

Jacques Perot

Président de l'ICOM
President of ICOM
Presidente del ICOM

Le tout jeune Comité international de l'ICOM pour les musées et collections universitaires (UMAC) a déjà su s'imposer, dans le paysage de l'ICOM, par ses nombreuses activités d'échange, de réflexion et de publication. Aujourd'hui, il fait entendre sa voix par cet onzième *Cahier d'étude* qui présente la spécificité des musées et collections universitaires, leur longue histoire et les riches perspectives de coopération pluridisciplinaire avec les acteurs de proximité et au sein des réseaux universitaires et muséaux.

Je tiens à remercier les membres du Comité qui ont contribué à cet ouvrage collectif, et tout particulièrement Peter Stanbury, président d'UMAC, et Peter Tirrell, éditeur scientifique, pour leur efficacité et leur énergie dans la préparation de ce *Cahier*. Ils nous font partager un savoir inestimable, qui nous permet d'apprécier toutes les subtilités du travail de réflexion mené par les membres de l'UMAC, dont le dynamisme a déjà fait ses preuves.

The recently-created ICOM International Committee for University Museums and Collections (UMAC) has already succeeded in making a name for itself within ICOM through a prolific programme of exchange, discussion and publication. In this eleventh volume of the ICOM *Study Series*, UMAC sets out the defining characteristics of University Museums and Collections, retraces their long history and describes their rich potential for interdisciplinary collaboration with local communities and organisations and within the academic and museum network.

I would like to take this opportunity to thank the members of the Committee involved in this joint venture, especially Peter Stanbury, the Chairman of UMAC, and Peter Tirrell, the Scientific Editor, for the professionalism and energy they have shown in bringing this project to fruition. They have provided invaluable insights into the complex issues being debated within UMAC - an impressively active new Committee which has already made its mark.

El recién creado Comité Internacional del ICOM para los Museos y Colecciones Universitarios (UMAC) ha logrado imponer su presencia en el seno del ICOM gracias a sus numerosas actividades de intercambio, reflexión y publicación. Este Comité es el protagonista de este undécimo *Cuaderno de Estudio*, que presenta la especificidad de los museos y colecciones universitarios, su dilatada historia y sus inmensas perspectivas de cooperación pluridisciplinarias tanto con sectores afines como en el seno de las redes universitarias y museales.

Quiero agradecer la contribución de los miembros del Comité durante la preparación de este *Cuaderno* colectivo, y especialmente el entusiasmo y la eficacia de su presidente, Peter Stanbury, y de su editor científico, Peter Tirrell. Al compartir con nosotros sus valiosos conocimientos, nos permiten apreciar todas las sutilezas de la labor de reflexión llevada a cabo por los miembros del UMAC, cuyo dinamismo ya ha probado su eficacia. n

- 1 **Préface - Foreword - Prólogo**
Jacques Perot
- 2 **Editorial**
Peter Stanbury
- 4 **A Globe is just another Tool: Understanding the Role of Objects in University Collections**
Steven W.G. de Clercq and Marta C. Lourenço
- 7 **Emerging Strengths and Resources of University Museums for Meeting Global Challenges**
Peter B. Tirrell
- 10 **University Museums: Collaboration with Non-Traditional Academic Departments**
Ewen Smith and Jim Devine
- 12 **Le musée de Sciences et techniques: archives de la recherche universitaire ouvertes aux différents publics**
Penelope Theologi-Gouti
- 14 **The History of Science through Academic Collections**
Liba Taub
- 17 **Le musée de Sciences : quel rôle pour les Musées universitaires ?**
Dominique Ferriot
- 19 **The University Museum as a "Theatre of Knowledge"**
Cornelia Weber
- 21 **Asociación de Museos y Colecciones Universitarias Españolas**
María Marco Such
- 23 **Outreach: a Structured and Coordinated Approach**
Di Yerbury
- 25 **Desperately Seeking Sustainability: University Museums in Meaningful Relationships**
Sally MacDonald
- 28 **Challenges for University Museums: Museums, Collections and their Communities**
Sue-Anne Wallace
- 30 **European Cooperation in the Protection and Promotion of the University Heritage**
Patrick J. Boylan

Président de l'ICOM
President of ICOM
Presidente del ICOM

Jacques Perot

Responsable de la publication
Managing Editor

Manus Brinkman

Responsable de la publicación

Responsable scientifique

Scientific Editor

Peter Tirrell

Responsable científico

Responsable éditorial

Supervising Editor

Valérie Jullien

Responsable de la édition

Suivi éditorial

Editor

Saskia Brown

Redactora

Caroline Taylor-Bouché

Traduction

Translation

Traducción

Margarita Pérez, Christophe Rendu,
Nitza Solá-Rotger, Victoria Selwyn

Les partenariats actifs des musées universitaires

Créé en 2001, le Comité international pour les musées et collections universitaires (UMAC) est l'un des plus récents Comités internationaux de l'ICOM ; les collections universitaires ont, quant à elles, des origines très anciennes, comme le rappellent plusieurs auteurs dans ce numéro.

Par la richesse et la variété des pièces qu'elles possèdent, ces collections soutiennent la comparaison avec l'ensemble des musées, toutes spécialités confondues. Leur matériel, d'une grande valeur historique et financière, est largement utilisé à des fins d'enseignement, de connaissance et de recherche. Liba Taub (Angleterre) fait valoir le caractère unique d'une grande partie de ces pièces, tandis que Steven de Clercq (Pays-Bas) et Marta Lourenço (Portugal) les envisagent comme des outils offrant une pluralité d'accès à un savoir vivant.

Les musées universitaires touchent un public étonnamment vaste puisque, outre les universitaires, les chercheurs et les étudiants, ils accueillent des groupes scolaires et une fréquentation familiale ou de proximité. On y rencontre facilement les conservateurs, et ces institutions sont plus propices que les autres musées aux contacts entre spécialistes. Ewen Smith et Jim Devine (Écosse) étudient la gamme très vaste de ces contacts professionnels.

Comme le dit Peter Tirrell (États-Unis), "dans ce domaine d'activité qui consiste à améliorer la qualité de la vie, il faudra désormais compter avec les musées universitaires". Cornelia Weber (Allemagne) voit dans les objets de musée les acteurs incontournables d'un théâtre du savoir. Sue-Anne Wallace (Australie) rappelle la nécessité pour les musées universitaires de bien identifier leur public. Pour sa part, Dominique Ferriot (France) estime que les collections universitaires doivent apporter à chaque visiteur une forme d'enrichissement personnel, et non rester figées par un usage qui sert avant tout le prestige de l'institution. Di Yerbury (Australie) propose une vision des actions communautaires des universités compatible avec les contraintes budgétaires.

L'UMAC note avec intérêt le nombre élevé de musées universitaires créés chaque année – Penelope Theologi-Gouti (Grèce) évoque à cet égard un exemple caractéristique. L'UMAC voit également un signe favorable dans la constitution d'organisations nationales de

musées universitaires, comme celle que décrit, pour l'Espagne, María Such (Espagne). Sally MacDonald (Angleterre) étudie le rôle du musée universitaire au sein d'une coopération régionale destinée à satisfaire les besoins des publics locaux. À l'échelle européenne, Patrick Boylan (Angleterre) met en exergue deux grands projets de protection du patrimoine universitaire.

Pourquoi l'UMAC demande-t-il à ses membres de promouvoir sa cause, et pourquoi recherche-t-il des partenariats actifs auprès du secteur muséal dans son ensemble, des équipes dirigeantes des universités et du monde politique ? Il le fait parce que les musées du secteur général font parfois de l'ombre à leurs équivalents universitaires (notamment aux plus petits d'entre eux), alors même que, au sein d'une université, chaque collection, petite ou grande, doit affronter la concurrence des grands départements pour l'octroi de ses financements.

Bien que rarement subventionnées avec largesse, et donc contraintes, comme plus d'un musée, de rechercher des revenus complémentaires, les collections universitaires représentent une part significative du patrimoine national et international. La responsabilité de leur entretien incombe cependant aux universités. Dans leur ensemble, celles-ci en conviennent et se reconnaissent dépositaires des collections au nom de la collectivité tout entière.

Il est du rôle de l'UMAC de faire en sorte que les décideurs mesurent pleinement cette responsabilité, afin que les collections des universités bénéficient d'une conservation professionnelle et qu'il en soit fait bon usage. Les conservateurs des musées universitaires ont pour mission de favoriser l'enseignement et la recherche, de faire progresser la connaissance et de rendre les collections plus accessibles grâce aux nouvelles technologies ; ils valorisent ainsi l'image de l'institution à laquelle ils appartiennent, et ce bénéfice d'image rejaillit sur l'intérêt des étudiants pour notre patrimoine historique, scientifique, social et artistique.

Les membres de l'UMAC, comme d'ailleurs les équipes de tous les musées et collections universitaires, souhaitent établir des partenariats efficaces avec leurs homologues d'institutions analogues et avec les décideurs, sans aucune exclusive ; ils sont ouverts à toutes leurs suggestions. n

University museums in active partnerships

The International Committee for University Museums and Collections (UMAC) is one of ICOM's newest International Committees (formed in 2001) but university collections have ancient origins, as several authors in this issue remind us.

The range of objects found in university collections rivals those found in any group of museums. The material is actively used for teaching, learning and research as well as being of significant historic and financial value. Much of it is unique, as Liba Taub (England) illustrates, while Steven de Clercq (Netherlands) and Marta Lourenço (Portugal) show how such objects can be seen as multi-purpose vessels of dynamic knowledge.

University Museums reach a surprisingly wide audience, including scholars, researchers, students, school groups, families and visitors from local communities. Curators are more easily accessible and academic contacts more frequent than in other museums. Ewen

Smith and Jim Devine (Scotland) examine this wide range of professional contacts.

As Peter Tirrell (U.S.A.) states, "In the business of adding quality to people's lives, University Museums are emerging as top contenders". Cornelia Weber (Germany) sees museum objects as vital players in the theatrical presentation of knowledge. Sue-Anne Wallace (Australia) highlights the need for University Museums to identify their audience. University collections should be used to enrich each visitor's experience, as Dominique Ferriot (France) also points out, rather than be used in a static manner primarily to enhance institutional prestige. Di Yerbury (Australia) presents a vision for community outreach within budgetary limits.

UMAC notes with interest the formation of many new University Museums each year - one typical example is mentioned by Penelope Theologi-Gouti (Greece). UMAC is also encouraged by the formation

of national groups of University Museums, such as the one in Spain reported on by María Such (Spain). Sally MacDonald (England) discusses the role of the University Museum as part of a regional collaboration to serve the needs of local audiences. On a pan-European scale, Patrick Boylan (England) outlines two major initiatives to try to protect the heritage held in universities.

Why does UMAC advise strong advocacy by its members and seek the support of - and active partnership with - the general museum sector, the senior management of universities and politicians? This is because University Museums (particularly the smaller ones) are sometimes over-shadowed by their counterparts in the general museum sector, while on campus each university collection, whatever its size, has to compete for resources against major departments of the university.

University collections form a significant part of national and international heritage, despite the fact that University Museums are

seldom generously funded and often have to seek additional income, in much the same way as other museums do. Their care, however, is an academic responsibility. Universities as a whole accept this, recognising that these collections are held in trust for us all.

UMAC's role includes ensuring that this responsibility is clearly understood by decision-makers and that collections in universities are professionally curated and effectively utilised. University Museum curators have a duty to enhance teaching and research, advance scholarship and use new technologies to improve access to the collections, thus providing a positive profile for the institutions to which they belong. This in turn fosters an appreciation among students of our historical, scientific, social and artistic heritage.

The members of UMAC, indeed the staff of all University Museums and collections, seek active partnerships with staff of kindred institutions and with decision-makers of all persuasions, and welcome their suggestions. n

La colaboración activa de los museos universitarios

El Comité Internacional para los Museos y Colecciones Universitarias (UMAC), creado en 2001, es uno de los Comités Internacionales más recientes del ICOM. Las colecciones universitarias, en cambio, tienen orígenes muy antiguos, tal y como nos recuerdan varios de los autores que contribuyeron a este número.

Las colecciones universitarias no tienen nada que envidiar al resto de los museos ya que también poseen una amplia gama de objetos. Además de tener un gran valor histórico y monetario, estos objetos se utilizan en la enseñanza, el aprendizaje y la investigación. Liba Taub (Inglaterra) nos señala que muchos de estos objetos son únicos mientras que Steven de Clercq (Países Bajos) y Marta Lourenço (Portugal) abogan por que sean considerados como vectores de conocimiento dinámico con múltiples usos.

Los museos universitarios cuentan con un público variado, compuesto de estudiosos, investigadores, estudiantes, grupos escolares, familiares y visitantes procedentes de las comunidades locales. Sus conservadores son mucho más accesibles y los contactos más frecuentes que en otros museos. Ewen Smith y Jim Devine (Escocia) exploran la gran variedad de estos contactos profesionales.

Según Peter Tirrell (Estados Unidos), "En lo que se refiere a la tarea de mejorar la calidad de vida de la gente, los museos universitarios están desempeñando un papel de primer orden". Cornelia Weber (Alemania) estima que los objetos de los museos son elementos vitales de la presentación teatral del conocimiento. Sue-Anne Wallace (Australia) recalca que los museos de universidades necesitan identificar a su público. Dominique Ferriot (Francia) subraya que las colecciones universitarias deben ayudar a enriquecer la experiencia de cada visitante, en vez de ser utilizadas de forma estática con el principal objetivo de contribuir al prestigio institucional. Por su parte, Di Yerbury (Australia) demuestra cómo los museos pueden realizar actividades dirigidas a su comunidad sin sobrepasar los límites presupuestarios.

Cada año, el UMAC presencia la formación de un gran número de nuevos museos universitarios. Penelope Theologi-Gouti (Grecia) nos presenta un ejemplo característico. El UMAC también ve con satisfacción la creación de grupos nacionales de museos universitarios.

María Such (España) nos informa sobre el grupo español. Sally MacDonald (Inglaterra) se interesa por el papel del museo universitario integrado en una red de colaboración regional con el fin de responder a las necesidades del público local. A nivel paneuropeo, Patrick Boylan (Inglaterra) da cuenta de dos importantes iniciativas para proteger el patrimonio de las universidades.

El UMAC recomienda a sus miembros que realicen una labor de promoción dinámica y busca el apoyo, además de la colaboración activa, del sector museístico, los altos cargos de las universidades y los políticos. Con ello quiere mejorar la situación de los museos y colecciones de universidades (especialmente los más pequeños) que a menudo se ven relegados a un segundo plano dentro del sector museístico y tienen que competir, sea cual sea su tamaño, con grandes departamentos universitarios para conseguir recursos.

Si bien las colecciones de las universidades forman parte integrante del patrimonio nacional e internacional, los museos universitarios no suelen recibir sustanciosos fondos y tienen que buscar ingresos adicionales al igual que el resto de los museos. Sin embargo, su mantenimiento es responsabilidad exclusiva del sector académico. Las universidades en su conjunto aceptan esta situación y mantienen las colecciones en nombre de todos nosotros.

Entre las funciones del UMAC figura garantizar que los decisores entiendan esta responsabilidad y que las colecciones de las universidades se beneficien de una gestión profesional y sean utilizadas eficazmente. Los conservadores de los museos universitarios tienen el deber de fomentar la enseñanza, la investigación y el estudio así como hacer uso de las nuevas tecnologías para mejorar la accesibilidad de las colecciones. De este modo, no sólo contribuirán a transmitir una imagen positiva de las instituciones de las que dependen sino que además ayudarán a los estudiantes a tomar conciencia de nuestro patrimonio histórico, científico, social y artístico.

Los miembros del UMAC, al igual que los empleados de todos los museos y colecciones universitarias, buscan establecer colaboraciones activas con el personal de instituciones análogas, así como con decisores, sean cuales sean sus orientaciones políticas, y agradecen sus sugerencias. n

A Globe is just another Tool: Understanding the Role of Objects in University Collections

4

Steven W.G. de Clercq
Marta C. Lourenço

Senior Consultant for Academic Heritage, Utrecht University, Netherlands

Assistant Researcher at the Museum of Science of the University of Lisbon, Portugal

Résumé *Le globe – un outil de plus: comprendre le rôle des objets dans les collections universitaires*

Cet article analyse le rôle de l'objet dans les collections d'enseignement et de recherche des universités et d'autres établissements d'enseignement supérieur. Dans le cas des collections d'enseignement, les objets sont sélectionnés parce qu'ils facilitent la compréhension d'un concept, d'une loi ou d'un phénomène naturel. Les objets des collections de recherche peuvent avoir deux fonctions différentes: soit de répondre à une question scientifique précise (fonction d'enquête) soit de fournir des archives d'informations scientifiques (fonction d'archive). Nous discuterons également du rôle d'UMAC dans la promotion et la prise en compte de ces collections.

Resumen *Un globo terráqueo no es sino un objeto más: cómo entender el papel de los objetos en las colecciones universitarias*

Este artículo analiza el papel que desempeñan los objetos en las colecciones educativas e investigativas pertenecientes a universidades y otras instituciones de educación superior. Los objetos que forman parte de las colecciones educativas tienen como propósito facilitar la comprensión de un concepto, de una ley o de un fenómeno natural. Los que conforman las colecciones investigativas tienen dos funciones diferentes: brindar una respuesta a una pregunta científica específica (investigación) o conservar información científica (archivo). Este artículo se centra asimismo sobre el papel desempeñado por el UMAC en la promoción y el reconocimiento de este tipo de colecciones.

In the early 1920s Guido Horn-d'Arturo, professor of Astronomy at the University of Bologna, Italy, marked a 1792 G.M. Cassini celestial globe with small paper “confetti” bearing the numbers of nebulae taken from the 1888 New General Catalogue of Nebulae and Clusters of Stars. Prof. Horn-d'Arturo was interested in studying the distribution of nebulae in the sky in order to understand the shape of our Galaxy and the real nature of nebulae¹. Obviously, the fact that the globe was almost 150 years old and therefore an historical instrument, was of no real concern. This is symbolic of how objects in universities are frequently viewed – as tools for teaching and research. For d'Arturo, the Cassini globe was just another tool.

The university is the key institution devised by Western civilisation for the advancement of knowledge. Invented in Middle Age Europe, the university has become the worldwide and primary instrument for the preservation and transmission of the highest learning, the training of specialists, and the general advancement of societies. From the beginning universities have gathered objects, for example sceptres and seals, documents, relics, and portraits. Other than books, the first confirmed record of collections used for teaching purposes is the hortus medicus in the mid 16th century. The ‘invention’ of the university museum took place round the end of the 16th century by the incorporation of objects and collections in university research and teaching, whereas the ‘institutionalisation’ of University Museums happened in 1683 when the Ashmolean Museum in Oxford, United

Kingdom, opened a permanent exhibition to the general public. The broader museum community regards the Ashmolean as the first museum in its modern meaning. Therefore, University Museums are older than non-University Museums and university collections even older than University Museums.

