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## **Entre deux mondes**

La spécificité et le rôle contemporain des  
collections et musées des universités en Europe

- Volume 1 -

## **Between two worlds**

The distinct nature and contemporary significance of  
university museums and collections in Europe

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### **Jury:**

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To all the dedicated people who care for the collections of European universities

## Preface

For the typical traveller university museums and collections will have the appeal of those travel books with titles such as *Off the Beaten Track in Tuscany* or *The Paris Nobody knows*.

J. Hale, 1989

Recently, Sally MacDonald described the first time she visited the Petrie Museum of Egyptian Archaeology at University College in London. At the time, she was considering applying to the job of museum manager. For three weeks she had been fruitlessly trying to find the Museum. Finally, she managed to arrange a meeting as a prospective candidate. It was a cold and snowy December day. She recounts:

“[...] Despite having lived in London for ten years I had never heard of the museum. It was listed in guidebooks, and in the telephone directory, under University College London [...], but switchboard staff were unsure whether it was open to the public, and the museum extension just rang and rang. I later found out that I had called at a bad time; the museum had been closed for most of the year for security improvements, and strong diesel fumes from the main university boiler, located directly underneath the galleries, had caused staff to evacuate. [...] As soon as the door opened I was overwhelmed with the feeling that I had found something precious. The approach to the museum, the building in which it was housed, was so uninspiring [...], its contents by contrast so extraordinary and diverse, its displays so rich and yet so dry – I had to apply for the job. Getting it felt like being given a big gold key”<sup>i</sup>.

Anyone who has visited the Petrie Museum will recognize this. When I visited the Petrie for the first time – in 2002, also on a December morning – I had several London maps and internet prints yet it took me almost one hour to find the street. I entered a university cafeteria and asked a group of students if they knew where the Petrie was – all replied they had never heard of it. When I had finally found the museum, the building could not be more indistinct (even though it had a banner). University museums often share buildings with other academic facilities. The building hosting the Petrie also housed a library, countless department offices and, of course, the university boiler described above. After entering the door, I came by a security officer who not unkindly said ‘Yes?’, as if I was not supposed to be there. After having explained that I had an appointment for a meeting at the Petrie Museum, the security pointed out some stairs. I went up and found a closed door with the discreet indication ‘Petrie Museum of Egyptian Archaeology’. I rang the doorbell and some seconds later Sally MacDonald was welcoming me. Behind that closed door was one of the most exceptional collections of Egyptian artefacts in Europe and certainly the most exceptional I had ever seen – untouched since the time of Professor Flinders Petrie at the turn of the 19<sup>th</sup> century.

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<sup>i</sup> S. MacDonald, 2000. University museums and the public: the case of the Petrie Museum. In: P. McManus (ed.), *Archaeological displays and the public: museology and interpretations*, second edition, pp. 67-86. Archetype Publications, London; quote from p. 67.

to the public, to school groups, to children? This is hopeless – better leave it here where no one can see it”. I was very wrong.

Is there something special about university museums and collections? Are they all equally special or only a few of them? And what is it that makes them distinct? In Ulysses, James Joyce wrote that “the horseness is the whatness of all horses”. What is the whatness of university collections? These questions have been on my mind ever since I began working at the Museum of Science of the University of Lisbon.

This research has seen many twists and turns since it started more than five years ago. The first title was *Museus Universitários: Porquê e Para Quê? Estudo sobre os museus e colecções universitárias em Portugal* ('University Museums: Why and What For? A study on university museums and collections in Portugal') (December 2000). As in many countries, the first Portuguese museums were university museums or had university collections at their origin. In 1978, the *Associação Portuguesa de Museologia* organised a conference on the topic of university museums, but there was no significant follow-up at either the research or the political level. It seemed to me that the history and present reality of Portuguese university collections as a group deserved further study. My aim was to draw from two theses that had recently been done<sup>ii</sup> and undertake a comprehensive study of the contemporary reality of Portuguese university collections. Things meanwhile changed and this turned out not (yet) to be the in-depth study Portuguese (and Spanish) university collections lack and deserve.

In 2001, several fortunate coincidences directed the research to the international arena. The turning point was perhaps my participation in the founding meeting of the International Committee for University Museums and Collections (UMAC) in Barcelona in July 2001. In February 2002, a revised PhD plan was submitted to the Conservatoire National des Arts et Métiers (CNAM) in Paris. In July 2002, the Gulbenkian Foundation in Lisbon generously agreed to provide financial support for study visits to a number of university collections in Europe. In November 2002, I began a 'tour' that would eventually bring me to more than 200 European university collections in 10 European countries. Initially I had planned to conduct 20 study visits, but every time I arrived at a new university there were five or six times more collections than I had anticipated. Instead of two days, I usually stayed one week. This meant

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<sup>ii</sup> H.C. Gouveia, 1997, *Museologia e etnologia em Portugal, instituições e personalidades* [Museology and ethnology in Portugal: Institutions and personalities']. PhD in Anthropology-Museology, Universidade Nova de Lisboa; J.C.P. Brigola, 2000, *Colecções, gabinetes e museus em Portugal no século XVIII* ['Collections, cabinets and museums in Portugal in the 18th century']. PhD in History, University of Évora.

that more information was collected than can possibly be presented in this dissertation. My sincere apologies are therefore due to anyone who might feel under-represented.

Not everything was marvellous and surely not all is well in the world of European university collections. It was difficult to behold so much neglect, contempt, reorganisation, dispersion, isolation and loss. Although not unexpected, I was quite unprepared for the degree of arbitrariness and superficiality that sometimes seems to guide irreversible decision-making regarding collections. To learn that, in the 1980s, one university *sold* its almost 200-year botanical garden to a private firm to be partly transformed into a Chinese-Babylonian theme-park is clearly not for the faint-hearted. Several outrageous facts (at least from my point of view) are not reported here or only reported with minimal discussion, because there are more appropriate arenas for condemnations and advocacy. Also, this is not a text where easy and prescribed solutions for the problems of university heritage will be found.

The purpose of this research was to contribute to our knowledge of university museums and collections – where they come from, where we are now and what their contemporary significance is. A lot is happening in this field and rapidly so. The general museum community hardly hears about what is going on with university collections and society at large even less. Yet, in Europe university collections are public. Universities are their custodians, but they really belong to the people of France, Portugal and the Netherlands.

In April 2004, at the University of Lille, Professor Pier Ugo Calzolari, Rector of the oldest university – the University of Bologna – argued eloquently about the heritage of universities being at the core of the European identity. Although today there seems to be no clear understanding about what *the* European identity means, it is true that since the mid-15<sup>th</sup> century (possibly even earlier) university collections never knew any borders except those of knowledge. They circulated and exchanged knowledge across Europe regardless of wars, religion or political turmoil, and scholars and students who used them travelled as well, from Altdorf to Louvain and from Louvain to Padua – long before Germany, Belgium or Italy as such existed. These scholars and students knew about freedom of expression, universality, criticism and pluralism – long before these were recognized and incorporated by nation states as fundamental pillars of democratic systems. The fate of our university collections should concern all Europeans.

Marta C. Lourenço  
Lisboa, 17 July 2005

For the past three years I was fortunate enough to have the opportunity to visit some of the most extraordinary treasures in Europe. Contrary to what some people may think, not only *national* museums and archives have treasures under their wings. Treasures are also to be found in the universities of Leipzig, Lyon, Pavia, Porto, St. Andrews, Tartu, Utrecht and many others. In Bologna, I admired Aldrovandi's herbarium from 1551, marvellous in its late medieval style, ornamented with gold and red drawings and adorned initials. In Oxford, I saw the type specimen of the tsetse fly *Glossina morsitans* pinned to a label written by Dr. Livingstone himself. I looked at some of the artefacts collected by Captain Cook during his 18<sup>th</sup> century voyages of exploration at the anthropology museum in Florence. At the Utrecht University Museum, I saw the lens through which Christiaan Huygens discovered Titan, the largest moon of Saturn, 350 years ago. The lens still bears Huygens' signature, scratched with a diamond along its edge. In Uppsala, I saw Anders Celsius' original thermometer and visited Linnaeus' botany cabinet. I could go on and on.

While working in a university museum, it did not take me long to realise that this was a peculiar type of museum. A museum where things I thought would be difficult were actually simple and things that seemed simple turned out to be quite the contrary. For example, designing a complete bilingual website from scratch with online bookings for school groups, collections, images and downloads for teachers was unexpectedly simple and straightforward, yet it never seemed possible to get extra security staff to open the exhibition on Sundays. A museum where funds to participate in a scientific conference seemed easier to get than a design for a new exhibition leaflet; where 'research position', 'research project' and 'invited scientist' were part of the daily glossary of the university administration, yet 'interactive', 'museology', 'museography' and even 'curator' were never heard. Sometimes, the university asked: Why does a museum need a photographer? What is a conservator? Why do you need a designer for an exhibition – can't you do it yourself? Why do you need a restorer to repair an instrument – can't you find a student to fix it?

Our collection was not 'normal' either – at least it was different from what I had seen before in museums of science. There were magnificent instruments, but many were indistinct, with plenty of parts missing and whole apparatuses done with bits and parts of completely different equipment and then sealed with rubber. Models, there were lots of them: models of machines, models of topological surfaces, models of architecture, models of the atom and molecules, miniatures of steam engines. Many were dull and several were ugly. Together with the collection, there were a lot of papers and books: some were scientific articles, others were class plans, scribbled notes with mathematical formulae, drawings of machines, laboratory notes and equipment manuals. I remember thinking: "How is it possible to display this stuff

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## List of Acronyms and Abbreviations

AAM	American Association of Museums (USA)
AMNH	American Museum of Natural History (USA)
ANMS	Associazione Nazionale Musei Scientifici (Italy)
ACUMG	Association of College and University Museums and Galleries (USA)
AHRC	Arts and Humanities Research Council (UK)
AMCUE	Asociación de Museos y Colecciones Universitarias Españoles (Spain)
ASTUT	Archivio Scientifico e Tecnologico (Italy)
CAUMAC	Council of Australian University Museums and Collections (Australia)
CCSTI	Centres de culture scientifique, technique et industrielle (France)
CIMAM	International Committee for Museums and Collections of Modern Art (ICOM)
CIMCIM	International Committee for Museums & Collections of Musical Instruments (ICOM)
CIMUSET	International Committee for Museums & Collections of Science and Technology (ICOM)
CNAM	Conservatoire National des Arts et Métiers (France)
CDESR	Steering Committee for Higher Education and Research (Council of Europe)
CDHT	Centre d'Histoire des Techniques (CNAM, France)
CDPAT	Steering Committee for Cultural Heritage (Council of Europe)
CFAT	Carnegie Foundation for the Advancement of Teaching (USA)
CNR	Consiglio Nazionale delle Ricerche (Italy)
CNRS	Centre National de Recherche Scientifique (France)
CPU	Conférence des Présidents d'Université (France)
CoE	Council of Europe
CRUI	Conferenza dei Rettori delle Università Italiane (Italy)
DRAC	Direction Régionale de l'Action Culturelle (France)
EC	European Commission
ECSITE	European Collaborative for Science, Industry & Technology Exhibitions
EHEA	European Higher Education Area
EU	European Union
GATS	General Agreement on Trades in Services (WTO)
ICOFOM	International Committee for Museology (ICOM)
ICOM	International Council of Museums
IPM	Instituto Português de Museus (Portugal)
HEI	Higher Education Institution
HEMCGs	Higher Education Museums, Galleries and Collections
KAUM	Korean Association of University Museums
LOCUC	Landelijk Overleg Contactfunctionarissen Universitaire Collecties (NL)
MA	Museums Association (UK)
NATHIST	International Committee for Museums and Collections of Natural History
NH-NL	Nationaal Herbarium Nederland (NL)
OCIM	Office de Coopération et d'Information Muséographiques (France)
OECD	Organisation for Economic Cooperation and Development
R&D	Research & Development
RCSE	Royal College of Surgeons of England (UK)
SAE	Stichting Academisch Erfgoed (NL)
SIC	Scientific Instrument Commission
TEI	Tertiary Education Institution
ULB	Université Libre de Bruxelles (Belgium)
UMAC	University Museums and Collections (ICOM)
UMG	University Museums Group (UK)
UMIS	University Museums in Scotland (UK)
UvA	Universiteit van Amsterdam (NL)
WTO	World Trade Organisation
RCSE	Royal College of Surgeons of England



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[M.C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## 1. Introduction

At an international meeting of university museum professionals at the University of Lille, 1 April 2004, the philosopher Pier Ugo Calzolari, Rector of the University of Bologna, asked: "Quel sens donner à tout ce patrimoine? Pour quoi? Pour qui? Et comment?" The audience realized that Calzolari aimed right at the heart of their common problem: today the significance of university museums and collections, once taken for granted, is under intense scrutiny. Coming from a university rector, the bluntness of the question is even more meaningful. Firstly, it explicitly addresses a dilemma faced by many rectors, presidents and vice-chancellors today when confronted with collections that seem to be at odds with the present and future agendas of their universities. Secondly, more than merely asking a rhetoric question, Calzolari appeared to challenge the professionals gathered at the meeting: more understanding is needed so that sound arguments can be made.

Today, the same questions are being asked by university rectors, vice-chancellors and presidents worldwide. Not only are these questions asked, but – either due to lack of answers or because these are deemed unsatisfactory – action is being taken. In 2003 alone, at least 14 university museums in the USA were under threat of being closed and almost half were closed or collections were dispersed.

During the same year, the five oldest Dutch universities<sup>1</sup> signed an agreement on the transfer of two-thirds of their geology and palaeontology collections to Naturalis, the national museum of natural history of the Netherlands, and to local museums in the Netherlands and the Geological Service of Indonesia. Also in 2003, the Historical Museum at Lund University, Sweden, was saved from closure through a petition signed by thousands of citizens of the town of Lund. In August 2003, the Boston Globe reported budget cuts that could have a severe impact on the art museums at Harvard University, while observing that Harvard "seems to have turned against its art museums which *should* be among its chief connections with the larger world" (Temin 2003) [*italics in original*].

Nevertheless, 2003 was not a particular *annus horribilis* for university collections, as 2002 had already been harsh and so would be the year to come. University collections have been reorganised, neglected, down-graded, dispersed, sold and lost for at least the past 25 years. Indeed, university collections have probably always been reorganised, dispersed and lost. However, while in the past this occurred mainly for scientific reasons, over the past 25 years the reasons for reorganisation and dispersal seem to have become largely political and administrative. Even the good news – such as the reorganisation and re-creation of university museums in recent years – seems often to be politically motivated. Considering that it took many decades – if not centuries – to assemble these collections, current developments are happening at a disturbing pace. What is going on in university museums and collections today? What are the challenges and dilemmas they are facing? What, if anything, is special about these museums and collections? Why are they important and worthy of our care and attention?

Even if the problem seems too complex to resolve, it is important to objectively assess present reality and try to understand the combination of historical facts and developments that has brought us where we are today. The two main goals of this research programme were: 1) To

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<sup>1</sup> Amsterdam, Delft, Groningen, Leiden and Utrecht. For a more detailed account of the recent developments involving Dutch university collections, particularly geology, see Clercq (2003) and Kriegsman (2004).

compile a comprehensive overview of the current state of knowledge of university museums and collections, with data taken both from the literature and from the field; and 2) To contribute to our understanding of the significance of university collections – particularly those related to teaching and research – both to universities and to contemporary society.

The present study was centred on Europe, where the majority of the study visits took place. The European university model, as well as its history, was taken as the main framework. Nevertheless, the findings and conclusions herein are likely to equally apply to many non-European university museums and collections. This research was conducted between November 2000 and November 2004. In this introduction, the background context for this research is described and an overview of the structure and organisation of the dissertation is also presented.

## 1.1 Universities, museums and collections

Previous studies of university museums and collections have focused on the situation in a single country (e.g. LOCUC 1985, Arnold-Foster 1993, Drysdale 1990, Kelly 1998, 1999). However, caution is needed when addressing Europe as a whole as the different national higher education systems are heterogeneous. To overcome this difficulty, I have looked into the criteria of what constitutes a 'university' adopted by international bodies operating at the European level, such as the Council of Europe (CoE), UNESCO, the Organisation for Economic Cooperation and Development (OECD), and the European Union (EU). Unfortunately, criteria appear to vary even within the same organisation. Sometimes, the generic designations of Higher Education Institution (HEI) or Tertiary Education Institution (TEI) are used to encompass the diversity and complexity of European institutions teaching, performing research and authorised to grant doctoral degrees. The designation HEI was also used in some of the earlier studies mentioned above. However, HEI is a mere designation and it does not include a consistent definition applicable across Europe. After careful consideration<sup>2</sup> and unless stated otherwise, I have herein adopted the term 'university' in its broadest sense of a higher education institution, i.e. encompassing universities *sensu stricto*, but also other higher education institutions, such as the German *Fachhochschulen*, the French établissements d'enseignement supérieur/grandes écoles, military academies and the polytechnics among others. For example, in France – which undoubtedly has one of the most complex systems of higher education in Europe – universités, the École polytechnique and both the Conservatoire national des arts et métiers and the Muséum national d'Histoire naturelle are all taken to represent the generic category of 'universities' as used in this dissertation.

The term 'university' *sensu lato* has also been adopted by the European Commission (EC) in several of its official documents<sup>3</sup>, as well as by the OECD (Kelly 2001). Additionally, the terms 'university museum' and 'university collection' are the ones most widely used in the literature and were recognised by the International Council of Museums (ICOM) through the creation of an international committee for University Museums and Collections (UMAC) in 2001. However, in order to avoid any chance of misinterpretation, each chapter begins with a

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<sup>2</sup> The American-based Carnegie Foundation for the Advancement of Teaching (CFAT) has established a classification of higher education institutions that is widely adopted as a reference throughout the world. The latest edition, dated 2000, classifies universities in five major groups: 1) Doctoral/Research Universities I, 2) Doctoral/Research Universities II, 3) Baccalaureate (Liberal Arts) Colleges I, 4) Baccalaureate Colleges II and 5) Associate's Colleges (CFAT 2000). I considered adopting this classification, but realised that it did not contribute significant understanding to the issue of university collections and, on the contrary, was a source of unnecessary extra complexity. This is not a study about higher education systems but about the museums and collections higher education institutions hold. The fact of the matter is that independently of the heterogeneities: a) almost all higher education institutions have collections and b) these seem to face similar problems and challenges.

<sup>3</sup> Including in the important strategic document *The Role of Universities in the Europe of Knowledge*, dated 5 February 2003 [COM(2003)58 final]. In: *EUR-Lex, European Union Law*, [http://europa.eu.int/eur-lex/en/com/cnc/2003/com2003\\_0058en01.pdf](http://europa.eu.int/eur-lex/en/com/cnc/2003/com2003_0058en01.pdf), accessed 25 August 2004.

footnote reminding the reader of the definition adopted. Throughout and also for simplicity, I will use the term 'rector' to include other designations such as 'vice-chancellor' and 'president'.

All universities have collections. Of course, universities are not all alike. Like hymns, they come organised in 'ancient' and 'modern'. The 'modern' are the overwhelming majority. Three quarters of European universities were created after 1900 and 50% after 1945 (Scott 1999). Naturally, the old universities – such as those of Oxford (1214), Padua (1222), Uppsala (1477) – are more likely to have richer and more diverse museums and collections, as well as buildings and gardens. However, so do some more recently established universities, such as Milan (1924), Bath (1966), and Maastricht (1976). In fact, the founding date of universities is hardly a reliable guide to the importance of its heritage. Upon foundation, many European universities incorporated collections and buildings from earlier schools, academies, etc. The University of Bath has a history of predecessors dating at least from 1856. Likewise, while contemplating the Renaissance collections at the Museo di Storia Naturale of the University of Florence, it seems hard to believe that the University was founded in the 1920s. The same applies to the University of Lisbon – founded in 1288, re-founded in 1911, but with collections, buildings and staff incorporated from the former *Escola Politécnica*, founded in 1837 (which in turn had already incorporated the *Colégio dos Nobres*, founded in 1761 and the *Noviciado da Cotovia*, created in 1603). The *Atheneum Illustre*, established in 1632, preceded the University of Amsterdam (1877). There are many more such examples throughout Europe.

Typically, the reasons why universities have museums and collections vary within the same university, from university to university, and from country to country. Ever since their very beginnings, European universities have more or less continuously collected art, religious artefacts and antiquities for reasons of prestige and social status. They also commissioned art to ornament noble rooms, buildings, and gardens. In this respect, universities are not different from other organisations, whether public or private, such as foundations, corporations or banks. More significantly however, universities have assembled collections in order to fulfil their teaching and research missions since at least the mid-16<sup>th</sup> century (Warhurst 1984, Lewis 1984, Boylan 1999, Clercq 1998, 2001, Schupbach 2001), with objects being assembled and collected because of the role they played, or projected to play, in the construction and transmission of knowledge in different disciplines.

The use of objects for learning and study is not an exclusive domain of universities. Collections were assembled 2,400 years ago at the *Lyceum* in Athens and at the *Museion* in Alexandria. In our modern world, research collections also exist in academies of sciences, hospitals, national laboratories, and national and local museums. Secondary schools (*lyceums*, *gymnasiums*, and their equivalents) have used collections for teaching ever since they were established. Notwithstanding these facts, universities have a long tradition in museums and have played a relevant role in the history of museums in general – contrary to high schools and *lyceums*. Moreover, the connection between learning and study is stronger, more explicit, indeed more special in universities. Within the university, education and research do not exist in isolation of one another, but are fully intertwined. As a community, the university has organised its structure, people, buildings, collections and *curricula* in such a way that learning effectively means *learning to research*. Students learn from first hand contact with actual researchers, who teach them not only the substance ('the facts'), but also the methods, processes, practices and *savoir faire*s that are inherent to research – even if later these students will not proceed a research career. In short, universities intrinsically and dynamically combine the creation of knowledge and the dissemination of it. This characteristic gives university museums and collections a unique articulation between objects and knowledge that this research aims at better understanding.

### 1.1.1 The pressure on universities

By definition, universities have always been highly dynamic institutions. A static university is a dead university. Although to some extent the core-business – teaching and research – has remained the same, universities mirror the demands and needs of contemporary society. During the past 40 years, universities faced major challenges and transformations, from the adaptation of courses to the needs and specificities of the employment market – thus redefining their missions in more utilitarian and vocational terms. Universities are also increasingly asked to contribute more significantly to regional and local development by establishing stronger links with local industries. Aspects such as free access, tuition fees, the Humboldt model, are under intense debate across Europe today. Moreover, the majority of European universities suffer from chronic underfunding and have been asked to raise a significant portion of their own annual budgets.

Some speak of paradise lost, of a 900 year-old institution in ruins. Others speak of new opportunities, a 'new university', paradise regained. The full dimensions of this debate are complex and beyond the scope of the present research. Here, I want to emphasize that the familiar institution of the university is going through a process of substantial and dramatic change and, although more poignantly in some countries than in others, this change is taking place from Riga to Dublin. With the Bologna process going on, the Lisbon Strategy in place<sup>4</sup> and 25 countries in widely different economic situations in the European Union, the pressure on universities is likely to increase rather than decrease. Moreover, in the whole world, the number of students in higher education increased from c. 51 million in 1980 to c. 82 million in 1995, an increase of 61%. It is estimated that by 2010 this figure will have soared to c. 97 million (Sadlack 2000). Other countries – particularly China, India, and Japan – are investing substantial resources in basic research so as to be able to compete effectively in the global knowledge economy. In November 2001, in Doha (United Arab Emirates), the World Trade Organisation (WTO) decided to include education services in the next round of liberalisation under the General Agreement on Trade in Services (GATS), a clear confirmation of what appears to be the emergence of a world education market. Kim Howells, the UK higher education minister, told *The Guardian* that vice-chancellors "know better than everyone that it's a market and it's a cut-throat market and it's going to become harder not easier for administrators and they are going to have to prove their worth"<sup>5</sup>. Universities are preparing to meet these challenges through rationalising resources, reorganising courses, departments and faculties and even merging with one another<sup>6</sup>. In the midst of this formidable and vertiginous change, where do museums and collections come in? How can they find their *raison d'être* and how can they be protected?

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<sup>4</sup> The so-called Bologna Process and the Lisbon Strategy are two significant recent developments impacting on European higher education systems. The Bologna Process is aimed at increasing the convergence of higher education systems in Europe through the compatibility of study and degree structures. This would enhance mobility within Europe. The wider aim is to develop a world class European Higher Education Area (EHEA), which would match the quality of the best universities in the USA and elsewhere. Nowadays the Bologna Process encompasses more than 40 European countries. The Lisbon Strategy – so called because it was agreed upon in the European Council of Lisbon in March 2000 – aims at transforming the European Union into the most competitive economic region in the world in 2010. It encompasses 25 countries and is coordinated by the European Union.

<sup>5</sup> P. Curtis, 2004. *Howells warns of merciless university market*. *The Guardian*, 23 September. In <http://education.guardian.co.uk/>, accessed 23 September 2004.

<sup>6</sup> For example, in the UK two 'super' universities were created in 2004 as a result of merges between institutions. Cardiff University merged with the University of Wales College of Medicine, becoming one of the largest in the UK (5,000 members of staff and 40,000 students). The Victoria University of Manchester and the Manchester Institute of Science and Technology (UMIST) merged to become the University of Manchester. Already in 2002, University College London and Imperial College considered a merger arguing that "joining together could help them become a 'global player' in the increasingly international higher education market" (BBC News Education. *Top Universities plan merger*. In <http://news.bbc.co.uk/1/hi/education/2326511.stm>, 14 October 2002. Accessed 13 April 2005).

In the 1845-46 Annual Report of Harvard University, President Edward Everett wrote that “[...] without collections in the various branches of Natural History it would seem almost ludicrous to require a professor to teach” (E. Everett *in* Kohlstedt 1988: 423). On condition of anonymity, a European rector told me that “Museums are a luxury we [the university] cannot afford”. These two statements represent more than a lapse of 150 years in an institution which is over 900 years of age. At their core lie two completely different ideas of what a university is or should be. The two viewpoints stand for a major cultural gap between yesterday’s university and the university of today and tomorrow.

### 1.1.2 The pressure on museums and collections

At the same time, both as a consequence of the developments described above and as a result of trends in science and teaching, courses such as archaeology, anthropology, biology and medicine have undergone profound curricular transformations. These transformations have often resulted in a decrease in the use of collections as a resource for research and teaching. Since the late 1980s, the fate (‘crisis’) of natural history collections has produced an extensive literature (e.g. Hounsome 1986, Diamond 1992, Alberch 1993, Krishtalka & Humphrey 2000, Gropp 2003, Mares 2005)<sup>7</sup>. Although caution is required when using the term ‘crisis’, the fact of the matter is that the use of specimens for research is now only a fraction of what it used to be and plays only a minor role in contemporary biological and medical research funding.

Every year rectors and deans across the world sit at their desk with their budgets in front of them, pondering how much of an ‘entrepreneurial’ university theirs is and measuring targets, performance indicators, outcomes and demonstrable impact, all of which were rare terms in the academic lexicon less than three decades ago. At the end of the day, they are likely to be searching the budgets for less relevant or redundant areas to slice – museums and collections often being the obvious ‘easy target’.



Fig. 1.1 – One of the oldest pianofortes in the world, a treasure of the Museum of Musical Instruments, University of Leipzig (Inv. No. 170). Constructed in 1726 by Bartolomeo Cristofori, an instrument maker at the ‘de Medici court in Florence (cf. Fontana & Heise 1998, Fontana *et al.* 2001) (photo J. Stekovics, reproduced with kind permission of the University of Leipzig).

<sup>7</sup> To the best of my knowledge, there has been no recent closure of any major natural history university museum in Europe, although rumours of such being forthcoming are frequent. Unfortunately, the same cannot be said of countless departmental teaching and research collections, particularly during the past 40 years.

Are university collections irrelevant for universities? No. Are they redundant for the fulfilment of their scientific, educational and social missions? No. Are they irrelevant for contemporary society? No. Universities have treasures of international significance, amongst which the world's oldest dress (Petrie Museum, University College London), the world's oldest percussion piano (Museum of Musical Instruments, University of Leipzig) (fig. 1.1), the lens with which Christiaan Huygens discovered Titan, the largest moon of Saturn in 1655 (Utrecht University Museum), the original Celsius thermometer (Gustavianum Museum, Uppsala University) (fig. 1.2), Linnaeus' original botany cabinet (Uppsala University), Dührers, Leonardos, Mirós, Henry Moores, artefacts and specimens collected by Captain Cook during his 18<sup>th</sup> century voyages of exploration, and so on. But, much more than 'treasures' in the strict sense of the word, universities have collections that constitute material evidence of how we came to know what we know about nature, about the universe, and about ourselves. As I will argue in this dissertation, this represents the main importance of university heritage – more than enough reason to be better known to the public.



Fig. 1.2 – Anders Celsius's original thermometer at the Gustavianum Museum, Uppsala University (photo T. Thörnlund, reproduced with kind permission of Uppsala University).

Many universities are aware of the importance of their collections. Collections do, however, pose them with the dilemma that Rector Calzolari so well enunciated, which can be broadly characterised as: "What shall we do with them? And how?" When asked about how this problem could be solved in German universities, the Chancellor of the University of Leipzig, a man sensitive towards the value of collections and heritage in general replied, with a mixture of regret and frustration: "At the moment, the problem has no solution" (P. Gutjahr-Löser, interview 4 June 2004). This dilemma partly results from the vast political agenda imposed on universities (in which collections do not seem to fit), partly for lack of objective knowledge regarding what exists, and partly, from a lack of appreciation of the significance and potential of these collections. With respect to the latter, university museum and collections directors and curators are also to blame and so is the museum sector in general, as these often have not been particularly good advocates of the cause. This is now beginning to change and their voice is better heard. If there are solutions – a single solution applicable to all cases probably does not exist – then they certainly require an engaging dialogue between all and everyone involved.

### 1.1.3 Recent developments

As an organised group, university museums and collections woke up late to the changing university landscape, but when they did their vitality was impressive. The call for arms began in the 1980s and the collaboration efforts and reflection has been growing and intensifying ever since.



Worldwide, there are now associations of university museum professionals in nine countries, five of which are European: Greece (2004), the Netherlands (1997), Scotland (1998), Spain (2002), and the UK (1987)<sup>8</sup>. Some studies at the national level have been conducted to systematically examine the situation of university museums and collections, often with the active support and advice from national museum associations.

At the international level, some recent developments are also significant. The European network Universeum, established in 2000, issued a declaration signed by 12 of the oldest European universities stating that “[university] collections serve as active resources for teaching and research as well as unique and irreplaceable historical records” (Declaration of Halle; for full text, see appendix A10). ICOM’s International Committee for University Museums and Collections (UMAC) was created at the General Assembly of Barcelona in July 2001, making UMAC the first association of university museums and collections of international scope. Perhaps more significantly, the creation of UMAC meant that, for the first time, the distinct identity of university museums was recognised by the most important organisation of museums and museum professionals worldwide. Together, these two bodies have produced a substantial number of publications on university museums and collections, amongst which two issues of *Museum International* (Vol. 206 & 207, 2000), the *Treasures of University Collections in Europe* (Bremer & Wegener 2001), *ICOM Study Series* (No. 11, 2003), and *Proceedings of UMAC Conferences* (2001, 2002) published in *Museologia* (Vol. 2 & 3). In addition, there have been several publications discussing matters at a national level, both quantitatively and qualitatively.

The issue of university museums and collections also caught the attention of international organisations devoted to higher education and culture. The OECD sponsored a volume on the management of university museums and collections (Kelly 2001), while the Council of Europe (CoE) developed a project on the heritage of European universities (see Sanz & Bergan 2002) and a *Draft Recommendation on the Governance and Management of the University Heritage*. Note that the CoE had already adopted a Recommendation indirectly related to university collections in 1998<sup>9</sup>. In 2004, another stakeholder, the European network of museums of science and science centres (ECSITE), held a special session on university museums and collections for the first time in the history of their annual conferences. The same happened at the 4<sup>th</sup> Science Centre World Congress held in Rio de Janeiro (2005).

Finally, this growing interest has now reached universities themselves as well as their rectors. In 2004, at least six conferences specifically addressing the topic of university collections were organised by universities, some sponsored by national conferences of rectors and with some rectors actively participating<sup>10</sup>. Just a few years ago, there were none apart from those organised annually by UMAC, Universeum, and other professional organisations.

In short, the general context is one of considerable transformation. The university is redefining itself as an institution and the broader outlines of its future path appear to have been painted: still focusing on teaching and research, but increasingly market-driven, less dependent on public expenditure, and competing at a global scale. University museums have been facing great challenges and are, perhaps for the first time in their history, seriously in need of convincing their own parent institutions of the significance and relevance of their collections. Undoubtedly, university museums and collections are presently going through what is probably the most difficult, but at the same time most intense and interesting period in their almost 500 years of existence.

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<sup>8</sup> The non-European countries are Australia (1992), Brazil (1992), South Korea (1961) and USA (1980).

<sup>9</sup> Recommendation “Incidental Collections” (Rec. # 1375, 1998), CoE.

<sup>10</sup> In Dartmouth College (USA) and at the universities of Lille and Montpellier (France), Louvain (Belgium), Halle (Germany) and Turin (Italy).

## 1.2 Organisation of the dissertation

The dissertation has two volumes: volume one contains the main text, while the appendices are found in volume two. The main text consists of seven chapters, organised as to provide a comprehensive overview. The list of references is included at the end of volume one.

Chapter 1 is the Introduction which you have just been reading. Chapter 2 describes the objectives, scope, approach and methodology of this research. It discusses field work and bibliographic sources and presents an overview of the number and types of institutions visited. Chapter 3 addresses the complexity and diversity of university museums and collections, which encompass a wide range of disciplines, sizes, and institutional types. The chapter discusses the two main levels that contribute to the complexity of university museums and collections – the collection level and the museum level – and reviews typologies of university collections commonly adopted, both in practice and in the literature. A survey of terminology directly related to university collections and museums is also discussed. Finally, it outlines and discusses the working typology that served as a basis for this research. Chapter 4 provides an historical overview of university collections and museums. It comprises the discussion of possible evidence for early uses of collections, speculates on the use of collections in medieval universities, and describes the role of the first historical records of teaching and research collections in universities. The chapter also addresses the second wave – or second generation – of university collections, resulting from an accumulation of significant historical equipment, as well as material evidence of the history of the university and student life. This second generation of historical university museums arose in the early 1900s and continues to exist, in conjunction with first generation collections and museums. Chapter 5 reviews the current state of knowledge about university collections and museums, both in terms of the literature and of recent initiatives at the national and international level. Chapter 6 reviews the present state of knowledge from the field. It discusses data collected during study visits, as well as recent bibliographic sources, to review the present situation of university collections and museums in terms of the three missions: teaching, research and public display. In particular, topics such as the general decline in collection-based teaching and collection-based research and museum-specific issues (such as mission, role of the public, mandate from the university, and legal status) are dealt with. A possible third generation of university museums, resulting from reorganisation trends, is also outlined, together with a discussion of the risks involved. Chapter 7, the final chapter, looks back at 500 years of university collections and discusses their significance for universities, the museum sector at large, and contemporary society. The chapter discusses limitations and weaknesses of this research and makes recommendations regarding future research areas.

There are 11 appendices (volume two). Appendix A1 discusses the problems related to estimating the number of university museums and collections in Europe. Appendices A2 to A6 are related to the data gathered during different stages of the field work. The terminology survey presented in Appendix A7 served as a basis for a discussion on terminological issues made in chapter 3. Appendix A8 presents a historical synopsis of university museums and collections (and related events), important in relation to chapter 4. Appendix A9 discusses the issue of present-day funding of university museums and Appendix A10 compiles relevant national and international documents – such as the *Magna Charta Universitatum*, the Declaration of Halle, and other position statements. Finally, to obtain a better insight in the frequency with which different institutions publish results of their research, a survey of three volumes of two renowned international journals in the field of systematics – *Cladistics* and *Systematic Biology* – was carried out. This survey is presented in Appendix A11.

[M.C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## 2. Objectives and Methods

### 2.1 Objectives, object of study and scope

The present research programme aims at reviewing past and present knowledge of university collections<sup>11</sup>, as well as contributing to our understanding of their significance for universities and for contemporary society in general.

The research focused on museums and collections in European public universities, although relevant literature from outside Europe was also taken into account. Throughout this dissertation, Europe should be understood as geographical Europe, as it was the classical model of the public European university, rather than political borders, that determined the scope of this research.

Although I have referred to museums *and* collections, the collection was considered the inclusive unit of this research. This was done for conceptual convenience as well as for other reasons, which will be discussed in chapter 3. When applicable, I will address museums separately, because a) universities have museums too and b) the museum is more than a mere physical location of collections and raises different issues by itself.

The study did not *a priori* exclude any disciplines represented in university collections, as similar issues appear to affect collections from all disciplines (although some more severely than others) – from natural history to archaeology, from medicine and art to the history of physics and anthropology. A multidisciplinary perspective seemed the most adequate to a field that is vast and diverse, but barely studied with regard to fundamental issues. By adopting such a perspective, it was hoped that key issues, as well as main conceptual, terminological and methodological problems, could be identified. A second important reason for adopting a multidisciplinary perspective was to examine if the significance of university collections could be derived from an eventual distinct nature (a disciplinary approach would limit the possibilities to discuss this aspect).

### 2.2 Limits and approach

Clearly, a price as to detail has to be paid for obtaining a general overview and it will go without saying that this research does not cover *all* aspects possibly related to university collections and museums.

What makes a collection significant? Typically, university collections are said to have importance for research, teaching, public interpretation or a combination of the three. It has also been said that objects are selected for being sources of information rather than for aesthetical or other reasons. This is often true, but what does it precisely mean? Is it possible to deepen our understanding of the relationships and connections between and amongst objects, collections and the different disciplines in the university context? The significance of collections has been the subject of extensive museological and material culture research (e.g. Lubar & Kingery 1993, Mayer 1994, Pearce 1994, 1998, Belk 1995, Kingery 1996), but none of these studies addressed university collections in particular or, for example, the role of objects in formal teaching. The issue is complex by its very nature, as it depends on how one defines

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<sup>11</sup> In this dissertation, the term 'university' is taken in its broadest sense and to mean all European higher education institutions, including for example the *Fachhochschulen*, the polytechnics and the *grandes écoles*.

'significance' in the first place. Generally speaking, the significance of a collection is a function of the individual objects or specimens included in that collection. A collection can also be significant because of the role each object plays within the system of that collection. As time passes, significance tends to grow and become multifaceted as both objects and collection acquire a new meaning and role.

Based on this simple assumption, five key parameters were selected to facilitate an initial exploration of these levels. These parameters were: a) role of the objects; b) origin and purpose of collections; c) organisation of the collection (e.g. taxonomic, chronological, etc.); d) use of collections and objects; and e) users of collections and objects. These served as a point of departure both while searching the literature and during study visits. Matters such as public access, exhibitions, interpretation, ethics and conservation were taken into consideration when relevant to collections, but did not constitute core objectives for study *per se*<sup>12</sup>.

The general approach in this research is historical and comparative. University collections were examined in relation to the history of universities, as well as the development of science and higher education, while the five key parameters served as a platform for comparative analysis across the different disciplines. A preliminary assessment of the origin and purpose of university collections is presented in chapter 4, while the remaining parameters are examined in chapters 5 and 6.

## 2.3 Theoretical framework

Any study of museums is necessarily interdisciplinary. Encompassing multiple disciplines, this research was not easy to frame theoretically. Additionally, university museums and collections are positioned at the intersection of two spheres: that of museums and that of academia. This research approaches university museums and collections from a historical and comparative perspective. Each of the above factors brought about its own layers of theoretical complexity.

Because research focused on the role of university museums and collections, it resorts under the general umbrella of museology. The nature of museology, its object of study and methodology, have been extensively discussed among museum professionals (e.g. Washburn 1967, Neustupn 1970, Teather 1984, Mensch 1992, Cameron 1995). Museology has entered the lexicon of museum professionals, even in the Anglo-Saxon world (e.g. AAM/ICOM Bylaws, last version amended 1996; Centre for Museology at the University of Manchester, MacManus 2000), and since 1976 there is an international committee of ICOM devoted to museology (ICOFOM), which defines museology as "the theoretical approach to the functions, the activities and the role in society of the museum as a repository of collective memory"<sup>13</sup>. Although not mentioned specifically, it is taken that this should be understood to include collections. It can be argued that the history and role of the majority of university collections have been driven by research policies and pedagogical methods and strategies rather than by the evolution and role of museums *per se*. Therefore, a second parallel major source of the theoretical background is derived from the way knowledge is constructed and transmitted in the different disciplines, i.e. history, epistemology and philosophy of science (science here understood in its broadest sense).

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<sup>12</sup> During study visits, I have purposefully collected information regarding exhibitions, interpretation and public access. The data will be used for future research.

<sup>13</sup> Definition established by ICOFOM (ICOM's International Committee for Museology).

## 2.4 Methods

Although extensive due to the geographical and disciplinary inclusiveness adopted, the methodology of this research has not been particularly complicated. The research programme revolved around two main methodological axes: a) one aimed at compiling a comprehensive bibliography, and b) another aimed at gathering qualitative data from the field through study visits and interviews. These two axes were mutually disseminating as the literature initially helped identifying issues to address in the field, as well as bringing up new questions and providing feedback, while in turn study visits brought to light additional literature. Therefore, data came from two major sources: a) bibliographical, including archival documents and legislation, and b) field study, including correspondence, interviews and visits.

### 2.4.1 Bibliographical Sources

The multidisciplinary approach defined the diversity of bibliographical sources, which can be grouped into two major categories: a) specific sources, and b) reference sources. These were in turn subdivided as shown in fig. 2.1.

Although the literature on university museums is substantial, it is also much dispersed. Given the traditional role of research by staff, of which publishing is a major component, university museum curators have been and still are prolific authors – they do, however, mostly publish in specialised journals related to the disciplines represented in the collections. There are also a considerable number of publications that pertain to the so-called ‘grey literature’<sup>14</sup>, which are often harder to access. As university collections and museums are at the intersection of the worlds of academia and museums, papers are published in both realms. However, the majority of bibliographic sources basic to this research are fundamental texts, which have contributed to our understanding of the role and significance of university museums and collections (e.g. Black 1984, Ferriot 2003). These were mostly published in the professional museum literature – journals such as *Curator*, *Lettre de l’OCIM*, *Museums Journal*, *Journal of the History of Collections*, as well as museum manuals and books. To establish the state of past research, a number of theses on university collections was also consulted (e.g. Peikert 1956, Hurst 1991).



Fig. 2.1 – Overview of bibliographical sources

<sup>14</sup> ‘Grey literature’ is usually understood as publications issued by organisations and institutions whose primary business is not publishing. Scientific grey literature comprises newsletters, reports, working papers, theses, government documents, bulletins, fact sheets, conference proceedings and other publications distributed free, through subscription or sale, in both printed and electronic formats (Weintraub 2000). The term is often used in a depreciative manner, but the importance of grey literature in science has been highlighted before (e.g. Subramanyan 1981, Auger 1989).

Professional museum literature did not exist before the 1900s (Hudson 1987). Among the older and more widely distributed museum journals, *Museums Journal* (UK) began publishing in 1902, *Museumskunde* (Germany) in 1905, *Museum Work* (USA) in 1919, *Museum News* (USA) in 1952, and *Curator* (USA) in 1957. A systematic and organised exchange of ideas at the international level did not exist before the establishment of ICOM in 1946 (Hudson 1987): *ICOM News* was first published in 1946 and *Museum International* in 1948. Only in 2000 did *Museum International* publish the first article – in fact a series of 16 articles, organised in two issues (Nos. 206, 207) – on university museums as a group in their own right. Texts on university museums of an international dimension – well-nigh non-existent before the late 1990s – are mostly the result of the creation of the *Universeum* network and particularly the establishment of UMAC within ICOM. In fact, and excluding descriptive papers of a particular university collection or museum, probably more than 90% of the literature on university museums and collections was published since the 1980s. National and international associations of university museums contributed substantially to the post-1980s boom in professional literature, which greatly benefited this research by means of abundant published and unpublished materials.

Papers published in specialised journals, such as *Paleobiology*, *Nature*, *International Review of Education*, and specialised catalogues (e.g. Cittert 1954, Brenni 2000), were considered relevant for this research if they included data on the history and significance of university collections (e.g. Cristofolini *et al.* 1993), the history of science and research (e.g. Pihlman 1995, Bennett 1997), or the role of objects in research and teaching (e.g. Zusi 1969, Ortner 1978, Rudwick 1985, Allmon 2005). Specialised subject-matter literature was also considered if dealing with particular social, economic or scientific aspects directly impacting university collections, such as the alleged 'crisis' in natural history (e.g. Dalton 2003, Wheeler 2004). Finally, papers addressing universities and higher education were also found relevant (e.g. Fehrman & Westling 1995, Verger 1999, Field 2003).

In short, bibliographic sources were taken from a) the professional museum literature (the majority); b) specialised scientific literature; c) journals, books, newsletters and catalogues published by university museums and universities, and d) other types of publications, such as theses, surveys, reports, policy and governmental documents, newspaper articles, and so on. At the start of the research, literature considered covered English, French and Portuguese sources only. As the work progressed, publications in German, Dutch, Italian, Finnish, Swedish, Spanish and Danish were also collected, both as hard copies and in electronic format (CD and DVD).

#### 2.4.2 Field Sources

The majority of study visits took place between November 2002 and November 2004 and included 195 university museums and collections in Belgium, Estonia, Finland, France, Germany, Italy, the Netherlands, Sweden, and the UK. Portuguese university collections were visited during 2001 and the University of Naples was visited in late 2000 (fig 2.2).

The aim of the study visits was to collect first-hand information. Lack of knowledge from the field, in combination with the seemingly rapid pace of change, prompted the use of an inquiry type of field research, sustained by flexible qualitative research tools under constant examination and reformulation. The following steps were taken, some necessarily overlapping in time:

##### *Preliminary surveying (November 2000-July 2002)*

At the outset of this study, only few published lists and directories of university museums and collections in Europe existed. Apart from lists resulting from the British (Bass 1984a,b,

Arnold-Foster 1989, 1993, 1999, Arnold-Foster & La Rue 1993, Arnold-Foster & Weeks 1999, 2000, 2001) and Dutch surveys (e.g. LOCUC 1985, Anonymous 1997, Stoop 1999, Galen & Stoop 2000, Adviesgroep Rijksdienst Beeldende Kunst 1996) and one report from France (Héritier-Augé 1991), existing lists remained unpublished. University museums could only be traced through a plethora of museum yearbooks, surveys and compilations (e.g. Ruppli 1991, 1996, Wijgengangs & Kati 1996, Spronsen 1998, Davoigneau & Tully 1999). There were two international online databases of university museums and collections – one developed at Macquarie University, Australia<sup>15</sup>, the other at the University of Witwatersrand, South Africa<sup>16</sup>. For this reason, and although this study did not aim at carrying out a census, at least some preliminary surveying was deemed necessary. This was mostly done through these published and online sources, as well as relevant governmental and non-governmental bodies and personal contacts. Although it might seem the obvious choice, sending emails or faxes to universities, inquiring about the existence of museums and collections, proved to produce only minimal results. In November 2001, precisely such inquiries were sent to the general email address of 22 French universities, which yielded only five replies (see appendix A2, table A2.3).

#### *Exploratory interviews (November & December 2000)*

In parallel with the preliminary surveying, short questionnaires were sent by email and fax to 54 members of staff responsible for university museums and collections in Belgium, Denmark, Finland, Italy and UK. Email addresses were taken from the publications and databases mentioned above. The objective of this round of queries was to refine issues and methods. The number of replies received was 37 (see appendix A2, table A2.1). These preliminary interviews were important as they suggested that: a) the number of teaching collections was probably larger than foreseen, b) terminology was important, and c) the field was much vaster than initially thought. Some of the replies received in this stage are used in this dissertation when considered relevant.

#### *Study visits and interviews in Portugal (February-June 2001)*

Between February and June 2001, 23 study visits to Portuguese university collections and museums were made and 19 in-depth interviews were conducted (see appendix A2, table A2.2). Several contacts were made for visits to other collections, which did however not materialize due to circumstances beyond my control.

Interviews were also conducted with representatives from Portuguese universities, e.g. the Rector of the University of Lisbon and the Pro-Rectors in charge of museums of the universities of Lisbon and Coimbra. The Portuguese Conference of Rectors was also contacted (for a full account of additional contacts, see appendix A6).

#### *Collecting initial information from relevant bodies and selected individuals (November 2000-July 2002):*

Pertinent bodies such as the Portuguese Ministry of Education and the French Ministère de la Recherche et de l'enseignement supérieur were contacted, both for collecting specific advice and obtaining documentation. Among other organizations contacted were the Portuguese Institute of Museums and the Portuguese Network of Museums (both residing under the Ministry of Culture), ICOM/UMAC, the Italian and Portuguese Councils of Rectors, and the European Association of Universities *EUA*. Because of the lack of published information on existing collections and museums, several specialists were also contacted. These provided important advice on topics to be covered during study visits and interviews. Specialised internet discussion-lists, such as Museum-L (museums), Vertpaleo (vertebrate

<sup>15</sup> This database has been expanded and is now UMAC's Database, accessible at <http://publicus.culture.hu-berlin.de/collections/>

<sup>16</sup> See <http://sunsite.wits.ac.za/mus/>, accessed 27 July 2005.

palaeontology), Taxacom (taxonomy and systematics), and AABGCOL (Botanical Gardens, Arboreta and Herbaria), also provided an important source of initial information.

#### *Pilot questionnaire (April-May 2002)*

The exploratory nature of the research required a preliminary pilot stage, during which conceptual, terminological and methodological problems were further identified. The Web was initially thought to be a privileged means of gathering information. An online pilot questionnaire was therefore designed and circulated among a selected group of respondents<sup>17</sup>.

The field study greatly benefited from this pilot questionnaire, particularly the interview script and the general guidelines for study visits. Apart from the questions, respondents were also asked to comment on the general objectives of the research and the pertinence of issues. The diversity of university museums and collections throughout Europe was further confirmed and so was the similarity of problems and challenges they were facing. During this preliminary stage it became clear that highly structured, standardised techniques of quantitative research would not be the appropriate approach to fulfil the aims of the present research project.

#### *Selecting universities and preparing study visits (summer 2002)*

A number of universities were selected as targets for study visits. Although the sample was not aimed at being statistically representative, geographical and disciplinary coverage were important selection criteria. The selection included universities in northern and southern Europe and different higher education models (e.g. Anglo-Saxon, French, Humboldtian). Because of temporal and financial restrictions, the proximity of multiple collections was also taken into account. The most important criterion, however, was the existence of a personal contact who could guide me through the particular institutional labyrinths of a place, thus enabling me to interview relevant staff. Through my participation in conferences and workshops, additional study visits were possible, including a few outside Europe (see appendix 6, table 6.4). More than 50 universities in 10 European countries were visited.

Each study visit was preceded by an exchange of correspondence and thorough preparation and it is probably fair to say that interviews often started weeks before the actual visit. Staff in charge of collections or museums often sent documentation in advance, either by ordinary mail or by email. Particular attention was given to the origins and history of collections and museums. When existent, websites of collections and museums to be visited, as well as the hosting university, were scrutinized, allowing for a customized interview script that would include issues specific to each institution.

#### *Study visits to university collections and museums (November 2002 to November 2004)*

Interviews (oral and by email) and direct observations were the preferred methods. The main guidelines for the field research were the five key parameters outlined above, i.e. role of objects, origin and purpose of collections, organisation of collection, use of collections and objects (see appendix A3).

##### *i) Interviews*

Interviews were not pre-structured, but based on open conversation topics designed to assemble maximum response. Basically, a respondent was encouraged to talk about the collection or museum and describe his or her experiences and motivations, rather than answering 'yes' or 'no'. As a result, some interviews lasted four hours while others lasted 30

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<sup>17</sup> See questionnaire and respondents in appendix A2.



minutes. This rule was followed even in the case of email interviews, which rarely consisted of one set of questions. Typically, a single email interview was an iterative process amounting to five or six emails, often more.

Oral interviews were initially recorded on tape for later transcription and analysis. However, the use of a tape recorder was abandoned as the conversations often covered sensitive topics (such as policies, assessment of the work of others) and interviewees felt inhibited by its presence. As an alternative, only handwritten notes were taken. Even so, part of the data was obtained under the condition of anonymity.



Fig. 2.2 – Map of Europe showing universities visited (2000-2004).

### *ii) Respondents*

Without exception, respondents were helpful and demonstrated great interest in participating in this research. As a rule, directors, curators and staff persons responsible for collections or museums were prime targets. This proved to be a very heterogeneous group, ranging from professors and professional curators to technicians and from retired professors to PhD students and researchers (see appendix A5, tables A5.1 and A5.2).

Visits to universities also provided opportunities for meetings with university administrators, whose job titles could vary from 'responsible for public relations' to 'pro-rector', 'vice-rector' and 'rector'. Duration of these meetings varied from brief encounters to lengthy interviews. These included university administrators from the universities of Lisbon, Porto, Coimbra, Leipzig, Halle-Wittenberg, Bologna, Tartu, the Technical University of Lisbon, Montpellier 2 and the Université Libre de Bruxelles (see appendix A6, table A6.1).

Whenever possible, interviews were also conducted with representatives of ministries of higher education and culture and other relevant bodies (appendix A6, table A6.2) and with experts from various fields, such as history of science and technology, history of art, and history of museums (appendix A6, table A6.3). Finally, a fifth category of respondents were

curators from museums non-affiliated with universities – for example national or local museums – particularly when these held substantial collections previously transferred from universities (appendix A5, table A5.4).

*iii) Types of collections and museums studied*

At the outset of this research, operational definitions of museum and collection were adopted, with the collection as the main inclusive unit. Apart from this, no strict demarcations were enforced and an open, inclusive and pragmatic approach was followed. No differentiation was made between small and big collections, small and large museums, complying with ICOM standards or not complying with ICOM standards, in current use or purely 'historical', catalogued or not catalogued, well kept or neglected, well-known or obscure, kept in storages, in warehouses, in laboratories or in classrooms. The approach taken was to allow the designations and concepts to dictate the topics rather than try to force an analysis into a predetermined scheme. Observing, listening to the interviewees and, more generally, exploring in an inclusive way was considered more important than fitting designations into pre-established drawers.

The time frame of study visits is shown in appendix A4 (table A4.1). Appendix A5 presents the bulk of the field work and it is organised as following:

- collections, museums and projects visited, as well as date, staff interviewed and job titles at the time of interview (table A5.1);
- interviews conducted without study visit (by email, phone, fax or in person but off site), including interviews conducted during the preliminary stage (table A5.2);
- summary-table (table A5.3);
- non-university affiliated museums visited, as well as date, staff interviewed and job titles at the time of interview (table A5.4).

In total, 236 university collections and museums were studied, either by study visit, interview or both (table 2.1). A total of 293 museums and collections were initially contacted, representing 20% of non-replies or first contact without appropriate follow-up. Although all 236 collections and museums were included in the final discussion, with quotes from interviews used throughout this dissertation, more detailed attention was paid to the 165 collections and museums visited with interviews.

Country	Study Visits		Interview without visit	Total
	With Interview	Without Interview		
<b>Belgium</b>	1	--	15	<b>16</b>
<b>Estonia</b>	6	--	--	<b>6</b>
<b>Finland</b>	7	3	--	<b>10</b>
<b>France</b>	34	3	4	<b>41</b>
<b>Germany</b>	25	5	--	<b>30</b>
<b>Italy</b>	28	7	--	<b>35</b>
<b>Netherlands</b>	16	2	--	<b>18</b>
<b>Portugal</b>	19	4	2	<b>25</b>
<b>Sweden</b>	9	1	--	<b>10</b>
<b>United Kingdom</b>	20	4	20	<b>44</b>
<b>Sub-Total</b>	165	30	41	<b>236</b>
<b>Total</b>	<b>195</b>		<b>41</b>	<b>236</b>

Table 2.1 – University museums and collections included in field research: total numbers per country.

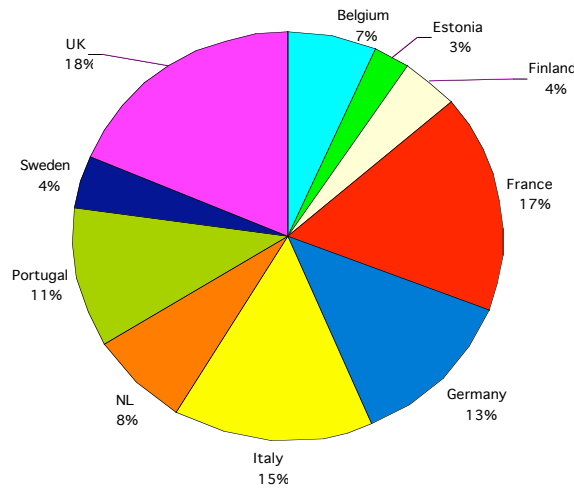


Fig. 2.3 – University museums and collections included in field research: percentage per country.

The museums and collections studied were diverse in terms of disciplines and types. It remains difficult to establish clearly defined disciplinary compartments –anthropology, for example, is sometimes taken as resorting under natural history, while in other situations it is seen as a category of its own. Nevertheless, the majority of museums and collections visited were clearly related to natural history and natural sciences (c. 37%), followed by arts and humanities (c. 21%) and history of science and medicine (c. 18%) (fig. 2.4)<sup>18</sup>. As far as types are concerned, and if designations provided by universities are accepted, then the entities visited included 43% of museums, 41% of collections and 8% of botanical gardens (fig. 2.5). The category ‘science centre/research centre/public understanding of research’, includes four institutions that are hard to classify – i.e. the Ahhaa Science Centre (University of Tartu, Estonia), the Helmholtz Zentrum (Humboldt University Berlin), the permanent interactive exhibition of Mathematics at the University of Milan and the Experimentarium at the University of Bourgogne (Dijon).

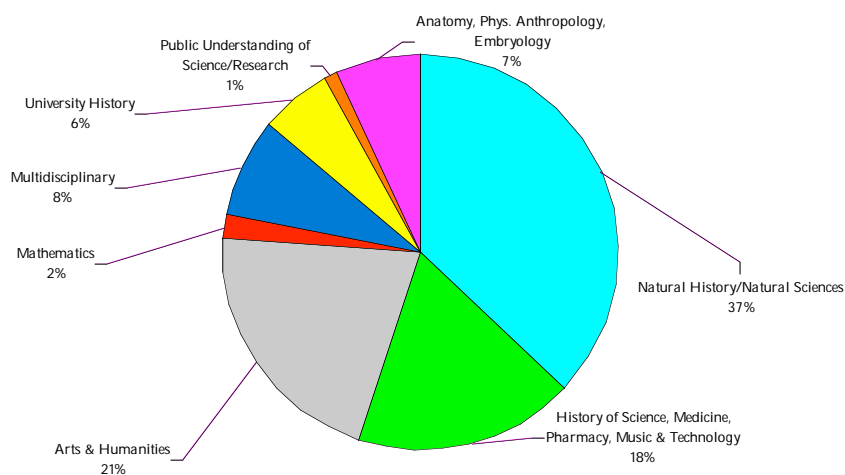


Fig. 2.4 – University museums and collections included in field research: percentage per discipline.

<sup>18</sup> Including history of technology, history of medical instruments, history of musical instruments, and history of pharmacy. Humanities includes archaeology, anthropology/ethnography.

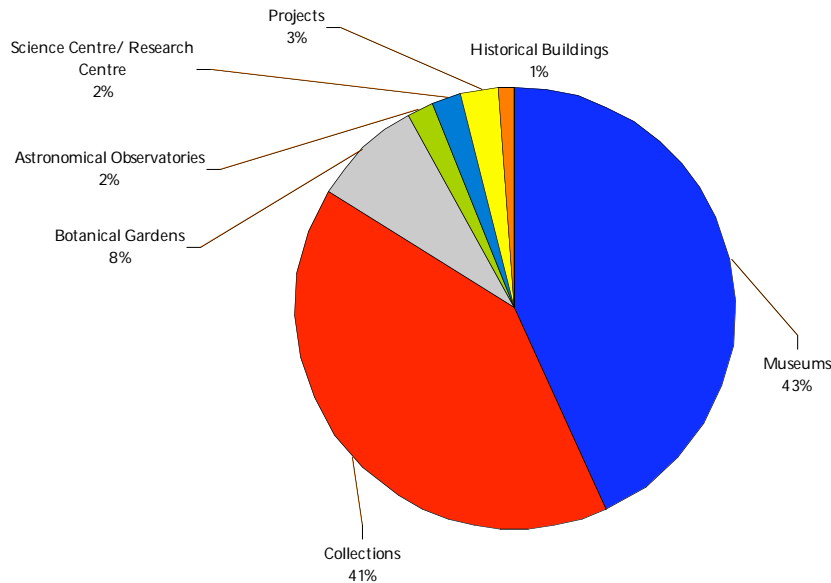


Fig. 2.5 – University museums and collections included in field research: percentage per type.

### *Follow-up correspondence*

Follow-up correspondence was conducted between the dates of each visit until March 2005. This included further clarification of topics addressed during the study visit, exchange of further documentation and updates on the situation of the collection or museum.

## **2.5 Summary**

This research aimed at reviewing past and present knowledge of university collections, as well as improving our understanding of their significance for universities and for contemporary society in general. To this aim, bibliographical sources were studied and exploratory study visits were undertaken. The approach was historical and comparative.

It is important to emphasize the exploratory nature of the present study. This is not a quantitative survey of European university museums and collections. The diversity of the field, the sources consulted and the methodology used do not allow for more than the identification and discussion of main trends and issues. This research aimed at gathering impressions rather than testing hypotheses, at probing more than counting.

Results of the study visits and interviews are applied throughout this thesis whenever considered appropriate, although the bulk of the results are presented in chapter 6. All transcriptions from respondents were made from notes therefore do not necessarily represent precise quotes.

[M.C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

### 3. Establishing the basics: Concepts and definitions

The [university] museum is neither an institution for the general public as are most museums; [...] nor a department of a college or university like Spanish, or Biochemistry, with its staff of teachers and students. If it were either one of these, its identity, role, philosophy and finances would be clearly delineated. [...] The beast is indeed strange.

(Freundlich 1964-65: 150)

One tends to look at university museums and collections as having other museums as their main reference model<sup>19</sup>. University museums themselves tend to benchmark against the museum sector (Wallace 2003a,b). This is natural given that there are many aspects in common, particularly in the case of important and high profile university museums such as the Fitzwilliam Museum in Cambridge, the Hunterian Museum in Glasgow or the Musée des Arts et Métiers in Paris. However, this perspective is partial and insufficient. For the large majority of university museums and collections, the influence of the museum sector has only become truly significant in recent decades, when their purposes became under intense scrutiny. It was only then that many university museums and collections began to look at non-university affiliated museums in search for alternative organisational models, roles, and, in many cases, in search for an identity.

University museums and collections cannot be understood without understanding universities for the simple reason that they are planned, built, directed, organised, expanded, neglected and dismantled by professors, researchers, students, librarians, and alumni. If the nature, history and *modus operandi* of universities are not taken into account, one is likely to find the complexity of university museums and collections overwhelming, the reasons for their existence chaotic and arbitrary, and their public performance well below standards. One can and should benchmark against the museum sector, but only once the nature and significance of university collections is more clearly understood.

In this chapter, I will examine what makes university museums and collections so complex. I will begin by detailing their diversity, discuss terminological issues and then propose a typology of university collections that provides a practical and simple tool to discuss their past, present and future significance, thus providing signposts for the next chapters.

#### 3.1 What is a museum? What is a collection?

As yet, no clear all-encompassing definition of 'university museum' appears to have been formulated. In fact, one of the stimulating aspects of university museums and collections is that their nature and history pose fundamental challenges to museology.

During a survey of British university museums and collections, Kelly (1999) found that many university museums, collections and galleries<sup>20</sup> might not meet the "official criteria" and recognised the need to be "less exclusive" (Kelly 1999: 8). She could not provide a proper definition: "I do not have a definition for a [university museum, gallery or collection] other than it is a museum, gallery or collection administratively within a degree granting institution" (Kelly 1999: 8). Indeed "if one regards the holding of a collection as the

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<sup>19</sup> In this dissertation, the term 'university' is taken in its broadest sense and to mean all European higher education institutions, including for example the *Fachhochschulen*, the polytechnics and the *grandes écoles*.

<sup>20</sup> Higher Education Museums, Collections and Galleries (HEMCGs) was the designation adopted in the survey.

fundamental and necessary criterion for inclusion in the concept museum, then university museums range from the slide cabinet in the lecturer's room, to departmental collections in the care of nobody in particular, to departmental collections in the care of the most junior technician because nobody else wants the job, all the way through proper departmental collections with a designated number of staff to look after it, right up to proper university museums, as one might say, of which Manchester, Newcastle, Glasgow, Oxford, Cambridge come to mind" (Hounsome 1986: 29). Black (1984) disagreed, noting that museums are made of collections, but collections do not make a museum. "What makes a museum", he wrote, "is obviously a matter of institutionalisation and structure, but first and foremost a permanent commitment to research, preservation and interpretation of collections for all of the university community, and, to varying degrees, for the general public" (Black 1984: 21). Kinsey (1966: 106) wrote: "My definition of a [university] museum is an institution with all the implications of a major museum" and he explained: "I am not referring to cabinets containing artefacts and objects used exclusively for teaching purposes. Nor do I refer to collections acquired as a result of the efforts of wealthy individuals or alumni whose hobby collections are accepted because these individuals may favour the [university] with a healthy contribution" (Kinsey 1966: 106). Already in the 1950s, Rodeck had denounced the indiscriminate use of the term 'museum', "whether speaking of a permanent collection of a million articles, [...] collections of teaching aids, [...] [or even] empty rooms where pictures may be hung" (Rodeck 1952: 5).

A distinction should be made between the conceptual and terminological levels. There are historical reasons for a flexible concept of 'museum' in universities. However, some degree of terminological clarity is essential. Furthermore, as the museum profession evolves and standards consolidate, there is no reason to use the term 'museum' when referring to a 'collection'. The Bertolozzi prints in the library of the Faculty of Sciences at the University of Porto, the pickled human brains in the Psychology Department at Cornell, or the fossils at the Department of Human Anatomy at the University of Turin constitute collections, but do not necessarily make a museum. Both collections and museums do exist in universities and both may include objects of significant value requiring preservation. However, the distinction must be made clear, at least at the terminological level. When definitions do not exist, one needs to get them where they exist – in this case from museum associations who have set the standards for decades.

Perhaps the most consensual definition of a museum, and the one more widely applied, is provided by the International Council of Museums (ICOM). First defined in 1946, ICOM's definition of 'museum' has been subject to subsequent refinements, reflecting social change, museological research, as well as the expectations of society: "A museum is a non-profit making, permanent institution in the service of society and of its development, and open to the public, which acquires, conserves, researches, communicates and exhibits, for purposes of study, education and enjoyment, material evidence of people and their environment"<sup>21</sup>. This definition is essentially similar to those adopted by museum organizations throughout the world, including the Museums Association (UK), the Canadian Museums Association, the American Association of Museums, Museums Australia, the Finnish Museums Association, as well as the French (Musées de France) and Portuguese law. Herein the term 'museum' is therefore used in the ICOM sense.

Professional organizations do define 'museum', but usually not 'collection'<sup>22</sup>. In the glossary of the Code of Ethics, the Museums Association (MA) of Britain provides an operational definition of a [museum] 'collection': "a collection is an organised assemblage of selected

<sup>21</sup> ICOM's latest definition of 'museum' was approved in Barcelona, July 2001, and is presently under debate.

<sup>22</sup> Some universities define 'collection' in their collections policies (when these exist). One of the two Australian surveys of university museums and collections defined 'collection' as "that unit within the university which acquires, conserves, and researches, for the purposes of study, education and enjoyment, material evidence of people and their environment, and **which has limited, scattered or no displays**" (University Museums Review Committee 1996: 206, bold in original).

material evidence of human activity or the natural environment, accompanied by associated information. As well as objects, scientific specimens or works of art held within a *museum* building, a collection may include buildings or sites” (Museums Association 2002: 7; italics added). Here, I will adopt this definition, be it slightly modified in order to explicitly include the possibility of a university collection being permanent despite of it not being in a museum, as is the case with herbariums and many other university collections. Therefore, in this dissertation the term *collection* is used in the sense of a logically coherent system of documented material evidence of human activity or the natural environment, permanently or temporarily gathered in the framework of a clear and previously established purpose. In the university context, this clear and previously established purpose may be research, teaching, display or any combination of the three.

It should be noted that ICOM’s definition is often considered problematic for university museums, particularly with respect to the interpretation of the terms ‘open to the public’ and ‘permanent institution’. For example, the Musée d’Anatomie at the University of Montpellier was created in 1851 as a teaching resource. It had a director (who was simultaneously the chair of anatomy) and allocated funds coming from the general budget of the Faculty. It was a ‘teaching museum’, a concept that has a long tradition in universities (see Chapter 4). In 1945, the Musée opened to the public. Today, the museum still exists (fig. 3.1), it still has a director, yet it is no longer used as a ‘teaching museum’ and is closed to the public again due to lack of financial resources. So, according to ICOM’s definition of a museum, when was the Musée d’Anatomie a museum proper, if indeed ever? The question is worth asking because university museums often do not have autonomous control over basic aspects such as public admittance and even their very existence. Ultimately, the university provides the conditions, the opportunities and the resources. Many university museums are permanently closed because they are given no other option. In the museum sector, a closed museum is usually rapidly dismantled and collections are transferred to other institutions. A university museum may merely close its doors and remain frozen in time for decades, like ‘ghost-museums’ waiting for a rebirth – yet maintaining the designation ‘museum’ in directories and lists. Examples are the Robert Koch Museum (Humboldt University in Berlin), the Cesare Lombroso Museum (University of Turin), and the Museo di Fisica (University of Bologna)<sup>23</sup>.



Fig. 3.1 – Musée d’Anatomie, Université de Montpellier 1 (photo: B. Pellequer, courtesy University of Montpellier 1).

<sup>23</sup> Hopefully this situation will change, at least for the Musée d’Anatomie in Montpellier and the Cesare Lombroso Museum in Turin, as both are included in renovation projects initiated by their universities. The Robert Koch Museum is presently at risk due because Humboldt University Berlin recently sold the building where it is located.



Nevertheless, in university museums, closed doors may also be the result of a deliberate policy. The Museum of Vertebrate Palaeontology at the University of California in Berkeley (USA) is active in research, teaching and public outreach for all ages, yet all resources are online, nothing on the floor. On the floor are just the collections, and the Museum doors are only open for researchers and students. Public exhibition is not included in their mission statement, only teaching and research<sup>24</sup>. If in ICOM's definition of a museum 'open to the public' is interpreted as 'open to the general public', then it is not a museum – a paradox given that the Berkeley Museum is in fact one of the most reputed museums in the world. This paradox has led Humphrey (1992a,b) to argue that university museums require a clearer definition, encompassing special characteristics and functions of university collections that are used for teaching and research, but which have no public engagement in their mission. My view is that ICOM's definition in itself is quite appropriate as long as researchers and university students count as 'public' and I see nothing in ICOM's definition that would not allow for doing so.

New technologies have undoubtedly provided new ways for public outreach. University museums are particularly well placed to profit from new technologies and use them to reach researchers, students and broader segments of the so-called 'general public', even if they are physically closed to the public. Being closed to the 'general public' is not necessarily synonymous with being moribund. Although closed to the public, the Museo di Fisica of the University of Bologna has a highly informative website and is actively engaged in the University's Open Days (G. Dragoni, interview 12 March 2003)<sup>25</sup>. The same applies to many other university museums and collections in Europe.

Definitions and interpretations change and should be understood in their historical context. Standards are a relatively recent development in the history of museums and the role of the public even more so. In the 1960s, important 'research museums' such as the American Museum of Natural History (AMNH) in New York did not consider the public their priority. E.H. Colbert, Curator of Geology at the AMNH and professor at the University of Columbia wrote: "As for the display of objects that are housed and studied in the museum, this is a desirable but not a basic museum function, even though a large segment of the public and a considerable proportion of professional museum people seem to think that such is a primary museum aim" (E.H. Colbert *in* Rolfe 1969: 7). Until seven years ago, the *Rijksmuseum van Natuurlijke Historie* (National Museum of Natural History) in Leiden, the Netherlands, was only accessible for researchers and students and no public display whatsoever existed.

An increasing awareness and involvement of the 'general public' in museums could be beneficial and the important role of museums in informal education is undeniable (e.g. Gil & Lourenço 1999, 2001). However, there are disturbing signs of 'hegemony', i.e. visitors being the sole factor determining what museums are and should be and how they ought to be funded. Recently, visitors have been engaged as active developers of educational programmes and co-curators in exhibitions. Moreover, there seems to be a widespread belief that it has always been like this (revisionism also impacts the history of museums). During the past years, this trend has also left its mark on university collections and museums. There is an increasing tendency to establish simplistic hierarchies of value (i.e. define what is good or bad), using the 'general public' as absolute criterion, if not as an excuse. Certainly, university museums and collections cannot be worthy of public funding unless they provide public benefit. However, public benefit is not limited to public exhibition and needs to be

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<sup>24</sup> See *Mission Statement* at <http://www.ucmp.berkeley.edu/museum/museum.html>, accessed 28 May 2005. For more information on the development of the UCMP's award-winning website, see Scotchmoore (2000).

<sup>25</sup> See *Museo di Fisica, Università di Bologna*, <http://www.df.unibo.it/museo/welcome.htm>, accessed 30 May 2005.



considered in its broadest sense<sup>26</sup>. It is also in a broad sense that the wording 'open to the public' in ICOM's definition must be considered, thereby making it an important and legitimate starting point to address the reality of university museums.

### 3.2 The diversity of university museums and collections

No one can grasp the true magnitude of the scientific, artistic and cultural heritage held by European universities. Collections are the 'dark matter' of universities: we know they are there, but no one can actually measure them. No comprehensive survey of university museums and collections at the European level has ever been done and only few exist at a national level<sup>27</sup>. Until a few years ago, several European universities – for example the University of Rome 'La Sapienza' – had 25-30 museums open to the public. The Humboldt University in Berlin and the University of Leipzig each list about 30 museums and collections. Pisa, Zurich and Kiel have 13 museums and collections each. Together, European universities probably have more than 10,000 museums and collections, with the total number of specimens certainly in the hundreds of millions<sup>28</sup>. Clearly, a significant proportion of the European scientific, artistic and natural heritage is in universities across the continent. In most cases, this heritage is virtually unknown outside the university to which it belongs and, *hélas*, often also unknown within the very university to which it belongs.

University collections encompass all possible disciplines. As Rodeck (1952: 4) stated, "There is every possible combination [...] and almost every imaginable subject, from dentistry to church history, [...] represented by a museum at some university". The designations may vary, but university collections cover 'traditional' fields such as natural history (which can in practice result in any combination of zoology, botany, mineralogy, geology, palaeontology and anthropology), art, archaeology, anatomy, pathology, among others. University collections also encompass collections of history – including social history, history of religion, history of the university (university memorabilia), history of student life, history of medicine, pharmacy and pharmacognosy, technology and engineering, physics, chemistry, and astronomy. University collections also cover more specialised subjects, such as history of design and textiles, history of theatre, geophysics, geodesy, meteorology, genetics, ecology, microbiology, and marine biology<sup>29</sup>.

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<sup>26</sup> Who pays is a different matter altogether and should be kept separate. It is however my view that if museums have responsibilities that far exceed exhibition, yet fall within 'public benefit', then the public is willing to pay for them if these responsibilities are properly explained.

<sup>27</sup> Published national surveys of university museums and collections were undertaken in the Netherlands in the 1980s and 1990s, the UK between 1989 and 2002. In France, there is an ongoing survey, but no data has been published yet. Italy and Germany have ongoing surveys too and the data has been made available on the internet (see Chapter 5).

<sup>28</sup> See Appendix A1.

<sup>29</sup> For a more comprehensive overview of disciplines represented in university collections, as well as institutional types, see UMAC's Worldwide Database at <http://publicus.culture.hu-berlin.de/collections/>



Fig. 3.2 – Techniek Museum, Technical University Delft (storage).

In terms of objects, university collections encompass a diverse typology, from minerals, crystals, meteorites, rocks, sedimentary soil profiles, plants, fungi, algae, bacteria, living marine and freshwater organisms, seedbanks, fossils, wet and dry zoological specimens, fruits, fibres, resins, barks, embryos, skins, skeletons, skulls, bird nests and eggs, anomalies and monstrosities, clothes and textiles, paintings, drawings, sculptures, jewellery, weapons, toys, musical instruments, astronomical instruments, surgery instruments, thermometers, chemistry equipment, sound archives, chemicals, measure standards, balances, machines, tools, cars, planes, boats, maps, photographs, slides, books, and the list could go on and on. University collections also include plaster, wax, and wood models, replicas, prototypes, and miniatures. In number of objects, university collections may vary from a couple of dozens each to tens of millions of objects.



Fig. 3.3 – Herbarium, University of Leipzig (seed bank).



Fig. 3.4 – Abel Salazar House Museum, University of Porto (photo Abel Salazar House Museum Archives).

At the organisational level, there are several models. Apart from the more ‘traditional’ museums and botanical gardens, it is worth mentioning that universities also have historical buildings and house-museums (e.g. Unamuno House Museum, University of Salamanca, Legado de Ortiz Echagüe Museum, University of Navarra, House Museum/Memorial Mōri Ogai, University Humboldt Berlin, Kettle’s Yard in Cambridge, and the Abel Salazar House Museum, University of Porto), science centres (e.g. Maison de la Science, University of Liège and Jodrell Bank Science Centre, University of Manchester), planetariums (e.g. Steno Museum, University of Aarhus and Museum of Science, University of Lisbon), castles (e.g. Durham Castle, University of Dundee), aquariums (e.g. Aquarium of Banyuls-sur-mer, University of Paris 6 Pierre et Marie Curie), ecomuseums (e.g. Ecomusée de la Région du Viroin-Treignes, Université Libre de Bruxelles), hospital museums (e.g. Museum at the Psychiatry Hospital, University of Aarhus), sacred art museums (e.g. Temple of the Annunciation Museum, University of Seville and Sacred Art Museum, University of Coimbra) and contemporary art museums (e.g. Laboratorio Arte Contemporanea at La Sapienza and Museo de la Universidad de Alicante).



Fig. 3.5 – Permanent exhibition *Simmetria, giochi di specchi*, Department of Mathematics, University of Milan (reproduced with kind permission of the University of Milan).



Fig. 3.6 – Collections of Christian archaeology (part), Faculty of Theology, Martin-Luther University of Halle-Wittenberg (reproduced with kind permission of the University of Halle-Wittenberg).

