ceramics as a new way of understanding the past and will disseminate this knowledge to both scholars and lifelong learners in the world of higher education. Internet users will be encouraged to follow up online studies with a visit to the Museum, in order to gain first-hand experience of the collection.

During August 2001 we produced our first draft study

Fig. 1 Thumb nail images act as a visual thesaurus with recommended name for form (reduced from larger images).

Figs 2 a – d *Standard images of the highly Decorated period with more detailed information in catalogue format (more fields of information are included on the database and could appear online too).*

module. By re-visiting early excavations and by addressing selected themes and employing up-to-date archaeological methodology, we plan to observe sites with fresh eyes, and to generate new information.

PotWeb as an interactive visitor facility

The final stage of the project will develop an interactive facility for Museum visitors and researchers. This will greatly enhance the experience derived from a visit to the collections, and will represent an important extension of the display capabilities of the Museum.

HOW THE POTWEB SITE WORKS ONLINE

The site can be explored via several different pathways. The chronological scope is illustrated under the heading of *2000 years of forms and shapes.* This is currently being expanded

backwards in time. *People and their collections* includes case studies of some of the collectors and excavators. The history of consumers and users can be explored through *A vessel for everyman and his family.* The potter and producer are highlighted in *Fingerprints of the maker.*

A study module, *The ABC of pottery in archaeology,* is already online and more are to follow. A new element, *Student presentations,* allows students on short term placements to present themes based on the resource, which may be further developed after testing for browser feedback.

PotWeb's IT methodology

For its website the museum uses a Sun Ultra 5 with Solaris 2.7 running Apache http Server 2. The database is run on a Windows 98 PC using MS Access 2000; Visual Basic Code produces HTML files which are FTP-ed to the web server. Macromedia Dreamweaver 3 software is used to develop themes for the study modules and to build the basic look of the catalogue page. Search engines for use throughout the whole museum website are currently under development.
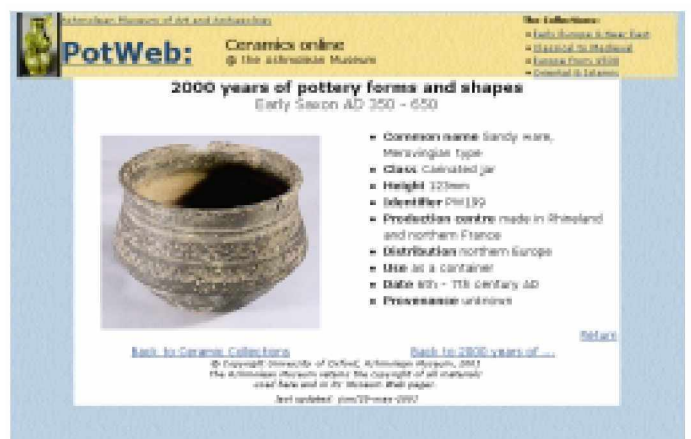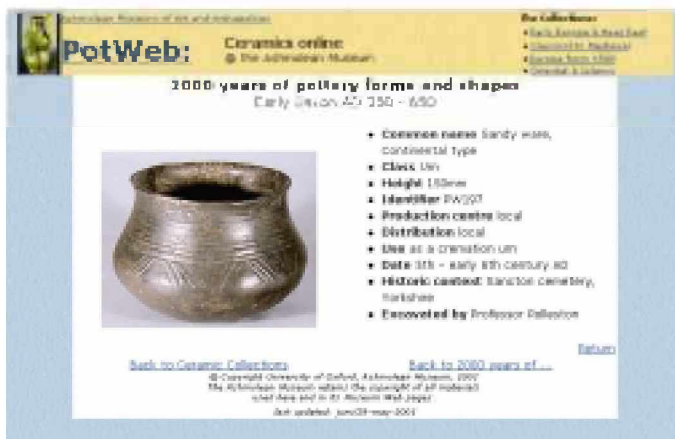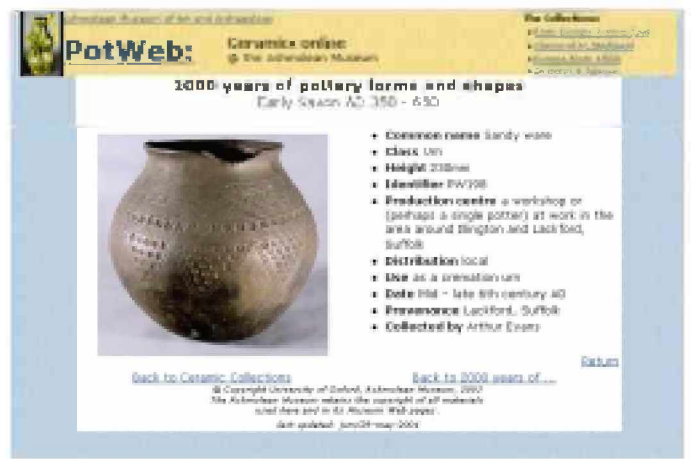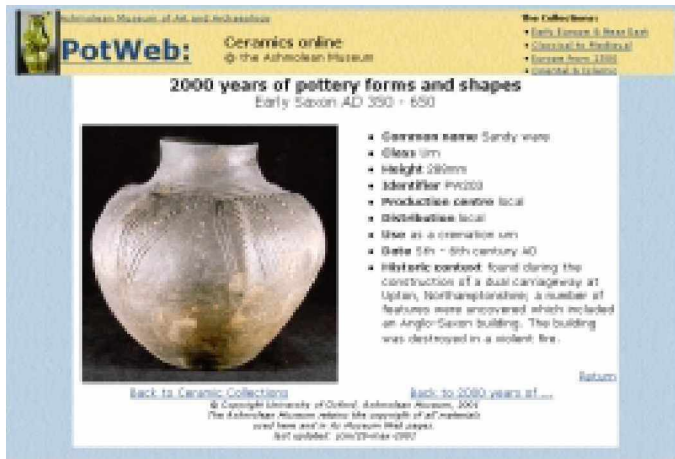
Figs 3 a – d Standard images of the Early Saxon period in catalogue format.