TEACHING COLLECTIONS

Learning by handling specimens or seeing ‘the real thing’, is considerably better than seeing just an illustration of it. Objects are gathered in teaching collections because they can facilitate learning: they are considered to provide a good example of a given natural phenomenon. Teaching collections can also consist of models, particularly when the topic is either too big or too small (as is frequently the case in physics, astronomy, technology or chemistry), or when a particular object does not exist anymore or is not easily accessible (like in ancient art, archaeology or palaeontology). Moreover, sometimes the subject is too abstract to visualise (as in mathematics or crystallography). Therefore, objects in teaching collections can be very diverse, including real objects and specimens but also simplified models, plaster reproductions and replicas, and maquettes. Typical examples are: a rock collection illustrating a particular type of mineralisation or a cast collection illustrating the different types of Roman architecture columns.

It has been established that collections were used in the *Museion*, founded c. 290 B.C.

in Alexandria². Before universities were founded, plants were grown for medical purposes in monasteries, cloisters and Arab schools. The first botanical gardens were established in the mid 16th century at the universities of Padua and Pisa. These gardens provided the first confirmed use of objects, including ‘fossilia’, for teaching purposes. The first of these teaching ‘museums’ was created in Pisa’s botanical garden in the 1590s³; soon to be followed by Leyden’s Ambulacrum in 1599⁴. Also in the field of medicine, anatomical theatres were created almost simultaneously in 1594 at the Universities of Padua in Italy and Leyden in the Netherlands. Soon these teaching museums displayed anatomical specimens, wax models, zoological material, ‘fossilia’ and curiosities⁵.

Today, teaching collections are still used, even in disciplines where there have been declines in collections-based research. Similarly, teaching ‘museums’ are still to be found in galleries and corridors of many universities worldwide.

RESEARCH COLLECTIONS

Research collections had their historical peak of importance from the mid 18th to the mid 20th century, but collections had already been made for study purposes since at least the 16th century. For example, Ulisse Aldrovandi, professor at the University of Bologna, and Olaus Worm at the University of Copenhagen, collected natural history specimens and antiquities both for study and teaching. The study of these objects, together with the works of Buffon, Cuvier, Linnaeus, Lyell, Darwin, Haeckel, and Virchow, the development of preservation techniques and scientific illustration, as well as the voyages of discovery and the great expeditions, had a major impact on the development of research collections. Archaeology came later, in the mid 19th century, when site excavations began to provide growing quantities of pottery, metal and stone artefacts for study. Anthropology also developed in the 19th century and both archaeology and anthropology adopted research methodologies from natural history. During the 19th century, the specialisation and development of new fields in natural history and medicine prompted the multiplication of research collections such as ophthalmology, dermatology and crystallography.

Interestingly, research is more likely to be linked with collections in some disciplines than others. Epistemologically,

disciplines such as anthropology, geology, and medicine, among others, share a comparative nature and objects are intrinsic to the production of new knowledge and understanding. As Rudwick⁶ put it, they share “an interaction between theory building and the accumulation of ever-richer stores of evidence”. Collections are therefore crucial because they allow comparison and reference, without which scientific understanding and dissemination would have little or no significance.

Objects are always incorporated in research collections for their potential information. A typical formation process for a research collection would begin with a scientific inquiry – for example birds collected at regular time intervals throughout the year to determine the breeding regime of a given population. Once in the laboratory the “working” collection can be reduced because the value of the object *per se* is subsidiary to the information it contains, and – unless the object is a fossil, or man-made, like a musical instrument or an archaeological artefact – its physical integrity does not necessarily have to be respected. Once the objects have provided the answer to the question the researcher had in mind, a publication is usually produced. The curiosity of the researcher will bring forward the next scientific question, for which often new objects are needed, enriching existing collections or forming new ones.

“OLD” COLLECTIONS

And what about the “old” collection? Assuming that objects survived, these can have several destinations. If the scientific results obtained are relevant, the whole collection (or a selection) may be preserved. If some objects are regarded as representative, they are integrated in reference collections. Other objects may be particularly illustrative and are integrated in teaching collections, while others may be displayed either because they are aesthetically attractive or have distinctively striking features. However, the collection may also be disposed of because it is no longer relevant or there is no space to store it.

Apart from providing the answer to a particular scientific inquiry, objects in research collections can acquire another role linked with early developments in taxonomy – the archival role (reference collections). Needless to say, the archival role is only relevant if the object is well documented and has been collected, identified and described. As diverse items were brought to the university for identification and description they were preserved as

representative sources of information – just like books in a library, in which we search for new ideas, compare our own ideas with those of different authors and come to our own conclusions. A well-known example of a reference collection is the collection of type specimens⁷. Contrary to other research collections, reference collections are to be permanently preserved and the physical integrity of the object is to be maintained.

Behind the idea of a reference collection is the concept of representative sample, permitting a comparative survey of a given aspect. This idea expanded well beyond natural history. For example, the expression *type series* is also used in archaeology. And in the field of history of science, Turner⁸ designates the collection of physics apparatus of the Teylers Museum (Haarlem, The Netherlands) as “the finest reference collection for late eighteenth- and nineteenth century”. Nowadays, the idea of representative sample is omnipresent in collections policies worldwide and is probably the most important criterion for the accession of objects.

The location where these collections were kept and studied was frequently referred to as the “museum”, a kind of miniature academy in its own right, which could also include the library and a laboratory. The Ashmolean was the first institutionalised model of museum-laboratory⁹ to be successful and was quickly replicated in almost every university in Europe.

A NEW MEANING : THE HISTORICAL ROLE

After centuries of teaching and research in universities, these collections acquired a new and different meaning – they became historical material evidence. The field of the medical and exact sciences, technology and suchlike, are particularly relevant for these historical collections. In these disciplines, instruments and other equipment are intensively used as long as they are in good condition and function adequately. As soon as instruments become obsolete, they are put aside and replaced by more sophisticated ones. Sometimes they are cannibalised: the useful parts are taken and used in other instruments. Moreover, changes in curricula or new pedagogical methods turn many of these objects obsolete for teaching. With time, these objects gain new meanings due to the light they can shed on the history of science and the history of education. Those that managed to survive were integrated in existing or purposefully created museums, particularly during the 20th century.

However, time does not pass in the same way through all collections. A well

documented 200 year-old geology research collection from Mount Etna may be as useful as material collected today. Research collections, regardless of their age, remain in essence research collections. They may have been asleep and forgotten for decades due to change in research policies and lack of personal interest from researchers. Referential value is maintained constant or even increases in the case of, for example, an extinct species or an exhausted copper mine. Frequently new advances in science prompt new outlooks at “old” specimens – and new discoveries. A fossil, which entered the collection of Teylers Museum in Haarlem in 1857 and had been identified as a *Pterosaur*, was only recognised as an *Archaeopteryx* in 1970, the fourth specimen known at the time¹⁰. The evolution of the botanical garden is another example of the impact of new scientific outlooks. In the late 16th century plants were organised according to their healing capacity; in the 18th century, gardens were organised following the Linnaean system. In the 19th century, the botanical garden – although maintaining the taxonomical organisation – introduced romantic features; and today botanical gardens emphasise an ecological approach and promote environmental education. The evolution of science and of research technology is continuously adding new meaning to these collections. Researchers and curators must therefore be sensible enough to anticipate future research applications for their collections.

The borderline between teaching and research in universities is not always clear. Professors teach and research, making it difficult to know when one activity stops and the other begins. The same applies to the use of collections – there is a long tradition of objects moving from research to teaching collections and vice versa. Objects are collected, exchanged, donated, and used for many different purposes both in the classroom and the laboratory. A series of roman vases can today be in a history of art classroom, tomorrow in an X-ray laboratory and next week on its way to another university to illustrate a history of technology PhD dissertation. In essence, these objects are just viewed as mere instruments for knowledge – and they are treated accordingly.

The physical integrity of the object is a value, which is considered absolute by the museum community at large: objects are supposed to be integrally preserved forever. In teaching and research collections, however, objects are not “untouchable”, on the contrary, they are often primarily regarded as a source of information or as an instrument, as we have illustrated with the 18th

century celestial globe. Today, such an incident is unlikely to be repeated but it illustrates how objects in teaching and research collections are regarded and valued. For Horn-d'Arturo, like for many of his colleagues, the globe was just another tool.

CONCLUSION

Museums, as we perceive them today, are places where our common heritage is studied, preserved and displayed for the pleasure and education of present and future societies. This common statement associates museums with an idea of stability and permanence that can, ultimately, be a source of misunderstanding. In particular, collections all too easily leave the impression that they are unchangeable, perhaps because they fix individual objects within a larger system. In fact, collections are dynamic, growing and ever-changing. And no collections are more intrinsically dynamic than university collections because universities are by definition institutions constantly seeking the forefront of innovation and creativity.

An important aim of UMAC is to clarify the notion of scientific heritage and to find the most appropriate means for its enhancement. So far, this topic has received little attention and both historians of science and museum curators have mostly dealt with limited segments of this crucial

research area. Collections of instruments, minerals, natural specimens and manuscripts represent the receptacle of a renewed interdisciplinary approach towards scientific heritage. UMAC will offer a unique opportunity to compare different experiences and will provide the theoretical as well as institutional conditions for interdisciplinary collaborative research programmes. The creation of UMAC in 2001 has had at least two direct consequences. Firstly, University Museums and collections, with their history of more than 400 years, are acknowledged as a relevant partner in the global museum community. Secondly, UMAC paves the way for a broader understanding of the reasons why University Museums and collections deserve to be treated, both typologically and historically, as a group with its own identity in the contemporary museum scene. In our view, this distinctive nature stems from the role of objects in teaching and research. Teaching and research collections are the material evidence, the only available primary source of information of how scientific knowledge was constructed and conceptualised, including the process of archiving nature. n

Acknowledgments

We are grateful to Fabrizio Bònoli, from the Department of Astronomy, University of Bologna, Italy, for telling us the story of

the Cassini globe. We are also indebted to Peter B. Tirrell, Ezter Fontana, and Antonio Garcia Belmar for their useful comments on the manuscript. Marta C. Lourenço would like to thank the Gulbenkian Foundation for supporting her research.

References

1. Horn-d'Arturo, G., "Sulla distribuzione apparente delle nebulose e delle stelle fisse", *Memorie della Società Astronomica Italiana* II, 1921, pp. 55-59.
2. Lewis, G.D., "Collections, collectors and museums: a brief world survey" in J.M.A. Thompson (ed.) *Manual of Curatorship*, London, Butterworths/MA, 1984, p. 7-22.
3. Alexander, E. P., *Museums in Motion*, Nashville, American Association for State and Local History, 1979.
4. Fat, L. T. S., *De tuin van Clusius, het ontstaan van de Leidse Hortus*, Leiden, Hortus Botanicus Leiden, 1992.
5. Schupbach, W., "Some Cabinets of Curiosities in European Academic Institutions" in O. Impey & A. MacGregor (eds.), *The Origins of Museums: The cabinet of curiosities in sixteenth- and seventeenth-century Europe*, 2nd edition, London, House of Stratus, 2001, p. 251-245.
6. Rudwick, M.J.S., *The meaning of fossils. Episodes in the history of palaeontology*. 2nd edition, Chicago, The University of Chicago Press, 1985.
7. A type specimen is the single specimen designated or otherwise fixed as the name-bearing type of a nominal species or subspecies when the nominal taxon is established (International Commission on Zoological Nomenclature 1999), which also defines lectotypes, paratypes, etc. Similar commissions and rules exist for other fields, e.g. the International Code of Botanical Nomenclature (ICBN), the International Code of Nomenclature of Bacteria (BC) and an International Code of Virus Classification and Nomenclature (ICVCN).
8. Turner, G. L'E., *The practice of science in the nineteenth century: Teaching and research apparatus in the Teyler Museum*, Haarlem, Teyler Museum, 1996.
9. MacGregor, A., "The Ashmolean as a museum of natural history, 1685-1860" in *Journal of the History of Collections* vol. 15 (2), 2001, pp. 125-144.
10. Ostrom, J.H., "Archaeopteryx: notice of a 'new' specimen" in *Science*, vol. 170, 1970, pp. 537-538.



The celestial globe by G.M. Cassini (Rome, 1792 Inv. Mds-69) with the "confetti" glued to it by Prof. Horn-d'Arturo. Courtesy Museo della Specola, University of Bologna. © M.L., July 2002

Emerging Strengths and Resources of University Museums for Meeting Global Challenges

Peter B. Tirrell

Associate Director, Sam Noble Oklahoma Museum of Natural History, University of Oklahoma, Norman, Oklahoma, U.S.A.

Résumé Les musées universitaires face aux défis de la mondialisation : des forces et des ressources émergentes

Les ressources et les qualités des musées universitaires en font des interlocuteurs privilégiés pour affronter les défis de la mondialisation et contribuer à notre qualité de vie à tous. Leurs ressources comprennent des collections spécialisées, des bibliothèques et des archives qui documentent et retracent la diversité et l'histoire de la vie sur terre. Les musées et les universités possèdent également des laboratoires, des services techniques et un personnel hautement qualifié. Leurs qualités tiennent à des programmes indispensables et dynamiques de recherche, d'enseignement et d'interprétation. S'appuyant sur leurs missions d'éducation, riches d'une dimension internationale voulue, les musées universitaires sont également des institutions capables d'explorer des thèmes d'ordre social, culturel et politique.

Resumen Nuevos recursos y bazas de los museos universitarios para hacer frente a los desafíos globales

Los museos universitarios cuentan con los recursos y las bazas necesarios para enfrentarse a los retos mundiales y contribuir a mejorar la calidad de vida de las personas. Entre sus recursos figuran colecciones, bibliotecas y archivos especializados que dan fe de la historia de la vida en la Tierra y su diversidad. Los museos y universidades también cuentan con laboratorios, centros tecnológicos y personal altamente cualificado y experimentado. Entre sus bazas podemos mencionar importantes y dinámicos programas de investigación, enseñanza e interpretación. Debido a su misión educativa y a su vocación internacional, los museos de universidades también son instituciones capaces de explorar temas sociales, políticos y culturales.

One distinctive challenge of modern life is the explosion of global information caused by new technology. However, much of the information remains fragmented. A need exists to create sound synthesis and systematisation of knowledge. A number of museums (e.g., UK) have major bio-informatics programmes directed at doing just this. In addition, museums, as one of our oldest and most significant social enterprises, are being pressed to join the effort to remedy all ills of the world, from poverty to global warming¹. Can University Museums meet these challenges? The answer is yes: University Museums are emerging as institutions that are ideally suited to provide comprehensive interpretations of our world and participate in the development of solutions to world problems. Why is this?

The strengths and resources of University Museums make them highly qualified for a leadership role, perhaps more qualified than other social enterprises. In future planning, universities and their museums can pose questions like "What is the point of convergence between the museum's mission and social needs regarding stewardship of the environment?"² Linked with their parent institutions, University Museums have unique strengths and resources and programmes that span the globe. Museums and universities do share several qualities that distinguish them from their competitors: a deep respect for

intellectual attainment and learning for its own sake; appreciation of and questioning about humanity's role in the world; and a sense of commitment or obligation to society with respect to educating its citizens³. They have the distinct advantage of being able to provide an equally high level of academic excellence and public service. Sally MacDonald lists several strengths of University Museums: specialised collections, tradition of quality presentation, and higher public profile⁴. However, she indicates that University Museums have not been quick to articulate their strengths and what they have to offer. Based on my observations and experiences, I also list and discuss the strengths and resources of University Museums, showing, through specific examples, how the strengths have been used to advance my particular museum, the Sam Noble Oklahoma Museum of Natural History (SNOMNH) and suggesting that this premise may be apropos for many University Museums around the world.

SPECIFIC STRENGTHS AND RESOURCES

1. *Specialised Collections* – For centuries, University Museums have amassed tens of millions of collection items that document the diversity and history of life on earth and provide the basis for ongoing research and teaching activities to the world's scientific and cultural communi-

ties. The collections are a shared legacy of inestimable value and are more than repositories of inspiration and memory - they are a constantly working and growing database⁵. For example, the SNOMNH systematically collects thousands of artefacts and specimens each year. Included in the museum's collections are specimens of newly discovered mammal species of Argentina that have adapted to a harsh ecological zone. How these animals can survive is of great interest to scientists who study ecology, evolution and physiology. More importantly, biological processes underlying discoveries are applicable to all organisms on earth consequently impacting our ability to effectively manage our limited resources. Global human health, agribusiness and conservation management directly benefit from such studies. University collections also play a role in the "global collection"⁶ of all items used for investigation of any specific topic. In addition, loans and reciprocal exchanges of items are commonly made between museums in different countries. University Museums also have large numbers of original objects or "type" specimens that serve as the final criterion of the characteristics of species. These objects also provide an opportunity to connect with the scientists who collected the objects and experience the history of their discovery.

2. *Specialised Resources* – As indicated by MacDonald, University Museums have access to important and specialised facilities such as libraries, archives, and laboratories⁷. At Oklahoma University, for example, the History of Science Libraries Collection is a part of the University Libraries system. Holdings are 87,000 volumes that range chronologically from Hrabanus Maurus' *Opus de universo* (the Collections' oldest book, printed before 20 July 1467) to current publications in the history of science. The Collections contain treasures such as Galileo's own copy of the first edition of the *Dialogo* (Dialogue on the Two Chief World Systems, 1632). The Collection also has resources such as textbooks, popular works, biographies, and illustrations. The SNOMNH and the Collections have collaborated in preparing an exhibit of scientific illustrations. For a weather exhibit, the museum will seek assistance from the U.S. National Severe Storms Laboratory, an internationally recognised research laboratory located at Oklahoma University. In addition, SNOMNH collections (e.g., mammalogy) usually have large libraries of books and reprints of original research papers necessary for conducting scientific investigation. In University Museums, these resources are usually much more complete

and focused than similar resources at other museums.

3. *Specialised People* – People are among the greatest assets for the University Museum. They include students, faculty, administrators and staff, alumni, volunteers, trustees, political allies, and donors. Once committed to the museum and galvanised to action, this is a powerful group of partners for solving problems such as the need for a new facility, a critical situation for University Museums in many countries⁸. With the help of partners, the SNOMNH raised \$45 million and built a new facility that opened in 2000. The museum worked hand-in-hand with university officials to form a campaign council, train volunteers, and develop fund-raising strategies and activities. Students from the Journalism School were assigned to write stories about the museum's activities, collections, curators, and plans. Students from the Business School assisted museum staff in preparing business and marketing plans.