There are also national museums under the direct administration of universities or, more generally, of higher education or research institutions, e.g. the National Museum of Natural History, University of Lisbon, the National Museum for the History of Medicine, University of Porto, the Musée National des Arts et Métiers (CNAM) in Paris, the National Museum of Architecture, Universidad Politecnica de Madrid, the Museo Nazionale degli Strumenti per il Calcolo, University of Pisa, and the Musée National de l'Éducation in Rouen of the Institut National de Recherche Pédagogique. In Norway, the national museums of archaeology and natural history are at the University of Bergen. There is at least one museum that is simultaneously a national museum and a research institution comprising a *Ecole doctorale*: the Muséum National d'Histoire Naturelle in Paris.



Fig. 3.7 – Sound archive, Department of Zoology, Humboldt University Berlin (reproduced with kind permission of the Humboldt University Berlin).

Nevertheless, as Merriman (2002: 74) said, in universities there is a “divide between ‘the museums’ and ‘the collections’”. Universities also have collections and these are undoubtedly



in the majority. Typically, they are in departments, institutes, astronomical observatories or other facilities. In Europe, some important examples are the historical collections of the École Nationale Supérieure des Beaux-Arts (Paris), the palaeontology collections at the University of Lyon Claude Bernard, the animal sound archive at the Humboldt University in Berlin, the collection of scientific instruments at the École Polytechnique (Paris), the Egyptology collections at the University of Strasbourg (March Bloch), the Galton Collection (University College London), the Egas Moniz Collection (University of Lisbon), among many others, including almost all herbariums. Conditions of public access vary – some collections are displayed in a permanent and dedicated space without being accessible to the public, for example art collections and university memorabilia. Other universities have art collections on permanent display in galleries open to the public – such as the Courtauld Institute of Art Gallery (London), the Galerie Wittert (University of Liège) and the Whitworth Gallery (University of Manchester). Art galleries without collections – hosting temporary exhibitions – are also found in universities. Although outside the scope of this research, such galleries are widespread, e.g. the Université de Lille (Sciences et Technologie), the Université de Bourgogne (Dijon), the Université Libre de Bruxelles, and the University of Rome ‘La Sapienza’.



Fig. 3.8 – Collection of scientific instruments from the University of Sciences and Technology in Lille: temporary exhibition at the *Espace Culture* of the University, April 2004 (reproduced with kind permission of the Université des Sciences et Technologie de Lille).

Finally, collections can also be found in university libraries. Keeping collections of objects in libraries is an old tradition in many European universities. As early as 1638 there was a gallery of antiquities in the Bodleian Library at Oxford University (MacGregor 2003). Collections under the jurisdiction of libraries may come under the designation ‘library special collections’ or ‘*fonds anciens*’, they may be technically considered (paper) archives yet they may contain museum-type objects. These archives may be associated with the history of the university (e.g. the College Archive Collection at Imperial College London, the Fonds anciens et précieux de la Bibliothèque universitaire, Université de Bourgogne in Dijon) or with a personality (e.g. Brunel Collection at the library of the University of Bristol). In fact, ‘museum-type’ collections are so common in university libraries that librarians have already claimed a whole new professional field – that of curatorship (e.g. Kemp 1994).

One conclusion necessarily follows from this diversity of sizes, types, disciplines, management, objects: if these entities are to be approached as a group, one needs to simplify. A first step is to eliminate multiple and often divergent designations. Galleries (with

collections), house-museums and historical houses, science centres, botanical gardens, all fit in the 'museum' category as defined by ICOM. Herbaria, library special collections, instruments, special archives, 'orphaned' collections abandoned in attics and the like fall under the designation of 'collection'. This is the first terminological and conceptual simplification: the diversity described above can be reduced to collections and museums (a simplification I have in fact used throughout this text so far). The second simplification is the recognition of the collection as main unit and its study separate from any form of organisation. There are two advantages to this. Firstly, it is intuitive and inclusive. As Warhurst (1986: 137) stated: "what we are really talking about is university collections, some of which happen to be in museums". Secondly, it enables the elimination of factors one cannot control. While in universities assembling collections is normally done for purposes which one can identify and understand, what happens to them afterwards is far more difficult to assess. University collections can be located in museums, libraries, galleries, storages, lecturing rooms, offices, laboratories, attics or basements. They can be how and where they are for an infinite number of reasons and for long or short periods of time. In particular, the organisation of museums may be driven by historical, political, practical or other "haphazard and unsystematized" reasons (Duggan 1964: 282, Maigret 2001), such as personal and persistent involvement of professors, a sudden appearance of funds, an unexpected donation, or even sheer chance.

Apart from being inclusive, the choice of the *collection* as main unit of study is also practical and has been adopted before. The first published survey done in Europe used the collection as unit. Sponsored by the Netherlands' Ministry of Culture, it was entitled *Landelijk Overleg Contactfunctionarissen Universitaire Collecties* (Survey Group for University Collections) (LOCUC 1985). Later surveys in the Netherlands followed the same approach under the name *Landelijke Coördinatiegroep Academische Collecties* (National Coordinating Group for Academic Collections) (Anonymous 1995b, 1997, Stoop 1999, Galen & Stoop 2000). The European network *Universeum* adopted both categories 'collection' and 'museum' (Bremer & Wegener 2001). In England, surveys began by using collections and museums as units, but later the acronym HEMGC (Higher Education Museums, Galleries and Collections) was adopted (Arnold-Foster 1989, 1993, 1999, Arnold-Foster & Weeks 1999, 2000, 2001). Similar surveys conducted in Northern Ireland (Northern Ireland Museums Council 2002), Wales (Council of Museums in Wales 2002) and Scotland (Drysdale 1990) adopted the collection as the inclusive unit. When Kelly (1999) surveyed management issues in British university museums and collections, she adopted HEMGC as a broad category. The HEMGC category was also used by Merriman (2002) and, with a slight adaptation, by Danilov (1996) in his US directory. Australian surveys used 'collection' and 'museum' (University Museums Review Committee 1996, 1998). Authors who aim to be inclusive – for example, by describing the whole panorama of a country – seem to prefer 'collections' (e.g. Arnold-Foster 2000, Hudson & Leggett 2000, Labrador 2000, Stanbury 2003, Weber 2003) or 'museums and collections'. The same happens in the designation of national and international associations. In fact, several international committees of ICOM are 'of museums and collections' (e.g. CIMAM, CIMCIM, CIMUSET, NATHIST, UMAC). Adopting the collection as main inclusive unit does not mean that the museum is irrelevant. It merely means that the organisation of collections in museums brings up a different array of issues that are better addressed separately.

### 3.3 Terminology

The beginning of knowledge consists in learning to call things by their names.

Old Chinese proverb

What is the wisest thing? Number; but second to the one who assigns names to things.

Pythagoras

Terminology is an important aspect of scientific endeavour. If different authors use the same word with different connotations or if the same word expresses different meanings, confusion will be the result. A consistent terminological body is also a sign of 'scientific maturity'. In the

case of terminology employed in museology and museum studies, chaos has prevailed for a long time, despite a few valuable attempts to bring order to the terminology used<sup>30</sup>. ICOM has been asking for *thesauri* and standardisation at least since 1978 (resolution adopted by the General Assembly), but so far to no avail.

Terminological inconsistency and conceptual depth are different sides of the same coin. Terminological inconsistency stems from lack of conceptual depth, which in turn generates terminological problems. In the case of university museums and collections, their diversity, their traditionally strong ties with the subject-matter of the collections, and the divide between academia and the general museum sector have resulted in a complex terminological body. However, university museums have barely begun to think about themselves as an autonomous group and there will likely be less terminological inconsistency as the development of a coherent philosophy about their role and nature takes shape.

For clarification, but also as a tool towards a better understanding of university museums and collections, a terminological survey was undertaken (see Appendix A7). As a result of this survey (complemented with terminology 'collected' during study visits), three major terminological problems were identified: a) country-specific terminological problems; b) terminological problems of a general and broad nature, shared with non-university affiliated museums; and c) specific terminological problems. These three problems will be briefly discussed, while at the same time clarifying the terms adopted herein.

### 3.3.1 Country-specific terminology

Given that this research had an international scope, particular attention was given to the meaning of terms in different languages and countries. For example, there is a significant difference in the use of the term 'anatomy' in Europe. In the Anglo-Saxon tradition, anatomy is fundamentally a synonym of macroscopic anatomy; microscopic anatomy does not exist as such and is instead designated histology. In the Latin tradition, anatomy can be microscopic *and* macroscopic and histology only relates to the cell and tissues<sup>31</sup>. Such nuances are crucial and need to be taken into account to understand the origin and development of university collections in different countries.

Archaeology in the USA is frequently considered a speciality within anthropology (the study of Man), whereas in Europe these have traditionally been two independent fields of study (Sturtevant 1969). Since this study focuses on Europe, one would suppose no particular caution was needed – this is not so. I will illustrate this with examples from one country, i.e. Portugal. At the University of Porto, the Museum of Archaeology and Prehistory not only includes the collections of anthropology, but the Museum is also an integral part of the Museum of Natural History. This is not because the University of Porto is particularly aligned with American traditions, but the result of a chequered history<sup>32</sup>. At the University of Lisbon, the National Museum of Natural History includes the university collections of physical anthropology, but not ethnology (which formed the basis of the National Museum of

<sup>30</sup> The *Dictionarium Museologicum*, containing 1,632 entries in 20 languages, was published by ICOM/CIDOC in 1986 (Budapest). Other projects of terminological homogenization (in München and Amsterdam) followed suit, as well as a number of meetings on the subject promoted by ICOFOM. *Thesauri* were developed at a disciplinary level (e.g. by the Getty Foundation). Peter van Mensch has published prolifically on the subject of terminology in museology and museums – for references and online papers, see the Reinwardt Academy's website at <http://www.mus.ahk.nl/>

<sup>31</sup> The same goes for treatises. In the Anglo-Saxon tradition treatises of histology include microscopic anatomy. Often reference collections are derived from such treatises and different terminological traditions impact the designations of collections and what they comprise.

<sup>32</sup> The professor who is at the origin of the Museum of Archaeology and Prehistory – António Augusto Mendes Corrêa – was chair of Anthropology at the Faculty of Sciences and simultaneously in charge of the Museum of Ethnology, the Art Gallery and the Museum of Archaeology at the Faculty of Humanities [*Letras*], where he was also professor. When the Faculty of Humanities was extinguished for political reasons in 1928 (only to be re-established in 1961) (Santos 1996), its collections were partly transferred to the Faculty of Sciences and integrated in the Museum of Natural History.

Ethnology) and at the University of Coimbra, the Museum of Natural History includes both physical anthropology and ethnology. There exist many similar examples in other European countries and caution is therefore always necessary in order to understand what is meant by the various disciplinary designations.

### 3.3.2 General terminology: uses of 'teaching' and 'research'

Issues of general terminology in museums are beyond the scope of this dissertation. However, the use of the terms 'research' and 'teaching' by the museum sector in general are in need of further clarification. Lourenço (2002) discussed this topic, but a brief review is appropriate here as university museums are likely to use the terms 'research' and 'teaching' often with a different meaning than the museum sector in general.

Education is an integral mission of all museums and although this may take a wide variety of forms, the museum sector generally does not use the term 'teaching' – terms and expressions such as 'informal education', 'interpretation', or simply 'education' appear to be more current. The museum sector focuses on the visitor, who assumes control of his or her voluntary learning experiences. In contrast, 'teaching' is centred on the teacher – the one who teaches – and is too loaded with the context of formal education (the museum sector does not use the term 'teacher' either, generally preferring 'docent'). The term 'teaching' [or *enseigner*, *ensinar*, *enseñar*, *insegnare*] is of widespread use in universities and has a long tradition – 'teaching' is in fact centuries older than 'research', the modern sense of which originates in the 19<sup>th</sup> century. Many university collections began as teaching collections and formal teaching was – and still is – an institutional responsibility of many university museums. Unless stated otherwise, in this dissertation the term 'teaching' – or 'teaching collection' – is used in the sense of formal teaching aimed at higher education students.

The term 'research' is more complex and in itself a multi-level concept with many facets at each level. It is commonly linked with the word 'science', which is not a simple term either. Some authors point out that languages such as English – and, for that matter, French, Spanish, Portuguese and Italian – have a rather "narrow and historically perverse" meaning for the word *science* (Schupbach 2001: 232, S. de Clercq, *in litt.* 12 August 2002), no matter how rich these languages are in other respects. In marked contrast, the German and Dutch equivalent words – *Wissenschaft* and *Wetenschap* – have a clear and direct link with the advancement of knowledge in a broad sense.

How does the museum sector generally perceive 'research'? There is no straightforward answer to this question as research has always been a 'hot topic' in the museum sector. There is an extensive literature on the subject and a plethora of meanings can be identified. This is partly due to the multilevel nature of museum theory and practice, partly to the complex nature of the term 'research' as outlined above, and partly because in contemporary society research is a 'prestigious' term hijacked by many – from committees' reports to governmental legislation, from hospital administrators to journalists, from unions to non-governmental organisations. Research is a broad term, it is all-encompassing and provides 'credibility' to those who use it. However, when using the term 'research' in a museum context, one has to clearly state what is meant.

A clear distinction should be made between discipline-based research (e.g. research in archaeology, history of art, anthropology) and for museological purposes. Both use the object as a source of information, but while one promotes understanding in the disciplines represented in the collection, the other promotes understanding in the field of museology. Mensch (1994) designates the former 'museum research' and the latter 'museological research', a terminology also followed by Beneš (1994) and the ICOFOM (1994), among others. In a similarly binomial way, Pearce (1995: 259) states that 'museum theory' encompasses: i) the discipline-based study of the museum material, and ii) the study of the history and nature of museums, their holdings and their operation. For 'discipline-based



research' synonyms used are e.g. 'research-oriented curatorship' (Davies 1984: 165), 'collection research' (Davies 1984: 166), 'curatorial research' (Hounsome 1984: 161), 'systematic object research' (Bridgen 1984: 171), 'subject-matter research' (Mensch 1992), 'museum-based research' (Bridgen 1984: 171, Fenton 1995: 225), 'discipline-based study of museum material' (Pearce 1995: 259), and 'subject-based expertise' (Fenton 1995: 224). Other than multiple synonyms, research is often reduced to other museum functions, in particular curatorship and interpretation (e.g. Parr 1963, Bridgen 1984). Research can also be (mis)identified, particularly in art museums, with object authentication and conservation (e.g. Parr 1963). In one of the latest editions of the *Collections of the British Museum*, the last chapter of the book is entitled 'Research', after chapters devoted to the study of collections (Egyptology, Numismatics, etc.). In the chapter, research is exclusively associated with conservation, and reduced to "the scientific examination of collections", meaning to "provide important information on when, how and where objects were made and what materials they were made of" (Wilson 2001: 282).

In this dissertation, the term 'research' does not merely refer to the investigation needed to write an exhibition label or catalogue, to answer queries from the general public or to determine the authenticity of an object and why or where it was collected. These are institutional routines that are often called 'research' and they may indeed qualify as such, depending more on the *how* than on the *what*. Unless stated otherwise, in this dissertation the term 'research' – or 'research collection' – means discipline-based research, i.e. the deliberate and hypothesis-driven activity that enhances disciplinary knowledge.

### 3.3.3. Specific terminology

Over the years, university museums and collections developed a terminological body (or rather a jargon) often not shared by the broad museum sector. This terminological specificity is a consequence of many decades of keeping a balance between three functions – research, teaching and public display – and therefore particularly illustrative of the conceptual framework under which university museums and collections operate. Being positioned between two worlds resulted in interesting hybrids, such as 'the display museum' vs. 'the working museum' (MacDonald 2000: 83), the 'display collection' (Nicks 1991: 112) and 'teacher-curator' (Coolidge 1956: 169). Indeed, this specific terminology represents a splendid key to the world of university museums and collections.

As the survey illustrates (see Appendix A7), the terms 'teaching collections' and 'research collections' are widely used to refer to collections resulting from or organised to support collection-based teaching and research. This is also the sense in which these terms are used in this dissertation. Hudson & Legget (2000: 21) used the expression 'collections didactiques' as a synonym for 'teaching collections'. In many museums, teaching collections are displayed exclusively for students – this is why Baramki (1970: 30) used the expression 'students' gallery', while Van den Driessche (2000: 39) used 'galerie didactique'. The expression (and concept) 'teaching museum' is also used (e.g. Warhurst 1984: 81) and the concept itself has a long tradition in universities.

Keene (1995) used the expression 'collection d'étude' for collections exclusively in store, suggesting an incompatibility between display and research functions. Similarly, Pierre Bariand, interviewed about the collection of minerals of the Université Pierre et Marie Curie (Paris), used the term 'collection de travail' – as a synonym of research collection – opposed to 'collection d'exhibition' (P. Bariand *in* Anonymous 1995a: 4). This dichotomy is further amplified in the use of 'public collection' vs. 'scientific collection' (Jorge 1952: 135), 'display museum' vs. 'working museum' (MacDonald 2000: 83) and 'public exhibition' vs. 'reserved exhibition' (MacDonald 2000: 78).

Warhurst (1984: 80) speaks of 'reserve collections' as a synonym for 'research collections', while Hudson & Legget (2000: 22) applied the expression 'matériaux de référence et de

recherche'. Other synonyms of research collections found in the survey are 'scientific collections' (Parr 1958: 14, Jorge 1941: 82) and 'study collections' (Collier 1962: 323, Guthe 1966: 103, Nicks 1991: 113). Hudson & Legget (2000: 20) used the expression 'collections scientifiques' as a synonym for 'research collections', while Van den Driessche (2000: 39) used the same for 'collections of exact sciences' (e.g. history of physics, astronomy, etc.).

The bulk of material resulting from field research (e.g. in archaeology, geology, palaeontology) is often subjected to study and selection before being accessioned and preserved. In such cases, some authors (e.g. Saville 1999, 2002) refrain from applying the designation 'collection', preferring to use 'assemblages'. Likewise, the Society of Museum Archaeologists (UK) designates these 'bulk collections' (Minsky 1976: 40) as 'field collections' (Society of Museum Archaeologists 1993). The ICOM Code of Ethics uses the expression 'working collection' (ICOM 2004), which is simpler and self-evident<sup>33</sup>.

The term 'sub-collection' also appears in the professional literature (e.g. Minsky 1976: 40) as a practical expedient for collections management in research. Although not exclusive of the university museum world, the term 'sub-collection' was recently adopted in university contexts – e.g. recent reorganisation projects in Dutch universities – as a unit to cope with the number of objects and thereby better assess university heritage. Clercq (2003: 33) defines the concept of sub-collection as: "[...] any group (between 10 and several 1000s) of objects with an internal logic, which is readily understood by the professional field. In the case of geology, sub-collections are identified by the name of the collector, the year, a geographical site or a subject, usually a combination, for example 'Subbetic Zone, Sierra de Maria (Spain), de Clercq, student-collection, 1968' ".

The great variety of terms employed is itself evidence of the multi-leveled practice associated with collections in universities. Hybridization is not necessarily something bad to be avoided, as it is a direct consequence of the position of university collections between the world of professional museums and the world of higher education. There is, however, need for greater clarity and consistency in terminology.

### 3.4 Typology of university collections

Usually, university collections and museums are classified according to disciplinary criteria (e.g. zoology collections, archaeology collections, museums of science, etc.). Classifications based on the nature of objects are also common (e.g. 'musée de moulages', anatomical wax models, herbariums, collection of mathematical models, collections of maps, drawings, etc.). Non-disciplinary and all-encompassing typologies of university collections are rare, which is hardly surprising. First, their diversity makes it difficult to provide a classification that goes beyond mere disciplinary categories. Secondly, because they are subject to constant change (mirroring advances in higher education and research, as well as institutional changes within the university), university collections are too complex, dynamic, and indeed historical to be boxed in rigid categories.

Typologies drawn from museum textbooks and manuals depend too much on the practice, organisation and exhibition function ('permanent collection', 'display collection') of non-university affiliated museums, which is not applicable to the broad spectrum of university collections. For example, according to scope, Lord & Lord (1991) classified collections in: a) representative collections, b) systematic collections, c) associative collections, and d) opportunistic collections. Edson & Dean (1994) recognised three categories, depending on the museum's mission: a) permanent collection, b) research collection, and c) education programme collection. Lord & Lord (1991) provided an alternative classification, based on

<sup>33</sup> The *ICOM Code of Professional Ethics* was adopted at the 15<sup>th</sup> General Assembly of ICOM meeting, Buenos Aires, Argentina, 1986. It was amended at the 20<sup>th</sup> General Assembly meeting in Barcelona, Spain, in 2001, and revised at the 21<sup>st</sup> General Assembly meeting in Seoul, Republic of Korea, in 2004.

use: a) display collection, b) study collection, c) reserve collection, d) demonstration collection, and e) library and archives collection.

However, a number of non-disciplinary typologies for university collections do exist. A recent survey of university collections in Northern Ireland (Northern Ireland Museums Council 2002) established seven categories of university collections based on their provenance and development:

- collections acquired to support teaching and research;
- collections accumulated as a by-product of research activity;
- collections significant to the development of a subject or to a department;
- collections donated by donors who see the university as a safe repository;
- portraits commissioned and works given as memorials;
- collections acquired by the university (ceremonial paraphernalia, silverware);
- works acquired to display in public spaces.

This typology is comprehensive and provides a proper account of the development of university collections (not only in Northern Ireland, but in the world). Although it has the merit of differentiating between collections assembled for research purposes and collections resulting from research, the classification is too long and complex.

Typologies especially developed for online databases also exist, yet they are more useful as search tools designed to facilitate the life of the database user than for theoretical insight. The Wits University Database and the Australian University Museums Information System both follow disciplinary criteria<sup>34</sup>. The database developed by UMAC – UMAC Worldwide Database (in progress) – has a triple searchable system organised disciplinarily, geographically and by type. The 22 types listed are: 'museum', 'collection', 'anatomical theatre', 'aquarium', 'arboretum', 'archive', 'art gallery', 'arts centre', 'astronomical observatory', 'biological station', 'botanical garden', 'detention room'<sup>35</sup>, 'greenhouse', 'herbarium', 'house museum', 'memorial', 'planetarium', 'science centre', 'sculpture park', 'sound archive', and 'virtual collection/museum'.

Possibly the simplest and most cited classification (used in several UK surveys) of university collections was proposed by Hamilton (1995). Although recognising that collections might have been formed randomly, Hamilton (1995: 73) provided a typology of university collections made up of four categories:

- a) ceremonial collections, encompassing items related to the university history (e.g. university mace, silver, ceremonial furniture, etc.);
- b) commemorative collections, encompassing portraits of distinguished individuals related to the university's past, works of art given in memory, silver, etc.;
- c) decorative collections, encompassing works of art acquired by the university to decorate public or private spaces within the university;
- d) didactic collections, encompassing works of art, natural history specimens or artefacts acquired for research, teaching and demonstration.

Hamilton's typology is simple though liable for amendment. Firstly, it has a strong bias towards collections of arts and humanities; secondly, categories a) and b) clearly overlap; and thirdly, 'didactic collections' is prone to misunderstanding as 'didactic' is instantly associated with teaching while the category itself is meant to encompass both teaching and research.

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<sup>34</sup> See respectively Wits University Database, [sunsite.wits.ac.za/mus/](http://sunsite.wits.ac.za/mus/) and Australian University Museums Information System (AUMIS) database, <http://www.lib.mq.edu.au/mcm/aumis/index.htm>, both accessed 28 May 2005.

<sup>35</sup> A 'detention room' is a space in which, in the past, universities put students when they misbehaved. Some universities, particularly those of German influence, have restored these rooms and opened them for visitors. There are restored 'detention rooms' at the universities of Greifswald, Göttingen, Heidelberg (Germany) and Tartu (Estonia), among others. The 'detention room' at the University of Tartu is part of the University Art Museum (both located in the University main building).

### 3.4.1 A working typology

There are many possible typologies of university collections. I propose the following working typology, based on Hamilton (1995) (see figures 3.9 to 3.19).

- a) **research collections**: collections that originally result from collection-based research or were organised to support it;
- b) **teaching collections**: collections that were originally organised to support collection-based teaching;
- c) collections of historical teaching and research objects, or simply **historical teaching and research collections**: collections of historical instruments, other equipment and specimens formerly used for teaching and research that were organised in collections after becoming obsolete;
- d) **collections of university history**: collections of university memorabilia and student life, as well as biographical collections related to a personality (e.g. a former rector, professor or student).

University art collections will be addressed in more detail below because some fall within these categories.



Fig. 3.9 – **Research collection**, archaeology: collection of beads at the Petrie Museum of Egyptian Archaeology, University College London. Petrie's exhibition reflects the typological organisation of the collection and corresponding catalogues.



Fig. 3.10 – **Research collection**, zoology: a series of bird skins of *Cyanopica cyanus* at the Museu Bocage (National Museum of Natural History), University of Lisbon (photo C.J. Hazevoet).



Fig. 3.11 – **Teaching collection**, anatomy, Institut d'Anatomie, University of Strasbourg Louis Pasteur.



Fig. 3.12 – **Teaching collection**, archaeology, Musée de Louvain-la-Neuve, Université Catholique de Louvain (Belgium). The artefacts are organised by material (ceramics, glass, etc.), independently of provenance, excavation or other factors.





Fig. 3.13 – **Teaching collection**, topological models, Department of Mathematics, University of Milan.



Fig. 3.14 – **Historical teaching collection**, botanical models in wood, Institut de Botanique, University of Strasbourg Louis Pasteur (photo S. Soubiran).



Fig. 3.15 – **Historical teaching collection**, historical crystal models for mineralogy, Oxford University Museum of Natural History (photo M. Price).



Fig. 3.16 – **Historical teaching and research collection**, medical instruments: the Bambilla collection (part), displayed at the entrance of the Aula Sarpa, Museo per la Storia dell'Università, University of Pavia.



Fig. 3.17 – **Historical teaching and research collection, technology:** Techniek Museum, Technical University Delft.



Fig. 3.18 – **Historical teaching collection, history of art.** The Swillens Collection (only partly depicted), presently at the Utrecht University Museum is a collection of art materials, pigments and tools organised to support teaching (photo P. Rothengatter).





Fig. 3.19 – **Collection of university history**, Martin-Luther University of Halle-Wittenberg.

The proposed typology is simple, intuitive, applicable to every discipline and comprehensive as long as one keeps in mind that, with time, university collections change in the way they are perceived and used. For example, research collections can also be used for teaching (in multiple disciplines). Teaching collections and historical collections can also be used for research. Many research collections are no longer used for their original purpose, but this does not necessarily transform them into historical collections: they may simply be less used due to shifts in scientific research. Uses of collections are infinite and technically impossible to account for in a typology and can be better understood through the history of university collections<sup>36</sup>.



Fig. 3.20 – Example of a historical teaching collection used for present-day teaching. Depicted is a huge ovarian cyst collected in the 19<sup>th</sup> century. Given that today these situations are very rare because patients are given treatment, students of medicine and pharmacy study them as extreme examples prior to the introduction of pharmaceuticals (courtesy Museo per la Storia dell'Università, University of Pavia).

An additional advantage of this typology is that it accounts for the two major processes of collecting in universities: either by purposeful and selective collecting driven by internal needs [types a) and b)] or by historical accumulation [types c) and d)]. Danilov (1996: 17) identified these two processes in his survey of university museums and collections in the

<sup>36</sup> In fact, there is nothing particularly special about university collections in their multiplicity of usage and users. Theoretically, any collection can be used for an infinite diversity of purposes and typologies cannot fully account for all uses. When a collection is thought of as a 'collection of social history', this does not necessarily mean that it is only used by historians. Similarly, a natural history collection does not cease being that because it is used by artists. Collections are not (only) what they are because of their users and the way they are used.

USA. He designated 'internally-generated' those natural history and related collections directly resulting from teaching and research, while for historical collections he used the common disciplinary terminology (e.g. museums of science, history museums, etc.). If appropriate and the context is clear, I may designate collections resulting from purposeful and selective collecting associated with teaching and research 'first generation university collections' and those resulting from historical accumulation 'second generation university collections' (see table 3.1 for a summary).

	Type	Process of collecting	Examples
First generation	Research collections	Purposefully for research or as a result of research.	Herbaria, palaeontology and zoology collections, bioacoustics collections, collections of microbiology, pathology and embryology, anthropology collections, archaeology collections, etc.
	Teaching collections	Purposefully for teaching.	Collections of surface models in mathematics, models in engineering and architecture, sculpture casts in art, etc.
Second generation	Historical research and teaching collections	Historical accumulation.	Historical instruments in physics, astronomy, medicine or other disciplines; historical collections of mathematical models, etc.
	Collections of university history		Portraits and sculptures related to the university, biographical collections, memorabilia.

Table 3.1 – Summary of proposed typology of university collections.

### 3.4.2 University art collections

University art collections deserve special reference and are undoubtedly worthy of a study of their own. During this research, I found a larger diversity of art collections than initially expected. Although courses in the history of art have been provided by the many European universities ever since the 19<sup>th</sup> century, the same does not apply to art itself. For example, in the Netherlands painting, sculpture and design are taught at intermediate level. I expected that university art collections (and museums) would be a limited phenomenon in Europe (Zeller 1985), but reality proved me wrong. Five major types of art collections were encountered:

1. Art collections related to the history of the university: portraits and busts of rectors and professors, paintings and drawings of buildings, etc. These often lack documentation on who commissioned or donated them and when. Even the identity of the artist may be unclear at times. These works have documental value for the university's history and resort in the category 'collections of university history' as defined above.
2. Decorative art collections displayed in cabinets and public areas in order to provide a pleasant and inspiring environment for learning and study and simultaneously project a prestigious institutional image. Although possibly more common in the USA and Australia (Coolidge 1966), decorative collections are not rare in European universities. Purely decorative art collections are outside the scope of this study given that they are no different from art collections owned by private foundations, insurance companies, embassies or banks. However, art collections are among the oldest collections in universities and when history of art emerged as a field of study in the 19<sup>th</sup> century, many purely decorative collections were reorganised for teaching purposes. This issue will be addressed in chapter 4.

3. Teaching art collections associated with the history of art, archaeology or fine arts. There are three sub-categories: a) collections representative of a given period in the history of art; b) collections of casts (*moulages*), also used in the teaching of classical archaeology; and c) reference collections of materials and techniques (e.g. the Swillens Collection depicted in fig. 3.18). Apart from examining and studying the originals or replicas, students may also be asked to write monographs and curate their own exhibitions (including selecting works and compiling the catalogue). More often than type 1. and 2., which tend to be scattered, these collections are typically kept in a dedicated space (gallery or museum) to facilitate access.
4. Collections resulting from works of art made by students or professors, such as the 'Prix de Rome' collections at the École Nationale Supérieure des Beaux Arts (Paris) – today an 'historical' collection with paintings by Ingres, Matisse, Delaroche, etc. However, when Ingres and Matisse did the works they were still students and later *maîtres*. Today, the École des Beaux Arts continues to occasionally incorporate contemporary art done by students and *maîtres* (E. Brugerolles, interview 26 June 2002). Another example is provided by the Mackintosh's Collection and Archive at the Glasgow School of Art, assembling works done by Charles Rennie Mackintosh when he was a student, as well as later works and other documentation. Often, students' art works were the result of formal evaluation processes. Therefore, the paintings, drawings and sculptures were considered by the university exactly like exams in physics or biology and archived for a given administrative period (typically five years). A significant part of the art collection of the Faculty of Fine Arts at the University of Porto is the result of these formal exams<sup>37</sup>. The same with the collection of the Birmingham Institute of Art and Design at the University of Birmingham: "it is primarily an art collection of staff and student works" (Everitt 2002). Although these collections are normally used for research in the history of art and design, there is no doubt that they have an experimental nature. They are certainly documents in the history of art, but being first works, they also represent material evidence of the process of artistic creation and its gradual development.
5. Art collections to support research in distinct fields, for example the drawings and sculptures at the Cesare Lombroso Collection, University of Turin, or other art works done by psychiatric patients. Some universities often collect and maintain (and sometimes display to the public) collections of children's art for the teaching of child development (e.g. University of Madrid, University of Macquarie, Australia<sup>38</sup>). A particularly interesting example is the Museum of Fakes at the University of Salerno, Italy. The collection is part of the Centre for the Study of Forgery, created in 1990 by the sociologist Salvatore Casillo, a sociologist who researches the 'technology, motivation and culture of forgery' (Williams 2004). As Castillo pointed out: "We only collect fakes. The better the fake, the better for us". The Museum has copies of Boticellis, De Chiricos, Greek and Roman sculptures and hundreds of other falsifications produced in Italy.

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<sup>37</sup> Although not technically considered art collections, the Museum of Science of the University of Lisbon has a significant collection of drawings of machines and models that result from exams done by students and the same goes for the Museo del Politecnico at the Politecnico of Turin and other European universities. Perhaps the most important collection of technical drawings is owned by the Musée des Arts et Métiers in Paris. Until recently, 'drawing' was an integral part of the teaching of physicists, astronomers, mathematicians and engineers. However, its historical role in teaching is considered minor and generally overlooked (when compared with the role of drawings in the training of zoologists and botanists). As a result, the significance of technical drawings is often misunderstood and collections are left in a museological limbo: they are rarely interpreted as teaching drawings of historical value and often displayed half-curiosity half-*objet d'art* (preferably alongside the machine represented in the drawing). These collections fall in the category historical teaching and research collections (second generation).

<sup>38</sup> See Leary (1999).

Perhaps even more than any other type of collection, university art collections present a challenge to categorise. Art collections probably have more diverse origins and purposes than other university collections. Due to its intrinsic nature, an art collection is also more intensively used than a teaching collection of models of irrigation systems. The Collection of Fakes at the University of Salerno is organised in a museum and enjoys considerable public interest, although strictly speaking it is a sociology research collection (how many of its visitors are aware of this?). Art collections are probably also less vulnerable to arbitrary disposal compared to other university collections. They may have originated in an initial donation and later catalysed further acquisitions and the development of teaching and research. They may also have arrived at the university as part of a building, for example Kettle's Yard at the University of Cambridge or the House-Museum Abel Salazar at the University of Porto. Moreover, an ethnographic specimen may also be appreciated, interpreted, researched and displayed as an *objet d'art*.

There are both research and teaching collections among university art collections – namely types 3, 4 and 5. These share common aspects with research and teaching collections in other disciplines (particularly in the organisation and in the role of the objects), contributing to the construction and transmission of knowledge in their own domains of study. Art collections are therefore included in the working typology provided above.

### 3.5 The epistemological nature of the typology

Our scientific ideas are of value to the degree in which we have felt ourselves lost before a question; have seen its problematic nature, and have realised that we cannot find support in received notions, in prescriptions, proverbs, mere words. The man who discovers a new scientific truth has previously had to smash to atoms almost everything he had learnt, and arrives at the truth with hands bloodstained from the slaughter of a thousand platitudes.

Ortega y Gasset, 1932

University collections have participated – and continue to participate – in the millenary adventure of knowing about ourselves and the world we live in. But what exactly does this mean? What roles do objects, specimens, artefacts, instruments play in research and teaching? What do collections represent?

Science addresses objective reality. It is information about the objective reality that researchers aim to gather and it is against the same reality that information is scrutinized. It is this creative, question-driven, hard, dynamic, repetitive and painstaking process of inquiry that generates knowledge. Sometimes, objects are crucial for this process: they are the very sources from which knowledge is derived. In other cases, objects are simply used in the inquiry process in order to get to the real sources. Science has two principle processes (or methods) of gathering information about objective reality and transforming it into knowledge: one is through observation and comparison and the other is through experimentation<sup>39</sup>. These two processes – often used in combination – are ultimately at the basis of the epistemological development of university collections.

Typically, disciplines such as zoology, botany, geology, mineralogy, microbiology, palaeontology, archaeology and anthropology, and, in part, medicine, astronomy, art, history and chemistry share a particular epistemological property: knowledge is constructed through direct observation and comparison of elements from reality. Or, according to Rudwick (1985: preface to second edition), these disciplines share “an interaction between theory-building and the accumulation of ever-richer stores of evidence”. Collections are crucial because by

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<sup>39</sup> A comprehensive overview of the comparative method in the life sciences is presented by Harvey & Pagel (1991). For the experimental method, there is a large number of publications in the philosophy and epistemology of the experimental sciences, encompassing different schools of thought and approaches.

accumulating artefacts and specimens they enable comparison to what is already known and without which our understanding would have little or no significance. As Prieur *et al.* (2003: 37) noted in the case of palaeontology: “L'étude du fossile nécessite une référence à l'actuel et inversement”. Research collections are never obsolete because the potential for comparison is maintained as long as the specimen and corresponding documentation are preserved. Research collections are and will remain important for researchers for the construction of present and future knowledge. They materialise present processes of knowledge – in botany, zoology, archaeology, pathology. In addition, if a research collection is old, it can *also* document past knowledge and its processes.

In physics and its derived sciences (geophysics, meteorology, biophysics), and in part in mathematics, engineering, chemistry, astronomy, and others, the epistemological process is generally different. Knowledge is created not by accumulation of elements from reality but by experimenting with reality. Contrary to a collection of rocks or bird skins, instruments are not supposed to ‘represent’ reality, but basically to measure it (e.g. thermometer, galvanometers, voltmeters), to perform calculations (e.g. calculators, computers), to simulate it (e.g. mathematical models), or to perform an act (e.g. a telescope to observe, a motor or machine, a surgical instrument, a demonstrative model). Scientific equipment acts as an intermediate between the researcher and the reality he or she is experimenting with.



Fig. 3.21 - Research collection of comparative osteology at the Laboratory of Human Palaeontology, University of Turin. These are reference collections of mammal bones for archaeozoological research, organised by type (mandibles in the left drawers, phalanges on the right). During excavations it is often difficult to identify bones; they are frequently incomplete or damaged. After being cleaned, the bones are brought to the Laboratory for identification by direct comparison with reference collections (photos reproduced with the kind permission of the Laboratorio di Paleontologia Umana, Dipartimento di Anatomia, Farmacologia e Medicina Legale, University of Turin).

Instead of reference, the crucial property of these instruments is their reliability and performance in intermediation: they are expected to measure well, calculate well, demonstrate well, and test well. If they do not and neither serve any other experimental purpose, they are thrown away and replaced by better ones. With time, this equipment inevitably acquires historical value and may constitute historical research collections (as long as someone takes the initiative to keep and protect them). These collections document



processes of past knowledge – in physics, astronomy, engineering, etc. More often than not the objects bears tangible marks of the processes of knowledge, as I will illustrate in the next chapter.



Fig. 3.22 – Storage at the Museum of Science, University of Porto. A second generation university museum, it incorporates historical teaching and research collections from the departments of physics, mathematics and chemistry of the Faculty of Sciences. The collections are mostly from the 19<sup>th</sup> and 20<sup>th</sup> centuries and the Museum preserves an early 20<sup>th</sup> century chemistry laboratory. Collections have been largely restored and inventoried and the Museum has developed temporary exhibitions. See also Araújo (1998) and Santos & Araújo (2003) (photo reproduced with the kind permission of the Museum of Science, University of Porto).

Although some sciences (disciplines) are more easily identifiable with the comparative method (e.g. biology) and others with the experimental method (e.g. physics), it is important to put the emphasis on the process. It is not so much the science that is comparative or experimental, but the method. Zoology may have comparative and experimental processes, as physics may have comparative and experimental processes. Both can use objects as sources or as intermediates. Zoology uses instruments too – microscopes, thermometers. Astronomy uses equipment (telescopes, lenses, mirrors), but also reference collections – for example collections of photographic plates. These plates are records of astronomical observations, intensively used since the invention of photography, but gradually declining with the introduction of new techniques such as the CCD camera. These collections have not become obsolete for research given that in astronomy it is crucial to have records of observation over the largest time span possible (Bernardi *et al.* 2004)<sup>40</sup>. The same happens in particle physics with the targets bearing the traces of collision of particles in accelerators – they are identified, described, accumulated, and data is compared, treated and crossed with data from equipment. Chemistry also uses reference collections of chemical preparations, arranged in series like reference collections of botany or archaeology. Perhaps the best example is medicine and its many specialities. There are two major groups of university collections of medicine: a) the collections of real specimens – better known as anatomy, pathology, and embryology collections, etc. – and b) the collections of historical instruments – better known as surgery, ophthalmology, and dentistry collections, or more generically, collections of the history of medicine. More than materialising the history of ideas, research collections and historical research collections materialise *how* we know – in medicine, physics, botany, archaeology.

<sup>40</sup> The Astronomical Observatory Pino Torinese, at the University of Turin, is presently restoring its collections of photographic plates for contemporary research (Bernardi *et al.* 2004).

Teaching collections cover a wider range of disciplinary subjects. Almost all disciplines can assemble teaching collections. Observing, touching, handling, feeling, assembling experiments, and often cutting, testing, opening to see what is inside, is more beneficial – even essential – to the cognitive process than looking at illustrations in a textbook. Moreover, scientific ideas may be conveyed by words, but processes are harder to catch in words because they involve practices and *savoir faire*s.



Fig. 3.23 – Teaching collections at the Department of Earth Sciences, University of Oxford. The room is full of drawers and showcases containing geological specimens and supporting documentation (maps, etc.) (courtesy Department of Earth Sciences, University of Oxford).



Fig. 3.24 – Same room as in fig. 3.23. Teaching collections are closely connected to curricular topics and year of studies. On the left image, the drawer corresponding to the course of 'Geology, 3<sup>rd</sup> Year, Revision Practical I'. Inside the drawer (right image) is a collection of 15 specimens and a sheet of paper with a brief description. In this case, specimens do not have any other documentation. The 'scientific' value of specimens is irrelevant, although they are certainly all *real* specimens. What counts is a) certain illustrative features; b) the fact that they are grouped together in a drawer, allowing certain comparisons; and c) the links to a given curricular content (courtesy Dep. of Earth Sciences, University of Oxford).

On the one hand, in universities teaching is *de facto* teaching *for* research, thus teaching collections are often difficult to distinguish from research collections<sup>41</sup>. On the other hand, students are being initiated, therefore reality often needs to be somehow simplified. Moreover, often subjects are too big or too small, or too short or too long, or too abstract, to be grasped without modelling and simulating. Teaching collections typically have simpler organisational criteria than research collections, ones that make a given point more immediately evident to students. Therefore, across almost all disciplines, from zoology, to archaeology, from anatomy and pathology to mathematics, physics, and engineering, objects are deliberately organised and arranged in collections to simplify an explanation, to provide an analogy, to illustrate or demonstrate a particular point, or to simulate reality (see figs. 3.23-24). Teaching collections and historical teaching collections materialise the processes of transmission of knowledge – in present day and in the past.

In short, research and historical research collections materialise present and past processes of research (comparative processes of inquiry and experimental processes of inquiry, respectively). Teaching and historical teaching collections materialise present and past processes of teaching. Together, they constitute material evidence of the history of knowledge. A better understanding of these ideas will derive from the origins of university collections in the next chapter. The shift of focus from disciplines and sciences to processes of knowledge has implications for the preservation and contemporary significance of university collections, as well as for their interpretation for broader segments of the public.

### 3.6 Summary

Understanding university museums and collections means first and foremost taking into consideration their academic context. Understanding university museums and collections also means reducing their complexity distinguishing between the multiple levels that influence them. The diversity of university museums and collections is staggering and encompasses:

- a) diversity in disciplines and types;
- b) terminological diversity, from a multiplication of terms – e.g. museum, gallery with and without collection, herbarium, and archive – to often divergent uses of the same term – e.g. museum;
- c) the coexistence of museums and non-institutionalised collections;
- d) diversity of size and management models;
- e) diversity of purposes: collections assembled for teaching, research, public display, and also collections resulting from the accumulation of university memorabilia and art;
- f) diversity of positioning within the university structure, resulting in diversity of autonomy models: museums and collections under departments, under faculties, under libraries, under the university executive board (rectors, vice-rectors, etc);
- g) diversity of public and users: university collections can be used by researchers and students, they can be open to the general public and they can have no use at all anymore (orphaned).

Breaking down this complexity necessitates distinguishing between the level of the collection (which is to be considered the main and inclusive unit), the level of the museum, and the level of the university. Each one of these three levels raises specific issues that, although obviously not unrelated, are more easily understood if treated separately. The *collection* level encompasses issues such as teaching and research, collection management and organisation, the role of objects and their relevance and significance. In addition, the *museum* raises another level of issues, for instance the role of the general public, staff and training, professional standards, institutional identity, autonomy, management, etc. Finally, given that

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<sup>41</sup> It is this close articulation that essentially distinguishes university collections from a) collections in secondary schools and lycées (mostly teaching) and b) collections in research laboratories and other museums (mostly research).



both collections and museums normally have limited or no autonomy, a third level needs to be taken into consideration, i.e. the relation between the collections and museums with their parent institution. This layer also brings up specific issues, such as institutional commitment, legal status, positioning within the university structure, status and recognition, mandate, etc.

In this chapter, definitions for the terms 'museum' and 'collection' were established, as well as the sense in which the terms 'research' and 'teaching' are employed. The role of the object in university collections was reflected upon. A working typology of university collections was proposed, based on the processes of collecting and the epistemological nature of the different disciplines. These were categorised in a) teaching collections; b) research collections; c) historical teaching and research collections; and d) collections of university history. In the following chapters, I will often refer to a) and b) as first generation university collections and to c) and d) as second generation university collections. University art collections present considerable classification challenges, although many can be grouped in categories a) and b). This is not a classification system and it is far from ideal. The proposed typology is empirical, based on the role of objects, aimed at examining the history and development of university collections and enabling the reflection on their distinct nature.



[M.C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

#### 4. Where do they come from? The origins of university collections

An immense collection of everything is necessary to the study of the sciences and the practice of the arts [...] A sort of encyclopaedia for the senses [...] All these things, which are not dispersed all around, as they are in some other places, are put together and thus represent a grand combination, each component of which, taken on its own, would offer nothing worth nothing.

J.W. von Archenoltz, 1787, in Tega (2002: 8)

*Wer keine Vergangenheit hat, hat keine Zukunft*  
[One who does not have a past, has no future]  
Wilhelm von Humboldt

Understanding the history of university collections<sup>42</sup> helps to understand their contemporary role. Historians tend to overlook the role of objects and collections, therefore the history of university collections has remained largely ignored in studies of the history of physics, biology, archaeology and other subjects. Although a recent field of study in itself, it is rather perplexing to realise how much history of science has been studied and published without a single reference to the history of collections, particularly university collections and their relation with higher education research policies, courses, and curricula. In this respect, Kohlstedt's (e.g. 1988, 1991, 1995) works on the history of life sciences in the USA remain largely singular. Perhaps even more telling is the small number of references to university museums and collections in the literature on museum history. University collections are not ignored – many are too important to be ignored – but rather it is the university side of the matter that is often left out. For example, the Ashmolean Museum is generally presented as the first public museum, but the link with the University of Oxford often remains unmentioned (e.g. Belk 1995). Likewise, the Botanical Garden at the University of Pisa is presented as the first botanical garden in the world regardless of having been created at the *University of Pisa*. In *Museums in Motion*, Alexander (1979) approaches the history of museums from a disciplinary perspective and references to university museums are occasional and scattered. More recently, in *Patrimoine et musées: l'institution de la culture*, Poulot (2001) gives an historical panorama of the role of museums and monuments in the shaping of modern culture (mostly art), but no explicit references to university collections or museums are made.

Lewis' (1984) introduction in the *Manual of Curatorship* provides a comprehensive non-disciplinary examination of the history of museums, including major university museums. The remarkable *The Origins of Museums* (Impey & MacGregor 2001) adopted a combination of geographical and disciplinary approach and there is a chapter specifically on university museums (Schupbach 2001). The earlier works by Gilman (1918) and Wittlin (1949) followed a similar approach. Danilov (1996) provided a brief historical account of university collections and museums in the USA, while Boylan (1999) treated university museums as a group and presented a comprehensive historical overview for Europe. MacGregor (2003) asked 'university museums: were they ever worth it?' and gave a broad historical account on the utility of university museum collections, with references to British, Dutch and Italian examples. Clearly, more research is needed on university museums and collections in the

<sup>42</sup> In this dissertation, the term 'university' is taken in its broadest sense and to mean all European higher education institutions, including for example the *Fachhochschulen*, military academies, the polytechnics and the *grandes écoles*.

context of the history and development of universities. University museums and collections certainly deserve being subject of historical research in their own right. Their creation and development raise distinct issues that are at best watered down and at worst omitted both in 'mainstream' museum history<sup>43</sup> and in 'mainstream' history of science.

In this chapter a historical overview of university collections is presented. The organisation follows the typology outlined in the past chapter, thus it is not necessarily chronological. The first part deals with first generation collections, i.e. collections purposefully assembled to fulfil teaching and research needs. I will discuss the origin of the teaching collection, the research collection (and its predecessor, the study collection), as well as first generation university museums. A separate section is devoted to art collections. In the second part I will discuss second generation university collections, i.e. those resulting from the accumulation of historical items related to teaching and research and to university memorabilia. Given that the primary literature provides only limited comparative analyses, the sources for this chapter were mainly secondary – dispersed documents on the history of museums, the history of universities and the history of science. This led to the development of a historical synopsis (appendix A8), which in turn allowed the identification of common patterns in different European countries<sup>44</sup>.

#### 4.1 Early 'collections' for study and teaching

There can be little doubt that objects uniquely loosen the teacher's tongue and enhance the understanding of students (Hamilton 1995). This seems to go back to ancient times. One of the most striking discoveries of early teaching 'collections' was made in the early 20<sup>th</sup> century by the archaeologist Leonard Woolley at Ur, in present-day Iraq. Woolley excavated a school dating from 530 BC containing a room with several antiquities that pre-dated the school by up to 1600 years. This school was established by En-nigaldi-Nanna, daughter of Nabonidus, the last king of Babylon. If this discovery was not already fascinating enough, what appears to have been a clay 'museum' label was found together with these antiquities (Woolley & Moorey 1982).

There are more examples of early collections. *Sheng Nung Peng Tsao* is considered the earliest *materia medica*, recording more than 10,000 medicinal substances – it was based on the hortus medicus created by Emperor Shen Nung of China, c. 2800 BC. Botanical gardens and menageries existed in Egypt and Assyria from at least 1500 BC (Alexander 1979, Lewis

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<sup>43</sup> With few exceptions museum history has been written and taught by museum professionals. The museum as a subject of historical criticism has received only limited attention from historians (cf. Hooper-Greenhill 1992, Lopes *sine anno*). Recently, Starn (2005) argued that museums should matter to historians and called for a greater involvement of historians in museum history, noting that "[...] museums actually deliver more history, more effectively, more of the time, to more people, than historians" and that the lack of interest is difficult to understand given that "[...] many historians first got the itch for history from museums, surely more than from the textbooks read at school" (2005: 68).

<sup>44</sup> The history of university collections presented in this chapter is based on the evolution of (arche)types based on common characteristics – e.g. the teaching collection, the research collection, etc. I am aware that museum historians are critical of this perspective, particularly in recent museum history. Hooper-Greenhill warns against finding generalisations and unities and instead proposes "to look for differences, for change, and for rupture" (1992: 9). Her alternative approach presents a succession of individual landmarks: the Medici Palace in Florence, the *Wunderkammer*, the natural history collections of the 17<sup>th</sup> century, particularly the Repository of the Royal Society of London, and the modern 'disciplinary museum' for which the post-revolutionary Louvre was the prototype. The result is not a connected museum history, let alone a history of *the* museum (Starn 2005). Weil observed that "the history of *the* museum is a pious fraud" (1995: 13, italics in original). I agree and also do not think that a single history of *the* university collection can be constructed. However, as a discipline, museum history has seen 100 years of development and museum historians can therefore afford not to base their perspectives on generalisations. Museum history has access to sufficient primary sources, anthologies and syntheses to aim at alternative and in-depth perspectives. This is not the case with the history of university collections and museums and to some extent this fact *per se* justifies finding 'generalisations and unities', paving the way for future research and alternative historical approaches.

1984, Foster 1999), although the study function was likely to be intertwined with leisure as well as social status. In the 4<sup>th</sup> century BC, Aristotle collected specimens for teaching and study in his *Lyceum* in Athens, which also included a menagerie donated by Alexander the Great (Whitehead 1970). The *Museion*, founded by Ptolemy Soter in Alexandria in 290 BC, had cloisters, a public lecture room, a botanical and zoological garden, a library, and paintings, sculptures and casts for the instruction of artists (Bateman 1975, Canfora 1990, Boylan 1999). The *Museion* was the scientific, artistic and literary mecca of its time, attracting scholars such as Demetrius, Strato, Euclid, Archimedes, Apollonius and Eratosthenes. Dissections were performed at the *Museion*. Generally, during the Hellenic and Roman periods several academies “devoted to particular philosophical traditions would have had significant portrait collections, presumably on public display” (Boylan 1999: 44). In Europe, herbs were cultivated since the 9<sup>th</sup> century<sup>45</sup>. Early ‘universities’ established in Muslim Spain, particularly Cordoba, Seville and Granada, taught medicine and *materia medica*<sup>46</sup>. The Persian scholar Ibn Sina (980-1037), known in the West as Avicenna, described fossil remains of aquatic and other animals found on mountains and explained the mountains as effects of upheavals of the crust of the earth (Van-Praët 2004, Toulmin & Goodfield 1965 in Heads 2005).

There is an abundant literature on early Islamic science and technology, but as far as I know, there has been no research into the existence of collections or proto-collections in Iberian Islamic ‘universities’ or, for that matter, elsewhere in the early Islamic world (e.g. Constantinople and Baghdad). Although our current state of knowledge does not allow discussion of the regularity or permanency of these early ‘collections’, let alone what notion of ‘collection’ early scholars and teachers had<sup>47</sup>, it is hard to believe that teaching and study collections only appeared in the mid-16<sup>th</sup> century. The use of collections for teaching (and study) is likely to be as old as teaching (and study) itself.

It is difficult to pinpoint a precise date for the creation of universities, because criteria vary (courses start on one date, official papal bull or royal decree comes later, etc). Bologna is considered to have had the first university in Europe. Although the year 1088 is not fully documented, it is widely accepted as the foundation date (Rüegg 1996a). The University of Paris was created between 1150 and 1170, although official recognition came in 1211 (Verger 1996). During the early Middle Ages, the University of Bologna was the model for universities in southern Europe and the University of Paris for those in northern Europe. The first title of Chancellor was conferred in 1214 at the University of Oxford.

## 4.2 The teaching collection

The teaching collection is a long survivor – it is the Methuselah of university collections. When and where the teaching collection first appeared is unclear and some authors maintain

<sup>45</sup> The first record is from the Abbey of Saint-Gall, Switzerland, in the 9<sup>th</sup> century (Paiva 1981). It is virtually unknown what early monastic gardens really looked like, but the plan of Saint Gall survived and shows orchards, fish ponds, grape arbours, herbs and vegetables for food and medicine, and decorative flowers for the altar. For more on the history of botanical gardens, see Ingwersen (1978) and Morton (1981).

<sup>46</sup> Islamic civilization flourished in parts of Iberia from the 8<sup>th</sup> to the 14<sup>th</sup> century. The ‘University’ of Cordoba was founded in the 10<sup>th</sup> century and attracted scholars from all over the medieval world. At its height (900s-1030s), Cordoba was exemplary for its social, political, scientific, artistic and cultural development. Both Christian and Jewish communities flourished, making it the most cultured city in Europe, and, with Constantinople and Baghdad, one of the three cultural centres of the medieval world (see ‘Abd al-Rahman III in: *Britannica Concise Encyclopedia* 2005, <http://concise.britannica.com/ebc/article?tocId=9354388>, accessed 3 June 2005). With a population of about half a million (for comparison, Paris had 40,000 inhabitants at the time), the city had 70 libraries. The library of Caliph al-Hakam II contained c. 400,000 volumes (while the Abbey of Saint-Gall, mentioned above, had c. 600 titles). For more on early Islamic civilization in Europe, see e.g. Hayes (1992). There also exists an extensive literature in Spanish on the subject.

<sup>47</sup> The term ‘collection’ apparently did not exist. The use of the term in the English language started in the 14<sup>th</sup> century (Merriam Webster On Line Dictionary).

that, apart from the royal treasures and religious collections, there were hardly any collections in medieval Europe (e.g. Lewis 1984, Belk 1995).

The scholastic atmosphere and theoretical nature of medieval teaching did not stimulate the assemblage of collections, as direct observation and experimentation were not customary. Medieval culture venerated the rare, the unusual, the wonderful and the miraculous. Natural history was largely dominated by mythical beasts like unicorns and mermaids, mostly due to the writings, between the second and fifth century, of the anonymous author known as Physiologus (Ritterbush 1969, Whitehead 1970). Moreover, the notions of 'research' and 'scientific progress' were unknown in medieval universities (Verger 1996)<sup>48</sup>. The engagement of universities in the discovery and advancement of knowledge came only with the Enlightenment and the establishment of nation states (Rudy 1984).

Pedagogy was also seen quite differently. In early universities, a typical class would begin with the reading of the official texts, followed by comments by the teacher – this was called the *lectio* and its purpose was to accustom students to the 'authorities'. The *lectio* was followed by the *disputatio*, an oral debate in which specific cases were discussed and constant reference to the authorities was required, either to establish, sustain or refute a given thesis. The *lectio-disputatio* model was universal in early universities (Verger 1996, 1999; Rudy 1984)<sup>49</sup>. Within this framework, there was little need for collections.



Fig. 4.1 – Medieval teaching and learning (14<sup>th</sup> century manuscript, Biblioteca Nazionale Braidense, Milano).

However, when looking more closely at the subjects and courses taught in medieval universities, the supposed absence of collections becomes questionable. Universities were organised under the classical model of the four faculties: Arts, Theology, Law and Medicine. There were seven Arts, grouped into the *trivium* and the *quadrivium*. The *trivium* included Grammar, Rhetoric and Logic, and the *quadrivium* comprised Music, Arithmetic, Geometry and Astronomy. Could there at least have been some form of 'collections' for the teaching of medicine and in the *quadrivium*?

<sup>48</sup> Professors were, however, supposed to achieve some degree of 'progress', meaning that their formulations got closer and closer to the truth (Verger 1996), but this 'progress' was obtained through the study and interpretation of Greek, Roman and Arab manuscripts. By the end of the 12<sup>th</sup> century, the majority of Aristotle's works had been translated into Latin and were studied in most universities (Whitehead 1970, Leff 1996, Rüegg 1996a). Albert Magnus (1206-1280) and his pupil, Thomas Aquinas (1225-1274), for example, were prominent interpreters of Aristotle's texts.

<sup>49</sup> At the time, universities systematically opposed other forms of intellectual expression. Both the mystical exegesis used in monastic culture and the more innovative methods of experimentation, measurement, and historical analysis were not permitted. The latter were gradually introduced in the late 15<sup>th</sup> and early 16<sup>th</sup> centuries with the humanist movement (Verger 1996). For more on the impact of humanism in universities, see Rüegg (1996b).

The history of universities and science shows that these questions are not without basis. In the first half of the 14<sup>th</sup> century, the calculators in Merton College (Oxford) were pioneers in the application of mathematical laws to the study of motion and they also measured physical properties of bodies (Leff 1996). The same happened in Paris in 1350 with Nicole (d')Oresme and, before him, with Jean Buridan and Albert de Saxe (Leff 1996). Leff (1996: 329) argued that “the Oxford calculators and the Parisian logicians created mathematical and mechanical instruments” – and if so, they most likely used these instruments for teaching. In general, physics and the *quadrivium* developed musical, optical and astronomical instruments that served “both for practical purposes and for research” (Rüegg 1996a: 27). Instruments like the quadrant, early models of astrolabes, solar clocks and the *equatorium* (for the study of Euclidean Astronomy) were used for teaching. The University of Krakow provides an early example, with an independent Astronomy course starting there as early as 1349 (North 1996).

As for Medicine<sup>50</sup>, “practical demonstrations existed ever since the first medical schools in Salerno [Italy]” (Siraisi 1996: 366). Public dissections started in Bologna as early as 1316, and in Montpellier dissections were statutorily established in 1340 (Siraisi 1996). Anatomy and pathology were taught in Paris from 1267 onwards and although official dissections were not frequent, teachers regularly performed private dissections for their students (Clin 1994). The objectives of dissections were related to the teaching of human anatomy rather than to mastering dissecting techniques (supposedly the task of surgeons)<sup>51</sup>, and therefore bones were likely to be preserved for future use. Moreover, although the first confirmed record of a *hortus medicus* in a university dates from the 1450s, they probably existed before in a more or less rudimentary form because: a) as said before, herbs had been cultivated for medical reasons in Europe at least since the 9<sup>th</sup> century, b) the Arabic treatises used in medieval university teaching explicitly considered botanical pharmacology (*materia medica*) as an independent area of study (Siraisi 1996), and c) medical students had to be familiar with Aristotle's *libri naturales*.



Fig. 4.2 – Dissection depicted in the frontispiece of *De Humanis Corporis Fabrica* (1555) by Andreas Vesalius (1514-1564), professor of Anatomy in Padua. Vesalius was a Flemish naturalist who studied in Louvain and Paris and went to Padua in 1537. He rejected Galen's description of the human body and for the first time practiced modern dissections. As a result, he commissioned an anatomical theatre (which did not survive) and he is likely to have assembled collections.

Object-based teaching probably took place in medieval universities to facilitate the transmission of ideas. These objects were likely to have been used repeatedly, individually and in groups, but records of their organisation and use only exist after the 16<sup>th</sup> century. It is important that historians of collections, historians of universities, and museum historians in general, examine primary sources of university history to shed light on these aspects. The

<sup>50</sup> For overviews of the study and practice of medicine in medieval universities, see Siraisi (1996) and Clin (1994), the latter specifically related to the early history of medicine at the University of Paris.

<sup>51</sup> It is historically relevant to distinguish between physicians and surgeons because often medical and surgical collections evolved separately. In fact, physicians were taught in universities and received a book-oriented training – physicians were scholars. In contrast, surgeons were considered craftsmen and received practical training (Clin 1994). Only during the 15<sup>th</sup> and 16<sup>th</sup> centuries did surgeons begin to receive university training.



teaching collection continues through the Renaissance university and to the 19th century up until the present. In the Renaissance university – more open to pedagogical innovation than its medieval counterpart (Verger 1996) – models, maquettes, casts, reproductions, and real objects like specimens and instruments, were made, assembled and used to illustrate, demonstrate and explain.

#### 4.2.1 The *hortus medicus* and the *theatrum anatomicum*: paving the way for the teaching ‘museum’

Renaissance cabinets<sup>52</sup> of curiosities have been studied in detail (e.g. Pomian 1987, Impey & Macgregor 2001, Alexander 1979, Mauriès 2002). Many *Wunderkammer*, despite their symbolic and mannerist arrangements, were considered important by university teachers and scholars, who visited them regularly (Aimi *et al.* 2001) and many ended up in universities<sup>53</sup>. Together with the humanist movement and the Reformation, the same conditions that triggered the development of private collecting during the Renaissance (such as the discoveries of foreign lands, European population growth following the plague, new inventions such as the clock and the printing press, humanism, and the rise of the bourgeoisie), also affected the university and university teaching<sup>54</sup>.

Two important landmarks should be considered in connection with the history of university collections during the Renaissance: the rise of botanical gardens and anatomical theatres. These led to the development of the first (recorded) collections and ‘museums’ in universities.

In line with the history of medieval universities, the first organised collections were undoubtedly related to the teaching of medicine: the physic garden (*hortus medicus* or *hortus simplicium*) and the anatomical theatre (*theatrum anatomicum*) (Olmi 2001, Schupbach 2001). The first garden was established in Italy in either Padua or Pisa in the 1540s and the first anatomical theatre in Padua in 1594. Botanical gardens and anatomical theatres quickly spread to other European universities, always with medical teaching at their roots<sup>55</sup>. In the first decades of the 17<sup>th</sup> century, there were anatomical theatres at the universities of Bologna, Ferrara, Leiden and Montpellier. Physic gardens and anatomical

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<sup>52</sup> The term ‘cabinet’ precedes ‘museum’. Derived from the Latin *cavea*, meaning cavity, it initially referred to a piece of furniture in which specimens were kept. Later the meaning was expanded to include a whole room or building in which a collection was housed. The Italians gradually began to call these cabinets *museo naturale* (Bateman 1975). In 14<sup>th</sup> century France, the predecessors of the cabinets were designated *estudes* and in 15<sup>th</sup> and 16<sup>th</sup> century Italy they were known as *studioli*. The terms *Kunstammer* and *Wunderkammer* first appeared in Samuel Quiccheberg’s famous treatise on museography *Inscriptiones vel Tituli Theatri Amplissimi* published in 1565 (Mauriès 2002).

<sup>53</sup> The cabinet of King Frederik II of Denmark (1609-1670) formed the basis for the Zoology and Mineralogy Museums of the University of Copenhagen, established in 1862 and 1870 respectively (Gundestrup 2001). The 19<sup>th</sup> century sculpture cast collection of the University of Prague has its origins in the cabinet of Count Nostitz (Dufková 1988), and the cabinet of antiquities and natural history of Sir Andrew Balfour (1630-1694) went to the University of Edinburgh in 1697 (MacGregor 2001a). In the USA, the collection of electrical instruments belonging to the Dutch Groenendijk family was acquired by the Dibner Institute for the History of Science and Technology (Massachusetts Institute of Technology) in 1959. The Groenendijk Collection in turn had its origins in the Felix Meritis Society of Amsterdam, founded in 1777 (D.A. Pantalony, *in litt.* 18 February 2005). Many European universities incorporated collections from scientific societies – for example the University of Athens incorporated collections from the Natural History Society of Athens and the University of Amsterdam from the Royal Zoological Society ‘Natura Artis Magistra’ (Roselaar 2003), which became the core of important university museums.

<sup>54</sup> For more on Renaissance and early modern universities, see Ridder-Symoens (1996).

<sup>55</sup> The creation of the Amsterdam Botanical Garden is both typical and interesting. In 1635, Amsterdam was hit by an epidemic of plague, so severe that almost half of the population perished. Merchants, apothecaries, pseudo-medical doctors and doctors were selling all sorts of (would be) remedies. In 1636, the town of Amsterdam established a training and certification programme for physicians, forcing them to pass an examination (the *keur*). The *hortus medicus* was founded to support the training and placed under the supervision of a group of physicians from the *Athenaeum Illustre* (predecessor of the University of Amsterdam). In 1638, the first director of the garden, Johannes Snijpendaal, was appointed (B. Ursem, *in litt.* 13 August 2002).







Fig. 4.5 – Dried seed of *Lodoicea maldivica* (double coconut) (reproduced with kind permission of the Botanical Garden of the University of Lisbon).

#### 4.2.2 The teaching 'museum'

Naturally, these botanical and *materia medica* teaching collections required a special space in order to be easily accessible for both students and scholars. Therefore, it was probably near botanical gardens and anatomical theatres that exhibits were first mounted in universities. Although we cannot speak of museums in the modern ICOM sense, exhibitions of teaching collections became known as 'teaching museums' – an expression still used today. In fact, the use of the term 'museum' is not completely inappropriate, since the exhibitions were permanent and occasionally visited by a more general public (fig. 4.6). Therefore, it seems fair to claim that 'teaching museums' have existed since the early 1600s and that these were clear predecessors of the Ashmolean Museum and the university museum in general.

The first record of a teaching 'museum', built in the 1590s, comes from Pisa's botanical garden (Alexander 1979). A similar one was built in Leiden in 1600. Anatomical teaching museums – located near anatomical theatres – appeared later and the first was probably constructed in Leiden<sup>56</sup>. However, a word of caution is necessary. One should keep in mind that this was the late 16<sup>th</sup>-early 17<sup>th</sup> century. Galileo was about 30 years of age, Giordano Bruno had barely been burned at the stake in Rome, Newton would not be born for 50 years, and Linnaeus not for 100 years. The earliest teaching 'museums' are ambiguous, they amalgamated students and public (that is, privileged elite and travellers), teaching and wonderment, and proto-classifications with symbolism. MacGregor (2003) points out that at Pisa's Cabinet, there were "natural curiosities as well as man-made rarities ranging from Mexican idols to distorting mirrors" and in the Cabinet near the Leiden Garden were "specimens lacking any direct relation to botanical studies – Brazilian animals, rattlesnakes, elephant's tusks, etc." The collection of anatomy at the Library of the University of Altdorf (Nuremberg) included a Croatian "who had terrorised the streets of Nuremberg before being hunted down, and whose skeleton was [...] displayed on horseback in the library with a pipe stuck in his mouth" (MacGregor 2003).

The display of teaching collections was practical for obvious reasons and later the teaching 'museum' spread to other fields such as the arts. The 17<sup>th</sup> century marks the beginning of the golden age of the schools of 'beaux-arts'. Painting, sculpture, and architecture were learnt by direct observation, and frequently imitation, of famous artists. During this period, plaster casts became objects of study both in sculpture and in architecture (Mossi re 1996). Like their anatomical and botanical counterparts, art teaching museums presented originals, reproductions, *maquettes*, and pedagogical models. Teaching 'museums' and cabinets were also created near chemical laboratories and astronomical observatories, particularly after the higher education reforms of the 19<sup>th</sup> century.

<sup>56</sup> The teaching museum model was also adopted outside universities. For example, in the 1650-60s, societies of surgeons in Rotterdam and Delft were among the first to construct anatomical theatres where curiosities were displayed (Schupbach 2001).

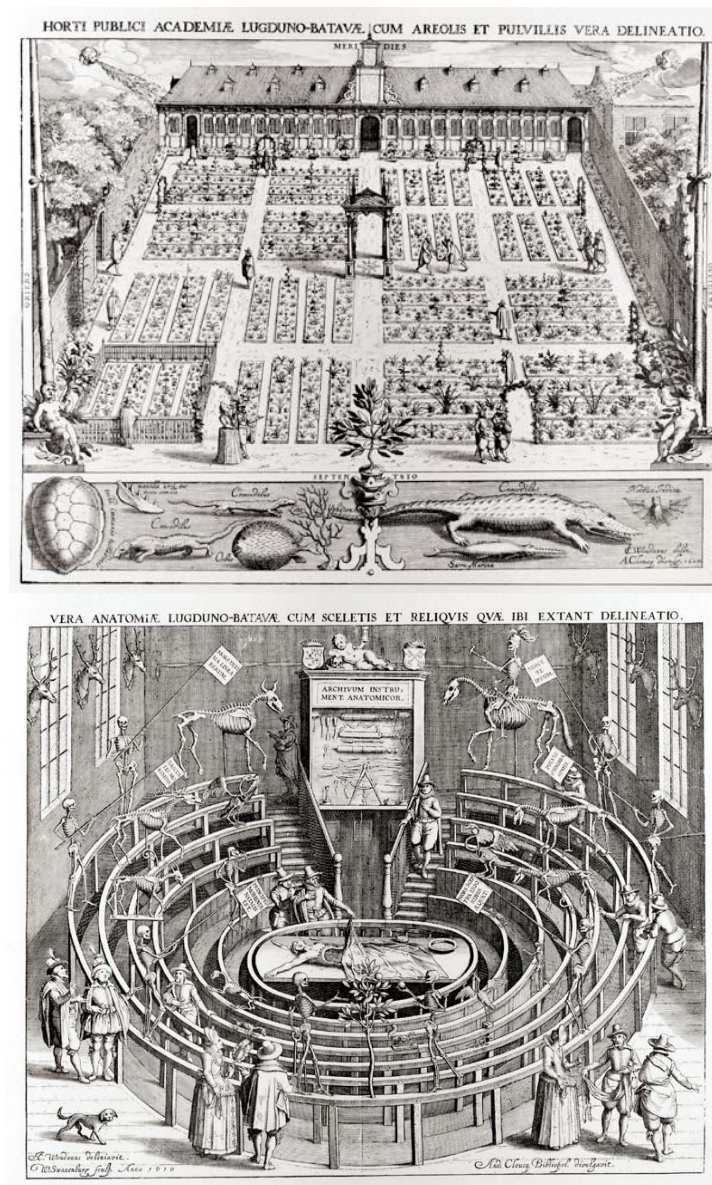


Fig. 4.6 – University of Leiden: *hortus medicus* (1587) with the annexed teaching cabinet and anatomical theatre (1597), depicting specimens and public. The engravings date from 1610.

Many teaching ‘museums’ established regular opening hours and facilitated public access, therefore becoming museums in the present sense of the term. However, even after ‘going public’, many preserved their teaching vocation both in interpretation and museography and, as a result, often served limited and specialised audiences. Many teaching museums were eventually absorbed by existing university museums. In the 19<sup>th</sup> and 20<sup>th</sup> centuries, the complexity of museums and collections increased substantially.

#### 4.2.3 The Cabinet of Natural Philosophy (Cabinet of Physics)

A special type of teaching collection is the cabinet of physics or cabinet of natural philosophy<sup>57</sup>. Common in 18<sup>th</sup> and 19<sup>th</sup> century European universities, this type of cabinet

<sup>57</sup> Not to be confused with private cabinets of curiosities that *also* included physics instruments – e.g. de Medici’s, etc. Only collections of instruments assembled by professors to teach natural philosophy in universities are dealt with here.



consisted of a collection of instruments assembled for teaching purposes, often in one location (hence the designation 'cabinet'). The Cabinet of Natural Philosophy at the University of Padua (1739), the Cabinet of Physics at the *Colégio dos Nobres* (College of Nobles) in Lisbon (1766; transferred to the University of Coimbra in 1772, where it continued to be used for teaching) and the Cabinet of Physics (Volta Cabinet) at the University of Pavia (1778), are three important examples of natural philosophy teaching collections in 18<sup>th</sup> century Europe<sup>58</sup>. There were earlier university cabinets of physics, such as the Leiden University Cabinet (1675) and the Utrecht Cabinet of Physics (1706)<sup>59</sup>. Often, the establishment of these cabinets was directly connected with the appointment of a professor charged to create a course in physics, which in practice meant writing the curriculum and assembling the collection to support it – for example Giovanni Dalla Bella (1730-c. 1823) in Lisbon and then Coimbra, Alessandro Volta (1745-1827) in Pavia, and Giovanni Poleni (1683-1761) in Padua.



Fig. 4.7 – Device to illustrate the parabolic trajectory of projectiles, 18<sup>th</sup> century cabinet of physics of the University of Coimbra (*Index* 1788: G.IV.178) (photo José Pessoa © Divisão de Documentação Fotográfica do Instituto Português de Museus, reproduced with kind permission of the Museum of Physics, University of Coimbra).

Cabinets of physics continued to be assembled in the 19<sup>th</sup> century and a particularly fine example is the Cabinet of Physics at the *Istituto Tecnico Toscano* in Florence. This Cabinet has survived almost intact and includes “c. 3000 items” and is “certainly the largest in Italy and one of the most complete in Europe as far as 19<sup>th</sup> century teaching and study of physics are concerned” (Brenni 2000: 9)<sup>60</sup>. Today, the Cabinet, together with other historical teaching and research collections of the former *Istituto*, is under the responsibility of the *Fondazione Scienza e Tecnica*, which is restoring it and plans to open an exhibition soon (P. Brenni, interview 13 January 2004).

<sup>58</sup> For the history of the Coimbra collection, see Carvalho (1959, 1978). Gil & Canêlhas (1987) and Gil *et al.* (1987) also provide a comprehensive historical account of the teaching of physics from the *Colégio dos Nobres* to the establishment of the Faculty of Sciences at the University of Lisbon in 1911. For the Volta Cabinet, see Bellodi *et al.* (2002) and the notable *Mediateca Voltiana*, a four DVD box released by the Istituto Lombardo and the University of Pavia in 2002. For the Padua Cabinet, see Peruzzi & Talas (2004).

<sup>59</sup> For the Leiden cabinet, see Clercq (1992, 1997); for the Utrecht cabinet, see Natuurkundig Gezelschap te Utrecht (1977) and Clercq (in press).

<sup>60</sup> For further information on the Cabinet, see also Brenni (1995) and Giatti & Miniatti (2001).



Fig. 4.8 – Cabinet of Physics of the *Istituto Tecnico Toscano* in 1898 (reproduced with kind permission of the *Fondazione Scienza e Tecnica*, Florence).

At this point, two aspects should be briefly mentioned. Firstly, these teaching collections (which might include astronomical instruments and mathematical models) could also be used for study – by both students and professors – and this double usage would increase as physics developed during the 19<sup>th</sup> century. Secondly, the collections often included both instruments acquired from commercial manufacturers and instruments built in-house (i.e. in university workshops). Dalla Bella acquired part of his instruments from commercial manufacturers in England, yet a considerable number of instruments were constructed by the Portuguese instrument maker Joaquim José dos Reis, who was a craftsman at the *Colégio dos Nobres* (Carvalho 1959). The role of these ‘internal’ instrument makers often went far beyond following strict instructions from superiors. Many of them were remarkably talented craftsmen, employed or contracted by the university and frequently anonymous, as they did not sign the instruments they made. Their work encompassed designing and building the instruments, adapting or making replicas of instruments acquired from commercial instrument makers and often conceiving the experiments and assisting the professor in his demonstrations (Carvalho 1959, Gil & Canêlhas 1987).

Sometimes instruments were designed, made, used, improved and re-used by professors themselves. An illustrative example is the Leiden Cabinet, the instruments of which were entirely built by professors from the University of Leiden (Clercq 1992). The best known were W.J. ‘s-Gravesande (1688-1742) and Peter van Musschenbroek (1692–1761). ‘s-Gravesande, in particular, constructed and assembled “a systematic collection of instruments with the purpose of mathematically demonstrating Newton’s theories to students” (Clercq 1992: 62). Like any other university teaching collection, major changes in science or teaching procedures impact cabinets of physics. As the teaching of physics evolved from lecture-demonstration to practical and laboratory-based in the mid- to late-19<sup>th</sup> century, the role of the physics workshop and the ‘internal’ instrument maker became even more prominent.

Most of the cabinets of physics that survived were organised into second generation university museums during the 20<sup>th</sup> century. The cabinets of Coimbra, Padua, Pavia and Utrecht have remained in their original universities – at the Museum of Physics of the University of Coimbra (1938), the Museum of History of Physics at the University of Padua (1990), the Museum of History of the University of Pavia (1932) and Utrecht University Museum (1928), respectively. The Cabinet of the University of Leiden is presently part of the National Museum for the History of Science and Medicine (Boerhaave Museum), also in Leiden.