Access is free to anyone who surfs the web. The University of Oxford is committed to keeping the online catalogue and the interactive package accessible through its permanent website.

WHO IS LOOKING AT POTWEB?

The November 2002 Web statistics were:

Total Requests (Hits):	42,072
Total Page Views:	14,096
Total Visits:	2,207
Total Sessions:	1,036

Where do all these hits come from?

To answer this we have to examine PotWeb's 'access log'. Internet Protocol (IP) addresses are the unique identifying numbers given to a computer, the equivalent of a telephone number. There are two types. The first is as a series of four numbers, *e.g.* 163.1.112.1, unique to any computer connected to the Internet. The second is more explicit, *e.g.*

Table 1 The 33 top-level domains represented

|				
com	458		nz	3
net	150		mt	3
uk	126		dk	3
edu	27		be	3
ca	12		tr	2
it	10		il	2
au	10		de	2
us	8		cz	2
es	8		ar	2
org	7		se	1
tw	6		ru	1
sg	6		ie	1
nl	6		hr	1
pl	5		gov	1
jp	4		ch	1
gr	4		at	1
fr	4			
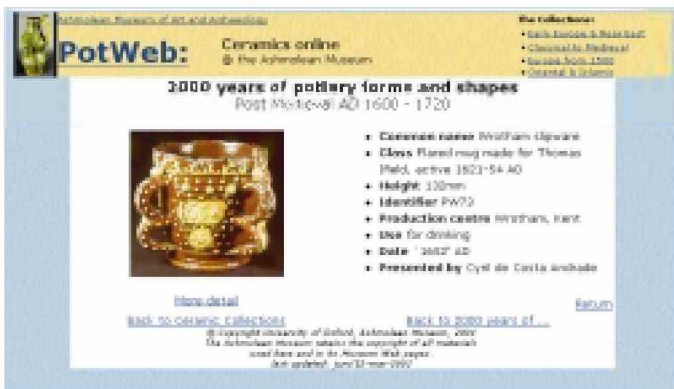
Figs 4 and 4 a – d Decorative motifs, showing details of manufacture and design of the Post Medieval period.

ashmxx01.ashmol.ox.ac.uk. The top level domain *uk* identifies the computer as having a location in the United Kingdom; the second-level *ac* indicates that the computer is attached to the academic network; *ox* idenitifies Oxford University; *ashmol* signifies the computer is on the Ashmolean's network, and the final part is the computer's name. However, not all IP addresses are quite so detailed, and unfortunately, not all computers have the second type of IP Address. Of the 1,036 sessions, 830 actually have useful IP addresses. We can use these to find out where, on the Internet, the computers are based. Table 1 shows the list of the 33 top-level domains represented (there are over 200 registered top level domains). However, five of these, *com*, *net*, *edu*, *org*, and *gov* are not strictly countries. The *edu* code is the USA's academic network (equivalent to *ac.uk*), while *gov* is the USA's government network (equivalent to *gov.uk*). Although the others may primarily represent the USA, this is not always the case, but we will assume they do. Consequently, we can say the majority of visitors come from the USA, with the UK coming second. This is what would be expected. Given that the largest number of computers connected to the Internet is in the USA.