4. *Scholarship and Research* – Based on their educational mission, universities and their museums are vital centres of learning and are collaboratively involved in research, collecting, teaching, dissemination of information, and public service. They are places where a great deal of science is done and innovation is often taking place⁹. University Museums have significant roles in the global questions concerning biodiversity and its ecology, distribution, and preservation¹⁰. Use of basic research is an integral and necessary part of the university museum's exhibits and public programmes. This is one of the most distinguishing and peerless features of University Museums. For example, the SNOMNH used its research on poison dart frogs in the Brazilian rain forest to form the basis of an outreach programme to rural schools in Oklahoma.

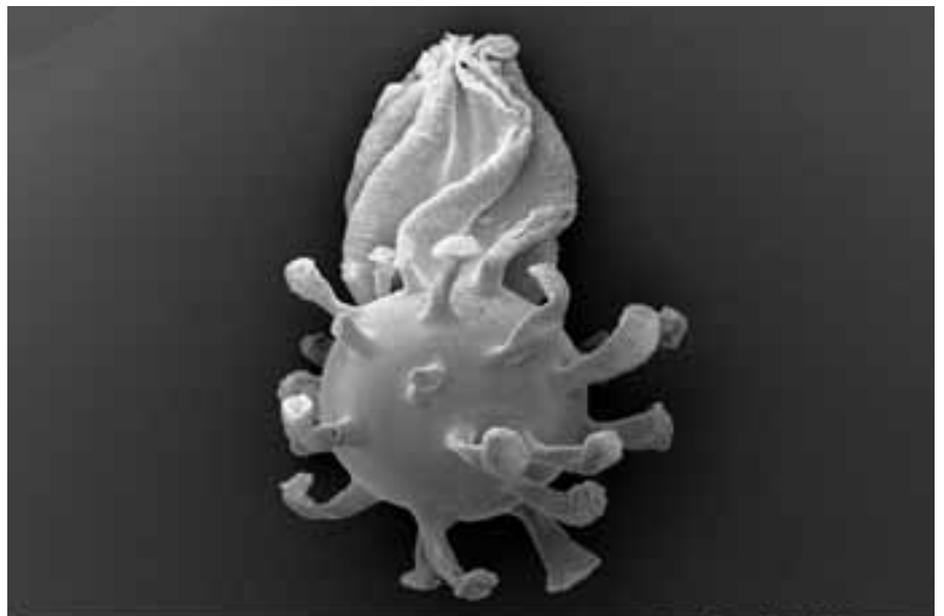
5. *International Contacts* – Universities and their museums attract students, faculty, scholars, and visitors from all countries. These contacts are important in establishing working relationships and ties between countries. They can also show the value of the museum. At the SNOMNH, we have hosted Henry Kissinger, former Assistant to the President (US) for National Security Affairs, and His Royal Highness Prince El Hassan bin Talal of Jordan. The Oklahoma University President, a museum supporter, uses the museum to entertain distinguished guests. In addition, University Museums also provide outreach and loans of collection items. We have collaborative research programmes with countries such

as Argentina, Brazil, Namibia, Poland, and France.

6. *Quality Provision* – The tradition of quality provision, or hands-on access is critical to understanding science, arts and culture¹². When real objects from museum collections are placed in the hands of an audience such as university students, teachers, or parents and their children, complex concepts such as biodiversity and cultural integrity become clear. Fossils, feathers, and artefacts can fire the imagination as they are touched, sorted, and discussed¹⁵. There is a thrill of seeing (being in the presence of) the original rather than just seeing text or digital images or type. Working with collections also helps us develop critical thinking skills and problem-solving abilities as we move from concrete to abstract. University Museums can link teaching and research to informal education, not only to show the beauty, rarity, or cultural meaning of an object, but also to illustrate the process of discovery. You can understand how previous generations did things – the evolution of science from sealing wax, tin cans and string through heavy fabricated metal or glass manufacture into electronics or the evolution of chasing specimens on foot with a lasso through nets to stun guns and high velocity poison darts etc. In a sense all these are about personal journeys in time through man's understanding of the world¹⁴. As described by Weber, the University Museum also can become a “theatre of knowledge” where

dynamic, audience centred presentations of objects are staged, each object from different spheres of historical, cultural, and scientific contexts.¹⁵

7. *Special programmes* – Special programmes such as athletics may provide museums with exceptional opportunities to increase their profile and audiences through advertisement, marketing and media coverage. Nearly all universities and colleges in the United States have strong intercollegiate athletics programmes that are extremely popular, widely followed, and greatly held in reverence and esteem by university personnel and many sports enthusiasts. For example, at Oklahoma University, high-profile sporting activities such as football games attract an audience of more than a million people to the campus each year. In addition, an audience of 100 million people may watch games on television. Information about the SNOMNH is part of the media coverage during the games and is presented on scoreboards, commercial breaks and “half time” features about the university. This helps the SNOMNH to vastly increase its profile and audience at no significant cost. The museum also benefits from an exhibit it created about Oklahoma University football. The exhibit attracts an audience that otherwise might never visit the Museum. The exhibit has important social, cultural and political themes that can be explored, including the relationship between sports, society and culture.



Viewed with the scanning electron microscope (SEM), and magnified 135 times, this spore from a prehistoric fern takes on a unique beauty. © Rick Lupia

8. *Special Services* - University Museums have access to architects, legal counsellors, accountants, technicians and craftsmen. The services they provide are invaluable and available and usually cost the museum nothing. The services of Oklahoma University architects have been important to the design and construction of the new SNOMNH facility; the services of the university's lawyers have been critical to the preparation and execution of exhibit and construction contracts. University Museums also have access to university equipment and facilities such as machinery, apparatus, vehicles, classrooms and auditoriums, campus grounds and field stations. In addition, universities are among the leaders with Interactive Technology and they have massive computers, all potentially available for their museums.

9. *Museum Studies Programmes and Independent Study* - Many museums are linked with formal museum studies programmes. They train students in museum fields such as art and science and I would argue that they influence students in many other fields. For example, many museums offer a wide range of independent study for practical experience in fields such as law, education, business management, journalism, technology, and interior design. University Museums also provide leading scholars and experts who are role models in many fields of research, from biodiversity to art history (e.g., The University of Nebraska State Museum featured women scientists in the outreach programme *WONDERWISE*). Museum studies programmes and independent studies in museums provide students with the opportunity to study side-by-side with museum professionals of the highest calibre.

10. *Community Engagement* - University Museums are ideally situated to connect with their communities. In many ways, the campus is the centre of life in the community, much as the central business district was in the pre-automobile city or the shopping mall is in suburbia. University communities have many things that are attractive and important to the quality of people's lives such as galleries and exhibits, restaurants, bookstores, recreational facilities, concert halls, sports stadiums, park-like green spaces and events. Campuses are a hub of activities that serve not only students and staff, but also the larger population of a town and region. Thus, the campus serves as both an environment for learning and a public space¹⁶ for the exchange of cultures. For example, the Michigan State University Museum has developed cooperative programmes with

Arabic and Native American communities in Michigan.

CONCLUSION

In the business of adding quality to people's lives, University Museums are emerging as top contenders. It is clear that University Museums provide the ideal interface between scientists and society. Through their activities, programmes, and personnel, they gain contact with people everywhere. In addition to serving as vital centres of research, teaching and interpretation, museums also need to be understood as institutions that can explore themes in social, cultural, and political arenas. As suggested by MacDonald, the museums can tell important stories about nationhood, progress, modernity, and even race¹⁷. n

Acknowledgments

I am grateful for the insightful suggestions and editorial assistance from Steven W.G. de Clercq, Michael Mares, Peter Stanbury, Penelope Theologi-Gouti, and Laurie Vitt.

References

1. Tassell, J. "Reverence for the object: art museums in a changed world", *Harvard Magazine*, vol.105, no. 1, 2002, pp. 48-58, 98, 99.
- 2, 5, 9, 11, 13. Tirrell, P. "The university museum as a social enterprise", *Museologia*, vol. 2, 2002, p. 119-132.
3. Solinger, J. "Museums and universities: choices" in *Museums and Universities: New Paths for Continuing Education*, ed. J. Solinger, New York, Collier Macmillan, 1990, p. 1-6.
- 4, 7, 12. MacDonald, S., "Desperately Seeking Sustainability: University Museums in Meaningful Relationships", *ICOM Study Series UMAC*, vol. 11, 2003, pp. 25-27.
6. De Clercq, S., personal correspondence.
8. Tirrell, P., "A synopsis and perspective of concerns and challenges for the international community of University Museums", *Curator: The Museum Journal*, vol. 43, no. 2, 2000, pp. 157-180.
10. Mares, M. and Tirrell, P., "The importance of university-based natural history museums" in *Museum News*, vol. 77, no. 2, 1998, pp. 7, 61, 62, 65.
14. Stanbury, P., personal correspondence.
15. Weber, C., "The University as a 'Theatre of knowledge'", *ICOM Study Series UMAC*, no. 11, 2003, pp. 19-21.
16. Blake Gumprecht, "The American college town", lecture delivered at the Department of Geography, 30 March 2001, Arizona State University, Tempe, Arizona.
17. MacDonald, S., "Exhibitions of power and powers of exhibition: an introduction to the politics of display" in *The Politics of Display: Museums, Science, Culture*, ed. S. MacDonald, London, Routledge, 1998, p. 1-24.

University Museums: Collaboration with Non-Traditional Academic Departments

Ewen Smith
Jim Devine

Deputy Director of the Hunterian Museum & Art Gallery, University of Glasgow, Glasgow, Scotland
Head of Education & Digital Media Resources, Hunterian Museum & Art Gallery, University of Glasgow, Glasgow, Scotland

Résumé *Les musées universitaires : des collaborations avec des départements universitaires non traditionnels*

Les auteurs montrent comment, dans les musées universitaires, la recherche traditionnelle qui prend les collections comme point de départ cède petit à petit le terrain aux compétences axées sur l'organisation et la gestion. Les progrès techniques actuels, l'apparition de nouveaux publics et la pluralité des sources de financement offrent de nouvelles possibilités de partenariat au niveau international et de collaboration avec les unités d'enseignement de l'institution mère. Ces études de cas décrivent les avantages très divers qui en résultent, tant pour le Hunterian Museum and Art Gallery, qui assure ainsi ses activités de conservation et ses sources de revenus, que pour les départements universitaires, les enseignants et les étudiants qui participent à ces partenariats à titre personnel.

Resumen *Museos universitarios: colaboraciones con departamentos académicos no tradicionales*

Los autores muestran cómo, en los museos universitarios, los métodos tradicionales de investigación basados en las colecciones van dando paso a las competencias organizacionales y de gestión. Los avances tecnológicos actuales, los nuevos tipos de público y las numerosas fuentes de financiación han abierto nuevas posibilidades de colaboración a nivel internacional y en el seno de los departamentos académicos de las instituciones. Estos estudios de caso se proponen ilustrar la amplia gama de oportunidades de conservación y obtención de ingresos de que disfrutaban los departamentos académicos, el personal y los estudiantes del Hunterian Museum and Art Gallery.

The traditional manner in which research in University Museums has been and is perceived obscures the possibilities for other fruitful work that would benefit their collections, their museums and their researchers. We intend to show in this paper that by looking at how “research” is defined, then broadening the scope, University Museums can tap into a range of resources, financial and intellectual, which otherwise will be lost to them, at the very moment when resource constraints are tightening.

The ICOM *Code of Ethics for Museums* defines research as follows: “Research to establish provenance, or for interpretation, publication, and other appropriate purposes, should be encouraged. While the level of research may vary from museum to museum, it should relate to institutional objectives and conform to established legal, ethical and academic practices including the conditions defined by national and international copyright legislation.”¹

We are not convinced that this is an adequate definition in terms of the widening role that University Museums should play within the sector ... unless, “other appropriate purposes” and “institutional objectives” are more widely interpreted than appears to have been the case when this definition was being prepared. Traditional “research” has focused substantially on collections, occasionally on museological con-

cerns, and relatively infrequently on organisational and managerial matters. Where the researcher is within the museum sector (universities, independents, military, the metropolitan galleries, or national museums and galleries) will probably determine the nature and quantity of the research activity undertaken, but essentially the process remains much the same.

TYPES OF RESEARCH

Without wishing to “compartmentalise” either institutions or individuals, we would offer the following simplified matrix, to illustrate the point, noting the predominant expectation of research output from varying organisations (see fig. 1).

As indicated in the matrix, the “expectation” among University Museum curators, and even among professionals outside the universities, is that significant amounts of a university curator’s high quality time will be

devoted to researching the collections and developing a strong research programme. In contrast, the curators do not spend quality time in museological and organisational research activities, and these programmes are weak in University Museums. University Museums use the output in these areas from other museums (e.g., nationals). Examples of output include lighting levels, visitor analysis, or simply how we manage ourselves. However, over-dependence on others’ research is changing, and the multiplicity of funding sources dictates that this welcome change will be reinforced by external pressures placed upon us. Research is increasingly produced for a new audience and a new purpose, largely oriented towards “accountability”, but our methods for pursuing research remain rooted in an expectation that the “best” research is collections based, intended for sharing with other academics and specialists. If we are to respond creatively to the new demands, then we must also cast around for novel ways of pursuing research with new partners.

EXAMPLES OF NEW OPPORTUNITIES

Let us now turn to some specific examples, which demonstrate the need for a wider interpretation and may serve as models that can be adapted to individual institutions. The Revelation project carried out pioneering work in developing and demonstrating the value of advanced technology for storing and communicating high-fidelity sound, images, moving-images, three-dimensional models and sophisticated interface programmes. This £665,000 three year Scottish Higher Education Funding Council (SHEFC) funded project was intended to act as a catalyst for multi-disciplinary research into computer-supported educational communication and self-managed study. The Revelation project provided a platform which encouraged close collaboration between the Hunterian Museum & Art Gallery (HMAG) and the Department of Computing Science; a non-traditional Museum partner. Several successful cross-disciplinary projects were undertaken, including: The Hominid Evolution, Romans

Institutions	Research Output		
	Collections	Museology	Organisational
Nationals	×	×	×
Metropolitan		×	
Independent	×	×	
Military	×		
University	×		

Fig. 1: Areas of research in different institutions.

in Scotland, and Scottish Ballads, which brought together expertise from the Hunterian, Computing Science, Forensic Medicine, The Glasgow-Strathclyde School of Scottish Studies, and Schools in Scotland and the U.S.A. Under the aegis of Revelation, the Hunterian also led a field study to Knossos in Crete to create a virtual tour of the entire archaeological site of the Palace of Knossos. This was done in partnership with the British School of Archaeology in Athens and the Hellenic Ministry of Culture.

In addition to re-asserting old, and establishing new partnerships with university departments, opportunities have arisen out of our collaborative activities using new technologies to present cultural content, to establish links with like-minded organisations overseas. In particular we have for some six years now had a mutually beneficial skills-sharing programme with the Smithsonian Institution. Smithsonian-Hunterian Advanced Digitisation Experiments (SHADE) grew out of opportunities provided by Revelation, and forms the sustainable element of that project.

The Smithsonian Institution and HMAG on their respective sides of the Atlantic, have established leading edge practices in the field of digital imaging for the scientific and cultural heritage sector. This project brings together the expertise of the Education and Digital Media Service at the Hunterian Museum and Art Gallery, University of Glasgow, and the Center for Scientific Imaging and Photography at the Smithsonian Institution. SHADE builds on skills-sharing activities between staff at SI and HMAG to further develop the potential of emergent technologies for the presentation of museum collections through digital media to an ever-widening audience.

The Hunterian has also established a working relationship with NASA's educational resource development team at the John C Stennis Space Center in Mississippi. Staff there have acted as external reviewers of Hunterian student projects focusing on exploration and discovery, (e.g. Captain Cook and Lewis and Clark) and are looking at ways of involving the Hunterian with NASA education projects.

STUDENT GAINS

The new millennium saw the implementation of the HMAG Summer Scholarships scheme. In 2000, two students participated in the pilot scheme and such was the success of that experiment that in 2001 the number of scholars had grown to eight. A further eight students benefited from participation in the scheme this past academic session. A variety of projects were put forward by departments within the Hunterian and the University of Glasgow, from the digital cataloguing of archival material to the completion of projects for national schemes such as Scottish Cultural Resources Access Network (SCRAN) and the lottery-based New Opportunities Fund (NOF). Applicants have been drawn from a wide range of academic departments including: Anatomy, Archaeology, Art History, History, Classics, Computing Science, Geology and Zoology. Kerry Antoniak, a third year Zoology student, had this to say about her experience:

"During the summer of 2002 I was awarded a Hunterian Scholarship to catalogue the British and Irish Odonata (dragonflies) collection held in the Zoology Museum.... I soon became familiar with the complex anatomical terms and felt able to

identify the specimens accurately... When the scholarship was completed it was the first insect order from the Hunterian's collections to be fully catalogued.... I will continue to work on a voluntary basis on the collection because the experience has been truly enjoyable and valuable.

The scholarship has given me experience in general skills such as prioritising, decision-making, setting goals and organisation. These are all skills that I can use in my future studies as well as my career. I have also learned a great deal about the importance of museums and my desire to work in museums has only increased while doing this project. I feel I now have a number of skills that will help me pursue a career in this field."

Geoff Hancock, the Curator supervising this project, commented: "The [dragonfly] collection can now be made available actively to others. Articles/ notes will be inserted in appropriate journals, newsletters, etc., to this effect. It is now possible to devise a meaningful collecting policy for this group of insects."

And from where do the resources come that might facilitate such work? As a matter of design, and necessity, these projects are overwhelmingly collaborative. That route has provided us with access to funding streams otherwise unavailable to the museum sector. Examples such as "Revelation" demonstrate this facility perfectly. However, in addition, we have committed substantial sums of money from our endowment funds, where the terms and conditions allow, to foster scholarship and research into the collections. The best examples of these are to be found in the various strands of the Scholarship Scheme. It is also worth noting here that investment from our own



Extracted "morphing" sequence of *Homo Habilis* © Hunterian Museum and Art Gallery, University of Glasgow.

■ Le musée de Sciences et techniques: archives de la recherche universitaire ouvertes aux différents publics

resources has succeeded in “leveraging” funding from other sources.

CONCLUSION

Our experience indicates enormous satisfaction in the outcomes for The Hunterian, for the academic departments engaged (and always looking for “real world” projects to complement some often abstract pedagogy), and for the students themselves, whose assessed projects have been of a very high standard (good for degree awards), and whose c.v’s. are substantially enhanced by reference to their work with us (good for employability).