### 4.3 The Study Collection

During the 16<sup>th</sup> century another important landmark collection makes its appearance: the study collection. As the teaching 'museum' or 'cabinet' represents the embryo of the university museum, the study collection is the embryo of the research collection. Study collections of many sorts prospered in 16<sup>th</sup> to 18<sup>th</sup> century Europe at the hands of learned societies and academies, merchants, noblemen, etc.<sup>61</sup>. The kind that interests us here, however, is the study collection closely associated with the university – i.e., gathered by university professors as a result of their own personal and professional interests and simultaneously used for study and teaching. The first was probably assembled by Ulisse Aldrovandi (1527-1605), professor *de fossibilis, plantis et animalibus* at the University of Bologna (Olmi 2001).



Fig. 4.9 – Ulisse Aldrovandi (1527-1605).

What was so special about these collections and what is it that makes them the embryos of modern research collections? Study collections probably represent the first attempts to study and document objects in an organised manner through direct observation and experiment, supported by an increasingly 'natural' classification (Ritterbush 1969, Whitehead 1970). Contrary to the *wunderkammer*, where reality was symbolically reconstructed, the study

<sup>61</sup> Some private study collections include: Manfredo Stella in Milan, Lodovico Moscardo in Verona, Ferdinando Cospì and Antonio Giganti in Bologna (Olmi 2001); Gerolamo Cardano, Gian Battista Clarici and Pietro Antonio Tolentino in Milan (Aimi *et al.* 2001) – the two latter joined Aldrovandi's collections and can be seen today at the Palazzo Poggi, University of Bologna. In Zurich in 1550, Conrad Gesner (1516-65), "the greatest naturalist of his century" (Rudwick 1985: 1), had one of the first museums primarily devoted to natural history (Alexander 1979); Felix Platter (1536-1614) of Basel had one of the most remarkable museums of his time, particularly rich in natural history specimens (Whitehead 1970). In pre-Revolutionary France, anatomists father and son Sue had a collection of more than 1000 items (of which the majority were wax models, later donated to the École des Beaux Arts), the anatomist Desault had a *Museum Chirurgicum*, and Fragonard had an anatomy cabinet in Alfort (Delmas 1995). At his house in Paris, Jacques Bonnier de la Masson had seven ground floor rooms for his art collection and a first floor room devoted to science (Bateman 1975). For more on French cabinets of natural history, see Laissus (1986). In the Netherlands, the collections of Albert Seba (1665-1736), an apothecary and merchant in Amsterdam, (Whitehead 1970), Jacob Swammerdam, also an apothecary, and Levinus Vincent, a merchant (Rooseboom 1958), must be mentioned. In Britain, the study collections of the Tradescants, John Ray, Francis Willughby, Joseph Banks, John and William Hunter, Ashton Lever, and Hans Sloane, among others, cannot be ignored. As for learned societies, at least the following gathered collections: the Accademia del Cimento (1650) in Florence; the Académie Royale des Sciences (1666) in Paris; the Royal Society (1660) in London; the Etruscan Academy (1726), which held excavations and a *galleria del publico* in Rome (Lewis 1984); the Natuurkundig Genootschap (1777) in Utrecht (S. de Clercq, *pers. comm.* 11 August 2002); and the Hollandsche Maatschappij der Wetenschappen (1778) in Haarlem (Lewis 1984). Other academies, such as the Accademia dei Lincei (1603) and the Accademia Fisico-Matematica (1677), both in Rome; the German Academia Naturae Curiosorum (1652) in Schweinfurt had plans for museums (Schupbach 2001), but never accomplished them. However, Torrens (2001) mentioned that the Accademia dei Lincei had geological collections. Many of these private collections intersected university collecting, both in Europe and in the USA (Kohlstedt 1988).



collection was seen as an instrument for the exploration, documentation and understanding of the world (Whitehead 1970, Olmi 2001, Laurencich-Minelli 2001). In Aldrovandi's collection, works of art were separated from natural objects (Ritterbush 1969) and common objects – like animals and plants from Bologna – were also represented (Olmi 2001). However, most authors do not regard these early study collections as 'real' research collections. Mannerism and symmetry in display were the prevailing organisational criteria (Olmi 2001), an arrangement legacy that "retained aspects of the medieval treasury" (Mauriès 2002: 50). Many of the different classification systems<sup>62</sup> were not only still incomplete, but based on the living animal and its way of life (e.g. whales and dolphins being classified as 'fish') – a tradition going back to Pliny and Physiologus (George 2001, Olmi 2001). Research collections, in order to become just that, would have to transcend symbolism to a large degree and in the case of natural history this meant the acceptance of the basic assumption that specimens represented reality (Ritterbush 1969).



Fig. 4.10 – The *Tetrodontide* or balloon-fish, from Aldrovandi's collection (reproduced with kind permission of the Museo Palazzo Poggi, University of Bologna).

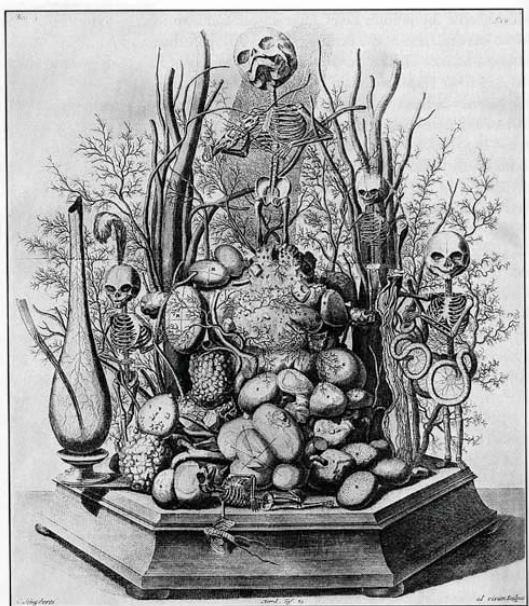


Fig. 4.11 – Anatomical group composed by Frederik Ruysch, professor of Botany at the *Atheneum Illustre*, Amsterdam. The plate was published in his *Opera Omnia* (1721).

Nevertheless, the importance of study collections should not be underestimated. Scholarly collecting continued well into the 17<sup>th</sup> and 18<sup>th</sup> centuries, with for example Olaus Worm (1588-1654) at the University of Copenhagen, Frederik Ruysch (1638-1731) at the *Atheneum Illustre* (predecessor of the University of Amsterdam), Johann Heinrich Schulze (1687-1744)

<sup>62</sup> Both Conrad Gesner and Aldrovandi developed their own classification system (Rudwick 1985, Ray 2001), as did John Ray and Francis Willughby (Ray 2001). John Tradescant adopted the system developed by the German Georgius Agricola (1494-1555), at least in his mineral collection (Rudwick 1985, Torrens 2001).

at the University of Halle-Wittenberg, and many others. Many university professors maintained study collections in the university and at home (frequently visited by students) and often also in learned societies, with specimens moving from one to the other when needed for study and teaching<sup>63</sup>.

The study of antiquities and natural history specimens in study collections paved the way for the classification system of Linnaeus and the zoogeographical theories of Buffon in the mid 18th century, the classification of minerals by Haüy in 1781, Lamarck's evolutionary theory in 1809, the establishment of the new disciplines of palaeontology and comparative anatomy by Cuvier c. 1800, and the archaeological classification of Thomsen in 1836. Initial identification and classification of specimens took several generations. In due course, the majority of these collections would become research collections and many were incorporated in museums.

#### 4.4 The Research Collection

It is impossible to say when and where the first research collection appeared as the line between study and research collections is a thin one<sup>64</sup>. As Laissus (1986: 659) noted, when discussing cabinets of natural history in 18th century France: "Les distinctions, en effet, que nous faisons aujourd'hui sont artificielles: les cabinets étaient rarement spécialisés et leur contenu ressortissait presque toujours non seulement à la physique, à la chimie et aux sciences naturelles, mais aussi à l'anatomie, à l'art et souvent même à l'archéologie". In the 18th century, the Anatomy Museum at Oxford University included in its collection: "a Moor's ear cut off; a frightful large Indian Bat; the Hand of a supposed Siren, dried; a Mermaid's hand; the teat of a witch; the skeleton and stuffed skin of a woman who had eighteen husbands" (Whitehead 1970: 51). These objects are hardly typical of what one would call a research collection and demonstrate that the 18th century (and even 19th century) was a transitory period in the history of research collections.

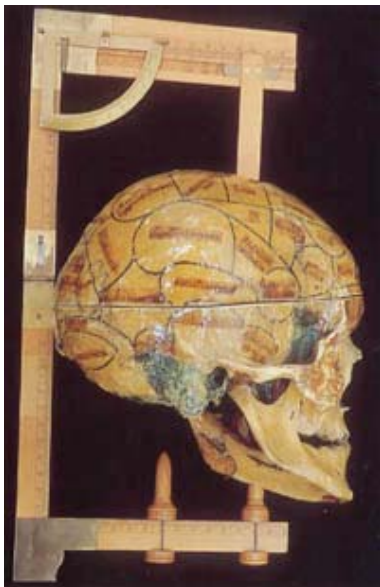


Fig. 4.12 – Phrenological skull with measuring apparatus, Utrecht Universiteitsmuseum, Inv. No. Up. 363. (photo Rosamond Purcell, courtesy of Utrecht University Museum).

<sup>63</sup> The use of collections by students was dependent on the way courses were designed. In the absence of standard courses in natural history in the USA, class demonstrations for students were "casual" and "intermittent" before the 1830s: "[...] students paid fees for special instruction at natural history societies or from private individuals where specimens could be used to illustrate scientific points" (Kohlstedt 1988: 413). Of course, these private individuals were often the professors themselves.

<sup>64</sup> For the development of biology in the USA, see Benson (1991) and Kohlstedt (1988, 1991). Garstka (1982) gives a concise historical overview on the subject.



From the late 18<sup>th</sup> century onwards, research collections arose in those sciences that require the accumulation of specimens and artefacts in order to compare and produce new knowledge. Research collections flourished in zoology, palaeontology, botany, mineralogy and geology, archaeology, anthropology and ethnography, and some fields of medicine.

The history of these sciences is well-documented (e.g. Parr 1959, Sturtevant 1969, Zusi 1969, Watson *et al.* 1971, Rudwick 1985, Greene 1995, Farber 1997). Undoubtedly, the great expeditions and the continuous use of study collections, the works of such writers as Bacon, Buffon, Cuvier, Lyell, Darwin and Haeckel, together with the development of preservation techniques and scientific illustration, had a major impact on the development of natural history (Whitehead 1970, Farber 1997). Moreover, the work of Linnaeus gave rise to the first standardised and widely accepted nomenclatural system for both botany and zoology<sup>65</sup>. Research collections in archaeology were only developed after 1836, when C.J. Thomsen introduced the three-age period of pre-history based on the materials used (Stone, Bronze and Iron). Subsequently, Jens Worsaae divided the Stone Age into Palaeolithic, Mesolithic and Neolithic, and regional variation within these periods was recognised<sup>66</sup>. Anthropological/ethnographic research collections also only appeared after those in natural history. The divorce between anthropology collections and natural history collections, giving rise to separate anthropology museums, started in the 1830-40s. Formal university training of anthropologists in France began in the 1850s, followed by Germany in the 1860s, the Netherlands in the 1870s, England in the 1880s, and the USA in the 1890s (Sturtevant 1969).

From the study to the research collection, the object acquired an increasingly important documentary value – it was collected to answer a particular question or to archive the answer (Clercq & Lourenço 2003). This role was adopted and adapted by archaeology and anthropology (Greene 1995, Boylan 1999) and other fields (e.g. art collections representing particular styles or periods). Research collections continue to fulfil their role until the present day. They may not be much used but the role and thus the relevance are there.

#### 4.5 The art collection

Art collections have a long history in European universities, but a distinct line of development. In medieval universities there are records of archives, commemorative objects, portraits, sacred art, manuscripts, and in due course, printed books (Gieysztor 1996). As Boylan (1999: 44) indicated, “Almost certainly the first collections of artefacts in universities would have fallen into two main categories: religious and ceremonial collections, and works of art”. Presumably, works of art had the same role as in contemporary noble cabinets: to adorn walls of majestic rooms, chapels and colleges, and simultaneously project an image of social status. The first art collection in a university was probably the Picture Gallery at Christ Church College, University of Oxford, founded in 1546. More than half of the collection of the Ashmolean Museum (University of Oxford) was art, antiquities and coins, along with natural history specimens, on display for the general public for the first time in 1683. The acquisition of art works marks the history of universities and continues in the 21<sup>st</sup> century, even at times of restricted financial resources<sup>67</sup>.

<sup>65</sup> For a comprehensive historical account of nomenclature systems, particularly in zoology, see Melville (1995).

<sup>66</sup> Before the 19<sup>th</sup> century, we cannot speak of archaeology proper, but rather of “amorphous antiquarianism” (S. Piggott, *in* Greene 1995: 8).

<sup>67</sup> In the USA, art museums in universities are more frequent and have been considerably expanded since the 1960s (Danilov 1996). In the USA, the appreciation of art is considered to lead to the development of taste, the ability to experience beauty, as well as instilling moral values in students (Read 1943). Moreover, and contrary to Europe, where most universities are built in towns or cities and art museums are plentiful, many campuses in the USA were established in rural areas, often hundreds of kilometres away from the nearest art museum (Rosenberg 1964-65). In fact, the first also accounts for the constitution of art collections and galleries in the UK, as Kelly (1999) reported, citing an art curator: “[...] the hope is [...] that the art will rub off, be taken in out of the corner of the eye. Because the corner of the eye is a good shortcut to the back of the mind” (A. Bennett *in* Kelly 1999: 28). Artworks are often displayed in offices of senior personnel or ceremonial rooms to which students do not have free



Fig. 4.13 – Frescos dating from the 1930s at the Faculty of Law, University of Amsterdam.

Decorative art collections may assume many forms, from paintings to sculpture parks and frescos, of which the Renaissance frescos in Italian universities are particularly remarkable. Kelly (1999: 28) remarked that art displays in present-day universities provide “an escape from the pressures of academic life, a special place of contemplation, conviviality [...] and attractive backdrops for receptions, conferences and open-days or form part of a grand tour for visiting VIPs” – in other words, a mixture of inspiring atmosphere and public relations tool. One should remember that an image of status and prestige is usually just as important as the performance in teaching and research and often even more so. Ever since the beginning, universities have drawn on the tension between respected tradition and academic innovation and collections have at times become expedient instruments for both. In the 19<sup>th</sup> century, art collections that started as merely decorative may have been reorganised for teaching and research. Although art collections are an old university tradition, the university art museum is a relatively recent phenomenon in European universities.

#### 4.6 The university museum

The Greek *museion* or the Roman *museum* or *musæum* indicated a place for learned discussion and study (Whitehead 1970, Lewis 1984, Hunter 2001, Taub 2001). The *Museion* of Alexandria, founded c. 290 BC, was a community of astronomers, mathematicians, physicians, naturalists, writers, historians and philosophers who lived and worked and thought together. They were invited by the king, who paid their salaries, provided them with a library, lecture rooms, dining rooms, laboratories, quiet gardens for contemplation, a botanical garden, a menagerie, and a collection of paintings and sculpture casts (Whitehead 1970, Lewis 1984, Canfora 1990, Boylan 1999). The *Museion* was a research and teaching centre, an academy, where learning through direct observation and perhaps some experiments took place. It has often been pointed out that the *Museion* had little to do with what we call a *museum* today (e.g. Bateman 1975, Lewis 1984, Canfora 1990). According to Lord (2000: 3), “[the] *Museion*, with its college of scholars and its library, was more the forerunner of the university than an institution to preserve and interpret material heritage”.

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or regular access, therefore beneficial contact with art was probably not the predominant factor in acquiring and displaying it (see Collet 2004 for Australia).

Indeed, Odegaard (1963: 32) asked why the 'university' was not in fact called 'museion': "[if] in its origin the university was [...] a community of scholars devoted to the life of learning and teaching, one wonders why they did not pick up the word *museion* for university" (possibly because they valued the inspiration brought by being together, '*universitas*', more than the inspiration of the muses). In any case, it is not by chance that the university museum has a lot in common with the *Museion*.

#### 4.6.1 The Ashmolean model

The Ashmolean Museum has been accepted as the first university museum in a recognizable modern form – it was a permanent institution, had collections, and was open to the public since 1683. Universities had assembled collections for centuries, but caution is needed when passing to the 'museum' level for two related but distinct reasons. Firstly, creating a museum requires commitment, investment and mobilisation from the university. It also requires that the university realises the implications resulting from that commitment. Macgregor (2003) argued that "until the very end of the 16<sup>th</sup> century at the earliest, it was simply inconceivable that such a device [the museum] might find a place in the curriculum and it took several centuries more before museums found an undisputed role in the university milieu". In other words, assembling and using collections is one thing – it is intrinsic to teaching and research in some disciplines – yet when it comes to museums, universities had to 'learn' how to accommodate them in their mission. They eventually found a perfect match, but only in the 19<sup>th</sup> century and after a lengthy and, at times, painful process. Secondly, as a result of this gradual process, the idea of a primordial university museum is too simplistic. There is not one unique common 'ancestor' after which all university museums created thereafter were modelled<sup>68</sup>. Nevertheless, the Ashmolean Museum left a major legacy for its successors and, contrary to what is commonly thought, this legacy was not the general public. The most significant legacy of the Ashmolean for university museums was its structure: a coherent architectonic, organisational and functional complex aimed at combining "[a] repository for rare and curious materials, [a] research institute and [an] educational academy" (MagGregor 2001b: 5) – in other words, a symbiosis between teaching, study and display.

European universities did not wake up to the general public only in 1683. As early as 1316, there had been public dissections in Bologna. In Leiden, the public used to flock by the hundreds to attend the dissections at the theatrum anatomicum, announced by the city's church bells (Rooseboom 1958). When the Ashmolean opened its doors, there were already several collections open to the public. At the University of Oxford, the Picture Gallery of Christ Church College had been founded in 1546 and curiosities displayed at the Bodleian Library are mentioned in the notes of the German traveller Georg Christoph Stirn in 1638 (MacGregor 2003). In 1617, Aldrovandi's and Cospi's 'museums' went on display in the Palazzo Publico, Bologna (Laurencich-Minelli 2001). In 1662, the city of Basel bought Basilius Amerbach's cabinet and donated it to the university. Public access to the cabinet was granted in 1671, 12 years before the opening of the Ashmolean (Lewis 1984, Ackerman 2001). In fact, Bateman (1975: 159) remarked that the Basel museum "was probably the first [university museum]".

The Ashmolean has been the subject of several in-depth studies (e.g. MacGregor 1983, 1988, 2001a,b, MacGregor & Headon 2000, Ovenell 1986). Only a single original document provides insight about how it was organised. In a letter dated 1683 (the founding year), Robert Plot, Professor of Chemistry and first Keeper, explained how the Ashmolean functioned: it had a school of natural history with lecture and demonstration rooms (ground

<sup>68</sup> As Hooper-Greenhill (1992: 191) pointed out – her words being probably even more appropriate in the particular case of university museums – "There is no essential museum. The museum is not a pre-constituted entity that is produced in the same way at all times. No direct ancestors [...] or fundamental role [...] can be identified". The recent debate on the definition of a museum in ICOM-L is particularly illustrative of this complexity (ICOM-L is the web-based discussion forum of ICOM; see <http://icom.museum/distlists.html>, accessed 4 June 2005).

floor), a chemistry laboratory (basement) and a display area (upper floor), all under the direction of Plot himself (MacGregor 2001a). This organisational structure, designed at integrating teaching (the School), study (the Laboratory) and public display (the Exhibition) represented a rupture with earlier customs. The previous teaching 'museum' or 'cabinet' was merely a location where collections were displayed for teaching convenience and occasional display. The same applies to the occasional display of collections in university libraries or galleries. As far as known, these collections had no particular structure, no director or appointed staff, in short no specific institutional mission or existence. The Ashmolean provided regular access for all, which is obviously significant. However, its major breakthrough was the fusion of the teaching, research and public display and its organisational placement under, and in conjunction with, a professorship. The Ashmolean institutionalised the triple mission. It was this model that constituted the Ashmolean's major legacy to university museums. From the late 18<sup>th</sup> century until the mid-20<sup>th</sup> century, this model would be emulated and adapted by university museums across the world. From Stockholm to Sydney and Tokyo, no matter how small and specialised, university museums were equipped with class and study rooms, demonstration rooms and auditoriums (theatres), display areas, and a library, under the direction of one professor.

Although the model was innovative, in substance the Ashmolean did not trigger a revolution in the university. The fundamental objective of the Ashmolean was still the same as that of earlier collections, libraries and archives: to be an *instrument* in support of teaching and to play an active role in explaining, describing, and archiving nature. With the Ashmolean, this objective is given a purposeful structure.

Ironically, the Ashmolean was also the first university museum on record to fall prey to the 'Curse of the University Museum' (or perhaps it 'invented' it): either the museum is relevant for teaching and research – which by definition means constantly reinventing itself – or it stagnates and dies a slow death. Although the Ashmolean enhanced its palaeontology collections, 100 years after its foundation the Ashmolean collections had faced a "process of progressive fragmentation", stagnation, assaults from pests, moulds and natural decay and had subsequently lost the capacity "to contribute anything of value to the curriculum" (MacGregor 2003). The fact that it was open to the public provided little consolation. In a notorious clean-up fire in 1755, the head, leg and foot of the Ashmolean's dodo *Raphus cucullatus* were rescued from complete destruction at the last minute. These are now kept at the Oxford University Museum and represent the only remaining soft-tissue specimens of this ill-fated flightless bird from Mauritius, driven to extinction in the 18<sup>th</sup> century.

With few exceptions<sup>69</sup>, the Ashmolean Museum would remain singular for many decades – in many respects its model was *avant la lettre*. Of course, universities continued to assemble teaching and study collections, but only during the 19<sup>th</sup> century would the triple mission model multiply and flourish. This required new developments, particularly the idea of institutional research as we know it today.

#### 4.6.2 The Golden Age of university museums

On the one hand, scientific advancement throughout the 18<sup>th</sup> and early 19<sup>th</sup> century increased the quantity and quality of collection-based research. On the other hand, when Wilhelm von Humboldt laid out the programme for the University of Berlin, created in 1810, he placed

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<sup>69</sup> For example the Zoology Museums at the Universities of Lund (1735) and Turin (1739), the Museums of Natural History at the Universities of Pavia (1771), Coimbra (1772) and Perpignan (1777), the Hunterian Museum at the University of Glasgow (1783), the Muséum national d'Histoire naturelle (1793) and the Conservatoire des arts et métiers (1794), both in Paris (some of which may not have followed the triple mission at all times). Botanical gardens, cabinets of physics and other teaching and research collections and teaching 'museums' continued to follow their own path.

research and training for research at its very core<sup>70</sup>. This meant that 19<sup>th</sup> century science places collections at the very heart of research, while at the same time the Humboldt model places research at the very heart of the university<sup>71</sup>. Several European countries implemented higher education reforms that stimulated the establishment of collections and museums. Under these conditions, university collections and museums could expand and flourish.

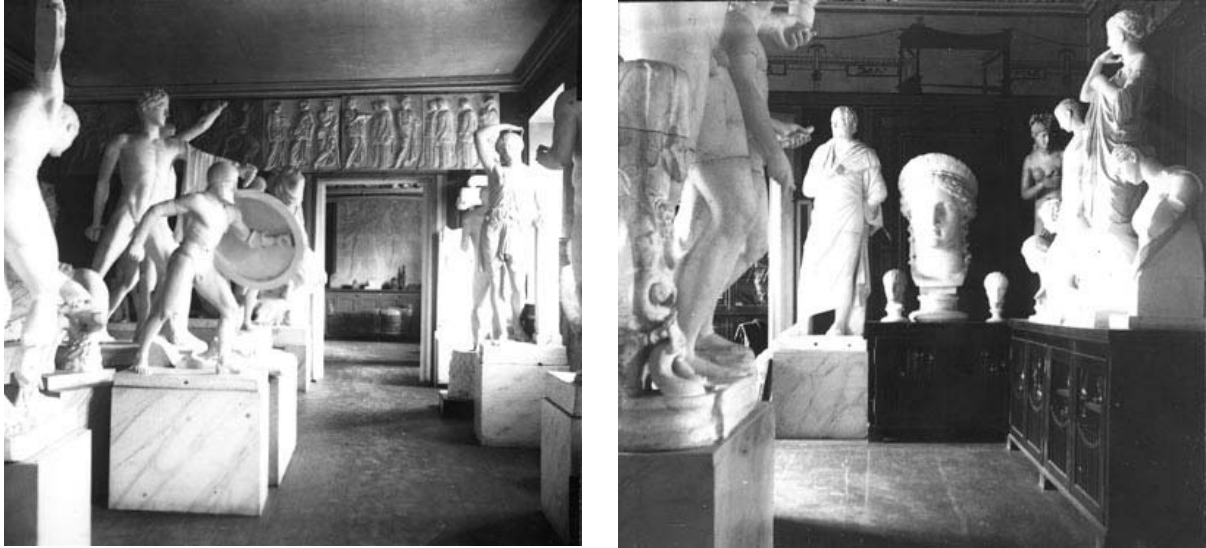


Fig. 4.14 – Tartu University Art Museum, a first generation university museum (teaching and study in the history of art), created in 19 April 1803 – the oldest museum in Estonia and one of the oldest plaster cast collections for teaching and study in European universities. Both photos date from 1898 (Art Museum Archives, reproduced with kind permission from the Tartu University Art Museum).

Moreover, during the 19<sup>th</sup> century, history of art, archaeology, anthropology and other humanities obtained a scientific and institutional identity of their own and collections of antiquities and art acquired a different meaning. Several institutions initiated overseas expeditions as well as local archaeological excavations. Gradually, the artefact ceased to be viewed merely as an ornament for adding lustre or status and became a document, a tool for the systematic understanding of the *other* – either distant in space (anthropology) or in time (archaeology). Universities that already had arts and humanities collections assembled them in newly created museums: in 1803, the Tartu University Art Museum (fig. 4.14); in 1816, the Fitzwilliam Museum at Cambridge; in 1819, the Museum of Archaeology at Pavia; in 1820, the Cabinet of Engravings at Halle-Wittenberg; in 1823, the Musée Atger in Montpellier; in 1833 the Marischal Museum (anthropology, archaeology and art) at Aberdeen; in 1894, the Museum of Ethnography in Bordeaux; in 1869, the Museum of Anthropology in Florence; in

<sup>70</sup> The modern university was proposed by Wilhelm von Humboldt. Humboldt organised the University of Berlin around the key idea of research while at the same time preserving the humanistic tradition in training, i.e. seeking knowledge and understanding of all matters pertaining to earthly, secular life while emphasizing the importance of human existence and culture. The Humboldt model promoted the advancement of research in favour of the training for professional careers, the latter being the French model at the time. This model was central to Germany's intellectual and scientific vigour and it was admired for instance by Emile Durkheim, who studied in Berlin in 1885. When the Sorbonne was reformed during the Third Republic (1870-1940), some aspects of the German model were incorporated (however, the French university system remained a complex and hybrid system until the present). The Humboldt model spread all over Europe and the world. Although some have doubts about the financial costs and the difficulty to adapt it to contemporary economies, Humboldt's is still the prevailing university model today.

<sup>71</sup> Note that the Zoological Museum was created *with* the University of Berlin. The Museum opened to the public in 1814. For more on the history of the Berlin Museum, see Ahrens (1925).

1890 and 1899, the Musée de Moulages of Montpellier and Lyon, respectively, among many others<sup>72</sup>.

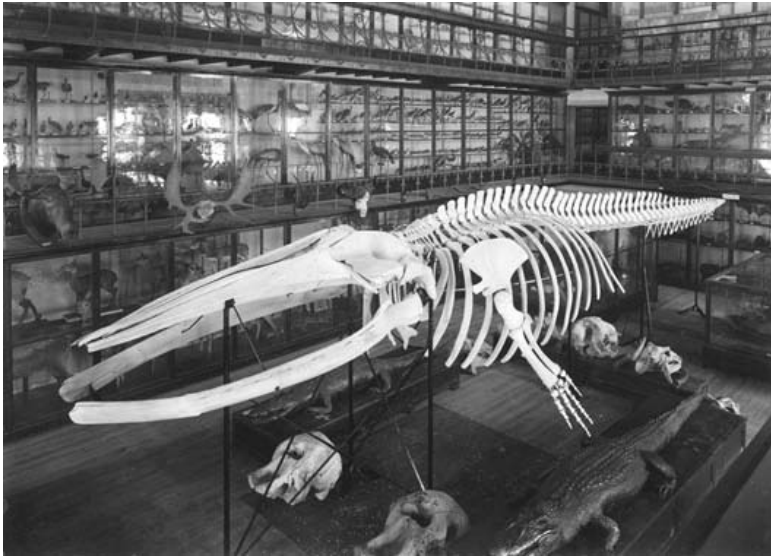


Fig. 4.15 – Museum and Laboratory of Zoology, University of Porto. It was created in 1916 but the collections date at least back to 1885 (photo Archives of the Museum of Zoology 'Augusto Nobre').

At the same time, the Museum of Natural History in Florence was divided into various disciplinary museums in 1878<sup>73</sup>. In Oxford, the Ashmolean's natural history collections were the first to go and form the core of the Museum of Natural History, created in 1860. Also in 1860, the coin collection was transferred to the Bodleian Library. In 1886, the ethnographic specimens joined General Pitt Rivers' collections in the Pitt Rivers Museum, created three years earlier (Blackwood 1991, Petch 1998)<sup>74</sup>. What was left of the 'old' Ashmolean at this point was archaeology and art. The Museum moved to the site where it is today with a mission dating from 1683 but reinvented in the light of the 19<sup>th</sup> century disciplinary specialisation: "[...] to ensure the university teachers and students had the means of supplementing their book-learning with a study of objects and specimens" (Harden 1947: 142)<sup>75</sup>. The former Ashmolean site is today occupied by another university museum: the Museum of the History of Science, created in 1925.

The majority of university museums of arts and humanities were founded between 1800 and the 1930s, just like the majority of university museums of natural history and medicine (anatomy and pathology). During this period, collection-based papers and PhD theses multiplied and specimens, artefacts and objects were intensely used in the classroom to illustrate, demonstrate and explain. Museums were at the core of university departments, quite often preceding them (e.g. the Sedgwick Museum in Cambridge). This was the Golden Age of university museums, an age summarised in 1904 by David Murray in *Museums: Their History and their Use*: "Every Professor of a branch of science requires a museum and a laboratory for his department; and accordingly in all our great universities and other

<sup>72</sup> In the USA, the first university art museum was established at Yale in 1831-32, followed by Vassar (1863), Princeton (1882), Stanford (1885), Wellesley (1889) and Harvard (1895). Previously, there already existed art collections based on the Oxford model (Christ Church Picture Gallery) at Harvard, Dartmouth and Bowdoin College (Rorschach 2004). For the history and function of the university and college art museum in the USA, see also Danilov (1996), Russell & Spencer (2000) and earlier works by Read (1943), Coolidge (1956, 1966), Sawyer (1964-65), Petheo (1971), and Sloan & Swinburne (1981).

<sup>73</sup> Universities themselves also separated humanities and sciences within faculties. For example, in 1848 the University of Turin separated the Faculty of Sciences and Mathematics from the Faculty of *Lettere* and Philosophy, which until then represented a single faculty.

<sup>74</sup> For more on the history of the Pitt Rivers Museum, see e.g. Gray (1905) and Petch (1999, 2001).

<sup>75</sup> The British Museum's natural history collections were also separated from those of archaeology – between 1880 and 1883, natural history moved to South Kensington where it still resides today, gaining autonomy from the British Museum in 1963.

teaching institutions we have independent museums of botany, palaeontology, geology, mineralogy and zoology, of anatomy, physiology, pathology and *materia medica*, of archaeology – prehistorical and historical, classical and Christian – each subject taught having its own appropriate collection” (D. Murray *in* Arnold-Foster 1989: 2).

#### 4.6.3 Is there a ‘specificité française’?

The history of university museums and collections in the different European countries remains largely unstudied. Although it would be impossible to fill in this gap in this dissertation (which is not the objective), the museological situation that emerged in France after the French Revolution in 1789 is to a great extent unique in Europe and thus deserves a brief discussion.

France does not have a pattern of university museums of natural history similar to Germany, Italy and UK. I have pondered over this matter during study visits to French universities. Van-Praët & Fromont (1995) offered an explanation. They argued that a combination of two factors contributed to a special context in France. Firstly, the Jardin royal des Plantes médicinales (1635), transformed after the Revolution into the Muséum national d'Histoire naturelle (1793), and both created outside the sphere of the Sorbonne, had a predominant role in the development of the natural sciences in France. Secondly, the creation in the 19th century of a system of 22 natural history muséums in every major French town also took place outside the academic sphere and under the jurisdiction of local authorities (*mairies*). Moreover, after conducting a survey among these municipal muséums, Van-Praët & Fromont (1995) found that whenever the initiator of the muséum could be identified (i.e. in one third of the cases), the local university was not involved, while university professors were personally involved in 10% of the cases.

The remarks made by Van-Praët & Fromont (1995) are pertinent. Given that by 1892 France had an active network of natural history museums like no other country in Europe, or indeed the world, there was no need for museums of natural history in universities. I would like to take their arguments further in the broader context of French university collections.

The Muséum of Paris was created by the Convention (and not by a university) with an unequivocal idea of *patrimoine national*, but at the same time it was fully integrated in the European tradition of university museums – and the same applies to the Conservatoire des arts et métiers, which will be discussed below. The Muséum followed (and follows today) a triple mission – teaching, research and public display. The Muséum was organised as a small integrated academy in itself, with departments and collections evolving around a professorship<sup>76</sup>. It is not by chance that Louis Agassiz, the Swiss ichthyologist who studied at the Muséum under Cuvier, was profoundly inspired by the idea of developing collections in conjunction with professorships (Kohlstedt 1988). When teaching at Harvard University, it was the Muséum model Agassiz used for his Museum of Comparative Zoology, created in 1859. Although the Muséum monopolised a considerable part of natural history research in France, it could not grant degrees, and this aspect is crucial because universities retained a significant portion of teaching and doctoral research. Like their European counterparts, French universities developed natural history teaching and research collections before and after the Muséum was created. What they did not do, unlike their European counterparts, was to organise them in museums, because there was no need for public dissemination of natural history. Lyon had a Muséum, Strasbourg had a Muséum, Toulouse had a Muséum and, above all, Paris had a Muséum with one of the most important natural history

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<sup>76</sup> In fact, the professorships existed already at the Jardin des Plantes. In 1788, the Jardin had three professorships “in the same subjects that had been taught since the seventeenth century” (Appel 1987: 17). There are many sources on the history of the Jardin des Plantes and the Muséum, see e.g. Limoges (1980), Pieters (1981), Van-Praët (1991).



collections in the world. The *specificité française* exists at the museum level, but not at collection level.

We know for example that there was a cabinet of natural history at the University of Perpignan since 1777 (Bourgat 2002) and the mineralogy collections at the University of Paris (now Pierre et Marie Curie) date from 1809 (Ruppli 1996). Also in Paris, the collections of mineralogy at the *École des Mines* probably date from before 1789 and there were palaeontology collections at the University of Lyon from the 1840s onwards (Prieur *et al.* 2003), not to mention the teaching collections proper, such as countless pedagogical boards, mineralogical and botanical models, etc.



Fig. 4.16 – Collections at the Institute of Zoology, University of Strasbourg Louis Pasteur. The collection of ‘*panneaux pédagogiques*’, below, is especially remarkable, well-preserved and catalogued (photo S. Soubiran, courtesy University of Strasbourg Louis Pasteur).

We also know that professors moved from the Paris Muséum to, say, the *École Normale* and from there to the Sorbonne, often holding chairs in two institutions simultaneously – e.g. from 1808 to 1841, E. Geoffroy Saint-Hillaire held both the Chair of Mammals and Birds at the Muséum and the Chair of Zoology at the Faculty of Sciences and Henri Milne Edwards held the same two positions from 1862 to 1876 (Appel 1987)<sup>77</sup>. Although managed by the *mairie*, the Director of the *Muséum* in Strasbourg traditionally held a professorship at the University of Strasbourg (M.-D. Wandhammer, interview 9 December 2003)<sup>78</sup>.

<sup>77</sup> At the time, professors at the Sorbonne were recruited rather fluidly among other higher institutions in Paris. As Appel (1987: 62) wrote, “At first, the Faculty of Sciences was no more than another source of free, public courses, and its existence did little to transform the training of zoologists”. Typically, an aspiring zoologist would “instead [...] obtain a medical degree and at the same time [...] audit the courses at the Muséum, the Collège de France, and the Faculté de Sciences” (Appel 1987: 62). Apparently, Henri Milne Edwards was the first professor of zoology at the faculty who took his job of educating zoologists seriously.

<sup>78</sup> Already the *hortus medicus*, created by the *mairie* (1619), followed this tradition of having a professor of the University of Strasbourg as its director (Le Minor 2002). Strasbourg probably puts forward a *specificité* itself in the context of French higher education system, given that it was shaped after the German model.





Fig. 4.17 – Palaeontology collections at the University of Lyon Claude Bernard. In terms of the scientific importance of fossils, Lyon's collection rates second in France for vertebrate palaeontology and first for invertebrate palaeontology (Prieur *et al.* 2003) (courtesy University of Lyon Claude Bernard).

Relations between universities and muséums appear to have been close at various times. René Koehler's deep sea dredging campaign in the Golfe de Gascogne in 1895 was an initiative of the Faculty of Sciences of Lyon (where he was professor of zoology), supported by the Muséum de Lyon (Richoux *et al.* 1997). Collections were often transferred from the muséum network to universities and vice versa – for example, the core collections of the Muséum of Perpignan, created in 1840, were the university cabinet collections (Bourgat 2002); in 1890, the mineralogy and geology collections at the Muséum of Strasbourg were transferred to the Institute of Mineralogy and Geology at the University (Leypold 1996), and recently, in the 1970s, the geology collections of the Catholic University in Lyon were transferred to the Muséum of Lyon (J. Clary, interview 18 May 2004), among several other examples<sup>79</sup>. The nature of these exchanges – of people, collections and knowledge – between French universities, the Muséum and the muséum network is certainly worth further study. Why did they happen? Was it for scientific reasons, personal involvement of a given curator, financial difficulties? Were collections reorganised according to different criteria when they passed from universities to muséums and vice versa?

In other fields of knowledge where the Muséum did not collect and display (or at least did not collect and display significantly), French universities *did* organise museums. This happened in medicine and, later, the arts and humanities. In these areas, French universities followed the pattern of their European counterparts. As far as medicine is concerned, French university heritage is very significant and dates from before the French Revolution. The University of Paris was the second in Europe (1211)<sup>80</sup> and, although medicine had been taught in Paris since 650 AD (Clin 1994), the first evidence of an organized faculty dates from

<sup>79</sup> In the 20<sup>th</sup> century, there were significant exchanges of natural history collections between universities as well. Prieur *et al.* (2003) reported that the University of Lyon Claude Bernard received palaeontology collections from the University of Clermont-Ferrand in 1972, from the École des Mines in 1978 (presumably when the École moved to Fontainebleau), from the Catholic University in Lyon in 1995, and from the Collège de France (date unspecified).

<sup>80</sup> Although probably founded 40-60 years earlier, the official year of recognition is generally taken to be 1211. Inevitably, the precise founding dates of early universities are controversial and that of the University of Paris' is particularly difficult to establish as "[it] was never founded as such, at a particular moment; instead it slowly evolved spontaneously, out of the cathedral school that already existed in the town" (Rudy 1984: 20).

1213 (Siraisi 1996, see also Crémer 1997). The École de Médecine of Montpellier had its statutes approved by the Pope in 1220 (remaining unaltered until 1789) and officially became a university in 1289 (a single *Studium generale*) (Rüegg 1996b). By 1788, like many other institutions of the Ancient Regime, higher education in France was rather “arid, obscurantist and reactionary” (Rudy 1984: 83). In 1600, Henri IV had assumed full control of the Sorbonne, going as far as regulating in minute detail every aspect of the its curricula. For almost two centuries, pedagogical innovation was disapproved, controversial issues shunned and works by Montesquieu, Rousseau and others judged subversive and banned from the academia. However, French universities created herbaria, materia medica collections (*droguiers*), botanical gardens and anatomical theatres and had assembled collections for teaching and study at least since the mid 16<sup>th</sup> century. There is, however, evidence that medicine had been taught in Montpellier at least from 1180 (Siraisi 1996, Verger 1996). In Strasbourg, the first official dissection took place in 1517 and the anatomical theatre was established in 1670 (Le Minor 2002). In 1593, inspired by Padua’s garden, Henri IV commissioned a botanical garden to Pierre Richer de Belleval, professor of botany and medicine at the École de Médecine of Montpellier (Jarry 1995, Cuénant 2002). The Faculty of Medicine in Paris was quick to follow, with the construction of its first anatomical theatre and botanical garden in 1604. Before, students did study medical herbs, but they had to travel to the plains of Gentilly (Clin 1994). In the preceding centuries, several other universities had been created (e.g. Toulouse in 1229, Avignon in 1303, Aix-en-Provence in 1409), but I have been unable to find data indicative of the creation of early collections or proto-collections in these institutions.



Fig. 4.18 – Anatomical dissection, Gui de Chauliac, *La Grande Chirurgie*, 15<sup>th</sup> century (Ms. H 184, folio 14 verso) at the Library of Medicine, University of Montpellier 1 (reproduced with the kind permission of the BIU de Montpellier, Atelier photo).

The French Revolution had a huge impact in the French higher education system, reforming it completely<sup>81</sup>. It impacted the teaching of medicine too. After having been discontinued in 1792, the faculties of medicine of the Universities of Paris, Montpellier and Strasbourg were re-established by a Convention decree (24 December 1794). The decree explicitly stipulated that each school should possess a ‘conservatoire’ encompassing anatomical teaching collections, a collection of surgical instruments and a collection of medical natural history

<sup>81</sup> For the history of French universities, see Verger (1986). More broadly, the French Revolution marked a transition point between the traditional order and a new era in history (Rudy 1984). The combined influence of nationalism, secularism, democracy, technology and science in the century that followed the French Revolution had a considerable impact on the European higher education system and changed it fundamentally.

(Cuénant 2002). The 'conservatoire' in Paris opened within less than a year (Clin 1994) and so did Montpellier's (Cuénant 2002, Bonnel *et al.* 2002)<sup>82</sup> – and this could not have happened so promptly unless collections were already there. At Strasbourg, collections existed since the creation of the anatomical theatre in 1670 and were merely reorganised for the purpose of the conservatoire (Le Minor 2002)<sup>83</sup>.

Like their European counterparts, 19th century French universities witnessed the specialisation of medicine and the multiplication of disciplinary museums – e.g. the Museum of Anatomy at the University of Lyon (1840), the Dupuytren Museum of Pathological Anatomy (1835) and the Orfila Museum of Comparative Anatomy (1847), all at the University of Paris. In the arts and humanities, the situation was similar: the Musée Atger at the University of Montpellier was created in 1823 (a very special art museum, within a Faculty of Medicine), the Musée Huguier of the École des Beaux-Arts was created in 1836<sup>84</sup>, the Musée des Moulages de Montpellier in 1890 and the Musée des Moulages de Lyon in 1899, among others mentioned before.

Generally, these museums aimed at the triple mission model (the 'Ashmolean model'). For example, in 1889, the Musée Huguier at the École des Beaux-Arts in Paris included several public display areas, a library and an archive, and a subsidiary anatomical museum and laboratory where human bones and articulations were prepared for teaching (Jacques 2001).

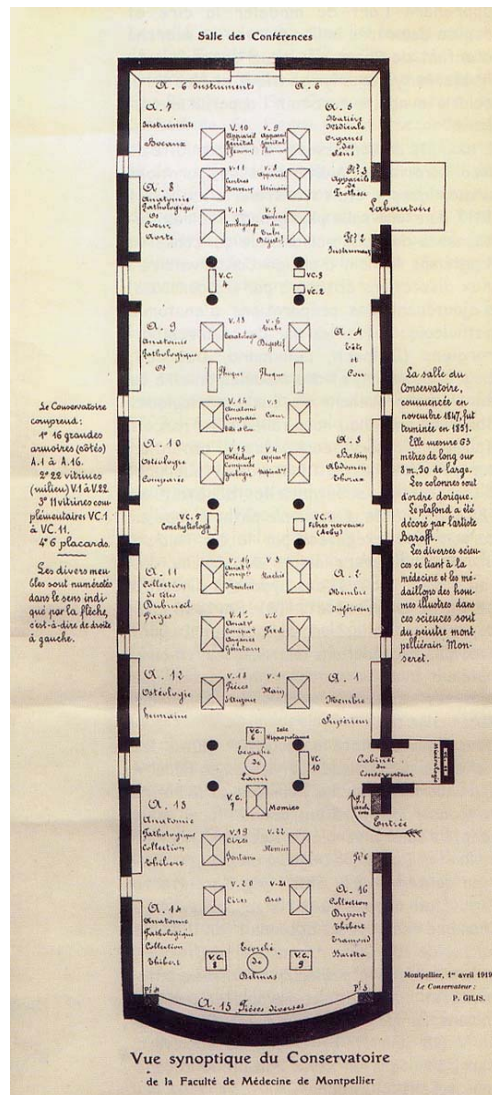


Fig. 4.19 – Plan of the Musée d'Anatomie, University of Montpellier. The document is signed by the conservateur P. Gilis, in 1919 (courtesy Archives of the Musée d'Anatomie, University of Montpellier 1).

<sup>82</sup> In Montpellier, the École took the term 'conservatoire' quite literally and only allowed students to attend their exams if they brought a specimen to the collection: "Nul élève, ne peut être admis aux examens définitifs à moins qu'il n'ait présenté une pièce anatomique naturelle ou artificielle pour être déposée au Conservatoire." (M. Peronnet *in* Cuénant 2002: 81).

<sup>83</sup> The establishment of university collections and cabinets 'by decree' was not uncommon in Europe at the time. For example, the hortus botanicus, physics cabinet, natural history cabinet and anatomical theatre at the University of Pavia were established by a decree issued by Maria Theresa of Austria in 1783. It was in consequence of this decree that Brusati and Borsieri (hortus), Volta (physics cabinet), Scopoli (natural history cabinet) and Scarpa (anatomy) were appointed by the University of Pavia. The decree that created the Polytechnic School of Lisbon in 1837 (predecessor of the University of Lisbon, re-created in 1911), determined the establishment of an astronomical observatory, a cabinet of physics, a chemistry laboratory, a natural history cabinet and a botanical garden (Gil & Canêlhas 1987). A similar decree had been issued in 1815 in the Netherlands when the Universities of Leiden, Groningen and Utrecht become State universities: each should have a cabinet of medicine with anatomical, physiological and pathological preparations and instruments; a cabinet of physics, with scientific instruments, models and apparatus; an astronomical observatory, with astronomical instruments; a laboratory of chemistry; a natural history cabinet, comprising zoology and comparative anatomy; a cabinet of geology and mineralogy; and a botanical garden and herbarium (S. de Clercq, *in litt.* 11 August 2002).

<sup>84</sup> Between 1795 and 1806 there was a museum at the former convent Petits-Augustins, the *Musée des Monuments Français*, created by the city of Paris and Alexandre Lenoir as appointed Director since 1791 (Poulot 2001: 61). For details on the convent (founded in 1608) and its adaptation to the École des Beaux Arts, see Jacques (2001: 7-11).



The same can be said of the Conservatoire des arts et métiers, established in Paris in 1794 and the network of astronomical observatories mostly established outside the academic sphere (though possibly less influential as far as public dissemination than the muséum network). Unlike other European countries (e.g. Whipple Museum at Cambridge, Museum of the History of Science in Oxford, Museum of Physics in Coimbra, Museum of Science in Lisbon, Museo di Fisica in Bologna and Naples<sup>85</sup>), there is no network of museums of the history of science in universities in France. There simply was no need. When there was need, museums were created – for example in the areas traditionally not covered by the Conservatoire (e.g. museums of the history of medicine and the history of pharmacy). At the collection level, however, French universities did not differ from their European counterparts: there were collections of instruments because the Conservatoire did not hold the monopoly on teaching and research of the so-called exact sciences and engineering. There are significant historical university collections of physics, mathematics and astronomy in France – e.g. at the École Polytechnique (Thooris *et al.* 1997, Thooris 1999), the École Normale Supérieure de Lyon (Artu 1996) and the University Louis Pasteur in Strasbourg, where apart from the physics and astronomy collections, the Musée de Sismologie et du Magnétisme Terrestre was created in 1900.

This is not the place to describe the history of the Conservatoire des Arts et Métiers, which is well documented, particularly in recent research works resulting from its renovation in the 1990s (e.g. Mercier 1989, 1994, Fontanon & Grelon 1992-1994, Le Moël & Saint-Paul 1994, Ferriot *et al.* 1998, Ferriot & Jacomy 2000, Jacomy 2000, Ferriot 2001). The role of the Conservatoire and its remarkable collection are internationally acknowledged. Here, I will only briefly examine the historical role of the Conservatoire in the context of European university museums.

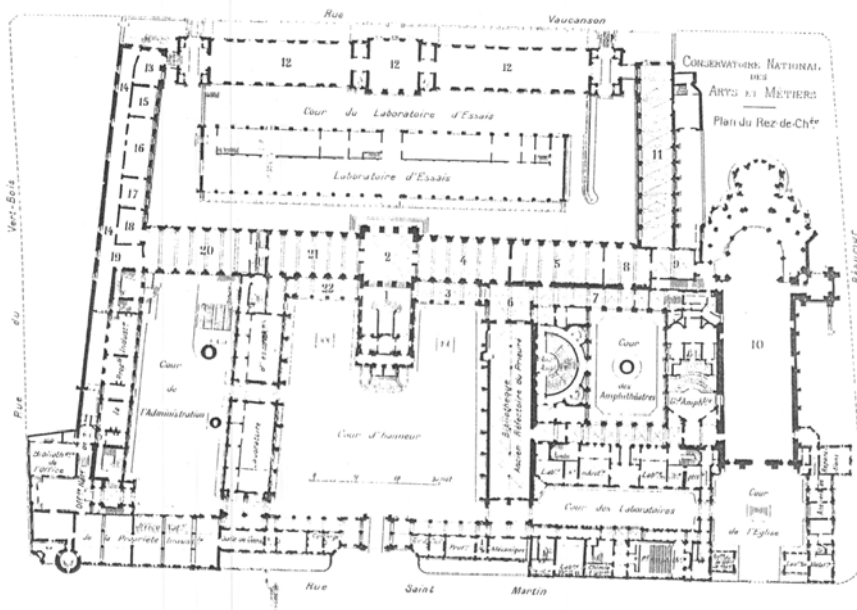


Fig. 4.20 – Plan of the ground floor of the Conservatoire des arts et métiers from the *Catalogue des collections*, 1905 edition, which also includes plans of the first and second floors (reproduced with kind permission of the Musée des Arts et Métiers).

Just like the *Muséum*, the *Conservatoire* fits in the broader tradition of European university museums: it had laboratories, classrooms and exhibition areas and its organisation institutionalised the triple mission (fig. 4.20). The Conservatoire also had professorships from 1819 (Ferriot *et al.* 1998). Both students and public were welcome to attend classes and

<sup>85</sup> Although it should be noted that in Europe the university museum of historical nature is a phenomenon of the 20<sup>th</sup> century.

demonstrations in the amphitheatres, visit the exhibitions rooms or use the library. Ironically, as at the Ashmolean too, after 100 years of existence a progressing fragmentation set in: “As science teaching becomes more abstract, the goals of conservation and demonstration had progressively moved apart” (Ferriot *et al.* 1998: 15). The public mission became gradually divorced from the other two missions (research/innovation and teaching) and this ultimately led to a museum crystalized *inside* a higher education institution, instead of the single and integrated institution that it was in 1794 and particularly since 1819: “In the 1920s, at the time when the Conservatoire was gradually affirming its vocation as a higher education establishment, the Museum suspended its evolution, and became frozen in time [...]” (Ferriot & Jacomy 2000: 33). As a result, the Museum underwent a severe identity crisis and only refound its identity and role during the renovation of the 1990s – an identity that is respectful of its original mission in 1794, as Dominique Ferriot underlines: “la première mission du Conservatoire était de contribuer à ‘perfectionner l’industrie nationale’ en permettant aux artisans de ‘copier les bons modèles’ ou , pour ceux qui étaient capables de ‘voir à plus longue distance’ de ‘faire des combinaisons nouvelles’, c’est-à-dire d’inventer; c’est pourquoi le Musée des arts et métiers rénové est fidèle à sa mission première en étant un musée de l’innovation technique (histoire et actualité des techniques)” (D. Ferriot, *in litt.* 29 July 2005).

A second aspect worth highlighting is the influence of the Conservatoire on museums created in European universities during the 19<sup>th</sup> century. For example, the Conservatoire model had a clear influence on the *Museo Industrial Italiano* created at the Politecnico di Torino in 1862 and still has a significant influence on its current successor, the *Museo e Archivio del Politecnico* (V. Marchis, interview 7 April 2003). Perhaps less known, the Conservatoire also influenced the *Museo Tecnologico* of the *Istituto Tecnico Toscano* in Florence, whose Cabinet of Physics was mentioned earlier in this chapter. The Museo Tecnologico, created by the same decree that established the Istituto in 1857 and the first director of which, Filippo Corridi, visited and corresponded with the director of the Conservatoire (Brenni 1990, Gori 2001), was not meant to be “a mere repository of machines, models, natural and artificial products”, but these “were to be made useful to the industrials, tradesmen and technicians – available for these to manipulate, study and copy in the name of the progress of Tuscany industry” (Brenni 1990: 77)<sup>86</sup>. The analogy between this excerpt and the original Convention Decree of 10 October 1794 that created the Conservatoire is remarkable.

So, is there a ‘singularité française’? Did the Muséum and the Conservatoire create a special situation in France that conditioned the creation and evolution of university museums and collections? The answer is yes at museum level and particularly in the subjects covered by the Muséum (and muséum network) and the Musée des Arts et Métiers. French universities did not create university museums of natural history and history of science and technology. The answer is no at collection level. French universities developed first and second generation collections in a wide range of subjects –including natural history and history of science and technology, as well as anatomical theatres, botanical gardens, herbaria, like their European counterparts.

Regardless of the ‘specificité française’, which is a topic that certainly could benefit from further in depth historical research (particularly as far as the history of French university collections are concerned), the fact of the matter is that French university heritage outside the Muséum and the Conservatoire is certainly rich, diverse and significant at European scale

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<sup>86</sup> Article 35 of the Museo’s founding decree reads: “The Museo Tecnologico has several collections that are useful for the technical teaching of the students of the Istituto, as well as craftsmen, tradesmen, and all those interested in knowing the applications of sciences” Article 36 details the type of collections: “scientific equipment and machines, technical equipment and machines, domestic equipment and machines, collection of drawings and models, of minerals and rocks, of organic products, metallurgic samples” (Brenni 1990: 77). The Conservatoire also inspired the creation of similar museums in Lisbon and Porto: the *Conservatorio das Artes e Officios* (1836) and the *Conservatorio Portuense das Artes e Officios* (1837), respectively – but not within the university and, in any case, both of only ephemeral existence.

and beyond. It has not yet received the recognition it deserves. All in all, it has systematically been left behind in surveys, reports and major renovations. My view is that the collections of the Muséum, the CNAM, and other French higher education institutions have in essence the same nature: they were assembled and organised to research and to learn. Unless this heritage is seen in an integrated way, as a nationally distributed collection of the history of knowledge, French university collections will not receive the recognition they deserve and possibly in a few decades a substantial part risks being lost. Much more collaboration than so far has been the case is needed.

#### 4.7 The second generation: the historical collection

During the 20<sup>th</sup> century, another generation of university collections makes its appearance: the historical collection. The genesis and therefore the development of second generation university collections is distinct from what has been presented so far – although they are also related to teaching and research.

University collections of historical nature emerge through the accumulation of items that are no longer relevant for their original purposes. These may include instruments, machines, models, pedagogical panels, prototypes, replicas, or any other item used for teaching and research, but for one reason or the other is no longer considered adequate to fulfil its purpose. The exact sciences (physics, technology and suchlike) are particularly important in the accumulation of historical collections, but historical collections also encompass medicine and pharmacy. Resulting from the accumulation of university memorabilia, collections of university history also belong to the second generation of university collections. Records of second generation museums only appear in the 20<sup>th</sup> century. The two major reasons for this are 1) the nature of these objects and the mechanisms of their use for teaching and research tend to result in a long-term collecting processes and 2) historical collections presented new challenges to the university as an institution. I will discuss these two points below.

The ‘natural fate’ of historical instruments and equipment in university laboratories is to be thrown away. Scientific equipment – like cats – has seven lives and objects are used and re-used, their research and teaching qualities being exploited until exhaustion. At the end of their seventh life, the instrument may be trashed or its importance may only be recognised after years. In universities, there is no formal inheritance of care or responsibility for this equipment. Experimental equipment is not considered a ‘collection’, nor are users generally concerned with the possible historical significance of the instruments they use every day. In fact, ‘historical significance’ is a relative concept at best. An instrument can be tens of years or even centuries old, yet still be ‘in use’. Paolo Brenni, researcher and president of the Scientific Instrument Commission (SIC), illustrated this with an example: “I have once seen a half destroyed 19<sup>th</sup> century spectrometer. Only the tripod bearing the plate with the graduation survived – it was used in a modern experiment dealing with a completely different field of physics.” (P. Brenni, *in litt.* 28 April 2005). As a result, if historical collections are to be formally assembled, someone needs to be aware of the significance of the objects, collect them (i.e. save them) and put them aside in order to be protected. If this happens at all, it is usually thanks to one or more professors.

One of the finest collections of instruments in Europe – the 18<sup>th</sup> century physics cabinet of the University of Coimbra – was sold for the best price at the door of the Physics Department in the early 1900s, undoubtedly because the right person was not there at the right time. Some of the instruments were later recovered and restored and in 1937 the former cabinet was re-created by Mário Silva, a professor of physics (Silva 1939, 1963). Today, the cabinet is protected and integrated in the Museum of Physics of the University of Coimbra. Similarly, a large number of physics and astronomy instruments from the University of Strasbourg Louis Pasteur was deemed to be lost in the 1980s, yet was saved by a group of professors who literally collected the instruments from the waste-bins and created an association to frame

their protection, the *Association pour un Musée de Sciences à Strasbourg (AMUSS)*<sup>87</sup>. Although not accessible, the collection has been inventoried and studied and will hopefully be integrated in the *Jardin des Sciences*, the new project aiming at reorganising the collections of physical and natural sciences of the University Louis Pasteur. The importance of the Strasbourg collection is beyond doubt and was confirmed by Paolo Brenni, following a visit in October 2003: “[...] le nombre d’instruments qui ont survécus est encore très important. Leur qualité est généralement remarquable, étant sortis des meilleurs ateliers des fabricants français et allemands de la fin du XIXe et du début du XXe siècle” (Brenni 2003).



Fig. 4.21 – Museum of Physics, University of Coimbra (partial view) (photo G. Pereira, reproduced with kind permission).

Although admittedly extreme, these examples might be seen as ‘proof’ of the rather careless and negligent way in which scientific equipment is treated in universities. The line between practices of daily teaching and research and practices of negligence can be very thin. Dynamic use, re-use and disposal are not only commonplace, but are intrinsic to the ways instruments are used and often tangible (e.g. cannibalised instruments). When the time comes for public interpretation, this dynamic nature is an added value that should not be omitted but, on the contrary, explained to the public.



Fig. 4.22 – Historical collection of physics, University Louis Pasteur of Strasbourg.

<sup>87</sup> AMUSS has now become Association de Muséographie et de Culture Scientifique (S. Soubiran, *in litt.* 23 June 2005).

In short, individual initiative and sensitivity towards academic heritage are crucial ingredients when it comes to assembling university historical collections. Consequently, such collections arise more arbitrarily and have longer collecting processes than others. As for university memorabilia, the collecting process is perhaps less arbitrary as objects are generally perceived as academic heritage (e.g. busts, portraits, seals).

Once 'historical' importance is acknowledged, formal recognition by the institution and the creation of a museum is usually the next step, although this may take decades too. Historical collections may be displayed for decoration in corridors, classrooms, libraries or auditoriums before an actual museum materialises. The formal constitution of the Museum of Science of the University of Lisbon stems from the 1980s, yet the instruments had been gradually collected for more than 20 years prior by the museum's first director, Fernando Bragança Gil. Robert T. Gunther listed and collected 'old' instruments, scattered around the University of Oxford, from at least 1916, but the Museum of the History of Science only opened to the public in 1925 (Bennett 1997). It takes persistence at an individual level (often against the prevailing mood amongst colleagues) and the agreement of a dean or rector to create a second generation museum whereas first generation museum emerge naturally from the teaching and research collections in a given department. Second generation museums did not emerge before the 20<sup>th</sup> century. Moreover, they started slowly and only grew in numbers after the 1960s.

The first university museums of a historical nature were created in the early 1900s. These included the Musée de Sismologie et du Magnétisme Terrestre at the University of Strasbourg Louis Pasteur (1900), the Musée d'Histoire de la Médecine et de la Pharmacie at the University of Lyon Claude Bernard (1913) (donation), the Scott Polar Research Institute Museum (1920) and Museum of the History of Science (1925), both in Oxford, the Utrecht University Museum (1936), the University Museum of Pavia (1932), the Museum of the History of Medicine at the University of Porto (1933), and the University Museum at Groningen (1934). The Whipple Museum in Cambridge was created during World War II (1944), but only opened to the public in 1951 (Bennett 1997). After 1945 there were for example the Musée National de l'Education in Rouen (1950) and the Museum of the History of Medicine at Louvain (1950).

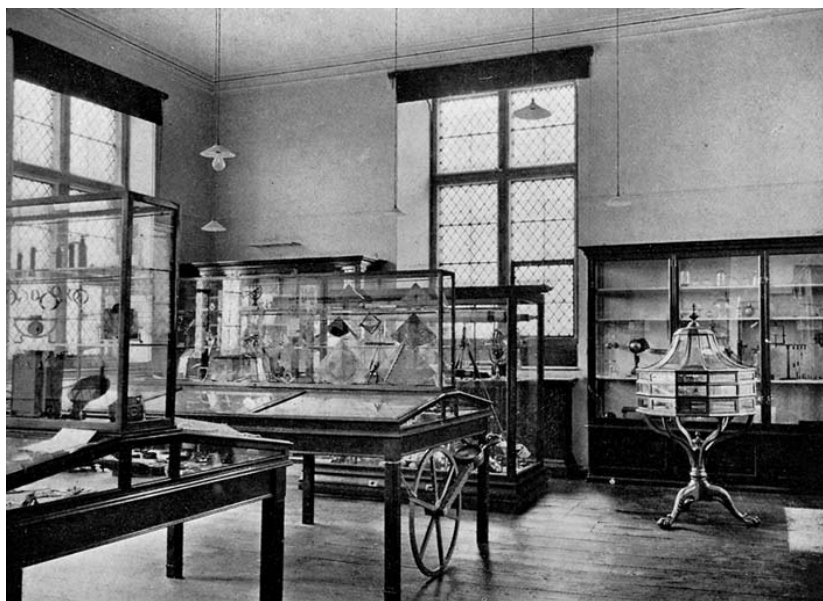


Fig. 4.23 – Museum of the History of Science, University of Oxford, first opened in 1925 as the Lewis Evans Collection on the top floor of the Old Ashmolean Building. This is possibly one of the earliest second generation university museums in Europe (photo originally published in *Country Life* Vol. 56, No. 1479, p. 734, 1925, reproduced with the kind permission of the Museum of the History of Science, University of Oxford).





Fig. 4.24 – University Museum at the Martin-Luther University of Halle-Wittenberg (left the section devoted to the history of the Faculty of Philosophy and right the sceptres and early engraving depicting the town). Often, university museums present both historical instruments and university memorabilia, particularly in north and central Europe (reproduced with kind permission).

Only after the 1960s, second generation university museums underwent a considerable increase in number, with the opening of the Robert Koch Museum at Humboldt University Berlin (1960), the Collection of Minerals at the University of Paris Pierre et Marie Curie (1970), the Sacred Art Museum at the University of Coimbra (1972), the Musée Dentaire at the University of Lyon Claude Bernard, the Musée de la Pharmacie 'Albert Ciurana' at the University of Montpellier 1 (1972), the Helsinki University Museum (1978), the Hunt Museum of Decorative Art, Limerick University (1978), the Musée de Louvain-la-Neuve (1979), and many others (see appendix A8).

Even considering the long and often arbitrary collecting process, why did second generation university museums take so long to actually take off? A combination of two factors probably contributed to the slow start. During the first decades of the 20<sup>th</sup> century, the notion of 'museum' was far from alien to universities. In fact, it was the Golden Age of university museums. In those days, museums were actively used for teaching and research by professors and students, the triple mission was at their core, and most were located in, and managed by, departments. However, the *historical* museum, in which objects suffered loss of context and were preserved to be displayed for the general public, represented a wholly new direction and development. There was no internal drive for the deliberate creation of historical museums in universities, there were no formal internal structures prepared to accommodate them and no trained staff to curate the collections. Second generation museums represented a challenge and a major mentality leap for universities. It is probably for this reason that it took almost the whole of the 20<sup>th</sup> century for universities to adapt to the idea. Furthermore, often they were not spontaneously created. It required strong catalysers – e.g. centenaries and other celebratory occasions – to trigger the creation of the large majority of second generation museums.



Fig. 4.25 – Museum of Science, University of Lisbon. The Museum has integrated and displays 18<sup>th</sup> - 20<sup>th</sup> century historical equipment from the Faculty of Sciences (departments of physics, chemistry, mathematics and derived sciences) and the Polytechnic School (predecessor of the University of Lisbon, created in 1837). It also integrates a practically intact late 19<sup>th</sup> century Laboratorio Chimico, as well as items of university history. The Museum was created officially in 1985, although it only opened to the public in 1993. See e.g. Gil (1994, 2003) (photo A. Cabral, reproduced with the kind permission of the Museum of Science, University of Lisbon).

Although universities often use their historical record as an argument for social and academic legitimacy, they generally only mobilise resources for the study and preservation of their heritage – through publications or exhibitions – at times of special commemorations. Many historical museums are created or renovated on these occasions. For example, at the University of Utrecht, an important physics collection was discovered in the attic in 1918. Years of deliberations followed and promises were made, but the Utrecht University Museum was only created in the aftermath of an exhibition in 1936 commemorating the 300<sup>th</sup> anniversary of the University (S. de Clercq, *pers. comm.* 5 May 2003). The Musée Dentaire at the University of Lyon Claude Bernard was created due to the 75<sup>th</sup> anniversary of the École de Médecine. A similar situation arose in connection with the restoration and reorganisation of the Volta Collection at the University of Pavia, which resulted from the commemoration of the bicentenary of Volta's battery in 1997 (F. Bevilacqua, interview 20 March 2003). The Museum of Science of the University of Lisbon was organised after an exhibition commemorating the 150<sup>th</sup> anniversary of the Polytechnic School and the 75<sup>th</sup> anniversary of the Faculty of Sciences. Sometimes, first generation university museums are also the outcome of special commemorative or scientific events. For example, the Museum of Mineralogy Giovanni Capellini at the University of Bologna was created in 1881, coinciding with the Second International Congress of Geology. There are many more examples. These facts *per se* are remarkably illustrative of the rather celebratory concept universities often have of their own heritage.

Possibly as significant and perhaps even more so, there is a second reason for the slow take off. The 1960s represented a turning point for the museum sector, with an increasing emphasis on the educational role of museums for society at large. Since second generation

university museums targeted the general public from their very beginning, they are likely to have benefited from this wave of change too<sup>88</sup>.

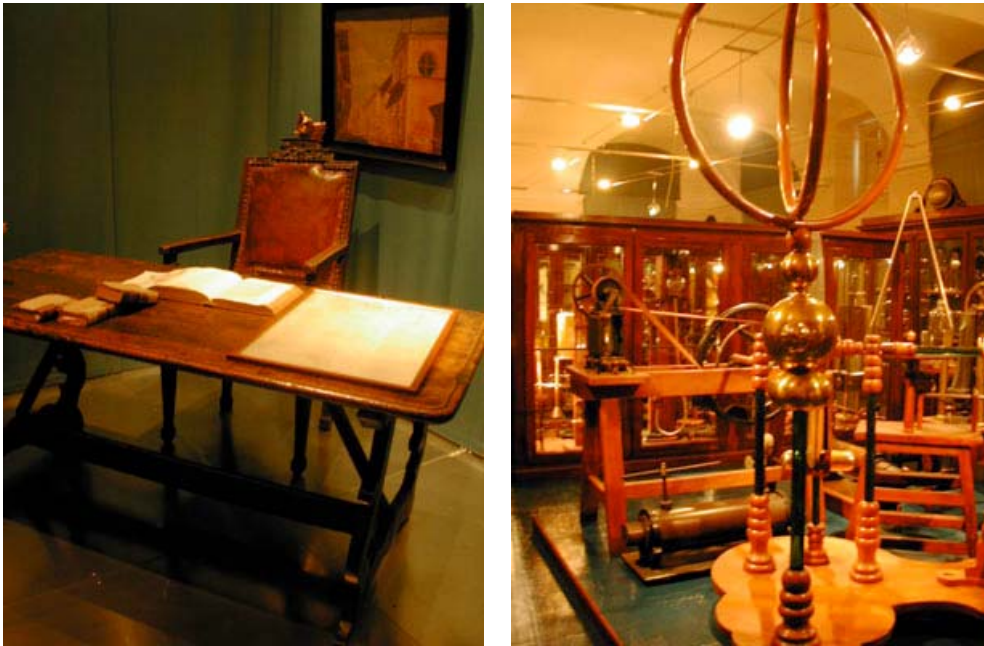


Fig. 4.26 – Gabinetto Volta at the Museum for the History of the University of Pavia, restored on the occasion of the bicentenary of Volta's battery in 1997 (photo reproduced with kind permission).

#### 4.8 Summary and discussion

The development of university collections and museums paralleled the development of universities and the advancement of teaching and research. For first generation university collections and museums, the general picture first became visible in the late 19<sup>th</sup> century (fig. 4.27). Teaching collections were possibly born together with the first universities and survived essentially unaltered until today. Research collections arose during the mid to late 18<sup>th</sup> century and were anticipated by late 16<sup>th</sup> century study collections. First generation university museums in the modern sense began with the Ashmolean in 1683, although their golden age only occurred after the 19<sup>th</sup> century higher education reforms.

In essence, the model adopted by (first generation) university museums during the golden age was that of the Ashmolean: the institutionalised integration of teaching, research and public display. The university museum (including the botanical garden) was an independent unit that encompassed classrooms, laboratories, exhibition areas, and at least one library, under the responsibility of one or more professorships. Second generation university museums and collections only appeared in the 20<sup>th</sup> century, initially slowly and gradually increasing since the 1960s. Universities were slow in absorbing the concept of historical heritage. Collections and museums of a historical nature are marked by long and often arbitrary collecting and their founding was often determined by important celebratory events.

<sup>88</sup> The post-1960s expansion of second generation university museums also took place in the USA. According to Danilov (1996), nearly half of American university museums were created between 1945 and 1995, and approximately two-thirds of them in the 1960s and 1970s. Of the new museums, 70% were in the field of the arts, coinciding with the growth of universities and colleges and with the development and expansion of history of art, studio and art-related courses. In the USA, historical museums and history-related facilities were the second group in terms of growth, also catalysed by celebratory occasions, particularly the bicentennial celebrations of the 1970s. Danilov (1996) noted that – compared with the previous 100 years – first generation museums experienced a decrease in their development rate during this period. As yet, data are insufficient to infer whether the same trend occurred in Europe and the possibility of a similar correlation should be investigated.

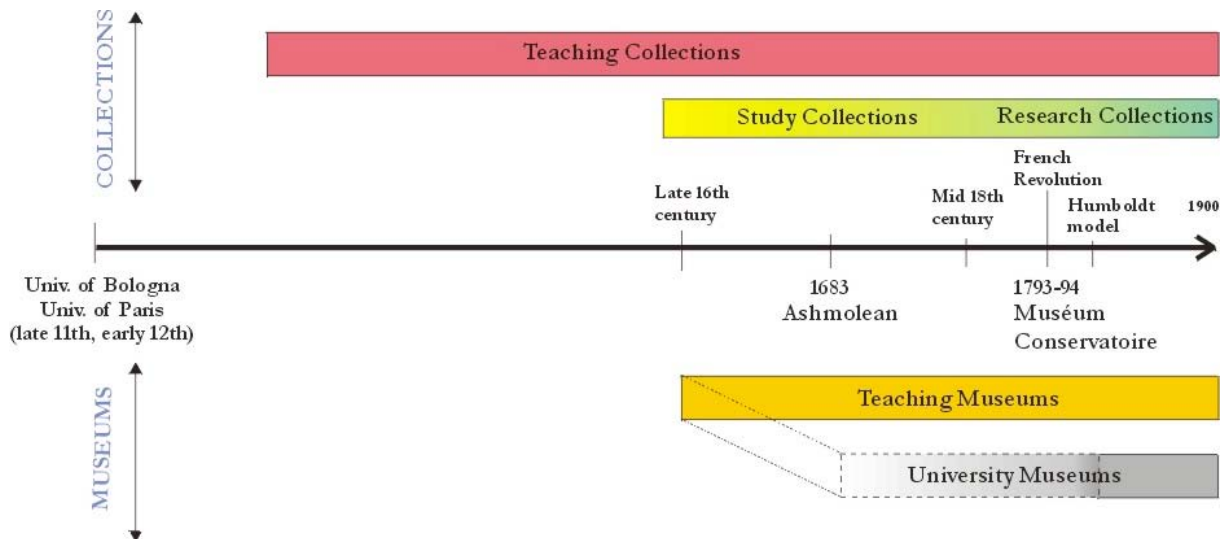


Fig. 4.27 – Development of first generation university museums and collections (timeline not to scale). Second generation museums and collections appeared in the 20<sup>th</sup> century and are not depicted.

Although first and second generation university museums coexist on campus, they have distinct origins, epistemological processes and missions and were subject to different historical developments. With few exceptions, their paths did not cross until recently, as the trend of integrating first and second generation university collections only became prominent during the last decade.

In the mid to the late 20<sup>th</sup> century, the complexity of the museological panorama in universities attests that first and second generation collections and museums of all disciplines, sizes and users, coexist and persist to the present day<sup>89</sup>. The borders between these entities were - and still are - often nebulous. Although the first impression is one of chaos, the cohesion and homogeneity of university collections is striking.

There is no distinct 'national' university museum in the sense in which, for example, the *ecomusée* is a typical French product or the *heimatmuseum* a result of early 20<sup>th</sup> century Germany or even the open air museum as a special Scandinavian creation. Doubtlessly, there are national and geographical factors that influenced the nature and development of specific university collections and museums: the Herbarium at the University of Turin focuses on the flora of the Italian region of Piemonte; the Robert Koch collection is housed at the Humboldt University of Berlin and not elsewhere, because Koch developed his scientific work in Berlin and the same goes for the collection of Alessandro Volta in Pavia. Likewise, the memorabilia related to the history of the University of Utrecht are different from those of the University of Bologna. Clearly, there is a 'local component' to be found in any university collection and this is important in their significance.

When governments intervened, this was not primarily done to introduce a national, political or ideological bias<sup>90</sup>. As illustrated by the Dutch and Italian examples given above and by the

<sup>89</sup> First generation collections did not suddenly stop in the 20<sup>th</sup> century. Sciences developed at different times and the majority of ethnology, archaeology and anthropology teaching and research collections developed in the early 20<sup>th</sup> century. Moreover, new types of first generation collections only develop after the 1950s (e.g. DNA banks).

<sup>90</sup> We know that in extreme cases of dictatorial regimes research was subordinate to ideological criteria. In Europe, the case of T.D. Lysenko under Stalin and the machinations in Nazi Germany are well-known and emblematic. It should be noted that, although there is an extensive literature on these two cases (including a recent editorial in *Nature*, see 'Uncomfortable truths', *Nature* 434: 681, 7 April 2005), we know little about the fate of university collections under oppressive regimes and how collecting, displaying and interpreting was used as a tool to promote political ideas (and 'national identity'). National and local museums were often 'normalized' and



Convention decrees that established the Muséum, the Conservatoire and the conservatoires of the faculties of medicine in France, governments intervened to establish and regulate higher education and research policies, which eventually resulted in collections and museums. In different countries, these laws were analogous in nature and more or less simultaneously implemented. Driven by a desire for progress in science and society, they did not introduce any significant 'national' bias. The result has been that, if one excludes the 'local component', university collections are remarkably consistent from Tartu to Dublin. The universal nature of knowledge and the proverbial communication and collaboration between scientists of different nationalities (intrinsic to science itself) signified that the major scientific questions were the same across the continent (and elsewhere) at any given moment in history. Similarly, the fundamentals of what was taught and how it was taught were basically the same as well. If one could look back and take a photograph of European universities frozen in time in, say, 1890, we would see scattered groups of researchers and students of physics, biology, anatomy, anthropology and astronomy in Cambridge, Leipzig, Toulouse, Naples and Uppsala, *grosso modo* operating within the same fundamental scientific frameworks<sup>91</sup>. The picture that would emerge would not be one of heterogeneity or multiplication (i.e. chaos), but one of cohesion and harmony – not thousands of chaotic and scattered collections, but an immense and consistent collection distributed across Europe. Moreover, the consistency is not only synchronic but also diachronic: there is a subtle and continuous line that can be traced back from the 'golden age' to the Muséum and the Conservatoire, to the Ashmolean and to teaching and study collections and indeed possibly all the way back to the early medieval Arab 'universities', monastery gardens, the *Lyceum*, the *Museion*, and the 530 BC school uncovered in Ur with teaching collections of antiquities.

Ultimately, what binds university collections together is the quest for knowledge about natural phenomena, as well as human creation. We are in the world of direct observation and comparison of artefacts and specimens, the world of understanding by doing, measuring and experimenting. Knowledge – how it is constructed, how it is transmitted – is the single main factor that affects the constitution and evolution of university collections. It is knowledge that provides them with the common shared character in their awesome disciplinary diversity.

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used to boost nationalistic feelings, but the case of university museums is more intriguing because, at least theoretically, the nature of their collections and the traditional autonomy of universities should have acted as a protection shield against undue interference. An interesting sub-topic for further research is the development of university collections during occupation regimes. For example, during the Japanese occupation of Korea (1910-1945), university museums assumed the role of catalysers and guardians of Korean culture. As T. Noach observed: "[...] It was very interesting to note that [South] Korea has no national Natural History museum, and that the small collections of natural history within universities are not regularly on display and are not the primary concern of the collection and exhibition policies. The major focus within university museums in Korea is archaeology and ethnography, [...] partly because of their links with the Japanese colonial period and the need to preserve unique, original Korean culture, and also because the primary area of academic research at the institutions is in these fields" (T. Noach in Macquarie University, <http://www.els.mq.edu.au/korea.html>, accessed 12 December 2004). Interestingly, there are signs that the rule of Mussolini in 1920s and 1930s fascist Italy seemed to coincide with a growth of interest in archaeological and artistic university collections to the detriment of scientific university collections – at least in some universities. This is an issue that deserves further work (S. Talas, *pers. comm.* 1 July 2005).