Table 2 2nd Level domains.

com.googlebot	95	com.alexa	37
com.aol	82	com.btopenworld	30
com.inktomisearch	72	com.ntl	29
uk.co	60	net.fastsearch	18
uk.ac	54	com.av	15

It is often quite interesting to look at the domains lower down the table. Thus, there were single visits from Sweden (*se*), Russia (*ru*), Ireland (*ie*), Croatia (*hr*), Switzerland (*ch*) and Austria (*at*). However, PotWeb's international audience, is
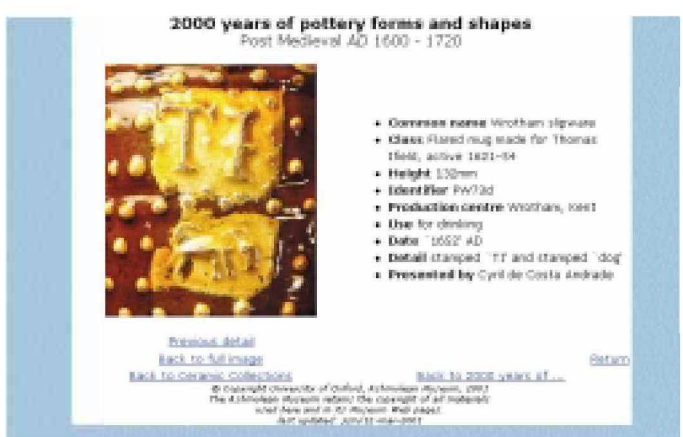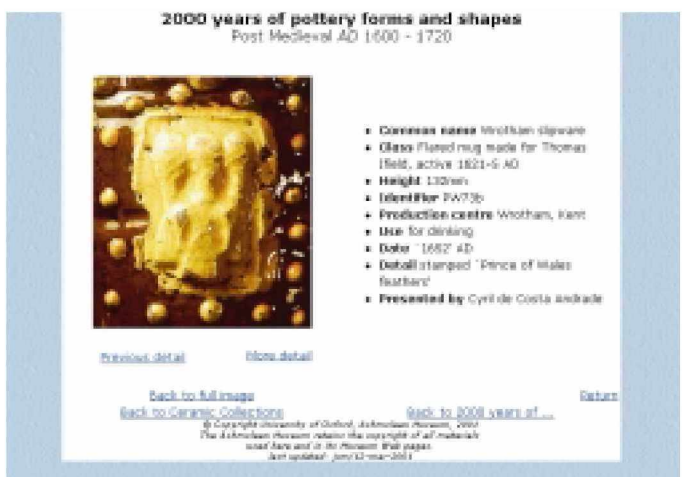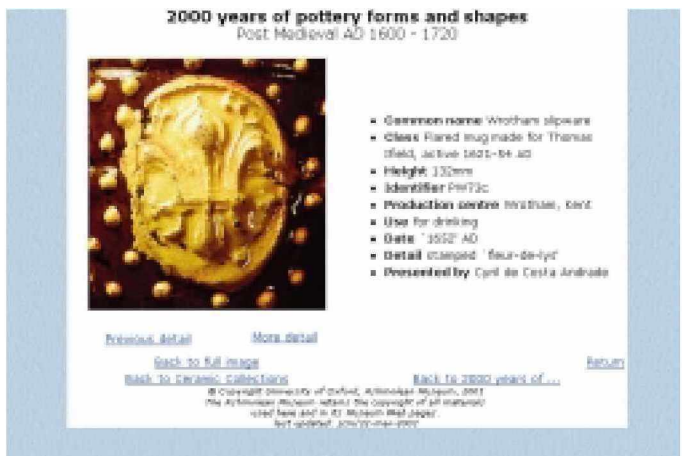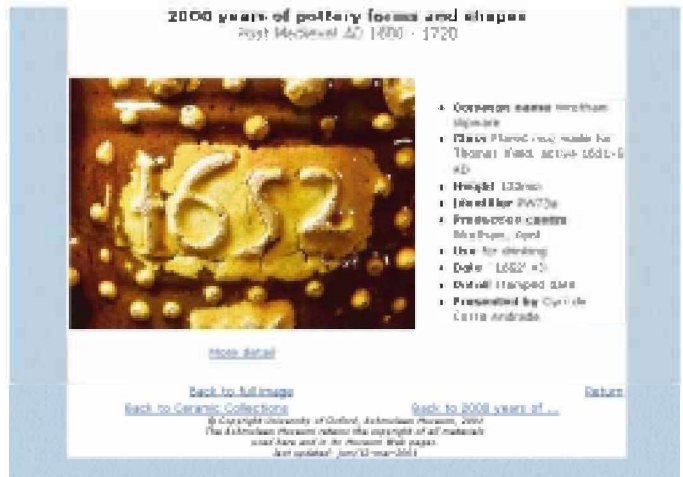
shown by two sessions from Argentina (*ar*), ten from Australia (*au*), three from New Zealand (*nz*) and six from Singapore (*sg*).It is possible to examine IP Addresses further by looking at the second-level domains (Table 2 *[note: IP Addresses have been reversed]*). The top three can be identified as the IP Addresses of search engines, and so most likely represent computers that are mechanically trawling through the Internet. Strictly speaking, these should be excluded as they do not really represent people, but they could also be copying the web pages to a "local cache". This is a computer elsewhere on the internet which is used to store web pages "closer to home" so increasing the speed at which pages are transferred. For PotWeb, this has the disadvantage that any request to a local cache is unlikely to be registered in the PotWeb access log, reducing the real number of "human visits". In order to balance the figures it is therefore reasonable to include requests made by search engines, although there is no ultimate method of determining how valid this is.