However, the process is not yet complete. Despite considerable efforts to forge new partnerships, we are still just at the beginning of “imagineering” potential outputs from our research activity. This is particularly true of opportunities that may be offered to us by information and communication technologies, whether in collections, museological, or organisational research, for data collection, analysis, or dissemination. Our expectation is in all of these, but in some still to be imagined. A Report commissioned by the European Union states “alternative research means devising, adopting and making use of innovative methods and facilities for managing, accessing, interpreting and preserving Europe’s rich cultural and scientific heritage. It is about turning information lying in various heritage repositories into active knowledge, readily accessible through new channels, such as the Internet or mobile phones, and specific to our needs.”²

It has the pronounced potential for, and is almost certainly going to be optimally utilised in an interactive manner, so that the research output, however defined, is not “concluded” but remains work-in-progress. Crucially, for our purposes, and for our planning purposes particularly, “because ICT technologies are systemic, they will have an effect upon all practices and procedures of an institution.”³ Research will not be exempt. Collaboration in novel directions will realise some of our wildest dreams.

In the future, we will be looking to fill gaps in pedagogical research, focusing on how people use, and learn, from museum collections made available using digital

media. n

References

1. ICOM *Code of Ethics for Museums* (2002), p. 21, para. 8.5.
2. The European Union’s IST-funded *DigiCULT Study Report*, May 2002, Section 1.
3. *Ibid.*, Section 2.

Penelope Theologi-Gouti

Architecte-Ethnologue, musée de Sciences et techniques de l’Université de Patras, Rion-Patras, Grèce

Abstract *The Science and Technology Museum: archives of university research for a wide audience*

The objects used in university research, and the products of research, can become a valuable part of University Museum collections. As such, they can be interpreted to the public in the crucial context of the research process. Patras University’s new Science and Technology Museum is engaged in collecting, documenting, interpreting and exhibiting research items. To make these items relevant to a wide audience, the museum is gathering information on each item, including the scientific methods used in the research, a description of the role of the object in the research project and the contribution of research personnel.

Resumen *El Museo de Ciencias y Técnicas: archivo de la investigación universitaria, abierto a un amplio público*

Los objetos utilizados en investigaciones universitarias y productos de las mismas pueden enriquecer las colecciones de los museos universitarios. Como tales, se exponen al público en el contexto específico del proceso de investigación. El nuevo Museo de Ciencias y Técnicas de la Universidad de Patras colecciona, documenta, interpreta y expone objetos relacionados con la investigación. Con el fin de hacer más atractivos estos objetos a un público más amplio, el museo recopila e difunde información relevante sobre cada uno de ellos, incluyendo los métodos científicos utilizados durante la investigación, la descripción del papel del objeto en el marco de la misma y la contribución del personal especializado.

Les musées universitaires de Sciences et techniques jouent un rôle essentiel par rapport à la recherche dans les universités, les centres scientifiques et les institutions qui travaillent dans le domaine des sciences et des techniques, par la transmission de ce savoir au public.

Les instruments (ustensiles, outils, machines, appareils, ordinateurs avec leur logiciel, etc.) utilisés par les laboratoires et les départements universitaires dans le cadre d’une recherche, ou issus de celle-ci (machines, livres, rapports de projets), constituent des collections d’importance historique pour les universités.¹ Ces instruments sont des témoignages matériels de l’histoire des sciences et des techniques, ainsi que de l’histoire de l’université elle-même.²

Ces instruments détiennent une valeur pour l’histoire des sciences et des techniques dans la mesure où ils sont collectionnés, documentés et exposés dans leur contexte, c’est-à-dire avec toutes les informations les concernant. Si on prend le cas des objets ethnographiques, ils doivent être placés dans un environnement culturel et social,³ accompagnés d’informations sur la méthodologie de recherche et sur les personnes qui y ont contribué,⁴ ainsi que sur les questions déontologiques soulevées.⁵ Le processus de recherche peut aussi s’illustrer par des photos, des vidéos, etc.

Les résultats des différentes recherches parviennent au public par des moyens

divers, si toutefois ils y arrivent, mais il est rare que les chercheurs puissent jouer un rôle actif dans ce processus. Il échoit donc aux Musées universitaires de devenir le lien entre les universités et la société, en contribuant, avec l’aide des chercheurs, au développement et à la diffusion de la connaissance scientifique.

L’Université de Patras est une des universités les plus dynamiques de la Grèce dans le domaine des sciences exactes et des techniques. Au sein de ses départements, des recherches importantes sont réalisées dans les différents champs scientifiques, mais malheureusement les résultats parviennent rarement au public, même s’ils l’intéressent, comme l’environnement, les séismes, la biotechnologie, la génétique, les différentes applications des ordinateurs, etc. Le musée de Sciences et techniques de l’Université de Patras, un musée en préparation,⁶ assume les fonctions classiques d’un musée mais il tient aussi à jouer un rôle primordial dans le transfert des résultats des recherches au public.

Les différents types de collections du musée sont enrichis par des objets utilisés et produits dans le cadre des recherches réalisées par les laboratoires et les départements de l’université, afin qu’ils deviennent des archives de recherches, ouvertes au public. Une série de collaborations avec des groupes d’étudiants est prévue, avec le soutien des professeurs et des laboratoires, afin de documenter les objets et donner l’image

la plus complète de la recherche par l'enregistrement de chaque étape et chaque aspect du processus. Un système manuel de documentation des collections est déjà en place, et le musée a en vue de développer un système électronique plus complexe, qui servira également à la création des collections muséales électroniques de nouvelle génération, ce qui permettra d'organiser des expositions et de rendre la recherche accessible aux différents publics.

Ce projet de documentation comprend l'enregistrement des résultats, des produits, des méthodologies et des profits de la recherche universitaire en sciences et techniques, en utilisant tous les moyens d'information disponibles, tels que interviews, questionnaires, vidéos, photos, etc. Il s'agit en même temps d'élaborer des archives pouvant être consultées par les différents publics (étudiants, spécialistes d'autres disciplines, personnes venant de l'industrie, grand public, etc.).

Le développement d'expositions thématiques⁷ sur les collections de la recherche universitaire devrait améliorer l'accessibilité et l'acceptabilité de la recherche, tout en contribuant à la valorisation et à une plus large exploitation de l'héritage scientifique et technologique de l'université. Ces services seront accompagnés d'une structure humaine, matérielle et technique qui permettra le rapprochement entre le public et les collections.

Des normes seront établies concernant la typologie de la recherche sur les sciences et techniques, le type d'information à enregistrer et à documenter pour chaque champ, et les nouveaux modèles, méthodes, techniques et systèmes pour créer, procéder, administrer, communiquer, accéder, exploiter et exposer le contenu des collections de recherche, de manière qualitative et quantitative.

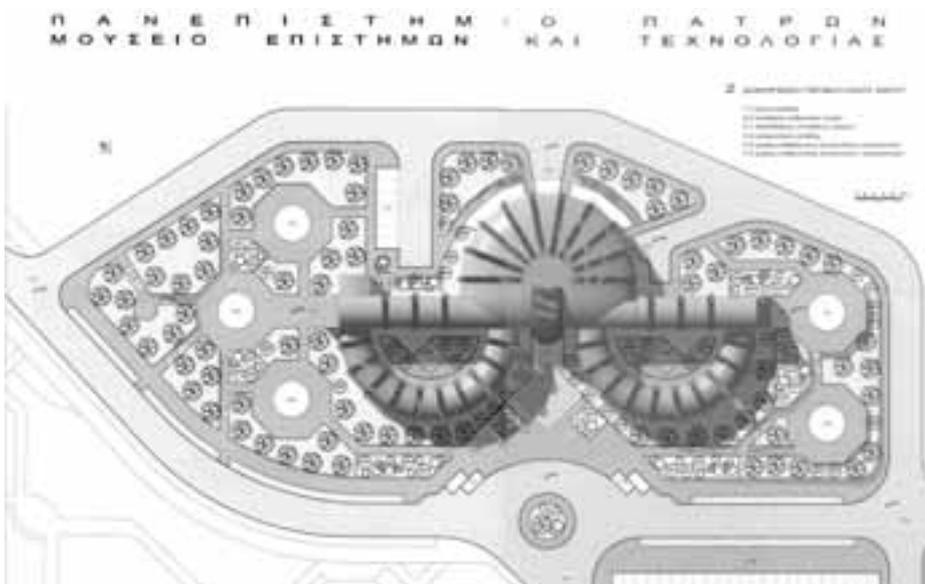
Des expositions thématiques seront développées sur la base d'une recherche sur un thème comme l'éducation, les sciences naturelles, les mathématiques, la science et les techniques des ordinateurs, les séismes ou la biotechnologie. Chaque exposition comprendra une phase de :

- Collection d'objets, d'informations, de documents, leur classification, documentation et évaluation
- Développement d'une base de données pour mieux administrer les collections
- Organisation en parallèle des programmes pédagogiques
- Développement des applications multimédia autour de l'exposition

Le musée de Sciences et techniques de l'Université de Patras a donc l'intention de créer des archives de recherches accessibles aux différents publics, d'exposer les résultats de ces recherches et de réussir à rapprocher l'Université de la société dans laquelle nous vivons. n

References

1. De Haan, P., "A public oriented and educational Museum" in *Managing University Museums*, OECD, 2001, p. 121.
2. De Clercq, S. and Lourenço, M., "A Globe is just another Tool - Understanding the Role of Objects in University Collections", *ICOM Study Series UMAC*, 2003, pp. 4-6.
3. Theologi-Gouti, P., « Collections ethnographiques et documentation muséale », *ICOM Study Series CIDOC*, 1996, pp. 21-25.
4. Tucci, P., "Disseminating Scientific Culture", *Museologia*, vol. 2, nos. 1-2, Spring 2002, p. 87.
5. King, L., "University Museums in the 21st century", *Managing University Museums*, OECD, 2001, p. 25.
6. Theologi-Gouti, P., "A New Museum in an Ancient Land: Patras University Science and Technology Museum", *Museum International*, UNESCO, vol. 206, p. 25.
7. Cornelia Weber, "From independent u-collections to a Wissenstheater", *Museologia*, vol. 2, nos. 1-2, Spring 2002, p. 87.



Topographical plan of the new Patras University Science and Technology Museum, designed by Ioannis Vedourakis, Architect © Patras University

■ The History of Science through Academic Collections

14

Liba Taub

Director and Curator, Whipple Museum of the History of Science, Department of History and Philosophy of Science, University of Cambridge, Cambridge, U.K.

Résumé *L'histoire des sciences vue à travers les collections universitaires*

Les universités, qui ont une longue histoire de participation à la recherche scientifique, sont les conservatoires naturels des témoins matériels de l'histoire des sciences et des rapports entre la science et d'autres champs culturels. Les sources de l'histoire des sciences présentes dans les collections universitaires sont d'une grande richesse ; on y trouve des matériels aussi divers que des instruments scientifiques, des appareils destinés à des expériences, des maquettes d'enseignement et des spécimens de toute sorte ainsi que de l'iconographie (illustrations, diagrammes, ornements architecturaux, photographies, portraits, etc.). Les collections universitaires constituent un observatoire privilégié de notre culture scientifique ; ce sont des gisements de sources originales importantes – et souvent uniques – de l'histoire des sciences.

Resumen *La historia de la ciencia a través de las colecciones universitarias*

Las universidades tienen una larga historia de participación en proyectos científicos. Por lo tanto, son una valiosa fuente de información que documenta la historia de la ciencia y su vínculo con otras áreas de la cultura. Las colecciones universitarias cuentan con material tan diverso como instrumentos científicos, aparatos de experimentación, modelos de enseñanza, especímenes de todo tipo e imágenes (ilustraciones, diagramas, decoraciones, fotografías, cuadros, etc.). Las colecciones universitarias nos brindan una visión privilegiada de nuestra cultura científica. Asimismo, cuentan con numerosos objetos importantes y, en muchos casos, únicos para la historia de la ciencia.

Universities house a wealth of scientific material, in some cases assembled over centuries. The Whipple Museum of the History of Science at the University of Cambridge holds a large collection of nineteenth- and twentieth-century botanical teaching diagrams, transferred from the Department of Plant Sciences; some of these were produced by John Stevens Henslow, the Professor of Botany who was the teacher and life-long friend of Charles Darwin. Collecting activity still thrives within our universities, and collections continue to be used in teaching and research. The richness and variety of the historical material housed within university collections, including museums, libraries and archives, is surprising to many visitors, students and scholars. Today these collections offer a very special vantage point from which to view our scientific culture; they represent rich repositories of important (and in many cases, unique) primary source materials for the history of science.

The sources for history of science within academic collections are vast, diverse, and not always obvious. The university was a mediaeval invention but, in the mediaeval and early modern periods, there was no body of knowledge and practices which would map directly on to our modern understanding of 'science'. Here, the phrase 'the scientific enterprise' will be used to refer to areas of study, research and practice which today would be regarded as part of science. Within universities, over the last 1,000 years, scholars and students have engaged in a

range of activities associated with 'the scientific enterprise', including (while noting some degree of overlap): (1) the production of science (as research); (2) education (including teaching and training); and (3) the dissemination of ideas and practices to wider audiences, both within and outside the university community. Each of these activities involved the use of material objects, including instruments, models, images and texts.

Many European universities were founded during the mediaeval and early modern periods, when academic attention was centred on theology, law and medicine. What today would be recognised as scientific subjects were part of university study and research; natural philosophy was part of the broader study of philosophy, and astronomy was taught and practised, sometimes with a link to medical studies. During the second half of the nineteenth and twentieth centuries, science faculties and laboratories developed and flourished within many universities, becoming important centres for research. At the beginning of the twenty-first century universities are regarded as the natural home of much of the scientific enterprise. It is not surprising that members of the public, students and scholars all look to universities, and their museums, for evidence and interpretation of the role of science within society, as well as the history of scientific endeavour. Universities, with their long histories of involvement in scientific pursuits, are the natural repositories of much evidence for the history

of science, and its relation to other areas of culture.

THE CHANGING FACE OF UNIVERSITY COLLECTIONS

During the first half of the twentieth century, history of science was often practised as a branch of intellectual history, with a focus on great men of science and their ideas. Recently, there has been an emphasis on the activities which are seen to be at the heart of the scientific enterprise, including conducting observations, experiments, demonstrations, fieldwork, and explorations, as well as engaging in various specimen collecting activities. Increasingly, historians of science are turning from the methods of intellectual history to embrace other approaches to the study of past science. Historians of science are utilising a much wider range of types of primary evidence than simply written documents, such as scientific instruments, experimental apparatus, teaching models and specimens of various sorts, as well as images (including illustrations, diagrams, building decorations, photographs and portraits). University collections hold a great deal of such artefacts, which serve as valuable sources for the history of science, but the study of this material presents challenges to historians accustomed to dealing solely with written sources. These objects and collections should not simply be preserved for the future, and displayed as inspirational relics, but must be explored, 'read' and opened up as important historical 'documents' in their own right.

These artefacts have only in some cases been deliberately collected and preserved as part of University Museums. Science collections have often been formed through the research and teaching interests of members of the university. Collections were built up over time as faculties sought to gather together objects, specimens, models and instruments useful in study and teaching. As universities became centres for research, collections often reflected the research and teaching programmes undertaken. Many university science museums were founded to provide a place of operation for distinguished professors, particularly as science teaching was increasingly formalised during the eighteenth, nineteenth, and twentieth centuries. So, for example, within the Museum for the History of the University of Pavia in Italy, the Physics Section contains the collection developed by the Professor of Physics, Alessandro Volta (1745-1827). Many universities assembled medical collections; the Museum Vrolik at the University of Amsterdam has its basis in the anatomical,

pathological and zoological specimens collected by the two professors Vrolik (father and son). Today, most medical museums are within universities and are used for teaching and research.

In some instances, the holdings within University Museums have no close association to university work itself, but are important or interesting objects that have been given to or acquired by the university or its members. The foundation collection of approximately 1000 antique scientific instruments and a similar number of rare books which were donated by Robert S. Whipple to the University of Cambridge for a history of science museum had few, if any, links to the University itself. Nevertheless, since the receipt of the founding collection, the Whipple Museum has served as a magnet to attract other scientific objects, many of which do have a university provenance.

Within many universities there are important research and teaching collections which have not been brought under the auspices of a formal museum. At the University of Cambridge, the Department of Pure Mathematics and Mathematical Statistics has a large collection of teaching models, still in use for educating mathematicians, but also studied by historians and philosophers of mathematics.

Not all academic collections of scientific material have been deliberately acquired and preserved. In some cases, what has been accumulated has been done so fortuitously. There is potentially important historical material that is still being used (or has already been discarded) in existing science departments, in laboratories, cupboards and storerooms; some of this material deserves to be preserved for future study. Much of the scientific material which is to be found in academic and other museums is the result of accidental survival (or rediscovery). The provision of primary sources for the study of twentieth- and twenty-first century science should not be left completely to the whims of chance; opportunities for deliberate collection and preservation should be seized now.

THE AESTHETIC DIMENSION

With reference to the “historically interesting” material which survives, it may seem surprising that often very little actually related to research has been preserved. This is the case for a variety of reasons, not least because pieces of equipment were often “cannibalised” for other experiments within the lab, being recycled into other working instruments. And in many cases the

equipment and material objects of the scientific enterprise are not visually appealing.

Nevertheless, some of the instruments and models preserved in academic collections are striking examples of elegant workmanship or beautiful design. In certain settings, the material culture of science, which includes instruments and illustrations, is treated purely as art, and scientific objects are displayed as purely as art objects. From the point of view of interpretation, such instruments are highly ambiguous as evidence of ‘technical progress’, yet they may provide evidence for the broader social and cultural roles of the scientific enterprise, and also for the flourishing of crafts associated with the manufacture of such objects.

Of course, the artistic value alone of certain scientific artefacts and instruments merits their inclusion in some collections. At the University of Cambridge, it is the fine arts museum, the Fitzwilliam, which is the official repository of particularly fine mediaeval astrolabes and early modern sundials which are highly valued for their decorative value. Subsequent to the founding of the Whipple, as a museum of the history of science, these objects were transferred and are still on display and much admired by visitors today.

But it is worth noting that finely-made objects, rather than crude prototypes, tend to be those that are displayed even in those institutions primarily committed to history of science. This may suggest to visitors that the valued objects of the scientific enterprise are always beautiful and appealing or, at the least, visually striking. Such displays may, however unintentionally, communicate a parallel message about the practice of earlier science as well, leading visitors to the belief that the (past) pursuit of science was always elegant and refined, unlike today’s science, which is often understood as fraught with dangerous and difficult choices.