<sup>91</sup> In physics in 1890, this meant operating within the framework of classical physics (mechanics, electricity, optics and heat), where in fact all major discoveries appeared to have been made in as much that Albert A. Michelson (1852-1931) predicted that subsequent developments would basically be in the sixth place of decimals. In the life sciences, this meant a quest for the mechanisms of evolution, ignited by the rediscovery of Mendel's work.



[M.C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## 5. Where are we now? Our state of knowledge

The most fundamental change that has affected museums during the [past] half-century [...] is the now almost universal conviction that they exist in order to serve the public. The old-style museum felt itself under no such obligation. It existed, it had a building, it had collections and a staff to look after them. It was reasonably adequately financed, and its visitors, usually not numerous, came to look, to wonder and to admire what was set before them. They were in no sense partners to the enterprise. The museum's prime responsibility was to its collections, not its visitors.

K. Hudson *in* Murphy (2003: 12)

These marvels (like all marvels) are mere repetitions of the ages.

Melville, 1998

The 1900s were a time of social, scientific, technological, cultural and economic changes on a scale unlike anything seen before. In the 20<sup>th</sup> century, university collections and museums<sup>92</sup> became increasingly complex, grew considerably in size and number of objects and diversified their scope and publics. It would be imprudent here, indeed impossible, to attempt a detailed description of the past 100 years. Nevertheless, from the literature available it is possible to outline major trends and key turning points.

During the first half of the 20<sup>th</sup> century, there were few second generation university museums as their expansion would only occur from the 1960s-1970s onwards. Instead, the development of first generation museums and collections was in full swing. Natural history museums and botanical gardens continued to be created (or sometimes re-created), e.g. the Botanical Garden at the University of Delft, founded in 1917, and the Geiseltal Museum (Geology and Palaeontology) of the University of Halle-Wittenberg, which was founded in 1934. The development of first generation collections in the humanities – ethnology, anthropology, archaeology – started later than in natural history and many museums were established as a result of the numerous expeditions and excavations in the early 1900s. The Museum of Anthropology at the University of British Columbia, Canada, was founded in 1947, the collection of the Musée Préhistorique de Penmarch was donated to the University of Rennes, France, in 1947, and the Ethnographic Museum Gerardus van der Leeuw, University of Groningen, the Netherlands, was founded in 1968.

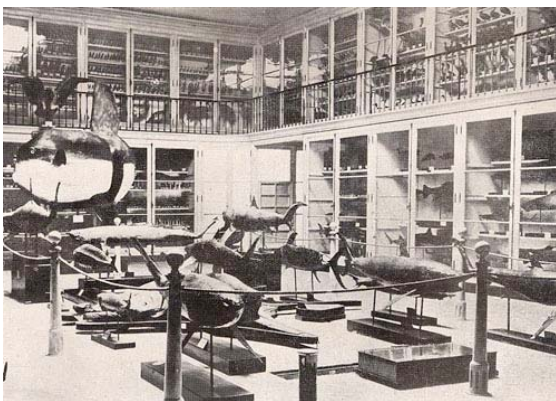


Fig. 5.1 – Museu Bocage, the zoology section of the National Museum of Natural History, University of Lisbon, photo from 1898. The Museum was tragically destroyed by a fire, 18 March 1978. “Almost nothing was left” (Almaça 1982: 35) (Museu Bocage Archives, reproduced with kind permission of the University of Lisbon).

<sup>92</sup> In this dissertation, the term ‘university’ is taken in its broadest sense and to mean all European higher education institutions, including for example the *Fachhochschulen*, the polytechnics, military academies and the *grandes écoles*.



Fig. 5.2 – Museu Mineralógico e Geológico, National Museum of Natural History, University of Lisbon. Photo of the Palaeontology Room, possibly from the 1930s. This Museum was also affected by the 1978 fire mentioned above (Museu Mineralógico e Geológico Archives, reproduced with kind permission of the University of Lisbon).

During the first half of the 20<sup>th</sup> century, first generation university collections were usually intensely used for teaching and research and universities were investing in them, e.g. the University of Bologna acquired substantial zoological collections in 1932 (Scaravelli & Bonfitto 1994).

The second half of the 20<sup>th</sup> century was a period marked by considerable change at social and political levels. Three major factors directly impacting university collections and museums can be identified: a) changes in the higher education system; b) changes in the museum sector, and c) technological developments and changes in scientific research and teaching. After 1945, universities expanded significantly and the number of institutions and students increased dramatically in the 1960s, when structural reforms in the higher education systems of many countries began to be introduced (e.g. in France, Belgium, the Netherlands, as well as in the USA). Higher education reforms continued through the 1970s and 1980s and are still ongoing today. In the 1980s, Prime Minister Thatcher's reforms in the UK marked the beginning of a trend towards a lesser involvement of the State (i.e. reduction of government funding) in universities. Today, the continued validity of the classic Humboldt model is under question and major pillars such as universal and free access are being debated in many European countries.

Because of the increase in the number of museums in general, the improvement in public service and the development of the museum profession, the post-war period was also marked by significant developments in the museum sector. In the 1960s and continuing throughout the 1970s, 1980s and 1990s, accreditation and registration schemes were implemented, museum legislation was substantially reformed or created, museum journals multiplied, staff training and general standards improved, and the museum profession gradually evolved into the many specialities we see today. As I will put forward, these developments had several implications for university museums and collections.

The third major factor impacting university collections and museums was the advancement of science. Some higher education courses, such as archaeology, anthropology, life sciences and medicine, have suffered profound curricular transformations as a result of scientific advancements and trends. Teaching has also changed as a result of the introduction and generalised use of new technologies. These modifications will be addressed in the next chapter.

Over the past four decades, these three factors combined have significantly altered the landscape of university museums and collections, as well as their use and role.



In the 1980s and early 1990s, the already vulnerable situation of first generation collections collapsed. Natural history museums in particular were going through a worldwide 'crisis' and several major European natural history museums vacillated (e.g. Anonymous 1990a,b, Butler 1997). In American universities, there were closures and dispersals (Black 1984). In Europe, universities gradually began to have tighter budgets and the management of space and staff became a poignant issue, with universities questioning the relevance of collections. Many second generation museums, although not directly affected by the 'crisis', also suffered from a lack of financial and staff resources, the lack of interest, and the fact that their role in the university was never clarified. Although to a different extent in different countries, by the late 1990s many university museums and collections were at best at a crossroads and at worse threatened.



Fig. 5.3 – Musée d'Histoire de la Médecine, Université Libre de Bruxelles, created in 1994. The collection (second generation) is significant and rather singular in the European context as it presents items related to the early history of health (magic and religious practices), as well as objects representative of non-Western medical practices (Pre-Colombian and African). The oldest objects are the representations of Hammourabi and the *Pazuzu* from Mesopotamia (2<sup>nd</sup> millennium BC) and pallets for ointment and oils of embalming (Egypt, 6<sup>th</sup> Dynasty, c. 2300 BC) (Archives Musée d'Histoire de la Médecine).

Confronted with this impasse, the university museum community mobilised, often with the support from the museum sector. National associations of university museums and collections were formed<sup>93</sup>: the American Association of College and University Museums and Galleries (1980)<sup>94</sup>, the British University Museums Group (1987), the Council of Australian University Museums and Collections (1992), the Brazilian Permanent Forum for University Museums (*Fórum Permanente de Museus Universitários Brasileiros*) (1992), the Dutch Foundation for Academic Heritage (*Stichting Academisch Erfgoed*) (1997), and the University Museums in Scotland (UMiS) (1998)<sup>95</sup>. In 2002, the Spanish Association of University Museums and Collections (*Asociación de Museos y Colecciones Universitarias Españolas*) was founded (Such 2003) and, in 2004, under the auspices of ICOM-Greece, the Greek University Museums and Collections Working Group was created (Theologi-Gouti 2005).

<sup>93</sup> The Korean Association of University Museums (KAUM) had already been created in 1961 and the American College Art Association (CAA) was founded way back in 1911. See <http://www.kaum.or.kr/english/1/main.htm> and <http://www.collegeart.org/>, respectively. Both accessed 26 June 2005.

<sup>94</sup> See ACUMG's mission and history at *ACUMG Website*, <http://www.acumg.org/mission.html>, accessed 20 December 2004.

<sup>95</sup> See UMG at <http://www.umg.org.uk/>, the SAE at <http://www.academischerfgoed.nl/> and UMiS at <http://www.dundee.ac.uk/umis/>, all accessed 26 June 2005.

On an international level, the three most important initiatives were the creation of the European network *Universeum* in 2000, the foundation of UMAC in 2001 and the delivery by the Council of Europe of the *Draft Recommendation on the Governance and Management of the University Heritage* (Council of Europe 2004).

The next sections are dedicated to the present state of knowledge regarding European university collections. In the first part, a literature review will be presented, comprising main publications from the 20<sup>th</sup> century as well as dissertations. In the second part, major recent initiatives regarding university collections at national and international levels will be presented and discussed.

## 5.1 University collections in the 20<sup>th</sup> century museum literature

One widespread view about university collections is that publications are only of a relatively recent date. Although it is true that there has been an explosion of texts on the subject, both in number and scope, during the past two decades (particularly the past five years), the professional museum literature on university collections goes back to the early 1900s.

One of the objectives of the present research programme was to compile as many published literature sources on university museums and collections as possible. Previously, a literature review – largely restricted to papers published in English – was given by Tirrell (2000b). Recently, the *Hermann von Helmholtz Zentrum für Kulturtechnik* (Humboldt University in Berlin) has developed an online bibliographical database in German, listing more than 600 titles on university museums<sup>96</sup>. The review presented below is restricted to a selection of articles, books and other relevant published material, addressing university museums and collections as a group or as a sub-group (university museums of art, university collections of mineralogy, etc.). For reasons of space and concision, catalogues, case-studies and descriptive papers are excluded. Literature addressing the 'crisis' of university collections will be discussed on the next chapter. The selection encompasses papers published in English and French (with occasional references in Dutch, Italian, Portuguese and Spanish) between 1917 and 2005. The majority of these were published in professional museum journals (e.g. *Curator*, *Museums Journal*, *Museum News*, *La Lettre de l'OCIM*, *Museum International*) and conference proceedings. Only a few are unpublished. The review has three sections: 5.1.1) fundamental papers, here to mean theoretical texts discussing nature and role of university museums and collections; 5.1.2) surveys; and 5.1.3) doctoral dissertations.

### 5.1.1 Fundamental papers

The literature on university museums has seen a substantial growth since the 1960s. Before, fundamental papers only appeared occasionally. Ruthven (e.g. 1923, 1931, 1939, 1963), Coleman (e.g. 1939, 1942) and Rodeck (e.g. 1950, 1952) were amongst the more prolific pre-1960s authors. The literature peaked three times in the 20<sup>th</sup> century: the first time in the 1960s, when a debate about broader audiences emerged, a second time in the 1980s, when the first alerts about the 'crisis' appeared, and a third time since the late 1990s till the present. Since the 1980s, a new wave of theoretical texts appeared notably by Arnold-Foster (e.g. 1989, 1993, 1999, 2000)<sup>97</sup>, Boylan (e.g. 1999, 2002, 2003), Clercq (e.g. 2001c, 2003a,b, 2005, in press)<sup>98</sup>, Hamilton (1995), Kelly (e.g. 1998, 1999, 2001), Stanbury (e.g. 1993, 1997,

<sup>96</sup> See <http://publicus.culture.hu-berlin.de/sammlungen/bibliographie.php>, accessed 18 June 2005. The bibliographical database also lists texts in other languages. At date of accession, the bibliographic database listed 656 titles in German, 242 in English, 16 titles in French, 1 title in Spanish and 2 titles in Latin.

<sup>97</sup> See also Arnold-Foster & La Rue (1993), Arnold-Foster & Weeks (1999, 2000, 2001) and Arnold-Foster & Mirchandani (2001).

<sup>98</sup> See also Clercq (1998, 2001a,b, 2004a,b) and Clercq & Lourenço (2003, 2004).

2000, 2001b, 2002, 2003a,b, 2004, 2005)<sup>99</sup>, Tirrell (e.g. 1991, 1994, 1998, 2000a,b, 2001a,b, 2002, 2003a,b, 2005), and Warhurst (e.g. 1984, 1986).

Before the 1960s, the majority of fundamental papers were published in American journals and caution is therefore needed when transposing reflections therein to the European situation. Nevertheless, it can be speculated that the problems of European university collections were to a great extent similar to those of their North American counterparts. Judging from evidence from the field, the difference is probably one of a delay in time, with European university museums and collections lagging at least one decade behind their North American counterparts, both in respect to the public access debate of the 1960s and the impact of the 'crisis' in the 1980s.

Right from the beginning, the role and purpose of university museums has been a recurrent topic in the literature. No matter whether describing the latest temporary exhibition or discussing the importance of collections, there is probably not a single paper that does not address the role, purpose, mission or goal of the museum or collection, as well as the conditions provided by the parent institution (university, college) enabling it to fulfil or not fulfil that role. Despite the prolixity, the place of the university museum and its mission within the university has not been unequivocally and coherently defined or articulated. If we add the dynamic nature of university museums and collections and their diversity in size and type, it is hardly surprising that many have often shown no clear understanding of the museums' role in the university.

Before the 1960s, the university appears to have been the *raison d'être* of university museums and collections<sup>100</sup>. Although access to broader segments of the public would not be denied, the goal and purpose of university collections, at least as expressed in the literature, seemed to be teaching and research. One of the earliest texts in which university museums are mentioned as a group was published by Smith (1917). In a paragraph detailing the function of university museums, he wrote: "University museums give opportunity for professors and students to do scientific research work and supply labeled [*sic*] specimens, casts, models and maps to illustrate the courses of study, just as the university library supplies literature" (Smith 1917: 101). Baker (1924) addressed the function and role of university museums of natural history, noting similarities and contrasts between them and university museums of art. He wrote, "[...] a well arranged museum can make a science course much more intelligible to an undergraduate", adding that specimens are "absolutely essential for the proper teaching of many subjects" and that these specimens "should be in a museum where they may be rationally arranged to bring out some principle" (Baker 1924: 82).

Although not often cited, the first important writer to reflect on the mission of university museums was probably Ruthven (1923, 1931, 1939, 1963). Ruthven wrote about the differences between local, national and university museums, while at the same time stressing the twofold mission of the latter. He argued that the university museum's fundamental mission is twofold: a) research through collecting and study and b) teaching through exhibition. "As a general rule", he maintained, local museums should aim mostly at "popular instruction", national museums "should combine instruction and research about equally" and the university museum "should strongly emphasize research, that is, the obtaining and study of collections for the advancement of science" (Ruthven 1931: 31). Noting that the university museum does not attract masses of visitors, it should therefore – instead of canalising resources into exhibitions that are not looked at – limit exhibits "to those which are needed

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<sup>99</sup> See also Stanbury (2001a).

<sup>100</sup> There are, of course, exceptions. For example, Luigi Rolando, the founder of the Museo di Anatomia Umana at the University of Turin clearly wished the Museo to be accessible to the general public from the start. In 1830, he located it at the Palazzo dei Regi Musei, in the center of Torino, together with the Museo di Storia Naturale and the Museo di Antichità ed Egizio (G. Giacobini, interview 31 March 2003). See more on the Museo di Anatomia Umana in Giacobini (1993, 1997a,b).

to illustrate elementary facts to the class of students who come in contact with them" (Ruthven 1931: 32). Likewise, Harden (1947) briefly discussed the history of university museums and explained why university museums primarily serve the university community: "[...] the end in view [of the university museum] was always the same, namely to ensure that university teachers and students had the means of supplementing their book-learning with a study of objects and specimens" (Harden 1947: 142). Later in the text he asks: "Should a university museum [...] cater more directly for the general public? One thing is certain, and that is if its exhibition galleries are arranged in a way which will provide the greatest benefit to university classes and students it will not help to render them attractive to the general public", concluding: "For this reason the service of the general public must always be the secondary consideration. But it would be a great mistake to exclude the general public altogether" (Harden 1947: 143). It was Harden (1947) who – possibly for the first time – mentioned the role university museums should play in the training of museum professionals, writing that "Existing in the midst of a body of students and having good general collections, it [the university museum] is very well placed for training museum workers" (Harden 1947: 143).

The twofold mission – research and teaching – was also subscribed to by Coleman (1939, 1942). Contrary to Ruthven, Laurence Vail Coleman is frequently cited, possibly because he was Director of the American Association of Museums from 1927 to 1958 and wrote the monumental three-volume work *The Museum in America*. Coleman vehemently defended that the university museum's principal duty was to serve the university community in internal education and research. As he poignantly stressed public service "is no more the first business of a [university] museum than that of a [university] library" (Coleman 1942: 5). Although he recognized that some university museums "try to be all things to all men", the first duty of a university or college museum "is to its parent establishment and students and faculty have prior claim to that of outsiders in general"<sup>101</sup> (Coleman 1942: 5).

I should pause to note that we are in the 1940s, thus in the almost exclusive domain of first generation university collections, i.e. those that since the late 16<sup>th</sup> century were assembled precisely for teaching and research.

Rodeck (1950, 1952) also wrote extensively about the mission, role and audience of university museums. He was probably the first to call for a clarification of their missions: "Museums forming part of a university may legitimately have one or several functions, but in any case these should be clearly defined and well understood" (Rodeck 1950: 7). "For their own protection [...]", he wrote, "[university] museum people had better define and restrict the meaning of the term 'museum'" (Rodeck 1952: 5). It is curious to observe that the currently *en vogue* 'university museum as a showcase for the university' has existed at least for 50 years. Borhegyi (1956a: 3) is likely to have coined the term "show windows" for the university. In his paper, a clear case for university museums as powerful public relation tools for universities is made. He writes "excellent and specialised research collections in the campus museum may serve a highly important drawing card to attract [...] students to the university" (Borhegyi 1956a: 3). Nowadays, this 'fourth mission' of university museums is especially popular among university administrators. In a second paper published the same year, he repeated the message, stressing however the need to primarily serve the university community in the widest sense, i.e. encompassing students from all disciplinary interests (Borhegyi 1956b).

With papers increasing in volume and depth, the 1960s represent a turning point. During this period, university museums became apparently more concerned with the demands of public service and the need to serve broader audiences. University museums of the second generation initiated their growth in numbers, both in Europe and the USA. In the museum

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<sup>101</sup> Note that 'faculty' has a somewhat different meaning in North America and in Europe. In North America, faculty means the members of the teaching staff and, occasionally, the administrative staff of an educational institution (college or university). In Europe, faculty is a division of a university (e.g. Faculty of Medicine).

sector at large, the educational role of the museum, professional training, development and standards began to be more regularly debated (though perhaps later in Europe). These factors may have contributed to a redefinition of the purpose of university museums and collections, as well as to a reflection on the quality of the public service provided.

In reality, museum standards became an issue. For the first time topics such as public access to exhibitions (Hill 1966, Reimann 1967, Rodeck 1968, Crompton 1968, Williams 1969), the distinction between permanent and temporary exhibitions (Hill 1966), educational programmes designed specifically for broader audiences (Matthews 1962, Reimann 1967), and public image (Rodeck 1968) were discussed in the university museum literature, along with conservation (Reimann 1967, Williams 1969), the need for collections policies (Hill 1966), and associations of friends of university museums (e.g. Williams 1969, Martins 1982). Moreover, authors demonstrated an increasing self-criticism and more openly denounced deficiencies. Reimann (1967: 36) complained about “rows and rows of glass jars” that could only be seen through the glass of locked doors. Odegaard (1963: 33) saw a tendency for ‘territoriality’ that put the museum in the situation of “finding itself in, but not of, the University, a kind of Bastille within the heart of the University”. A similar view was put forward by Rodeck (1968: 34), who wrote about some university museums as being scientific ivory towers, “in which the inhabitants [...] talk only occasionally [...] to each other”. Rodeck even wondered why so many university administrations had continued supporting these museums, suggesting that lack of interest and neglect may arise from the fact that “the museum makes no observable, positive contribution to the educational activities of the university” (Rodeck 1968: 34). Realising that many of the problems resulted from the lack of qualified staff (i.e. museum-qualified staff), a reassessment of profiles and training of staff, including directors, was demanded (e.g. Rodeck 1968, Reimann 1967, Crompton 1968, Fleming 1969, and later Rosenbaum 1988).

It is interesting to note that many, if not all, of these themes persist in the agenda of university museums and collections today (as if these papers were written yesterday). However, in the 1960s university museums were merely echoing similar claims made by the museum sector in general: an increase in public service, better museography and interpretation, more attention to the visitor, definition of museum careers. Although these issues continue to be discussed by the museum sector, after 40 years their substance is not questioned anymore – public service, professional standards, training, conservation and careers are now all taken for granted worldwide. In other words, general museums changed, while the large majority of university museums have remained as they were in the 1960s – except that their problems are now even more severe.

It was also in the 1960s that the idea of the university museum as the ‘ideal museum’ appeared. At the 8<sup>th</sup> General Assembly of ICOM held at the Deutsches Museum in Munich in 1968, Rodeck stated: “When one considers the natural advantages of a museum in a university community, one wonders whether any other kind of museum may not be under a handicap in one respect or another!” (Rodeck 1970: 39). Likewise, Fleming (1969: 10) said, “[...] the university museum [...] represents what seems to me to be in theory the ideal relationship of two institutions”. Other authors agree (e.g. Meneses 1968, Wittkower 1968, Auer 1970), with their arguments ranging from ‘the academic atmosphere being more suitable for creativity’ to ‘the privileged access to information, equipment and scholarship’. Thus, at this time, university museums were not only claiming a change in the *status quo* – in tune with other museums – but they were also suggesting that their strategic position provided them with a prominent role in the museum sector at large. It is also in this context that university museums appear in the literature as potential leaders in the provision of museum courses and in the training of museum professionals (a role they actually never played). As Burcaw (1969: 15) put it, “[...] university museums, to a much greater extent than is now the case, should initiate and offer museum training courses; [they] are not doing their duty to students, public, or the museum profession in this respect”. The same position was taken by other authors (e.g. Harden 1947, Borhegyi 1958, Odegaard 1963, Burcaw 1969,

Williams 1969)<sup>102</sup>. Already in the 1940s, Harden (1947) had highlighted the role of university museums in assisting small museums with expertise – an idea that was to be ‘re-invented’ in England in the new millennium, with the active participation of some university museums, for example the Petrie Museum of Egyptian Archaeology (University College London), in ‘museum hubs’ (S. MacDonald, interview 25 November 2002). There were, however, dissonant voices. For example, Manning (1980: 6) stated that “university courses are essentially academic, and are rarely intended to be a form of vocational training. Their aim is not to produce museum assistants, field archaeologists, or any other type of specialist, but to produce a graduate who has the basic knowledge [at disciplinary level] on which a more specialised training can be built”.

In the 1970s and 1980s, there seem to be fewer papers addressing career development and professional standards (e.g. Zeller 1984, Freedman-Harvey 1989). Nonetheless, the function and role of university museums (Petheo 1971, Strachan 1979, Waller 1980, Guthe 1983, Schmidt 1987), the dilemmas resulting from multiple audiences (Arth 1974, Lopez 1977) and, in particular, the problem of combining students and general visitors in one single exhibition continued to be addressed (e.g. Seyd 1971, King 1980, Warhurst 1984, Craig 1988). From the 1980s onwards, papers addressing the positive aspects of partnerships between universities and museums written by non-university museum authors also became more frequent (e.g. Selig & Lanouette 1982, Butler & Horn 1983, Rosenbaum 1988, Solinger 1990, Lauret 1997).

In 1984, possibly for the first time, university museums were granted a distinct chapter in a major museology manual, the *Manual of Curatorship: A Guide to Museum Practice* (Warhurst 1984): the chapter covers the function of university museums, their history (focused on the UK), buildings, administration, finances, and staff. At the time, most university museums continued to focus on internal audiences. As Warhurst states, “although most university museums would not refuse organised visits by school children, few provide anything that can be called an educational service for this purpose” and those museums “which are strictly departmental teaching museums will clearly aim their arrangements at the [...] student in the department” (Warhurst 1984: 81). This focus on internal audiences is confirmed by available museum statistics. Danilov (1996) confirmed that attendance in many campus museums and galleries in the USA was quite small (i.e. between 5,000 and 10,000 a year), the majority being students, researchers and staff. He recognises, however, that some larger institutions attracted more than 300,000 visitors a year, from school groups to residents and tourists (Danilov 1996).

Nevertheless, the issue dominating the university museum literature in the 1970s (e.g. Davis 1976, Minsky 1976) and particularly during the 1980s is the ‘crisis’. During this time, more papers from Europe appeared. The nature and reasons for the ‘crisis’ will be discussed in the next chapter. At this point, I would simply like to signal the appearance of the ‘crisis’ and to identify a number of consequences brought forward in the literature. Probably the first article mentioning a ‘crisis’ in university museums in general (not specifically in natural history university museums) at a national scale and in a professional journal of international distribution appeared in 1986. Warhurst (1986) announced that English university museums were going through a ‘triple crisis’: a crisis of identity and purpose, a crisis of recognition and a crisis of resources. Warhurst’s article, together with one by Willet (1986) revealing a crisis in Scottish university museums<sup>103</sup>, were widely cited and represented a turning point for university museums in the UK (Merriman 2002). Around the same time, Black (1984)

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<sup>102</sup> In fact, university museums were among the first to provide programmes and courses for the museum sector. In the USA, the first course to train professionals for natural history museums was put forward by the Museum of Natural History of the State University of Iowa as early as 1908. The second course for the training of art museum professionals in the USA was implemented by the Farnsworth Museum of Wellesley College in 1910, the Philadelphia Museum of Art being the first (Cushman 1984).

<sup>103</sup> Providing numerous examples from Scottish universities such as Glasgow, Aberdeen, St. Andrews and Stirling, Willet (1986) was critical of the formula-funding and denounced situations where curators were forced to be shop managers and security officers for the museum to open its doors.

reported that university museums of art, history and natural science in the USA “were either closed or had their programs drastically curtailed” (Black 1984: 20). In France, a dramatic report on the state of the museums under the jurisdiction of the Ministère de l'Éducation Nationale was published in 1991 (Héritier-Augé 1991). This report raised awareness about problems related to French university museums and collections, the majority of them similar to those reported by Danilov (1996) in the USA and denounced by Warhurst (1986) in Britain. Héritier-Augé's report would also set in motion a series of initiatives at the political level in France.

Elsewhere in Europe, museum professionals raised the topic of the often deplorable state of university museums and collections. There was a meeting organised by the Portuguese Association of Museology at the University of Coimbra in 1978 (Associação Portuguesa de Museologia 1982), where several case-studies were presented (e.g. Almaça 1982, Coelho & Canêlhas 1982, Encarnação 1982, Firmino 1982, Gil 1982, Gouveia 1982a,b, Lima 1982, Martins 1982, Meneres 1982, Teixeira 1982). The 1970s university museum reality in Portugal was generally very poor. Unfortunately, there were no significant improvements resulting from the meeting. The first concerns in the Netherlands had been raised as early as 1977, in connection with ‘orphaned’ natural history collections at the University of Utrecht (S. de Clercq, *in litt.* 7 February 2005).

The ‘crisis’ had three major consequences for the literature. Firstly, surveys were initiated in different countries. Secondly, university museums and collections began a period of increasing collaboration, both at national and international levels – this has resulted in the creation of the national and international associations mentioned earlier, and a pronounced growth in texts, conference proceedings, and other publications. In particular, *Universeum* and UMAC have produced a significant number of publications, amongst which the already mentioned *Declaration of Halle: Academic Heritage and Universities: Responsibility and Public Access* (2000) (see appendix A10), two volumes of *Museum International* (Vols. 206 & 207, 2000), and *Treasures of University Collections in Europe* (Bremer & Wegener 2001). UMAC has published its annual conference proceedings since its creation in 2001 – in the journal *Museologia* for the 2001 and 2002 conferences and as an independent publication for the 2003 conference (Tirrell 2005). Also worth mentioning were a publication sponsored by the OECD (Kelly 2001) and a special issue of *ICOM Study Series* (No. 11, 2003). Thirdly, the literature clearly indicates a whole new range of issues being under discussion, including a strong political dimension. More papers on university museums and collections have been published in the past five years than during the previous 100 years together. It would be impossible to cover the large number of recent publications in detail and I will merely identify major points of discussion and give a few illustrative references. At the end of this section a selection of published references arranged by discipline is given (Table 5.1).

The accumulated effects of years of limited resources, a “flurry of dispersals” and “mistakes”<sup>104</sup>, an apparent decline in the use of collections for teaching and research (questioning their role in the university) and an explosion in the number, scope, and variety of museums worldwide (which significantly increased competition and standards, while at the same time highlighting the poor public service offered by university museums) have placed university museums and collections at the crossroads. The challenge was summarised by Kelly (2001: 8): “[The university museum] must protect the scholarly values appropriate to its position within an institution of higher learning whilst at the same time providing the stimulating environment demanded by an increasingly sophisticated and diverse audience”, and this with less financial and staff resources than 40 years ago. The post-1980s literature exhaustively examines this challenge, the circumstances that led to it and the long-term consequences. Three major groups of – often overlapping – issues can be identified.

<sup>104</sup> K. Arnold-Foster in Mulhearn (2003: 33) in relation to the situation in the UK in the 1980s and 1990s, although the remark is extensive to other European countries.

Firstly, many authors stress the importance and relevance of university collections, both of the first and second generation. When discussing what he considered to be the three imperatives for university museums, Boylan (1999) singled out the first as being 'relevance' (the other two being 'collaboration' and 'autonomy'). He stated: "It is essential that the museum [...], or a particular large and important collection within it, is made relevant to present-day needs. This does not mean that areas of collections or study which no longer relate to the current teaching curriculum should be abandoned, but the value and potential future importance of historical material should be emphasised" (Boylan 1999: 52-53). Furthermore, university museums and collections feel the vulnerability of the situation; threats loom. Papers are increasingly titled 'Why do universities have museums?' in its multiple variants (e.g. Kemp 1994, Deloche 1995, Gil 1998, Clercq 2003b, Rorschach 2004). There is a parallel flow of papers addressing the topic of the future of university museums (e.g. Spencer 1971, Almaça 1982, Coor 1986, Canelhas 1987, Turk 1994, Casaleiro 1996, Hudson & Legget 2000). The importance of collections for the university and for society in general is stressed repeatedly. As Yerbury (1993: 1) stated, "university museums and collections are as important [...] as libraries and laboratories. They play a very valuable role as information resources for teaching and research". Black (1984: 21) argued that university museums have "a unique and vital role" to play in reminding people of western society's qualities and achievements. Associated with relevance comes the perpetual unfulfilled potential of university collections. MacDonald (2003: 25) mentioned the "strengths and potential" of university museums and collections, comprising: "specialised collections accumulated for teaching and research, specialised supporting libraries and archives, access to cross-disciplinary expertise [...], tradition of quality provision (e.g. hands-on access), access to higher education and research funding, [and] higher public profile through association with an academic institution". Scheiner (1992: 18) agreed that university museums have an "enormous potential" and regrets that so much remains to be done in terms of public access. Diamond (1992: 92) bluntly stated that the unfulfilled potential is due to the lack of resources: "public programs in many university museums have not had the resources to keep up with current museum practice". Moreover, "many university museums have little contact with new educational research [...]. They may have no ties to the departments on campus that conduct educational research, and their staff often have little credibility with educational researchers", concluding that "It is as if these public programmes activities existed in an entirely separate sphere from the rest of the university" (Diamond 1992: 92). The potential of university museums is further addressed in e.g. Marandino (2001), Ferriot (2003b), Gil (2002).

A second group of issues raised in the literature is related to the identity challenges, dilemmas, and the risks ahead. Clercq (2003b: 152) asked: "Who are we [university museums and collections], what are we and for whom do we work? How does the museum fit into the mission of our university? How can we consolidate our position within our parent institution? [...] What is our relation with ongoing research and teaching programmes [...] and with students? How do university museums succeed in making science interesting, thus inspiring young people to pursue science as a career? What is the 'public quality' of our museums? What is our role in the museum community at large? [...] What kind of leadership is required?". Murphy (2003: 9-10) discussed "multiple identity issues" and "tensions [that] can pull people in university museums in many different directions simultaneously". Black (1984) summarised by posing the question: 'university museums – open door or ivory tower?' Another distinction based on role and users was bluntly put forward by King (2001: 23): "We are becoming less university museums and more museums at universities". Already in the 1990s, Scheiner (1992) had distinguished two types of university museums: the "museum of the university" and the "museum for the university" (*museu da universidade vs. museu para a universidade*). 30 years earlier, Odegaard (1963: 33) had noted the difference between a museum that is "in, but not of, the University". Mere word games or symptoms of intrinsic dilemmas?



Further dilemmas were recognized by Wallace (2003b: 8): “How can university museums better respond to society’s need for lifelong learning? How can university museums improve learning environments in universities? And what is their role in contributing to universities ‘research’, ‘academic citizenship’ and community service?”. All these questions remain unanswered today. Wallace also warned for the risk of alienation when pursuing a broader audience: “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” (Wallace 2003a: 28, see also Wallace 2000, 2002).

Apart from teaching, research and public display, the ‘fourth’ mission occurred more frequently in the past five years’ literature than before: the university museum as a ‘showcase’ for the university. The concept was summarised by Haan (2001: 121), when referring to the Utrecht University Museum: “[...the Museum serves] as a centre of expertise that professionally manages the academic history collection of the university and demonstrates the achievements of Utrecht science, both past and present, to a broad public. In other words, it is the showcase of Utrecht University”. As indicated above, the ‘museum as a showcase’ has existed in the literature at least since the 1950s (Borhegyi 1956a). Potentially, it has advantages for both sides: the university uses the collections to promote its social image and recruit future students in an increasingly competitive higher education ‘market’ and university museums and collections acquire the much-needed staff and financial stability. However, university museums should not be reduced to mere marketing tools and this ‘fourth’ mission needs to be carefully reconciled with the relevance and use of collections for present-day teaching and research, as well as more meaningful collections-oriented public service.

A third group of papers discusses structural difficulties and suggest tools to improve the situation, including more collaboration, raising public standards, governance, management, leadership profiles, autonomy, repositioning of the museums and collections in the university structure (e.g. Tirrell 1991, 1994, Boyd 1995, Hamilton 1995, Jonaitis 1995, 2003, Genoways 1999, Stanbury 2001b). For example, Tirrell (1994) examined major difficulties facing many university museums, such as heavy bureaucracy, dwindling support, inconsistent evaluation criteria, constantly changing administrations, and special interest pressures. Stanbury (2001b) alerted to the potential deadly spiral of isolation of staff responsible for the care of university collections: “some may feel anxiety or shame about the collection’s condition and in such circumstances [...] may seek to protect the university’s or the department’s reputation by discouraging access to the collection or limiting information about it. [...] The feeling of isolation is often increased because [...] [they] believe they are powerless to make changes. Support from supervisors may be lacking, resources may be inadequate, few people may use the collection, modern syllabus content may appear to bypass the collection area, and colleagues working in the same field may be distant” (Stanbury 2001b: 70). Isolation is further discussed in Weeks (2000).

Also at the structural level and for the first time, governance and the positioning of university museums within the university structure are singled out as a tool to improve their recognition within the university. Providing data from the field of natural history, Humphrey (1992a: 59-60) stated: “Based on my own impressions, effective, successful, nationally recognised university museums [...] are administered as independent units that report to a dean, vice-president, or the equivalent”. Likewise, Birney (1994: 99) argued in favour of greater autonomy, stating that university museums are “best viewed and administered as a university resource and responsibility rather than as a departmental or collegiate unit” and explained “the higher the authority level of the administrator immediately above the director, the greater the probability that they will be making budgetary decisions based on the museum’s actual nature and importance rather than just on the short-term needs of associated academic departments” (Birney 1994: 106). Autonomy can be a two-sided sword for university museums, though – particularly first generation university museums as I will demonstrate in the next chapter.

Papers addressing:	References
The distinct nature of university museums and collections <b>as a group</b>	Smith 1917, Harden 1947, Rodeck 1950, 1952, 1968, 1970; Borhegyi 1956a,b; Odegaard 1963, Meneses 1968, Guthe 1966, Swanson 1969, Auer 1970, Seyd 1971, Piper 1972, Arth 1974, Reynolds 1979, Gouveia 1982a, Tandon 1983, Warhurst 1984, 1986; Huntley <i>et al.</i> 1986, Willet 1986, Canelhas 1987, Schmidt 1987, Craig 1988, Rosenbaum 1988, Bruno 1992, Scheiner 1992, Holo 1993, 1993-94, Yerbury 1993, Hamilton 1995, Lénard 1996, Clercq 2003b, Clercq & Lourenço 2003, Gil 1998, 2002, Boylan 1999, 2002, 2003, Lord 2000, Silva 2000, Stanbury 2000, 2001b, 2002, 2003a,b, 2004, 2005, Tirrell 2000b, Weeks 2000, Bremer & Wegener 2001, King 2001, Taub 2001, Geysant 2002, Lourenço 2002, 2003, 2004, 2005, MacDonald 2003, Mulhearn 2003, Murphy 2003, Wallace 2002, 2003a,b, Reynolds 2004, Rorschach 2004, Van den Driessche 2005a, Willumson 2000
The <b>governance</b> of university museums	Davis 1976, Rosenbaum 1988, Diamond 1992, Hoagland 1992, Humphrey 1992a,b, Alarcão 1993, Cato 1993, 1994, Birney 1994, Cannon-Brookes 1994, Boyd 1995, Genoways 1999, Carradice 2001, Kelly 2001, Mack 2001, Heinämies 2001, Oster & Goetzmann 2002, Munktel 2003, Tirrell 2003a,b, Mares 2005
University museums and students: <b>teaching function</b>	James 1960, Duggan 1964, Kinsey 1966, Reimann 1967, Battcock 1968-69, Baramki 1970, Johnson 1971, Ortner 1978, Eldredge 1978, Holo 1985, King 2002, Heinämies 2003, Weber 2005a
University museums and research: <b>research function</b>	Grinnell 1910, Auer 1970, Rodeck 1970, Tucci 2000, Jonaitis 2003, Clercq 2004a, Clercq & Lourenço 2004
The distinct nature and role of university museums and collections of <b>natural history</b>	Ruthven 1923, 1931, 1939, 1963, Baker 1924, Guthe 1966, 1983, Reimann 1967, Rolfe 1969, Minsky 1976, Strachan 1979, Wilson 1988, Kohlstedt 1988, 1991, Humphrey 1991, 1992a,b, Tirrell 1991, 1994, 1998, 2000a, Lazare 1996, Leypold 1996, Mares & Tirrell 1998, Cordell 2000, Diamond 2000a,b, Lanyon <i>et al.</i> 2000, MacFadden & Camp 2000, Tirrell 2000a, Mares 1999, 2001, 2003, Verschelde 2001, Simpson 2003a,b, 2005, Clercq 2003a, Hutterer 2005, Loneux 2005
The distinct nature and role of university museums and collections of <b>art</b>	Coolidge 1956, 1966, James 1960, Freundlich 1964-65, Sawyer 1964-65, Hill 1966, Hester 1967, Jaffé 1967, Wittkower 1968, Battcock 1968-69, Johnson 1971, Petheo 1971, Zeller 1984, 1985, 1986, Heffernan 1987, Lyons 1991, Cuno 1992, 1994, 1995, Curnow 1993, Stone 1993, Drucker 1994, Deloche 1995, Fleury 1996, Mossière 1996, Wallace 2000, 2003a, Balandraud & François 2001, Van den Driessche 2001, Collet 2004, Snell 2004
The distinct nature and role of university museums and collections of <b>medicine</b>	Duggan 1964, Turk 1994, Horder 1999, 2001, 2003, Wakefield 2002
The distinct nature and role of university museums and collections of <b>archaeology and anthropology</b>	Matthews 1962, Crompton 1968, Williams 1969, Baramki 1970, Lopez 1977, Manning 1980, Pihlman 1995, Mériot 1996, Lima 1982
The distinct nature and role of university museums and collections of <b>social history</b>	Fleming 1969, Schlereth 1980, Martin 2004, Nemec 2004
The distinct nature and role of university museums and collections of <b>history of science, mathematics, technology &amp; science centres</b>	Gil 1982, Artu 1996, Ferrarese & Palladino 1998, Giacardi & Roero 1999, Savini 2001, Salmi 2001, Tucci 2002, Ferriot 2003a,b, Taub 2003, Theologi-Gouti 2003a,b, Clercq 1998, 2001a,b,c, 2005, in press

Table 5.1 – Literature on the distinct nature and function of university museums and collections (as a group and at disciplinary level). The table is not exhaustive and it does not include descriptive papers.

Recently, the term 'university heritage' or 'academic heritage' was introduced in the literature. The term was used in the Netherlands in the report *Om het Academisch Erfgoed*, which means *For the Academic Heritage*, in the 1990s (Adviesgroep Rijksdienst Beeldende Kunst 1996) and at an international level it was possibly first used in 2000 by the European network *Universeum* in the Halle Declaration (see appendix A10) and later adopted by other authors (e.g. Bell 2000, Sanz & Bergan 2002a, Boylan 2003, Bulotait 2003, Associazione Nazionale Musei Scientifici 2004, Council of Europe 2004, Ferriot & Lourenço 2004, Gesché-Koning 2005a,b).

To summarise this section, few fundamental papers were published before the 1960s. Significant changes in the 1960s resulted in an increasing debate regarding professional standards and the need for a broader public service. The 'crisis', first diagnosed in the 1980s, resulted in a substantial growth in the quantity and quality of fundamental papers focusing on issues such as the relevance and importance of university collections, identity dilemmas and governance issues – namely profiles of staff, management and autonomy.

### 5.1.2 Surveys of university museums and collections

University museums are dealt with in multiple European yearbooks, surveys and directories (e.g. Doughty 1981, Ruppli 1991, 1996, Wijgengangs & Kati 1996, Spronsen 1998, Pezzali 1998, Davoigneau & Le Guet Tully 1999). However, in these cases they are grouped with non-university-affiliated museums of similar disciplines – e.g. directories of museums of science. This specialised literature is too vast and dispersed to review here and, in any case, beyond the scope of this research. Instead, I will exclusively focus on comprehensive surveys and directories exclusively presenting university museums. Such publications are not numerous.

Survey studies can be done at a multidisciplinary level (encompassing all disciplines) or at disciplinary level (encompassing a sub-group of university museums or collections). They can be based on a selected sample (e.g. Humphrey 1992a,b) or assume the form of a nation-wide census (e.g. Coleman 1942). Surveys may moreover investigate multiple theoretical and practical aspects (from mission and function to exhibitions, conservation, staffing, and funding) or look into one particular aspect, for example management (e.g. Birney 1994, Kelly 1999) or visitor studies (e.g. Almeida 2004). Comprehensive surveys conducted at national scale, focusing on multiple aspects of museum theory and practice and multiple disciplines, are relatively recent. They are likely to have resulted from a situation of instability or 'crisis' and often present detailed recommendations, including at political level.

Coleman (1942) was possibly the first to carry out a systematic multi-disciplinary survey of university museums, complemented with extensive comments on their philosophy and background. His book was the result of more than 200 study visits to university museums in the USA. Coleman identified c. 700 museums in 400 universities, mostly large and well-established higher education institutions. He grouped museums into three major categories: art museums (c. 100), museums of science (including both natural history and science and technology) (c. 500) and history museums (c. 100). Previously, in the third volume of his *The Museum in America*, Coleman (1939) had listed 66 university museums. A decade later, Rodeck (1952) sent questionnaires to 527 universities in the USA, asking if they had museums (173 replies received). Art museums came first in number, closely followed by life sciences museums and museums of geology, anthropology and history in smaller numbers. Rodeck was, however, sceptical of the large number of art 'museums' because he suspected many to be simple galleries without collections – "empty rooms to hang pictures" as he called them (Rodeck 1952: 5) – and objected to these being called museums.

In the 1990s, Victor J. Danilov compiled the latest exhaustive directory of American university and colleges museums and galleries (Danilov 1996). The first 140 pages include an in-depth discussion of several key issues, e.g. role, history, types, governance, collections and

research, exhibitions and funding. The survey was conducted between 1993 and 1995 and covered 1,108 museums, galleries and related facilities, although the author recognised that the total number would certainly be much higher. The precise number of university museums and collections was hard to determine due to the lack of consistent definitions and the low profile and informal nature of many museum-like facilities – this is also the case in Europe. The survey was organised typologically and Danilov identified 24 types of university museums, ranging from art galleries and museums to textile and costumes museums; historical museums, houses and sites; marine science museums and aquariums; science and technology museums and centres, planetariums and observatories; religious museums and sculpture gardens, among others. Following a period of great expansion and growth in the 1960s and 70s (Bryant 1967, Rosenbaum 1988), Danilov found that many American university museums in the 1990s were facing multiple needs, typically around the areas of funds, space and staff. Allen Rosenbaum, director of the Princeton University Art Museum, suggested that some museums have become bigger than their parent institutions: “[...] the university is not always prepared for the museum to take on a complex life of its own as a more sophisticated professional organisation, one no longer manageable by an active member of the faculty” (Rosenbaum 1988, quoted in Danilov 1996: 141). In the USA, the 1990s were a decade of economic expansion, following the rather agitated 1980s, which witnessed the ‘first crisis’ of natural history museums and the creation of the Association of University Museums and Galleries (ACUMG)<sup>105</sup>. Thus, several surveys of university museums of natural history were undertaken, encompassing issues such as history, relevance, organisation and governance (e.g. Armstrong *et al.* 1991, Kohlstedt 1991, Humphrey 1991, 1992a,b, Diamond 1992, Cato 1993, 1994, Tirrell 2000).

*Art on Campus*, another US directory, exclusively listed university art museums and galleries (Russell & Spencer 2000). This directory was sponsored by the College Art Association (CAA), created in 1911<sup>106</sup>. *Art on Campus* listed more than 700 art museums, galleries and sculpture parks, a smaller number than listed by Danilov (1996). The directory aimed to be a practical guide, listing institutions by State and in alphabetical order by university or college. For each museum, collection or gallery, basic information is presented, as well as descriptions of collections and facilities. Earlier, a survey of US university museums of art had been published by Sloan & Swinburne (1981).

In Australia, not much was known about university museums and collections before the 1990s<sup>107</sup>. In 1975, the Pigott Report (Pigott *et al.* 1975) noted the plight of many university museums and recommended ways of appropriately funding them on a level consistent with other types of museums. Two preliminary surveys of university collections were published in 1993 – one addressing university collections of all disciplines (Stanbury 1993) and the other addressing university art collections (Curnow 1993). The nation-wide *Cinderella Collections: University Museums and Collections in Australia* was published in 1996 (University Museums Review Committee 1996), after considerable influence by the Council of Australian University Museums and Collections (CAUMAC), which had been formed in 1992 (Simpson 2003a, Stanbury 2003a). The *Cinderella* survey identified 256 university museums and collections in Australia. Among its most important findings, the Committee identified a widespread poor level of awareness on the part of universities of their museums and collections, with “many university administrations with little if any idea of the number and range of museums and collections that existed within their universities” (University Museums Review Committee 1996: 3). The appendices included two lists of university

<sup>105</sup> David Huntly, who was president of the ACUMG, also did a survey of university museums in the late 1980s-early 1990s, but the survey was not published (P. B. Tirrell, *in litt.* 9 February 2005).

<sup>106</sup> According to the CAA’s website, over 13,000 artists, art historians, scholars, curators, collectors, educators, art publishers, and other visual arts professionals are individual members. Another 2,000 university art and art history departments, museums, libraries, and professional and commercial organizations hold institutional memberships (in CAA’s website, <http://www.collegeart.org/aboutus/>, accessed 8 February 2005).

<sup>107</sup> There had been a publication in the 1930s, but it described Australian museums in general, not only university museums (Markham & Richards 1933).

museums and collections organised by Australian State and by subject, as well as important kick-off resources such as a selected bibliography, guidelines for writing a university museums policy and a set of performance indicators.

A second Australian report followed in 1998, allowing a wider range of university collections to be included (University Museums Project Committee 1998). This second report, *Transforming Cinderella Collections*, aimed at gathering new information and monitoring the implementation of recommendations made two years before. Like the first, it also includes a larger and substantially more detailed directory of university museums, collections and herbaria (143 pp.), organised per State and per university. The two reports had a considerable impact on Australian university museums and collections, particularly at the level of awareness of, and responsibility for, such a significant proportion of national scientific, cultural and artistic heritage. These reports also had consequences in relation to university collections staff: standards of collections care were improved and opportunities for exchange experiences were provided (Stanbury 2003). The two *Cinderella* reports were discussed in Stanbury (2001b), Yerbury (2001), Reynolds (2004), and a follow-up regarding geology university collections was published by Simpson (2003a,b).

In Europe, the first major initiative to survey university collections at the national level took place in the Netherlands. After almost three decades of instability, neglect, department closures, reorganisations, de-accessions and c. 2,000,000 orphaned specimens, keepers and curators gathered forces and created the LOCUC<sup>108</sup> (Clercq 2003a). Sponsored by the Dutch Ministry of Culture, the LOCUC group published a report on their findings about the situation of Dutch academic heritage (LOCUC 1985). LOCUC used the *collection* as their unit – which obviously varied in size – and identified 224 collections in a total of 13 universities surveyed. Methodologies used were questionnaires and study visits. The appendices include, among others, the number of collections per university, a list of collections per university, and a list of botanical gardens per university. The survey depicted a generally deplorable situation and recommended urgent action. It identified 18 threatened collections – seven partly or exclusively due to poor housing and conservation and eleven due to reorganisations, including closures of departments or faculties. These threatened collections belonged to the University of Amsterdam, the Free University of Amsterdam, the University of Groningen, the University of Utrecht and the Technical University of Delft. LOCUC's survey caused embarrassment and possibly represented a turning point in Dutch university heritage: another report was commissioned and LOCUC's early findings were confirmed<sup>109</sup>. However, significant strategic action at national level would not occur before the merging of the Ministry of Education (responsible for higher education) and the Ministry of Culture (responsible for museums, collections and heritage) in 1995 (Clercq 2003a).

The five old Dutch universities – Amsterdam, Groningen, Leiden, Utrecht and Delft – saw the merge as an opportunity to raise awareness about their historical heritage and at the same time present a strategic-rescue plan to safeguard it. As a result, *Universitaire collecties en cultuurschatten* (University collections and treasures of culture) was published in four volumes (Anonymous 1995, 1997, Stoop 1999, Galen & Stoop 2000). This 'rescue-plan' made four key-points: a) the five 'old' universities, and the national museums in Leiden<sup>110</sup>, kept the overwhelming majority of the Dutch academic heritage; b) many university collections were poorly housed and needed urgent conservation action; c) not all university collections were worth being preserved; d) many collections were still considered as important resources for

<sup>108</sup> LOCUC stands for *Landelijk Overleg Contactfunctionarissen Universitaire Collecties* (Survey Group for University Collections).

<sup>109</sup> *Advies betreffende de bedreigde universitaire collecties*. Rijkscommissie voor de musea en Commissie van advies voor de natuurhistorische musea, 1986. See more in Clercq (2003a).

<sup>110</sup> Rijksmuseum voor natuurlijke historie, Naturalis (natural history); Rijksmuseum voor de geschiedenis van de natuurwetenschappen en geneeskunde, Boerhaave (history of science and medicine); Rijksmuseum voor Volkenkunde (anthropology) and Rijksmuseum voor Oudheden (archaeology).

teaching and research; and d) the fact that a university considered a collection 'worthless' or 'orphaned' was no accurate measure of their intrinsic significance (Clercq 2003a).

These observations, in combination with increasing political pressure, a growing awareness of the cultural role and responsibility of universities towards their heritage, and the conviction that action had become inevitable, led to the establishment by the same five universities of a foundation for academic heritage – *Stichting Academisch Erfgoed* (SAE) – in 1997. The aim of this collaborative network was to improve the quality and accessibility of university collections, as well as to intensify their present and future use through selection, de-accession, collection mobility, or even disposal (Clercq 2003a). Meanwhile, the Ministry for Education, Culture and Science commissioned a second survey, which was published in 1996 (Adviesgroep Rijksdienst Beeldende Kunst 1996). This survey, entitled *Om het Academisch Erfgoed* (For the Academic Heritage) used a broader definition of academic heritage than the earlier one: i) encompassing not only universities but also other research institutions like the Dutch Academy of Sciences; and ii) comprising museums, collections, libraries and archives and a total of c. 35 million items.

In the UK, specific issues related to university museums have been addressed at the political level at least since the 1960s. Since then, both independent and governmental surveys have been conducted regularly (Standing Commission on Museums and Galleries 1968, 1976; Museums and Galleries Commission 1987, Higher Education Funding Council for England 1995, Bennett *et al.* 1999).

Two surveys of British university collections were undertaken in the 1980s: one on university collections in South Eastern England (Bass 1984a) and another on collections at the University of London (Bass 1984b). However, detailed and systematic surveys of British university collections were only conducted between 1989 and 2002. The UK surveys were commissioned by the Museums and Galleries Commission and conducted progressively and region by region, starting with a survey for the University of London (Arnold-Foster 1989). Eight more surveys followed: Scotland (Drysdale 1990), Northern England (Arnold-Foster 1993), Southern England (Arnold-Foster 1999), South West (Arnold-Foster & Weeks 1999), Midlands (Arnold-Foster & Weeks 2000), South East (Arnold-Foster & Weeks 2001), Wales (Council of Museums in Wales 2002) and Northern Ireland (Northern Ireland Museums Council 2002). These surveys looked into several issues, such as governance, management, exhibitions and collections care. Like their USA, Dutch and Australian counterparts, the UK surveys confirmed the diversity and complexity in size and type of university museums and collections. About 400 museums and collections were identified, representing 4% of the UK's museum sector. Of these, 25% were regularly open to the public, while 75% were mostly used by academics and students. The main findings were summarised in Arnold-Foster (2000), Arnold-Foster & Mirchandani (2001) and Merriman (2002)<sup>111</sup>.

The UK surveys represented a significant breakthrough for university collections. It is mostly because the diagnosis had been done thoroughly at the national level that key advocacy documents such as *The Oxford and Cambridge University Museums: A global contribution to widening knowledge and deepening understanding* (Roodhouse 2003), *University museums in the United Kingdom: A national resource for the 21<sup>st</sup> century* (University Museums Group 2004) and *Opening doors to learning - University museums for 21<sup>st</sup> century Scotland* (University Museums in Scotland 2004) were accomplished. The UMG text, in particular, was well-received by universities and the museum sector in general (T. Bestermann *in litt.* 18 October 2004, K. Arnold-Foster *in litt.* 3 November 2004) and it has already achieved concrete results (see next section).

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<sup>111</sup> At the time of these surveys, a similar survey was carried out for archives in universities (Everitt 2002). The resulting 1997 report *Survey of Needs of Holdings of Archives in UK Higher Education Institutions* was compiled by the Joint Information Systems Committee (JISC), a group that provides strategic guidance, advice and opportunities to universities on the use of ICT to support teaching, learning, research and administration.

In France, the survey of university museums and collections is an ongoing process and no results have as yet been published. At present, the unofficial working list provided by the *Bureau des musées et du patrimoine scientifique et technique* (Ministère de l'Éducation Nationale et de la Recherche) identifies 22 French university museums (R. Bertrand, *pers. comm.* 8 July 2004).

An important report on the state of the museums of the Ministère de l'Éducation Nationale from the early 1990s (Héritier-Augé 1991) omitted university collections due to the lack of reliable lists: "il n'existe rien [...] pour les collections universitaires [...] dont l'inventaire systématique reste à dresser par une enquête appropriée" (Héritier-Augé 1991: 6). Only the national museums were included. The author painted a solemn picture of decades of "intellectual and moral" abandonment, lack of adequate funding, lack of space, and low professional standards – which contrasted sharply with the immense importance of the heritage involved. "Tout garder pour n'en rien faire" is how the author portrayed the situation of the national collections, an appraisal likely to apply to university museums and collections as well. Héritier-Augé described the role of a higher education museum consistent with its European counterparts and based on the triple mission: research, teaching and public display (Héritier-Augé 1991: 33). Subsequently, the Musée des Arts et Métiers (fig. 5.4)<sup>112</sup> and the Muséum national d'Histoire naturelle underwent museographic and structural renovations. At present, part of the collections of the Musée de l'Homme are being included in a major new project – the Musée du Quai Branly (Desveaux 2004, Mohen 2004, Naffah 2003, 2004).



Fig. 5.4 – One of the priorities in the renovation of the Musée des Arts et Métiers was the construction of a new 7,500 m<sup>2</sup> off-site storage building (Saint-Denis, architect François Deslaugiers), equipped with state-of-the-art conservation facilities, study rooms for researchers, technical and maintenance workshops, restoration and photographic labs, and a documentation centre. The building was completed in 1994, upon which the move from Paris could begin. At the same time, a complete reformulation of the catalogue and database system was carried out, coupled with an ambitious publications policy. See Picard (1998, 2000a,b) and *La Revue* (Musée des Arts et Métiers), 15, 1996 (photos Pascal Dolémieux, Métis, reproduced with kind permission of the Musée des Arts et Métiers).

<sup>112</sup> The renovation of the Musée des Arts et Métiers began in 1990 (formal integration in the Grands Travaux de l'État) and the new musée was inaugurated 10 April 2000. The project took place in three parallel axes. As Dominique Ferriot explains: "[la] rénovation 1990/2000 [...] recouvre trois 'chantiers', celui des collections (nouvel inventaire, restauration, numérisation et acquisitions), celui des publics (en particulier études d'attentes et représentations, évaluation des expositions temporaires) et bien sûr chantier bâtiment." (D. Ferriot, *in litt.* 22 July 2005). See *La Revue* 28/29 (double issue, 2000) for a more detailed account of the project, as well the Musée's website at *Chronique de la rénovation*, <http://www.arts-et-metiers.net/magic.php?P=149&lang=fra>, accessed 22 July 2005.



Geyssant (2002) gave an overview of French museums and scientific culture centres under the jurisdiction of the ministries of Education and Research, with emphasis on the Muséum national d'Histoire naturelle, the Musée des Arts et Métiers, the Palais de la Découverte, la Cité des Sciences et de l'Industrie and the two networks of local museums and scientific culture centres (CCSTIs). References to collections in French universities *sensu strictu* were limited to the University Louis Pasteur of Strasbourg. Chamoux (2002) presented a brief overview of scientific instruments, mostly in French *lycées*<sup>113</sup>.

Additional knowledge about French university collections can be found in a special issue of *La Lettre de L'OCIM* (No 44, 1996). Apart from papers presenting overviews of herbaria (Lazare 1996) and plaster casts collections (Mossière 1996), there are several case-studies of university collections: scientific instruments at the Ecole Normale Supérieure de Lyon (Artu 1996), a plaster plan of 4<sup>th</sup> century A.D. Rome at the University of Caen (Fleury 1996) and the ethnography museum at the University of Bordeaux II (Mériot 1996).

As in Australia, the initiative to survey Italian university heritage came from the conference of rectors, the *Conferenza dei Rettori delle Università Italiane* (CRUI). Before 1999, knowledge about university museums and collections in Italy was incipient and fragmentary, although museums had been included in general directories. Cipriani *et al.* (1986) published a survey listing 98 university museums and 23 botanical gardens. In 1999, CRUI created a committee – the *Commissione dei delegati rettorali per i Musei, gli archivi e i centri per le collezioni universitarie di interesse storico-scientifico* (Committee of university delegates for museums, archives and centres of historically and scientifically significant university collections), which I will refer to as Commissione CRUI. The Commissione CRUI has conducted a systematic and in-depth survey of university museums and collections in Italy, with results gradually being made available on the web<sup>114</sup>. For that purpose, two distinct databases were designed: one for museums and archives (including botanical gardens) and a second for collections (including arboreta and herbaria), both organised by subject. In February 2005, the Commissione's web portal listed c. 180 university museums and archives and c. 350 university collections (although there is overlap between the two databases).

In Germany, published surveys are scarce too. Like Italy, the only recent and comprehensive census of university museums and collections at the national level has adopted the internet as a dissemination platform. In 2001, the *Helmholtz Zentrum für Kulturtechnik* at the Humboldt University in Berlin initiated a project of surveying German university museums and collections (excluding libraries and archives). Results are gradually being entered in the database, designated *Universitätsmuseen und Sammlungen in Deutschland*<sup>115</sup>. In July 2005, the database held information on 545 German university museums and collections. Data on university museums and collections are retrievable per locality, university, discipline, and institutional form (aquarium, house museum, etc.). Weber (2003) presented the first results of the German census, discussed the advantages of choosing a web-based platform, and outlined its potential both for the recognition of German university heritage and as a tool for graduate and post-graduate museology teaching and research (Weber 2005a, see also Weber 2004, 2005b).

Apart from the surveys and directories mentioned above, overviews of university museums and collections have been published for Belgium (Van den Driessche 2000), Brazil (Almeida & Martins 2000), Spain (Such 2003), Philippines (Labrador 2000), New Zealand (Hudson &

<sup>113</sup> See the inventory online at the site of the Service d'Histoire de l'Éducation (Institut national de recherche pédagogique, which is also responsible for the French Musée national de l'Éducation à Rouen), in <http://www.inrp.fr/she/instruments/index.htm>, accessed 22 June 2005. On the date of accession, there were c. 1,200 instruments inventoried and described from all over the French territory.

<sup>114</sup> For museums, see *Scelta del Museo* at <http://www1.crui.it/musei/mainmenu.asp?Scelta=Musei> and for collections see *Scelta della Collezione* at <http://www1.crui.it/musei/mainmenu.asp?Scelta=Collezioni>, both accessed 21 April 2005.

<sup>115</sup> See <http://publicus.culture.hu-berlin.de/sammlungen/>, accessed 5 July 2005.

Legget 2000), Australia (Wallace 2000), Japan (Kinoshita & Yasui 2000, Adachi 2003), Mexico (Herreman 2000) and India (Tandon 1983). At a disciplinary level, Almeida (2002) presented an overview of university art museums in Brazil. Geological university collections were discussed in Simpson (2003a,b) for Australia and Clercq (2001c, 2003a) and Kriegsman (2004) for the Netherlands.



Fig. 5.5 – Musée de Louvain la Neuve, Université Catholique de Louvain (Belgium). The Museum, comprising art, anthropology and archaeology collections, has an innovative concept underpinning its museological programme. Defined by its founder Ignace Vandevivere as a 'musée du dialogue', the Museum aims at blurring the conventional divisions between artist, museologist and visitor (see e.g. Vandevivere 1979, 1996, 2001, Van den Driessche 2002) (photo reproduced with kind permission of the Musée de Louvain-la-Neuve).

Recently, n° 107 (January-February-March 2005) of *Les Nouvelles du Patrimoine*, a journal published by the Association des Amis d'UNESCO, Belgium, was entirely dedicated to Belgian university museums and collections. It included review papers by Van den Driessche (2005a) and Geshé-Koning (2005a,b), papers on the heritage of the Université Catholique de Louvain (Robert 2005, Van den Driessche 2005b), the Université de Liège (Drouguet & Gob 2005), the Université Libre de Bruxelles (Séjournet 2005, Geshé-Koning 2005c), the Facultés Universitaires Catholiques de Mons (Caltagirone 2005), and statements by the corresponding rectors (Dorchy 2005a,b,c). A similar volume published by the Musées du Service du Patrimoine culturel du Ministère de la Communauté française de Belgique is currently in press (N. Nyst, *in litt.* 21 January 2005).

To the best of my knowledge, no published surveys on university museums and collections at the national level have been carried out in Portugal, Finland, or Sweden. A list of Portuguese university museums and collections was presented in Lourenço (2002).

### 5.1.3 Doctoral dissertations

Four doctoral dissertations, specifically addressing university collections, are worth mentioning. In 1956, Cecilia H. Peikert conducted a survey of art museums on college and university campuses in the USA (Peikert 1956). Also in the USA, Alva G. Huffer looked into the management and administration of university museums (Huffer 1971). Education of

adults in North American university museums was discussed by M. Hurst (1991), whereas Adriana M. Almeida discussed mission and origins of the art museums at the University of São Paulo, Brazil (Almeida 2001).

Although these were significant contributions to our understanding of university museums and collections, the small number of doctoral dissertations is an indication of the theoretical and empirical weakness of the field, particularly in Europe. Clearly, there is a need for more comprehensive research at doctoral level. At present, I know of eight dissertations specifically addressing university museums and collections being prepared: Helen Rawson and Zenobia R. Kozak at the University of St. Andrews, UK, Barbara Rothermel and Wahiza A. Wahid at the University of Leicester, UK, Placide Mumbembele at the University of Cairo, Egypt, Thijs van Excel and Claudia de Roos at the University of Amsterdam, the Netherlands, and Yaqoub S. Al-Busaidi at the University of Wales Institute, Cardiff, UK. These encompass fundamental issues such as the history and role of university collections and museums, the concept of university heritage, the relation between university heritage and the tourism industry, the interdisciplinary potential of university museums, and selection and disposal of university collections.

## **5.2 National and international initiatives**

In the current post-‘crisis’ era, different European countries have employed different approaches to tackle the challenges posed by university museums and collections. Universities have at times made attempts to come up with solutions, but many of the challenges are too complex and diverse to be solved without coordinated approach at a national level. Without dealing in depth with each country’s specific circumstances and problems, I will discuss recent initiatives and challenges at national levels, with an emphasis on the more positive developments. A combination of circumstances, as well as a considerable growth in awareness, leave the Netherlands, UK, France, Germany and Italy better prepared to face the challenges posed university heritage. Some brief comments on the situation in Spain, Greece, Estonia and Eastern Europe are also included.

### **5.2.1 United Kingdom**

In the 1980s, university museums and collections in the UK were in a deplorable state (Warhurst 1986, Willet 1986). Since then, their role in universities has been clarified, their profile within the university and community raised, professional standards improved, while many have received substantial funding, many collections are – often in innovative ways – used for teaching and research, and their situation now seems generally stable. Undoubtedly, UK university museums still face challenges (Merriman 2002), but they have come a long way during the past 25 years or so, particularly when compared with their continental European counterparts.

These positive developments are the result of three factors. Firstly, the strategic collaboration between all parties involved has been crucial: universities, the university museums groups UMG and UMIS, museum authorities (national and local), and the Museums Association (MA), UK’s association of museums and museum professionals. Secondly, detailed knowledge of the realities of the field has played an important role: an extensive survey of university museums and collections was undertaken from the late 1980s until 2002. The information obtained has paved the way for sustained and coordinated advocacy. Finally, the resulting investment was strategically planned and executed, starting with the cataloguing of collections and an assessment of their accessibility, both of which were appropriately funded in the majority of cases. This was a difficult – often tumultuous – process (T. Berstermann, interview 3 February 2004; K. Arnold-Foster, interview 6 February 2004), yet it did not result in the need for major de-accessions and the operation is already beginning to bear fruit.



Fig. 5.6 - The Cole Museum of Zoology, University of Reading (reproduced with the kind permission of University Museums and Collections Services, University of Reading).



Today, 32 UK university museums receive direct funding from the Arts and Humanities Research Board (AHRB<sup>116</sup>), the UK's funding body for research in arts and humanities, including structural funding such as staff and collections care (note that the AHRB funds university museums on the basis of the significance of their collections and the relevance of projects, regardless whether they are science, natural history, archaeology, or art collections). In the aftermath of two recent advocacy publications (University Museums Group 2004, University Museums in Scotland 2004) in which 38 recommendations were presented (34 of which aimed at universities and four at the British government), UK university museums have obtained exemption from VAT (HM Treasury 2003, Museums Association 2004a,b, Taylor 2004)<sup>117</sup>.

### 5.2.2 The Netherlands

The situation of Dutch university museums is changing rapidly at present, making a general evaluation somewhat premature. However, some general reflections are already possible.

The Netherlands owns a rich and centuries old academic heritage and enjoy the rare privilege of being a country in which museums and universities are regulated and funded by the same ministry (*Ministerie van Onderwijs, Cultuur en Wetenschap*). Theoretically, this should be beneficial for university collections, which so often are divided between a ministry of education holding that collections are 'culture' and therefore none of their business and a ministry of culture that says that they come under the jurisdiction of universities and therefore are none of their business either. However, despite increasing efforts to establish bridges and growing interest from the Culture and Heritage section of the Dutch Ministry (C. van Rappard-Boon, *pers. comm.* 7 May 2003), the divide between culture and science persists even when the two are departments of the same ministry.

The already mentioned *Stichting Academisch Erfgoed* (SAE), a foundation established in 1997 by the five 'old' universities (Amsterdam, Delft, Groningen, Leiden and Utrecht) has been the main actor in the strategic selection and promotion of Dutch university heritage. In parallel to the surveys mentioned earlier, the SAE has been coordinating and implementing

<sup>116</sup> In April 2005, the AHRB changed the name to Arts and Humanities Research Council (AHRC).

<sup>117</sup> Previously, publicly funded museums, except university museums, in the UK were exempted from VAT. In Portugal the situation is even worse as university museums pay VAT for which universities receive a refund at the end of the year because they are exempted, but often the refund is not canalised back to the museums.



national projects funded by the Dutch Government<sup>118</sup>. The implementation plan was divided into five thematic/disciplinary projects: i) geological collections, ii) botanical gardens, iii) *beeldcollecties* (collections of pictorial art, including portraits, plaster casts, posters), iv) medicine collections and v) collections of historical pedagogical panels. The geological collections project was concluded in April 2003 (cf. Kriegsman 2004) and the reorganisation of botanical gardens in December 2004 (cf. Stichting Nationale Plantencollectie 2001). The remaining projects are near completion, if not completed altogether. An aspect of the SAE worth mentioning is that it has an independent chair and each university is represented by two members: one museum professional and one close to the Board of the University.

SAE's projects have two broad aims: a) to increase the accessibility of university collections for both researchers and the general public and b) to promote new ways of cooperation in and around the field of university heritage (T. Monquil, interview 8 May 2003). They involve three consecutive steps: a) diagnosis and inventory of the existing situation, b) pragmatic and strategic assessment, and c) deciding on the appropriate measures to be taken – these may vary from conservation and restoration to de-accession and re-distribution of the collections. The evaluation criteria are of particular interest to the university museum community and deserve to be more widely known and discussed<sup>119</sup>.



Fig. 5.7 - The renovated University Museum at the University of Groningen. Created in 1934 as a second generation university museum, it now incorporates both first and second generation collections from the University of Groningen. The reorganisation and renovation took place in the past two years (photo Groningen University Museum Archives).

Not all projects involve the five universities simultaneously. For example, the project on pedagogical panels involves all five, but the one on medical collections does not include TU Delft. Furthermore, projects employ a broad concept as to what should be regarded as academic heritage and, hence, this may also involve non-university collections. For instance, the project on botanical gardens involved 17 botanical gardens, of which only seven were university gardens (G. van Uffelen, interview 29 April 2003).

<sup>118</sup> The Governmental grant – which is administered by the Mondriaan Foundation – covers 40% of the total cost while 60% is paid by the universities, leading to a total budget of 25 million €. See more in Clercq (2003a).

<sup>119</sup> The evaluation criteria include working at sub-collection level (e.g. looking at a particular coherent collection, say resulting from a PhD study, within a larger collection) and their categorisation into four types – from A to D – according to value and significance. For a concise description of the criteria, see Clercq (2003a).

The collaborative aspect of the 'Dutch approach' should be underlined because collaboration seems to be something that everybody recognises and appreciates, yet often without significant consequences at a practical level. In the Dutch example, collaboration meant looking at the promotion of collections strategically, at a national scale, and coordinating an action plan. For example, the Universities of Leiden, Utrecht and Wageningen joined their herbaria, resources and staff in order to create the *Nationaal Herbarium Nederland* (NH-NL).



Fig. 5.8 - Research at the *Nationaal Herbarium Nederland*, University of Leiden branch. Above, research collections of DNA samples (photo © S. Ober, Gorlaeus Lab).

The NH-NL encompasses more than 5.5 million specimens and the herbaria were re-organized, with each branch having its own geographical specialisation in line with traditional research and the strengths of the individual collections (Leiden specialises in the Indo-Pacific, tropical Asian and European floras; Utrecht in the Neotropical flora, and Wageningen in cultivars and the African flora). Before the merging, the situation at the three different herbaria was seriously stagnated, yet after the reorganisation the NH-NL is a success in terms of funding (from research councils, government agencies and the private sector), as well as in terms of teaching and research output (B. Gravendeel, interview 29 April 2003), demonstrating that herbarium specimens are still important for science<sup>120</sup>.

The downside of the 'Dutch approach' is that it involved considerable movements and reorganisations of university collections, resulting in de-accessions and dispersions. The long-term impact of these de-accessions on Dutch higher education, training of students and research remains to be seen (see also next chapter).

### 5.2.3 France

As detailed before, France has remarkable university collections, covering all disciplines from natural history to the history of science, medicine and pharmacy, Egyptology to art and anthropology. Apart from the national collections (Musée des arts et métiers, Muséum national d'Histoire naturelle<sup>121</sup>, Musée national de l'éducation in Rouen, the Musée du Quai Branly) and the network of 66 regional muséums, the significance of some of the lesser known collections in the European context cannot be emphasized enough: the notable 'Prix

<sup>120</sup> For more on the NH-NL, see <http://www.nationaalherbarium.nl>, accessed 22 June 2005.

<sup>121</sup> Both the Conservatoire des Arts et Métiers (CNAM) and the Muséum National d'Histoire Naturelle (MNHN) are *établissements publics à caractère scientifique, culturel et professionnel constitués sous la forme de grands établissements* (Statutes of the CNAM and the MNHN, decrees published 22 April 1988 and 3 October 2001, respectively).

de Rome' collections at the École nationale supérieure des Beaux-Arts, the collections of Palaeontology at the University of Lyon I, the collections of history of medicine in Paris, Montpellier, Strasbourg and Lyon (together practically covering the whole history of research and teaching in surgery and medicine up to the 20<sup>th</sup> century), the herbaria at Lyon I, Toulouse Paul Sabatier and Montpellier II, the scientific instruments at the École Polytechnique, Strasbourg Louis Pasteur, Lille and Montpellier II, the exquisite Cabinet d'Estampes Atger at the University of Montpellier I, the Musée d'Ethnographie of Bordeaux II and Strasbourg Marc Bloch, the Egyptology collections at Strasbourg Marc Bloch, the mineralogy collections at Strasbourg Louis Pasteur and the École des Mines, the history of pharmacy and *materia medica* collections at Montpellier I, the moulages at the University of Lyon Lumière and Montpellier Paul-Valéry (see also Ruppli 1991, 1996).

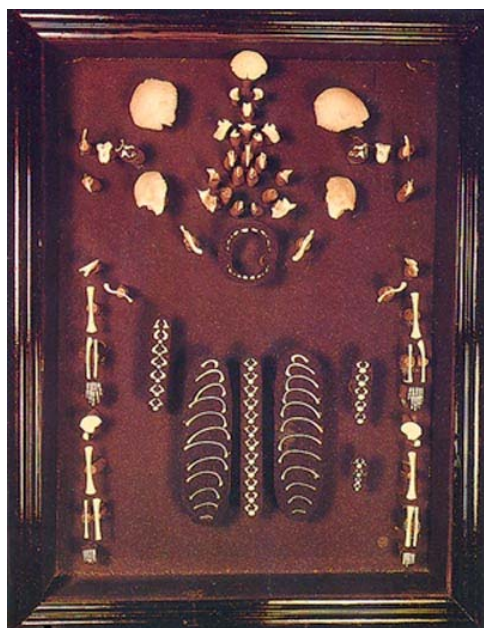


Fig. 5.9 - Skeleton of a five month foetus. Musée Anatomique, Faculté de Médecine de Strasbourg (Jardin des Sciences Archives, reproduced with kind permission of the University of Strasbourg Louis Pasteur).

Based on the ratio museum/university of similar countries (e.g. UK and Germany), I estimate that there are at least 400-500 collections in French universities, *instituts nationaux polytechniques*, *grands établissements*, and *écoles normales supérieures*, and certainly more if research laboratories (CNRS etc) are also included. Although there have been some encouraging developments recently, a significant proportion of this huge heritage – particularly the collections held by universities *sensu strictu* – is virtually unknown to the French public and has received little attention from the relevant authorities so far. In this section I will mostly refer to the lesser known university collections.

The lack of recognition starts within the universities themselves. During the early stages of this research, I did a survey of 101 websites of French institutions of higher education<sup>122</sup>. Of these, only 34 mentioned the existence of museums and collections. Several that I knew had collections and museums made no reference to them (contrary to libraries). Of the 34 universities that cited museums and collections, only four did so in their main webpage (commonly designated 'home page'): the Conservatoire national des arts et métiers, the Muséum national d'Histoire naturelle, the Institut National de Recherche Pédagogique and the Université Henri Poincaré-Nancy I. Given that three of these four higher education institutions either manage or actually are national museums<sup>123</sup>, the general visibility of

<sup>122</sup> The survey was conducted in 13-14 January 2002 (all websites accessed during these two days). As a departing source the French higher education web portal was used (<http://www.education.gouv.fr/sup/default.htm>) and the survey encompassed universities, écoles normales supérieures, grands établissements, and other higher education institutions.

<sup>123</sup> The Institut National de Recherche Pédagogique runs the Musée National de l'Éducation in Rouen.



museums and collections in websites of French higher education institutions is minimal. Two institutions cited their museums and collections under '*présentation de l'université*' (Université de Caen and Université René Descartes-Paris 5). As for the remaining 28 websites, one had to dig deep through multiple layers of web-information in order to find one brief allusion to museums or collections<sup>124</sup>. Apart from the lack of recognition, French university collections suffer from the same problems as their foreign counterparts: lack of resources (funds and staff), lack of a clear identity, lack of a clear role within the university, uncertainty regarding the future, and alienation from the university middle- to long-term strategic planning. In addition, the size and international importance of the French national collections is likely to have absorbed the attention and public resources from governments. However, in terms of legislation and structure, France is one of the countries in Europe better prepared to protect and promote its university heritage.