Table 3 ac.uk domain.

14	uk.ac.ox		1	uk.ac.surrart
7	uk.ac.soton		1	uk.ac.st-and
4	uk.ac.brookes		1	uk.ac.southampton-institute
3	uk.ac.dur		1	uk.ac.ram
3	uk.ac.bris		1	uk.ac.ncl
2	uk.ac.nottingham		1	uk.ac.mmu
2	uk.ac.nms		1	uk.ac.le
2	uk.ac.glam		1	uk.ac.hull
2	uk.ac.dundee		1	uk.ac.cf
1	uk.ac.york		1	uk.ac.cam
1	uk.ac.ucl		1	uk.ac.british-museum
1	uk.ac.swan		1	uk.ac.bham

When looking at the 3rd level domains it pays to be more selective. Table 3 lists the *ac.uk* IP Addresses. It can be seen that 24 UK Academic institutions are represented, with Oxford University having the largest visitor figures. These exclude any IP Addresses that are on the Ashmolean's network, as these are automatically excluded from PotWeb statistics.

CONCLUSION

This pilot study has been an enormously valuable exercise in how to present ceramics to a wider audience and how to draw in new converts. We have put the user at the centre of our activities and continually solicit feedback by email,

newsletter and telephone. We are still testing the market, compiling the number of hits and sessions to the website monthly and honing photographic techniques.

How many people are interested in ceramics? In 2001 the project team was invited to give presentations at the headquarters of the British ceramic manufacturers in Stoke-on-Trent, Staffordshire and at *Studio Pottery 2001 and 2002,* the annual festival of the Craftsmen Potter's Association. At the International Ceramics Fair in London the team met connoisseurs of earthenware and porcelain to test the appeal of the project. Feedback from America, Australia, Germany, Italy, New Zealand, Netherlands and the British Isles has come from practising craftsmen as well as collectors and students and is invariably enthusiastic. PotWeb was recognised by the Millennium Commission with awards which allowed the project photographer and also a curator from The Potteries Museum and Art Gallery to be seconded to the project to share their own and PotWeb's skills. The recognition seems singularly appropriate: PotWeb has already proved itself to be one of the most innovative developments in present-day ceramic studies, presenting a model that will recommend itself to other institutions holding large bodies of ceramic and other archaeological material whose range and complexity defies conventional museum presentation.

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Résumé

Cet article illustre comment un musée anglais essaie de rendre sa collection la plus riche (la poterie) accessible au monde entier 24 heures sur 24. Le projet Potweb (http:www.potweb.org) a été crée pour incinter les personnes intéressées à venir visiter les collections.

Zusammenfassung

Dieser Artikel zeigt, wie ein englisches Museum versucht seine reichsten überkommenen Ressourcen, nämlich Töpferwaren, weltweit und 24 Stunden am Tag zugänglich zu machen. Das Projekt unter dem Schlüsselwort PotWeb (http://www.potweb.org) ist so gestaltet, daß es eine breite Palette von Fragen beantwortet und anreizen soll, die Sammlung persönlich zu besuchen.