THE ETHICS OF DISPLAY

Today we are well aware that science is not always politically correct or easy, as many on-going debates regarding the suitability of certain collections (e.g. of human remains) demonstrate. Within our universities, we often have evidence of research related to such debates. In some museums, as part of the effort to provide an appealing experience for visitors, some collections and objects which are seen to be communicating the “wrong” message may be removed from public view, for example some specimen collections, or ethnographic objects of particular kinds, which are

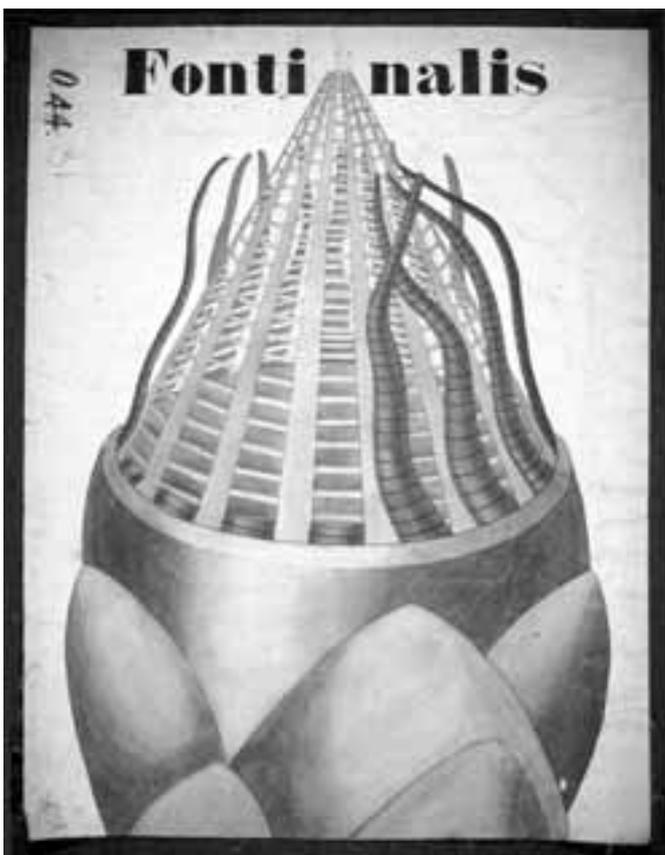


Diagram by John Stevens Henslow, Professor of Botany, University of Cambridge. Wh5133
© Whipple Museum of the History of Science, Cambridge University

regarded as politically incorrect or offensive. But, to limit these objects and collections from view may leave visitors with a distorted impression of past science. Whether or not we choose to display and interpret such material is one of the challenges we face, as academic institutions committed to education and intellectual freedom. Our scientific holdings can be displayed and interpreted in ways in which the various contexts and questions engaged in and confronted by researchers, teachers and pupils are presented; students and museum visitors will thus gain a richer appreciation of the objects, beyond their physical beauty or curiosity. Our holdings of historic (even potentially problematic) scientific material can and should be interpreted in ways which indicate that science and technology are part of the fabric of our culture.

In some universities there is an active academic programme of teaching and research in history of science. Collections-based teaching plays an important role within several university history of science museums, including the Museum of the History of Science at Oxford, the Whipple Museum of the History of Science at Cambridge, and the Historical Collection of Scientific Instruments at Harvard. Students are encouraged to work on material within the collections as part of their research requirement and also have opportunities to contribute to displays and exhibitions. Other institutions are working to develop similar programmes. As an illustration of this, students and staff at Southwestern University, a small liberal arts college established in Georgetown, Texas in 1840, worked together to create an exhibition related to the history of scientific work within their own institution. Each student chose an object in the university's previously uncatalogued collection of scientific apparatus (ca. 1870-1950), and researched both its former use and the broader history of science that would help to contextualise that piece of apparatus. The collection is now better understood and used, while students and staff had an unusual opportunity to broaden their understanding and share their work with others.

Many of our academic collections and museums serve as public windows on our universities; such displays offer important opportunities for introducing members of the public and the university to the history of science within our institutions. n

Acknowledgments

In November 2001, as part of the European Month of Academic Heritage, the European Union Project 'Academic Heritage and

European Universities: Responsibility and Public Access' organised a conference at the Universiteitsmuseum at Utrecht. I spoke on 'Academic Heritage as a primary source of information on the history of science: On the Role of University Collections and Museums in the History of Science, Technology and Medicine', and I am grateful to members of the project and the audience for sharing their insights and helpful comments. I would also like to thank Elizabeth Green Musselman (Southwestern University) and Nico Bertoloni Meli (University of Indiana) for sharing information about activities within their own institutions, and Dr Peter Tirrell, as well as the referees, for helpful comments on an earlier draft.

References

- Bennett, J., "Museums and the history of science at Oxford and Cambridge", *The British Journal for the History of Science* vol. 30, 1997, pp. 29-46.
- Bennett, J., "Can science museums take history seriously?" in S. Macdonald (ed.), *The Politics of Display*.
- Butler, S., *Science and Technology Museums*, Leicester University Press, 1992.
- Durant, J. (ed.), *Museums and the public understanding of science*, Science Museum in association with the Committee on the Public Understanding of Science, 1992.
- Pearce, S. (ed.), *Exploring Science in Museums*, Athlone, 1996.
- Farmelo, G. and J. Carding, (eds.), *Here and Now: contemporary science and technology in museums and science centres; Proceedings of a conference held at the Science Museum, London 21-23 November 1996*, Science Museum with the support of the European Commission Directorate General XII, 1997.
- MacDonald, S. (ed.), *The Politics of Display: Museums, Science, Culture*, Routledge, 1998.
- Field, J.V. and Frank A.J.L. James, *Science in Art: Works in the National Gallery that illustrate the history of science and technology*, British Society for the History of Science, 1997.
- MacDonald, S., "Supermarket science? Consumers and the public understanding of science", in Macdonald, S. (ed.), *The Politics of Display*, p. 1-24.
- Taub, L., "On the Role of Museums in the History of Science, Technology and Medicine", (commissioned guest editorial), *Endeavour* 22 (2), 1998, pp. 41-45.
- Taub, L., "Introduction: Universities in Europe - The circulation of ideas" in *Alligators and Astro-labes: Treasures of University Collections in Europe*, Halle, Academic Heritage and European Universities: Responsibility and Public Access Project, 2001.

■ Le musée de Sciences: quel rôle pour les Musées universitaires ?

17

Dominique Ferriot

Professeure des universités au Conservatoire national des arts et métiers, Paris, France

Abstract *University Museums and their role for Science Museums*

University Museums were the first Science Museums. The advent of Science Centres (in the 1980s, in the case of France) temporarily obscured the vital role played by University Museums in implementing policies for the dissemination of knowledge. Their collections and their links with research mean that University Museums are ideally equipped to present and popularise specialist knowledge. But more resources should be devoted to them, and the work of their staff and in particular of academics who take time out of teaching and research to design science lessons for all types of visitor about the objects or fields related to their research, should receive greater acknowledgement.

Resumen *Museos de Ciencias: ¿cuál es el lugar de los Museos Universitarios?*

Los museos universitarios dieron origen a los museos de ciencia. La creación de centros de ciencia o science centres (en Francia en la década de los ochenta), eclipsó durante un tiempo el papel fundamental de los museos universitarios en el marco de una política de difusión del saber. Gracias a sus investigadores y sus colecciones, estos museos poseen todas las bazas necesarias para transmitir el saber científico. Sin embargo, necesitan mayores recursos y que se reconozca la labor de su personal, particularmente el papel desempeñado por los profesores-investigadores que dedican parte de su tiempo a crear, a partir de sus objetos o áreas de investigación, enseñanzas científicas para todos los públicos.

Le musée de Sciences est, depuis l'origine et le *Mouseion* d'Alexandrie, un lieu d'étude et de recherche. Les collections conservées dans les universités européennes ont été des outils de recherche et d'enseignement ; elles sont plus que jamais ouvertes aux chercheurs et la création de "réserves visitables" dans les musées, c'est-à-dire accessibles à tous ceux qui ont un projet de recherche, est maintenant la règle. Qu'en est-il du rapport entre ces collections et ce que l'on a coutume d'appeler "le grand public" ?

LES "SCIENCE CENTRES", UN MODÈLE DÉPASSÉ ?

Prenons l'exemple de la France au début des années 1980 ; la vulgarisation des sciences est une priorité nationale, le ministère de la Recherche crée un "programme mobilisateur" pour le développement de la culture scientifique et technique avec le souci de rapprocher les citoyens du monde de la recherche et des technologies nouvelles ; les anciens abattoirs de La Villette deviennent *Cité des Sciences et de l'Industrie*. De nombreux Comités scientifiques établissent le programme d'une future exposition permanente évolutive, *Explora*, en misant sur une muséographie interactive qui fait une large part à l'audiovisuel. A l'époque, les collections, uniques au monde, du Conservatoire national des arts et métiers (CNAM) sont à l'abandon et le Palais de la découverte, faute de moyens, peine à conserver son rôle majeur de démonstration de "la science en train de se faire". Or que fait-on ? À la Cité des Sciences, on minimise le rôle des objets d'une part, de la médiation humaine d'autre

part et l'on crée, de toutes pièces, un géant de la "culture scientifique et technique" qui, deux décennies plus tard, a toujours du mal à trouver ses références et ses publics, malgré un budget et des ressources humaines sans comparaison avec les autres "musées de sciences". N'est-il pas temps enfin de reconsidérer la place de l'objet et de la leçon de sciences qu'il permet au cœur de l'institution muséale ?

LES ATOUTS DES MUSÉES UNIVERSITAIRES

A Paris, le musée du Conservatoire national des arts et métiers, ainsi que la Galerie de l'évolution du Muséum national d'histoire naturelle viennent d'être rénovés ; surtout, le CNAM, par exemple, a repris une politique d'acquisition pour reconquérir son rôle de témoin des innovations techniques les plus contemporaines. Nous avons là le cas de grands établissements d'enseignement supérieur et de recherche ; nous pouvons aussi citer le projet muséal de l'Université de Montpellier II, ou les efforts faits pour réhabiliter les collections anatomiques Delmas-Orfila-Rouvière de l'Université René Descartes à Paris V qui doivent se retrouver dans un futur Musée du corps.

Ainsi les Musées universitaires qui sont riches d'hommes et d'objets peuvent rester ou redevenir des lieux de partage du savoir avec des publics toujours plus nombreux qui viennent chercher au musée une expertise sur des questions de sciences qu'ils ne trouvent pas toujours à l'école, dans la presse, à la télévision ; au musée, il y a l'émotion en plus ou plutôt, il y a d'abord l'émotion, source première d'une curiosité

nécessaire pour tout apprentissage ; bien sûr, le musée et en particulier le Musée universitaire ne peut pas tout faire. Simplement, son rôle peut être unique par cette médiation qu'il permet en facilitant la rencontre entre des chercheurs et leurs objets ou terrains de recherche à l'université. Les grands musées scientifiques ont bien compris que leurs collections étaient un atout plus qu'une charge ; ainsi à Londres, le *Natural History Museum* vient d'ouvrir un nouveau bâtiment, le *Darwin Centre*, qui replace les collections, autrefois en réserve, au cœur du musée et les rend accessibles, grâce à la présence de chercheurs-médiateurs, à tous les publics.

DANS LES MURS MAIS AUSSI «HORS LES MURS»

Les collections des Musées universitaires sont aussi une chance pour des établissements qui ont la possibilité d'être présents grâce à leur site Web dans un réseau mondial. Le musée du Conservatoire national des arts et métiers, en 1994, a été le premier musée en France à disposer d'un site Web par lequel on avait accès à la base de données des collections (80000 objets, 15 000 dessins et plans techniques) ; encore faut-il que les inventaires soient correctement tenus et c'est une belle revanche pour les documentalistes et tous ceux qui travaillent sur les dossiers d'œuvres que de voir leur travail de fourni acquérir, grâce à Internet, une notoriété internationale. Sans être des universités, d'autres établissements de recherche jouent aussi un rôle de premier plan dans la préservation et la valorisation du patrimoine scientifique ; citons les Observatoires et en France, ceux de Nice ou de Marseille engagés dans des programmes muséaux qui permettront de redécouvrir des lieux de sciences mal connus du grand public (ainsi à Nice, les bâtiments construits à la fin du XIXe siècle par Charles Garnier et Gustave Eiffel pour créer l'Observatoire idéal voulu par un mécène éclairé, Raphaël Bischoffsheim).

Les nouveaux réseaux d'information permettent aussi la transmission à distance des "leçons de science" qui sont données dans les universités. En 2000, une expérience originale, *L'université de tous les savoirs*, a été conçue et réalisée par le professeur Yves Michaud, faisant figurer les sciences dans le cadre d'une programmation qui traitait de l'ensemble des arts, des sciences et des lettres. Les sciences font partie de la culture et il importe de favoriser toutes les initiatives qui, en replaçant le musée dans un champ social, favorisent les échanges et l'interdisciplinarité.

UN NOUVEL AVENIR

Ainsi les Musées universitaires ont-ils été successivement, à l'origine des musées de sciences, puis négligés par leurs administrations et leurs autorités de tutelle et aujourd'hui redécouverts parce qu'ils peuvent mieux répondre aux attentes légitimes de publics variés. Pour faire face à cette attente, il convient cependant que les musées universitaires soient mieux dotés et davantage reconnus. Reconnus, cela signifie par exemple que le travail de communication de la science soit réellement perçu comme l'une des missions des enseignants-chercheurs ; c'est le cas dans les textes ; malheureusement, lors des Comités d'évaluation, la pratique suit rarement la théorie. Cela signifie aussi donner au musée l'autonomie nécessaire à l'intérieur de son établissement de rattachement pour que ses responsables puissent avoir un rapport direct et rapide avec les publics du musée. Il convient aussi de veiller à ce que des budgets de fonctionnement décents permettent aux Musées universitaires de tenir leur rang dans la communauté muséale et par

rapport à leurs missions statutaires, en matière d'acquisition notamment. Les Musées universitaires sont à nouveau l'un des avènements du musée de Sciences. Cette conviction n'ôte rien à la légitimité et à la qualité des nombreuses initiatives qui contribuent au développement de la culture scientifique et technique par d'autres moyens que ceux du musée. Simplement il est temps de redonner aux Musées universitaires leur place et leur importance au service de cet enjeu majeur qu'est l'enrichissement d'un savoir mieux compris, mieux maîtrisé et mieux partagé. n



Cabinet de Charles. Au premier plan, œil artificiel montrant les causes de la myopie et de la presbytie. Au deuxième plan, appareil à roues dentées pour faire mouvoir des plans circulaires diversement colorés © Musée des arts et métiers/P. Dolémieux/Métis

Cornelia Weber

General manager, researcher and lecturer, Helmholtz-Zentrum für Kulturtechnik, Humboldt University, Berlin, Germany

Résumé *Le Musée universitaire comme “théâtre du savoir”*

Pour les Musées universitaires, le théâtre du savoir est un nouveau concept de diffusion de la connaissance scientifique à un plus large public. Ces musées représentent un large éventail de disciplines et de collections et ont accès aux experts et aux équipements des départements universitaires. Ils offrent de ce fait une bonne base pour la réalisation de ce nouveau paradigme. Les éléments clés en sont la présentation dynamique d'objets provenant de sphères différentes, inscrits dans les divers aspects de leur contexte historique, culturel et scientifique, et une mise en scène volontairement tournée vers le public.

Resumen *El Museo Universitario como “Teatro del conocimiento”*

El teatro del conocimiento es un nuevo concepto que los Museos Universitarios pueden hacer suyo para difundir el saber científico a un público más amplio. Estos museos, al contar con variadas especializaciones y colecciones, así como un contacto privilegiado con los expertos de los departamentos académicos y acceso al material de los mismos, son el punto de partida idóneo para la creación de un nuevo paradigma cuyos elementos clave son la presentación dinámica – siempre enfocada al público – de objetos provenientes de diferentes esferas, integrados en múltiples contextos históricos, culturales y científicos.

Theatre derives from the Greek word *theatron*: a place of seeing. A theatre performance is a unique communicative setting. It is characterised by the high expectations of the audience with their attention intensely focused on the stage. The story line is often known in advance. Nevertheless, the audience wants the story to be told professionally and entertainingly and with all of the expected visual and auditory sensations. The challenge is to keep the audience's attention and interpret the material in such a way so that not only new connections within the play are made apparent but also so that new insights about the outside world and the audience's own life become possible.

These self-evident observations should suffice as a motivation as to why it is worthwhile exploring the concept of the museum as a *theatre of knowledge*. This new paradigm is particularly suitable for the museum within a university. On the one hand, the university itself can be described as a theatre of knowledge. On the other hand, university collections are often of a highly diverse character and not adequately presentable within the framework of conventional and more static forms of exhibition. Pioneering the concept of a theatre of knowledge is a great chance for University Museums to impart scientific knowledge to a broader audience.

HISTORICAL BACKGROUND

In early modern Europe the rise of museums, laboratories, botanical gardens

and anatomical theatres played an important role in the transformation of knowledge from a discursive to a visual venue.¹ The Italian natural scientist Ulisse Aldrovandi characterised his collection as a *theatre of nature*, and the French naturalist Pierre Belon described the botanical gardens in Padua as *theatres of the earth*.² It should be noted that in those days museums and laboratories frequently assumed the shape of a theatre – such as a *theatrum anatomicum*.

Gottfried Wilhelm Leibniz, initiator and first president of the Berlin Society of Sciences, pursued the idea of a *theatrum naturae et artis*: a combination of research and theatre, in which a staging of science with objects from collections of the arts, nature and technology as well as from kitchen gardens, gardens with medicinal herbs and zoological gardens functioned as the actors. His seminal concept of a *theatre of knowledge*⁵ was based not only on the visibility of knowledge and on living impressions but also on the fun and pleasure to be derived from the experience⁴. A project team of the Humboldt University in Berlin referred to Leibniz's concept in their design of the exhibition *Theatre of Nature and Art*⁵, in which the university for the first time presented its entire spectrum of collections. The exhibits created a panorama of the history of human knowledge and they formed an organic associative complex that addressed all of the human senses. Throughout the entire run of the exhibition a coherent programme of events with lectures, demonstrations, theatrical readings, workshops for children,

symposia and concerts added an element of liveliness to the exhibition halls. These events were based on the experiences of museums experts, but also profited enormously from the pool of ideas and creativity present in a modern university. The production was so successful that the Humboldt University plans to continue and to develop further the staged concept in a permanent theatre of knowledge. Our key concept for the theatre of knowledge is that of the active presentation of objects from different spheres within their settings, combining this popularised form of presentation with entertainment and pleasure.

At present university collections and museums are experiencing a real renaissance in Germany. These collections are increasingly becoming an object of general interest both in academia and in the broader public⁶. I will argue that the university museum – with its variety of disciplines and collections, as well as its access to the experts and equipment of academic departments – is a nearly perfect basis for such a theatre of knowledge.