France has the appropriate legal instruments concerning university collections. It is possibly the only country in Europe to have the study and care of collections explicitly mentioned in the law on higher education. The reference dates at least from the Loi Savary in 1984 (Law No. 84-52 on Higher Education, 26 January 1984), which states in article 7:

Article 7 – Le service public de l'enseignement supérieur a pour mission le développement de la culture et la diffusion des connaissances et des résultats de la recherche. [...] Il participe à l'étude et à la mise en valeur des éléments du patrimoine national et régional. Il assure la conservation et l'enrichissement des collections confiées aux établissements (italics added).

Although universities may not be given the necessary resources (or may use them for purposes other than collections), no French university administration can comfortably say that 'collections are none of our business' without breaching the law<sup>125</sup>.

Apart from the legal framework, France also has a permanent structure within the Ministère de l'Éducation Nationale, Recherche et Enseignement Supérieur, devoted to the coordination, surveying, policy-making, supervision and funding (on a four-year project-basis) of university museums and collections: the Bureau Musées<sup>126</sup>. As far as I know, this structure is also singular in the European context. As a result of the Report Héritier-Augé mentioned before, the Bureau initiated in 1993 a policy to promote French university collections (Lénard 1996). The Bureau is equally responsible for the Office de Coopération et d'Information Muséographiques (OCIM)<sup>127</sup>, an important instrument in the training and dissemination of knowledge among museum professionals. The Bureau has a staff of six, with jurisdiction over the museum network, the Musée des arts et métiers, the Muséum national d'Histoire naturelle, the Palais de la découverte, the Cité des Sciences et de l'Industrie, the Musée du Quai Branly, the Musée National de l'Éducation and French university museums and collections of unknown total number. The Bureau's jurisdiction is restricted to the

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<sup>124</sup> This low profile of museums and collections in the websites of universities compared to libraries is not specific for the French higher education system. A similar survey conducted at the same time found that only two Portuguese universities mentioned their museums and collections in their 'home' webpage (universities of Lisbon and Porto) – out of a total of 14 public universities, of which at least seven were confirmed to have museums and collections.

<sup>125</sup> Another relevant French law is Decree No. 2002-677 (29 April 2002, latest version). This decree states that public construction works must be decorated [sic] with one or more pieces of contemporary art, which in turn should cost at least 1% of the total construction costs. Universities also count as these are public buildings. This law (that also exists in other European countries, if not in the form of law at least as a common practice, e.g. Germany, the Netherlands), is likely to have less impact on collections than on artistic and architectonic heritage (e.g. sculpture parks, etc).

<sup>126</sup> The Bureau Musées resorts directly under the Mission de la culture et de l'information scientifiques et techniques, which in turn is a division of the Direction de la Recherche at the Ministère délégué à la recherche (since June 2005 under the Ministère délégué à la recherche et à l'enseignement supérieur, therefore possibly a political move with beneficial results for university museums and collections). The objectives of the Bureau can be read at <http://www.recherche.gouv.fr/recherche/cism/musee.htm>, accessed 23 June 2005).

<sup>127</sup> OCIM was created in 1985 as a special service of the University of Bourgogne in Dijon. For details on OCIM's mission and activities, see <http://www.ocim.fr/sommaire/ocim/index.html>.

'patrimoine scientifique', although it employs a broad concept of 'patrimoine' (R. Bertrand, pers. comm. 8 July 2004). French university collections of arts and humanities thus pose a challenge as they run the risk of falling into 'no man's land' – certainly more so than their scientific counterparts. As for university collections, the Bureau Musées main priorities at present are: a) create a working group for university museums and collections (ongoing); b) intensify relations with the Conférence des Présidents des Universités, c) keep the information regarding university museums and collections up-to-date; and d) produce a publication on university museums and collections in 2005 (R. Bertrand, *pers. comm.* 25 June 2005)<sup>128</sup>.

In the immediate future, the challenges for French university collections are extraordinary. Perhaps the first and foremost step is getting to know what exists and where. Given the importance of the heritage at stake, this should be given the highest priority. The survey should comprise the state and use of collections, storage conditions, immediate needs (restoration, security), status of present staff and funding, and legal status. Without this survey, sustainable and stable long-term strategies, policies and actions cannot be planned at the national level.

The second challenge is one of collaboration and integration. Due to its intrinsic nature, university heritage cannot be promoted without the involvement and cooperation of the Ministère de la Culture, the Conférence des Présidents d'Universités (CPU), the national museums and, naturally, the Ministère de la Recherche and the university museums and collections themselves. The national museums in particular have a crucial role to play given their visibility, expertise and credibility. In the UK, during the 1990s, the British Museum and its former Director played an active role in the promotion of university museums and collections (R.G.W. Anderson, pers. comm. 29 June 2002). There is a growing interest in university heritage from the part of French cultural authorities, particularly at local levels (e.g. Direction régionale de l'action culturelle [DRAC] Alsace). This interest has translated into an increase in exchanges among professionals from both parts. At the national level, the Ministère de la Culture has been involved in the promotion of collections of science before, namely in the notable survey of astronomical observatories<sup>129</sup>. Some regional museums are looking with growing interest at the developments around university collections (C. Schlecht, J. Clary, interviews 18 May 2004). The conditions for enduring partnerships do therefore exist. Collaboration among universities themselves is also vital. There are already good examples (see below), but clearly more needs to be done. Moreover, university heritage should be approached in an integrated way, both at the level of national policies and at university level. Objects, artefacts, books, libraries, laboratories, archives, amphitheatres, drawings, paintings need to be looked at integrally by an interdisciplinary and professional team. As more research into the history of French university collections is gradually done, their complex and dynamic ramifications will inevitably surface, making them difficult, if not impossible, to fit inside rigid compartments.

The third challenge is one of debate and exchange. Until recently, the debate around university museums and collections in France had to a great extent been incidental and fragmented. The interest for university heritage in France has grown considerably over the past couple of years and hopefully the stage is being set for the situation to change positively. Two recent conferences, at the University of Lille (April 2004) and University of Montpellier

<sup>128</sup> The Proceedings of the Conference *Journées nationales de réflexion et d'étude sur le patrimoine scientifique des universités*, held at the University of Montpellier 18-19 November 2004.

<sup>129</sup> See databases of the *Ministère de la Culture* (particularly the databases *Palissy* and *Mérimée*) in <http://www.inventaire.culture.gouv.fr/culture/inventai/presenta/bddinv.htm>, accessed 24 June 2005. For more information on the inventory, see Davoigneau & Le Guet Tully (1999), Le Guet Tully & Davoigneau (2002) and, in particular, No 84 of *La Lettre de l'OCIM* (November-December 2002), which includes articles on the subject by Jérôme Lamy, Béatrice Motard, Anthony Turner, Paolo Brenni, Laetitia Maison, Soraya Boudia, and Françoise Le Guet Tully and Jean Davoigneau, among others.

(November 2004)<sup>130</sup> enjoyed the active participation of museum professionals (university and non-university) and of rectors from France and abroad. The momentum exists and there is genuine enthusiasm for discussing common issues.

Like the Netherlands, France has also seen inter-university collaborative projects to promote its university heritage. Perhaps the most ambitious, given its scope and the importance of the heritage involved, is the *MuseUM* Project (Musée des Universités de Montpellier, provisional title), aiming at studying, protecting and interpreting the scientific, artistic, and architectonic heritage of the three universities of Montpellier – from the Jardin des Plantes to the herbier, from natural history and medical collections to scientific and astronomical instruments, as well as pharmaceutical and art collections, and important architectonic elements such as the *theatrum anatomicum*. *MuseUM*, currently being developed under the framework of the Pôle Universitaire Européen de Montpellier et du Languedoc-Roussillon, remains largely singular at the European scale as it transcends not only traditional disciplinary borders, but also the limits of a single university.

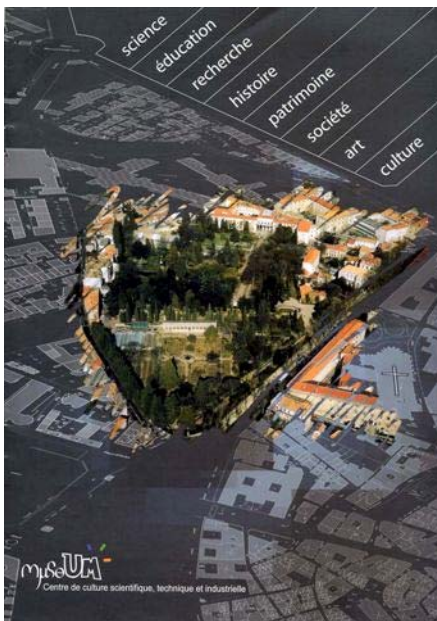


Fig. 5.10 – Leaflet of the *MuseUM* project, highlighting the Jardin des Plantes, the Institut de Botanique and the Herbarium (central area) and the Faculty of Medicine (on the right) (reproduced with kind permission of *MuseUM*).

The integration presents major challenges in terms of public interpretation (the appropriate storyline that binds the elements together), physical accessibility (the elements are scattered across the town of Montpellier), management (the nature and positioning of the coordinating structure, funding, the status and ownership of the collections, the status of staff, etc.), and academic culture (traditional resistance to inter-institutional approaches, etc.). The *MuseUM* project clearly presents an innovative and experimental proposal that potentially opens a new window for the promotion of university heritage in Europe.

Another collaborative project involving several universities was initiated in 1999 by the universities of the Pays de Loire region: the project *Patrimoine Scientifique et Technique Contemporain*<sup>131</sup>, aimed at interpreting contemporary second generation university collections. Although photographing, inventorying and describing the instruments and equipment was of specific concern, the project also included interviews with researchers who invented, improved and used the equipment (C. Cuenca, interview 26 May 2004).

<sup>130</sup> The former jointly organised by the Ministère de la Culture & le Ministère de la Recherche and the latter by the Bureau Musées (Ministère de la Recherche) and sponsored by the French Conférence des Présidents d'Université (CPU).

<sup>131</sup> See <http://patrimoine.atlantech.fr/atlantech/foffice/portail/accueil.html>, accessed 23 June 2005. The project has meanwhile been expanded to the national level and the Musée des Arts et Métiers is coordinating its implementation (C. Cuenca & D. Thoulouze, interview 26 May 2004).



Fig. 5.11 – The project ‘Patrimoine Scientifique et Technique Contemporain’, developed by the GIP ATLANTECH and the University of Nantes of the Pays de la Loire region. The resource is available on DVD and on-line<sup>132</sup>. On the left, the WWW-menu allowing the user to explore both the equipment and the researchers who developed and used it; on the right, the main DVD-menu (images reproduced with the kind permission of GIP ATLANTECH, Université de Nantes & Iht-A).

The project is detailed and multi-leveled – integrating objects, documentation and the *savoir faire* of researchers (fig. 5.11). The incorporation of contemporary equipment and, generally, second generation collections is a challenge for universities across Europe given the extraordinary pace with which apparatuses are dismantled and laboratories re-equipped. The equipment itself also poses major challenges in terms of collecting, storing and public interpretation (see e.g. Brenni 2000, Caro 2004, Jacomy 2004).



Fig. 5.12 – Leaflet of the project *Jardin des Sciences* (reproduced with kind permission of the University Louis Pasteur of Strasbourg).

<sup>132</sup> DVD *Patrimoine Scientifique et Technique Contemporain*, coordinated by C. Cuenca & Yves Thomas, GIP atlantech, Université de Nantes & Iht-A, Nantes 2001. The project is available online at <http://patstec.fr/> accessed 13 July 2005.

For the moment involving only one university and benefiting from a privileged historical relationship with and the physical proximity of the Muséum de Strasbourg, the project *Jardin des Sciences* at the University Louis Pasteur of Strasbourg (fig. 5.12) is also worth mentioning. The project revolves around the main objective of providing a bridge between contemporary research at the University Louis Pasteur and society, using the collections as vessels to establish connections with past research and at the same time promoting them (H. Dreyssé, interview 7 December 2003). The *Jardin des Sciences* involves collections of natural history, medicine, history of physics, and astronomy from the University Louis Pasteur of Strasbourg, the natural history collections of the Muséum de Strasbourg and, possibly, the arts and humanities collections of the University of Strasbourg Marc Bloch (of which the most significant are the archaeology and Egyptology collections, the ethnology collections and the musée de moulages). The definite aims, scope and format of the *Jardin des Sciences* are still under discussion. It has been supported by a regular programme of public activities (debates, conferences, exhibitions, publications), coupled with continuing in-depth research into the University's archives, particularly into the history of the collections of physics<sup>133</sup>.

### 5.2.4 Italy

Italy holds university heritage of great international significance, including the first botanical gardens, anatomical theatres, herbaria and medical collections. The Botanical Garden of the University of Padua is the only university collection classified by UNESCO as World Heritage Site. Many Italian university museums remained untouched for decades and represent extraordinary examples of the golden age of first generation university museums and collections. Thus, the national and international importance of Italian university heritage is not only relevant – indeed unique – scientifically, artistically, and architectonically, but requires a multi-layered perspective of which the history of collections and museums is an important component to promote and interpret to the public.

Since 1999, when the Commissione Musei was created, the promotion of Italian university heritage at the national level has been in the hands of the Conference of Rectors. The Commissione Musei is chaired by a Rector (Professor Vincenzo Milanese, Rector of the University of Padua, at the time of writing)<sup>134</sup>. The principal aim of the Commissione is to develop a structural programme promoting the heritage held by Italian university museums, collections, archives, and botanical gardens (Garuccio 2005). Such integrated approach is most welcome and the similarities between the Italian and the Dutch approaches are worth observing: in both cases, the initiative to promote university heritage came from the universities (in the Dutch case the five oldest universities, in the Italian case the conference of rectors), both initiatives show a broad scope and include collections of all disciplines, but also archives and libraries, and both brought rectors and university museums' professionals to work together.

In a document dated 2000, outlining the present and future situation of Italian university museums, the Commissione Musei acknowledged the relevance of Italian university museums and collections, their typological and historical diversity, and the need for increased recognition at the national level (CRUI 2000). The document recognizes that collections represent the overwhelming majority of Italian university heritage, both in quantitative and qualitative terms. The majority of Italian university museums are small to very small, often closed to the public, inadequately staffed in terms of collections care, preservation skills and competences, and maintaining close and regular links with research groups. Funding is modest, irregular and often not guaranteed (CRUI 2000). Many

<sup>133</sup> See MCST-IRIST 2004-2007. *Sauvegarde du patrimoine de la physique à Strasbourg. Recherches et mise en public* [Programme financé dans le cadre de l'ACI «culture scientifique» du Ministère de la recherche et par les Amis du centre d'histoire de la physique de l'American Institute of Physics/DRAC Alsace]. Université Louis Pasteur Strasbourg, Strasbourg.

<sup>134</sup> All documents produced by the Commissione Musei since its creation in 1999 are available at <http://www.cruui.it/link/?ID=1350>, accessed 5 July 2005.

university museums rarely develop any significant activities in the public sphere, such as exhibitions, films, publications, etc. Given the multiplication of isolated and fragmented initiatives and the heterogeneity of standards at different levels (catalogues, inventories, statutes, missions, public service), the document calls for better coordination and collaboration among universities, aiming at more consistent and homogeneous policies and practices. It is in this context that the Commissione proposed the creation of an Italian Network of University Museums (*Rete Nazionale di Sistemi Museali di Ateneo*). The creation of the National System encouraged Italian universities to create their own systems of university museums, to be implemented according to the particular histories and contemporary roles of the different museums and collections involved (before, proto-museum systems had been developed in at least Bologna and Pavia). Pugnaroni (2001, 2003) discussed several aspects of the Italian Network – feasibility, legal, mission and activities.

In May 2005, a proposal was presented in Rome with the aim of providing a legal framework – the National Observatory for Museums of Science – for future protection, promotion and collaboration of university museums and collections at the national level<sup>135</sup>. Although still in a preliminary stage, the proposal was developed with the active participation of the Commissione Musei, the Italian Association of Museums of Science (ANMS) and ICOM-Italy. The Observatory, provided it is given the adequate resources and conditions, may represent a major step towards the recognition of university heritage in Italy.

At present, the main challenge for Italian university heritage is to translate the reflections and surveys of the past 12 years into practical measures, so that, like in the UK, the long process of awareness, framed by the necessary political and legal tools and provided with the much needed resources, begins to bear fruit.

### 5.2.5 Germany

Germany has an impressive academic heritage. Many German universities have 20 to 30 university museums and collections which have not yet been subject to major reorganisations, including collections of major international significance such as the Museum of Musical Instruments at the University of Leipzig, the Natural History Museum at Humboldt University Berlin, the Berlin-Dahlem Botanical Garden and Museum at the Freie University Berlin, the Virchow Collection at Humboldt University Berlin, and the Geiseltal Museum at the Martin-Luther University of Halle-Wittenberg, among many others. Moreover, Germany holds the legacy of the Humboldt university model. However, like in other countries, German university heritage is barely known outside the boundaries of the university.

Some museums and collections suffered severe damage during World War II, for example the destruction of part of the collections (and building) at the Museum of Natural History at Humboldt University Berlin (fig. 5.13), and the looting and dispersion at the Museum of Musical Instruments at the University of Leipzig (Fontana & Heise 1998). More recently, while other European countries were going through the 1990s economic boom, Germany was paying heavily for its reunification and is currently going through a complex economic situation. In 2004, universities underwent severe budget cuts, endangering some collections (F. Riesbeck, interview 2 June 2004), while in other cases their future is as yet unclear. The Geiseltal Museum at the University of Halle-Wittenberg faces an uncertain future due to the new Science Museum being projected for the *Neue Residenz*, the Geiseltal's present venue (G. Berg, interview 8 June 2004). The Zoology Museum at the University of Hamburg is presently endangered. The collections of the Department of Geology and Paleontology of the Technical University of Clausthal were in danger due to imminent closure of the department (L. Schmitz, *in litt.* 11 October 2003; could not confirm what happened subsequently), and

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<sup>135</sup> Proposta di Legge "Istituzione dell'Osservatorio nazionale sui musei scientifici" (Camera dei Deputati No. 5839, iniziativa del deputato Mazzuca), 2005.



the same is likely to happen with the anthropology collections at the Institute of Anthropology, Humboldt University Berlin (U. Kreuz, interview 10 June 2004). The Robert Koch Museum at Humboldt University of Berlin is also facing an uncertain future given that the University sold the building of the Institute of Microbiology/Charité, where it is housed (W. Donath, *in litt.* 12 July 2005). The 'crisis' of German natural history collections, aggravated by bureaucratic collecting procedures and other structural problems, has recently been discussed in *Bayerische Akademie der Wissenschaften* (2003; reviewed by Krell 2004).



Fig. 5.13 - Museum of Natural History, Humboldt University Berlin, damaged by World War II bombings. Photo taken in July 2004.



Fig. 5.14 – Museum of Anatomy at the Charité, Humboldt University Berlin (reproduced with the kind permission of Humboldt University Berlin).

In other disciplinary areas, German university collections seem to be actively used for teaching and research while at the same time maintaining vivid ties with the general public. One remarkable example is the Museum of Musical Instruments at the University of Leipzig, which is also one of the finest reference collections of musical instruments in the world. Born as a first generation university collection, it is active today in its teaching and research relations with several departments across the University as well as applied research for the Leipzig community. The Museum founded the Institute for Research of Musical Instruments

(E. Fontana, interview 3 June 2004). Another example is the collection of 300 mathematical models – mostly made by Martin Schilling; c. 1875-1920 – at the Department of Mathematics and Computer Sciences of the Martin-Luther University of Halle-Wittenberg. The collection is used in the teaching of geometry, topology and mechanics, as well as for the history of mathematics (K. Richter, *in litt.* 23 June 2004).

In the near future, the challenges for German university museums and collections will be substantial. Being a federal state, there is no centralised jurisdiction over the higher education system in Germany and universities are administered and funded by the different *Länder*. Therefore, it may be more difficult to coordinate measures at the national level. Additionally, there is no association of university museums and collections that could assume leadership in the recognition process. Nevertheless, basic preparatory work has been done, mainly at the initiative of the *Helmholtz Zentrum für Kulturtechnik* (Humboldt University Berlin), which has been compiling data on German university museums and collections since 2001. Presently, a research project on the history of Germany university collections is being developed.



Fig. 5.15 – Robert Koch Museum at the Charité, Humboldt University Berlin: a biographical museum devoted to the life and work of Nobel-prize winner Robert Koch (reproduced with the kind permission of the Robert Koch Museum).



### 5.2.6 Other countries

In other European countries, the problems are basically the same as those described above, but initiatives at the national level have been rare until now. This situation will possibly change in Greece and Spain, where national associations of university collections were created recently. In Spain, an online directory of university museums is currently being developed (Such 2003). In Norway, university museums have developed a collaborative project to increase access to university collections (Ore 2001).

Apart from Poland, Estonia, Lithuania, and the former DDR, little is published in English about university collections in eastern European countries. Often universities have gone through a turbulent political past and collections have been dispersed, transferred or lost. For example, important geological collections from the University of Tartu, Estonia, were transferred to the Academy of Sciences in Tallinn, including type collections of Estonian palaeontology (M. Isakar, interview 9 October 2003). The same applies to the historical collection of archaeological originals and oil paintings from the 16<sup>th</sup> to 19<sup>th</sup> centuries, which were transferred to Russia during World War I and are still held at the Art Museum of



Voronezh (I. Kukk, interview 9 October 2003). Judging from the situation in Estonia and Lithuania, the Soviet period appears to have caused significant stagnation for first generation university collections, partly stemming from the restricted access for, and contact with, non-Soviet researchers, the lack of access for Estonian researchers to collections and journals outside the Soviet sphere of influence, and because of the small number of tourists visiting the countries at the time. Given that they have remained inaccessible to the wider scientific community for so long, university collections of natural history, archaeology, anthropology are likely to raise considerable interest as they now become better known<sup>136</sup>.



Fig. 5.16 – Anatomical Theatre (left) and Astronomical Observatory (right), University of Tartu. The Anatomical Theatre was built between 1803 and 1805 (central rotunda), and lateral expansions until 1860. The Observatory was built between 1808 and 1810 and the tower (originally domed), was rebuilt in 1825 to house the Fraunhofer refractor (photos S. de Clercq).



Fig. 5.17 – Students at the Museum of University History, University of Tartu: section devoted to the 19<sup>th</sup> century (photo: M. Sakson, reproduced with the kind permission of the University of Tartu).

The University of Tartu (1632), the oldest university of Estonia, has collections, museums and buildings of great interest, including the Art Museum, the Museum of University History (fig. 5.17), the Museum of Geology, the Museum of Zoology, the Botanical Garden and Herbarium, the Anatomical Theatre, the Astronomical Observatory and the corresponding medical and instruments collections. The Astronomical Observatory is part of the Struve

<sup>136</sup> At the University of Tartu there is a keen interest in making collections better known to scientists around the world. Today, Tartu's zoology, palaeontology and geology collections are being catalogued according to modern standards (M. Isakar, T. Pani, interview 9 October 2003).

Geodetic Arc, today classified by UNESCO as World Heritage (see chapter 7). The majority of collections are well-preserved and the buildings are structurally intact, only suffering from normal decay due to the passage of time. Integrated under a common structure in 2005, the collections are aiming to speak with a coordinated voice within the University and to offer an improved public service, without losing ties with teaching and research, particularly in the case of the first generation collections (see Mägi in press).

Russia seems to have considerable university heritage, although surveys or inventories are either non-existent or unreliable (V. Kuzevanov, *in litt.* 13 May 2004). There is clearly a need for more research into university collections in Eastern Europe as almost two-thirds of European universities are situated there (see appendix A1).

### 5.2.7 Initiatives at international level

At the international level, the three most important recent initiatives were the creation of the network Universeum in 2000, the European project developed by the Council of Europe (1999-2001) and the creation in 2001 of a specific international committee for university collections (UMAC) within the International Council of Museums.

#### *i) The Universeum Network (2000)*

During the late 1990s, 12 of the oldest and most renowned universities in Europe engaged in a collaborative project ('Universeum: Academic Heritage and Universities, Responsibility and Public Access'), financed by the European Commission (*Culture 2000* programme), to share knowledge and experiences and to take initiatives with the aim of enhancing access to collections. The 12 founding universities were the University of Amsterdam, the Humboldt University Berlin, the University of Bologna, the University of Cambridge, the University of Groningen, the Martin-Luther University of Halle-Wittenberg, the University of Leipzig, the Royal College of Surgeons of England, the University of Oxford, the University of Pavia, the University of Uppsala and the University of Utrecht. In 16 April 2000, the Declaration of Halle was signed by these institutions (see Declaration of Halle transcribed in appendix A10). The network developed three collaborative projects: one to "identify and inventory the collections of a sample of European universities, starting with the medical discipline" (Database project), a second with the aim of establishing a "web-based facility to allow easy access to Europe's university treasures via the Internet" (Virtual Gallery project) and an exhibition "showing the interactions of knowledge between European universities in the past and present" (Joint Exhibition project) (Bremer 2001: 7). Universeum also produced *Treasures of University Collections in Europe* (Bremer & Wegener 2001). Universeum has held regular meetings and since 2000 other European universities have joined in. Although never formally constituted as an association, Universeum is the only group today aiming at raising awareness about university heritage at European level.

#### *ii) UMAC (2001)*

ICOM's International Committee for University Museums and Collections (UMAC) was formally created during the 19<sup>th</sup> General Assembly of the International Council of Museums (ICOM) in Barcelona in July 2001, making it the first association of university museums and collections of international scope<sup>137</sup>. The creation of UMAC meant that, for the first time, the distinct identity of university museums was recognised by the most important organisation of museums worldwide. According to Peter Stanbury, chair of UMAC between 2001 and 2004, "UMAC's role is to highlight similarities and differences between university museums and other museums, and to encourage interaction and partnerships between all museum professionals [...]. By asking probing questions, UMAC enables solutions to be found to

<sup>137</sup> See UMAC's website at <http://icom.museum/umac>. UMAC's objectives are to be found under 'What is UMAC'. See also Stanbury (2002).

protect our common heritage. UMAC's writings, conferences and discussions augment the formal training of those responsible for university collections" (Stanbury 2003b: 3).

UMAC has proven to be an active body. Since its creation, the proceedings of the annual conferences in Barcelona (2001), Sydney and Canberra (2002) and Oklahoma USA (2003) have been published and a selection of papers from the annual conference in Seoul (2004) will be published soon. UMAC was also responsible for the compilation and editing of an issue of ICOM Study Series (No. 11, 2003) and it released the advisory document *University Museums and Collections: Importance, Responsibility, Maintenance, Disposal and Closure* (UMAC 2004, see also appendix A10). One of UMAC's most ambitious projects has been to compile information about university museums and collections worldwide and make it available on the internet. UMAC's Worldwide Database of University Museums and Collections has drawn from two initial databases in Germany and Australia and is searchable per country, per museum and collection type and per subject (Weber & Lourenço 2005)<sup>138</sup>. The Database is being developed further to become an even richer source of information for university museum professionals, as well as a more useful online instrument for researchers and the general public alike.

### *iii) University Heritage and the Council of Europe (1999-2001)*

Between 1999 and 2001, the Council of Europe developed a collaborative project at the European level with the aim of promoting academic heritage. The project was a joint initiative of the Steering Committees for Higher Education and Research (CDESR) and Cultural Heritage (CDPAT) of the Council of Europe and partly funded by the European Commission. It involved universities from Belgium, Croatia, Estonia, France, Italy, Lithuania, Poland, Portugal, Romania, Russia, Spain and Turkey. Originally aimed at establishing an Ancient Universities Route, "the participants quite rapidly moved away from this [...] in favour of an emphasis on the heritage of European universities for at least two reasons. Firstly, while the origin of European universities may well be termed ancient, not all the institutions that identify with and continue to live this tradition are marked by old age. Secondly, while the European university tradition provides a link in space and time between a variety of institutions in Europe and beyond, the concept of a route is too simplistic a way of conceiving this relation" (Sanz & Bergan 2002b: 15; see Boylan 2003 for a description of the project). After the project was completed, *Heritage of European Universities* was published in English and French (Sanz & Bergan 2002a). It includes articles on university history (Ridder-Symoens 2002a,b, Rüegg 2002, Zonta 2002), universities and the European identity (Blasi 2002, Brizzi 2002a, Peset 2002, Renaut 2002), museums and collections in relation to university heritage (Boylan 2002), the concept of university heritage (Sanz & Bergan 2002b,c,d), case-studies (Bakhouché 2002, Brizzi 2002b, Díaz 2002, Silva 2002), and a compilation of relevant European declarations and conventions. The project also produced the draft Recommendation on the Governance and Management of the University Heritage (Council of Europe 2004). The draft Recommendation is directed at the governments of the 46 Council of Europe member states and was considered by the Steering Committees for Higher Education and Research (CDESR) and Cultural Heritage (CDPAT) in late 2004/early 2005. The text has a detailed introduction and includes recommendations on legislation, governance and management, finance, access, professionalisation, training, research, awareness raising, relations with the local community, and international cooperation. The Draft Recommendation urges governments to "implement in their policy, law and practice" the principles contained in the text and to "promote the implementation of [the] measures by relevant public authorities at all levels as well as higher education institutions".

It should be noted that the Council of Europe had already adopted a Recommendation indirectly related to university collections in 1998, i.e. the Recommendation 'Incidental

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<sup>138</sup> See UMAC Worldwide Database at <http://publicus.culture.hu-berlin.de/collections/>

Collections' (Recommendation No. 1375/1998). Another relevant Recommendation of the Council of Europe in relation to university heritage was issued in 2000 (Recommendation No. R (2000)8 of the Committee of Ministers) on the research mission of universities, which reads that: "[we should] regard the contributions of universities, through their wide variety of disciplines, to the preservation, development and enrichment of European cultural heritage".

### 5.3 Discussion

This chapter aimed at reviewing our current state of knowledge about university collections, both in terms of the literature and of recent initiatives in Europe.

The museum level was predominant in the literature review and the collection-level was hardly mentioned. This is not so much because collections did not exist – they certainly did – but because there is a bias in the sources employed: papers were mainly selected from professional museum journals, in which texts on museums are more likely to be published. References to university collections mostly appear in specialised journals (archaeology, anthropology, zoology, etc.) and are relatively rare in the museum literature.

The literature published in the 20<sup>th</sup> century seems to indicate that the role of university museums is somehow erratic and lacks consistent formulation – particularly in terms of audiences. Although the general public was of concern to university museums, the targeted audience comprised mostly students and researchers. In the late 1950s, texts gradually began to make distinctions at the exhibition level to accommodate internal and external users and a turning point seems to have occurred in the 1960s: more texts began to mention both the general public and professional standards. This transformation is likely to have resulted from a combination of related factors. Firstly, the number of universities grew rapidly, coupled with signs of shifts in research interests at least since the 1950s, resulting in a decline in the use of first generation collections for teaching and research. Secondly, the museum sector initiated a dramatic transformation. Thirdly, in the 1960s the university museum of historical nature (second generation) initiated a gradual period of growth. Exclusively presenting historically and artistically relevant objects, second generation university museums possibly attracted broader segments of the general public to universities and eventually to first generation museums as well. More research on this aspect would certainly be welcome, but the diversification of audiences is likely to have gradually induced first university museums to contemplate on the nature of their own public role, including opening hours, collection accessibility, interpretation and professional standards, especially given that at the same time they were confronted with a decline in their traditional audiences.

The growth of second generation university museums could also have been related to the growth in the number of universities – more universities, therefore more museums in absolute terms (no relevant statistics are available as far as I know). However, the boom in second generation university museums was not accompanied by a growth in first generation university museums<sup>139</sup>. In my view, historical and artistic museums expanded in universities mostly as a result of changes in museums in general, particularly the increasingly prominent role of the public, coupled with a growing awareness among universities of the importance of their historical heritage (also, perhaps mostly, as a public relations and student recruitment tool). This in turn brought new audiences to universities and induced first generation university museums to re-think their audiences and professional standards.

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<sup>139</sup> To the best of my knowledge, no major university museum of natural history in Europe was created after the 1960s. 'New' museums did appear, but they resulted from the reorganisation of former museums or collections – e.g. the Museum of Mineralogy at the Université Pierre et Marie Curie, Paris (1970), with collections dating from the 1800s and the Natural History Museum, University of Wrocław (1976), resulting from the reorganisation of the zoological and botanical museums, both dating from the 19<sup>th</sup> century (Jakubowski 2001).



The main contemporary dilemma of university museums and collections can be formulated as follows. In order to stay relevant for the university, collections need to contribute significantly to teaching and research; in order to be relevant to society at large, they need to increasingly provide access to collections, raise their professional standards and deliver public service more broadly. How can this be achieved when university museum professionals have themselves considerable difficulty in clearly defining the contemporary role of university collections and its connections with present, past and future teaching and research? How can this occur when the university itself has a rather restricted vision of their contemporary social and cultural role? Finally, how can this be achieved when resources are diminishing and do not suffice for stability, reflection, research and collaboration?

Finding the key to this dilemma requires collaborative efforts between universities, governments and the museum sector. It requires transcending disciplinary borders, university borders and national borders. University collections need to be seen in an integrated way as part of a nationally and internationally distributed collection. Collaboration is a challenge as it requires major cultural leaps. Collaboration may also prove difficult at a practical level when countries are large (like France) or de-centralised (like Germany), but collaboration and an integrated vision are essential for a more effective promotion of university heritage.

The literature also shows that comprehensive surveys of university museums and collections are not numerous. Such surveys require considerable financial and human resources, scientific expertise, time, and political will. Nevertheless, they are an essential tool towards an objective understanding of the nature of university museums and collections, as well as an indispensable first step towards informed decision-making. At present, data from different surveys in Europe are difficult to compare because European higher education systems remain diverse despite the tendency for homogeneity. Furthermore, existing surveys were carried out within different conceptual and methodological frameworks (e.g. varying definitions of 'museum' and 'collection') and different scopes (some including only object collections, others including archives and libraries, some focusing on public universities, others on public and private universities). More efforts should be made to improve consistency in standards and definitions. Despite the differences in methods and scope, all surveys have two things in common: at their roots were situations of general and critical instability, if not 'crisis', and the findings and recommendations are strikingly similar, i.e. university museums and collections are insufficiently recognised by contemporary universities and society alike, their role is being questioned, and they are generally operating well below their potential in research, teaching and public service.



[M.C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## 6. Where are we now? University collections and the three missions: research, teaching and public display

“I feel they [contemporary ‘novelties’] hold nothing essentially new and are really no more than timid variations [...]”.

Jorge Luis Borges (1978)

Three developments have become increasingly apparent during the past two decades: a) many university collections<sup>140</sup> do not seem to be used much, if at all, for teaching and research, b) more universities seem to be disposing of collections and closing museums, while at the same time c) many universities are developing alternative organisational and management models to merge collections into newly created museums (many that have not done so yet appear to be considering such steps for the near future). At first sight these trends seem inherently contradictory, but they are closely intertwined.

In many ways, the past five years have been vertiginous for university museums and collections. On the one hand, the ‘crisis’ of the 1980s regarding first generation university collections became more acute. On the other hand, after a period of relative expansion, second generation collections and museums are now seemingly going through an impasse. Finally, the university itself has also changed significantly.

University museums are going through a stage of concerted, collaborative and intense debate – a debate that is far from closed. The main challenges comprise: increasing alienation from teaching and research, lack of funding, lack of staff and career paths for staff, inadequate professional standards (including major ethical issues), lack of a clear management structure, and lack of a clear identity and strategy. In this chapter, I will discuss these developments with the aim of reviewing the present situation of university collections in relation to the three missions: teaching, research and public display. Data were collected during field work and retrieved from the literature. Teaching and research will be examined (both for first and second generation collections) and recent trends in public service will be outlined.

### 6.1 Putting the ‘crisis’ in its place

The ‘crisis’ of university collections is often presented in a simplified way, in a cause and effect relation with the decline of use for teaching and research or other reasons (for instance, lack of awareness towards collections by university administrators). The ‘crisis’, however, is probably less *about* collections and more *about* universities.

When discussing the challenges faced by university collections, it is impossible to ignore the challenges universities are confronted with today. Universities are dynamic institutions. They are dynamic because they are driven by the advancement of knowledge in science, engineering, the arts and the humanities. Universities are also dynamic because they mirror and adapt to changes in society and European universities have been facing major reforms during the past two or three decades. They have adapted courses to the needs and demands of the job market and redefined their mission in more utilitarian and vocational terms. They are also increasingly asked to contribute to local and regional economic development, for

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<sup>140</sup> In this dissertation, the term ‘university’ is taken in its broadest sense and to mean all European higher education institutions, including for example the *Fachhochschulen*, the polytechnics, military academies and the *grandes écoles*.

instance by establishing stronger links with local industries. Some courses have recently faced a decrease in the number of students as a result of demographic factors or low public appeal. Possibly more than ever before, European universities are also being asked to compete in the international arena, particularly with North American universities. Everything and its exact opposite are being asked from universities today: to be elitist and democratic, to specialise and be universal, to produce research and deliver jobs, to compete globally yet focus locally.

European universities are being solicited to deliver this convoluted and grand scientific, economic and social agenda, yet at the same time government funding per student has decreased – in some countries (e.g. UK), it has almost been halved over the past 20 years (Boylan 2003)<sup>141</sup>. According to *Le Monde*, the annual budget of the Université d'Orsay-Paris XI for 2003 only covered 81% of the operational costs. In January 2003, Orsay closed for two weeks to save heating fuel and water. Similar actions were announced by the University of Toulouse Paul Sabatier<sup>142</sup>. Budget cuts in Halle-Wittenberg amounted to 10% in 2004. For the first time in its history, Germany is debating whether higher education is a universal right (P. Wegener, *pers. comm.* 6 June 2004). Today, from Riga to Dublin, European universities are going through a double crisis: a crisis of identity and purpose and a crisis of resources. The reasons for the university 'crisis' do not appear to be primarily scientific, but first and foremost political and economic.

Departments – and often complete faculties – are being eliminated and new ones created, while entire universities are merging. In the UK, where these dynamics are more visible at present, Cardiff University merged with the University of Wales' College of Medicine in August 2004. Less than three months later, the two Manchester universities merged into one 'super' university. According to a December 2004 survey by the BBC, one out of every five universities closed or down-sized departments during 2004 or plans to do so in 2005, including chemistry at the Anglia Polytechnic University; chemistry, music, cognitive science and creative writing at Exeter, French and Spanish at Kingston; and agricultural sciences at the Imperial College<sup>143</sup>. The same survey indicated that other disciplines and departments are being created – new subjects such as risk and stochastics at the London School of Economics and digital media at the University of Gloucestershire, as well as more 'classical' subjects such as physics and chemistry at the University of Durham; environmental sciences at the Imperial College; applied physics at the University of Newcastle and zoology at the University of Paisley, Scotland. Eliminating courses and creating others is not new. What seems to be new is a progressive discontinuity in the century-old ideal of the university as an institution that delivers a universal range of subjects. Present-day UK universities seem to be specialising in strategic areas of knowledge, a tendency that has also become visible elsewhere, for example in the Netherlands.

Undoubtedly, university collections of *all* sizes and types may suffer. This is an important point because there seems to be a widespread belief that only university collections that are no longer used for present-day teaching and research suffer from neglect. A university may neglect or even want to discard a collection of geology, a collection of archaeology, history of medicine or art. The Robert Koch Museum, a historical museum devoted to the life and work of Robert Koch at the Humboldt University Berlin, is currently facing an uncertain future as the University sold the building in which it is housed (W. Donath, *in litt.* 12 July 2005). Even collections in well-funded universities are not immune, e.g. Harvard University (Temin 2003). In fact, a university may want to discard a collection even if it is actively used for teaching and research.

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<sup>141</sup> For the moment, the majority of European universities have no student fees (or only symbolic ones) and when charged, they are 10 to 20 times smaller compared to those in the USA.

<sup>142</sup> *L'université d'Orsay ferme quinze jours faute de moyens*. LeMonde.fr, <http://www.lemonde.fr/web/article/0,1-0@2-3226,36-306698,0.html>, accessed 13 February 2003.

<sup>143</sup> *University confirms subject cuts*. BBC website, <http://news.bbc.co.uk/1/hi/education/4105961.stm>, accessed 21 December 2004.

The current 'crisis' of university collections is impossible to dissociate from a more general 'crisis' of universities. The roots of the latter are primarily economic and political and caution is therefore needed when attributing the current challenges and problems that university collections are facing to purely scientific circumstances. The clarification of this point is important before moving on to the discussion of the use (or non-use) of university collections.

## 6.2 First generation collections: research

"For most people, the destruction of books has universally come to be thought of as a symbol of barbarity. The burning of the library of [Catholic University of] Louvain, Belgium, by the German army in 1914 was, for example, seen around the world not only as an act of terror but also as an act against posterity. (...) The 1992 destruction of the main library in Sarajevo during the Balkan wars (...) was seen by many as one of the conflict's most tragic incidents (...). Even if we justifiably bemoan the anti-intellectualism of much of modern society, Western culture at its best cherishes books and libraries as symbols of civilization, humanity, and intellectual freedom. It is therefore striking that we by and large do not see threats to other accumulations of knowledge and potential knowledge in the same way."

Warren D. Allmon (2005: 1)

Anything bigger than a cell is not getting funding, and it does seem that many scientists perceive taxonomy as a quaint Victorian pursuit.

E. Pauls *in litt* 10 August 2003

During the second half of the 20<sup>th</sup> century, first generation university collections underwent a considerable decline in use for teaching and research. In the literature, the decline in natural history and medical collections is usually said to have started in the 1950s and that in archaeology and anthropology in the 1960s. However, a distinction should be made between collections resulting from research (e.g. master's and doctoral theses, monographs resulting from or associated with field work) and collection research. Data indicate that the decline is more pronounced in the former than in the latter. Unless stated otherwise, I refer below to collection research, i.e. to the use of existing collections for research.

During the initial stages of this research, 54 university museums and collections from Belgium, Denmark, Finland, Italy and the UK were asked whether there was *any* research being done on their collections at the time (see appendix A2). Positive replies amounted to 17 (out of 37 respondents) of which one from a natural history museum. A selection of replies from first generation collections reads as follows:

[Just] students' studies. No real scientific research as such (there has been in the 19<sup>th</sup> century).

D. Verschelde, Zoological Museum, Rijksuniversiteit Gent (Belgium), 6 December 2000

[Only] occasionally, due to lack of researchers interested.

M. Loneux, Musée de Zoologie, Université de Liège (Belgium), 8 December 2000

There has been. Presently not.

M. Jangoux, Musée de Zoologie Auguste Lemeere, Université Libre de Bruxelles (Belgium), 11 December 2000

There has not been any research done on the collection. It is a teaching and learning resource, and as such it is in constant use [for teaching] by academic staff and students.

J. Nichols, Bones and Models Collection, Faculty of Health and Social Care University of the West of England (UK), 14 December 2000

Research has been done in the past on some of the vertebrate material though by whom and where published I do not know.

P. Court, Biological Collections, University of Bristol (UK), 15 December 2000

No research. Unfortunately, the situation of the invertebrate collection in Louvain is dramatic! Moreover, the geological department will be closed next year.

L. Hance, Invertebrate Palaeontology Collection  
Université Catholique de Louvain (Belgium), 26 February 2001

Among first generation collections, those of natural history – including zoology, botany, geology – are undoubtedly the most severely affected for two reasons. Firstly, natural history collections represent the majority of university collections and, secondly, their storage requires considerable space.

The ‘crisis’ of natural history collections has been discussed at length for the past 25 years (e.g. Ricklefs 1980, McKittrick 1981, Olson 1981, Bryant 1983, Alberch 1993, Mares 1993, Seymour 1994, Winker 1996, Herbert 2001, Maigret 2001, Godfray 2002, Dalton 2003, Krishtalka 2003, Miller *et al.* 2004, Wheeler 2004, Wheeler *et al.* 2004). This is not the place to make the case for the relevance of taxonomy and natural history collections for science in particular and contemporary society in general – their importance has been sufficiently underlined before (e.g. Bartholomew 1986, Nicholson 1991, Cato & Jones 1991, Cusset 1995, Tassy 1995, Nudds & Pettitt 1997, Brown 1997, Krishtalka & Humphrey 2000, Ray 2001, Jonaitis 2003, Suarez & Tsutsui 2004, Allmon 2005, Mares 2005). Neither will I comment on the importance of natural history collections for contemporary anatomists, veterinarians, physicians, molecular biologists, ecologists, archaeologists, toxicologists, virologists, conservationists and environmentalists and, more broadly, for agriculture, public health and safety, climate studies, and a range of other areas. Moreover, I will not repeat that natural history collections are routinely used for molecular biology studies as storehouses of DNA (e.g. Houde & Braun 1988, Graves & Braun 1992, Leeton *et al.* 1993, Payne & Sorenson 2003, Hewitt 2004) and ancient DNA (e.g. Pääbo 1993, Poinar 1999). I will not argue that by continuing to assemble genetic resource collections of tissues, blood and molecular extracts (proteins and nuclear acids) natural history museums “fulfil a moral imperative to conserve ex-situ as much information as possible about the genetic diversity in our world before it disappears” (Sheldon 2001: 331) or that some of the best collecting is still in museum drawers – millions of taxa remain undescribed or under-described or described so long ago that re-description is badly needed. New type specimens, new taxa (including higher ones, like traditional ‘families’ and ‘orders’) are constantly being discovered among specimens languishing in museums for decades (e.g. Whitfield 2002).

Finally, I will not emphasise that “regardless of how much information in museums is data-based or how many specimens are scanned and high-resolution images posted on the World Wide Web, the ultimate value of collections resides in specimens. They will remain the ultimate arbiters in questions of identification or character expression for the researcher and they will remain the unique draw for children and adult visitors alike” (Wheeler 2004: 578) – and this statement equally applies to archaeological and anthropological artefacts and many medical collections. Natural history collections are relevant for a multiplicity of theoretical and applied purposes, as some universities in both Europe and the USA will probably come to realise in the hardest way possible (i.e. after they neglected their collections or disposed of them entirely) in the decades to come.

The reasons for the decline in the use of natural history collections for research are complex in their ramifications (scientific, social, economic and political) and have been discussed extensively in the literature. Reasons frequently mentioned are: a) recent developments in biology – molecular biology, but also ecology, ethology, population studies – having strongly eclipsed ‘whole organism’ research and teaching in universities, coupled with the pressure to carry out commercially supported applied research (e.g. Shaw 2002); b) the costs of



maintaining large collections of specimens; c) opposition to collecting of certain vertebrate groups (e.g. mammals and birds), which, according to some authors, may amount to social and political misunderstandings and lacks a scientific basis and credibility (e.g. Winker *et al.* 1991, Remsen 1995, Patterson 2002, Krell 2004); d) a misguided competition between molecular biology and taxonomy (Wheeler 2004), as if the former has arrived to replace the latter, plus a series of associated misconceptions such as the view that DNA bar-coding will replace specimens, when bar-coding simply “generates information, not knowledge” (Ebach 2005: 697); and e) a desire to follow the latest trends and hypes (Heads 2005).

For the past two decades, these factors have generated a deplorable low regard for natural history collections – at best associated with amateurism and ‘stamp collecting’ (Bateman 1975) and at worst with dusty and useless materials. A low regard that, according to Mares (2003), university museum professionals themselves are partly to blame for. The impact of this low regard on daily academic life was explained by Professor Pietro Passerin d’Entrèves, director of the Zoology Museum at the University of Turin:

Students do not show any interest in systematics, although systematics is still taught as part of the Biology degree [at the University of Turin]. Sometimes I have a PhD student working with me – in conservation or ecological studies of course – and he or she comes up with some interesting taxonomic result. Therefore I encourage him or her to publish. And they ask me ‘And where do you suggest we can publish this?’ and I say ‘Clearly this is a subject for XXXX [a systematics journal]’ and they become very distressed, do not want to have the thing published in that journal and sometimes even suggest to mask the paper under the cover of conservation to have it published in a conservation journal because of the [Scientific] Citation Index<sup>144</sup> [...] Myself, I do systematics of insects. Now I’m at the top of my career, but in my promotion from associate to full professor there was a colleague in the jury who said that what I did ‘was low profile because it did not cost much money’. That’s how things go at the moment for systematists. And of course collections suffer”.

P.P. d’Entrèves, interview 4 April 2003.

The long-term consequences of the low regard for university collections of natural history are hard to anticipate but they are already visible and significant. Several departments have recently been closed due to lack of students (in geology, palaeontology and mineralogy, for example in the Netherlands and Belgium), others have been restructured and changed name, ties between museums and departments have weakened and in some cases were broken, and disciplines that used collections as a main source for teaching and research were removed from graduate courses or became optional<sup>145</sup>. In some universities, staff occupying traditional collection-based careers and functions – such as the curator-professor, the taxidermist, the naturalist – retired and were not replaced, while in other cases these careers were discontinued<sup>146</sup>. The constant need for space and the management of buildings also put pressure on museums and collections, with collections being dispersed due to the sale of

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<sup>144</sup> The Scientific Citation Index is a database that keeps track of which articles in scientific journals cite which other articles. The journals are ranked according to the controversial ‘impact factors’, which in practice means that some sciences rank higher than others. For example, and on average, medical journals have higher impact factors than mathematical journals and molecular biology and conservation journals have higher impact factors than taxonomy or systematics journals. The Scientific Citation Index (and its equivalent for the arts and humanities) has a huge influence on the way published scientific research is perceived and evaluated and, therefore, on research assessment processes and career progression in universities, and ultimately on university collections. See more at <http://isiwebofknowledge.com/>, accessed 20 June 2005.

<sup>145</sup> At the University of Lisbon, systematics was eliminated in the 1980s (or rather ‘buried’ under the rather illustrative designation of ‘History of Biological Thought and Systematics’) and in several other European universities it has become optional in biology degrees (such as at the University of Pavia). Palaeontology is no longer taught in the Netherlands as a degree, across Europe the discipline of mineralogy is today practically extinct from higher education curricula, the majority of mineralogy university collections is orphaned for university teaching (though not necessarily for research).

<sup>146</sup> In Portuguese universities, the position of ‘naturalist’ was eliminated in the 1970s. At the time, naturalists were given the choice to be integrated in research careers, which many did. However, the assessment of research careers rarely comprises or rewards collection-based work. The same happened to the position of *conservatore* in most Italian universities. Today, a few naturalists and *conservatores* are still in function, but are nearing retirement.

buildings or pushed into attics, the ultimate 'black hole of universities' (university attics are known for their formidable gravitational fields – everything going in yet nothing escaping). For literature on the 'crisis' of university collections of natural history, see e.g. Black (1984), Hounsom (1986), Mares (1988, 1999, 2003), Mares & Tirrell (1998), Clercq (2003), Gropp (2003), Simpson (2003a,b), Kriegsman (2004), and Hutterer (2005).

In 2003 alone, at least 14 university museums in the USA were under threat of being closed (E. Farber, *in litt.* 13 January 2004) and almost half were effectively closed or had their collections dispersed, including important natural history museums at the universities of Arkansas and Nebraska. In 2000, the University of Cincinnati invertebrate palaeontology collections were transferred to the Cincinnati Museum Center (formerly the Cincinnati Museum of Natural History) (Sumrall *et al.* 2000). In 2004, the University of Vanderbilt (Nashville, Tennessee) discarded their palaeontology collections – some to a local museum, some to another university (University of Tennessee at Martin) and the destiny of the rest remains unknown (J. Hecht, *in litt.* 7 April 2005). The American Association of Museums (AAM) considered the situation to be serious enough to issue – for the first time in the history of the organization – an official Position Statement on University Collections (see appendix A10).

In Europe, the situation is also serious and should raise the concerns of the museum sector more than has so far been the case. In several collections visited, the conditions of storage have to be seen to be believed: lack of space, specimens packed in boxes from floor to ceiling unopened for decades in windowless, damp cellars or attics, specimens severely damaged by pests – few meet minimum standards of accessibility to researchers or to the public. Hundreds of thousands of specimens and artefacts cared for by one person or no one at all. It is difficult to even think about collection-based research when such basic needs and conditions are lacking.

Research collections, particularly those in natural history, are so intrinsically associated with the act of researching that curating *de facto* means researching. Their mere existence does not necessarily generate research. In the absence of active curating for whatever reasons, collections become unreliable, their scientific quality erodes over time and collections inevitably enter a spiral of decay from which they can only escape with difficulty. Their alleged 'irrelevance' becomes a self-fulfilling prophecy.

In the previous chapter, endangered collections and disposals due to closures of departments in the Netherlands, Germany and Belgium were briefly mentioned. A particularly illustrative example is the University of Amsterdam (UvA), which in the past 20 years practically eliminated its natural history collections or intends to do so in the near future:

- a) 1983: Geology was abolished as a discipline (collections were orphaned) (Clercq 2003);
- b) 1988: the Botanical Garden was de-accessioned (a private Foundation for its maintenance was created) (Ursem 1994);
- c) 1993: it was decided to donate one-third of the geology collections to the Amsterdam Zoo – transfer effective in 2002 (Clercq 2003);
- d) 1998: the *Pinetum Blijdenstein* (arboretum of conifers) was 'sold' to the Botanical Garden Foundation;
- e) 2002: a letter of intentions between UvA and the National Museum of Natural History (Naturalis) in Leiden was signed, foreseeing the transfer of 90% of the Zoological Museum's collection (13 million specimens) to Naturalis in 2006 following a recommendation from the Royal Dutch Academy of Sciences that systematic zoology in the Netherlands should be centralised (W. Los, interview 11 May 2003); note that, at the time of writing, actual transfer has not yet been decided;
- f) 2003: a part of the remaining two-thirds of the geology collections were dispersed among Naturalis, the local natural history museums of Maastricht and Nijmegen, and the

Geological Service of Indonesia in Bandung – the rest was disposed of (Clercq 2003)<sup>147</sup>.

Other universities are transferring and reorganising collections internally – for example separating them from the departments or confining them to a mere exhibition role. I will address this point in the section devoted to the third mission.

Despite future consequences, particularly in the training of geologists, botanists, zoologists, anatomists and palaeontologists, it is important to put the 'crisis' of university collections of natural history into a broader perspective.

Firstly, a great deal of what is said here applies equally to non-university museums. The 'crisis' of natural history collections is a worldwide phenomenon<sup>148</sup>. Moreover, a general lack of resources and interest, coupled with increasing competition in a super-crowded cultural market, has resulted in vulnerable situations for many local and national museums. Regardless of the discipline, background yet essential duties of museums – such as research and preserving collections – are especially affected. Recently, the Director of the Department for Museums and Fine Arts at the Ministry of Science Research and Arts of the Land Baden-Württemberg (Germany) is reported to have "unequivocally expressed the view that for museums, collecting, preserving and research is 'out'. Moreover, the whole museum business 'has to become cheaper'" (Krell 2004: 569). If we add to this general atmosphere the 'crisis' of universities, the problems of so many university collections should not come entirely as a surprise.

Secondly, disposals of university collections of natural history are not new<sup>149</sup>. Reliable accounts of institutions discarding collections are elusive, but word of mouth accounts are so numerous that it is reasonable to conclude that they are not uncommon. In 1970, zoological collections from the University of Bologna were transferred to the museum of the Istituto Nazionale per la Fauna Selvatica (Ozzano dell'Emilia) (Roselaar 2003, O. Negra, *in litt.* 4 April 2005). In 1977, more research collections were transferred, and the University of Bologna was basically left with display material only (Scaravelli & Bonfitto 1993). In 1972, zoology collections of the University of Siena (1900-1930) were transferred to the Accademia dei Fisiocritici (Roselaar 2003). The collections are now in the Museo di Storia Naturale of the Accademia and are managed by the city of Siena. In 1979, the University of Turin transferred its zoological collections to the Museo Regionale di Scienze Naturali (P.P. d'Entrèves, interview 4 April 2003). As far as collections are concerned, a major human-made tragedy of recent times was the division of one of the oldest universities in Europe, the Catholic University of Louvain (Belgium, 1425), for purely political reasons. The 1968 split into Université Catholique de Louvain and Katholieke Universiteit van Leuven resulted in an often arbitrary division of heritage, books, archives and collections (Aubert 1998). When collections are divided, the result is smaller than the sum of each parts<sup>150</sup>.

<sup>147</sup> Transfer session at Naturalis, attended by the author, 28 April 2003.

<sup>148</sup> In Europe, perhaps the first major natural history museum to be gravely hit was the Natural History Museum in London (a non-university museum). In 1990, the Museum announced job cuts due to redundancy and a "revolutionary restructuring of the Museum's scientific activities" (Anonymous 1990b, see also Anonymous 1990a). A combination of two reasons was given: externally the lack of Government funding and internally the failure to recognise the importance of collection-based research. During the years thereafter, the situation has improved considerably (Thackray & Press 2001).

<sup>149</sup> Apart from disposals, there is also the problem of some professors seeing collections as their personal property. I was told of several cases of professors who retired and took 'their' collections with them.

<sup>150</sup> In the USA, in 1968, the Belmont Report, a major national survey of museums done by the American Association of Museums (AAM) reported that: "Although *universities have tended to discard* their natural history collections because of the present-day emphasis on molecular biology rather than taxonomic biological training, there are more science museums than any other kind on American campuses [today]" (Belmont Report *in* Kolsted 1988: 408, italics added). In 1957, the California Institute of Technology (CalTech) sold its vertebrate palaeontology collections to the Los Angeles County Museum (Glowiak & Rowland 2003).

Stagnation, lack of resources and neglect are not recent phenomena either. The Ashmolean Museum stagnated a century after its opening and ceased to make any significant contribution to the Oxford curricula (MacGregor 2001). Even during the Golden Age (1800s-1940s), there were reports of natural history university collections not being used for teaching and research. In 1924, Frank C. Baker noted: "There are more than two hundred university and college [natural history] museums in the United States. Of these, not more than a dozen are functioning in a satisfactory manner and the great majority are of little or no value as an aid to actual instruction. [...] collections may be found in many institutions today, dusty and neglected, mute witnesses of a great and vanished past" (Baker 1924: 81-82). In a similar vein, Alexander Ruthven, director of Museum of Natural History at the University of Michigan (Ann Arbor), reported neglect, lack of interest and funding, and faculty colleagues referring to the museum in depreciative terms. He noted that one university administrator had said to a local newspaper that the university should cut expenses by eliminating the museum, it being "an unnecessary department" (Ruthven 1931: 65) and, more to the point, "the Secretary of the University was accustomed to ask each new curator when the museum would be finished so that the staff could be dismissed"<sup>151</sup>. In its official website, the Museum of Natural History at the University of Florence bluntly declares that "In the first half of the 20<sup>th</sup> century, the museums loose their autonomy, [...] becoming mere 'appendices' to the Institutes and furthermore, were often robbed of their funds, space and personnel"<sup>152</sup>. When going through early 20<sup>th</sup> century correspondence of museum directors and their annual reports, one often finds evidence of miserable working conditions.

A third aspect that helps putting things into perspective is that the alleged 'crisis' may not be as simple and straightforward as some like to suggest. Funds are indeed scarce, but I have come across several zoology, palaeontology and geology collections that are actively used for teaching and research, where specimens are actively exchanged and high quality collection-based scientific papers and PhD-theses are produced at a regular pace. Among these are both small and large collections, e.g. the Zoology Museum at the University of Cambridge, the Herbarium at the University of Leiden (part of the *Nationaal Herbarium Nederland*), the Botanical Garden and Herbaria at the University of Leipzig, the Animal Sound Archive at Humboldt University Berlin, the Berlin-Dahlem Botanical Garden and Museum at the Free University Berlin, the Botanical Garden at the University of Leiden, the Botanical Garden and the Laboratory of Human Palaeontology at the University of Turin, the Oxford University Museum, the Muséum national d'Histoire Naturelle in Paris, the Manchester Museum (University of Manchester), and the Zoology Museum at the University of Amsterdam<sup>153</sup>. Many of these museums are publishing in high-standard scientific journals (see appendix A11). In other cases, curators recognised that their collections were not being used due to decades of dormancy, with specimens being packed in boxes and lack of appropriate curating, expressing the hope that once collections were catalogued and become wider known, their use would intensify (C. Violani, F. Barbagli, C. Rovati, interview 24 March 2003). Important natural history collections of historical value are also used for research into the history of science, for instance Aldrovandi's Herbarium at the University of Bologna (A. Magnalia, interview 13 March 2003), the Museo di Storia Naturale at the University of Pavia (F.

<sup>151</sup> Signs of neglect can probably be traced even further back. Kolhstedt (1988) pointed out that in their early years (i.e. early 19<sup>th</sup> century), university and college collections of natural history "had an uncertain status on campus; acknowledged as somehow significant, they rarely had permanent allocations of space or guaranteed maintenance from year to year" (Kolhstedt 1988: 417). She transcribed a report dated 15 March 1812 from the Princeton University Archives in which one professor stated: "With respect to the cabinet of curiosities [natural history collection] [...] The state in which I found it was really discouraging – the room was covered with dust; while such curiosities as were perishable were (many of them) past all recovery [...]" (Kolhstedt 1988: 412).

<sup>152</sup> Museum of the History of Science, University of Florence, in [http://www.unifi.it/msn/history/hifr\\_eng.htm](http://www.unifi.it/msn/history/hifr_eng.htm), accessed 7 September 2002.

<sup>153</sup> Apart from the quality and scope of its collections (c. 35,000 holotypes and the collection is particularly strong in insects and molluscs as it covers the whole world), the Zoology Museum at the University of Amsterdam is active in post-graduate teaching, theoretical and applied research, has c. 700 visiting researchers per year and is active in collecting. It raises 50% of its budget from external funds (Dutch Science Foundation, the European Commission, and other sponsors, mostly industrial) (W. Los interview 11 May 2003). Note that the University of Amsterdam plans to dispose of 90% of this Museum in the coming years.

Barbagli, interview 24 March 2003), the collections at the Sedgwick Museum, University of Cambridge (M. Dorling, interview 12 November 2002) and at the Musée de l'École des Mines in Paris (L. Touret and J. Touret, interview, 21 June 2002), among others.

In short, as far as the use of natural history university collections for research is concerned, the situation is somehow confusing, partly because conditions are rapidly changing and partly because some facts seem contradictory. On the one hand, there is a worldwide 'crisis' in the use and funding of specimen-based research, the reasons and consequences of which have been extensively addressed in the literature. Many university collections are neglected, dormant, face severe conservation problems and some are being transferred and reorganised, 'selected' in function of the third mission, dispersed or simply thrown away. On the other hand, many university museums and collections seem to be unaffected by the 'crisis' (or perhaps have overcome it) and are active in research and teaching. The key to their success seems to have been innovative adaptation to current research policies and funding, opening up new research fronts in conservation, ecology<sup>154</sup>, bio-informatics, molecular biology, and applied science, while simultaneously maintaining taxonomic research. International cooperation in systematics is especially important and many university museums have established fruitful partnerships to enhance collection research and accessibility. In the case of museums that have been dormant for decades, the inevitable first step to improve collection-based research is to start almost from scrap by reducing backlogs and making collections known and accessible for researchers – this is currently being done at the Museums of Natural History at the Universities of Tartu, Estonia, and Pavia, Italy. At the same time, there are examples of university collections and museums that – although the collections are significant and active in research and teaching – are threatened with closure. This seems to confirm that at the root of the problem are reasons that are not of a scientific nature and thus transcend the issue of use or the lack of use. Clearly, in many instances thoughtful reflection and long-term vision is required. In many cases, selection is beneficial and can greatly enhance use. It should be noted, that today universities may no longer have the staff adequately qualified to assess, select and eventually de-accession collections.

The situation of other research collections does not seem to be as severe, possibly because the 'crisis' is not generalised, but also because trashing a collection of rocks 'feels' substantially different to trashing a Etruscan vase or a musical instrument from Papua New Guinea.

In anthropology, the use of university collections for research seems to have been declining since the 1960s (e.g. Collier 1962, Parr 1963, Sturtevant 1967). It is interesting to note that French students in May-June 1968 demanded "access to [anthropology] museum collections and introduction to their study" (H. Balfet, in Sturtevant 1967: 639). Sturtevant (1967) conducted a survey of three major anthropological journals in the USA, UK and France and found that, in the previous year, 65 papers were published on ethnological topics. Of these, only five dealt with material culture and of these, three were based on field observations and made no reference to collections. He concluded: "the overwhelming majority [60 to 63 out of 65] could have been written if there were no museum collections at all" (Sturtevant 1967: 632). In the course of the present study, I observed that – with few exceptions – university collections of anthropology and ethnology are little used in research or advanced teaching and students are seldom encouraged to use them for monographs or theses – in the words of one curator-researcher, "par manque d'information et manque d'intérêt" (M. Girotti, interview 1 April 2003). The reasons include the decline of classical concepts such as 'primitive cultures', coupled with a shift towards cultural anthropology, increasing importance of social and familiar relationships, and a shift from an individual-paradigm to a society-paradigm (Sturtevant 1967, L. Peers interview, 21 November 2002) or from the

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<sup>154</sup> Many of these initiatives are within reach of smaller university museums. For example, the Natural History Museum at the University of Tartu has developed a collaborative project between ecologists and taxonomists to build a genebank. The genebank (including DNA sequences from specimens identified by experts and deposited in public herbaria) is important for ecologists for the identification of fungi on plant roots (U. Kõljalg, *in litt.* 18 July 2005). See at *UNITE*, <http://unite.zbi.ee/>, accessed 20 July 2005.

artefact to social organisation (Saville 2002), comparable to the post-1950s shift from the organism-paradigm to the population-paradigm in the natural sciences.

In physical anthropology, the decline in the use of collections for research started in the 1950s. During the early 20<sup>th</sup> century, osteometry based on both museum collections and living people was a major field of study. In the 1950s, sub-specialities such as human genetics and primate ethology – which only employ limited, if any, use of collections – became popular and classical osteometry and anthropometry almost vanished (Sturtevant 1967). Research on human palaeontology, palaeodemography and palaeopathology still depends on skeletal material, but – unless significant in size and scope – older collections rarely constitute proper samples of ancient populations (Sturtevant 1967). There are hundreds of anthropology collections in European universities, the majority of which is only used for limited palaeopathological, forensic or genealogical research. Such collections pose a major challenge to universities. Their uncertain future due to the closure of departments and institutes and the lack of staff raise serious concerns. Contrary to other research collections, these are not collections that can easily find a ‘second life’ through public display and neither can they be disposed of in a ‘normal’ and simple way. University staff ought to be increasingly aware of the legal and ethical issues in connection with the preservation, research, teaching and display of collections of human remains. Countries that have not yet done so, should undertake a complete national survey of physical anthropology collections within their higher education institutions, museums, research laboratories, and academies of sciences. Although I do not necessarily agree with the idea of concentrating university collections in a single location (centralised archives of research collections), in this case the idea is not inappropriate.

One would assume that some disciplines – e.g. archaeology – would be predominantly collection-based. However, the situation of archaeology collections seems to be similar to that of anthropology collections (Morgan 1972, Davies 1984, Hawkes 1982, Saville 1999). According to Saville (2002), archaeology has gone through three major epistemological periods. The ‘three age system’, its subdivisions and the recognition of regional variation within these periods has led to the artefact playing a fundamental role in establishing “chronological horizons and [defining] archaeological cultures in space and time” (Saville 2002). This was the first period and the role of collections in teaching and research was significant. In the second period, artefacts were perceived as evidence of “technological development and typological sequence through time” (Saville 2002). Collections were therefore crucial to understand activities such as hunting and trade through time. For the past 25 years or so, “attention has focused on social, political and economic interpretations of artefact types and groups, on raw material exploitation and acquisition, and on insights into ritual activity [...] using secondary data rather than working directly on collections” (Saville 2002)<sup>155</sup>. This was further aggravated by a general decline in the number of museum archaeologists in the UK. Of the universities visited, few conduct archaeological excavations of their own, but archaeological collections in Germany (e.g. University of Halle-Wittenberg, University of Leipzig), Finland (e.g. University of Turku), France (e.g. Egyptology Collections at the Institute of Egyptology, University of Strasbourg Marc Bloch), Sweden (e.g. University of Uppsala) and even the UK (e.g. Petrie Museum of Egyptian Archaeology, University College London) appeared to be used for teaching and research. In fact, in countries like the

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<sup>155</sup> Note that these theoretical insights based on secondary sources can only be arrived at because primary sources were previously studied. As Saville (1999: 194) put it, there was a time when “there existed the time, expertise and resources to enable objects to be properly documented, studied and published” (Saville 1999: 194). Similarly, Wheeler (2004) noted that most contemporary molecular research in the life sciences would be of little value to science without the background knowledge that is available because collections were studied, documented and published. Indeed, “without [the] historical background knowledge of interesting anatomical structures or behaviours, [...] molecular phylogenies would have little or no interest to science. [...] Molecular phylogeneticists are in essence spending the intellectual capital that has been banked by morphologists since the sixteenth century” (Wheeler 2004: 573-574). What will happen to these contemporary research trends if this intellectual capital is undermined by decades of gaps in documenting and studying collections, by the absence of regular revisions, monographs and catalogues, or by discarding collections altogether?



UK, where the decline had been more acute, “the situation is increasingly turning around again [...] so perhaps the alienation phase is drawing to a close” (A. Saville, *in litt.* 7 January 2003), which seems to confirm that the use of collections is driven by fluctuating trends rather than actual scientific motives. The cause-effect association between lack of use and lack of scientific relevance is not only unsound but likely to be dangerous, leading to *ad hoc* decisions about the fate of collections.

### 6.3 Second generation collections: research

“The community of scholars consists of two groups – one may even say two parties. The university chairs are mostly occupied by people who like to call themselves historians, and in the museum offices you meet the curators. The historians strive especially from the general to the particular, from the abstract to the concrete, from the intellectual to the visible. Curators move in the opposite direction, and both mostly never get further than half-way – incidentally, without meeting each other.”  
M. Friedlaender, quoted in Hester (1967: 246)

For second generation collections, research problems seem to be somehow simpler: there has been no decline in use because there never was much, if any, use. As Lindsay (1962: 242) stated, “The problem with the science museum or the history museum is not that the historian has turned away from it, it is that the historian has never been induced to recognise it in the first place”.

Generally speaking, historians of physics, medicine, biology or technology do not use objects as primary sources of information. Although objects seem to become increasingly relevant – at least in the history of scientific instruments, where methodologies such as experimental history and ‘performative’ historiography of science are becoming important (Sibum 2000), little of history research is object-based or makes significant use of three-dimensional sources. In general, historians mainly work with words – they consult books, articles, letters, and other archival sources. The divorce between ‘word’ and ‘object’ is not limited to university collections or to the history of science, encompassing research in anthropology, history of art, social history, among others. It has previously been discussed by Hester (1967), Fleming (1969), Greenaway (1984), Lubar & Kingery (1993), Corn (1996), Kingery (1996), among others.



Fig. 6.1 – Collection of history of medicine, Karl-Sudhoff Institute, University of Leipzig, a second generation university collection, incorporating c. 5,000 objects. The collection is used for research in history of medicine (six PhD students doing collection-based theses at the time of visit). See Beutler (2002) (photo reproduced with kind permission)<sup>156</sup>.

<sup>156</sup> See website with online catalogue at *Medizinhistorische Sammlung* <http://www.uni-leipzig.de/~ksi/ksi600.html#Medizinhistorische%20Sammlung> accessed 20 July 2005.

At the core of the word *vs.* object divide is the 'sacredness' of the written word in western culture, as if written words glow with objectiveness and truth. Ultimately, this 'sacredness' is the reason why we hold books in high regard and feel shock and outrage when libraries are destroyed. The divide is reminiscent of timeless prejudices of mankind, the notion that the world of ideas is intellectually superior to the world of manmade things, of abstract being superior to concrete, of theory being superior to practice, of pure research being *better* than applied research or engineering. In fact, the word *vs.* object debate seems to be the 2,500 years spirit *vs.* matter revisited in the museum context (Lourenço 2002).

In addition, there may be other divides. Given that the majority of collections of historical instruments and equipment are saved and assembled by professors of physics, medicine, mathematics, the individual professors may feel marginalised in their own scientific departments. One respondent in charge of a university collection of scientific instruments, who wished to remain anonymous, said "I am a pariah in my own department [of physics] and I have been persistently marginalised in my career in favour of colleagues who do condensed matter physics or particle physics" (Anonymous, *pers. comm.* 2003). Similarly, Pasquale Tucci, full time professor and director of the Osservatorio Brera at the Institute of Applied Physics (University of Milan) explained that "[...] the standards and career evaluation process are the same, but we have to work twice as much as other colleagues to get to the same position" (P. Tucci, interview 25 March 2003). This is strikingly similar to the low regard that some natural history curators say they feel from other colleagues in departments of biology or earth sciences. However, in physics or mathematics the situation is even more paradoxical given that many scientists and engineers are often among the first to say that 'traditional' historians (i.e. coming from 'the humanities') lack the appropriate scientific training to do history of science.

For second generation university collections, the consequences of these divides are multiple. Firstly, they are rarely used by students, teachers or researchers, and the majority is confined to the third mission (public display), when not in storages or decorating offices or corridors. Secondly, many curators and keepers have received inadequate training in scientific material culture (Taub 2003), which may limit their research to "the mechanics of compiling lists" (Fenton 1995: 225). Thirdly, given that preserving, studying and interpreting second generation collections depends on the voluntary initiative of professors, if they are not stimulated by their own scientific departments, collections may be at risk.

There are several exceptions. Among second generation collections, there was collection-based research in several of the museums studied – for example, the Musée des Arts et Métiers, the Theatre Museum at the University of Bristol, the Jardin des Sciences project at the University of Strasbourg Louis Pasteur, and the Museum of the History of the University of Pavia. Bennett (1997) explained how the collections of scientific instruments at the Whipple Museum (Cambridge) and Museum of the History of Science (Oxford) played an important role in teaching and research in the history and science and were at the basis of the creation of the corresponding academic departments of history of science. Both the Oxford and Cambridge collections continue to play a significant role in teaching and research, and this engagement is conveyed to the general public<sup>157</sup>. Similarly, the Gabinetto Volta (Museum of the History of the University of Pavia) – where there is an associated Chair in the History of Science – has played a remarkable role in teaching and research in the history of science resulting in rich web-based resources accessible to the scientific community and the general public alike. These include 3D animations of physics concepts, developed around the Volta collection, from a) a historical viewpoint, b) an operational viewpoint, and c) qualitative and

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<sup>157</sup> For example at the time of the visit (November 2002), the Whipple was presenting a small temporary exhibition – *Representations of the Double Helix* – conceived and developed by molecular biology researchers, Soraya de Chadarevian and Harmke Kamminga, from the University's Laboratory of Molecular Biology. The Museum of the History of Science holds regular collection-based demonstrations for the general public (the so-called *Table Talks*), among other object-based special events and educational programmes.

quantitative approaches (F. Bevilacqua, interview 20 March 2003)<sup>158</sup>. Such interpretations of collection-based research for diversified audiences require considerable scholarship, which is often not recognised as such in academic careers.



Fig. 6.2 - The Whipple Museum (University of Cambridge) stimulates students from the Department of History and Philosophy of Science to develop collection-based research. This may involve writing an essay and developing an exhibit for the permanent exhibition. One of the so-called 'Case Studies Showcases' is depicted here (detail on the right). The student arranged the showcase, selected the objects and wrote the labels. The essay is displayed next to the showcase (photo reproduced with the kind permission of the Whipple Museum).



Fig. 6.3 – Display in the new *Science of Surgery* gallery of the Hunterian Museum at Royal College of Surgeons, including public interpretation of teaching techniques in contemporary surgery (photo Hunterian Museum Archives, RCSE).

Is it possible that second generation collections are more likely to be used for teaching and research when they are associated with a department of history of science or have a supporting post-graduate course of history of science? Or is it more likely to be a matter of

<sup>158</sup> See the resources at Gabinetto Volta, in <http://ppp.unipv.it/web/>, accessed 9 July 2005.

individual initiative? Or both? This is an issue that deserves comparative studies between European countries.

### 6.3.1 Preserving the distinct nature: documenting and researching the history of teaching and research

There are three aspects related to research into second generation university collections that have not been given sufficient attention by historians and university museum curators alike: the role of tangible marks of teaching and research, the role of contextual documentation, and the role of university workshops.

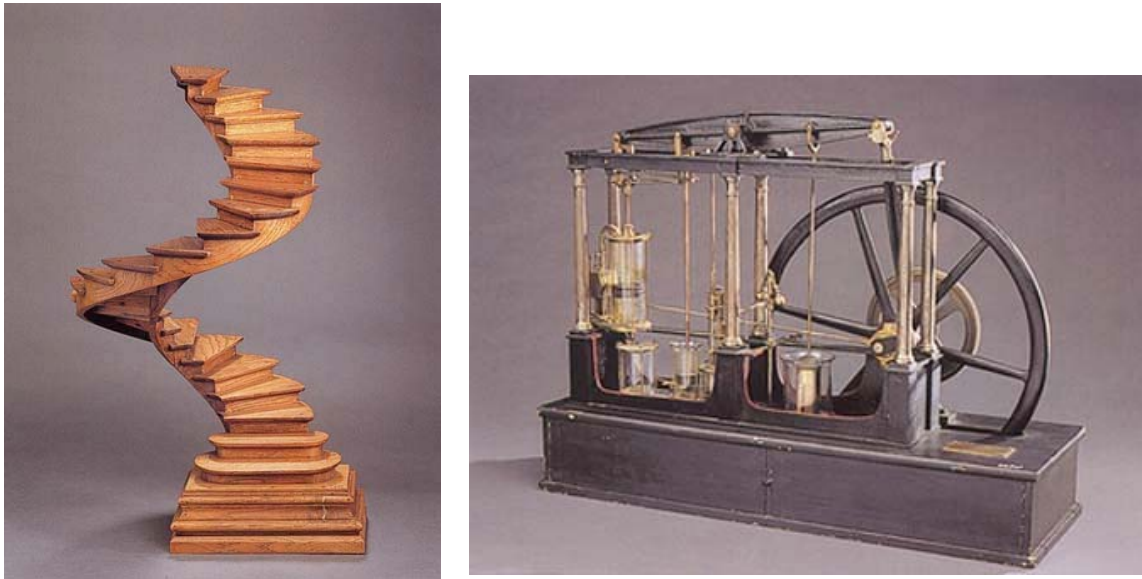


Fig. 6.4 – Two historical models from the collection of the Musée des Arts et Métiers, CNAM, Paris. Models are common in teaching collections, both in the past and present-day. On the left a model of a spiral staircase by Delespeaux, 1867 (Inv. No. 7885) and on the right a demonstration model of James Watt's steam engine by Clair, early 19<sup>th</sup> century (Inv. No. 5094-I). Images published in Ferriot *et al.* (1998: 39, 83) (H. Maertens, reproduced with the kind permission of the Musée des Arts et Métiers).