THE OBJECT AND ITS CONTEXTS

Today's predominant form of education is book- and Internet-oriented. Therefore young people rarely gain experience in dealing with real objects. In the past, teaching – together with research – has been one of the main rationales for universities maintaining collections. These collections were fundamental for teaching and research. In the course of time teaching methods shifted away from collections-based learning. A theatre of knowledge places the object in the centre again and attempts to reaffirm the powerfully evocative qualities of objects. However, in contrast to previous teaching methods, the theatre does not focus on one single aspect or discipline. Instead its aim is to enable a comprehensive view on the subject in all of its varied facets and to convey the context in which the respective object plays a special role.

The following examples illustrate this approach. A simple, rarely asked question shall serve as starting point: “How did this particular object make its way into this collection?” Usually, we see the exhibited result and cannot imagine the long and complex process from the first impulse to collect the object to the endpoint of its display. “How did the world's largest assembled dinosaur skeleton come into the Berlin (University) Museum of Natural History?” This query refers to the skeleton of a *Brachiosaurus brancai*, which belongs to an extensive collection of dinosaurs excavated by the

German Tendaguru expedition between 1909 and 1913. Tendaguru, situated in south-eastern Tanzania, has yielded one of the most important assemblages of Late Jurassic dinosaurs.⁷ Apart from the scientific notes, a wealth of transmitted material exists which can give us an idea of the great exertion needed to realise such an expedition. An example of this is E. Hennig's description of the project⁸. This account gives us insights into the daily life of an expedition that we do not think of when we are looking at a dinosaur, such as the financing of the undertaking, the march to Tendaguru Hill, the organisation of the daily work routine, involving indigenous laborers, the climate of the region, the physical risks taken, the atmosphere of camp life and the transportation of the excavation finds to Europe. The expedition documentation also includes three oil paintings completed by Ina Reck at Tendaguru Hill and several scientific drawings. Usually the aesthetic qualities of scientific drawings, often made by highly skilled scientists, are irrelevant. Here, the opposite is the case.

There may be some who have difficulty with the mosaic pieces that together form the context of the dinosaur's excavation. But those capable of more imagination will take to the complete and many faceted picture

of what it means to undertake an excavation and develop a specific idea. They will also learn of the uncertainties implied in any paleontological reconstruction. Paleontology is a field of hits and misses, in which the discovery of a new find can dramatically alter the way we interpret the past. Learning about different excavations, debates, interpretations and theories means portraying science, scientific ideas and concepts within their cultural context, a context made transparent with its protagonists, its motives and aims, its errors and successes. This transparency opens the way towards a dynamic view of science and scientific knowledge.

For the museum as a theatre of knowledge, this approach implies that those pieces of the mosaic that cannot be displayed shall be presented in other ways. Appropriate forms of performances, such as theatrical readings, public lectures and documentary films, must be utilised. Workshops, exercises and behind-the-scenes tours will allow a closer look at such working methods as digging, drawing, mapping, labelling, cataloguing and packing. Besides the sheer quantity of factual information and enjoyable entertainment, people will obtain the chance to come close to the researchers and their current work. In the language of the

performing arts, the link to the university guarantees a modern play with dynamic presentations, great actors and best properties. Remember, with the theatre of knowledge the museum's visitors are the theatre's audience!

An object from the classical archaeological collection can tell a similar story. It would be highly interesting to learn something about the parallels and, even more so, about the differences between the excavations of dinosaurs and antiquities!

APPEALING TO THE SENSES

A *good* exhibit is not necessarily a unique artefact or find but rather something that appeals strongly to the senses, capturing the visitor's imagination and stimulating further thinking. Not only dinosaurs were collected in East Africa, but also spears, shields and tusks and even human skulls. The film *Headhunting* by M. Baer (2001) forces us to pose the question as to exactly how human skulls came into anthropological collections for research purposes in the past. In the film a young Tanzanian computer scientist, the great-grandson of the East African chief Mkwawa who had fought the German colonialists for seven years before his death in 1898, goes "headhunting" in European museums and archives. He tries to figure out why German colonial officers cut off the head of his dead great-grandfather and took it to Berlin a century before. In the Peace Treaty of Versailles of 1919 a provision demanded that the skull be returned to Mkwawa's people in East Africa. The Germans however refused for many decades to carry out this provision.⁹ We cannot here further elaborate on the value of this illustrative example of teaching colonial history and of the confrontation with ethical questions, but much more could be said about this case.

At that time German explorers in East Africa also collected and preserved indigenous music, which was recorded with portable phonographs and later analysed at the university in Berlin. We need only to follow the traces of the collectors to find fascinating topics.

The theatre should appeal not only to the eye and to the ear but also to the touch. Looking at and studying objects is only one aspect of human experience; the next most important one is touching. University collections usually have a surplus of original material that can be used for experimental or educational purposes. Redundant or less important objects are sometimes simply thrown away or are neglected and left in inaccessible premises. These items should



A huge limewood skull for teaching and learning which can be dismantled into its constituent bones. The model was awarded the gold medal at the St. Louis World Fair in the United States in 1904. © Barbara Herrenkind

María Marco Such

Técnico Superior de Arte, Coordinadora de la Sala de Exposiciones Aífos, Universidad de Alicante, Alicante, España

also play a role in the theatre of knowledge, especially in laboratories where school-aged children will get the opportunity to search and discover things by themselves. It makes a great difference whether you have ever touched a *real* dinosaur bone or not!

CONCLUSION

Not all universities will have the resources of the Humboldt University at Berlin. But collaborations with local museums would be highly desirable in any case. Today the gap between the achievement of the sciences and their appreciation in public consciousness is painfully apparent to many. A *theatre of knowledge* could bridge the gap: using dynamic presentations of objects from different spheres which are embedded in their multifaceted historical, cultural and scientific contexts as well as audience-centred staging of these objects. n

References

1. Findlen, P., "Die Zeit vor dem Laboratorium: die Museen und der Bereich der Wissenschaft 1550-1705" in H. Grote, *Macrocosmos in microcosmo. Die Welt in der Stube. Zur Geschichte des Sammelns 1480-1800*, Berliner Schriften zur Museumskunde 10, Opladen, 1994, p. 191-207; 193.
2. Findlen *ibid.*, p. 193.
3. Unfortunately, the translation "theatre of knowledge" does not carry all the connotations present in the German term "Wissenstheater".
4. Bredekamp, H., "Leibniz' Theater der Natur und Kunst", in H. Bredekamp, J. Brüning, C. Weber (eds.), *Theater der Natur und Kunst. Theatrum naturae et artis. Essays*, Berlin, 2000, pp. 12-19.
5. *Theatre of Nature and Art. Treasure-trove of Knowledge*, Berlin, 2000/01 (www2.hu-berlin.de/hzk/theatrum)
6. The universities of Dresden, Göttingen, Greifswald and Münster published books about their collections, the university of Halle exhibited parts of its holdings, and others are currently in the process of creating dedicated museums. For an overview of German university collections see: <http://www2.hu-berlin.de/kulturtechnik/sammlungsdatabank.php>
7. Heinrich, W.-D., "The Taphony of Dinosaurs from the Upper Jurassic of Tendaguru (Tanzania) Based on Field Sketches of the German Tendaguru Expedition (1909-1913)" in *Mitteilungen aus dem Museum für Naturkunde in Berlin. Naturwissenschaftliche Reihe*, vol. 2, 1999, pp. 25-61.
8. Hennig, E., *Am Tendaguru. Leben und Wirken einer deutschen Forschungs-Expedition zur Ausgrabung vorweltlicher Riesensaurier in Deutsch-Ostafrika*, Stuttgart, 1912.
9. <http://www.einekopffagd.de/headhunting.htm>. The film is based on the book of M. Baer and O. Schröter, *Eine Kopffagd. Deutsche in Ostafrika. Spuren kolonialer Herrschaft*, Berlin, 2001.

Abstract The Association of Spanish University Museums and Collections

This article sets out to provide a clear definition of Spanish University Museums and their collections, and shows how their common objectives differentiate them from other museums. Historically, University Museums have played a key role in student and faculty training and research. Furthermore, they serve as art laboratories, providing a place where art schools can exhibit their work and experimentations. Spanish universities have in their care rich collections composed of artistic, scientific and bibliographical material. However, these resources remain unknown to the universities themselves and to their communities. We need to raise awareness at university level of the importance of conserving, preserving, and promoting these collections.

Résumé L'Association des musées et collections universitaires espagnols

Cet article veut offrir une vision claire des musées universitaires espagnols et de leurs collections et montrer en quoi leurs objectifs communs les distinguent d'autres musées. Historiquement, les musées universitaires et leurs collections occupent une place essentielle dans l'enseignement et la recherche, auprès des étudiants comme du corps enseignant. Ils jouent également un rôle de laboratoires artistiques en offrant aux écoles d'art des lieux d'exposition pour leurs œuvres et leurs expérimentations. Les universités espagnoles ont sous leur garde des collections d'une grande richesse, constituées de fonds artistiques, scientifiques et bibliographiques. Ces ressources restent pourtant mal connues des universités elles-mêmes et de la communauté universitaire. Il nous faut sensibiliser la communauté universitaire à la nécessité de conserver, de préserver et de promouvoir ces collections.

Historicamente, el coleccionismo ha estado unido a la docencia, particularmente en el campo de las ciencias naturales. Herbolarios, animales, objetos científicos han sido utilizados como herramientas de estudio e investigación. Sin embargo, en España, estos fondos se han convertido en objetos guardados o perdidos en algún almacén o, en el mejor de los casos, en piezas meramente contemplativas. Evidentemente, una de las funciones de los museos es proteger los objetos pero los museos universitarios no tenemos que ser ni actuar como el resto de los museos. Si bien es cierto que, al igual que estos, somos responsables de conservar, cuidar, investigar y difundir fondos, nosotros tenemos una función y objetivos diferentes. Nuestra misión es respetar la memoria histórica para investigarla, estudiarla y aplicar lo conocido a las necesidades actuales. Los museos o colecciones universitarias son, además, museos de museos, ya que reúnen fondos de distinta naturaleza en los campos del: arte, la arqueología, la etnografía, las ciencias naturales y la ciencia y tecnología, entre otros.

En España, la situación de los museos universitarios es descorazonadora. Salvo contadas excepciones, las colecciones no han sido catalogadas, lo que ha resultado en la desaparición de objetos, la pérdida de documentación, el deterioro de las piezas y robos. Podemos citar el ejemplo de la Universidad de Alicante, que, a pesar de

ser una universidad muy joven que cuenta con tan sólo 25 años de existencia, no comenzó a inventariar su patrimonio sino hasta hace muy poco, en 2002. Desde el principio, la labor de catalogación de piezas del MUA (Museo de la Universidad de Alicante) se limitó a aquellas obras que estaban más a la vista, dejando de lado el resto del patrimonio artístico universitario. En este caso, no se disponía de personal suficiente, ni de medios para realizar un inventario más extenso. Además, la mayor parte de las energías se centraban en la realización de exposiciones de obra externa y en la gestión que estas conllevan. Sin embargo, cabe destacar que, actualmente, el Rectorado y el Vicerrectorado de Extensión Universitaria, encargado de la cultura, están apoyando la catalogación de todo el patrimonio universitario, teniendo en cuenta, que el propietario de este patrimonio es la universidad, no los lugares donde están depositadas las piezas. De este modo, se evitan feudos que impiden que las obras estén al servicio de la comunidad universitaria y del resto de la sociedad. Según Ley Española, la única persona jurídica propietaria de todos los fondos patrimoniales es la Universidad, no las facultades ni los departamentos, de ahí la necesidad de la centralización de las colecciones.

Aunque parezca increíble, este trabajo en una universidad joven puede resultar sumamente complicado. Se han presentado

casos en los que difícilmente se puede obtener documentación sobre las obras encontradas. Antes de 1994, año en que comenzó a constituirse la colección que alberga el MUA, se adquirieron obras, sobre todo pinturas para adornar despachos, pero se tomaban como simple ornamento sin tener en cuenta su valor como objeto artístico. Este hecho ha dado lugar a una serie de dificultades para conocer su procedencia, el tipo de adquisición, su valor y los criterios de selección de las piezas. Aunque el trabajo es arduo, también es gratificante, sobre todo por la ayuda que nos han proporcionado las personas que llevan trabajando en la Universidad desde sus comienzos. Podemos catalogar esta labor de arqueológica, de reconstrucción de un pasado perdido, pero que, en esencia, constituye la historia de la institución. Si este problema se ha dado en una universidad nueva, el mismo adquiere una magnitud desbordante en el caso de las universidades históricas, ya que en ellas el tiempo y los recursos humanos se multiplican.

Para llevar a cabo el proyecto de Museo Universitario y plantear los objetivos de un museo universitario, la Universidad de Alicante estudió la tradición de los museos de origen anglosajón, por ser los más conocidos. Así descubrimos que países como Inglaterra, con un amplio pasado en este campo, atraviesan por problemas muy graves en el mantenimiento de sus colecciones. En el caso de España, había que estudiar, primero que nada, la tradición de museos y colecciones universitarias y, en segundo lugar, sus características y funcionamiento. Se realizó un primer sondeo por medio de cartas y llamadas telefónicas, ya que no existía ningún tipo de dato ni de control al respecto. De este modo, se elaboró un listado de colecciones y museos universitarios españoles que fue entregado a Peter Stanbury, presidente del ICOM-UMAC, para incluirlo en la página Web que estaba construyendo la Macquarie University de New South Wales (Australia).

El UMAC se preocupa por el patrimonio de las universidades, su estado, mantenimiento, difusión y protección. Peter Stanbury ha realizado una labor sobresaliente, ya que no sólo se dedicó a resolver los problemas existentes en su país, sino que fue más allá al crear una Web que alberga los museos universitarios de todo el mundo y que dio paso a la constitución del citado Comité. El éxito del UMAC radica en la unión de los profesionales con el propósito de reclamar derechos para los museos universitarios que, generalmente,

permanecen desconocidos, incluso dentro de la propia universidad.

El ciclo de conferencias sobre el Patrimonio Universitario Español organizado por la Universidad de Valladolid en el año 2001 fueron sumamente útiles, ya que, por primera vez, reunieron a los técnicos encargados del patrimonio universitario tales como profesores, gestores universitarios, conservadores y becarios. Todos concordábamos en la falta de apoyo con la que contamos y la dificultad que supone, en una universidad, trabajar en un campo que se considera ajeno a la propia idiosincrasia universitaria. Esta base de datos realizada por la Universidad de Alicante sirvió de punto de partida para la creación de un listado de museos universitarios españoles. El resto de las universidades reunidas ayudaron a ampliar y esclarecer la información disponible. Además, se incluyeron otras universidades que no estuvieron presentes pero de las que se obtuvo noticias posteriormente. A este nuevo listado se le añadieron más campos: universidad, nombre del museo o colección, departamento responsable, director, técnicos, otro personal, dirección, código postal, ciudad, provincia, teléfono, fax, dirección de Internet y e-mail de contacto. Esta información puede consultarse en la página Web: www.lib.mq.edu.au/mcm/world/.

Estas gestiones fueron el primer paso para la creación de una futura asociación de profesionales de este campo que deseaban unir fuerzas para poner sobre la mesa las cuestiones principales, buscar una solución a los problemas comunes y concienciar al gobierno de nuestras universidades de la importancia del patrimonio como sello identificador de cada institución. Las colecciones son la historia que ha hecho de una universidad lo que es y no otra cosa. Son también las páginas en las que se escriben su evolución y desarrollo.

El objetivo de esta asociación es difundir el patrimonio universitario español. Los profesionales del cuidado del patrimonio nos brindamos apoyo para hacer fuerza en cada una de las universidades, para aprovechar los recursos disponibles y trabajar en proyectos comunes destinados a conservar los bienes y difundirlos entre las universidades, mediante exposiciones compartidas o exposiciones de los fondos de cada universidad en otras.

Para terminar, debo recalcar que considero fundamental el trabajo que se está realizando y que ha alcanzado repercusión internacional. Todos y cada uno de nosotros somos conscientes de lo importante que es el patrimonio universitario,

de la tradición de nuestros museos y del orgullo que nuestras colecciones suponen para la comunidad universitaria. n

Agradecimientos

Quiero agradecer a Lorena Cantó y Julie Cole la ayuda que me han prestado, respectivamente, con la base de datos y la recogida de información.

Di Yerbury

Emeritus Professor, Vice-Chancellor and President of Macquarie University, Sydney, Australia,
Chair of the New South Wales UMAC Committee

Résumé Actions de proximité : structure et coordination

En utilisant une analyse en trois étapes des actions de proximité des universités et, comme cas d'étude, la galerie d'art d'une université australienne, l'article préconise l'approche la plus affinée, étape 3, afin de favoriser un engagement durable, d'intérêt réciproque, au service de la communauté. Les actions de proximité de l'étape 3 sont ciblées, stratégiques, bien conçues et bien exécutées, mettant en œuvre les atouts institutionnels et les axes prioritaires de la mission universitaire. Ainsi, les actions de proximité des musées universitaires seront plus volontiers reconnues et encouragées en tant qu'activité institutionnelle fondamentale.

Resumen Actividades de involucramiento comunitario – un enfoque estructurado y coordinado

Este artículo analiza las actividades de involucramiento comunitario de las universidades y realiza el estudio de caso del museo de una universidad australiana. Recomienda a las universidades que establezcan relaciones sostenibles y mutuamente beneficiosas con su comunidad recurriendo a la fase más elaborada de dicho análisis. Esta fase selectiva y estratégica requiere una planificación y una realización perfectas, ancladas en los puntos fuertes de cada institución y en sus prioridades académicas. De este modo, las actividades outreach de los museos de universidades serán percibidas como una actividad institucional fundamental y, como tal, recibirán el apoyo necesario.

The modern university cannot be an ivory tower; however, community engagement, if not tackled strategically, can be a “bottomless pit”. To ensure sustainability and mutual satisfaction, the outreach needs to be well planned and affordable.

Every university institution needs to formulate a distinctive mission, focus on priorities and engage in business planning to forge a competitive edge in research and education. Likewise in its outreach work, which ideally builds on and complements its academic strengths.

Macquarie University in Sydney, Australia, engaged an American consultant, Professor Ernest Lynton, in 1994 to help formulate a Community Outreach Plan which developed from and strengthened its teaching/research/outreach nexus. The same year, I developed a three phase chronological outreach model, summarised below:

1. Early development of community outreach, characterised by:
 - Uncoordinated staff initiatives
 - Individual and institutional attempts to harness community support, and responses to community requests
 - Fortuitous interaction as a major seed of outreach
 - Little strategy or systematic integration with academic strategic directions
 - Limited quality assurance
 - Limited coordination
2. Significant outreach, characterised by:
 - Increasing demand from communities, and use of resources in meeting demands

- Concern by staff about recognition and rewards for involvement in outreach work
 - Growing realisation of the need for conscious choices
 - More systematic identification of the range and scope of outreach activities and key external constituencies
 - Reviews of quality and effectiveness
 - Emergence of distinctive, coherent themes
3. Structured and coordinated outreach work characterised by:
 - Nurturing of distinctive, coherent themes, related to key features of the mission
 - Organisational structures for strategic planning, and coordination mechanisms for outreach
 - Setting priorities to optimise the match between internal resources and external needs
 - More integrated approach to expectations and responsibilities of staff, to balancing demands and workloads, and recognising excellence
 - Systematic harnessing of input and feedback from staff and key external constituencies
 - Systematic and comprehensive quality assurance
 - Rational pricing and subsidising policies

When Macquarie now embarks on major outreach work, it endeavours to structure and implement it in ways consistent with Phase 3, as it did when the Art Gallery opened in 2000, with the Vice-Chancellor and President (the author)

as Director/Curator. This enables the University to avoid the problems it often experienced with its outreach programmes in earlier years – that is, in Phases 1 and 2.

PHASE 3 CHARACTERISTICS AS APPLIED TO THE NEW GALLERY

1. *Nurturing of distinctive themes and building on strengths.* The Community Outreach Plan identifies a manageable number of coherent themes, related to key features of the institutional mission, one of them being arts and culture. Macquarie positions itself as a leader in promoting policies for recognising, sustaining and enhancing University Museums and Collections (UMAC). Macquarie offers Australia's only undergraduate museum studies course. There is a dearth of public art museums in northern Sydney, providing both a need and an opportunity which Macquarie, with its University Museums and Collections experience and art collections, could readily fill. The Sculpture Park (operating jointly with the Art Gallery) was already Australia's largest public sculpture collection.

2. *Strategic planning and relevance to the community outreach plan.* While the first three of the five goals in Macquarie's community outreach plan are not directly relevant to the visual arts, dealing as they do with the provision of information services (Goal 1), research-based services (Goal 2) and continuing education programmes (Goal 3), the Gallery clearly promotes Goal 4 (“to serve as a cultural center for Macquarie's community and the region by supporting the arts”) and Goal 5 (“to share capacity in Macquarie's physical and intellectual infrastructure and facilities”). The Director prepared a plan well before the Gallery opened which was used as teaching material for professional development seminars for museums.

3. *Planned physical facilities.* The Gallery was designed to professional standards when the new Administration Building was conceived. Public spaces of the building were fitted with professional tracking and light controls, to furnish additional secure exhibiting spaces. The building's foyer accommodates groups visiting the Gallery, including school children. The Function Room, with catering facilities, was designed for convenient interaction, while ensuring that food and drink do not come into contact with exhibits. The building's security staff provide professional protection for exhibits, and direct Gallery visitors.

4. *Coordination mechanisms* include Macquarie's UMAC Committee, and the combined organisation of school visits to the University Museum. Collaboration between Macquarie UMAC staff, and other cultural staff such as photographers, digital designers and video-makers, provides a mutually supportive community. Co-ordination with conferences and academic programmes includes internships for arts administration students. Promotion is facilitated by the central marketing unit, which publishes *Culture on Campus*, a free e-newsletter and website. The Gallery has been very successful in attracting free advertising and media coverage including reviews.

In 2001, Macquarie launched, with *AdLib*, its Museums and Collections Information Management System (www.lib.mq.edu.au/mcm/). With thousands of image-based records, users can catalogue, track and search the various collections, while staff can deliver via the Web to new audiences, including remote schools. The database also supports Museums Studies.

5. *Strategic priority-setting.* The Gallery team includes an Education Officer in recognition of the priority afforded to outreach to schools. This is managed on a structured, coordinated basis, with attention to the High School Certificate syllabus and the special needs of institutions in Macquarie's School Partners Program. Educational kits for different age groups are prepared for each exhibition.

6. *Staff responsibilities and inputs.* By employing dedicated, professional staff, the Gallery avoids the common problem (which surveys suggest exists in many Australian UMAC) of academic or general staff being employed primarily for other purposes, whose UMAC duties are often not formalised in workloads. At Macquarie, the Central Operating Budget assists with staffing the University Museum. Staff systematically contribute to planning and organising exhibitions, and are invited to curate selected shows as part of their professional development.

7. *Strategic alliances and inputs.* The Gallery has mounted collaborative and exchange exhibitions with the National Gallery of Australia and regional galleries. Many museums have generously loaned works to Macquarie for its University Museum exhibitions while, in turn, significant items in University Collections are loaned to museums. As a non-commercial gallery, it can also co-operate with commercial outlets to host invited guest

exhibitions, with potential buyers directed to the commercial gallery.

8. *Systematic quality assurance and feedback.* Comments are sought from all visitors, and written evaluations and feedback obtained from teachers accompanying school groups. A conservation expert employed by the University to service all museums and collections on campus continuously monitors temperature, humidity, lighting, etc, providing fortnightly reports; inspecting collections and advising on preservation; arranging conservation and restoration where necessary; and providing specialist input on physical aspects of quality assurance.

9. *No-fees policy.* Macquarie provides certain outreach activities on a non-charging basis, eg, free community concerts, films introduced with expert talks, and visits to the Gallery and other collections. The benefits it receives in return for the Gallery's outreach work include access to potential students, the good will of teachers; access to many other museums and galleries and their holdings; positive public relations; and community support; and very generous donations of artworks from artists and owners on a tax-deductible basis.

CONCLUSION

Several Australian University Museums experience problems in relation to buildings and facilities, collections management including physical care, staffing, databases and cataloguing, and services. With accumulating funding pressures, some Australian University Museums are regarded as a dispensable drain on overstretched resources rather than an integrated core activity.

Opening a new Art Gallery in such challenging times could have been an unpopular proposition. Instead, it was recognised (in terms of the University's outreach mission statement) that this venture, along with all other outreach work, should be on the basis of a "sustainable and mutually beneficial interface between selected, high priority needs" in the community, and "Macquarie's expertise, functions, artistic activities and infrastructure". The early stage of such outreach work is characterised by fortuitous interactions; the second phase involves a "growing realisation of the need for conscious choices"; while Phase 3 outreach is more selective and strategic, and matched to institutional strengths and priorities in the academic mission. Starting out with the Phase 3 approach made the Gallery viable from the outset. n

References

- "Cinderella Collections: University Museums & Collections in Australia" in *Report of the University Museums Review Committee*, AGPS, 1996.
- "Transforming Cinderella Collections: The Management and Conservation of Australian University Museums, Collections & Herbaria" in *Report of the DCA/AV-CC University Museums Project Committee*, AGPS, 1998.
- Di Yerbury, "The Cinderella Collections: An Australian Fairy Story" in *Managing University Museums*, OECD, 2001.

Desperately Seeking Sustainability: University Museums in Meaningful Relationships

Sally MacDonald

Manager, Petrie Museum of Egyptian Archaeology, University College London, London, U.K.

Résumé *Les Musées universitaires en quête d'associations durables*

L'auteur décrit les atouts que les Musées universitaires peuvent apporter aux partenaires potentiels : l'accès à des collections, bibliothèques et archives spécialisées ; une solide compétence interdisciplinaire ; l'acquisition d'un savoir approfondi et d'une notoriété, conférés par l'association avec une institution universitaire. L'auteur, qui reconnaît que les Musées universitaires ont tardé à prendre toute la mesure de leur potentiel, décrit l'évolution et l'enrichissement qu'ont amené des partenariats récents. Elle les examine du point de vue local, régional, national et mondial.

Resumen *Buscando desesperadamente la sostenibilidad: museos universitarios y colaboraciones relevantes*

La autora ilustra las ventajas de las que pueden beneficiarse los potenciales colaboradores de los museos de universidades: acceso a colecciones, bibliotecas y archivos especializados, así como a conocimientos multidisciplinares, aprendizaje en profundidad y proyección pública. Si bien los museos universitarios han tardado en tomar conciencia de sus posibilidades, la situación está cambiando, como lo demuestra una serie de nuevas y exitosas colaboraciones que la autora analiza desde una perspectiva local, regional, nacional y global.

In the last few decades, many University Museums and collections have experienced a period of self-doubt, a crisis of confidence. Funding for higher education was increasingly stretched, and in many institutions this coincided with changes in teaching priorities. As a result, some collections were neglected by their parent institutions¹. Others were simply thrown out. The more successful museums reinvented themselves, restructuring, reviewing their objectives and attracting new audiences. For some, new partnerships became essential to survival.

Many University Museums house internationally important collections and were already experienced in collaboration within their specialist disciplines for the purposes of research. Others were compelled by the harsher economic climate to adopt more strategic approaches and forge new kinds of links. A study carried out in England in the late 1990s² found that 78% of University Museums and collections had links – long-term or project-based – with local government in their area, and some also worked closely with regional arts providers.

Given the late 20th century consensus that University Museums were in crisis, it might be expected that these new partnerships would be born of desperation. Most university collections were and are acutely aware of their weaknesses and of what they stand to gain from partnership, such as:

- Better management of resources (money, people, collections)
- New audiences
- Expertise in working with new audiences
- Access to new sources of funding
- Higher public profile through community and mass media

University Museums have perhaps been less quick to articulate their strengths and potential, which include:

- Specialised collections accumulated for teaching and research
- Specialised supporting libraries and archives
- Access to cross-disciplinary expertise, including research skills
- Tradition of quality provision (e.g. hands-on access)
- Access to higher education and research funding
- Higher public profile through association with an academic institution

An understanding of such complementary strengths is critical even to informal collaborations but essential for partners entering longer-term or more formal relationships, particularly where strong external incentives, such as grant funding, may require unusual alliances. Where compatibility exists, though, such external incentives – global, national, regional or local – can nurture and sustain partnerships.

INTERNATIONAL PARTNERSHIPS

International partnerships have traditionally tended to focus around shared subject specialisms; projects to develop research programmes, touring exhibitions or publications. The growth of digital technologies – online catalogues and learning resources, subject portals – offers huge potential to increase such links, and substantial funding is available from, for instance, the European Union, to enable collaborations to take place. Meanwhile specialist disciplines are slowly broadening

their perspectives. Some museums with international ethnographic collections – the Pitt Rivers Museum at Oxford University is one – are developing new kinds of partnerships with source communities – engaging in dialogues on the ownership, care, documentation and interpretation of university collections⁵. Such partnerships have the potential to offer multiple interpretations of objects previously presented according to western academic taxonomies.

NATIONAL COLLABORATION

At a national level, non subject-based collaborations have perhaps greater potential and here government incentives can play a major role. In England, the Widening Participation initiative, instigated by a 1997 Government report into higher education and backed by substantial funding, encourages universities to accept a broad student intake⁴. The initiative is particularly aimed at the older-established institutions that have traditionally admitted a disproportionate number of students educated at private, as opposed to state-run, schools. Many such universities also administer museums and some of these have seized this opportunity to demonstrate their potential as shop windows for the university. To function effectively in this role they must engage more actively and openly with their target audiences. Government guidelines stress that partnership will be crucial to success, and suggest a range of possible partners for universities, including local and regional government, schools, colleges and community forums.

University College London (UCL) has recently appointed a Collections Education Officer, funded through the Widening Participation initiative. She works closely with target primary and secondary schools, and with play and youth services administered by the local education authority. Her role is to develop collections-based programmes, including outreach handling sessions, museum visits with specialists on hand, summer schools, university experience days and a range of events for young people and their parents. Such programmes have the potential to benefit each partner. They help to raise educational aspirations among people who would not otherwise have considered university an option. In addition, they enable the university to attract a more diverse student body, and its museums to serve a broader audience more representative of the local community. All of the institutions involved in these partnerships have access to Widening Participation funding and are essentially working to the same political agenda.

The availability of government and other funding has provided a powerful incentive for the forging of new partnerships. In the United Kingdom, the Heritage Lottery Fund (HLF) through its support of publicly-oriented heritage projects has transformed museum provision in recent years. The availability of this funding prompted a partnership between The Petrie Museum of Egyptian Archaeology at UCL and two local authority museum services in Croydon and Glasgow, and enabled the creation of a touring exhibition from the Petrie collection⁵. The exhibition drew on recent research but was geared to non-academic audiences and presented ancient Egypt in a new and challenging way, examining, amongst other things, the politics of archaeology and the ethics of displaying human remains. University Museums have perhaps greater potential than, say, national museums to experiment with new display methods, and to provoke controversy and debate. Croydon and Glasgow museums, as host venues, brought their own expertise to the project. They were fully involved in exhibition design and interpretation to ensure that it would cater for their local audiences, and they used their extensive contacts and experience of outreach work to construct events and marketing programmes to attract a new audience, such as young people from ethnic minorities, who might not otherwise visit such an exhibition. All partners benefited from this collaboration, and a little-known university collection was seen by over 90,000 people.

REGIONAL INITIATIVES

University libraries have already demonstrated the potential for imaginative regional partnership, collaborating with local authority libraries in geographical and subject-based networks. The aim is to maximise resources and enhance public service by sharing their holdings, working together on research and providing combined training programmes. In Sunderland, in the North East of England, academic and public libraries now operate a single reader's ticket scheme, offering all library users access to the general and specialist resources of the whole region.

Such regional collaborations are now being proposed for museums; and funding is being sought to establish a system of regional museum "hubs" one in each of the nine English regions⁶. Each hub consists of several larger museums, some

including University Museums. The hubs are intended to become centres of excellence, ensuring that regional resources are truly focused on the needs of regional audiences. These new structures encourage University Museums to work with other museums in their regions, to better serve their existing audiences and to attract new ones. Some already have experience of such creative partnerships. In 1992 management of the Hancock Museum, owned by the University of Newcastle upon Tyne, was transferred by formal agreement to Tyne and Wear Museums Service, which already ran several museums in the region. Under the agreement, the university retained ownership of the Hancock collections but Tyne and Wear Museums agreed to manage the Hancock on behalf of the university. As a result, the Hancock now benefits from professional programming, marketing and interpretation and the expertise of a large and diverse staff team. Many more people also now have access to the Hancock

collections; visitor figures rose from 80,000 in 1992 to 120,000 in 1999, and yet the Hancock remains very much a University Museum, with the collections used in teaching across a range of academic departments.

Elsewhere, new building projects, and the need to find funding for them, have acted as a catalyst for regional and local partnerships. The National Library of Women, owned by London's Guildhall University, forged a partnership with the London Borough of Tower Hamlets to plan a new home for the collection, the project envisaged as a cornerstone for regeneration in a poor area. Such strategic planning enabled the National Library to attract funding from area regeneration budgets and from HLF, neither of which would have funded a project designed solely for academic use. The new Women's Library, opened in 2002, includes facilities for scholars and the general public and illustrates the direction university collections must take if they are to access public funding.



A young visitor encounters an octopus at the Grant Museum of Zoology, UCL. Participation networks have opened up University Museums to wider audiences. Photo Andy O'Connell © Grant Museum of Zoology, UCL

Some of the most effective partnerships can be made at a very local level. A recent initiative at Cambridge University involved four University Museums – of zoology, geology, history of science and archaeology/ anthropology – working together on an outreach project to raise their profile with local audiences. A project established by two adjacent university museums in Oxford – the Oxford University Museum of Natural History and the Pitt Rivers Museum – likewise aims to attract a more diverse and local audience. Both projects have achieved considerable success through planned, shared marketing and mobile and off-site promotions. They have raised important but basic issues to do with signage, opening hours and working practices. And both now face a challenge of sustaining change once the external project funding that helped initiate them runs out.

The Egypt Centre, a museum run by Swansea University, has developed an impressively strong volunteer programme – including its own young volunteers group – with volunteer training and development at the heart of its work. The Centre is taking advantage of project funding to develop their services for disadvantaged children, as part of its objective to work constructively with children with special needs. Partner schools in the Swansea area nominate children who could benefit from the programme, which is designed to increase children's confidence and aspirations. Although the project funding is short-term, the museum's commitment to volunteer development bodes well for the partnership to be sustained even without external support.

CONCLUSION

Some partnerships of the kind cited here may only need to be short term. Others require longer to mature, and will need time and effort to sustain. Support from outside will help but a partnership can only work when it answers genuine needs on both sides, when partners value their own and others' contributions, and when everyone is clear about what is expected of them. The potential benefits for University Museums in entering relationships are enormous; new ways of understanding collections and better ways of using them, new audiences, new skills, and a far brighter future. n

References

1. Museums Association, *Museums and Higher Education*, London, Museums Association Annual Report, 1991.

2. Bennet, O. et al., *Partners and Providers: The role of HEIs in the provision of cultural and sports facilities to the wider public*, Bristol, Higher Education Funding Council for England (HEFCE), no. 99/25, 1999.

3. Peers, L., "Sharing Knowledge", *Museums Journal*, May 2002, pp. 25-27.

4. Higher Education Funding Council for England (HEFCE), *Strategies for widening participation in higher education*, Bristol, no. 01/36, 2001.

5. MacDonald, S., "An Experiment in Access", *Museologia*, no. 2, 2002, pp. 101-8.

6. Resource, *Renaissance in the Regions: a new vision for England's museums*, London, Resource, 2001.

Challenges for University Museums: Museums, Collections and their Communities

28

Sue-Anne Wallace

Director, QUT Cultural Precinct, Queensland University of Technology, Brisbane, Australia

Résumé Une gageure pour les musées universitaires : musées, collections et communautés Parmi les difficultés auxquelles sont confrontés les musées universitaires, certaines affectent tout autant les musées non universitaires tandis que d'autres sont spécifiques à l'environnement universitaire. Cet article examine l'intérêt des relations qui peuvent se développer entre les musées et leurs différentes communautés – qu'il s'agisse du public, des visiteurs ou des partenaires – et suggère que l'identification de la communauté muséale semble un processus plus complexe pour les musées universitaires que pour leurs homologues non universitaires.

Resumen Retos de los museos universitarios: los museos, sus colecciones y sus comunidades Los museos universitarios se enfrentan tanto a los desafíos de los museos no universitarios como a aquellos específicos a los museos universitarios. Este artículo estudia la importancia de las relaciones que deben fomentarse entre los museos y sus comunidades (público, visitantes o accionistas) y recalca que la identificación de la comunidad de un museo universitario es más compleja que la de los demás tipos de museos.

National and State museums appear confident about the identification of their communities as their purpose is to play a public role. Through the resonance of their collections with their immediate environment, the local community is especially attracted to the museum. So too is a wider community enticed by the 'blockbuster' and specialist exhibitions that expand visitors' horizons by showing rare and precious things or new discoveries.