Second generation university collections are historical collections of teaching and research objects. Before these objects suffered loss of context and were incorporated in a collection, they were used for research and teaching – typically, integrated in a laboratory apparatus or a classroom demonstration. These objects were intensely used and re-used by researchers, lecturers and students, adapted and improved and cannibalised until there is practically nothing left of them. Many were acquired from commercial instrument makers and adapted for a variety of purposes in the workshop of the department or institute. Others were conceived and constructed in these workshops. Except for a few self-sufficient demonstration models or machines, they were hardly ever used in isolation and usually integrated multiple apparatuses with specific research and study purposes. As discussed in chapter 4, these practices date back to the 18<sup>th</sup> century cabinets of natural philosophy and continue until the present in university departments of condensed-matter physics, geophysics, biochemistry, ophthalmology, radiology and nuclear medicine, among many others.

Traces of this (often decades-long) process are visible in instruments and equipment – objects bear the tangible marks of teaching and research. More than documenting scientific principles and concepts, the story these objects have to tell is the story of *learning and knowing about* scientific principles and concepts. More than the history of physics and medicine, they are material evidence of the history of knowledge in physics and medicine.



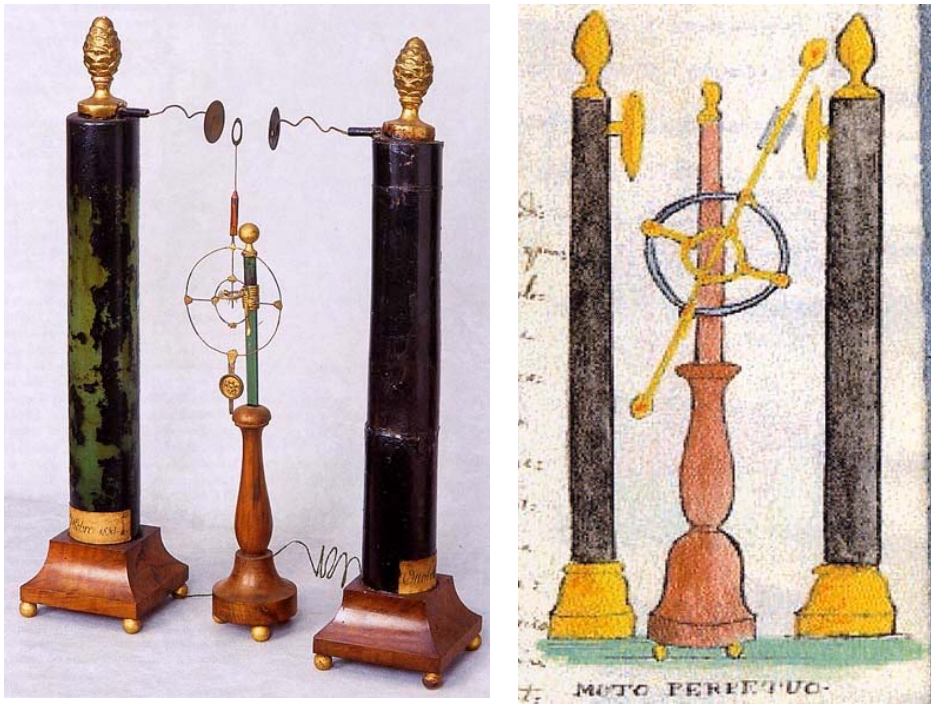


Fig. 6.5 - The Zamponi Pendulum (1830, Inv. No. 249), Museum of the History of Physics, University of Padua, here depicted alongside a drawing done by one of Giuseppe Zamponi's students (*Ms. Zamponi*, 1840; Collezione Beltrame). The student wrote *moto perpetuo* ('perpetual motion') on the drawing. These images were published in the catalogue of the exhibition *Bagliori nel vuoto* (Peruzzi & Talas 2004) (Reproduced with the kind permission of the Museo di Storia della Fisica, Università di Padova, and G. Beltrame).

Instruments and equipment can be displayed and interpreted in an infinite variety of ways and for innumerable purposes. However, the museum has the responsibility to move forward from a certain 'antiquarian' view of collecting<sup>159</sup> and document, for future research and public interpretation, the context in which equipment was used. Documenting the context includes awareness of the marks of teaching and research objects may bear, their study and their preservation. Documenting the context not only comprises assembling catalogues and manuals of instruments (which is standard procedure), but also directories of professors, contents of courses, syllabuses, teachers' class plans and notes, students' notes and drawings (fig. 6.5), apparatuses schemes, laboratory results, correspondence between professors, etc. — documentation that professors and researchers often take with them upon retiring or, when it stays in the laboratory, is among the first things to be dispersed and lost.

Documenting the context also includes listening to and recording researchers, students and teachers who have used and adapted the instruments. One example of a contextual approach to documentation is the Archivio Scientifico e Tecnologico at the University of Turin (ASTUT), created in 1991. The Archivio collects scientific and technological objects, but also "the whole context", such as personal documents, furniture, relevant architectural elements (lamps, drawers, closets' handles, etc.), books, photographs, videos and oral history by researchers, teachers and students, with the aim of documenting the material evidence of teaching and research at the University of Turin and local laboratories (M. Galloni, interview 3 April 2003)<sup>160</sup>.

<sup>159</sup> Object is viewed *per se*, particularly beautiful ones.

<sup>160</sup> The University of Turin has made an internal regulation the compulsory report of any obsolete equipment across all academic departments to the Archivio before it is disposed of. Even if, due to lack of space or other reasons, the equipment is not incorporated by the Archivio, staff goes to the laboratory and documents, usually on video, the last hours of use of a given instrument complemented with *in situ* explanations by researchers. Although the Archivio rarely develops exhibitions (as Professor Galloni put it, "we consider ourselves a study

Documenting the context also implies an increasing awareness of the role of technicians and craftsmen in university workshops. In the present as in the past, instruments are adapted or built from scratch to fit the needs of a particular experiment, faulty instruments are repaired, parts are removed from obsolete equipment and inserted into other instruments, and replicas are made (fig. 6.6).



Fig. 6.6 – On the left an instrument to determine the mechanical equivalent of the calorie, acquired in 1930 from the famous German instrument maker Max Kohl by the Faculty of Sciences, University of Porto. On the right (behind another instrument) an exact 1:1 replica made in the workshop of the Department of Physics by an in-house technician. Both instruments are today part of the collection of the Museum of Science, Faculty of Sciences, University of Porto (original Inv. No. 1138/1929 and replica Inv. No. 2727/1962) (photo reproduced with the kind permission of the Museum of Science).

These workshops and their technicians/craftsmen have a significant responsibility for the diversity and distinct nature of second generation university collections. However, unless they are famous instrument makers like Musschenbroek for example, they do not seem to attract much attention from curators or historians of science. Holland (2002) has called for more research into in-house instrument makers and their role in the development of scientific research.

#### 6.4 First and second generation collections: teaching

Arguments and reasoning brought forward in relation to research collections, equally apply to teaching collections. Because much of university teaching is *de facto* teaching *for* research, teaching collections are often difficult to distinguish from research collections. A decline in collection-based research in a given discipline is most likely accompanied by a decline in collection-based teaching. As D.J. Mann, collections manager at the Oxford University Museum, put it: “all students learn now is ecology – and this requires field observation, not museum specimen observation” (D.J. Mann, interview 18 November 2002). At the Marischal Museum (University of Aberdeen), a museum of anthropology, archaeology, and fine arts, the

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archive”), these materials are often used for the public interpretation of the history of research, both in exhibitions developed by the University of Turin or other entities, as well as in publications (M. Galloni, interview 3 April 2003). See Slaviero & Galloni (2000).



classroom that exists near the exhibition is regularly used for teaching. When asked whether professors used objects in their classes, the answer was “They rarely handle objects – they usually come for our slide collection” (A. Taylor, interview 3 December 2002).

The decline in the use of teaching collections can occur for reasons other than strictly scientific ones. Teaching collections are assembled and organised according to the level of studies and given sections of the curricula. Except in advanced levels of studies – where teaching and research collections may indeed be remarkably similar – the organisational criteria of teaching and research collections are often different even in the same museum. Teaching collections typically have simpler organisational criteria, ones that make a given point more immediately evident to students. At the Petrie Museum of Egyptian Archaeology (University College London), the research collection (which is also the main collection) is organised typologically (ceramics, beads, etc.), but the three teaching collections are organised chronologically and by excavation site (S. MacDonald, interview 25 November 2002). At the Marischal Museum, the main collection is organised geographically, but the teaching collections are organised thematically (Victorian collection, Roman collection, etc.) (A. Taylor, interview 3 December 2002). At the Musée de Louvain la Neuve (Université Catholique de Louvain), an art, archaeology and anthropology museum, the general collection is organised thematically (art, pre-history, etc.) and by historical periods, but the collections used by students of archaeology and history of art are organised by materials and techniques (engravings, wood, ceramics, etc.) (B. Van den Driessche, interview 25 November 2004)<sup>161</sup>.

These strong connections with particular courses and curricula define the distinct nature of teaching collections and have obvious implications in use. If a discipline (e.g. mineralogy or geology) is eliminated and the department closed, teaching collections become automatically redundant – the same does not necessarily apply to research collections. At the Oxford University Museum, mineralogy has not been taught for 30 years and mineralogy teaching collections are now considered ‘historic’, yet there still exists collection-based research (M. Price, interview 19 November 2002). It is also possible that, when a department is closed, both teaching and research collections are discarded – this happened at the department of geology at the University of Amsterdam in 1983 and at the Catholic University of Louvain in 2002. In the case of Amsterdam, collections were transferred to other museums, but in Louvain the fate of the collections is unknown, as far as I have been able to determine.

Often, the mere fact that a given discipline changes status in the university can impact on the use of collections for teaching. For example, at the University of Pavia the discipline of systematics was compulsory, but recently it became optional for biology *laurea* students due to a national curricular reform (C. Violani, interview 24 March 2003). Although seemingly a detail, this amounted to an effective change of status and impacted both the use of collections for teaching (which diminished as a result of the decrease in number of students) and the perceptions that the university has of collections.

Reasons such as “exigencies of teaching”, “the diminished status of geometry in some universities” and the “increasing diversity of mathematics” (Gray 1988: 68) have led to the decline in use of mathematical models in the 1940s. However, Gray added: “I know of places where they are used and places where they are not” (Gray 1988: 68). There are professors of mathematics who still use these models or versions adapted to contemporary times – examples were found at the University of Milan and the Martin-Luther University of Halle-Wittenberg. For more on the history and typology of mathematical models, see Fischer (1986).

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<sup>161</sup> In these examples (Petrie, Marischal and Louvain-la-Neuve) the teaching collections are also handled by the general public. This is common in university museums that follow the three missions.



Fig. 6.7 - Two images of a collection of c. 65 models for the teaching of geometry from the late 19<sup>th</sup> century to early 20<sup>th</sup> century, on display at the Giuseppe Peano Library, Department of Mathematics, University of Turin. These models were extensively used until World War II, but then put aside and stored in a locked closet. In the late 1980s, they were found by G. Ferrarese, Professor of mathematics, who studied, restored and catalogued them and arranged for their display in the library. See Ferrarese & Palladino (1998) and Giacardi & Roero (1999) (photo reproduced with the kind permission of the Department of Mathematics, University of Turin).



Fig. 6.8 – Teaching collection of models at the Department of Mathematics, University of Milan. The collection is intensely used today in topology courses by Professor Maria Dedò. Left image: a model for the teaching of surfaces and right image: a torus to explaining the solution of the classical 3-houses problem. Object-based teaching in mathematics has led Professor Dedò to develop a permanent exhibition of mathematics in the Department<sup>162</sup>, as well as exhibitions for other museums (e.g. the exhibition *MathMilano* [2003-2004] at the Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci, Milan).

<sup>162</sup> The exhibition *Simmetria, giochi di specchi* opened to the public in 2000. See website at <http://specchi.mat.unimi.it/>, accessed 20 July 2005. See also Dedò (2001).

A teaching collection can also become less used or be put aside altogether due to its replacement by other collections of more explanatory power. An illustrative example is the transition from wax models to the study of real body parts in anatomy in the 19<sup>th</sup> century. When preservation techniques improved, interest in wax models declined because learning from 'real' anatomical preparations was considered more beneficial and accurate (Giacobini 1997)<sup>163</sup>. Similarly, pathological collections were often organised by dividing the total effects of one disease in a single person, in other words, separating the organs: "Students became confronted by ponderous arrays of post-mortem material consisting of large groups of the same organ showing different pathological changes" (Duggan 1964: 283). When the concept of disease changed in the 1950s, it became more important to have associations of organs from the same body together. Thus, collections lost demonstrative value and became obsolete for teaching. Clearly these collections are of great importance for understanding how our knowledge about health and disease evolved through the ages.



Fig. 6.9 – First generation teaching collection of history of art and architecture at the Faculty of Theology, Martin-Luther University of Halle-Wittenberg. The slides are catalogued and used in conjunction with the collection of artworks and a collection of prints and books held at the faculty library. Many of the architectural elements in the slides are from buildings that no longer exist, making them even more valuable for study. This collection has been in use for teaching since the 19<sup>th</sup> century (photo reproduced with the kind permission of the Martin-Luther University of Halle-Wittenberg).

The use of teaching collections can also decrease due to the introduction of modern technologies or visual aids. A typical example is the introduction of photography and slides in higher education courses in the history of art – in fact the two are almost contemporary events. The advantage of first hand observation of originals, instead of reproductions, has been a constant claim in 20<sup>th</sup> century history of art teaching (Read 1943, James 1960, Rosenberg 1964-65, Robertson 2000). However, two-dimensional images can enhance learning by allowing observation and comparison of remote, inaccessible or lost artworks. Often, history of art, (cultural) anthropology and archaeology courses developed slide collections together with collections of artworks and artefacts – an example is the

<sup>163</sup> This led to the gradual and inevitable decline of wax models for teaching to the point that when a student said something stupid it was not uncommon for the professor to promptly ask: "Where did you learn anatomy – in wax models?" (G. Giacobini, interview 31 March 2003).

archaeology and history of art teaching collections at the Faculty of Theology, Martin Luther University of Halle-Wittenberg (fig. 6.9).

New technologies also opened new possibilities to the field of architecture and the so-called graphic arts, resulting in a decline in the use of collections of models, *maquettes*, and plaster casts for teaching. Perhaps more surprising is the decline in the use of teaching collections in faculties of medicine, reported at least from the mid- to late 1940s (Duggan 1964). Although many professors maintain that dissection is more important than ever, not only for the teaching of human anatomy but also for more subtle lessons which it can convey on the meaning of being a doctor, computerised scans and three-dimensional software are now of widespread use in faculties of medicine and often are replacing handling specimens for study altogether (J.-C. Neidhart, O. Guedel, interview 19 May 2004, Zuger 2004). More worrying perhaps is the status of the study of human anatomy as a whole, which seems to be in trouble in some curricula. Recently, Frank Gonzalez-Crussi, a retired pathologist and historian stated that “Much of the traditional [human] anatomy curriculum is irrelevant to medical practice and might easily be eliminated” (F. Gonzalez-Crussi, cited in Zuger 2004: 1). Apart from the effect a statement like this (which is not consensual) has on the perception of anatomical and pathological collections, one cannot help wondering whether first-hand observing, handling and studying specimens at elementary graduate level is not more beneficial for future medical doctors and surgeons than learning about human bones and tissues through software.

Undoubtedly, collection-based teaching frequently results from persistence in personal contacts between museum staff and university departments – “we *do* have to convince them” (T. Buttrey, pers. comm. 14 November 2002). However, I have encountered many examples of first and second generation collections being used for teaching, possibly even more than for research – for example at the Museum of History of Science at the University of Oxford, the Whipple Museum at the University of Cambridge, the Herbarium at the University of Leipzig (fig. 6.10), the Zoology Museum at the University of Cambridge (fig. 6.11), the Department of Earth Sciences at the University of Cambridge, the Musée de Louvain la Neuve at the Catholic University of Louvain, the Ashmolean Museum at the University of Oxford, the Gabinetto Volta at the University of Pavia<sup>164</sup>.



Fig. 6.10 – A teaching herbarium (*Studienherbar*), one of the herbaria of the University of Leipzig. Note that the herbarium sheets are covered with plastic to resist intensive student handling. The name of the specimen is presented at the back of the sheet – in this case *Ligustrum vulgare* (Oleaceae) (photos reproduced with the kind permission of the Botanical Garden and Herbaria, University of Leipzig).

<sup>164</sup> Note that the museums cited as active in collection-based teaching were also cited as active in collection-based research. This is probably not coincidental and once one collection is actively used, it becomes active in both.





Fig. 6.11 – The Museum of Zoology, University of Cambridge has a teaching lab inside the Museum – where students are given practical demonstrations, observe and handle specimens from the collection, and have practical assessments (exams). A student can actually be seen on the left picture. As a teaching aid, a separate desk is provided with reference books and papers for student use. Right image: one of the desks where a fossil is being studied by a student (photos courtesy of the Zoology Museum, University of Cambridge).



Fig. 6.12 - Art students at the Tartu University Art Museum, October 2003 (photo reproduced with the kind permission of the Tartu University Art Museum).

Furthermore, when collection-based teaching does occur, it may transcend the disciplines represented in the collection. For instance, apart from natural history collections being frequently used by art students (as found in practically every collection visited), professors of English Literature use the numismatics collection at the Fitzwilliam Museum (University of Cambridge) (M. Blackburn, interview 14 November 2002), and arts and crafts courses use the Ashmolean collection of musical instruments (J. Whiteley, interview 20 November 2002). More traditional teaching links do also occur, as in the optional seminar 'Egyptian Artefacts' (UCL's degree in History), taught at the Petrie (S. MacDonald, interview 25 November 2002) or art students using plaster casts at the Art Museum of the University of

Tartu (Estonia) (fig. 6.12). The MSc in Material Anthropology and Museum Ethnography at the Pitt Rivers is another example of collection use for training (in this case, museum anthropologists) (L. Peers, interview 21 November 2002). Clearly, there are many possibilities for university museums and collections to increase the use of their collections for both teaching and research.

### 6.5 The third mission: The tendency for integration

Museums are being renovated and recreated in European universities. The Museum of Musical Instruments at the University of Leipzig is currently moving to a renovated building. The Utrecht University Museum was renovated in 1996 (fig. 6.17). The renovated Musée des Arts et Métiers was inaugurated in Paris in 2000 and so was the Palazzo Poggi Museum at the University of Bologna. In July 2003, the renovated Manchester Museum (University of Manchester) opened to the public and in October the same year the Helsinki University Museum opened in the restored *Arppeanum* building<sup>165</sup>. The Fitzwilliam Museum (University of Cambridge) inaugurated its renovated courtyard in June 2004. The Groningen University Museum was renovated and opened to the public in June 2004.



Fig. 6.13 - Entrance to the new Hunterian Museum at the Royal College of Surgeons, London (photo Hunterian Museum Archives, RCSE).

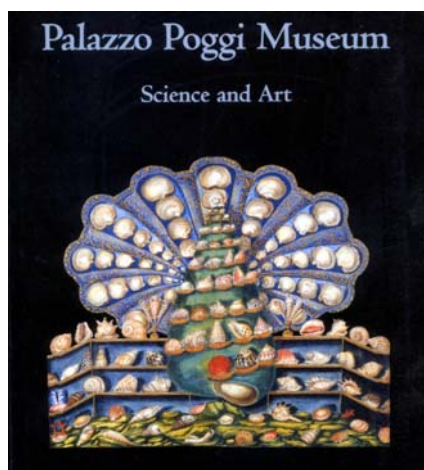


Fig. 6.14 - Cover of the catalogue of the Palazzo Poggi Museum, created in 2000 and presenting some of the most significant historical collections from the University of Bologna. See a description of the Palazzo Poggi Museum, innovative in its integrated approach to science and art in Tega (2002).

<sup>165</sup> The new Helsinki University Museum was awarded the Museum of the Year Prize by ICOM-Finland in 2004.



In 2005, the new Museo di Fisica at the University of Naples opened in January and the new Museum of Evolution at the University of Uppsala in February. The new Hunterian Museum at the Royal College of Surgeons of England (London) was inaugurated last February (fig. 6.13). Both the new Museum at the Royal College of Surgeons of Edinburgh and the Museum of the English Rural Life at the University of Reading opened in July. The new Museum of the North at the University of Alaska Fairbanks (USA) will be inaugurated September 2005. The Sainsbury Centre for Visual Arts at the University of East Anglia is being expanded and will open in the autumn, while the renovated Museum of Human Anatomy at the University of Turin will also be inaugurated in autumn. The renovated Laboratorio Chimico at the Museum of Science, University of Lisbon, is due to open in 2006 (fig. 6.15).

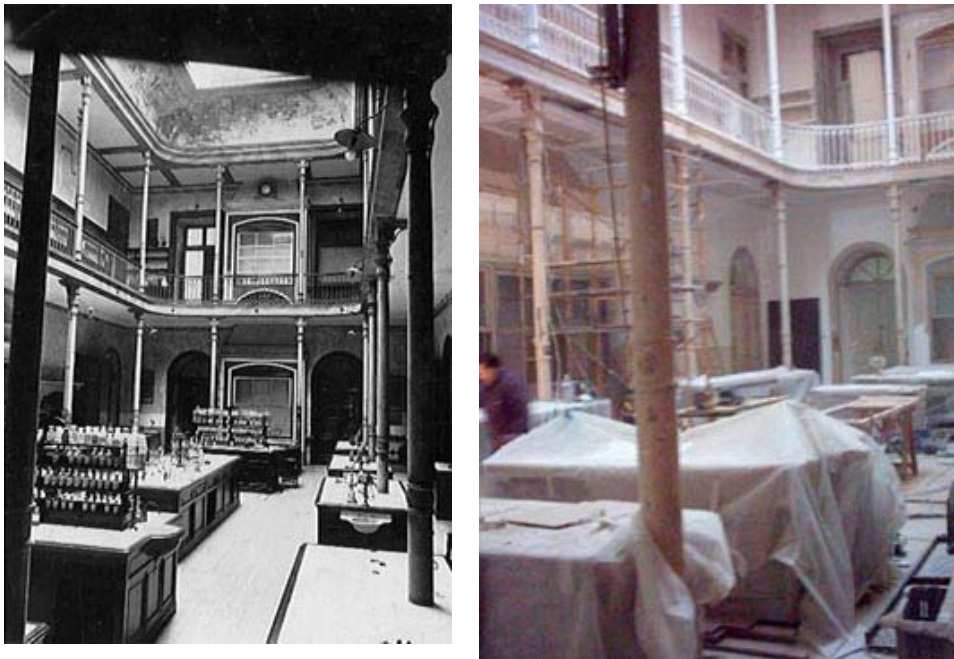


Fig. 6.15 – The 19<sup>th</sup> century Laboratorio Chimico of the University of Lisbon which includes an amphitheatre (to the right of both images) is part of the Museum of Science. Chemistry classes were taught here until 1998. As seen in the right image, the Laboratorio is currently being restored and is due to open in 2006 (photo taken in February 2005). The photograph on the left probably dates from the early 20<sup>th</sup> century. Today, these early laboratories of chemistry are rare in European universities as the majority were readapted while research and teaching evolved. In some cases, only the walls, a working bench or a chimney are left. See Ramalho (2001) and Santa-Bárbara (2001) (left photo: Museum of Science Archives).



Fig. 6.16 – Restoration works at the 18<sup>th</sup> century Laboratorio Chimico, University of Coimbra in February 2005. The Laboratorio also includes an amphitheatre. During restoration, a couple of 16<sup>th</sup> century architectural elements (window and pulpit, not depicted) were discovered (reproduced with the kind permission of the University of Coimbra).

More university museums are at a project stage. The Ashmolean Museum of the University of Oxford plans a major renovation for the coming years. The Musée de Louvain-la-Neuve has a project for a new building. New projects exist for the collections at the University of St. Andrews and the Museum of Natural History at the University of Pavia. In 2003, the Museo di Storia Naturale at the University of Florence initiated major structural reforms that are ongoing. Patras University in Greece also has a Science and Technology Museum at project stage (Theologi-Gouti 2003). The University College London will re-house its archaeology, art and library collections, including the Egyptology collections from the Petrie Museum, in the new Panopticon, due to open in 2008<sup>166</sup>.



Fig. 6.17 - Utrecht University Museum, created in 1936 and renovated in 1996. The Museum integrates first and second generation collections: history of medicine, dentistry, physics, natural history, university history and student life, and art collections. The Museum also includes the *Oude Hortus* (Old Hortus), seen on the left (photo S. de Clercq).

After having gone through a process of collection assessment, selection and (sometimes) disposal as described earlier in this chapter, many universities have reorganised their museums and collections. Although different countries are at different stages in this process, the emerging tendency is clear: universities are increasingly integrating collections in a single museum or under a single management structure. The aim seems to be threefold. On the one hand, universities are seeking less expensive and more efficient management models for buildings, collections and staff. On the other hand, they aim at providing a 'second life' to 'orphaned' or 'dormant' collections, particularly first generation collections. Lastly, being increasingly aware of the importance of establishing bridges with society, universities are seeking 'windows' on the local community and the public at large.

<sup>166</sup> Panopticon means 'all-visible' in Greek and it act as UCL's 'window on the world', providing a new entrance to the university campus" (MacDonald in press). See more at the Petrie Museum's website, <http://www.petrie.ucl.ac.uk/index2.html>, accessed 10 July 2005. See also e.g. Morris (2002).



Fig. 6.18 - The Gustavianum Museum at the University of Uppsala, created in 2000. The name of the Museum derives from the building – the Gustavianum – which dates from 1620. The Museum preserves and interprets the history of the University of Uppsala from 1477 to the present, comprising first and second generation collections of Egyptian archaeology, history of science and medicine, numismatics and art. The Museum also includes the Anatomical Theatre, built in 1663 under the supervision of Olof Rudbeck the Elder (photos F. Galli, reproduced with the kind permission of the University of Uppsala).

One common structure or museum is easier to coordinate and manage than 20 smaller museums scattered throughout the university. One common structure or museum is more visible both within the university and to society. One common structure is more likely to receive public funds from the cultural heritage sector (read: ministries of culture or equivalents, typically the funding bodies of museums). As the director of one university museum said, “Today, there seems to be more money for collections from ‘culture’ than from ‘science’ ” (W. Los, interview 11 May 2003)<sup>167</sup>.

From the perspective of university heritage, these integrative projects present challenges and risks, but at the same time provide a remarkable opportunity for recognition. If the new projects manage to balance meaningful public interpretation with the relevance of collections for future research and teaching (balance between the three missions) and if they are provided with the conditions (funds and staff) to do so in a sustainable and long-lasting way, then university collections may well be able to achieve their potential – possibly more fully so than ever before.

### 6.5.1 The different forms of integration

Although the process that led to recent developments was essentially the same across Europe – evaluation of collections and users, often accompanied by selection – and the tendency to integrate collections is also widespread, the form that this tendency assumes varies significantly from university to university.

<sup>167</sup> Most of the funds for these projects come from the private sector, the European Commission, local or regional authorities, ministries of culture and the heritage sector in general. The financial contribution of universities is minimal. For example, in the case of the Utrecht University Museum, the University only assumed 15% of the total costs of renovation (S. de Clercq, interview 5 May 2003). The renovation of the Musée des Arts et Métiers was included in a series of major cultural initiatives commissioned by President Mitterrand (*Grands Travaux*) and funding was provided through special subvention. Typically, higher education institutions provide the space and continue to assume staff and operational costs, while other funds need to be found elsewhere.



Universities that already had museums may have chosen to expand and renovate these. Collections scattered around different departments were thus integrated in existing museums, either because they were orphaned, not used for teaching and research or simply because departments did not want to keep them any longer. At the University of Utrecht, several research and teaching collections of medicine and natural history were integrated in the Utrecht University Museum. The Helsinki and Groningen University Museums also integrated first generation collections (and museums). At the time of writing, there is hope that the anthropology collections at the Institute of Medical Anthropology, Humboldt University Berlin, will be transferred to the Museum of the History of Medicine/Virchow House due to imminent transfer of the Institute (U. Creuz, interview 10 June 2004).

Sometimes, when museums did not exist, they were purposefully created. The Palazzo Poggi Museum at the University of Bologna, created in 2000 (though the building dates from the 16<sup>th</sup> century), assembles historical collections of natural history, history of physics, archaeology, and medicine, among others. The Gustavianum Museum, also created in 2000, gathers all significant historical collections from the University of Uppsala (archaeology, history of physics, medicine, numismatics, art) except natural history, for which a new museum – the Museum of Evolution – was inaugurated in February 2005.

In some recent projects, collections are not necessarily assembled under the same roof. For example, the new museums for the Universities of Strasbourg Louis Pasteur (*Jardin des Sciences* project) and Montpellier I, II & III (*MuseUM* project) encompass the coordinated integration of mission, strategy and activities of several museums and collections without any significant movement of collections. Likewise, the new Museo dell'Uomo at the University of Turin (still at project stage) aims at integrating the Museum of Human Anatomy, the Cesare Lombroso Museum (a criminal anthropology collection), the Museum of Anthropology and Ethnography and research collections from the Laboratory of Human Palaeontology.

In other cases, museums and collections have remained independent, but were provided with a common 'umbrella' structure. This has been the case in most universities in the UK, which with few exceptions have maintained museums and collections within the departments, but created special committees and units within the university structure to manage them – for example the University Museums and Collections Services at the University of Reading, the University of Dundee Museum Services, the Museums and Heritage Committee at University College London (fig. 6.21), as well as similar cross-departmental units at the Universities of Oxford, Cambridge, Manchester, St. Andrews, among others. This was also the approach followed by the majority of Italian universities when they began creating museum systems in the late 1990s and early 2000s (see chapter 5): museums and collections stay in departments and institutes, but the *sistema museale* assumes a coordinated management and part of the financial responsibility<sup>168</sup>. For example, the museum system at the University of Bologna is provided with a status equivalent to a department, it is given autonomy and its own statute<sup>169</sup>, has an appointed director and a dedicated annual budget, which is divided by the museums and collections on a quota basis, depending on surface area, staff and number of visitors (F. Bonoli, interview 12 March 2003). Other universities have also developed formal or informal 'umbrella' structures – e.g. the 'Groupement de collections de l'Université Claude Bernard' in Lyon, among others.

<sup>168</sup> Compared with Pavia, Florence, Padua or Turin, the University of Bologna developed a hybrid system: some collections are at the Palazzo Poggi Museum and some have remained in departments and institutes. Clearly, there are no prescribed recipes; each university is a singular case that needs to be evaluated carefully.

<sup>169</sup> The *Regolamento di Costituzione e Funzionamento del Sistema Museale d'Ateneo* (see at [www2.unibo.it/musei-universitari/statuto.htm](http://www2.unibo.it/musei-universitari/statuto.htm), accessed 13 January 2003). The Regolamento lists 17 museums and collections at the University of Bologna.



Fig. 6.19 – The restored Museo di Anatomia Umana, University of Turin, to be inaugurated in September 2005. The Museum was created by Luigi Rolando in 1830 and the architectural similarities to a cathedral are striking. Today, the Museo is part of the Museo dell'Uomo project, aimed at integrating several museums and collections from the University of Turin (photos: A. D'Angelo (left) and C. Cilli (right), reproduced with the kind permission of the Museo di Anatomia Umana).

To whom these museums and structures respond in the university hierarchy varies from case to case. This may be a crucial factor in ultimate success or failure. Humphrey (1992a,b) and Birney (1994) suggested that the higher the authority level of the administrator immediately above the museums and collections, the greater the probability that universities will be making budgetary decisions based on the museum's actual nature and importance, thereby improving overall recognition and efficiency. In Italy, the different museum systems tend to be under the direct jurisdiction of the rector or the vice-rector. At the UCL, the museums and heritage committee is under the University Council (fig. 6.20). At the University of Lisbon there is no formal coordination structure yet the directors of the two museums – National Museum of Natural History and Museum of Science – both respond to the rector of the University of Lisbon<sup>170</sup>.



Fig. 6.20 - Simplified flow-chart of museums and collections at University College London (implementation dating 2000). The Museums and Heritage Committee is chaired by the Vice-Provost and composed of one Pro-Provost (usually the one responsible for UCL's finances) and three external advisors. This Committee is in turn supported by two sub-committees: a) the Curators' Committee, where all curators are represented, chaired by the Curator of Collections and b) the Heads of Departments' Committee, which is chaired by a Head of Department on a rotating basis. The Curator of Collections reports to the Museums and Heritage Committee and simultaneously acts as a bridge between the two sub-committees.

<sup>170</sup> A pro-rector is responsible for the museums and some steps have been taken in the direction of a common management structure.

In other universities, the common structure was positioned under non-academic or administrative units – for example at the University of Aberdeen the Marischal Museum was positioned under the Directorate of Information Systems (fig. 6.21) and at the University of Amsterdam two important museums – Allard Pierson Museum (art and antiquities) and *De Agnietenkapel* (university history) – were placed under the University Central Library.

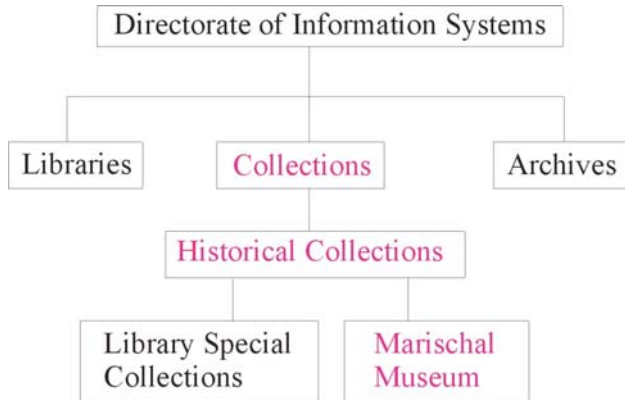


Fig. 6.21 – The Marischal Museum’s (anthropology, archaeology, fine arts and numismatics) current positioning within the structure of the University of Aberdeen.

Given that the sheer number of scattered collections continues to pose challenges regarding security and preservation, some universities are seeking increased responsibility from departments and faculties when physical transfer is not possible or desirable. The appointment of “individuals who are responsible, on a full-time basis” for these collections had been one of the recommendations of the UK surveys (Merriman 2002: 79). At Utrecht University, the Utrecht University Museum has a formal ‘inspection role’<sup>171</sup> over collections scattered elsewhere in the University, particularly collections of significant value such as the collection of veterinary medicine (located in the faculty of the same name), the collection of cartography (located at the faculty of geography) and the anatomy museum (at the faculty of medicine) (fig. 6.22). In practice, this means that departments or faculties regularly report to the Museum on the state of collections.

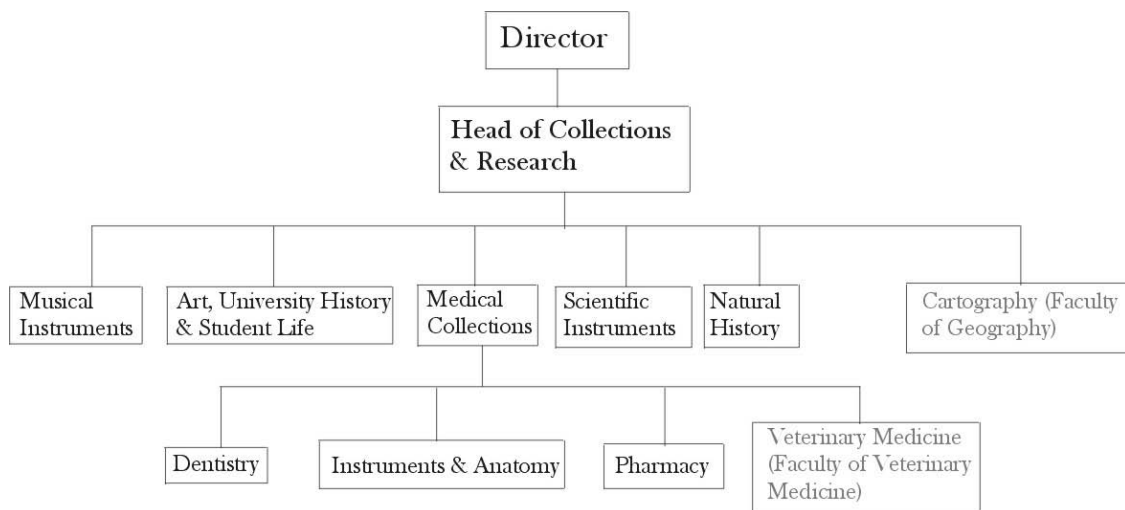


Fig. 6.22 – Flow-chart of Utrecht University Museum (section of Collections and Research). Grey on the right indicates collections located outside the Museum’s premises over which it has a supervisory role (only the more important shown). The Director has a seat in the Council of Directors of Faculties and Central Services, meeting monthly to discuss common issues.

<sup>171</sup> The designation was recently scaled down to ‘advisory role’ (J. Schuller, interview 8 May 2003).



Structures that pose the biggest concern are *ad hoc* foundations and associations to run museums, collections and staff. This has become prominent on the agenda of some Italian, French and Portuguese universities. Increasing the eligibility for external funds and a more flexible management seem to be the two major objectives. Although the legal terms of these foundations vary from country to country, caution is needed to avoid alienation and transfer of ownership of collections and buildings, as well as guaranteeing stable and attractive staff career paths. In this respect, universities ought to look carefully into previous experiences, both in the academic world (e.g. the already mentioned Botanical Garden of the University of Amsterdam, 'privatised' in 1986, and the Haren Botanical Garden of the University of Groningen, 'privatised' in the 1990s) and the museum sector at large (e.g. foundations and outsourced management in some Italian and Dutch national and local museums)<sup>172</sup>.

In short, university museums and collections may greatly benefit from a centralised structure responsible for coordination and responding directly to the rector. Such a structure may promote collaboration and the development of common policies and coordinated strategies<sup>173</sup>, provide a single voice for (unequal) museums and collections within the university (especially if the structure is represented in the university executive bodies), facilitate management, increase visibility and increase the likelihood of external funding. Furthermore, this structure may oversee orphaned or isolated collections scattered through departments that for a variety of reasons have not migrated to museums.

Nevertheless, it is the public who benefits most. Instead of 20 interlocutors, each with a different phone number, website and opening hours, both school groups and general visitors will profit from the existence of a liaison structure – providing information (locations, events, programmes, collections), coordinate bookings and facility rentals for special events, receive and forward requests for scientific services (e.g. loans of objects and images), handle public relations and press releases, etc. This is already being done in several European universities today. Moreover, many of these structures provide web portals with resources such as searchable collection databases<sup>174</sup>. University museums have been discussing the role of the general public for a long time and it is difficult to understand why it took so long to implement even the simplest coordination structure for public access.

### 6.5.2 The migration to the 'third mission': dilemmas and risks

The migration to the realm of 'historical heritage' and the redefinition of university collections exclusively in terms of the 'third mission' (public display) pose bigger challenges to first generation collections than to second generation collections. After all, collections of medical and scientific instruments, historical teaching collections of mathematical models and university memorabilia *are* historical heritage. For some first generation collections – like research and teaching collections in ethnography, art or archaeology – migration to the third mission is unproblematic, although it may involve a shift in the role of the object (e.g. an ethnographic artefact changing from being a 'document' to an 'artwork').

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<sup>172</sup> The creation of non-profit organisations ruled by private sector legislation for a multiplicity of purposes – including R&D – is not uncommon in European universities, including for the public understanding of science. In fact, the science centres *Heureka* at Vantaa (Finland) and *Exploratório Infante D. Henrique* at Coimbra both resulted from associations/foundations of which the respective universities were founding partners. A similar structure appears to be under discussion for the new science centre *Ahhaa* in Tartu (T. Siild, interview 10 October 2003).

<sup>173</sup> Including the much needed collection policies at university level, at present limited to UK and Italian university museums and not universally applied there either.

<sup>174</sup> Particularly rich web portals are those from the University of Alberta Museums (<http://www.museums.ualberta.ca/>), the Museums and Collections @ Macquarie (<http://www.lib.mq.edu.au/mcm/>) and, in Europe, for example the University of Dundee Museum Services (<http://www.dundee.ac.uk/museum/>), all accessed 10 July 2005.



Fig. 6.23 - Specimens from the teratology collection (birth defects) at the Musée Testut-Latarjet, University of Lyon Claude Bernard (reproduced with kind permission).

For other first generation collections – particularly teaching and research collections in natural history and medicine – migration to the third mission poses major challenges, not in the least because in practice many are to a great extent being excluded. Although feasible, public interpretation of embryology research collections is difficult and raises many questions, including ethical ones. The same goes for research and teaching collections in human anatomy or physical anthropology. Many university collections are valuable for research and teaching and have only limited if any value for the ‘third mission’. It is unlikely that the cultural heritage or private sector will fund long-lasting maintenance and preservation of these collections (see appendix A9), therefore funds need to be found elsewhere. Perhaps more worrying, migration to the third mission implies a gradual dilution of the differences between first and second generation collections, which in turn will result in a substantial change in the role of some natural history and medical research collections.

The idea of ‘historic’ natural history collection is problematic to say the least, because, unlike a scientific instrument, a natural history specimen does not lose its original purpose. In the words of a curator-researcher of a 400 year old herbarium: “Contemporary research is our priority, we are *not* a historical herbarium; being a historical herbarium would mean death” (B. Gravendeel, interview 29 April 2003). Another curator agreed: “Historical value is secondary to taxonomic value – even when the specimen is hundreds of years old” (S.A. Ulenberg, interview 11 May 2003). Change of role is a risk because many new projects are being funded by the cultural heritage sector, which does not necessarily pursue a teaching and research agenda. This can be severely aggravated if first generation collections are physically separated from their main users or placed under a non-academic unit, such as a public relations division, a library, or the university’s central administration.

For the past 30 years or so, many teaching and research collections have been separated from their natural users. Across Europe, laboratories, lecturers, researchers, students, equipment, etc. moved to modern facilities, state-of-the-art campuses usually on the outskirts of town, while collections typically remained in old buildings in city centres. In itself, keeping museums in city centres is not an illogical idea. Initially, staff may have hoped that this might enhance and broaden their activities, increase working conditions (e.g. more space because departments left) and boost regard among colleagues. However, the separation often turned out to create difficult situations.

The case of the University of Lisbon is both typical and illustrative because it has two different museums and both underwent similar processes of gradual migration to the third mission, coupled with physical separation from their parent-departments during the 1990s. The collections of the National Museum of Natural History (officially created in 1919) are first generation collections assembled in departments in close association with research and teaching in zoology, mineralogy, geology and botany. The collections of the Museum of Science (officially created in 1985) are the result of the accumulation of historical equipment from the departments of physics, mathematics, chemistry and derived sciences. Originally, both museums were created within the Faculty of Sciences. In the late 1980s, the Faculty (departments) began a gradual move to a new campus outside the city centre, while the museums stayed in the old building in the heart of Lisbon. At the same time, the museums were 'upgraded' to the central administration (*Reitoria*) and both directors began to report directly to the rector.

The impact of the process is still difficult to evaluate, but it seems to have been substantially different for each of the museums. While for the Museum of Science the process was greatly beneficial and it was able to enhance public activities and events, diversify audiences, improve public service and raise external funds with moderate success, for the National Museum of Natural History the migration to the 'third mission' was problematic and it is still searching for its purpose and audience. As the Director of the Botanical Garden (part of the National Museum of Natural History) explained: "All of a sudden there we were – alone and empty. Emptied of life, our main purpose, emptied of everything". He described the dilemmas raised by the new situation: "I felt very much divided between the Department [of Botany], where I was professor, and the Garden, which I directed, when the time came to separate the waters. I took active part in the decline of all of this because in the 1980s I encouraged my staff to go with the department. [...] The life of universities is in colleges and departments: it's the students, it's the lectures, and it's the research. I wanted my Faculty to progress, I wanted theses, and I wanted good researchers. The Garden is important, but I felt it didn't count anymore for the University. Besides, why would I need researchers if I no longer had laboratories?" (F. Catarino, interview 12 April 2000). Along the same lines, the Director of the Geology and Mineralogy Museum explained: "We *upgraded*, but the price has been too high. We used to be fully integrated in the research of the department, now research is fragmented, on a project basis and frequently not collection-based" and, more to the point, "In the department, we were obliged to do research. Today, nobody cares – if we crossed our arms and sat doing nothing the whole day, nobody would ask us why we aren't producing any science – as long, of course, as we keep the doors open to the public. It's a whole different way of thinking and it's costing us a lot to adapt" (A.M.G. Carvalho, interview 24 April 2000).

Similar dilemmas have been felt elsewhere in Europe. The *École des Mines* in Paris moved from the *Jardin du Luxembourg* to new facilities in Fontainebleau (in the suburbs of Paris) in the late 1970s, leaving behind the *Musée*. The *Musée* underwent a considerable decline in the use of collections for teaching and research and seems now confined to the roles of historical preservation and public display, coupled with research into the history of natural history (where it is active, including in active partnerships at the European level). Separation processes may have paradoxical and ironic aspects. Given that first generation collections continue to be needed and used, researchers and lecturers often develop new collections in the new locations rather than using the ones left behind. Teaching collections were created at the new *École des Mines* in Fontainebleau – some of them almost exact duplicates of the collections owned by the *Musée* (J. Touret, interview 21 June 2002). At the new Faculty of Sciences of the University of Lisbon, teaching and research collections in zoology, botany and geology continued to be created and used in the new laboratories, while the collections of the National Museum of Natural History linger dormant and practically unused (C. Lopes, interview 29 August 2001). The same happened at the University of Turin when the zoology collections were de-accessioned to the *Museo Regionale* in 1979; the department continued to assemble collections: "Yes, of course we do [create and use collections]. We keep most of the collections inside the laboratories or in researchers' offices. They are catalogued, exactly like

in a museum – and we have exactly the same problems that we used to have with the Museum collections [before 1979]: lack of space and pressure to throw many things away” (P.P. d’Entrèves, interview 4 April 2003).

Integration of collections, together with physical separation, has been tried before. For instance, in the 1960s there was a project to integrate all public exhibitions of Harvard University museums into one single exhibition facility; the project was later abandoned (Williams 1969). In 1928, four museums previously scattered throughout the University of Michigan, Ann Arbor, were placed under the same roof in a new building. This was one of the first migrations of first generation collections from departments and possibly one of the first university museums integrating multidisciplinary collections under a single director and professional management. In the new museum, a distinction was made between the ‘research museum’ and the ‘exhibit museum’: the former acted as a catalyser for research, maintaining the links with departments elsewhere on campus, while the latter consisted of an integrated exhibition of selected specimens from the four museums, aimed mostly at students and providing a general understanding of “the origin and structure of man and its biological environment, and of the planet on which he lives” (Reimann 1967: 38). The model was abandoned in the 1950s, mostly because links with the departments were not strong enough to keep the ‘research museum’ alive and to prevent a decline in the use of collections for teaching and research (Reimann 1967). As a result, the collections returned to the departments. Today, the Museum of Zoology at the University of Michigan is one of the most productive university museums in systematic research<sup>175</sup>.

In conclusion, the landscape of university museums and collections is changing as a result of the ‘crisis’ and impasse of the 1980s and 1990s. The tendency seems to be towards an increasing integration of collections under the same roof or under a common structure. This has advantages for the university (more rational management of resources, a single public relations gateway), collections and museums (increased visibility and autonomy, opportunity of a coordinated single voice, illegibility for an increasing diversity of funds, protection of small or orphaned collections) and the public (a single access point). This is not to say that no risks are involved. The main risk of this integration is a redefinition of the role of university collections exclusively in function of the third mission, i.e. public display. This, coupled with the physical separation of first generation collections from their primary users, may further alienate university collections from academic life, diminish their present and future roles for science and education and dilute their history and their identity.

Today, physical separation is being avoided by universities who only recently began substantial reorganisations and therefore had the opportunity to learn from past mistakes made elsewhere. Two years ago the University of Tartu was considering the physical separation of collections and departments, but today the idea has become quite the opposite: “We are moving towards more formal and physical proximity between researchers, students and collections to stimulate the use of collections for teaching and research, while at the same time keeping the balance with the needs of public display” (U. Koljalg, Director of the Natural History Museum, University of Tartu, *pers. comm.* 1 July 2005). Often, knowledge about how the university operates is paramount. In 2002, as a result of a profound internal (and external) restructuring, the Manchester Museum at the University of Manchester conceived the staff position of so-called MAJAs – Museum joint appointments with cognate academic departments – to create stronger links at strategic level between the Museum and the rest of the University. Recently, Carol Mayer, curator at the Museum of Anthropology and professor of museum anthropology in the department of anthropology and sociology at the University

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<sup>175</sup> A survey of three volumes (2000, 2001 and 2002) of two peer-reviewed international journals in the field of systematics – *Cladistics* and *Systematic Biology* – was carried out to determine which university museums were publishing results of research in systematics. The survey comprised a total of 147 articles in *Systematic Biology* and 72 articles in *Cladistics* and only addressed the provenance of authors – not the substance of papers. A summary of the results is found in Appendix A11. The Museum of Zoology at Michigan Ann Arbor is among the university museums that publishes most in the two journals.

of British Columbia, Canada, discussed the professional dilemmas that both worlds raise – “[...] the challenge is how to stay credible and connected in both [worlds] when each has a different set of expectations” – while at the same time giving an inspiring account of the richness, depth and meaning offered by curating *and* teaching (Mayer 2005: 179). In university museums, the balance between the three missions is a difficult one, requiring collaboration, innovation and passion.

For the moment it is too early to assess the implications of recent reorganisations because the majority date from the past five years and some are still under debate<sup>176</sup>. More research would be welcome in this respect although ultimately the model adopted will always depend on the type of collections, their use, the management of buildings, the age of the university, the campus location (in town or suburbs), and the existence of other museums in the area – there are no universal recipes.

### 6.5.3 The next generation university museum

Keeping the balance between the three missions – teaching, research and public display – is the key for meaningful new university museums. Not only are collections still *relevant* for teaching and research, but they are indeed *being used* and their potential for research and teaching in a multiplicity of new fields is formidable. This certainly depends on resources, but first and foremost it depends on individual initiative, vision, openness to new methods and subjects and careful strategic planning in order to ensure that arbitrary reorganisations do not eradicate relevance for science and education.

Third generation university museums have an extraordinary opportunity to position themselves at the very heart of the university, tear apart disciplinary borders and aim at an integrated public interpretation of the history of past and present knowledge. They would be perceived as everybody's business, not just the business of the department A or B, or worse – professor X or Y. Collections would be a research and teaching resource for any student or researcher of any subject – from art to zoology, from physics to sociology, from history of medicine to statistics, from chemistry to astronomy. The materials resulting from their research would be explained *in situ* for the general public. Third generation university museums would also have access to knowledge produced *now* in other departments of the university, which would also be interpreted for the general public. They would be focused not only on *what* we know, but on *how* we knew yesterday and *how* we know today. They would be key actors in collaborative projects between universities and non-university museums – not showcases, but true gateways between the university and society, a focus of cohesion and exchange for the university and a place of meaningful interpretation of past, present and future knowledge for citizens.

This would represent a significant step forward from the present *status quo*. For this potential to be achieved, new university museums cannot be merely close to the university, as if they were 'historic' or 'decorative' appendices – they need to be truly embedded in it. They need to be properly funded and staffed by qualified and interdisciplinary teams and fully integrated in the university long-term strategic plan – and then, they would indeed become significant recruitment tools for future students. Merely historical and decorative appendices will not attract many and certainly not the bright and inquisitive minds.

## 6.6 Summary: Between two worlds

When discussing the challenges faced by university collections, it is impossible to ignore the challenges universities are confronted with today. University collections are not necessarily

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<sup>176</sup> A compilation of good practices, coupled with an evaluation of the pros and cons of each model would be most useful. However I am unsure if universities are conducting any evaluation of the new organisational models – they obviously ought to, as well as publish the results.

subject to the same rules and developments experienced by other museums. Regardless of its size or autonomy, there is a permanent and intrinsic vulnerability in every university museum or collection, because collections are small and the university is big. Any change within the university can have significant impact on collections and the changes universities have recently gone through have certainly not been small. The main source of instability of university collections is the university itself and, ultimately, the reasons are economic and political.

Although the performance of university museums and collections depends, to a large extent, on the initiative and vision of individuals, there are plenty examples demonstrating that management of university collections and their position within the university structure has a direct influence on the research, teaching and public service output. As for research and teaching, second generation university collections may benefit from close connections with departments, institutes or research centres of history of science and technology (although these are scarce in European universities) or post-graduate courses on these subjects. For first generation collections, these connections are crucial to the point of being an essential requirement. None of this is incompatible with the existence of 'umbrella' structures, preferably responding to rectors, to coordinate policies, strategies and public service. Neither is it incompatible with increasing autonomy – particularly for major, high-profile and professionally run university museums, such as the Musée des Arts et Métiers (CNAM), the Hunterian Museum (University of Glasgow), the Manchester Museum (University of Manchester), the Fitzwilliam Museum (University of Cambridge), and the Oxford University Museum.

University museums are 'strange beasts' indeed. They fluctuate between the world of museums and the world of academia – sometimes with one foot in each, at other times with both feet on one or the other. University museums do not feel completely at ease in the museum sector, but they do not feel completely at ease in the university either. As the previous chapter demonstrated, the literature is replete of inherent dilemmas resulting from this divide. University museum terminology is full of signs of this divide. Murphy (2003: 13) explained that university museums and collections are susceptible to "multiple schizophrenic dangers" resulting from a simultaneous displacement between "their own practices and more progressive museological standards generally" on the one hand and "the professional duty and the momentum of academic environment which may have little to do with collections". University museum curators speak of *égarement*, even disaffection. Anders Ödman, former Director of the History Museum of the University of Lund, Sweden, explained: "[...] the basic problem is that the museum comes under the Ministry of Education rather than the Ministry of Culture. We are playing in the wrong league"<sup>177</sup>. Many museums try to cope and combine the better of two worlds, but the divide is often too deep.

Universities are big. Museums and collections may be considered the 'jewels of the crown' in speeches delivered on solemn occasions, but they come low in the university's list of priorities – there are salaries of professors and researchers to pay, the running costs of buildings, the maintenance and improvement of laboratories and classrooms, building and expansion, investment and development, pharmaceuticals for the academic hospital, students grants. Museums and collections need to compete permanently with all of this. One curator put it this way: "[...] I have the impression of being a tennis player lost in the middle of a rugby team"<sup>178</sup>. More than the struggle, it is the constant awareness of the smallness – even frivolity, like 'jewels' are at times – that often makes university museums and collections so vulnerable and lost. That is why relevance for the university is crucial for collections. Relevance brings resources, but more importantly, relevance removes the feeling of being permanently at the mercy of a rector's or a dean's budgetary discretion, relevance brings recognition and visibility, relevance brings stability, autonomy and meaning.

<sup>177</sup> A. Ödman in *Bulletin of the European Museum Forum* (January 2001). Accessed 4 June 2001, in [stars.coe.fr/museum/bulletin\\_e.htm](http://stars.coe.fr/museum/bulletin_e.htm).

<sup>178</sup> Anonymous museum curator, quoted in Weeks (2000: 10).



The divide between two worlds and the identity problem are in many ways recent. Until 50 years ago and despite the fact that resources were probably always scarce, university museums were full members of both the museum world and the university world. Their practices were in tune both with museological standards of the time and with the academic momentum. Many followed the triple mission – teaching, research and public display – but many others only did research or teaching and it was just as acceptable. By the mid-20<sup>th</sup> century, relevance for teaching and research appears to have gradually become questioned. Science evolved, research and teaching evolved, the university evolved. Research policies and funding changed and century old bonds began to break down. University museums and collections felt lost, without a voice. Many searched for an identity in the museum sector, only to discover that museums in general had changed considerably as well. The expectations of the public and society had also changed. This aggravated the sense of isolation. University collections are out of pace with their universities, with the museum sector at large and with contemporary society.

In the recent past, university museums have too often stood with both feet in the ‘museum world’, aligning their missions, their public, their identity, even their history, with non-university museums. Indeed, many university museums preferred to think of themselves as one more link in the long chain of museums of science, science centres and the like. There was the director of a high profile university art museum in Europe who, in the 1970s, was convinced that the projection of a credible public image was incompatible with being a university museum. In the words of a curator who shared the experience “at least publicly, he [the director] did not want to have anything to do with the university, to the point of removing all references to the university from letters, stationery, posters and business cards” (Anonymous, *pers. comm.* 2002). This is a legitimate, perhaps understandable, position, but one that not only denies an extraordinary historical legacy but also compromises the biggest strength of university museums. Most likely, these examples are less common today, as there is an increased awareness of the significance of university collections – still moderate but growing.

Tensions pulling in many different directions are not necessarily negative. It is crucial to leave the rhetoric of divides, divorces and impenetrable compartments behind and move forward. More than being divided between two worlds, university museums and collections are *at the intersection* of two worlds, which in elementary mathematics simply means that they integrate elements shared by both, resulting in a distinct and unique entity.

Belonging to two worlds may be a source of tensions, yet paradoxically it is precisely where the identity of university museums and collections lies. Museums are being created everyday and everywhere and it is pointless to imitate them. Being a museum in a university is all too easy and so is being a museum of a university or a museum for a university. The challenge is to discover what it means to be *a* university museum and *a* university collection today. This is *the* dilemma university museums and collections are facing. The rest – institutional visibility, recognition, professional standards, staff profiles and careers, audiences, resources – depends on how university museums and collections resolve this dilemma, strike an integrated balance between the two worlds and define their role in contemporary society. Most likely, the key lies in the artefacts, objects and specimens and the stories that these can tell – to researchers, to students and the general public of today and tomorrow.



[M.C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## 7. Discussion

Quel sens donner à tout ce patrimoine?  
Pour quoi? Pour qui? Et comment?

P.U. Calzolari, Rector of the University of Bologna, 2004

How can we convince the university [that a museum is important]?  
How will the university achieve its objectives – two of which focus on outreach and one is to connect the [...] students with their heritage?  
How can this be done if there is no real interest in the material evidence of this heritage? [...] There is only a theoretical book, no use of objects, only lectio-disputatio methods [...] we have many students from [primary and secondary] schools every day, but there is no place to take them to, let alone the general public.

Y.A.B.

Archaeologist concerned with the uncertain fate of several collections at his university. Email dated 6 April 2005 (edited for clarity and length).

There are possibly 5,000 university museums and collections in the 25 EU countries. Although the exact figure is hard to come by, it is clear that European universities hold a significant proportion of our scientific, artistic and cultural heritage. For various reasons this important heritage has not received the attention and recognition it deserves and has remained largely unknown and inaccessible to the broader public.

This study, carried out between 2000 and 2004, comprised 236 university museums and collections from 50 European universities in 10 countries. In this chapter, its main results are summarized, areas for further research outlined and some concluding remarks about the cultural role of universities made.

### 7.1 Conclusions and main results

The prime objective of this study was to obtain a comprehensive overview of the present state of knowledge of European university museums and collections, leading to a better understanding of the role and significance of university collections today. Sources were bibliographical and data collected in the field. Three syntheses resulted from the study: history of university collections (chapter 4), 20<sup>th</sup> century literature (chapter 5) and present situation (chapter 6).

Two major difficulties faced were the the volatility of the present situation of university museums and collections and their diversity. The rapid pace of events in the field makes objective analysis difficult. The diversity of university museums and collections is overwhelming, and traditional – e.g. disciplinary – approaches make them difficult, if not impossible, to study as a group. Additionally, because the majority of collections are not organised in museums and differences in size between institutions are also considerable, large and high profile university museums tend to be under-emphasised when generalisations are made (Merriman 2002).

One way to overcome the obstacles raised by the diversity of university collections and museums is an approach at collection level and a focus on common features. One important contribution of this study was the development of a typology of university collections that

enabled their study as a group. The typology comprised four types of university collections: i) teaching collections, ii) research collections, iii) historical teaching and research collections, and iv) collections of university history. Throughout this dissertation, the former two types were designated first generation collections and the latter two types were designated second generation collections. In itself, the typology is not new and can be found even in the earliest literature on the subject – it is simple and intuitive. In this study, however, it was formalised and developed.

The main criterion of the typology was the collecting process: through purposeful collecting for the needs of teaching and research in the case of first generation collections and through historical accumulation in the case of second generation collections. The criterion is epistemological because it reflects two distinct methods of acquiring knowledge – comparative and experimental – and, by implication, two distinct roles of objects in processes of inquiry: comparing in order to know (first generation) and experimenting in order to know (second generation). The epistemological approach to university collections has enabled the second major contribution of this study, namely further reflection on the distinct nature of university collections. I have argued that these are material evidence of the history of knowledge, an argument I will take further in the Closing Remarks below.

The epistemological approach leads to two distinct origins and therefore two diverse pathways of development of first and second generation university collections. The history of university museums and collections is more closely linked to the progress of science and education and the institutional development of universities than to the development of general museums (whose influence became visible especially in the past decades).

First generation university collections are the older and among these, with a recorded history of almost 500 years, teaching collections are the oldest. It is however likely that collections or proto-collections have been longer in use for teaching. Today, teaching collections are still used in a wide range of disciplines and the role of the object has remained unaltered: it facilitates an explanation or a comparison, it illustrates an idea, it serves as an example, or it demonstrates a principle or a phenomenon. Research collections emerged in the late 18<sup>th</sup> century, although they were preceded by study collections since at least the late 16<sup>th</sup> century. Research collections continue to be assembled today, both in more recently developed disciplines (microbiology, genetics) and traditional ones (zoology, botany). First generation collections are dynamic entities. This dynamism is difficult to apprehend and is often misunderstood. Collections too easily leave the impression that they are fixed in eternity perhaps because they fix individual items within a larger system (Hamm 2001).

Many university collections were organised in museums, although collections existed before museums and in many cases continue to develop independently of museums. The first records of collections more or less permanently assembled in a single location for teaching purposes – teaching ‘museums’ – date from the late 16<sup>th</sup> century (adjunct to anatomical theatres and botanical gardens). The first records of collections assembled in a single location for the public are from the early to mid 17<sup>th</sup> century. The first record of a university museum in the modern sense is from the late 17<sup>th</sup> century. However, university museums would only flourish in the 19<sup>th</sup> century, partly due to the development of the different sciences and partly due to the consolidation of research as the institutional vocation of the university. 19<sup>th</sup> century science placed collections at the heart of research, while at the same time the Humboldt model placed research at the heart of the university – it was the Golden Age of first generation museums and collections.

Second generation collections appeared in the 20<sup>th</sup> century, although they possibly existed before. Because they result from the historical accumulation of objects, once assembled second generation collections are supposed to be preserved for posterity. They are less dynamic than first generation collections and less used as primary sources for teaching and research.

In the 20<sup>th</sup> century, the landscape of university museums and collections became more complex. Second generation museums multiplied, but not in significant numbers until the 1960s. This late development is due to four reasons: prolonged collecting processes, the lack of internal drive, the absence of formal structures in universities to accommodate historical museums and the rather celebratory concept universities have of their heritage. Second generation university museums also benefited greatly from the post-1960s worldwide expansion of the museum sector. Presenting exclusively historical and artistic collections, second generation museums were more likely to attract broader audiences. Possibly for the first time, new and more diverse audiences induced first generation university museums to contemplate on their public role, especially in view of the decline in their traditional audiences (students and researchers) since World War II.

During the same period, the number of universities increased markedly and higher education systems across the world faced major reforms. Between the 1960s and the present-day, the university underwent dramatic changes. Today, it is facing enormous social and political pressure, identity challenges, and economic crisis. Inevitably, the crisis of universities caused instability for university museums and collections.

Lacking a clearly formulated mission and status within the university – the majority of university collections and museums in Europe are not inscribed in the statutes of the university or in its strategic plans – and after at least two decades of instability, reorganisations, closures and losses, university museums and collections today are facing the greatest challenges in their history. A major result of the study, based on insight gained from study visits and interviews, is that these challenges can be grouped into two closely related kinds: challenges of identity and challenges of recognition. Challenges of identity comprise the ‘divide’ between the academic world and the museum world, in particular issues related to the difficulty in combining traditional and new audiences, roles and uses. Internal challenges of recognition encompass use of collections for education and research, legal and statutory framing, status and management issues, sustainable funding, and autonomy issues. External challenges of recognition comprise raising of standards and professional qualifications of staff, as well as improving public accessibility. Undoubtedly, some universities have taken positive steps, but on the one hand many of these challenges are too complex, if not impossible, to overcome without a coordinated approach at the national (or even international) level. They also require a clarification of the role of museums and collections in the university and society. To resolve the latter, the significance of collections is cornerstone.

During recent years, across Europe and the world, there has been more action and coordination from the university museums community than ever before. The recent rise in the number of articles, policy and advocacy documents, professional associations and conferences is illustrative of the vitality of the field. The past five years have also witnessed a growing interest in university collections from the museum sector. This growing interest, however, has not been accompanied by concrete partnerships to assist university museum professionals or to strongly advocate the importance of university heritage. Neither has the growing interest been accompanied by in-depth research into university collections and museums.

## **7.2 Further research**

Before research into university museums and collections can be developed, researchers need to have access to basic information, presently unavailable, in particular which university collections exist and where. For most countries, there are not even simple, reliable lists. Universities need to make basic information regarding their museums and collections available to the scientific community and each country has the responsibility to survey its university heritage and keep the information up to date. Research into university collections

as a distinct group is barely starting and much remains to be done. This study has identified three main areas where research is most needed at present.

The first concerns recent reorganisations of first and second generation university collections. The volatility of the situation requires a follow-up. Thorough evaluation and case-studies are crucial, particularly in relation to the impact on teaching, research and public accessibility.

The second area in need of research is that of governance, from management to profiles and career paths of staff and from the positioning of the museum within the university hierarchy to autonomy. Although research on the impact of governance (Humphrey 1992a,b, Cato 1993, 1994, Birney 1994, Genoways 1999), strategic planning and leadership (Tirrell 1994, 2001, 2003) on the performance of university museums has been done, this is limited to university museums of natural history. More in-depth studies are needed to encompass second generation university museums, as well as comparative studies between first and second generation university museums and between large and small university museums. In-depth systematic surveys and comparative studies in this area, coupled with thorough evaluation of current reorganisations, would provide much needed information. Many universities are implementing new management and governance models for university museums and collections without well-founded knowledge of future implications.

A third area in which research is paramount is the history of university collections, including early university collections and proto-collections. We need to know more about the development of university collections against the background of and in synchrony with the history of higher education. Developments during the 20<sup>th</sup> century are also relevant given that higher education systems across the world underwent dramatic expansion and reform. A better insight into the recent history of university collections would be most valuable for an understanding of their present dilemmas.

In addition, three groups of issues stemming directly from the present study would benefit from further research: the typology, ethics, and the concept of university heritage.

### **7.2.1 The typology**

The typology of university collections presented in this study requires further development in a number of areas. Firstly, collections of university history were only briefly addressed. These collections of university memorabilia or institutional history – portraits, seals, busts, solemn and formal clothing – are not directly related to the education and research missions of the university. However, if adequately interpreted, they may fall within the ‘third mission’ of universities (i.e. their cultural role). Together with other university collections, they can participate in an integrated interpretation of the role of the university in the history of knowledge and university heritage. This is certainly an area deserving further development. Secondly, this study only briefly considered new forms of university collections. New types of teaching collections in mathematics were studied and presented, but there is a vast range of new areas – often interdisciplinary – that have assembled collections for teaching and research. It would be valuable to investigate the epistemological relationships between recent fields – for example biophysics, biotechnology, molecular parasitology – and the development of new types of teaching and research collections, as well as their articulation with more traditional types of first generation collections. Reversibly, new types of research and teaching collections from physics, astronomy, and other ‘traditional’ subjects – e.g. data from satellite imagery, accelerators, new telescopes – also deserve further study.

### **7.2.2 Ethics**

In any profession, the perception of what is ‘ethical’ changes with time. Due to their vast dynamics and change, ethics would always be a stimulating topic of research in relation to



university collections, particularly when it comes to first generation collections. Ethics were not a core-subject of this study, but ethical issues related to the care for university collections emerged and field data were gathered for future research.

The issue of ethics in relation to university collections can be approached on two different levels. On the one hand, they are subject to the same issues that affect all museums – including human remains<sup>179</sup>, free trade, provenance of objects, etc. On the other hand, there are more specific issues deriving from the practices of collection-based teaching and research, such as the integrity of the object and de-accession in teaching and research collections, dubious ownership of collections, etc. These issues are presently covered by the new version of the ICOM Code of Ethics (ICOM 2004), although more research would be valuable to circumscribe and clarify them more precisely.

In practice, however, matters are different and seem to be more serious in some countries than others. Many university collections are not cared for by any staff or by staff with only limited training and preparation. Many are unfamiliar with ICOM's Code of Ethics or even unaware of the ethical issues involved at all. Responsibility for all issues regarding collections – including malpractice and neglect – may not be clearly attributed (although ultimately resting with the university administration). There are collections that simply do not exist in official records. Successive restructuring, extinction and renaming of departments, faculties and museums, including moving collections from one building to another without documenting the process or keeping track of collections, makes ownership often difficult to attribute. There are also issues related to the overlap between personal and institutional collecting. In short, the ethics of university collections raise serious concerns and deserve a study in their own right. It is a topic that cannot be discussed without considering professional training and standards, as well as institutional responsibility<sup>180</sup>.

### 7.2.3 University heritage

Another topic that deserves more investigation is that of 'university heritage' or 'academic heritage'. The expression is increasingly employed, but the precise meaning remains unclear.

When applied to the university context, the term 'heritage' not only encompasses collections and museums, but also monuments, astronomical observatories, laboratories, greenhouses, libraries and archives. It is not only about science, but also about arts, humanities and engineering. It is not only tangible heritage, but also a set of distinct "scientific and technical discoveries [...] forgotten and 'reinvented'" (Van-Praët 2004: 113), *savoir faire*s and values associated with teaching and research. It is about academic and student life traditions, often so deeply embedded in towns' daily life and traditions that it becomes hard to tell which came first. It is in the identity of an imagined and trans-national community of scholars and students (Sanz & Bergan 2002). University heritage is a complex and intricate concept directly associated with the history of knowledge and with implications for the European identity. More research should be done to clarify and further develop the concept.

Two universities have been classified as UNESCO World Heritage Sites: the University of Virginia in Charlottesville, USA, and the University of Alcalá de Henares, Spain. These classifications are directly linked to the legacies of Thomas Jefferson and Miguel de

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<sup>179</sup> The issue of human remains is mostly likely to be more poignant in universities. There are literally thousands of physical anthropology collections in European universities and because they are little used for research and some reorganisations affecting them are on the way, many raise serious concerns.

<sup>180</sup> It is in the context of ethics and professional standards that differences between university collections become more evident. There are basically two types of university collections: a) those under the care of professionals, and b) those under the care of ill-prepared individuals – regardless of how well-intended they may be – or under no care at all.

Cervantes, respectively, and not to a broader and all-encompassing concept of university heritage as put forward above<sup>181</sup>.

In 1997, the Botanical Garden at the University of Padua, Italy, was classified as World Heritage. The UNESCO Committee explains the decision “to inscribe this property [...] considering that the Botanical Garden of Padua is the original of all botanical gardens throughout the world, and represents the birth of science, of scientific exchanges, and understanding of the relationship between nature and culture. It has made a profound contribution to the development of many modern scientific disciplines, notably botany, medicine, chemistry, ecology, and pharmacy”<sup>182</sup>. On 15 July 2005, UNESCO classified the Struve Geodetic Arc as World Heritage<sup>183</sup>, of which one of the 34 marking points is located at the Astronomical Observatory of the University of Tartu, Estonia (fig. 7.1). These two classifications are more in tune with the recognition of the contribution of universities to the advancement of knowledge. Also on these premises, the University of Coimbra, Portugal, is preparing an application for World Heritage.



Fig. 7.1 – Mark indicating the Struve Geodetic Arc at the Astronomical Observatory, University of Tartu. The arc stretches across 10 countries from Norway to the Black Sea. It constituted the first accurate measurement of a long segment of a meridian. The survey was carried out between 1816 and 1855 by the astronomer Friedrich Georg Wilhelm von Struve (1793-1864). Struve supervised the survey from the University of Tartu, where he worked from 1813 to 1839.

What is the significance of the overall legacy of universities to Europe and the world? How do collections fit in this legacy? How do collections articulate with other tangible and intangible elements of this legacy? These are matters that would certainly benefit from further study. Some preliminary reflections are put forward in the following Closing Remarks.

<sup>181</sup> Other universities, such as the University of Évora in Portugal and the Universities of Santiago de Compostela and Salamanca in Spain, are part of historical town centres that are UNESCO World Heritage Sites.

<sup>182</sup> See UNESCO World Heritage List at [http://whc.unesco.org/pg.cfm?cid=31&id\\_site=824](http://whc.unesco.org/pg.cfm?cid=31&id_site=824), accessed 30 April 2004.

<sup>183</sup> See UNESCO World Heritage List at <http://whc.unesco.org/en/list/1187>, accessed 22 July 2005. See also University of Tartu Press-release *Struve's Geodetic Arc inscribed in UNESCO World Heritage List*, 20 July 2005, <http://www.ut.ee/111584>, accessed 22 July 2005.

### 7.3 Closing remarks: Collections and the cultural role of universities

Higher education legislation across Europe attributes two main missions to universities – education and research – in addition to the ‘third mission’. The precise formula varies from country to country, and the ‘third mission’ may assume the form of public dissemination of research (Sweden), science communication (the Netherlands), contribution to the development of societies (Sweden), culture (Finland, Estonia, France, Portugal, Italy), service to mankind (Finland) or some other form of social role. For example, the Danish Act on Universities describes the three missions as follows:

“Article 2.1 The university shall conduct research and offer research-based education to the highest international level within the disciplines covered by the university. The university shall ensure a balanced relationship between research and education, make regular, strategic selection, prioritise and develop the disciplines it covers in relation to research and education and disseminate knowledge of scientific methods and results” (Danish Act on Universities, May 2003).

The *Magna Charta Universitatum*, the most important recent document setting the stage for the European university of the future (and a notable text by itself), not only considers the third mission, but takes it one step further than national laws. In its first principle, the Charta states that “the university [...] produces, examines, appraises and hands down culture by research and teaching” (cf. appendix A10). The Charta does not say that universities are to provide culture *apart from* education and research, as if the three were mutually exclusive entities. Instead, it embodies a synthesis between education, research and culture, and at the same time places culture at the very core of what universities are and do. If taken literally, the Magna Charta has extraordinary implications for university collections.

Reality is quite different from the Magna Charta. The third mission is rarely understood or explored. Although universities often use history as a basis for social and academic legitimacy, they tend to underestimate the importance of their own history and heritage. Typically, they only mobilise resources for the study and preservation of heritage – through publications or exhibitions – at times of special commemorations. Second generation university museums are mostly created on such occasions.

The way the ‘third mission’ is ordinarily implemented seems to confirm the limited view that many universities have of ‘culture’ or ‘social role’ or ‘dissemination of science’. Universities regularly develop ‘cultural’ programmes that comprise a variety of activities for students and the general public (sports, theatre, concerts) and services ranging from conferences to exhibitions, open days, workshops, publications and so-called e-learning and lifelong learning (although these can technically be perceived to fit in the first mission, i.e. education). Regardless of how well-intended and meritorious these activities may be when considered in isolation, the general picture is one of fragmentation and inconsistency. Cultural activities and community service are developed in almost complete isolation from education and research, as if on the one hand the university was a scientific institution and on the other hand a cultural centre. University collections and museums do not fit in this particular vision of ‘culture’. When reorganised in order to fit, they become displaced and their real meaning is perverted. Given that European universities spent considerable amounts of money each year to support the ‘third mission’, it is not merely a matter of funding.

The long-term challenge for university collections does not primarily lie in the first and second missions. Collections *are* relevant for present-day teaching and research and can be used more – it is often a matter of individual initiative. The real long-term challenge for university collections lies in the ‘third mission’: how to fit collections into the rather limited view that universities have of culture and their cultural role without undermining their

distinctiveness? Indeed, how to broaden the narrow perception universities have of their cultural role *through* collections? This is the real challenge – making objects relevant for teaching and research is easy compared with this.

What is the meaning of the collections universities have? Quel sens donner à tout ce patrimoine? The answer requires subtle ways of seeing. Despite being possibly known by one French citizen in every 20, the Atger Collection at the Faculty of Medicine of the University of Montpellier 1 is the second largest collection of drawings in France, after the one at the Louvre. It is not just an extraordinary collection of drawings by Tiepolo, Caravaggio and Fragonard (fig. 7.2). When Jean-François Atger donated the collection in the early 1800s, the purpose was clear: the drawings were meant to be used in the study of human physiognomy and body (Lorblanchet 2002). The collection shows a remarkable coherence: it is about human faces, limbs, bodies – in all possible expressions and positions. Students at the Faculty of Medicine used and studied these drawings for decades. This is what makes the Atger collection so special, intimately linking it to both the Jardin des Plantes, 20 m away, and for example to the collections of anatomical wax models at the University of Utrecht, almost 1,000 km north. The fact that the drawings are Tiepolos and Fragonards only makes the collection all the more valuable<sup>184</sup>.



Fig. 7.2 – Old man and youngster, by Giambattista Tiepolo (1696-1770). Musée Atger, University of Montpellier 1 (reproduced with the kind permission of the BIU de Montpellier, Atelier photo).

Time passes, uses change and memories are lost. Today, the Atger collection is an art collection in a faculty of medicine – possibly undervalued by the art world because it is in a university and undervalued by the university because it is art. It *is* indeed an art collection, but it is also so much more – its true meaning only shining in full splendour when we learn about its history and let the drawings tell their real story.

<sup>184</sup> This is not by chance. Hélène Lorblanchet, curator of the Musée Atger, explained: “[...] ainsi les étudiants pourraient contempler des représentations du corps humain alliant à l’intérêt anatomique les qualités de l’artiste” (Lorblanchet 2002: 60).

In the early 1920s, Guido Horn-d'Arturo, professor of astronomy at the University of Bologna, was investigating the relation between the distribution of nebulae in the sky, the shape of our galaxy and the real nature of nebulae (Clercq & Lourenço 2002). Presumably with the 1888 *New General Catalogue of Nebulae and Clusters of Stars* by his side, he grabbed a 1792 Cassini celestial globe, wrote down the catalogue numbers of the nebulae on some confetti and glued these to the globe (fig. 7.3). The fact that the globe was almost 150 years old and therefore 'historical' was of no concern to him – he glued the confetti because he was studying the distribution of nebulae and this is how one studies distributions normally. Horn-d'Arturo merely 'updated' the old Globe with the results of new observations, of new knowledge. Fortunately, the confetti still adorns the Cassini globe in the Museo La Specola of the University of Bologna (cf. Baicada *et al.* 1995).



Fig. 7.3 – Celestial globe by G.M. Cassini (Rome, 1792 Inv. MdS-69), with confetti glued to it by Prof. Horn-d'Arturo, today preserved at the Museo della Specola (courtesy Museo della Specola, University of Bologna).



Researchers and teachers use objects and collections as tools to understand and explain the world we live in. More often than not, objects bear the tangible marks of this quest. The processes and *savoir faire*s of research and teaching are consolidated through and materialised in university collections.

Documenting, researching and interpreting university collections as *just* historical or artistic heritage, as mere documents in the history of science, medicine, pharmacy or art, is possible, but it is not good enough. It is not good enough to say that the Atger collection is an art collection (although it is, and a magnificent one). It is not good enough to detach an early 20<sup>th</sup> century thermometer from decades of use and re-use in multiple experiments and say it documents the evolution of the concept of temperature (although it does). It is not good enough to say that humans are more closely related to mushrooms than to spinaches (although they are). It is not good enough to present and interpret detached results and sublimated ideas as if ideas were central and collections were there merely to illustrate them. It can be done, but on the one hand it has already been done for ages by other museums that have better 'examples' to illustrate the evolution of ideas. On the other hand, it amounts to detaching university collections from a long and meaningful epistemological chain of processes – it is not the real story objects have to tell<sup>185</sup>.

The present-day museum sector is a crowded one. There are museums of all sizes, covering all possible subjects from arts to science, from the history of horse shoes to linen, from radio museums to farm museums. New museums are opening and existing ones grow bigger and

<sup>185</sup> Interpreting processes is not an easy task. Other museums and science centres have tried and most have failed – interpreting ideas through objects is simpler.



bigger. University museums need to step back for a moment and reflect on what they have to offer that makes them distinct and meaningful. University collections can evoke the gradual, slow, hard, determined, persistent, intuitive, patient, trial and error, mistake-driven, erroneous, go-fix-that-part-of-the-spectrograph-and-let's-try-again, boring, processes that researchers have gone through in their quest for knowledge. Still today, technologies evolve, collections assume different forms and acquire new objects, yet the processes are essentially the same: questioning, comparing, learning, experimenting, rejecting, re-experimenting, sharing results and ideas, innovating, thinking creatively. In the sciences as in the humanities and the arts.

For centuries, globes like that of Cassini, drawings like that of Tiepolo, together with Huyghens' lens, the Oxford astrolabes, countless drawers of bird skins and boxes of tibias and skulls, paintings done by young artists developing their personal artistic style, unglamorous equipment that was used in a condensed matter physics laboratory and saved from ending in the nearest metal dump, indistinct cannibalised instruments, cast replicas of Greek columns and Aphrodites used for the teaching of comparative art, unattractive wood and plaster models used to teach topology and surface theory long before the Internet was invented – they have all contributed to our knowledge about the universe, the world we live in and ourselves. Because many are being used for present-day and future research and teaching, they will continue to contribute to the enhancement of our understanding. This articulation between past, present and future knowledge is a cornerstone of university collections and should not be forgotten or underestimated when interpreted to the public.

Universities have collections that can tell the story of knowledge – how it is created and how it is passed on from generation to generation. University collections are actual and tangible *facts* of intangible past, present and future knowledge. At first glance, this may seem overwhelming, but in reality it is liberating – the new possibilities it opens are boundless.

The core idea of the university as we know it today began in medieval Europe. During 900 years of history, the university has survived wars, pillages, revolutions, changes in sovereignty, plagues, and political and social turmoil. Only 66 institutions worldwide survived without interruption since the Reformation until the present day: the Catholic Church, the Protestant Church, the parliaments of Iceland and the Isle of Man and 62 universities (Rüegg 2002). The longevity of the university and its role in highly complex societies have been discussed before (e.g. Ridder-Symoens 2002, Rüegg 2002). One of the reasons put forward for the university's long history of success is its capacity to adapt to political, economical and social circumstances in an ongoing process of change, yet at the same time maintaining its structural identity and the universal nature of its social role. However, possibly the main single reason for the university's long history of success is that societies believe in its importance. What the university is, what it does and what it stands for, resonates with the ideals, dreams and hopes of people from all over the world. Whether in Denmark, Kenya, India, or the Philippines, the university is perceived as *the* place of knowledge and, as it did 900 years ago, continues to capture the splendid world of human imagination.

It does not matter if these ideals are partly symbolic. It does not matter if today's university is not that of Newman<sup>186</sup> and Humboldt. Citizens all over the world continue to trust and respect universities, granting them the right of unorthodoxy as no other institution, and expecting great achievements from them – expecting them to play a major role in the advancement of society through the progress of knowledge. This is the university's most important legacy to the world. Their cultural and social role, their 'third mission' is to explain this legacy to society. Collections are the single and most important resource universities have to do so in a tangible and meaningful way.

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<sup>186</sup> John Henry Newman (1801-1890), Rector of the Catholic University of Dublin. In a famous lecture entitled 'The idea of a university' (1854), Newman defended "the high protecting power of all knowledge and science, of fact and principle, of inquiry and discovery, of experiment and speculation".



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## Chapter 5 – Where are we now? Our state of knowledge

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### **Biographical Note**

Marta C. Lourenço was born in Santarém, Portugal. She received her *Licenciatura* (BSc Honours) in Physics (Education) from the Universidade de Lisboa (1992) and a Master degree in Anthropology (Museology) from the Universidade Nova de Lisboa (2000). She is Assistant Researcher at the Museu de Ciência da Universidade de Lisboa.



Conservatoire national des arts et métiers  
École doctorale technologique et professionnelle  
Paris

Thèse de doctorat  
Histoire des Techniques, Muséologie

Marta C. Lourenço

## **Entre deux mondes**

La spécificité et le rôle contemporain des  
collections et musées des universités en Europe

- Volume 2 -

## **Between two worlds**

The distinct nature and contemporary significance of  
university museums and collections in Europe

Thèse dirigée par Dominique Ferriot et Steven de Clercq  
Soutenue le 20 octobre 2005

### **Jury:**

Steven de Clercq  
Pietro Corsi  
Dominique Ferriot  
André Guillerme  
Michel Van-Praët



## Volume Two

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[M. C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## Appendix A1: Number of university museums and collections in Europe

The precise number of university museums and collections existing in Europe today is unknown. With a few exceptions, there are no surveys, statistics or even simple lists. In January 2005, attempts were made to obtain information on the number of public higher education institutions in Europe (of all types)<sup>187</sup>, in order to make an estimate of the total number of university museums and collections in Europe (to be understood as geographical Europe, i.e. not only EU; cf. *The Times Comprehensive Atlas of the World*, 10<sup>th</sup> edition, 1999, London).

Due to their divergent history and traditions, higher education systems in Europe are not homogeneous. For example, in a small country like the Netherlands:

The higher education system is a binary system and consists of 13 universities and 44 *hogescholen* (polytechnics). Besides the 13 traditional research universities, a number of small "designated institutions" are part of the university sector: a university for business administration, four institutes for theological training and a humanistic university, as well as several international education institutes. These are formally part of the higher education system, but are usually not included in the educational statistics and only to a limited extent are they influenced directly by overall higher education policy. Apart from *hogescholen* and universities, higher education in the Netherlands is also provided through the Open University. Two of the universities are legally private but they are treated as public universities (Frans Keiser, *in litt.* 12 April 2005).

Portugal also has a binary system, though different from the Dutch. In some countries, such as the UK, the polytechnics were already integrated or transformed into universities in the 1990s. Countries like France and Germany have even more complex higher education systems. Across Europe, there is significant debate on the transformations required to make the systems compatible and to facilitate mobility of researchers and students (which, ironically, was easier in the 14<sup>th</sup> century than it is now).

*First step: The official route*

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<sup>187</sup> Speaking at the University of Turin in September 2004, Viviane Reding, then European Commissioner for Education and Culture, said that Europe had roughly the same number of universities as the USA, although it is not clear which Europe she had in mind, the 25 countries of the European Union or geographical Europe (Reding 2004).

The obvious place to obtain information regarding the number of higher education institutions in Europe would seem to be bodies concerned with higher education at a European scale, the more important of which are:

- i) the European Union – including the European Commission, its statistical office *Eurostat* (established in 1953), and the European database for education *Eurydice*;
- ii) the Council of Europe;
- iii) the European University Association (EUA), a body representing both European universities and the European conference of rectors;
- iv) the European Higher Education Society (EHES), devoted to higher education management issues and based in the Netherlands;
- v) UNESCO-CEPES (European Centre for Higher Education), founded in 1972 and based in Bucharest (Romania);
- vi) OECD (Organisation for Economic Cooperation and Development).

None of the information sought could be obtained from the offices of the European Union. The European Commission appears to be mostly concerned with the mobility of students and corresponding exchange programmes (e.g. Erasmus, Socrates). *Eurostat* does not collect this information and I was referred to the European database *Eurydice*<sup>188</sup>. *Eurydice* is a non-user friendly database, difficult to navigate and search. Information is organised per country in big chunks of text and in many cases not translated. The EUA did not have the information and referred to the IAU (International Association of Universities). The IAU did not have the information either, but suggested that I buy their *International Handbook of Universities* for £225 (listing 8,200 institutions in 181 countries worldwide). The EHES did not reply and neither did UNESCO-CEPES, which only gathers statistical data for Central and Eastern European higher education systems (which was eventually used, see table below). The OECD replied saying that they do not collect data on the subject.

The difficulties in getting to know how many universities exist in Europe (or in the EU for a starter) were quite unforeseen. One would have expected a simpler access to information, particularly given the fact that Europe is presently engaged in two major challenges involving coordination at the tertiary education level – the so-called Bologna Process (involving 47 countries) and the Lisbon Strategy (involving the 25 EU countries), respectively. In marked contrast, the number of American universities can be found through several sources (both governmental and associative) by a simple Google search that takes less than three seconds – there are c. 4,000, public and private. This simple example speaks volumes about the long way the EU still has to go before achieving the Bologna and Lisbon targets.

---

<sup>188</sup> See [http://www.eurydice.org/accueil\\_menu/en/frameset\\_menu.html](http://www.eurydice.org/accueil_menu/en/frameset_menu.html).

*Second step: The 'old-fashioned' route*

The only option left was to try and find the number of universities for each country. There exist two worldwide databases of universities online – the *Database of World Universities at Canadian Universities*<sup>189</sup> and the *Database of Universities Worldwide*<sup>190</sup> – however, for the sake of reliability, I decided to make direct inquiries to each one of the national conferences of rectors.

The result is in Table A1.1. Data for one country (Bosnia-Herzegovina) could not be found. For the Federal Republic of Yugoslavia (Serbia and Montenegro), Cyprus, Spain and Malta data obtained from the *Database of Universities Worldwide* and the *Database of World Universities (Canadian Universities)* were used, because of difficulties in contacting relevant national bodies or lack of response from the national conference of rectors.

The total number of public higher education institutions in Europe appears to be **2,935**, of which 1061 (36%) in the EU.

*Step 3: Estimate of the number of university museums and collections in Europe*

The only country for which there exists credible and relatively up-to-date information on the number of university museums and collections is the UK, where systematic and consistent surveys were carried out between 1989 and 2002. These surveys found an average of 4.4 museums and collections per university.

Applying the same ratio to Europe as a whole (including Russia), we get a figure of **12,914** university museums and collections (**10,032** excluding Russia). The estimate for the number of university museums and collections in the EU is **4,668.4**.

Obviously, this estimate only serves as an indication of the real numbers. It would need refinement when other factors are taken into account (such as the ratio between old and new universities and past dispersals). Clearly, more countries need to conduct surveys on their university heritage, with consistent definitions and coherent methodologies to allow for comparable data across Europe.

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<sup>189</sup> See [http://www.canadian-universities.net/World\\_Universities/index.html](http://www.canadian-universities.net/World_Universities/index.html).

<sup>190</sup> See <http://univ.cc/>

Country	Number of public HEIs	Source	Data from	Observations
Albania	11	UNESCO-CEPES	2003	
<b>Austria</b>	21	Austrian Rectors Conference (Österreichische Rektorenkonferenz)	2004	
Belarus	43	UNESCO-CEPES	2003	
<b>Belgium</b>	15	Flemish Interuniversity Council & Conseil Interuniversitaire de la Communauté française de Belgique	2004	9 in Wallony, 6 in Flandres
Bosnia-Herzegovina	Unknown	-----	-----	-----
Bulgaria	37	UNESCO-CEPES	2003	
Croatia	84	UNESCO-CEPES	2003	
<b>Cyprus</b>	1	Database of World Universities (Canadian Universities)	2004	
<b>Czech Republic</b>	28	UNESCO-CEPES	2003	
<b>Denmark</b>	17	Danish Rectors' Conference	2002	
<b>Estonia</b>	13	UNESCO-CEPES	2003	
<b>Finland</b>	21	Finnish Council of University Rectors	2004	
<b>France</b>	120	"La Maison des Universités"	2003	<a href="http://www.amue.fr/Universites/Default.asp">http://www.amue.fr/Universites/Default.asp</a> Includes universités, écoles normales supérieures, grands établissements, INSAs & Institut National de Recherche Pédagogique
<b>Germany</b>	235	Hochschulrektorenkonferenz (HRK)	2004	
<b>Greece</b>	18	Synodos Prytaneon Ellinikon Panepistimion (Greek Conference of Rectors)	2003	
<b>Hungary</b>	30	UNESCO-CEPES	2003	
Iceland	6	University of Iceland website ( <a href="http://www.hi.is/page/HE_in_Iceland">http://www.hi.is/page/HE_in_Iceland</a> )	2004	Total of 9, of which 3 are private but run with State support.
<b>Ireland</b>	7	Conference of Heads of Irish Universities (CHIU)	2004	
<b>Italy</b>	69	Conferenza dei Rettori delle Università Italiane (CRUI)	2004	77 in total (public and private)
<b>Latvia</b>	20	UNESCO-CEPES	2003	
<b>Lithuania</b>	30	UNESCO-CEPES	2003	
<b>Luxembourg</b>	1	European University Association	2004	
FYR Macedonia	31	UNESCO-CEPES	2003	
<b>Malta</b>	1	Database of World Universities (Canadian Universities)	2004	
Moldova	60	UNESCO-CEPES	2003	
<b>Netherlands</b>	14	Association of Universities in the Netherlands (VSNU)	2004	
Norway	10	Norwegian Council for Higher Education (UHR)	2004	
<b>Poland</b>	125	UNESCO-CEPES	2003	

<b>Portugal</b>	15	CRUP (Portuguese Conference of Rectors)	2004	Includes the Catholic University, which has a special statute and is government-funded
Romania	55	UNESCO-CEPES	2003	
Russia	655	UNESCO-CEPES	2003	
<b>Slovakia</b>	22	UNESCO-CEPES	2003	
<b>Slovenia</b>	62	UNESCO-CEPES	2003	
<b>Spain</b>	50	Database of World Universities (Canadian Universities)	2004	+ 24 private (CRUE)
<b>Sweden</b>	36	Association of Swedish Higher Education (SUHF)	2004	15 universities, 18 university colleges and 7 university colleges of art
Switzerland	50	Conférence des Recteurs des Universités Suisses (CRUS)	2004	
Ukraine	822	UNESCO-CEPES	2003	
<b>UK</b>	91	Universities UK	2004	
FR Yugoslavia	9	Database of Universities Worldwide	2004	Including University of Prishtina (Kosovo)

Table A1.1 – Number of public higher education institutions in Europe, per country. In bold, the 25 EU countries.

## Reference

- V. Reding, 2004. *Speech on the award of the honoris causa*. University of Turin, 9 September.  
<http://europa.eu.int/rapid/pressReleasesAction.do?reference=SPEECH/04/394&format=HTML&aged=0&language=EN&guiLanguage=en>, accessed 5 December 2004.





[M. C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## Appendix A2

### Field Work: Preliminary Study

Preliminary inquiries and study visits, November 2000 to May 2002:

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## Exploratory Interviews (November & December 2000)

----- Original Message -----

From: "Marta C. Lourenco" <[martal@museu-de-ciencia.ul.pt](mailto:martal@museu-de-ciencia.ul.pt)>

To: <[michele.loneux@ulg.ac.be](mailto:michele.loneux@ulg.ac.be)>

Sent: Wednesday, November 29, 2000 12:41 AM

Subject: request

> Dear Dr. Michèle Loneux,

>

> While preparing for my PhD research on University Museums/Collections in

> Europe, I found your name in a study done by Prof. Peter Stanbury, of

> Macquarie University, Australia

> (<http://www2.lib.mq.edu.au/mcm/world/menu.html>).

>

> At the moment I am organizing a data-base on museums and collections

> according to their particular characteristics. Could you please be so

> kind and answer a few questions regarding your collection? You may

> answer just by quoting and replying to this e-mail.

>

> **Aquarium et Musée de Zoologie (Université de Liège)**

> 1) Are the collections organized and inventoried?

> 2) Is there a public permanent exhibition?

> 3) Is/has there been any research done on the collections?

> 4) Is there staff appointed to take care/manage the collections? If so,

> how many (full time and/or part time)?

> 5) Is there a budget to manage/take care/exhibit the collections?

>

> Thanks in advance,

> Yours faithfully

>

>

> Marta Lourenco.

>

> --

>

>

>

> -----

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> [martal@museu-de-ciencia.ul.pt](mailto:martal@museu-de-ciencia.ul.pt)

> <http://www.museu-de-ciencia.ul.pt>

>

University (alphabetically)	Museum/ Collection	Dates	Inquiry to	Results
University of Århus (DK)	Museum of the Psychiatric Hospital	9 Dec 2000	mpr@cybernet.dk	NO REPLY
	Moesgård Museum	9 Dec 2000	moesgaard@moes.hum.aau.dk	NO REPLY
	Collection of Ancient Art	11 Dec 2000	unspecified	NO REPLY
University of Aberystwyth (UK)	Collections of the Institute of Biological Sciences	28 Nov 2000	Jane Watts	Replied 28 Nov saying she was not sure what I had in mind. Suggested a general query to the Institute
Art Institute at Bournemouth (UK)	Design Collection	1 Dec 2000	Kirsten Hardie	Replied 7 Dec 2000
	Natural History Illustration Collection	11 Dec 2000	Amanda Evans	NO REPLY
University of Bath (UK)	Art Collection	1 Dec 2000	John Struthers	NO REPLY
	Pitman Collection	1 Dec 2000	Lizzie Richmond	Replied 4 Dec 2000
	Holburne Art Museum	11 Dec 2000	Barley Roscoe	NO REPLY
	Crafts Study Centre (at Holburne Museum)	11 Dec 2000	Barley Roscoe	NO REPLY
Bath Spa University College (UK)	Library Special Collections	9 Dec 2000	Helen Rayner	Replied 12 Dec 2000
	Natural History Collections	11 Dec 2000	Sue Rawlings.	NO REPLY
University of Bologna (IT)	Museo di Anatomia Umana	11 Dec 2000	Alessandro Rugget	NO REPLY
University of Bournemouth (UK)	School of Conservation Sciences Collection	9 Dec 2000	consci@bournemouth.ac.uk	Replied by Damian Evans, Technical Officer Collections/ Research, on 14 Dec 2000
University of Bristol (UK)	Biology Collections (Botanical Drawings)	9 Dec 2000	Barbara Costello	Replied 11 Dec 2000
	Biology Collections (Zoology)	9 Dec 2000	Barbara Costello	Inquiry forwarded to Paul Court, who replied 15 Dec 2000
	Geology Department Museum	9 Dec 2000	Elizabeth Loeffler	Replied 21 Dec 2000; museum visited 5 Nov 2002
	Theatre Collection	9 Dec 2000	Sarah Cuthill	Replied 11 Dec 2000
	Special Collections at the University Library	11 Dec 2000	Michael Liversidge	Replied 12 Dec 2000 by M.T. Richardson
	Veterinary Anatomy Collections	11 Dec 2000	Steve Gaze	NO REPLY
Université Libre de Bruxelles (B)	Jardin expérimental Jean Massart	1 Dec 2000	Laurence Belalia	Replied 1 Dec 2000
	Musée des Sciences et des Techniques de Parentville	9 Dec 2000	Laurent Thomas	NO REPLY
	Ecomusée de la Région du Viroin-Treignes	9 Dec 2000	Wlady Quinet	Replied 11 Dec 2000
	Musée de Zoologie Auguste Lameere	9 Dec 2000	Michel Jangoux	Replied 11 Dec 2000
	Musée de la Médecine	11 Dec 2000	unspecified	Replied 12 Dec 2000 by Diana Gasparon
Cheltenham and Gloucestershire College of Higher Education (UK)	Geology Collection	9 Dec 2000	Joe Angseesing	Replied 11 Dec 2000
	Teacher-Training Archive	9 Dec 2000	Anne Mathie	NO REPLY
College of St Mark and St John (UK)	College Archive	9 Dec 2000	Alison Bidgood	Replied 19 Dec 2000

Table A2.1 – Interviews by fax and email with university museums and collections staff (Belgium, Denmark, Finland, Italy, United Kingdom), November and December 2000.

University	Museum/ Collection	Dates	Inquiry to	Results
University of Dundee (UK)	University Museum	9 Dec 2000	Laura Adam	Replied 5 Mar 2001; Matthew Jarron (Curator of collections) replied 6 Mar 2001
University of Exeter (UK)	Archaeology Collection (Department)	9 Dec 2000	Valerie Maxfield	Replied 13 Dec 2000
	Fine Arts Collection	9 Dec 2000	Gina Cox	Replied 11 Dec 2000
	Special Collections and Manuscripts	9 Dec 2000	Alasdair Paterson	Replied 18 Jan 2001
	Bill Douglas Centre	11 Dec 2000	Hester Higon	Replied 15 Dec 2000
Ghent University (B)	Archaeologische Verzamelingen	1 Dec 2000	Jean Bourgeois	NO REPLY
	Zoological Museum	1 Dec 2000	Dominick Verschelde	Replied 6 Dec 2000
Gloucester College of Arts and Technology (UK)	Typography Teaching Collection	9 Dec 2000	Jill Hall	Replied 11 Dec 2000
University of Helsinki (FI)	University Museum	28 Nov 2000	Kati Hëinamies	Replied 28 Nov 2000; visit to the Museum, Nov 2003
Lackham College (UK)	Agricultural Museum	9 Dec 2000	Andrew Davies	NO REPLY
KU Leuven (B)	Archaeologische Verzamelingen	28 Nov 2000	Arnold Provoost	No reply; met A. Provoost, Nov 2004
	Kunst Patrimonium	28 Nov 2000	Jan Roegiers	NO REPLY
Université de Liège (B)	Musée de Zoologie	28 Nov 2000	Michèle Loneux	Replied 8 Dec 2000
	Observatoire du Monde des plantes	28 Nov 2000	Alain Hambuckers	Replied 30 Nov 2000
	Le Musée du Service de Préhistoire	1 Dec 2000	Marcel Otte	Replied 4 Dec 2000
	Patrimoine Artistique de l'Université (Liège) et Galerie Wittert	1 Dec 2000	Jean-Patrick Duchesne	Replied by Jean Housen, 1 Dec 2000
	Maison des Sciences	11 Dec 2000 (fax)	unspecified	NO REPLY
UC Louvain (B)	Vertebrate Palaeontology Collections	1 Dec 2000	Marie Claire Groessens-Van Dyck	Replied 1 Dec 2000
	Invertebrate Palaeontology Collections	9 Dec 2000	Luc Hance	Replied 26 Feb 2001
	Chirurgical and medical instruments	1 Dec 2000	Geneviève Aubert	Replied 1 Dec 2000
	Musée de Louvain-la-Neuve	9 Dec 2000	Bernard Van den Driessche	Replied 13 Dec 2000; visit to the museum in Nov 2004
	Pharmacology Collections (Salle Couvreur)	12 Dec 2000	Roger Verbeeck	Replied by Didier Lambert, 13 Dec 2000
	Musée de la Vie/Musée des Sciences	9 Dec 2000	Philippe Bertrand	Replied 8 Jan 2001
Plymouth University (UK)	Herbarium	9 Dec 2000	Dorothy Merrett	NO REPLY
	Arachnida and Lepidoptera Collection	9 Dec 2000	Peter Smithers	Replied 11 Decr 2000
University of the West of England (UK)	Bones and Models Collection	11 Dec 2000	Anne Boulton	Replied by Jan Nichols, 14 Dec 2000

Table A2.1 (cont.)

## Exploratory Interviews (November and December 2000): Replies

Name Museum/Collection:	<input type="text" value="Design Study Collection"/>		
University/Faculty:	<input type="text" value="Art Institute of Bournemouth"/>		
Address:	<input type="text" value="Wallis Down Poole&lt;br/&gt;Dorset BH12 5HH&lt;br/&gt;UK"/>		
Fax:	<input type="text" value="+441202537729"/>	Phone:	<input type="text" value="+441202533011"/>
Web page(s):	<input type="text"/>		
Contact:	<input type="text" value="Kirsten Hardie"/>		
Email:	<input type="text" value="k.hardie@arts-inst-bournemouth.ac.uk"/>		
Fax:	<input type="text"/>	Phone:	<input type="text"/>
History of contacts:	<input type="text" value="Answered the preliminary inquiry on 7/12/2000 (results below)."/>		
Collection(s) typology:	<input type="text" value="4,000 manufactured objects of domestic character or contemporary themes&lt;br/&gt;such as royalty, football, cultural trends, and ephemera."/>		
Collection(s) origin:	<input type="text"/>		
Observations:	<input type="text"/>		

**Are the collections organized and inventoried?**

Yes, we have an acquisition policy and full records.

**Is there a public exhibition?**

Yes, we've just completed a major exhibition showcasing our contemporary design collections - open to the public and we had a great response.

**Is/has there been any research done on the collections?**

Yes – various bits and pieces although there is lots to do.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

A Design Collection Manager and myself - we both have other roles within the Institute too so time is a little limited - we are also establishing some volunteers to - MA students.

**Is there a budget to manage/take care/exhibit the collections?**

Yes - for both the care and development of the Design Collection and also for exhibitions as part of the Institutes Research support.

Name Museum/Collection:

University/Faculty:

Address:

Fax:  Phone:

Web page(s):

Contact:

Email:

Fax:  Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Work on sorting and cataloguing the Pitman Collection archives is under way but progress is slow (I'm only part-time). It will be some time before a proper catalogue is complete.

**Is there a public exhibition?**

At present there is no public exhibition although a small exhibition was arranged during 1997 in collaboration with a local museum to coincide with the centenary of Sir Isaac Pitman's death.

**Is/has there been any research done on the collections?**

Not much research has been done on the collection so far. I think this is partly because people didn't know it was here. We do occasionally have researchers. Last year they included visitors from universities in Canada and Germany.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

The university employs one qualified archivist/records manager (me!) for 2.5 days a week.

**Is there a budget to manage/take care/exhibit the collections?**

No!!!! I wish there was and I'm working on this. [Later, Lizzie Richmond added:] Some funding from an outside source (HEFCE) was used to start cataloguing a small section of the collection but apart from this, the collection comes under the Library and Learning Centre budget. I don't think there are any major problems with the collection that couldn't be solved through quality staff time. Next year I'm hoping to devote more time to finishing the sorting and cataloguing. After that we can go ahead and promote the collection properly.

Name Museum/Collection: **Library Special Collections**

University/Faculty: **Bath Spa University College**

Address: **Bath Spa University College  
Library Special Collections  
Sion Hill  
Lansdown  
Bath BA1 5SF  
UK**

Fax: **+ 44 1225 875666**

Phone: **+44 1225 875875/875649**

Web page(s): **www.bathspa.ac.uk**

Contact: **Helen Rayner**

Email: **h.rayner@bathspa.ac.uk**

Fax:

Phone:

History of contacts: **Helen Rayner answered the preliminary inquiry in 12/12/2000 (results below).**

Collection(s) typology: **Rare books, historic photograph items, posters, prints, models, and miscellaneous objects. Engravings, early photographic equipment.**

Collection(s) origin: **Bath Academy of Art.  
The collections date from the early 1970s.**

Observations:

**Are the collections organized and inventoried?**

The rare and valuable books are classified: some using simple Dewey Decimal, and some using the Broxix Classification Scheme (a specialist art and design scheme). They are all on our main computer catalogue. The photographic material is listed but not properly catalogued. The other material is not organised at all.

**Is there a public exhibition?**

No, although I do display some items in exhibition cases in the library.

**Is/has there been any research done on the collections?**

No.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

No.

**Is there a budget to manage/take care/exhibit the collections?**

No. [Later, H. Rayner added:] Yes, the Library has to find money from its own budget. Although we no longer add to the collections, you are right to point out that there are still costs involved in housing a collection like this. We receive no extra financial help from the College.



Name Museum/Collection: **School of Conservation Sciences Collection**

University/Faculty: School of Conservation Sciences  
Bournemouth University

Address: School of Conservation Sciences  
Talbot Campus  
Bournemouth University  
Poole Dorset BH12 5BB

Fax: +44 1202 595255 Phone: +44 1202 59444/595176

Web page(s): [Cweb.Bournemouth.ac.uk/consci/text](http://Cweb.Bournemouth.ac.uk/consci/text)

Contact: Damian Evans

Email: [devans@bournemouth.ac.uk](mailto:devans@bournemouth.ac.uk)

Fax: Phone:

History of contacts: Damian Evans answered the preliminary inquiry in 14/12/2000 (results below).

Collection(s) typology: Archaeological material and associated archives, including human remains, natural history, traditional building materials and tools (total c. 50,000 objects and specimens).

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

The collections are organised, they are split into three categories: 1. Reference collection. 2. Research collection. 3. Bulk storage. Inventories do exist for the majority of the individual collections.

**Is there a public exhibition?**

The public do have access to the collections, although we do not advertise the fact. We have 5 display cases in which we exhibit some of the collections for a part of the year.

**Is/has there been any research done on the collections?**

Research has been; and still is an ongoing task.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Overall the collections are run by the Collections Management Group, but the day to day running of the collections is done by myself (technical officer for collections/research).

**Is there a budget to manage/take care/exhibit the collections?**

There is no specific budget for the collections at all.

Name Museum/Collection: **Botanical Drawings**

University/Faculty: **Biology Department of the University of Bristol**

Address: **School of Biological Sciences  
University of Bristol  
Bristol BS8 1TH  
UK**

Fax:  Phone: **+44 117 9289000**

Web page(s): **www.bio.bris.ac.uk**

Contact: **Barbara Costello (Subject Librarian - Biological Sciences and Pharmacology, University of Bristol, Woodland Road, Bristol BS8 1UG).**

Email: **Barbara.Costello@bris.ac.uk**

Fax:  Phone: **+44117 9287943  
+44 7771 874814 (mobile)**

History of contacts: **Barbara Costello answered the preliminary inquiry in 11/12/2000 (results below).**

Collection(s) typology:

Collection(s) origin:

Observations: **Barbara Costello: The [Biological] collections fall into three categories.  
1.A collection of botanical drawings kept in the library  
2.A zoological collection  
3.A botanical collection  
I am responsible only for the collection of botanical drawings and my replies to your questions apply only to these (...). I have forwarded your message to Maggie Gamble and Paul Court who are responsible for the zoological and botanical collections and asked them to contact you separately.**

**Are the collections organized and inventoried?**

The collection comprises 1443 drawings in 16 bound volumes. They are not indexed.

**Is there a public exhibition?**

The drawings are kept in a locked chest in the library and can be viewed on request.

**Is/has there been any research done on the collections?**

No research has been done on the drawings as far as I know.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

The care of the drawings is my responsibility as Biological Sciences Librarian.

**Is there a budget to manage/take care/exhibit the collections?**

There is no specific budget relating to the care of the drawings.

[Later, Barbara Costello explained:] Regarding funding, this is theoretically borne by the library rather than the Biological Sciences Department. The drawings were a gift to the library but any expenditure on conservation, re-binding etc. would be paid for from library funds.

Name Museum/Collection: **Biology Collections**

University/Faculty: School of Biological Sciences  
University of Bristol

Address: School of Biological Sciences  
University of Bristol  
Bristol BS8 1TH

Fax: Phone: +44 117 9289000

Web page(s): www.bio.bris.ac.uk

Contact: Paul Court

Email: Paul.Court@bristol.ac.uk

Fax: Phone:

History of contacts: Paul Court answered the preliminary inquiry in 15/12/2000 (results below).

Collection(s) typology: Botanical drawings (held in Biological Sciences Library, not included in the answers), zoology collection and a botanical collection.

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Most of the vertebrate material is inventoried but the invertebrate & botanical material is not.

**Is there a public exhibition?**

There is no public exhibition though some of the specimens are in corridor display cases which visitors to the Schools preview days can see.

**Is/has there been any research done on the collections?**

Research has been done in the past on some of the vertebrate material though who by and where published I do not know.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

There are no staff appointed to manage the collection.

**Is there a budget to manage/take care/exhibit the collections?**

There is no budget allocated to the collections. Very little is spent on maintenance, but what is will come out of the Teaching budget.

Name Museum/Collection:

University/Faculty:

Address:

Fax:  Phone:

Web page(s):

Contact:

Email:

Fax:  Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

There is an incomplete card index, but I am currently compiling a computer catalogue.

**Is there a public exhibition?**

There are display cases in the Department of Earth Sciences; the public can view them by arrangement with our security personnel during normal working hours (Monday-Friday, 9 am - 5pm, during term time).

**Is/has there been any research done on the collections?**

Nothing has been published.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

One part-time curator (15 hours per week).

**Is there a budget to manage/take care/exhibit the collections?**

Annual budget of £300, but most of the running costs (heating, lighting, security) are covered centrally, and impossible to separate from the general running costs of the department.

Name Museum/Collection: **Theatre Collection**

University/Faculty: Department of Drama (University of Bristol)

Address: Department of Drama  
University of Bristol  
Cantocks Close  
Bristol BS8 1UP  
UK

Fax: +44 (0)1179288251 Phone: + 44 (0)1179287836

Web page(s): [www.bris.ac.uk/depts/drama/tc.html](http://www.bris.ac.uk/depts/drama/tc.html)  
[www.bris.ac.uk/theatreollection](http://www.bris.ac.uk/theatreollection)

Contact: Sarah Cuthill

Email: [s.j.cuthill@bristol.ac.uk](mailto:s.j.cuthill@bristol.ac.uk)

Fax: Phone:

History of contacts: Sarah C. answered the preliminary inquiry on 11/12/00 (results below).

Collection(s) typology: Material illustrating the development of theatre from the primitive to the modern: archives, printed works, visual material, and artefacts (costumes, set models, wigs and props).

Collection(s) origin:

Observations: The Theatre Museum was established in 1951.

**Are the collections organized and inventoried?**

Yes. See our website [www.bris.ac.uk/theatreollection](http://www.bris.ac.uk/theatreollection).

**Is there a public exhibition?**

Yes. 3-4 temporary exhibitions per year on site.

**Is/has there been any research done on the collections?**

Yes. We are primarily a research centre.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Currently 2 full-time permanent, 1 full-time temporary (paid by a grant for 2 years), 1 part-time temporary (paid by a grant for 2 years).

**Is there a budget to manage/take care/exhibit the collections?**

Yes.

Name Museum/Collection: **Library Special Collections**

University/Faculty: **University of Bristol**

Address: **University Library  
Tyndall Avenue  
University of Bristol  
Bristol BS8 1TH**

Fax: **+ 44 117 9251424** Phone: **+44 117 9289000**

Web page(s):

Contact: **Michael Liversidge, Michael T. Richardson**

Email: **Michael.Richardson@bristol.ac.uk**

Fax: Phone:

History of contacts: **A fax was sent C/o Michael Liversidge. M.T. Richardson answered by email in 12/12/2000 (results below).**

Collection(s) typology: **Mainly archives, but include museum-type material: engravings, topographical prints, drawings, drawing instruments, telegraph cable, binoculars, brass rubbings.**

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Yes.

**Is there a public exhibition?**

Exhibitions are mounted in four display cases in public areas of the library building.

**Is/has there been any research done on the collections?**

About 1700 research visits or enquiries by post or telephone or electronic mail are handled "per annum".

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

The general staffing complement is composed of one person serving full-time, one serving half-time and one person serving for ten hours per week; research grants support cataloguers working on computerising the catalogue provide one person full-time, one person half-time and one person serving for three days per week.

**Is there a budget to manage/take care/exhibit the collections?**

The funding is taken from the general funding of the library plus research grants awarded to enhance access to the collections.

Name Museum/Collection:

University/Faculty:

Address:

Fax:

Phone:

Web page(s):

Contact:

Email:

Fax:

Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Yes, we have living thematic collections of plants e.g. medicinal plants, agricultural plants, arboretum, evolutionary garden...not extensively inventoried.

**Is there a public exhibition?**

The collections are available to be visited freely.

**Is/has there been any research done on the collections?**

Some part of the garden is devoted to experimental plots.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Yes, 3 full time.

**Is there a budget to manage/take care/exhibit the collections?**

Yes.



Name Museum/Collection: **Ecomusée de la région du Viroin-Treignes**

University/Faculty: Université Libre de Bruxelles

Address: Ecomusée de la Région du Viroin  
81, rue de la Gare  
B 5670 Treignes

Fax: 32 - (0) 60/39.94.50 Phone: 32 - (0) 60/39.96.24

Contact: Wladyslaw QUINET, Conservateur

Email: [wquinet@ulb.ac.be](mailto:wquinet@ulb.ac.be)

History of contacts: Wlady Quinet did not answer the questions directly and instead sent documentation written by Jean-Jacques VAN MOL (Professeur émérite & directeur de l'Ecomusée) in 11/12/2000 (summary below).

Collection(s) typology: L'Ecomusée s'est attaché à réaliser un inventaire systématique des sources ethnologiques : produits, agents, outils, techniques, et documents provenant de la région. Les collections consistent essentiellement en outils et machines se rapportant aux métiers traditionnels de nos campagnes, principalement l'agriculture.  
Les outils représentent des séries complètes de l'outillage et des machines utilisées dans les principaux métiers artisanaux qui ont été pratiqués dans notre région. Les collections comportent plus de 6.000 outils répertoriés. Les machines et outils agricoles constituent une collection de 150 machines représentative de l'histoire de l'agriculture en Belgique depuis 1850. L'outillage manuel se compose de plus de 1.000 pièces. Les collections se rapportent aux grandes cultures pratiquées dans notre pays. Nos archives agricoles fournissent un complément par une très abondante documentation sur le machinisme agricole en Belgique.  
Le chauffage domestique et la poèlerie ont joué un rôle déterminant dans l'économie régionale pendant plus d'un demi-siècle. Ce thème a fait l'objet d'enquêtes de terrain et de collectage d'archives d'usines et d'objets manufacturés (poêles et cuisinières) qui ont abouti à la réunion d'une importante documentation.  
L'Ecomusée est doté d'un équipement informatique complet qui comprend ordinateurs pour la gestion informatisée des collections, logiciels pour la micro-édition, traitement d'images, etc. Il possède également des enregistreurs pour les enquêtes ainsi que le matériel de projection pour les documents.  
Des recherches ont été menées sur l'architecture vernaculaire, l'histoire de l'agriculture, l'histoire d'entreprises de fabrication de matériel agricole. Des études sont poursuivies sur l'histoire du paysage et de l'environnement. Une analyse de l'évolution des aires matrimoniales parmi la population des communes de l'entité, depuis 1794 à 1980, a été réalisée.

Collection(s) origin: L'Ecomusée de la Région du Viroin est intégré au Centre d'Environnement de l'Université Libre de Bruxelles, à Treignes, il est administrativement rattaché à l'Institut de Gestion de l'Environnement et de l'Aménagement du Territoire (I.G.E.A.T.). Treignes est un village de 700 habitants, regroupé dans une entité appelée Viroinval, de 5.000 habitants environ, en province de Namur. Ce laboratoire de l'environnement, aménagé dans l'ancienne gare ferroviaire du village, a été fondé en 1972, par la Faculté des Sciences de l'Université Libre de Bruxelles, pour constituer un laboratoire de terrain pour les enseignements en Sciences Naturelles (Zoologie, Géologie, Botanique, Ecologie). Le choix de cette implantation était motivé par la richesse de la faune, de la flore de cette région ainsi que par la diversité de son substrat géologique. Treignes se trouve en effet à la lisière de la forêt ardennaise sur la frange méridionale d'une formation

calcaire appelée Calestienne. Le territoire couvert par nos activités concerne la partie méridionale de l'Entre-Sambre-et-Meuse, aux confins de la région de Champagne-Ardenne en France. Le paysage de ce terroir a remarquablement conservé sa structure à trois composantes, ager, saltus et sylva. La forêt couvre 60% de la superficie du territoire de la commune, les limons fertiles, couvrant un plateau, ont été cultivés depuis l'époque celtique. Les friches communales, autrefois pâturées par les moutons, sont actuellement converties en réserves naturelles. Dès 1978, les recherches se sont élargies à la population humaine, à son passé historique et sa réalité contemporaine, le Centre de l'Environnement est ainsi devenu également un centre d'interprétation de l'histoire économique et sociale de la région. Les historiens se sont attachés à analyser les relations de l'homme et de l'environnement, en favorisant l'agriculture dans nos sujets d'études. Les enquêtes ethnologiques, le collectage systématique de témoignages, les dons d'objets ont alimenté un fonds de documentation qui s'est enrichi au cours des années. C'est ainsi qu'est né le projet de créer une structure appropriée pour conserver et gérer le patrimoine accumulé, dans les meilleures conditions possibles, et de le valoriser dans un programme de restitution à la population. La formule de l'écomusée, inspirée du modèle français, a été adoptée. L'Ecomusée a privilégié les domaines de la technologie, outils et techniques étant les moyens dont l'homme s'est doté pour maîtriser la matière et exploiter les ressources du milieu. En 1983, l'Université faisait l'acquisition de la ferme-château située au centre du village, pour créer un Ecomusée avec comme but de développer une action d'éducation et de sensibilisation au patrimoine, destinée à la population locale et au public en général. Un des objectifs a été aussi de promouvoir une formation à l'action culturelle pour des chômeurs locaux, compte tenu du taux de chômage très élevé dans cette région rurale (40%). Les premières salles permanentes de l'Ecomusée ont été inaugurées en 1988. L'Ecomusée comporte actuellement trois cellules : la ferme-château, en cours de restauration, est destinée à devenir le siège principal de l'Ecomusée, l'artisanat de nos campagnes y est actuellement évoqué, le musée d'agriculture (provisoirement dans une annexe de la gare) et le musée de la forge à Romedenne situé à 12 km de Treignes. Des expositions temporaires sont organisées chaque année.

Observations:

Base documentaire: La bibliothèque comporte plusieurs milliers d'ouvrages et de traités qui concernent l'agriculture (1800-1990), l'histoire et la sociologie rurales, les techniques anciennes (dictionnaires, traités, etc. ), les collections des principaux périodiques agricoles belges depuis 1945, certains depuis plus longtemps, des revues d'histoire régionale. Des archives industrielles : centrale électrique de Treignes (1919-1955), tannerie (1900-1980), coopérative laitière (1895-1980), ateliers de matériel agricole, école communale (1930-1935); archives agricoles diverses (1890-1990); prospectus publicitaires, documents iconographiques sur les manufactures belges, dont un important fonds documentaire sur la Société des Charrues Mélotte à Gembloux; archives des fonderies et poêleries; archives diverses des communes de la région. De plus, un inventaire des archives communales, provinciales et nationales relatives à la région a été réalisé. Les archives sonores sont constituées par des enregistrements de témoins qui ont joué un rôle économique ou social (280 bandes magnétiques, la plupart retranscrites dans une banque informatisée). Les sujets enregistrés ont pratiqué divers métiers : agriculteurs, sabotiers, cordonniers, meuniers, forgerons, ouvriers et employés dans les fonderies couvinoises et aux usines métallurgiques de la Chiers (Vireux en France), ouvriers et employés du constructeur de charrues Mélotte, exploitants forestiers, vie quotidienne, etc. Cette banque de données a été entièrement retranscrite sur traitement de textes informatisé. Les archives iconographiques comportent plusieurs milliers de cartes postales, photographies originales, reportages photographiques, diapositives et enregistrements vidéo des gestes et des actes dans les domaines de l'artisanat.

**OBJECTIFS DE L'ECOMUSEE**

La gestion de l'Ecomusée est confiée à une association sans but lucratif. Le fonctionnement est assuré par un personnel, majoritairement composé de chômeurs de longue durée, travaillant dans le cadre d'un programme de résorption du chômage mis sur pied par la Région Wallonne. Ce personnel, non

qualifié, a été entièrement formé par nos soins. L'Ecomusée est un lieu de culture qui intègre dans sa démarche le milieu dans lequel vit l'homme et les relations que celui-ci entretient avec ce milieu, il est une illustration du savoir-faire technologique, base du fonctionnement autonome de la communauté villageoise. Il veut rendre perceptible l'alliance remarquable entre la force, l'adresse et l'intelligence qui caractérisent la technologie traditionnelle. Il propose une analyse de l'évolution et des transformations de la ruralité provoquées par la Révolution Industrielle. L'Ecomusée associe trois composantes fondamentales : un territoire, une population, et le temps qui lui apportent sa perspective historique. Son implantation sur les lieux mêmes dont l'histoire est reconstituée veut affirmer la correspondance nécessaire entre les documents présentés et le monde qu'ils décrivent. La ferme-château, siège de l'Ecomusée : La «ferme-château» du village de Treignes est une imposante bâtisse qui est située au coeur du village. Ancienne résidence du représentant du pouvoir sous l'Ancien Régime, cette bâtisse offre une belle illustration d'une évolution architecturale qui témoigne des époques successives de son édification. Tour à tour défensive, avec sa tour donjon qui date du XVI<sup>e</sup> siècle, demeure résidentielle, puis exploitation agricole avec ses dépendances, grange et étables, la ferme-château constitue un ensemble d'édifices regroupés autour d'une cour carrée.

### **ACTIVITES:**

Cinq colloques se sont succédés depuis 1988. Les sujets traités ont été : l'épeautre, le seigle, l'archéologie du pain, l'attelage à chevaux dans l'Antiquité et le Moyen-Age, l'industrie de la poèlerie. Les actes en ont été publiés ou sont en cours de publication.

#### Activités scolaires :

Des activités pédagogiques sont mises au point et réalisées sur des thèmes spécifiques (le pain, le travail du fer, la fabrication artisanale de la corde, classes du patrimoine architectural, etc.). Par le biais de jeux et d'activités créatrices, les enfants sont amenés à observer, découvrir et comprendre les relations entre l'homme et le milieu. La mise au point de ces activités est réalisée en étroite collaboration avec les collègues de l'Université. Au cours de l'année scolaire écoulée une cinquantaine d'écoles ont été accueillies dans nos locaux.

Des publications de vulgarisation scientifiques ont été éditées. Depuis 1989, l'Ecomusée diffuse un bulletin d'informations trimestriel : les Chroniques de l'Ecomusée, il constitue un organe de liaison destiné aux amis et sympathisants de l'Ecomusée. Les rubriques couvrent des sujets variés : les activités de l'Ecomusée, nouvelles acquisitions, enquêtes & documents, notes de lectures, vie du Centre de l'Environnement, etc. 31 numéros ont été publiés à ce jour.

Des scénarios pour la télévision scolaire (RTBF) ont été réalisés par notre équipe scientifique.

D'autres activités, dans un souci d'inventaire historique, ont été programmées. C'est ainsi qu'en 1980, a été reconstituée la fabrication de charbon de bois par le procédé traditionnel. L'opération a fait l'objet d'un reportage photographique et filmé complet. Des enquêtes et reportages ont été effectués sur des thèmes spécifiques de manière à constituer un fonds documentaire. Avec les matériaux recueillis des expositions à thèmes, ont été proposées au public : l'exploitation du marbre, la saboterie, l'extraction de l'ardoise, etc.

#### Action sociale :

L'Ecomusée constitue un terrain d'application des recherches et des préoccupations du Centre d'Histoire et de Technologies Rurales ainsi que des recherches en Sciences "exactes". Il a pour but de contribuer à la diversification et au renforcement de la résistance de l'écosystème rural local en privilégiant une politique d'emploi et de développement d'activités reposant en grande partie sur les possibilités locales ainsi que sur une dynamique au sein de la population. Il s'efforce de favoriser un renforcement de la culture et de l'identité du territoire; il s'inscrit dans une stratégie de développement régional qui tient compte des spécificités locales.

L'Ecomusée constitue à la fois un outil d'acquisition de connaissance et de diffusion d'un savoir régional. Il contribue à l'insertion sociale de chômeurs en leur assurant un encadrement et une formation en animation culturelle. Il développe actuellement des ateliers d'artisanat où est entretenu un savoir-faire traditionnel (cuir, fer).

Il accueille également des séminaires organisés par la Fondation Rurale de Wallonie et des stagiaires en Tourisme.

#### Relations internationales :

L'Ecomusée est membre de la Fédération Française des Ecomusées et Musées de Société, de l'Association Internationale des Musées d'Agriculture et de l'Association française des Musées d'Agriculture. Des contrats d'association sont en cours avec des partenaires en Ardenne française.

Dans le cadre des programmes ERASMUS et TEMPUS, des échanges ont été effectués avec plusieurs pays de la Communauté Européenne et la Roumanie en 1993 et 1995. Une collaboration plus étroite a été établie avec le Musée du Paysan Roumain de Bucarest, elle a abouti au montage d'une exposition à Treignes, cet été, avec pour titre : "La Roumanie en miroir".

Plus récemment l'Ecomusée participe à un programme RECITE de l'UE, en partenariat avec l'Italie

(Ecomuseo del Lago Orta e Mattarone), la Grèce (Evros-Feres), et le Portugal (Éco-Musée de Castelo do Bode - Abrantes).

Fréquentation:

L'Ecomusée accueille actuellement environ 8.000 visiteurs par an alors que les conditions d'accueil sont encore très imparfaites, la restauration de la ferme-château est en voie d'achèvement.

Publications:

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- PUISSANT J. & VAN MOL J-J., édit. 1984 : Mémoires collectives. Actes du colloque à l'ULB Éditions de l'Université de Bruxelles, 317p.(1)
- VAN MOL J-J. 1984 : Le Centre de l'Environnement à Treignes. Centre de recherche universitaire, outil d'animation culturelle. Mémoires collectives. op. cit. supra. pp. 203-205.
- BILLEN C., GRIMMEAU J.P. & PILLEN P. 1984 : Des caravanes dans le paysage! Étude de l'impact esthétique de différentes formes de seconde résidence sur le paysage. Le cas de Viroinval et Doische (Entre-Sambre-et-Meuse). Ministère de la Communauté française; Bruxelles. 135 p.
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- AMATO A. & BILLEN C. 1986 : Comprendre pour sauvegarder. Ministère de la Communauté française.
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- VAN MOL J-J. 1988 : J. QUINTART et Fils, constructeur de machines agricoles à Briffoeil. Edit. DIRE, 28 p.
- DEVROEY J-P. & VAN MOL J-J. édit. 1989 : L'épeautre (*Triticum spelta*), histoire et ethnologie. Actes du colloque international à Treignes en 1988. DIRE, Treignes, 205 p.
- VAN MOL J-J. 1990: L'Écomusée de Treignes, in *Du passé faisons table garnie. Archéologie Industrielle de la Sambre. Cenforsoc*, pp. 72-75.
- Ouvrage collectif 1990 : *Autour de Treignes. Crédit Communal*, 62 p.
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- DEVROEY J-P. & VAN MOL J-J. édit. 1991 : La condition ouvrière en région dinantaise au XIXe siècle. Le rapport du Dr. Didot en 1847. Edit. DIRE, Treignes, 96 p.
- RAEPSAET G. & ROMMELAERE C. 1995 : Brancards et transports attelés entre Seine et Rhin de l'Antiquité au Moyen-Age. Aspects archéologiques, économiques et techniques. Actes du colloque de Bruxelles et Treignes. Edit. DIRE, Treignes, 151 p.\*\*
- BILLEN C., DEVROEY J-P. & VAN MOL J-J. édit. 1995 : Le seigle (*Secale cereale*), histoire et ethnologie. Edit DIRE, Treignes 254 p.
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- BILLEN C., HEIRWEGH J.-J. & VAN MOL J.-J. 1997 : Innovations techniques en agriculture en Belgique aux XIXe et XXe siècles. Alfred Mélotte, constructeur de charrue, fondateur d'industrie. Edit DIRE Treignes, 110 p.
- PUISSANT J. 1996 : notices sur des patrons de la région, in KURGAN, JAUMAIN & MONTENS : *Dictionnaire des patrons en Belgique. De Boeck Université*.
- VAN MOL J.-J. s.d.: Historique de la vallée de la Gelbressée. in *Bassin Hydrographique de la Gelbressée. Comité Scientifique de la Conservation de la Nature et de la Protection des Eaux, asbl. Namur* pp. 19-20.
- VAN MOL J.-J., QUINET Wladyslaw : *Artisans et terroir. Folklore Wallon*, 200p.
- En préparation
- MESNIL M. & FECHNER K. : *Archéologie du pain. Actes du colloque à Treignes en 1995*.
- PUISSANT J. & VAN MOL J.-J. : *Fonderies de fer et poêleries. Actes du colloque à Couvin en 1996*.
- VAN MOL J.-J. : *Histoire de la mécanisation de l'agriculture en Belgique depuis 1800*.

Name Museum/Collection: **Musée de Zoologie Auguste Lemeere**

University/Faculty: **Université Libre de Bruxelles**

Address:

Web page(s):

Contact: **Prof Michel Jangoux, Service de Biologie Marine (160/15), Université Libre de Bruxelles  
50 ave F.D. Roosevelt, 1050 Bruxelles, Belgium**

Email: **mjangoux@ulb.ac.be**

Fax: **+ 322 6502796** Phone: **+ 32 26502412**

History of contacts: **Answered preliminary inquiry in 11/12/2000 (results below).  
A pack of documentation (reprints) arrived in 15/12/2000.**

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Yes they are and we hope to be able to improve (computerization) the inventory.

**Is there a public exhibition?**

Yes. It is first assigned to the students (Universities and secondary schools); we also organizes visits for interested people whichever they are.

**Is/has there been any research done on the collections?**

It has been. Presently not.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Yes. There is one full-time curator. No technician.

**Is there a budget to manage/take care/exhibit the collections?**

Yes. About 4.000 Euros/year.

Name Museum/Collection:

University/Faculty:

Address:

Fax:  Phone:

Web page(s):

Contact:

Email:

Fax:  Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Yes, the collections are organized and inventoried.

**Is there a public exhibition?**

Yes and open two times a week.

**Is/has there been any research done on the collections?**

We've published a book few years ago.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Two persons : 1 secretary full time and 1 historian 1/3 time.

**Is there a budget to manage/take care/exhibit the collections?**

No.

Name Museum/Collection: **Geology Collection**

University/Faculty: Cheltenham and Gloucestershire College of Higher Education

Address:

Fax: Phone:

Web page(s):

Contact: (Dr) Joe Angseesing, School of Environment, Cheltenham and Gloucester College of H.E  
Cheltenham GL50 4AZ, UK

Email: psmithers@plym.ac.uk

Fax: Phone: +44 1242 532973

History of contacts: Joe Angseesing answered the preliminary inquiry in 11/12/2000 (results below).

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Partly catalogued, but not completely.

**Is there a public exhibition?**

Public exhibition is very small - just a few good specimens to attract attention to the Department.

**Is/has there been any research done on the collections?**

A small amount of research has been done on the history of the collections (partly covered in a paper by Hugh Torrens on the Cheltenham collections).

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

No staff at present; the geology lecturers all take on some responsibility; there is not much technical support.

**Is there a budget to manage/take care/exhibit the collections?**

There is no budget; some specific purchases for storage are made from our teaching budget (we are primarily a teaching department in higher education).

Name Museum/Collection:

University/Faculty:

Address:

Fax:  Phone:

Web page(s):

Contact:

Email:

Fax:  Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Yes but with a backlog of work to be done.

**Is there a public exhibition?**

Yes but only for specific events such as alumni reunions and special College anniversaries.

**Is/has there been any research done on the collections?**

Yes people have used the collection for a variety of research work such as history of sport in education and musical education as well as teacher training. The most frequent use though is for tracing family histories.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Yes, as the College Librarian my job description includes maintenance of the collection. I try to spend half a day each week with the archives but often fail - hence the backlog. I will always try to answer any specific enquiries.

**Is there a budget to manage/take care/exhibit the collections?**

Yes - £500 per annum!



Name Museum/Collection:

University/Faculty:

Address:

Fax:  Phone:

Web page(s):

Contact:

Email:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Most of the collections are catalogued on a database called INCA, which is used by quite a few universities. It includes digital images of some of the objects, but there is no public access to it at present.

**Is there a public exhibition?**

Several departments have small displays in their own buildings, and as Laura told you, the Medical History collection is on permanent display in a small museum. We also have temporary exhibitions in several locations around the campus. The ultimate aim is to open a permanent museum for all the collections.

**Is/has there been any research done on the collections?**

The collections are often used for research work by staff, students and others.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

As Laura explained there is one full-time Curator (myself) and about 20 honorary departmental curators. I also have an assistant and various volunteers.

**Is there a budget to manage/take care/exhibit the collections?**

Excluding salaries and so forth, the university gives us about 8000 pounds a year to manage the collections. A separate fund exists for conservation work on the Fine Art collection.

Name Museum/Collection: **Archaeology Collection**

University/Faculty: Department of Archaeology of the University of Exeter

Address: Archaeology Department  
Queen's Building  
The Queen's Drive  
Exeter EX4 4QJ

Fax: Phone: + 44 1392 264327

Web page(s):

Contact: Dr. Valerie Maxfield

Email: v.a.maxfield@exeter.ac.uk

Fax: Phone:

History of contacts: V. Maxfield answered the preliminary inquiry in 13/12/2000 (results below).

Collection(s) typology: Less than 5,000 objects: pottery, metalwork, lithics, and organics. Also small collection of Roman, medieval and modern coins and tokens, which is shared with the History Department. V. Maxfield explained that this collection is also under her care: "YES IT IS. IT IS HOUSED IN THE ARCHAEOLOGY DEPARTMENT. HISTORY AND ARCHAEOLOGY USED TO BE PARTS OF THE SAME DEPARTMENT WHICH IS WHY WE JOINTLY OWN THE COLLECTION." (Maxfield, in litt., 13/12/2000).

Collection(s) origin: Teaching collection dating from 1948.  
The objects date from prehistoric to medieval.

Observations: The collection in question is just a small teaching collection made up of material derived from a wide range of sources over a large number of years. It is not publicly displayed, but is made available to any scholar who needs to use material in it (Maxfield, in litt., 13/12/2000).

**Are the collections organized and inventoried?**

YES. BUT NOT IN DETAIL ORGANIZED JUST BY MATERIAL TYPE, SINCE THIS IS HOW THE STUDENTS USE THEM.

**Is there a public exhibition?**

No.

**Is/has there been any research done on the collections?**

N SOME OF IT - THAT PART WHICH APPEARS IN PUBLISHED EXCAVATION REPORTS.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

NO. IT IS LOOKED AFTER BY THE LECTURERS/TECHNICIANS WHO USE IT

**Is there a budget to manage/take care/exhibit the collections?**

No. [Later, V. Maxfield added:] CURATION IS JUST PART OF STAFF TIME. IF ANY OTHER BUDGET NEEDED IT WILL BE TAKEN FROM WHATEVER COST CODE SEEMS APPROPRIATE OR ELSE A BID MADE TO SPECIAL TEACHING FUNDS. BUT IT IS A VERY SMALL COLLECTION!

Name Museum/Collection:

University/Faculty:

Address:

Fax:

Phone:

Web page(s):

Contact:

Email:

Fax:

Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

The following are on an inventory: art works, sculpture, antiques, ceramics and silver. Plus the photographic archives.

**Is there a public exhibition?**

There are two: Northcote House Gallery has two 6 monthly exhibitions by west-country based artists. Reed Hall Gallery has six exhibitions annually of 3 weeks duration, again by west-country based artists.

**Is/has there been any research done on the collections?**

The Newlyn School and the Turner Liber Studiorum.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Just me - the Fine Art Curator, part-time.

**Is there a budget to manage/take care/exhibit the collections?**

Yes and its very small.

Name Museum/Collection: **Special Collections and Manuscripts**

University/Faculty: **Main Library of the University of Exeter**

Address: **Main Library  
University of Exeter  
Stocker Rd  
Exeter EX4 4QJ**

Fax: **+44 1392 263871** Phone: **+ 44 1392 263869**

Web page(s): **<http://www.library.ex.ac.uk/special/>**

Contact: **Alasdair Paterson, University Librarian**

Email: **[a.t.paterson@exeter.ac.uk](mailto:a.t.paterson@exeter.ac.uk)**

Fax: Phone:

History of contacts: **A. Paterson answered the preliminary inquiry in 18/01/2001 (results below).**

Collection(s) typology: **Special Collections is an administrative department of the University Library through which the Library's collection of archives and rare books are managed, alongside the film collections of the Bill Douglas Centre. The University's Fine Art Collections are also administered through Special Collections.**

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

In part.

**Is there a public exhibition?**

Not currently (except a permanent exhibition in the Cathedral Library, which we manage).

**Is/has there been any research done on the collections?**

Yes.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

1 full-time senior librarian, 1 part-time archivist, clerical assistance amounting to 1 full-time.

**Is there a budget to manage/take care/exhibit the collections?**

A staffing budget, project money for some collections, acquisitions budgets for the heritage libraries (Cathedral and Devon & Exeter Institution) we maintain - otherwise a share of more general budgets.

Name Museum/Collection: **Bill Douglas Centre for the History of Cinema and Popular Culture**

University/Faculty: **University of Exeter**

Address: **Bill Douglas Centre for the History of Cinema and Popular Culture  
Queen's Building  
Queen's Drive  
Exeter EX4 4QH**

Fax: **+44 1392 264361** Phone: **+44 1392 264321**

Web page(s): **www.ex.ac.uk/bill.douglas/**

Contact: **Dr. Hester Higton**

Email: **H.K.Higton@exeter.ac.uk**

Fax: Phone:

History of contacts: **H. Higton answered by email the preliminary inquiry (sent by fax on 11/12).  
Results are below.**

Collection(s) typology: **Books, prints, artefacts and ephemera depicting the history of cinema from  
late 18<sup>th</sup> century to Hollywood. Total: 60,000 items. Opened to the public in  
1997.**

Collection(s) origin:

**Are the collections organized and inventoried?**

The collections are almost completely inventoried on computer, using Microsoft Access 97. The information at present is only sufficient for basic searching; there are no complete descriptions of items. The collection is only organised in the sense that books are kept on shelves, papers are stored in boxes and other items are kept in filing cabinets. However, all items have locations so they can all be retrieved when necessary.

**Is there a public exhibition?**

There is a public exhibition. You can see pictures of it on our web site at <http://www.ex.ac.uk/bill.douglas/galleries.html>.

**Is/has there been any research done on the collections?**

The collections have been used for research since the Centre opened three years ago. Most of the research is undertaken by postgraduates here at Exeter, and by the staff in the English department who are interested in film. However, we have also had outside researchers making use of the collection and coming from as far afield as Australia to do so.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Staff who look after the collections. There is only one full time member of staff with responsibility for the collections. That is me. As curator I deal with all tasks relating to exhibitions, collections management, schools education and publicity. I have two part-time assistants who generally work on the inventory of new materials.

**Is there a budget to manage/take care/exhibit the collections?**

The total budget for the running of the Centre (excluding my salary) is 6500 pounds. About two-thirds of this pays for my assistants; the remainder is used for display and conservation equipment, for publicity, for miscellaneous office materials, etc. etc.

Name Museum/Collection:

University/Faculty:

Address:

Fax:  Phone:

Web page(s):

Contact:

Email:

Fax:  Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Partially.

**Is there a public exhibition?**

Yes.

**Is/has there been any research done on the collections?**

Students' studies, no real scientific research as such (there has been in the 19<sup>th</sup> century).

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Only one: the curator (that's me). I have to do all the work involved with the museum.

**Is there a budget to manage/take care/exhibit the collections?**

Our annual budget is 300,000 Belgian franks (about 6650 US dollars) with which I have to finance everything concerning the museum and its collections.

Name Museum/Collection:

University/Faculty:

Address:

Fax:  Phone:

Web page(s):

Contact:

Email:

Fax:  Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

- Are the collections organized and inventoried?**
- Is there a public exhibition?**
- Is/has there been any research done on the collections?**
- Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**
- Is there a budget to manage/take care/exhibit the collections?**

The answer to all questions is no I am afraid. We did manage to get a bit of staffing to put the records on a database but there is no budget and no staff at the moment. The resources have been used by students in our Arts and Media Centre as examples of particular resources.

Name Museum/Collection: **Helsinki University Museum**

University/Faculty: **University of Helsinki**

Address: **Yliopistonkatu 4  
(P.O. Box 33, 00014 University of Helsinki)  
Helsinki**

Fax:  Phone: **+ 358 9 191 22928/9**

Web page(s):

Contact: **Kati Heinamies**

Email: **kati.heinamies@helsinki.fi or kati\_heinamies@savotta.pc.helsinki.fi**

Fax:  Phone:

History of contacts: **I exchanged 1 email with Kati Heinamies in November 2000. Did not send preliminary inquiry. She sent me, by normal mail, a leaflet on the museums of the University of Helsinki.**

Collection(s) typology: **History of the University administration and various disciplines (furniture, scientific apparatus, printed documents, art collections (800), portraits. The most important collections are the Cabinet of Physics and the Aboica Collection of the Helsinki University Library (600 foreign books).**

Collection(s) origin:

Observations: **The Museum was established in 1978.  
It has its own building.  
It is open by appointment.  
  
One of the main collections of the Museum – the Coin and Medal Collection – is housed in the Coin Cabinet of the National Museum of Finland.**

Note: This Museum was renovated in 2003, encompassing more collections from the University of Helsinki. The new museum was visited just before the opening (October 2003) and Kati Heinamies interviewed on site (see appendix 6, table A6.1).



Name Museum/Collection: **Musée de Zoologie**

University/Faculty: **Université d'Etat de Liège**

Address: **Quai Ed. Van Beneden, 22  
4020 Liège  
Belgique**

Fax: **+32(0)43665010/5113** Phone: **+32(0)43665002**

Web page(s): **www.ulg.ac.be/museezoo**

Contact: **Dr. Michèle Loneux (Curator) (same address as above)**

Email: **Michele.Loneux@ulg.ac.be**

Fax: **+32 04 366 5010 or 5113** Phone: **+32 04 366 5002**

History of contacts: **Answered the preliminary inquiry in 8/12/2000 (results below).**

Collection(s) typology:

Collection(s) origin:

Observations: **When asked about what she considered the biggest problem the Museum was facing, M. Loneux answered: "The biggest problem is to be known and recognized as interesting Museum for its scientific collections by the scientific community inside and outside the University. Inside the University, people not concerned see quite only the collections exhibited for the public, for which there is a welcome staff centered to the Aquarium; that's why also my curator-job for the scientific collections is not yet guaranteed by the University. Most of the few successful collaborations done til now were with foreign researchers. The local researchers prefer to go out for some external mission. This recognition depends on inventories, publications and promotion, which can be done only at very slow pace due to the lack of staff (to do the job) and money (to assume costs of research and publication in scientific journals)" (M.Loneux, *in litt.*, 12/12/2000).**

**Are the collections organized and inventoried?**

Yes.

**Is there a public exhibition?**

Yes.

**Is/has there been any research done on the collections?**

Yes, but OCCASIONALLY [sic], due to lack of researchers interested on.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Yes but LESS AND LESS [sic]. We are today only two persons for the scientific collections of the Zoological Museum : 1 Scientific half-time (me!) and 1 technician in drawing full time reconverted in encoding of the data base with specimens in the collection.

**Is there a budget to manage/take care/exhibit the collections?**

Yes, but only a small one.

Name Museum/Collection:

University/Faculty:

Address:

Fax:

Phone:

Web page(s):

Contact:

Email:

Fax:

Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Yes. We have 4 greenhouses with different climates plus outdoor collections. Each greenhouse has a part for reserves. In each greenhouse, we have developed a particular theme of botany. We are busy with inventorying the collections.

**Is there a public exhibition?**

The objectives of our museum are (i) to cultivate plants for practical works of the University students, (ii) to take care of plant collections of the University and (iii) to manage public exhibition.

**Is/has there been any research done on the collections?**

Our objects of collections (plants) are not studied but (i) some are used in experimentations, (ii) we seek for their correct name (determination) and (iii) we send samples to a renowned herbarium.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

One scientific and 3 gardeners.

**Is there a budget to manage/take care/exhibit the collections?**

Yes.

Name Museum/Collection:

University/Faculty:

Address:

Fax:  Phone:

Web page(s):

Contact:

Email:

Fax:  Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Yes.

**Is there a public exhibition?**

Yes.

**Is/has there been any research done on the collections?**

Yes.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Yes.

**Is there a budget to manage/take care/exhibit the collections?**

No.

Name Museum/Collection: **Patrimoine Artistique et Galerie Wittert**

University/Faculty: **Université de Liège**

Address: **Université de Liège  
Service des Collections Artistiques  
Palace du 20-aout, 7  
4000 Liège  
Belgique**

Fax: **+3243665854** Phone: **+3243665329**

Web page(s): **www.ulg.ac.be/wittert/a\_accueil.html  
www.ulg.ac.be/wittert/fr/boutique/boutique\_cartes.html**

Contact: **Jean Housen**

Email: **Jean.Housen@ulg.ac.be**

Fax: Phone:

History of contacts: **Respondeu ao inquérito preliminary em 1/12/2000 (results below).**

Collection(s) typology: **40,000 engravings and drawings.**

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

The collection consists of about 40,000 engravings and drawings. We have a manuscript inventory (basic information on the works) and are working on a computerized inventory (which now contains 20,000 objects).

**Is there a public exhibition?**

We have a gallery where are presented our collections (temporary exhibitions). The gallery is available for the university community.

**Is/has there been any research done on the collections?**

The research on the collection is done:

- by the students of the Department of Art History (material for lectures,...)
- by students for doctoral thesis
- by the laboratory of Archeometry of the University of Liege
- by researchers from other universities in Belgium and abroad

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Staff consists of 3 persons : 2 assistants full-time and 1 secretary (2/3 time)

**Is there a budget to manage/take care/exhibit the collections?**

We have a budget for manage, take care, and exhibitions. The budget comes from:

- the university
- the government of the French-speaking community of Belgium
- own resources (sell of reproductions, lending of exhibitions, etc.)

Name Museum/Collection: **Vertebrate Palaeontology Collections**

University/Faculty: **Université Catholique de Louvain at Louvain-la-Neuve**

Address: Prof. M. C. Groessens-Van Dyck  
Fondation Morren  
Unité GEOL  
Place L. Pasteur 3  
1348 Louvain-la-Neuve  
Belgique

Fax:  Phone: **+32 010 47 28 41**

Web page(s):

Contact: **Marie-Claire Vandyck (Prof.)**

Email: **vandyck@geol.ucl.ac.be**

Fax:  Phone:

History of contacts: **Marie-Claire Vandyck was very helpful and sent me interesting information on the splitting of the palaeontology collections in Louvain. She answered the preliminary inquiry in 1/12/2000 (see results below).**

Collection(s) typology: **Vertebrate collection.**

Collection(s) origin:

Observations: **At the present time the Université Catholique de Louvain is split in two. One is always in Leuven and the other one (French speaking) is in Louvain-la-Neuve. Each university has a part of the palaeontological collections. I am myself in charge of the vertebrate collection here in Louvain-la-Neuve so the following answers concern only the vertebrates from Louvain-la-Neuve. For information about the other part you have to contact my colleague, prof. L. Hance : hance@geol.ucl.ac.be Unfortunately I don't know exactly who is in charge of the paleontological collection in Leuven because I think that professeur Bultynck is retired. If you want I may ask (Van Dyck, *in litt.* 1/12/2000). I asked M.C. van Dyck whether the Université Catholique de Louvain was a public or private university? She answered "It is very curious, and probably typical from our country, it is a free university with state recognition and money (as is also the university of Brussel)" (Van Dyck, *in litt.* 1/12/2000). [And the Catholic University of Lisbon, I must add].**

**Are the collections organized and inventoried?** Yes.

**Is there a public exhibition?** Yes for a part of them.

**Is/has there been any research done on the collections?** Yes.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Yes and no. There is a recent private foundation (Foundation H. et L. Morren) that promotes research and education about evolution. One of its purposes is the conservation of the vertebrate collection. The Foundation pays for a part-time [sic].

**Is there a budget to manage/take care/exhibit the collections?**

No. [Vandyck later specified that the staff is paid by the Foundation and the care management by the department of Geology of the University].

Name Museum/Collection:

University/Faculty:

Address:

Fax:  Phone:

Web page(s):

Contact:

Email:

Fax:  Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations: in litt. 26/2/2001)."/>

**Are the collections organized and inventoried?** No. The collection has an interest mainly for educational purposes. Most interesting fossils were bought more than 100 years ago and are "museum pieces".

**Is there a public exhibition?** Permanent exhibition of some groups for the students.

**Is/has there been any research done on the collections?** Very few.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**  
No.

**Is there a budget to manage/take care/exhibit the collections?**  
No.

Note: Indeed the Geology Department closed in 2001 (B. Driessche *in litt.* 11 Nov. 2003). I have tried to contact Prof. Luc Hance even to his private address but without success. Nobody seems to know what happened to the collection.

Name Museum/Collection:

University/Faculty:

Address:

Fax:  Phone:

Web page(s):

Contact:

Email:

Fax:  Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

The collection is not organized; it is more a cave or a shambles ! But there exists an inventory of the medical and surgical artefacts (about 1200 items) in the format of a FileMakerPro file.

**Is there a public exhibition?**

No. Some objects have been exhibited at temporary exhibitions.

**Is/has there been any research done on the collections?**

Almost nothing. I am currently working on the very interesting photographic (600 gelatino-bromide glass plates) and cinematographic (about 3 hours of nitrate films) work of Arthur Van Gehuchten (1861-1914). Parts of this research have been published as abstracts and papers; I could send it to you if you are interested.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Absolutely nobody ! I am a clinical neurologist working in a university hospital. History of medicine is my hobby; the work on this subject is done on a totally voluntary basis, during my free time.

**Is there a budget to manage/take care/exhibit the collections?**

Absolutely nothing !

Name Museum/Collection: **Musée de Louvain-La-Neuve**

University/Faculty: **Université Catholique de Louvain at Louvain-la-Neuve**

Address: **Musee de Louvain-la-Neuve  
Place Blaise Pascal, 1  
B.1348 Louvain-la-Neuve**

Fax: **(32)(10) 47.24.13** Phone: **(32)(10) 47.48.41**

Web page(s): **<http://www.muse.ucl.ac.be/>**

Contact: **Bernard Van den Driessche  
Administrateur**

Email: **vdd@muse.ucl.ac.be**

Fax: Phone:

History of contacts: **B. Van den Driessche answered the preliminary inquiry by email in 13/12/2000 (results below).**

Collection(s) typology: **Art, archaeology and anthropology.**

Collection(s) origin:

Observations: **Note: This Museum was visited just in November 2004 and Van den Driessche interviewed on site (see appendix 6, table A6.1).**

**Are the collections organized and inventoried?**

YES (part on the web).

**Is there a public exhibition?**

Yes.

**Is/has there been any research done on the collections?**

Yes.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

Yes: 3 full time appointed by the University + 5 by external appointment.

**Is there a budget to manage/take care/exhibit the collections?**

YES but not enough !



Name Museum/Collection: **Pharmacology Collections (Salle Couvreur)**

University/Faculty: **Université Catholique de Louvain**

Address:

Fax:  Phone:

Web page(s):

Contact: **Dr Didier M. Lambert, Ph.D. (Chargé de cours à l'Université catholique de Louvain)  
Unité de Chimie pharmaceutique et de Radiopharmacie, Université catholique de  
Louvain, Avenue Mounier, 73, UCL-CMFA 73.40, B-1200 Brussels, Belgium**

Email: **lambert@cmfa.ucl.ac.be**

Fax: **+ 32 2 764 7363** Phone: **+ 32 2 764 7347**

History of contacts: **D. Lambert answered by email in 13/12/2000 (results below)**

Collection(s) typology: **La Salle Couvreur a été installée sur le site de l'UCL-Bruxelles pour accueillir les collections d'objets de pharmacie anciens rassemblés par le Pharmacien Albert Couvreur (1887 - 1955). La collection comprend divers matériels utilisés pour la préparation des médicaments (balances, mortiers, appareils à distiller, piluliers, coupe-racines, filtres pasteurisants), des livres anciens (herbiers, ouvrages de botanique, de matières médicales, de chimie et de pharmacopées), une très importante collection de matériels utilisés pour la conservation des médicaments (pots en porcelaine, bois, verre) et enfin quelques matériels utilisés pour leur dispensation (clystères, mobilier etc...). La salle Couvreur est visitable sur demande adressée au Secrétariat de l'Ecole de Pharmacie (qui transmettra la demande). Les collections peuvent aussi être observées à l'occasion des Séminaires du Département des Sciences Pharmaceutiques et de l'Ecole de Pharmacie ou des autres réunions scientifiques qui se tiennent dans cette salle (Lambert, *in litt*, 13/12/2000).**

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

More or less. The collections contains books, jars, tins and implement in relation with the profession of pharmacist. A list of books (uncompleted) exists and is available in French, a list of jars, tins and implement partially exists but it is not available as it is handwritten (to my knowledge). The whole inventory needs to be done soon.

**Is there a public exhibition?**

Under certain circumstances, yes. Or if you ask for a visit, a visit is organized.

**Is/has there been any research done on the collections?**

Almost not (there was some) but we have some future prospective about that.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

No staff appointed at all.

**Is there a budget to manage/take care/exhibit the collections?**

No, almost not. We have a sort of charity team called the "Centre pour l'histoire de la pharmacie et du médicament" which is trying to organize exhibitions and conferences around the Collection Couvreur.

Name Museum/Collection:

University/Faculty:

Address:

Fax:  Phone:

Web page(s):

Contact:

Email:

Fax:  Phone:

History of contacts:

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

**Is there a public exhibition?**

**Is/has there been any research done on the collections?**

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

**Is there a budget to manage/take care/exhibit the collections?**

Bonjour Madame,

Le Musée des Sciences de l'Université de Louvain est en phase d'attente pour sa réorganisation depuis le transfert de l'université sur son nouveau site de Louvain-La-Neuve en 1970...

Avec l'inauguration de la Maison des Sciences en décembre dernier, nous espérons voir renaître un nouveau musée des sciences dans les mois (ou années) prochains!

[...]

Philippe Bertrand

Name Museum/Collection: **Arachnida and Lepidoptera Collection**

University/Faculty: Department of Biological Sciences of the University of Plymouth

Address: Dept Biological Sciences  
University of Plymouth  
Drake Circus  
Devon PL4 8AA  
UK

Fax: + 441752 232956 Phone: +441752 232956

Web page(s):

Contact: Peter Smithers

Email: psmithers@plym.ac.uk

Fax: Phone:

History of contacts: Peter Smithers answered the preliminary inquiry in 11/12/2000 (results below).