University Museums have developed in a scholarly environment, often with a limited public function, if one exists at all. When University Museums chase the public outside the university campus, it seems they lose touch with the point of difference that makes them unique – the relationship with the university itself, their key stakeholder. Building partnerships with university faculties, and extending these partnerships into the business or public sectors, is likely to create a more sustainable base from which to develop University Museums. Such business alliances can also provide credibility for funding of museum programmes in times of fiscal restraint in the university sector.

Some University Museums seem to disappear into the university environment, their collections pitched to students and staff as an adjunct to teaching and research programs, existing for reasons other than museological,¹ which may be entirely appropriate. Such collections may suffer through use, sometimes through neglect, and, often, through a lack of collection management, possibly becoming a liability to the university rather than an asset. Other University Museums that set about competing with the more open world of non-University Museums, while promoting a public role, may be disadvantaged by an

insufficiency of resources in comparison with those available to government-funded museums.

I have not always worked in museums, let alone University Museums. However, of my eleven years in museums, four were spent in a national art gallery, four in a university art museum not colocated with the university and the past three in a cultural precinct, including an art museum, sited in the heart of the university campus. While my experience relates to art museums, it is relevant, I believe, to most if not all University Museums. What I've learnt is that seeing the museum from the perspective of the visitor rather than the collection is a critical success factor.

Visitor experiences are very much on the minds of museum workers these days. Evaluation of visitor experiences consumes much time in many museums. Some large

er museums take the opportunity to do front end evaluation to test ideas for new exhibitions with target audiences. Audience response is then built into curatorial direction and exhibition design. It seems to me that University Museums have not considered their audiences' needs with such intense interest.

COMMUNITIES, AUDIENCES, VISITORS, CLIENTS

There are a number of terms here – communities, audiences, visitors. I should pause and indicate where these overlap and where they diverge. Communities are like families, although the cords that tie them together may not be as secure as the familial bond. Communities have a commitment and sense of ownership, in this case with the museum and its programmes. Audiences, on the one hand, are *assemblies of listeners*², whose involvement with the museum is quite limited. Visitors, on the other, are implicitly or explicitly, invited to the museum. They may give their opinions about what they see and what they do or they may hardly communicate with the museum and its staff. Scholars have identified three types of attitudes that prevail towards visitors – those of stranger, guest and client – sometimes co-existing, sometimes in conflict.³ According to this research, when a museum affords primacy to the collection, visitors are likely to remain strangers; when a museum emphasises its educational programmes, visitors become the responsibility of the museum, like guests. Museums that prioritise their responsibilities and accountabilities to their visitors develop a client relationship with them.



Gwyn Hanssen Pigott (born 1935) Pale suite with cups, 2001. Twelve glazed, wood-fired porcelain vessels, wheel thrown 13.5 x 92 x 16 cm. Purchased 2001. Photographer: Brian Hand © Gwyn Hanssen Pigott.

What happens in University Museums? I have suggested that University Museums, having largely grown around their collections, have taken collections as the cornerstone of their existence, rather than their audiences.⁴

The Queensland University of Technology (QUT) Art Collection was begun in 1945, while the museum, QUT Art Museum, only opened in May 2000. Before the collection was housed in the museum, it had considerable significance to the university.⁵ It began as a teaching collection. The audience, therefore, was the teaching faculties and the student body. However, as the focus of teaching shifted, the collection had less direct pedagogical relevance. Nevertheless, it did retain significant visibility as an increasing percentage of the collection was installed in public areas of the university.

With curatorial staff to support the development of the collection, it continued to expand through judicious purchases and gifts, doubling in size during the 1990s. A push to open a museum to house the collection was finally successful in 1999, enabling the works of art to be appreciated by wider audiences, both university and public, and enhancing significantly the university's commitment to serving the broader community of Brisbane and Queensland. Universities, however, expect more than public acknowledgement in return for their investments in museums. Some further benefit must accrue to the campus to justify the resources expended on building museums and maintaining their operations.

THE VIRTUE AND PRESTIGE OF COLLECTIONS

It has been claimed that in the nineteenth century, *public art museums became signs of politically virtuous states*, while in the twentieth century one read that *museum fever continues unabated*.⁶ Such virtuous and feverish activities could be seen as catalysts for universities to build museums and to enlarge existing museums, thereby enhancing public access to their collections. Furthermore, most Australian universities include a commitment to community service in their charters, so support of a university museum, open to the public, is seen as recognition of this civic duty.

At the same time, there is significant prestige that can accrue to the university because of the value of the objects or works in the collection, along with their provenance. If university research led to the discovery of the objects now publicly displayed, then the university museum provides an opportunity to celebrate such scholarship.



John Wilson (born 1955) *Figure and bird*, 1997. Coloured ochres, feathers, bark, fibre and string on ironwood. Purchased 1998 with funds provided by Barclay Mowlem Construction Limited through the QUT Foundation © John Wilson

This is true, for example, of museums focusing on archaeological, anthropological or scientific finds, such as the Nicholson Museum at the University of Sydney or Macquarie University's Museum of Ancient Cultures. Art museums that show the work of current or former university staff and students may similarly promote the reputation of the university, its teaching and research.

Yet such virtue and prestige are largely ignored by some University Museums, more intent on appealing to mass culture⁷ than university values. Appealing though mass culture may be – it is after all our quotidian environment – it is not necessarily going to reflect the values of the university, which surely relate to pedagogy and prestige as much as entrepreneurship.

RE-FOCUSING UNIVERSITY MUSEUMS ON THEIR CLIENTS: THE UNIVERSITY COMMUNITY

So a different approach for University Museums is from the perspective of the client rather than the collection. The client/museum relationship is critical to all museums but perhaps none more so than University Museums that have tended to neglect this aspect of their work, focusing on the object/museum junction.

If I ask my Australian university colleagues about the clients for their museums, the answers I am most likely given relate to the number of public visitors entering the museum. Attracting these visitors and satisfying their needs serves the civic duty of the university. But in times of economic belt tightening, when funds for teaching and research are at risk, such audiences may seem marginal to the university's core business.

At QUT we focus on the university community as our key client. While we attract a significant audience to the Art Museum (estimated at 30,000 in 2002) and the Cultural Precinct (estimated at 70,000 in 2002) through educational and public programmes, the key to our success is the partnerships we have formed with the schools and faculties of the university, our communities and, moreover, our stakeholders.⁸

For this reason, while not neglecting the public, at QUT Cultural Precinct we focus on the university community as our key client. Although the partnerships that can be developed with the teaching and research areas may be the most challenging, they are likely, ultimately, to be the most rewarding for the university, the museum and the public. n

Acknowledgments

Valuable, constructive comments by Peter Tirrell and Steven de Clercq have helped tighten the focus of this paper. My thanks to them both for their support during a challenging period.

References

1. For example, the University of Adelaide's Insect Reference Collection for undergraduate teaching, not open to the public and the University of Melbourne's Herbarium, for research and teaching purposes only, cited in the report *Transforming Cinderella Collections*, Canberra, Department of Communications and the Arts, and the Australian Vice-Chancellor's Committee, 1998, p. 302 and p. 260.
2. *Oxford English Dictionary*.
3. Doering, Z. D., "Strangers, Guests, or Clients? Visitor experiences in museums", *Curator: The Museum Journal*, vol. 42, no. 2, 1999, pp. 74-87.
4. De Clercq, S., Lourenço, M., "A Globe is just another Tool. Understanding the Role of Objects

■ European Cooperation in the Protection and Promotion of the University Heritage

in University Collections”, *ICOM Study Series UMAC*, pp. 4–6.

5. Rainbird, S., *Selected Australian Works*, Brisbane, Queensland University of Technology, 1995.

6. Duncan, C., *Civilizing Rituals inside public art museums*, London, Routledge, 1995, p. 21.

7. For an enlightened overview of mass culture see Hall, P., “The marriage of art and technology” in *Cities in Civilization*, London, Phoenix Giant, 1998, pp. 505 - 608.

8. At QUT Cultural Precinct, a suite of programmes for specific audiences (young children and seniors) has been developed in partnership with teaching and research units of various faculties and divisions, including the schools of Early Childhood, Nursing, Human Movement Studies, Design and Built Environment, Humanities and Human Services and faculties of Creative Industries, Business and Science.

Patrick J. Boylan

Professor of Heritage Policy and Management, City University, London, U.K.

Résumé *La coopération européenne pour la protection et la promotion du patrimoine universitaire*

Les universités, qui sont l'une des principales contributions de l'Europe à la culture universelle, ont amassé tout au long des neuf derniers siècles un patrimoine considérable, qu'il soit d'ordre matériel (édifices historiques, musées et collections) ou immatériel. Dans un monde soumis aux influences du marché, les universités subissent de fortes contraintes qui les incitent, pour assurer leur survie, à négliger l'héritage que leur a légué l'histoire. Cet article revient sur deux projets récents, “ L'Europe : campagne pour un patrimoine commun ” et “ Universeum : patrimoine universitaire et universités – Responsabilité et ouverture au public ”, projets qui ne sont que les prémices d'une grande campagne qu'il faudra mener dans la durée pour mieux faire connaître la valeur historique irremplaçable – et l'intérêt toujours actuel – du patrimoine universitaire de l'Europe.

Resumen *Cooperación europea para la protección y la promoción del patrimonio de las universidades*

Las universidades, que constituyen una de las más importantes contribuciones europeas al mundo de la cultura, han acumulado a lo largo de los últimos nueve siglos un considerable patrimonio tanto tangible (edificios históricos, museos y colecciones) como intangible. Para sobrevivir en el mundo actual, regido por una lógica comercial y de mercado, las universidades se ven sometidas a una fuerte presión externa para que descuiden el patrimonio que han heredado. Este artículo describe dos proyectos recientes: “Europa: Una Campaña a Favor del Patrimonio Común” y “Universeum: Patrimonio Académico y Universidades – Responsabilidad y Acceso al Público” que son sólo el comienzo de lo que no dejará de convertirse en una importante campaña a largo plazo para concienciar sobre la vital importancia tanto histórica como actual del patrimonio universitario europeo.

There is evidence that academies of learning undertaking and promoting research and teaching existed in many places during the Classical periods of ancient Greece and then Rome, and that these certainly included important libraries and works of art, and probably museum-type collections as well, in at least some cases. The most famous were the 4th century B.C. Greek *Lyceum* - most closely associated with Aristotle and his followers, and the great Library and *Museion* founded by Ptolemy Sotor in 290 B.C. in Alexandria, Egypt, which remained amongst the most important places of learning in the world for at least 600 years and numbered Archimedes amongst its most distinguished members. Though less is known about them, such academic centres existing in other regions and cultural traditions as well, particularly Asia, where there seem to have been academies of some kind in ancient Mesopotamia even earlier than in Greece, and the tradition of scholarly communities and special centres for them was already flourishing by the latter part of the first millennium A.D. in the Oriental and Muslim worlds perhaps 1,500 years ago.¹

However, it is generally accepted that the modern concept of a university, now copied and adapted in all parts of the world, is essentially a European one and arguably one of the most important European contributions to world culture. The first university was Bologna, Italy, founded in 1088, and this was followed in the next century by Paris, France (1170) and Oxford, England (1167). At least 16 more were established in the course of the 13th century, and by 1500, often regarded as the end of the Middle Ages, at least 77 of Europe's present-day universities were already established, ranging from Poland and Slovakia in the east, Sweden, Denmark and Scotland in the north, Portugal in the west, Sicily in the south.

THE EVOLUTION OF UNIVERSITY MUSEUMS

European universities were one of the most important pioneers in the establishment of museums, which frequently developed out of the need for teaching and research collections for use in a wide range of academic fields, particularly the natural sciences, anthropology and classical archaeology and antiquities, the earliest of which

can be dated back to the late Mediaeval period. Most of these historic universities, and very many others founded in more modern times, have a very rich material heritage in terms of their numerous specially developed historic buildings, which from the late 17th century construction of the original Ashmolean Museum in Oxford began to include special buildings to accommodate these collections and the related teaching and research.

It is probably fair to argue that collections-based and hence museums-based university research and teaching reached its high point in the mid- to late-19th century when the museum collections were central to much of the leading edge research of the day: work on the classification, progression and evolution of life in geology (particularly palaeontology), botany and zoology, and in the emerging new sciences of anthropology, ethnography and archaeology. As a result many University Museums have very large collections of material, which remain of fundamental and permanent importance in terms of both contemporary studies of taxonomy (the classification and naming of past and present life forms) or as evidence of past human cultures and societies.

However, over the past few decades university (and wider) science has moved in radically different directions, with far greater emphasis on areas such as geological structure and sedimentology and other processes in the case of geology, on research and teaching at the cellular, biochemistry and now genetic levels within biology, and on the sociology and social anthropology in the case of the human sciences. Similarly, many of the historic buildings that universities have built and occupied over perhaps a matter of centuries are regarded as no longer suitable for today's current needs, which call for much larger lecture rooms, laboratories etc. all equipped to meet contemporary teaching and research needs.

More recently still, the past decade or so has seen a quite dramatic change in the priorities and operations of many universities as institutions as a result of a combination of pressures. These include in many, perhaps all, European countries government policies pressing universities to adopt much more commercial attitudes towards the management of their resources, and seeking very large-scale expansion in student numbers to provide increased access to universities, which has rarely if ever been adequately funded by the governments demanding such developments. (To take one example, the United Kingdom government's own figures show that over the past 20 years the annual funding per student in British

universities has fallen by more than 40%, while the ratio of students to academic staff has worsened by over 100%.)

CHANGING PRIORITIES

Under such pressures universities and other higher education institutions are inevitably focusing their priorities onto what they regard as their current core areas of activity in teaching and research, and are questioning the future of those activities, which are not seen to be paying their way within the new market-driven academic world. Thus, when whole subject areas and individual courses that do not cover their way in terms of student numbers, external research grants or other funding are called into question, or even closed down completely, a university's expenditure on its heritage buildings and - particularly its - perhaps ancient - museums is similarly being thrown into sharp relief, and may well face very real uncertainty (or worse) in relation to their future.

However, such short-term and narrow views of the university's inherited past, whether in physical form, such as historic buildings or University Museums, or intangible, such as traditional colourful institutional and student traditions, is seriously misguided. Instead, the heritage of ancient universities (and indeed much younger institutions) should be recognised, protected, promoted and celebrated. Indeed, in the increasingly competitive and market-led world in which higher education has to operate these days there is a strong case for positively exploiting this in student recruitment, fund-raising and other marketing efforts, as a growing number of universities, both old and relatively young, are now recognising.

PROTECTING EUROPEAN UNIVERSITY HERITAGE

In the face of what was seen as a very real threat to up to 900 years of European university heritage, in 1999 the Council of Ministers representing the 42 Member States of the Council of Europe authorised the Council's Higher Education and Cultural Heritage Divisions to undertake a major study of issues relating to both the material and intangible heritage of European universities within the framework of the "Europe: A Common Heritage Campaign". Co-financed by the European Union, a two year programme of meetings and studies was initiated on the theme of university heritage as part of the promotion of Europe's common cultural heritage, with the active cooperation of historic universities in various countries including Belgium, Croatia,

Estonia, France, Italy, Lithuania, Poland, Portugal, Romania, Russia, Spain and Turkey. Four study conferences were held in the universities of Alcala de Henares (Spain), Montpellier (France), Bologna (Italy) and Krakow (Poland) to explore different aspects of the university heritage and to explore cases studies and practical ways of both defending this and - more important - actively promoting its importance both to society as a whole, and not least to the universities themselves. The "Heritage of European Universities" project is now completed with the publication of a substantial final report in November 2002 with contributions from 15 authors together with the texts of a number of key Council of Europe policy documents relating to both higher education and the cultural heritage²

Another recent project with similar aims, but focused most specifically on cooperation between a number of important university and other academic museums and collections, was also supported by the European Union through a grant under the EU's Culture 2000 programme. This was initiated under the title "Universeum: Academic Heritage and Universities - Responsibility and public access", and coordinated by the Martin-Luther-Universität Halle-Wittenberg (Germany), working in partnership with museums of the Universities of Amsterdam, Groningen and Utrecht in the Netherlands, Bologna and Pavia in Italy, Oxford and Cambridge in the United Kingdom, Leipzig in Germany and Uppsala in Sweden, as well as the Humboldt University, Berlin and the Royal College of Surgeons, London.⁵

The aim was to share knowledge and experiences and to undertake joint projects with the aim of enhancing access to the collections at all levels. Priorities included establishing directories of collections (not just museums) within the respective academic institutions, to stimulate awareness of the collections through travelling exhibitions, conferences and symposia, exchanges and loans, and scholarly research and teaching, together with the development of common use of electronic media, with a view to creating a "virtual" museum of resources to promote access to the academic heritage, (Universeum, 2002). One important achievement was the mounting in each museum in the autumn of 2001 of special exhibitions on subjects of common interest and promoting the other partners in the network, supported by access to an electronic guide to all the institutions covered. This work continues, and a permanent website to continue both the academic and professional exchanges and public information and promotion of the various museums and

collections was launched by Halle in June 2002.

These projects are seen as just a start of what will have to be a major long-term campaign, not least within the universities themselves in the first instance, but also with governments and the general public, to greatly improve knowledge of the vital historic importance, and continuing contemporary relevance, of the European university heritage, including the very many important University Museums. In particular, within the Council of Europe, discussions and studies continue on possible ways to take further what the report itself describes as “a vast agenda that has to be addressed by higher education authorities, heritage professionals, public authorities, local communities, international organisations, whether governmental or non-governmental, volunteer associations and certainly many other bodies”.⁴ n

References

1. For a more detailed introduction to the relationship between universities and museums throughout history and today, see Boylan, P.J., “Universities and Museums: Past, Present and Future”, *I y II Jornadas de Museos Universitarios*, Universidad de Alicante, Alicante, 1999, pp. 11-21; reprinted in *Museum Management and Curatorship*, vol. 18, no. 1, 1999, pp. 43 - 56; see also UMAC’s University Museums and Collections Worldwide
Website: <http://www.lib.mq.edu.au/mcm/world/>
2. Council of Europe, 2002: “Heritage of European Universities”
(Website: http://www.coe.int/T/E/Cultural%5FCo%2Doperation/education/Higher%5Feducation/Activities/Heritage_of_European_Universities/default.asp); Sanz, N., and Bergan, S., (eds.), *The Heritage of European Universities*, Strasbourg, Council of Europe Publishing, 2002.
3. “Universeum, 2002. Academic Heritage and Universities: Responsibility and Public Access” (Website: <http://www.universeum.de/>).
4. Sanz and Bergan, 2002, p. 173.