Collection(s) typology:

Collection(s) origin:

Observations:

**Are the collections organized and inventoried?**

Yes.

**Is there a public exhibition?**

No they are a reference collection, but any one who would like to look at them is welcome.

**Is/has there been any research done on the collections?**

The Arachnid collections are the focus of current research. We are attempting to produce an identification key to the spiders of from the Ecuadorian Andes and the invertebrates of the mountains of northern Spain.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

The care of the collection falls within my remit but it is only a small part of my job.

**Is there a budget to manage/take care/exhibit the collections?**

No. [Later, Peter Smithers explained:] (...) the collections are maintained and the maintenance is funded by the department. But there is no money allocated to run the collections.

Name Museum/Collection: **Bones and Models Collection**

University/Faculty: Faculty of Health and Social Care  
University of the West of England

Address: Library  
Faculty of Health and Social Care  
Glenside Campus  
Blackberry Hill  
Stapleton  
Bristol BS16 1DD

Fax: + 44 117 975 8402 Phone: + 44 117 965 6261

Web page(s): <http://www.uwe.ac.uk/library/info/glenside/>

Contact: Jan Nichols

Email: Jan.Nichols@uwe.ac.uk

Fax: Phone:

History of contacts: Jan Nichols answered the preliminary inquiry in 14/12/2000 (results below).

Collection(s) typology: Human bones, anatomical models used for demonstration and study purposes. Anatomical models: over 300 types; bones: c. 100 types; and skeletons (part and full c. 20).

Collection(s) origin: Various institutions that form the basis of the Faculty, including hospitals and former colleges.

Observations: Anne Boulton retired meanwhile.

**Are the collections organized and inventoried?**

The collection is organized according to the Dewey Decimal Classification System, and all items are catalogued onto the Unicorn Library Management System. This is also available on the Web.

**Is there a public exhibition?**

We have displays throughout the year on different subjects, such as the heart, cell biology, effects of smoking, the spine, which incorporate various models and bones and other media according to the subject.

**Is/has there been any research done on the collections?**

There has not been any research done on the collection. It is a learning and teaching resource, and as such it is in constant use by academic staff and students.

**Is there staff appointed to take care/manage the collections? If so, how many (full time and/or part time)?**

We have a part-time qualified librarian who manages the Audio Visual Collection as part of her professional duties. (These duties include enquiry work, and some information skills teaching.)

**Is there a budget to manage/take care/exhibit the collections?**

The budget for the collection is a part of the book budget which is managed as a whole. There is not a designated annual amount spent on the collection.

University	Museum/Collection	Date	Respondent	Job title (at the time of interview)
University of Coimbra	Museum of Physics	9 May 2001	Armando Policarpo	Professor, Director
		9 May 2001; 29 May 2001	Ermelinda Ramos Antunes	Researcher at the Faculty of Sciences & Technology, appointed to look after the Museum
		9 May 2001; 29 May 2001	Catarina Carvalho	Doctoral student
	Museum of Anthropology (MNH)	30 May 2001	Paulo Gama Mota	Professor, Director
	Student Life Museum	30 May 2001	Artur Ribeiro	Responsible for the Museum
	Collection of Archaeology	31 May 2001	Jorge Alarcão	Director of the Institute
		31 May 2001	António Pinto	Researcher (archaeologist)
	Museum of Zoology (MNH)	8 May 2001	Study visit alone	----
	Botanical Garden (MNH)	8 May 2001	Study visit alone	----
	Botanical Museum (MNH)	8 May 2001	Study visit alone	----
Sacred Art Museum	8 May 2001	Maria de Fátima Silva	Pro-Rector, in charge of the Museum	
University of Lisbon	Museum of Science*	11 Apr 2001 (& many more)	Fernando Bragança Gil	Professor, Director
	Museum of Mineralogy & Geology (National Museum of Natural History)	24 Apr 2001	António Marcos Galopim de Carvalho	Professor, Director Mineralogy & Geology, Director MNHN
		28 Aug 2001; 29 Aug 2001, plus several emails	César Lopes	Researcher
		27 Apr 2001	Carlos Alberto Matos Alves	Former Director
	Botanical Garden (NMNH)*	12 Apr 2001	Fernando Catarino	Professor, Director
	Herbarium (NMNH)	12 Apr 2001	Fernando Catarino	Professor, Director
	Museum of Zoology (NMNH)	2 May 2001	Carlos Almaça	Professor, Director
	Collection of the History of Medicine/ Egas Moniz Museum	9 Feb 2001	David Ferreira	Vice-Rector, Professor of Medicine. The interview did not result in a study visit
	Museums of the Polytechnic School (central management)	several (2001)	Fernando Costa Parente	Professor, Deputy Director Museum of Science, Pro-Rector for the Museums
University of Porto	Museum of Science	7 May 2001	José Moreira de Araújo	Professor, Director
		7 May 2001	Marisa Monteiro	Museum collaborator
	Museum of Mineralogy (MNH)	7 May 2001	Frederico Sodrê Borges	Professor, Director Mineralogy, Director MNH
	Museum of Zoology (MHN)	Brief conversation 7 May 2001; email interview 23 May	Luzia Sousa	Researcher (Biologist)
		Brief conversation 7 May 2001; email interview 23 May	Maria José Cunha	Researcher (Biologist)
	Museum of Archaeology & Anthropology (MNH)	Brief conversation 7 May 2001; email interview 23 May	Huet Bacelar Gonçalves	Researcher (Archaeologist)
	Collection of Engravings of Francesco Bartolozzi	7 May 2001	José Moreira Araújo	Professor of Physics, Director
Technical University Lisbon	Collection of Scientific Instruments	19 Jun 2001	Teresa R. Pêra	Librarian, Acting Curator
	Royal Botanical Garden of Ajuda	15 Jun 2001	Study visit alone	----

Table A2.2 – Study visits and interviews conducted in Portugal during the preliminary stage (February to June 2001). More interviews and study visits were conducted at a later stage (see appendices A5 and A6).

University	Dates	Inquiry to	Results
<b>Bordeaux 1</b>	Email 21 Nov 2001	Allain Glykos	NO REPLY
<b>Bordeaux 2</b>	Email 22 Nov 2001	Patricia Demichel	NO REPLY
<b>Bordeaux 3</b>	Email 22 Nov 2001	Maïalen Boscq-Lafite	NO REPLY
<b>Bourgogne (Dijon)</b>	Email 21 Nov 2001	Jean-Marc Fick	Replied 22 Nov; message forwarded to l'Atheneum (centre culturel de l'université de Bourgogne); no further replies received
<b>Bretagne-Sud</b>	Email 21 Nov 2001	webcom@univ-ubs.fr	NO REPLY
<b>Brest</b>	Email 21 Nov 2001	Pierrick Cellier	NO REPLY
<b>Caen</b>	Email 21 Nov 2001	anim.culturelle@admin.unicaen.fr	NO REPLY
<b>Haute Alsace (Mulhouse)</b>	Email 20 Nov 2001	culture@uha.fr	After several internal inquiries by Philippe Weigel, he emailed saying there were no museums or collections
<b>Lyon 3</b>	Email 21 Nov 2001	culture@univ-lyon3.fr	NO REPLY
<b>Marc Bloch (Strasbourg)</b>	Email 20 Nov 2001	acult@umb.u-strasbg.fr	NO REPLY
<b>Montpellier 2 (Ecole Pratique des Hautes Etudes)</b>	Email 21 Nov 2001	Jacques Michaux	The President of the Section de Sciences de la Vie et de la Terre (Ecole Pratique des Hautes Etudes) replied 23 January 2002: no collections
<b>Nancy 2</b>	Email 20 Nov 2001	w3admin@univ-nancy2.fr	NO REPLY
<b>Orléans</b>	Email 21 Nov 2001	sasc@univ-orleans.fr	NO REPLY
<b>Paris 12</b>	Email 21 Nov 2001	scuio@univ-paris12.fr	NO REPLY
<b>Paris 13</b>	Email 21 Nov 2001	adm-clt@upn.univ-paris13.fr	NO REPLY
<b>Pierre Mendès France (Grenoble)</b>	Email 21 Nov 2001	Joséphine Bruyat	Replied 22 Nov: no collections or museums.
<b>Reims</b>	Email 20 Nov 2001	service.communication@univ-reims.fr	Michel Laval replied 27 Nov 2000 that La Villa Douce (Présidence de l'Université de Reims) is a "monument classé"
<b>Rennes 1</b>	Email 21 Nov 2001	culture@univ-rennes1.fr	NO REPLY
<b>Rennes 2</b>	Email 21 Nov 2001	Marie-Noelle Masson	NO REPLY
<b>Rouen</b>	Email 20 Nov 2001	Pascale Clermont	NO REPLY
<b>Toulouse 2 (Le Mirail)</b>	Email 22 Nov 2001	ciam@univ-tlse2.fr	NO REPLY
<b>Université de Technologie de Troyes</b>	Email 20 Nov 2001	info.utt@utt.fr	Reply 20 Dec by Diane Azzolini: no museum or collection "at the moment"

Table A2.3 – General inquiries to universities about the existence of museums and collections in France, November 2001.

## Online Pilot Questionnaire (April-May 2002)

The initial idea was to use email as the preferred means of collecting information, thus hoping to minimise the number of non-replies. The questionnaire also aimed at clarifying conceptual issues and test further steps.

A descriptive and standardized questionnaire was designed, aimed at characterizing the collections in terms of disciplines and types, as well as to collect information about them regarding:

- a) origin;
- b) purpose (teaching, research or other);
- c) organisation;
- d) objects and their roles and uses.

In April-May 2002 the questionnaire was put online (see p. 359 of this appendix) and a diverse group of selected respondents were invited to test it and provide feedback:

- Anne-Laure Carré, Musée des arts et Métiers, Conservatoire national des arts et métiers, Paris.
- Graça Santa-Bárbara, Museum of Science, University of Lisbon.
- Liba Taub, Whipple Museum, University of Cambridge,
- Francesc Uribe, Natural History Museum, University of Barcelona,
- Bernard Van den Driessche, Musée de Louvain-la-Neuve, Université Catholique de Louvain,
- Cornelia Weber, Helmholtz Zentrum für Kulturtechnik, Humboldt University Berlin.

A standardised questionnaire proved difficult to design, as well as an inaccurate tool given our state of knowledge of university museums and collections. Main problems were: i) the diversity of collections and ii) the complexity of their management and situation within any given university. For example, one respondent asked if the 50 rocks he had in a drawer in his office for a paper he was writing also counted. Other respondents replied:

"I would like to help [...], but it is impossible for me because we have almost 100 singular collections. [...] And I am not a curator or an "owner" of one of the collections. I only coordinate the activities around the collections of Humboldt University." (C. Weber *in litt.* 11 May 2002)

"I started managing the collections of my current department only five years ago. I don't have information about the scientific production before 1997." (F. Uribe *in litt.* 13 May 2002)

"Not all collections have a proper name [...] Do you want an answer by collection unit or by the whole institution [i.e. museum]?" (F. Uribe *in litt.* 13 May 2002)

"Do you want me to reply using the original collection as a reference or the total collections of the museum?" (G. Santa-Bárbara, *in litt.* 9 May 2002).

"When was the collection formed? Don't you mean 'founded' more than 'formed'? It happens that a collection is started at a time but the bulk could be achieved long after." (F. Uribe *in litt.* 13 May 2002)

"The museums often manage their budget as a whole for all the collections and it is difficult to discern the amount of money [...] by collection." (F. Uribe *in litt.* 13 May 2002)

These problems might have been solved if clear definitions of 'museum' and 'collection' (and also of 'curator', etc.) had been provided at the introduction of the questionnaire. However, one of the objectives of this research was precisely to obtain a better understanding of the designations and concepts universities have of these issues. Moreover, without reliable lists of who was responsible for collections, with so many of them seemingly orphaned and their situation so unstable, it was difficult to know to whom to send the questionnaires. Finally, although the questionnaire primarily dealt with teaching and research collections, one of the aims was to gather information about other collections existing in universities. Initial technical problems also occurred (downloading and sending the questionnaire), but these would have been solved in due course.

In the end, a qualitative inquiry based on direct observations and open interviews seemed to offer the best option to obtain information.



### Teaching and Research Collections in Universities

This questionnaire aims at identifying teaching and research collections in higher education and research institutions. It should be answered by the direct responsible for the collection.

The questionnaire will not take more than 10 minutes to answer.

The information will be received by email and will remain completely confidential. Data gathered will be used exclusively for the purposes of this study and will be disclosed as a whole.

Thank you so much for your patience and time.

*Marta C. Lourenço*

*PhD student at the Conservatoire National des Arts et Métiers, Paris*

#### BRIEF IDENTIFICATION

Designation of the Collection:

Name of the Museum (if the collection is in a Museum):

Name of Department, Faculty and University (or Research Institution):

Address:

Internet link (if applicable):

Name of respondent:

Position/job:

<http://pwp.netcabo.pt/0157601302/>

02/06/2002

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**Academic qualifications (BSc, MSc, PhD, etc):**

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**Address (if different from above):**

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**Phone:**

**Fax:**

**Email:**

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## I – The collection

1 - When was the collection formed?

(if unknown, please provide approximate date)

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2 - What are the disciplines represented in the collection (e.g. archaeology, history, academic life, palaeontology, etc.)?

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3 - The majority of the objects in the collection dates back to (please tick the appropriate boxes):

- 16<sup>th</sup> century or earlier   
17<sup>th</sup> century   
18<sup>th</sup> century   
19<sup>th</sup> century   
20<sup>th</sup> century

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4 - As far as incorporation is concerned:

4.1 -

<http://pwp.netcabo.pt/0157601302/>

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The collection is closed – there is no more incorporation of objects  
The collection is open – incorporation goes on

4.2 - If you answered "open" in question 4.1, please specify:

When was the date of the last incorporation of objects

5 - What type of objects does the collection have? (fill in the following table)

**Legend:**

**Column A – tick in the corresponding type of object**

**Column B – give an approximate total number of objects**

Objects	A	B
Minerals & rocks	<input type="checkbox"/>	<input type="text"/>
Fossils	<input type="checkbox"/>	<input type="text"/>
Living organisms	<input type="checkbox"/>	<input type="text"/>
Wet and mounted specimens	<input type="checkbox"/>	<input type="text"/>
Skins, nests and eggs	<input type="checkbox"/>	<input type="text"/>
Skeletons	<input type="checkbox"/>	<input type="text"/>
Wood and timber samples	<input type="checkbox"/>	<input type="text"/>
Tissue banks	<input type="checkbox"/>	<input type="text"/>
Seed banks	<input type="checkbox"/>	<input type="text"/>
Fruits, fibres and resins	<input type="checkbox"/>	<input type="text"/>
Abnormalities and monstrosities	<input type="checkbox"/>	<input type="text"/>
Chirurgical and medical instruments	<input type="checkbox"/>	<input type="text"/>
Chemicals and pharmaceuticals	<input type="checkbox"/>	<input type="text"/>
Ethnographic tools and materials	<input type="checkbox"/>	<input type="text"/>
Textiles and clothes	<input type="checkbox"/>	<input type="text"/>
Scientific instruments	<input type="checkbox"/>	<input type="text"/>
Science interactives ("hands-on")	<input type="checkbox"/>	<input type="text"/>
Technological equipment	<input type="checkbox"/>	<input type="text"/>
Archaeological objects and fragments	<input type="checkbox"/>	<u>Please answer also question 6</u>
Musical instruments and scores	<input type="checkbox"/>	<input type="text"/>
Sculptures	<input type="checkbox"/>	<input type="text"/>
Paintings	<input type="checkbox"/>	<input type="text"/>
Drawings and engravings	<input type="checkbox"/>	<input type="text"/>
Pottery	<input type="checkbox"/>	<input type="text"/>
Furniture	<input type="checkbox"/>	<input type="text"/>
Coins and medals	<input type="checkbox"/>	<input type="text"/>
Books	<input type="checkbox"/>	<input type="text"/>
Maps	<input type="checkbox"/>	<input type="text"/>
Models (casts, wood, wax)	<input type="checkbox"/>	<input type="text"/>

Didactic maps and diagrams    
Reproductions, replicas or maquettes    
Other  - please specify

---

6 - If yours is an archaeological collection, please specify:

6.1 - the total number of objects:  Of which  inventoried

6.2 - the total number of fragments (tick the appropriate box):

More than 500,000

Between 100,000 and 500,000

Between 10,000 and 100,000

Less than 10,000

Impossible to estimate

---

7 - Is the collection organised in sub-collections?

No Yes If you answered YES, please provide the sub-collections' designations:

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8 - Is there a specific budget allocated for the care of the collection?

No Yes If you answered YES, please answer 8.1:

8.1 - How much (in euros)?

---

## II – Collection Research

9 - Does the collection or part of the collection result of research processes?

No Yes If you answered YES, please answer 9.1:

9.1 - Could you briefly give two examples of research processes that resulted in the incorporation of objects (preferably recent)?

---

10 - Is the collection (or part of the collection) used **today** for research purposes?

No Yes

If you answered NO, please answer question 11.

If you answered YES, please proceed to question 12.

11 - Was it used in the past?

No Yes

In your opinion why isn't it used anymore for research purposes?

12 - Who uses the collection for research purposes (please tick the appropriate box or boxes)?

In house staff

Visiting scholars

Other

Who?

Please note that:

- *In house staff* means staff from the higher education or research institution (includes student research);
- *A visiting scholar* is somebody from another university or research institution (including student research).

13 - Which scientific domains or disciplines use the collection for research?

14 - How are the research results generally disclosed?

Catalogues

Papers

Books

Theses & other academic dissertations

Other form

Which?

15 - How many papers were published on the collection during the past 10 years (approx.)?

16 - Please provide complete reference of one of the last papers:

<http://pwp.netcabo.pt/0157601302/>

02/06/2002

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17 - How many visiting scholars on the past 10 years (approx.)?

---

18 - On the whole, how would you classify the evolution of research on the collection/museum?

Increasing

Stable/constant

Declining

---

### III – Collection Teaching

19 - Is the collection (or part of it) used **today** for (university) teaching purposes?

No Yes

If you answered NO, please answer question 20.

If you answered YES, please proceed to question 21.

---

20 - Was it used in the past?

No Yes

In your opinion, why isn't the collection used anymore for teaching purposes?

21 - Who uses the collection for teaching purposes (please tick the appropriate box or boxes)?

In house staff

Visiting professors

Other

Which?

---

Please note:

- *In house staff* means professors/researchers from the higher education or research institution.
- *A visiting professor* is somebody from another university or research institution.

Please note that non-higher education institutions (e.g. high schools) do not count for the purposes of this questionnaire.

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22 - Which domains or disciplines use the collection for teaching purposes?

<http://pwp.netcabo.pt/0157601302/>

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23 - How is the teaching on the collection processed?  
Usually professors borrow objects to take to the classroom  
Usually professors bring students to the collection/museum  
Both

---

24 - How many university students visited the collection (approx.) in the last 5 years (both from the university or outside)?

Please note:

- Consider only students in groups, accompanied by professors.

---

25 - How many objects were borrowed for classes in the past 2 year (approx.)?

---

26 - On the whole, how would you classify the evolution of teaching activities based on the collection/museum?  
Increasing  
Stable/constant  
Declining

---

*Thank you so much for you time and cooperation.  
Please tick  if you are willing to respond additional questions that may arise from your answers.*

**Marta Lourenço**

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Send questionnaire

Clear questionnaire





[M. C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## Appendix A3: Guidelines for study visits and interviews

In September 2002, a Field Research Brief was compiled containing guidelines for study visits and topics to be raised in interviews. These guidelines were based on the results of the pilot study and the identification of key issues in bibliographic sources. The Field Research Brief is transcribed below.

1. Operational definitions
2. Key issues and research questions
3. General selection criteria
4. General interview topics
5. Documentation to collect

### 1. Operational definitions

'Museum' is used in the ICOM sense and 'collection' in the sense of a logically coherent system of documented material evidence of human activity or the natural environment, permanently or temporarily gathered within the framework of a clear and previously established purpose.

These are operational definitions. The aim of the study visits is to collect information. No collection or museum should be excluded merely because it does not conform to previously established definitions. Interpretations and analyses are to be performed at a later stage.

If there is one general conclusion arising from the literature, it is that there does not exist a particular pattern or unique model in university collections and museums – there are many different types. First of all, they differ in the disciplines represented and the typology of objects. They also differ in the origin, the use of objects, and in their organisation. From an administrative and financial point of view, the dissimilarities are equally substantial, with some museums and collections belonging to a department, others to a faculty or college, while some resort directly under a rector or vice-chancellor. Some are open to the public at regular hours, while others are closed to the public. Whereas some museums with teaching and research collections are widely known and have national or international prestige, others may only be of interest to a particular sector of a given discipline and are merely part of a university department. Therefore, it is not feasible to *a priori* define higher education

collections or museums beyond the trivial characteristic of 'belonging' to a higher education or research institution (not necessarily a university), which provides, although often not exclusively, for their administration, building, staff and finance.

## 2. Key issues and research questions

Five key issues form the basis of observations and study visits:

- a) role of the objects;
- b) origin of the collection;
- c) purpose of the collection;
- d) organisation of the collection;
- e) use of collections and objects.

These five points form the basis for the following questions that will frame both the observations and the interviews:

- a) **Origin and purpose of the collection:** What is the historical background of the collection? Why was it assembled? With what purpose and when?
- b) **Organisation of the collection:** How is the collection organised? What are the main criteria (e.g. chronological, typological, taxonomical)? Why is this so? What is the link between its organisation and its use?
- c) **Role of the objects:** What makes an object become a 'research object' or a 'teaching object'? How are objects selected and de-accessioned? Are they catalogued?
- d) **Identification of users:** Is the collection used by local staff only? Is it used by visiting scholars?
- e) **Identification of disciplines using objects:** In which academic disciplines are objects used? What for and how? Which disciplines are represented in the collection?
- f) **Frequency of use:** How frequently are objects used for teaching and research? How many papers based on the collection were published in the past 10 years? How many requests for research visits were received during that period? How many class visits?
- g) **Evolution of use:** Has there been a decline or an increase in use? What is the reason for this? Can present use be considered stable?

## 3. General selection criteria

Twenty universities in Europe will be selected for study visits for the purposes of this research according to the following criteria:

- 1) A fair degree of geographical representation should be sought and universities from the three higher education models (i.e. British, French, German) must be included.
- 2) Preference will be given to universities with existing personal contacts.
- 3) To maximise efficiency, each of the 20 universities should have the largest diversity of collections and museums possible.
- 4) Further insight into the concept of the collection:
  - a) at least 60% of the collection is kept together in a dedicated space;
  - b) there should be a supporting documentation system (a list at the very least).
- 5) Disciplines represented should include *at least*:
  - a) one collection of geology and mineralogy;
  - b) one collection of zoology;
  - c) one collection of palaeontology;
  - d) one botanical garden;
  - e) one herbarium;
  - f) one collection of anthropology;
  - g) one collection of ethnology;
  - h) one collection of archaeology;
  - i) one collection of medical instruments and *material medica*;
  - j) one collection of pharmaceutical instruments and pharmaceuticals;
  - k) one osteological collection (including human osteology);
  - l) one collection of marine biology or aquarium;
  - m) one collection of microbiology;
  - n) one collection of architecture and design;
  - o) one collection of applied sciences or industry;
  - p) one collection of scientific instruments (astronomy, physics and chemistry);
  - q) one collection of mathematics;
  - r) one 'faculty art' collection;
  - s) one collection of casts.
- 6) Collections to be visited may be organised in museums although this is not a *sine qua non* condition.

#### 4. General interview topics

Interviews will consist of open-ended questions based on the research issues listed above. The topic is established for the respondent, who is left free to structure a reply as he or she sees fit. Interviews will be taped for later analysis and reflection<sup>191</sup>. At the start of the

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<sup>191</sup> Taping interviews was later abandoned as it was found to inhibit respondents.

interview, respondents are informed that they can remain anonymous if they feel this to be appropriate.

Topics:

1. Clarify the origins of the collection: how did it begin?
2. Briefly outline the institutional history of the collection (ownership, major incorporations, relevant researchers, vulnerabilities, disasters that may have occurred).
3. Clarify the purpose and scope of the collection: what are its objectives? Why does it exist and for whom?
4. Explain the organisation of the collection: are there any sub-collections (reference, reserved, etc.)? What are the organisational criteria?
5. Clarify the use of the collection: who actually uses it? With what purposes? Which disciplines? How is it used?
6. Outline frequency of use and evolution of frequency of use. Has it always been like this? Did the use increase, decrease or remain the same?
7. Give opinion on specificity: because this collection is in a university, do you think it is different from a non-university one? In what respect? Would this collection make sense outside the university? Why or why not?
8. Clarify collections management standards: conservation, existence of reserves, security (fire and robbery), academic qualification of staff (also museological or not), de-accession, inventories, and collection accessibility procedures.  
Note: if written policies do not exist, ask for a recorded statement concerning incorporation and de-accessioning.
9. Give opinion on the value of collections: is the collection of local (university), national or international relevance? Why? Which are the most important objects (at least two examples, to be photographed)?
10. Elaborate on the collection facilities: who owns the building in which the collection is located? Are the facilities temporary or permanent?
11. Give opinion on recognition by the parent-institution: does the department/institute/university acknowledge the value of the collection? Who do you (as director) have to respond to? Do you have easy/direct access to this person?

If the respondent is a 'user' of the collection (researcher, professor, PhD student, etc.), the core topics can be further developed:

Research collection (or use)	Teaching collection (or use)
Subject of research project Essay? PhD? Paper?	Name of course/discipline Graduate or post-graduate?
Questions of value and relevance; personal interest. Reference/archive value, proof value, other.	Questions of value and relevance; personal interest Is the object illustrative? Explanatory? Demonstrative? Is it a model? A replica? A reconstruction? To what concrete curricular topics is the object linked? Is the object functional and put into work (science and technology)?
Reconstruct the object's path: a) Did the collection already exist (collection as a source)? b) Did the collection result from the actual research (collection as a product)? Other possible procedures.	Reconstruct the object's path: Take students to location? Select a few objects and instead take to the classroom?
How will the research results be disclosed? Written form?	Not applicable
General opinion on relevance for research.	General opinion on relevance for teaching.

It should be noted that the information gathered will not only cover the topics addressed in the thesis, but will also provide general and extensive information on a large number of collections of higher education and research institutions.

If possible on logistical grounds, national (and local) museums owning collections originating in universities are also targeted. In that case, the aim is to understand if the original organisation and nature of the collections were maintained upon incorporation.

## 5. Documentation to collect (or observe)

Documents to be collected (some may not apply in each and every case):

- a) publications on the history of the collection;
- b) catalogues;
- c) policies (if existent in written form): incorporation policies and collections management policies;
- d) empty inventory file record plus inventory instructions;
- e) creation decree (plus eventual changes);
- f) statutes (plus eventual changes);
- g) organisational flow chart;
- h) staff flow chart;
- i) job description of the collections staff;
- j) last budget;
- k) floor plan of the collections facilities;
- l) public documentation (brochures, leaflets, postcards, etc.);

- m) one or two reprints of scientific papers on the collection;
- n) field notebooks;
- o) curricula, syllabuses and class plans.

This list should be sent in advance in order to provide respondents with enough time for preparation.

Marta C. Lourenço  
12 September 2002

[M. C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

#### Appendix A4: Study visits (time-table)

	2001	2002	2003	2004
Paris	9-15 June 26 November- 2 December	1-6 February 21 May-3 July 9-18 September 7-12 December	24 May-7 June 30 November-6 December	15-16 May 24-31 May 13-17 June 7-25 July
Coimbra	8-11 May 27-31 May			
Porto	7 May			
Montpellier			28 January-7 February	18-21 November
Nice			10-11 February	
Strasbourg			7-9 December	
Lille				30 March-4 April
Lyon				17-21 May
Dijon				16-17 November
Barcelona	30 June-7 July			4-7 November
Bristol	30 August-1 September			
London		23-27 March 23-27 November		
Oxford		28 June-1 July 18-23 November	26-29 June	7-9 December
St Andrews		5-11 November		
Cambridge		11-17 November	29 June-6 July	4-6 December
Manchester				30 January-5 February
Reading				6-7 February
Munich	20-24 October		26-29 November	
Berlin				1-2 June 9-12 June
Leipzig				3-4 June
Halle- Wittenberg				5-9 June
Bologna		4-8 July	11-18 March	
Pavia			19-24 March	
Milan			25-28 March	
Torino			28 March-8 April	2-8 January 9-15 November
Trento				9-10 January
Florence				11-17 January
Leiden			27 April-2 May	
Utrecht			7-9 May	
Amsterdam	15 September-10 October		12-13 May 9-19 July	28 August-12 September
Groningen			14 May	
Delft			15 May	
Helsinki			7 October 11-14 October	
Tartu			8-10 October	
Turku			15-16 October	
Uppsala			17-19 October	
Lund			20-22 October	
Louvain-la- Neuve				24-28 November
Sydney AUS		25 September-17 October		
Oklahoma US			15-30 September	

Table A4.1 – Time-table of study visits during 2001-2004 (visits to Lisbon museums have been excluded).





[M. C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## Appendix A5: Study visits and interviews

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## 1. Presentation email (example)

----- Original Message -----

From: "Marta C. Lourenco" <[martal@fc.ul.pt](mailto:martal@fc.ul.pt)>

To: <[lmb50@cam.ac.uk](mailto:lmb50@cam.ac.uk)>

Sent: Monday, September 23, 2002 7:56 PM

Subject: visit to Cambridge

Dear Dr. Lucilla Burn,

At the moment, I am doing a PhD research on the topic of university museums and collections, under the supervision of Dominique Ferriot (Conservatoire des Arts et Métiers, Paris) and Steven de Clercq (University of Utrecht).

In particular, I am interested in how teaching and research collections are managed in universities: why are objects incorporated in teaching and research collections? Why do some disciplines have research collections while others have not? Are all these objects worth preserving? Did their role change through time? What is their contemporary significance?

Between 11 and 17 November I will be at Cambridge University for field work visits to a few collections.

I would be grateful if I could discuss either with you or with some other member of the staff a few collection management issues regarding the antiquities collection of the Fitzwilliam.

The most convenient date in the period mentioned above would be 11 November, in the morning, but please tell me if other date suits you better.

Looking forward to hearing from you,

I thank you in advance,

Yours faithfully,

Marta C. Lourenco.

-----  
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## 2. List of museums and collections visited (2001-2004)

### Belgium

Musée de Louvain-la-Neuve, Université de Louvain, Louvain-la-Neuve (2004)

### Estonia

Museum of Geology, University of Tartu (2003)

Museum of Zoology, University of Tartu (2003)

Art Museum, University of Tartu (2003)

Botanical Garden, University of Tartu (2003)

Historical Museum, University of Tartu (2003)

### Finland

University Museum, University of Helsinki (2003)

Central Library Collections, University of Helsinki (2003)

Teaching Collections, Department of Archaeology, University of Helsinki (2003)

Archives of the Finnish Literature Society (2003)

Archives of the Student Union, Helsinki University of Technology (2003)

Student Union Museum, Helsinki University of Technology (2003)

Collections of the Central Archive, Helsinki University of Technology (2003)

Archaeological Collections, University of Turku (2003)

### France

Muséum National d'Histoire Naturelle (Paris) (2002)

École Nationale des Beaux-Arts (Paris) (2002)

Musée des Arts et Métiers, Conservatoire National des Arts et Métiers (Paris) (2002)

Musée de Minéralogie, École des Mines (Paris) (2002)

Musée du Val-de-Grâce (Paris) (2002)

Musée de l'Institut Pasteur (Paris) (2002)

Musée de l'Histoire de la Médecine, Université de Paris (2002)

Observatoire de Paris (2002)

Observatoire de Nice (2003)

Jardin des Plantes, Université de Montpellier II (2003)

Herbier, Université de Montpellier II (2003)

Musée d'Anatomie, Université de Montpellier I (2003)

Musée Atger, Université de Montpellier I (2003)

Musée de la Pharmacie, Université de Montpellier I (2003)

Droguier *Materia Medica*, Université de Montpellier I (2003)

Science Collections Université de Montpellier II (2003)

Special Project *MuseUM*, Universités de Montpellier I, II & III (2003)

Special Project Jardin des Sciences, Université Louis Pasteur, Strasbourg (2003)

Musée de Zoologie, Université Louis Pasteur, Strasbourg (2003)

Collection d'Instruments Scientifiques, Université Louis Pasteur, Strasbourg (2003)

Observatoire Astronomique, Université Louis Pasteur, Strasbourg (2003)

Musée de Minéralogie, Université Louis Pasteur, Strasbourg (2003)

Collections d'enseignement de Zoologie, Département de Biologie, Université Louis Pasteur, Strasbourg (2003)

Collections de Médecine, Institut d'Anatomie, Faculté de Médecine (Hôpital du Centre Ville), Université Louis Pasteur, Strasbourg (2003)

Herbier, Université Louis Pasteur, Strasbourg (2003)

Collection d'Égyptologie, Institut d'Égyptologie, Université Marc Bloch, Strasbourg (2003)

Collection de Moulages, Département d'archéologie, Université Marc Bloch, Strasbourg (2003)

Collections d'enseignement d'archéologie, Département d'archéologie, Université Marc Bloch, Strasbourg (2003)

Musée des Moulages Université de Lyon Lumière (2004)  
Collections de Paléontologie, Université de Lyon Claude Bernard (2004)  
Musée Testut-Latarjet d'Histoire de la Médecine, Université de Lyon Claude Bernard (2004)  
Collections d'instruments scientifiques, École Polytechnique Paris (2004)  
Collections d'uniformes, École Polytechnique Paris (2004)  
Musée du Quai Branly [Collection d'ethnographie, Musée de l'Homme], Paris (2004)  
Experimentarium, Université de Bourgogne, Dijon (2004)  
Fonds anciens et précieux de la Bibliothèque universitaire, Univ. de Bourgogne, Dijon (2004)  
Musée d'ethnographie de l'Université Bordeaux II (2004, email)

### **Germany**

Animal Sound Archive, Natural History Museum, Humboldt University Berlin (2004)  
Peat Knowledge Collection of Topography and Geology Maps, Humboldt University Berlin (2004)  
Anthropology Collections, Institute of Medical Anthropology/Charité, Humboldt University Berlin (2004)  
Mori-Ôgai Memorial, Humboldt University Berlin (2004)  
Anatomical Museum at Charité, Humboldt University Berlin (2004)  
Museum of the History of Medicine/Rudolf Virchow House, Humboldt University Berlin (2004)  
Robert Koch Museum, Humboldt University Berlin (2004)  
Collection of the History of Medicine, Karl-Sudhof-Institut, University of Leipzig (2004)  
Museum of Musical Instruments, University of Leipzig (2004)  
Museum of Archaeology & Antiquities, University of Leipzig (2004)  
Botanical Garden and Herbarium, University of Leipzig (2004)  
Egyptology Museum, Egyptology Institute, University of Leipzig (2004)  
Christian Archaeology Collections, Faculty of Theology, University of Halle-Wittenberg (2004)  
Geiseltal Museum of Geology and Palaeontology, University of Halle-Wittenberg (2004)  
University Museum, University of Halle-Wittenberg (2004)  
Project Museum of Science (Neue Residenz), University of Halle-Wittenberg (2004)  
Botanical Museum, Free University Berlin (2004)  
Architectural Drawings Collection, Technical University Berlin (2004)

### **Italy**

Museo di Palazzo Poggi, University of Bologna (2002, 2003)  
Museo per la Storia dell'Università di Pavia, University of Pavia (2003)  
Gabinetto Alessandro Volta, Museo per la Storia dell'Università di Pavia, University of Pavia (2003)  
Museo di Storia Naturale, University of Pavia (2003)  
Orto Botanico, University of Pavia (2003)  
Museo di Fisica, University of Bologna (2003)  
Museo di Evoluzione Animale, University of Bologna (2003)  
Erbario, University of Bologna (2003)  
Osservatorio Astronomico La Specola, University of Bologna (2003)  
Osservatorio Brera, Università degli Studi di Milano, University of Milan (2003)  
Exposizione "Simmetrie: Giochi di Specchi", Dipartimento di Matematica, Università degli Studi di Milano, University of Milan (2003)  
Museo di Anatomia Umana, University of Turin (2003, 2004)  
Progetto Museo dell'Uomo, University of Turin (2003, 2004)  
Museo di Antropologia ed Etnografia, University of Turin (2003)  
Archivio Scientifico e Tecnologico, University of Turin (2003)  
Collezione di Modelli e Strumenti Matematici, University of Turin (2003)  
Erbario, University of Turin (2003)  
Orto Botanico, University of Turin (2003)  
Collezione di Ricerca, Laboratorio di Paleontologia Umana, University of Turin (2003)

Museo di Antropologia Criminale “Cesare Lombroso”, University of Turin (2003)  
Museo di Zoologia, University of Turin (2003)  
Museo e Archivio del Politecnico di Torino, Politecnico di Torino (2003)  
Scientific Collections of the Istituto Tecnico Toscano (Engineering, Astronomy, Physics, Chemistry and Natural History), Florence (2004)  
Museo di Zoologia La Specola (Museo di Storia Naturale), University of Florence (2004)  
Museo di Antropologia (Museo di Storia Naturale), University of Florence (2004)  
Museo di Geologia e Paleontologia (Museo di Storia Naturale), University of Florence (2004)  
Giardino dei Semplici (Museo di Storia Naturale), University of Florence (2004)

### **the Netherlands**

Botanical Garden, University of Leiden (2003)  
Herbarium, University of Leiden (2003)  
Museum of Anatomy, University of Leiden (2003)  
Hubrecht Embryology Collection, Hubrecht Laboratorium, Utrecht (2003)  
Utrecht Universiteitsmuseum, University of Utrecht (2003)  
Zoology Museum, University of Amsterdam (2003)  
Allard Pierson Museum, University of Amsterdam (2003)  
Universiteitsmuseum “De Agnietenkapel”, University of Amsterdam (2003)  
Universiteitsmuseum, University of Groningen (2003)  
Gerardus van der Leeuw Museum, University of Groningen (2003)  
Techniek Museum, Technical University Delft (2003)  
Botanical Garden, Technical University Delft (2003)

### **Portugal**

Museum of Science, University of Lisbon (2001)  
Mineralogy Museum, National Museum of Natural History, University of Lisbon (2001)  
Zoology Museum, National Museum of Natural History, University of Lisbon (2001)  
Botanical Garden & Herbarium, National Museum of Natural History, University of Lisbon (2001)  
Museums of the Polytechnic School ‘Project’, University of Lisbon (2004)  
Museum of Physics (Faculty of Sciences and Technology), University of Coimbra (2001)  
Archaeology Collection (Institute of Archaeology), University of Coimbra  
Anthropology Museum (Natural History Museum, Faculty of Sciences and Technology), University of Coimbra (2001)  
Academic Museum, University of Coimbra (2001)  
Sacred Art Museum, University of Coimbra (2001)  
Collection of the Astronomical Observatory (Faculty of Sciences and Technology), University of Coimbra (2001)  
Collection of the Faculty of Medicine, University of Lisbon (2001)  
Museum of Mineralogy, Museum of Natural History (Faculty of Sciences), University of Porto (2001)  
Museum of Zoology, Museum of Natural History (Faculty of Sciences), University of Porto (2001)  
Museum of Palaeontology, Museum of Natural History (Faculty of Sciences), University of Porto (2001)  
Museum of Archaeology & Pre-History, Museum of Natural History (Faculty of Sciences), University of Porto (2001)  
National Museum of the History of Medicine (Faculty of Medicine), University of Porto  
Collection of Engravings of Francesco Bartolozzi, Central Library (Faculty of Sciences), University of Porto (2001)  
Royal Botanical Garden of Ajuda, Technical University of Lisbon (2001)  
Collection of Scientific Instruments, Technical University of Lisbon (2001)

### **Sweden**

Museum Gustavianum, University of Uppsala (2003)

Botanical Garden, University of Uppsala (2003)  
Evolution Museum, University of Uppsala (2003)  
Linnaeus Cabinet, University of Uppsala (2003)  
Embryology Collection, Thornblad Institute, University of Lund (2003)  
Historical Museum, University of Lund (2003)  
Botanical and Zoological Museum, University of Lund (2003)

## **UK**

Bell Pettigrew Museum, University of St Andrews (2002)  
Marischal Museum, University of Aberdeen (2002)  
Sedgwick Museum, University of Cambridge (2002)  
Museum of Zoology, University of Cambridge (2002)  
Whipple Museum of the History of Science, University of Cambridge (2002)  
Kettle's Yard, University of Cambridge (2002)  
Fitzwilliam Museum, University of Cambridge (2002)  
Museum of Natural History, University of Oxford (2002)  
Ashmolean Museum, University of Oxford (2002)  
Museum of the History of Science, University of Oxford (2002)  
Pitt Rivers Museum, University of Oxford  
Petrie Museum of Egyptian Archaeology, University College London  
Museums of the Royal College of Surgeons, London  
The Manchester Museum (Zoology, Entomology & Living Animals Collections), University of Manchester  
Wintworth Gallery, University of Manchester  
Museum of English Rural Life, University of Reading (2004)  
Cole Museum of Zoology, University of Reading (2004)  
Ure Museum of Greek Archaeology, University of Reading (2004)

## **University Collections at National Museums (or similar):**

National Museum, Helsinki, Finland (2003)  
National Museum of Technology, Helsinki, Finland (2003)  
Istituto e Museo di Storia della Scienza, Florence, Italy (2004)  
Volkenkunde, The Netherlands (2003)  
Naturalis, The Netherlands (2003)

## **Non-European**

### **Australia**

Art Gallery & Collection, Macquarie University (2002)  
Australian History Museum, Macquarie University (2002)  
Museum of Ancient Cultures, Macquarie University (2002)  
Biology Museum, Macquarie University (2002)  
Earth Sciences Museum, Macquarie University (2002)  
Macleay Museum, University of Sydney (2002)  
Nicholson Museum, University of Sydney (2002)  
Drill Hall Gallery, Australian National University, Canberra (2002)  
Canberra School of Art Gallery, Australian National University, Canberra (2002)

### **USA**

Sam Noble Museum of Natural History, University of Oklahoma (2003)  
Fred Jones Junior Museum of Art, University of Oklahoma (2003)  
Western History Collection, University of Oklahoma (2003)  
History of Science Collection, University of Oklahoma (2003)  
Charles M. Russell Center, University of Oklahoma (2003)

**3. Study visits to university museums, collections and projects: table A5.1**

Country	HE Institution/ University	Museum/Collection/Project	Date visit or interview	Respondents	Job titles (at the time of interview)	Direct Administration	Notes
Belgium	UC Louvain	Musée de Louvain-la-Neuve	25 November 2004, 26 November 2004	Bernard Van den Driessche	Administrateur		Bernard had already replied to a pilot interview by email (Nov. 2000).
Estonia	University of Tartu	Historical Museum	10 October 2003				Visit alone; interview by email
			Email 4 November 2003	Leili Kriis	Curator		
		Art Museum	9 October 2003	Inge Kukk	Director		
				Rauro Thomas Mo	Professor History of Art		
		Zoology Museum	9 October 2003	Jaan Luig	Curator Entomology		
		Geology Museum	9 October 2003	Tõnu Pani	Curator of Geology		
				Mare Isakar	Chief-Curator		
		Science Centre Ahhaa Project	10 October 2003	Tiuu Sild	Project Director	University and town (foundation)	Brief conversation; later interview by email
		Botanical Garden	9 October 2003	Jüri Sild			
Finland	University of Helsinki	University Museum	7 October 2003	Kati Hëinamies	Director		Visit and dinner with Kati and Steven de Clercq; the Museum was inaugurated 30 October 2003. Kati had already replied to a pilot interview by email (Nov. 2000).
			13 October 2003	Kati Hëinamies	Director		
		Archaeology Teaching Collections	13 October 2003	Mika Lavento	Professor	Department of Archaeology	Brief visit with Panu Nykänen; interview followed by email
			Email 18 February 2004	Eeva-Maria Viitanen	Curator		
		Old University Building	13 October 2003				Visit with Panu Nykänen. No interview.
		University Central Library	13 October 2003				Visit with Panu Nykänen. No interview.

	<b>Technical University Helsinki</b>	<b>Student Union Museum</b>	14 October 2003	Matti M.M. Änkö	Curator (Emeritus)	Student Union	Visit with Panu Nykänen
		<b>Student Union Archives</b>	14 October 2003	Jukka Korhonen	Archivist, researcher	Student Union	Visit with Panu Nykänen
		<b>University Central Archive</b>	14 October 2003	Jukka Korhonen	Archivist, researcher		Visit with Panu Nykänen
		<b>Collection of Instruments</b>	14 October 2003			Department of Forest Products Technology	Visit with Panu Nykänen. No interview.
		<b>University Museum Project</b>	14 October 2003, plus several emails in 2003 & 2004	Panu Nykänen	Historian, researcher		
	<b>University of Turku</b>	<b>Archaeological Collections</b>	15 October 2003	Henrik Asplund	Curator	Department of Cultural Studies	
<b>France</b>	<b>Université de Bourgogne (Dijon)</b>	<b>Experimentarium</b>	16 November 2004	Daniel Raichvarg	Professeur, Directeur du Centre de Recherche sur la Culture, les Musées et la Diffusion des Savoirs; Chargé de la Mission à la Culture Scientifique de l'Université de Bourgogne	Université de Bourgogne, CCSTI de Bourgogne	
			16 November 2004	Lionel Maillot	Project Manager		
		<b>Fonds anciens et précieux de la Bibliothèque universitaire</b>	17 November 2004	Rodolphe Leroy	Conservateur de Bibliothèque	Service Commun de Documentation (which includes all libraries)	
	<b>Conservatoire National des Arts et Métiers</b>	<b>Musée des Arts et Métiers</b>	Several interviews and emails between 2001 & 2005.	Dominique Ferriot	Professor, Former Director		
			30 November 2001	Christiane Delpy	Responsable des Réserves		
			30 May 2002; 11 June 2002	Élise Picard	Conservateur (retired)		
			13 June 2002	Anne-Laure Carré	Responsable du Département Scientifique		Lunch
			13 June 2002; 17 September 2002	Anne-Catherine Hauglustaine	Responsable du Département Partenariat et Expositions		Lunch



			27 November 2001	Anne Chanteux	Responsable du Centre de Documentation		
			5 February 2002; 24 June 2002; 4 December 2003	Bruno Jacomy	Directeur Adjoint		Brief conversations
			26 May 2004	Daniel Thoulouze	Directeur		Meeting with Catherine Cuenca
	<b>Ecole Nationale Supérieure des Beaux-Arts</b>	<b>Collections contemporaines</b>	17 June 2002	Laurence Maynier	Responsable du service de la communication et des expositions		
		<b>Collections Historiques</b>	26 June 2002	Emmanuelle Brugerolles	Conservateur		
	<b>Ecole des Mines</b>	<b>Musée de l'Ecole des Mines</b>	21 June 2002	Lydie Touret	Conservateur (manager)		
			21 June 2002	Jacques Touret	Professeur (Emeritus)		
	<b>Ecole Polytechnique</b>	<b>Collection d'instruments scientifiques</b>	24 May 2004	Marie-Christine Thooris	Coordinateur du Service Patrimoine	Central Library	
		<b>Collection d'uniformes</b>	24 May 2004	Marie-Christine Thooris	Coordinateur du Service Patrimoine	Central Library	
	<b>Université de Sciences et Technologies de Lille</b>	<b>Collection d'instruments scientifiques</b>	2 April 2004	Guy Séguier	Professeur (retired)		
	<b>Université Lyon Claude Bernard</b>	<b>Observatoire de Lyon</b>	Email sent 2 May 2004 asking for an interview; a 2nd sent 14 May 2004.	Gilles Adam	Astronomer, Historian of Astronomy	CNRS, l'Ecole Normale Supérieure de Lyon et l'Université Claude Bernard-Lyon I	No reply. Excluded from the final sample.
		<b>Collections de Paléontologie</b>	19 May 2004	Abel Prieur	Paleontologue, Conservateur		
				Pierre Éluard	Professeur (retired)		
		<b>Musée Testut-Latarjet d'Anatomie de Lyon</b>	19 May 2004	Jean-Christophe Neidhart	Conservateur	Faculté de Médecine	
				Olivier Guedel	Medicine student		
	<b>Université Lyon Lumière</b>	<b>Musée des Moulages</b>	18 May 2004	Odette Balandraud	Former Director		
			18 May 2004	Patrice Charavel	Director, Responsable du Service Culturel de l'Université		

	<b>Muséum National d'Histoire Naturelle (MNHN)</b>	<b>Muséum National d'Histoire Naturelle (MNHN)</b>	29 Novembre 2001	Michel Van Praët	Professor, Director for the Galleries & Advisor for the museums of the University of Coimbra	Tutelle conjointe des ministres chargés de l'enseignement supérieur, de l'environnement et de la recherche (Statut 3 Octobre 2001)	
			3 June 2002	Jacques Maigret	Conservateur en Chef		
			24 June 2002	Michel Tranier	Director for Collections		This interview was cancelled.
	<b>Musée de l'Homme Antropologie (MNHN)</b>	<b>Musée du Quai Branly (project)</b>	12 July 2004	Emmanuel Desveaux	Directeur du Projet pour la Recherche et l'Enseignement		
			18 November 2004, plus several emails	Germain Viatte	Directeur du Projet Muséologique		
	<b>Université de Montpellier 1</b>	<b>Jardin des Plantes</b>	29 January 2003	Daniel M. Jarry	Former Director, now retired		Visit with Bernard Pellequer & Dominique Ferriot
			1 February 2003				Visit alone
			18 November 2004				Visit integrated in the Journées de Montpellier.
		<b>Musée Atger</b>	29 January 2003	Hélène Lorblanchet	Conservatrice	Library Faculty of Medicine	Visit with Bernard Pellequer & Dominique Ferriot
			5 February 2003	Hélène Lorblanchet	Conservatrice		
		<b>Musée d'Anatomie</b>	29 January 2003	No one in charge to receive us.			Visit with Bernard Pellequer & Dominique Ferriot
			18 November 2004				Visit integrated in the Journées de Montpellier.
		<b>Musée de la Pharmacie</b>	3 February 2003	Colette Charlot	Conservatrice		
		<b>Musée du Droguier (<i>Materia Medica</i>)</b>	4 February 2003	Chantal Marion	Conservatrice		
	<b>Université de Montpellier 2</b>	<b>Herbiers</b>	29 January 2003	Joel Mathez	Directeur		Visit with Bernard Pellequer, Daniel M. Jarry & Dominique Ferriot
		<b>Collections de Sciences</b>	5 February 2003	Monique Vianey-Liaud	Professeur, Vice-Président pour la Culture		
	<b>Université Paris 5</b>	<b>Musée de l'Histoire de la Médecine</b>	17 June 2002; 26 June 2002; 14 September 2002	Marie Véronique Clin	Conservateur		

	<b>Université Paris 6 (Jussieu)</b>	<b>Musée /Collection de Minéralogie</b>	25 June 2002				Visit alone. I met the Director, Jean-Claude Boulliard in Montpellier (18 November 2004) and we had a brief conversation about the collection.
	<b>Université Strasbourg Louis Pasteur</b>	<b>Projet Jardin des Sciences</b>	7 December 2003	Hugues Dreysse	Professor of Physics, Director of Mission de Culture Scientifique et Technique ; Advisor to the President on scientific culture	Mission de Culture Scientifique et Technique	
			7 December 2003	Virginio Gaudenzi	Directeur du Projet	Mission de Culture Scientifique et Technique	
			8 December 2003	Sébastien Soubiran	Historian of science, Responsible for university archives policy	Mission de Culture Scientifique et Technique	
		<b>Observatoire Astronomique</b>	8 December 2003	Jean-Pierre Riebb	Professeur (retired)		Brief visit.
		<b>Collection d'instruments scientifiques</b>	8 December 2003	Jean-Pierre Riebb	Professeur (retired)		AMUSS
		<b>Collection/Musée de minéralogie</b>	9 December 2003	Denis Leypold	Professeur, Conservateur	Ecole et Observatoire des sciences de la terre/Institut de Géologie	
		<b>Collections d'enseignement de minéralogie</b>	9 December 2003	Denis Leypold	Professeur, Conservateur	Ecole et Observatoire des sciences de la terre/Institut de Géologie	
		<b>Collection de paléontologie</b>	9 December 2003	Jean-Claude Gall	Professeur, Conservateur	Ecole et Observatoire des sciences de la terre/Institut de Géologie	
		<b>Herbiers</b>	9 December 2003	Michel Hoff	Conservateur	Institute of Botany	
		<b>Collections d'anatomie</b>	9 December 2003	Jean Luc Kahn	Professeur d'Anatomie, Directeur de l'Institut d'Anatomie	Institute of Anatomy	

		<b>Collections d'enseignement d'anatomie</b>	9 December 2003	Jean Luc Kahn	Professor of Anatomy, Director of the Institute of Anatomy	Institute of Anatomy	
	<b>Université Strasbourg Marc Bloch</b>	<b>Collection d'Égyptologie</b>	8 December 2004	Claude Traunecker	Professeur, Directeur	Institut d'Égyptologie	
				Annie Schweitzer	Chargée de la Collection	Institut d'Égyptologie	
		<b>Collections d'archéologie greco-romaine</b>	8 December 2004	Thierry Petit	Professeur/ Conservateur	Institut d'Archéologie	Teaching collections
		<b>Musée des Moulages d'Antiques</b>	8 December 2004	Thierry Petit	Professeur/ Conservateur	Institut d'Archéologie	
		<b>Collection d'ethnographie</b>	26 November 2004	Roger Somée	Conservateur		At Louvain-la-Neuve brief conversation. No interview. No visit. Excluded from the final sample.
	<i>Inter-university</i>	<b>Projet MuseUM (Montpellier 1, 2 &amp; 3)</b>	7 February 2003	Bernard Pellequer	Professeur associé		
	<i>Inter-university</i>	<b>Observatoire de la Côte d'Azur (Nice)</b>	10 February 2003	Françoise Le Guet Tully	Astronomer, Historian of Astronomy		
<b>Germany</b>	<b>Free University Berlin</b>	<b>Berlin-Dahlem Botanical Garden</b>	9 June 2004	Walter Lack	Professor, Director	Under the Chancellor	
		<b>Berlin-Dahlem Botanical Museum</b>	9 June 2004	Walter Lack	Professor, Director	Under the Chancellor	
	<b>Humboldt University Berlin</b>	<b>Animal Sound Archive</b>	2 June 2004	Karl-Heinz Frommolt	Curator	Department of Zoology	Location at the Museum of Natural History
		<b>Peat Knowledge Collection</b>	2 June 2004	Franck Riesbeck	Professor, researcher	Faculty of Agriculture	
		<b>Teaching collection of models of irrigation systems</b>	2 June 2004	Franck Riesbeck	Professor, researcher	Faculty of Agriculture	
		<b>Anthropology Collections</b>	10 June 2004	Ulrich Creuz	Anthropologist		
		<b>Mori Ôgai House Museum/Memorial</b>	10 June 2004	Beate Weber	Curator		
		<b>Winckelmann Archaeology Collections</b>	2 June 2004			Winckelmann Institute	Visit alone with Cornelia Weber. No interview.
		<b>Collections of Instruments &amp; Models (Charité)</b>	10 June 2004			Faculty of Medicine/ Zentrum für Anatomie	Visit alone with Cornelia Weber. No interview.

		<b>Anatomical Museum (Charité)</b>	10 June 2004			Faculty of Medicine/ Zentrum für Anatomie	Visit alone with Cornelia Weber. No interview.
		<b>Anatomical Theatre (Veterinary) (Charité)</b>	10 June 2004				Visit alone with Cornelia Weber (only outside)
		<b>Museum of the History of Medicine/Rudolf Virchow House (Charité)</b>	10 June 2004	Thomas Schnalke	Director	Faculty of Medicine	
		<b>Robert Koch Museum</b>	11 June 2004	Wolfram Donath	Acting Curator	Institute for Medical Microbiology (Charité)	
		<b>Dermatology Wax Models</b>	11 June 2004			Institute for Medical Microbiology (Charité)	Visit with Wolfram Donath (from the Robert Koch Museum)
		<b>Helmholtz Zentrum für Kulturtechnik</b>	10 & 11 June 2004	Cornelia Weber	Manager		
			10 June 2004	Jochen Brüning	Director, Professor		
			2 June 2004	Ulrich Moritz	Project Collaborator		
			11 June 2004	Martin Stricker	IT officer		
	<b>Technical University Berlin</b>	<b>Collection of Architectural Drawings</b>	10 June 2004	Hans-Dieter Nägelke	Curator	University Library	
				Claudia Zachariae			
	<b>University of Leipzig</b>	<b>Collection of the History of Medicine</b>	3 June 2004	Sabine Fahrenbach	Acting Curator	Karl-Sudhoff Institut	
		<b>Museum of Musical Instruments</b>	2 June 2003 (Paris); 3 June 2004; 4 June 2004	Eszter Fontana	Director	Faculty of Arts, History & Old Languages	
		<b>Museum of Archaeology and Antiquities</b>	4 June 2004	Hans-Peter Müller	Curator		
		<b>Herbaria</b>	4 June 2004	Wilfried Morawetz	Director		
		<b>Teaching Herbarium</b>	4 June 2004	Wilfried Morawetz	Director		
		<b>Collection of Botanical Models</b>	4 June 2004	Wilfried Morawetz	Director		
		<b>Botanical Garden &amp; Hortus Medicus</b>	4 June 2004	Wilfried Morawetz	Director		
				Martin Unterseher	Collaborator		
		<b>Egyptology Museum</b>	4 June 2004	Friederike Seyfried	Kustodin	Egyptology	

						Institut	
	<b>University Halle-Wittenberg</b>	<b>Christian Archaeology Collections</b>	7 June 2004	Andrea Zimmermann	Professor	Faculty of Theology	
		<b>Art History teaching collections</b>	7 June 2004	Andrea Zimmermann	Professor	Faculty of Theology	
		<b>Geiseltal Museum of Geology &amp; Palaeontology</b>	8 June 2004	Meinholf Hellmund	Curator, researcher	Institut for Geological Sciences & Geiseltal Museum	
		<b>Art &amp; Culture Collection</b>	8 June 2004	Thorsten Speler	Chief-custodian		
		<b>University Museum</b>	8 June 2004	Thorsten Speler	Chief-custodian		
		<b>Science Museum Project (<i>Neue Residenz</i>)</b>	8 June 2004	Gunnar Berg	Professor, Former Rector		
<b>Italy</b>	<b>University of Bologna</b>	<b>Palazzo Poggi</b>	5 July 2002				Visit integrated in the Universeum meeting
			14 March 2003	Walter Tega	Vice-Rector, Director		Dinner & Interview
				Raffaella Simili	Professor		Dinner & Interview
		<b>Osservatorio La Specola</b>	12 March 2003	Fabrizio Bonoli	Professor, Director	Department of Astronomy	
		<b>Museo di Fisica</b>	12 March 2003	Giorgio Dragoni	Professor, Director	Department of Physics	
		<b>Erbario</b>	13 March 2003	Annalisa Managlia	Curator	Department of Biology	
				Giovanni Cristofolini	Professor	Department of Biology	
		<b>Orto Botanico</b>	13 March 2003	Umberto Mosseti	Curator	Department of Biology	Visit alone. Brief conversation with Mosseti. No interview.
		<b>Museo Botanico</b>	13 March 2003	Annalisa Managlia	Curator	Department of Biology	
		<b>Museo di Mineralogia</b>	14 March 2003				Visit alone
		<b>Museo dell'Evoluzione (Antropologia)</b>	14 March 2003				Visit alone
		<b>Museo dell'Evoluzione (Anatomia Comparata)</b>	14 March 2003				Visit alone
		<b>Museo dell'Evoluzione (Zoologia)</b>	14 March 2003				Visit alone

	<b>University of Florence</b>	<b>Museo Zoologico La Specola</b>	14 January 2004	Marco Vannini	Professor, Director Specola section	Museo di Storia Naturale	
			12 November 2004	Fausto Barbagli	Member of the "Ufficio di Presidenza" (Advisory Group to the President of the Museo), responsible for Historical Archive at the Specola, co-responsible for the bird collection.	Museo di Storia Naturale	
		<b>Museo di Antropologia</b>	15 January 2004	Brunetto Chiarelli	Professor, Director	Museo di Storia Naturale	
			15 January 2004	Monica Zavattaro	Curator	Museo di Storia Naturale	
			16 January 2004				Visit alone, extra-ordinary opening of the Museum in the evening
		<b>Orto Botanico Giardino dei Semplici</b>	15 January 2004			Museo di Storia Naturale	Visit alone
		<b>Museo di Paleontologia</b>	16 January 2004	Elisabetta Cioppi		Museo di Storia Naturale	
	<b>University of Milan</b>	<b>Osservatorio Brera</b>	25 March 2003	Pasquale Tucci	Professor of History of Physics, Curator	Institute of Applied Physics	
		<b>Simmetria, giochi di specchi</b>	27 March 2003	Maria Dedò	Professor of Topology	Department of Mathematics	
				Paola Testi Saltini			
		<b>Topology teaching collections</b>	27 March 2003	Maria Dedò		Department of Mathematics	
		<b>Historical teaching collections</b>	27 March 2003	Maria Dedò		Department of Mathematics	
	<b>University of Naples</b>	<b>Museo Zoologico</b>	19 November 2000	Nicola Maio	Curator		
	<b>University of Pavia</b>	<b>Museo di Storia dell'Università (Gabinetto Volta)</b>	20 March 2003	Fabio Bevilacqua	Professor of History of Science, responsible for the Gabinetto Volta		
		<b>Museo di Storia dell'Università (Medicine Section)</b>	21 March 2003	Alberto Calligaro	Professor, Director		
			21 March 2003	Paolo Mazzarello	Historian of Medicine		
		<b>Orto Botanico</b>	23 March 2003				Visit alone

		<b>Museo di Storia Naturale</b>	24 March 2003	Fausto Barbagli	Curator of the zoological collection		
				Clementina Rovati	Director of the Centro Interdipartimentale di Servizi Musei Universitari and of the Natural History Museum		Note: The Natural History Museum is section of the Centro Interdipartimentale Musei Universitari.
				Carlo Violanti	Professor		
	<b>Politecnic of Turin</b>	<b>Museo del Politecnico</b>	7 April 2003	Vittorio Marchis	Professor of History of Technology, Director		
	<b>University of Turin</b>	<b>Museo di Anatomia Umana</b>	31 March 2003 8 January 2004	Giacomo Giacobini	Professor of Anatomy, Director	Dipartimento d'Anatomia, Farmacologia e Medicina Legale	
				Cristina Cilli	Technician & researcher (paleoanthropology)		
				Giancarla Malerba	Technician		
			6 April 2003	Andrea Bandelli	Web developer		Interview re new website
		<b>Progetto Museo dell'Uomo</b>	31 March 2003 7 January 2004	Giacomo Giacobini	Professor of Anatomy, Director	Under University & Province of Piemonte	
		<b>Museo di Antropologia Criminale Cesare Lombroso</b>	1 April 2003	Giacomo Giacobini		Dipartimento d'Anatomia, Farmacologia e Medicina Legale	
				Helena Gay	Curator		
				Paolo Tappero	Director		I was briefly introduced, he excused himself and passed to Helena Gay
		<b>Museo di Antropologia ed Etnografia</b>	1 April 2003	Marilena Girotti	Anthropologist		
		<b>Research Collections of Human Palaeontology</b>	1 April 2003	Giacomo Giacobini	Professor of Anatomy, Director	Laboratorio di Paleontologia Umana	
				Cristina Cilli	Technician & researcher (paleoanthropology)		
		<b>Orto Botanico</b>	2 April 2003	Marcella Crespi	Volunteer (Biosphere)		
		<b>Erbario</b>	2 April 2003	Guiliana Forneris	Curator		
		<b>Archivio Scientifico e Tecnologico (ASTUT)</b>	3 April 2003	Marco Galloni	Professor of Veterinary Medicine, President		



				Marco Prunotto	PhD Student (Anatomy)		
				Giuseppe Slaviero	Executive Director ASTUT		
		<b>Mathematical Models</b>	3 April 2003	Giorgio Ferrarese	Professor of Mathematics	Library, Department of Mathematics	
		<b>Museo di Zoologia</b>	4 April 2003	Pietro Passerin d'Entrèves	Professor of Zoology		
<b>NL</b>	<b>University of Amsterdam</b>	<b>Zoological Museum</b>	11 May 2003	Wouter Los	Director		
		<b>Entomology Collections (Zoological Museum)</b>	11 May 2003	Sandrine A. Ulenberg	Head of Entomology; Curator of Entomology		Guided visit by Sandrine A.U. & Wouter Los. Sandrine sent interview by email later.
		<b>Allard Pierson Museum</b>	11 May 2003	René van Beek	Curator		
		<b>University Museum De Agnietenkapel</b>	12 May 2003	Marian Schilder	Director		
			12 May 2003	Marika van Roon	Assistant Curator		Brief conversation. No interview.
		<b>Hortus Botanicus</b>	12 May 2003				Visit alone
	<b>Technical University Delft</b>	<b>Techniek Museum Delft</b>	15 May 2003	Han Heijmans	Director		
			15 May 2003	Rob Korving	Curator		
		<b>Hortus Botanicus</b>	15 May 2003	Bob Ursem	Director		Misunderstanding in the date; visited alone
	<b>University of Groningen</b>	<b>University Museum</b>	14 May 2003	Rolf ter Sluis	Curator, Director	University Library	
		<b>Medical Teaching Collections (historical)</b>	14 May 2003	Rolf ter Sluis	Curator	Groningen University Medical Centre	
		<b>Pathology Museum</b>	14 May 2003	Rolf ter Sluis	Curator	Groningen University Medical Centre	
		<b>Gerardus van der Leeuw Museum of Anthropology</b>	14 May 2003	Victorine Arnoldus- Schröder	Curator/Acting Director		
	<b>University of Leiden</b>	<b>Hortus Botanicus</b>	29 April 2003	Gerda van Uffelen	Collectiebeheerder (Collection manager)		
		<b>Herbarium (simultaneously the Leiden branch of the Dutch Nationaal Herbarium)</b>	29 April 2003	Barbara Gravendeel	Postdoctoral fellow, researcher		

				Gerard Thijsse	Chief Collections Manager		Brief conversation. No interview.
				Stans Kofman	Collections Manager Phanerogams		Brief conversation. No interview.
		<b>Leiden Museum of Anatomy</b>	Brief conversation 28 April 2003; 2 May 2003	Dries van Dam	Conservator	Leiden University Medical Centre	
	<b>University of Utrecht</b>	<b>Utrecht University Museum</b>	5 May 2003 plus several interviews & emails between 2001 and 2005.	Steven de Clercq	Former Director, advisor SAE		
			9 May 2003	Paul Lambers	Curator of Natural History		
			8 May 2003; 9 September 2004	Joke Schuller	Curator of Academic History & Art		
			8 May 2003	Reina de Raat	Project Manager Medical Collection		Brief conversation, interview by email
			9 May 2003	Klaus Staubermann	Curator Scientific Instruments		
			9 May 2003	Peter de Haan	Director		Interview/lunch
		<b>Oude Hortus</b>	8, 9 May 2003	Peter de Haan	Director		
			9 September 2004	Joke Schuller	Curator of Academic History & Art		Brief conversation about the Swillens Collection (art history teaching collection at the UUM).
			9 September 2004	Peter de Haan	Director		Brief Conversation about the recent 'incorporation' of the Astronomical Observatory in the UUM.
	<b>Inter-university</b>	<b>Stichting Academisch Erfgoed (SAE) Projects</b>	8 May 2003; 9 September 2004, several emails followed.	Tiny Monquill	Project Manager		
			Several emails between 2001 and 2005	Steven de Clercq	Advisor on University Heritage to the SAE		
<b>Portugal (2nd batch)</b>	<b>Technical University Lisbon</b>	<b>Collection of Civil Engineering</b>	Email sent 6 January 2005.	Dinar Camotim	Professor	Higher Institute of Technology	No reply. Excluded from the final sample.

		<b>Collection of Geology</b>	11 Jan. 2005	António Mouraz Moutinho	Professor	Higher Institute of Technology	
<b>Sweden</b>	<b>University of Lund</b>	<b>Embryology Collection</b>	20 October 2003	Bengt Källén	Former Director, Researcher	Thornblad Institute	
		<b>Historical Museum</b>	20 October 2003	Hans Modig	Acting Director		
		<b>Botanical Museum</b>	21 October 2003	Ingvar Kärnefelt	Director of the Botanical & Zoology Museum , Professor		
		<b>Zoological Museum</b>	21 October 2003	Sven-Axel Bengston	Former Director Zoology Museum; professor		
	<b>University of Uppsala</b>	<b>Gustavianum Museum</b>	17 October 2003	Christina Risberg	Senior Curator Classical Antiquities		
			17 October 2003	Harald Nilsson	Senior Curator of Numismatics		Numismatics Collection is off-site
			17 October 2003	Johan Cederlund	Senior Curator of Art		
			17, 18 October 2003	Ing-Marie Munktell	Director		
			17 October 2003	Geoffrey Mertz	Researcher		
		<b>Botanical Garden</b>	17 October 2003				Visit alone.
		<b>Museum of Evolution (in project)</b>	18 October 2003	John Peel	Professor, Director		Visit with Ing-Marie Munktell.
		<b>Natural History Collections</b>	18 October 2003	John Peel	Professor, Director		Visit with Ing-Marie Munktell.
		<b>Linnaeus' Collections</b>	18 October 2003	John Peel	Professor, Director		Visit with Ing-Marie Munktell.
		<b>Herbarium</b>	18 October 2003	John Peel	Professor, Director		Visit with Ing-Marie Munktell.
<b>UK</b>	<b>University of Cambridge</b>	<b>Sedgwick Museum</b>	12 November 2002	Mike Dorling	Collections Manager (Geology & Palaeontology)	Department of Earth Sciences	
			13 November 2002	Steve Laurie	Collections Manager (Mineralogy)		
			1 July 2003				Visit alone
			4 July 2003	Mike Dorling	Collections Manager (Geology & Palaeontology)		Visit with Steven de Clercq
		<b>Zoology Museum</b>	12 November 2002	Ray Symonds	Collections Manager	Department of Biology	

		<b>Museum of Anthropology &amp; Archaeology</b>	1 July 2003				Visit alone. Mike Dorling had given the name of Chris Chippindale, email sent 18 June 2003 asking for visit and interview. No reply.
		<b>Whipple Museum</b>	12 November 2002	Liba Taub	Director [Keeper] and Professor of History of Science	Department of History and Philosophy of Science	
			15 November 2002	Liba Taub	Director [Keeper] and Professor of History of Science		
				Monica Elsey	Assistant Keeper		
			30 June 2003				Visit alone
			4 July 2003				Visit guided by Liba Taub, integrated in Conference "University Collections: Are they worth it?"
			6 December 2004	Liba Taub	Director [Keeper] and Professor of History of Science		Visit with A.I. Simões
				Lisa Newble	Assistant Keeper		Visit with A.I. Simões
		<b>Kettle's Yard</b>	13 November 2002	Sebastiano Barassi	Curator		
		<b>Fitzwilliam Museum</b>	14 November 2002	Mark Blackburn	Keeper Coins & Medals		
			14 November 2002	Ted Buttrey	Former Keeper		
			14 November 2002	Elina Screen	Researcher		
			30 June 2003	Sally-Ann Ashton	Assistant Keeper of Antiquities		Contact given by Lucilla Burn (Keeper of Antiquities).
	<b>University College London</b>	<b>Petrie Museum of Egyptian Archaeology</b>	25 November 2002	Sally Macdonald	Manager		
	<b>University of Manchester</b>	<b>Manchester Museum</b>	3 February 2004	Tristram Besterman	Director		
			3 February 2004	Bernadette Lynch	Head of Public Programmes and Academic Development		
			3 February 2004	Dmitri Logunov	Keeper of Zoology (Arthropods)		
			3 February 2004	Andrew Grey	Keeper of Zoology (Herpetology)		

			3 February 2004	Henry McGhie	Keeper of Zoology		
		<b>Wintworth Gallery</b>	4 February 2004				Visit alone
	<b>University of Oxford</b>	<b>Museum of the History of Science</b>	29 June 2002	Jim Bennett	Director		
			27 June 2003				Visit alone
			8 December 2004	Jim Bennett	Director		Visit with A.I. Simões
			8 December 2004	Rachel Mellor	Collections Manager		
		<b>University Museum of Natural History</b>	18 November 2002	Sarah Phibbs	IT Officer		
			18 November 2002	Darren J. Mann	Technician (Collections Manager) Entomology		
			18 November 2002	Malgosia Nowak-Kemp	Tehnician (Collections Manager) Zoology		
			19 November 2002	Philip Powell	Curator Geology		
			19 November 2002	Monica Price	Assistant Curator Mineralogy		
		<b>Collections Department of Geology</b>	19 November 2002	Philip Powell	Curator Geology	Department of Geology	Teaching collections
		<b>Ashmolean Museum</b>	20 November 2002	Jon Whiteley	Curator of Western Art		
		<b>Pitt Rivers Museum</b>	21 November 2002	Laura Peers	Curator/Lecturer		
		<b>Botanical Garden</b>					Visit alone. Email sent 23 September 2002 asking for a visit & interview. No reply. Second visit June 2003 with Steven de Clercq and other colleagues.
		<b>Bate Collection</b>		Hélène La Rue, email sent to bate.collection@music.ox.ac.uk.	Curator	Faculty of Music/ Ashmolean Museum	Email sent 23 September 2002 asking for a visit & interview. No reply. No visit. Excluded from the final sample.
	<b>University of Reading</b>	<b>Museum of English Rural Life</b>	6 February 2004	Kate Arnold-Foster	Head of Museums and Collections Service		
		<b>Cole Museum of Zoology</b>	6 February 2004	Kate Arnold-Foster	Head of Museums and Collections Service	School of Animal & Microbial Sciences	

		<b>Ure Museum of Greek Archaeology</b>	6 February 2004	Kate Arnold-Foster	Head of Museums and Collections Service	Department of Classics	
		<b>Zoology teaching collections</b>	6 February 2004	Kate Arnold-Foster	Head of Museums and Collections Service	School of Animal & Microbial Sciences	
	<b>Royal College of Surgeons of England</b>	<b>Hunterian Museum</b>	26 November 2002	Stella Mason	Director		
			26 November 2002	Simon Chaplin	Senior Curator		
		<b>Odontological Museum</b>	26 November 2002	Stella Mason	Director		
		<b>Wellcome Museum</b>	26 November 2002	Stella Mason	Director		
	<b>University of St Andrews</b>	<b>Bell Pettigrew Museum</b>	6 November 2002; 9 November 2002				Visit alone. Conversation with Helen Rawson by phone (5 Dec. 2002); correspondence followed.

#### 4. Interviews without study visits: table A5.2

Notes:

1. These interviews were conducted by email, phone, fax or in person.
2. Two entries overlap with the previous table (A5.1): Musée de Louvain-la-Neuve and Helsinki University Museum.
3. Entries marked (\*) were conducted during the preliminary stage of this research (see appendix A2, table A2.1). However, given that responses are cited throughout the dissertation, it was thought appropriate to list them all here for convenience.
4. No replies were excluded from this table (32%).

HE Institution/ University	Museum/Collection/Project	Date of contact	Inquiry made to	Result
University of Aberdeen (UK)	Marischal Museum	3 December 2002 (phone)	Anne Taylor, Collections Manager & Neil Curtis, Acting Director	Interview by phone. I had met Anne T. personally in St. Andrews (November 2002).
Art Institute at Bournemouth (UK)	Design Collection*	1 December 2000	Kirsten Hardie	Replied 7 December 2000.
	Pitman Collection*	1 December 2000	Lizzie Richmond	Replied 4 December 2000.
Bath Spa University College (UK)	Library Special Collections (University Library)*	9 December 2000	Helen Rayner	Replied 12 December 2000.
Université de Bordeaux 2 (France)	Musée d'ethnographie	18 November 2004 (in person)	Sophie Chave-Dartoen, Director	Reply by email 22 November 2004.
Université de Bourgogne (France)	Collections géologiques, Centre des Sciences de la Terre	18 November 2004 (in person)	Jérôme Thomas, Sophie Montuire, researchers	Reply by email 2 December 2004, signed by both.
University of Bournemouth (UK)	School of Conservation Sciences Collection*	9 December 2000	Sent to consci@bournemouth.ac.uk	Replied by Damian Evans, Technical Officer Collections/research, on 14 December 2000.
University of Bristol (UK)	Biology Collections (Botanical Drawings), Department of Biology*	9 December 2000	Barbara Costello (Subject Librarian - Biological Sciences and Pharmacology)	Replied 11 December 2000. Forwarded to Paul Court for Zoology

	<b>Biology Collections (Zoology), Department of Biology*</b>	Inquiry forwarded by Barbara Costello	Paul Court	Paul Court replied 15 December 2000.
	<b>Geology Department Museum*</b>	9 December 2000	Elizabeth Loeffler	Replied 21 December 2000.
	<b>Theatre Collection*</b>	9 December 2000	Sarah Cuthill	Replied 11 December 2000.
	<b>Special Collections at the University Library*</b>	11 December 2000 (fax)	Fax sent to Michael Liversidge	Replied 12 December 2000 by email by M.T. Richardson.
<b>UL Bruxelles (B)</b>	<b>Jardin expérimental Jean Massart*</b>	1 December 2000	Laurence Belalia	Replied 1 December 2000.
	<b>Ecomusée de la Région du Viroin-Treignes*</b>	9 December 2000	Wlady Quinet	Replied 11 December 2000.
	<b>Musée de Zoologie Auguste Lameere*</b>	9 December 2000	Michel Jangoux	Replied 11 December 2000.
	<b>Musée de la Médecine*</b>	11 December 2000 (fax)	Unspecified	Replied by email by Diana Gasparon, 12 December 2000.
<b>Cheltenham &amp; Gloucestershire College of Higher Education (UK)</b>	<b>Geology Collection*</b>	9 December 2000	Joe Angseesing	Replied 11 December 2000.
<b>College of St Mark and St John (UK)</b>	<b>College Archive*</b>	9 December 2000	Alison Bidgood	Replied 19 December 2000.
<b>University of Dundee (UK)</b>	<b>University Museum*</b>	9 December 2000	Laura Adam, Responsible for the Medical History Museum	Laura Adam replied 5 March 2001. Matthew Jarron (Curator for all Dundee collections) replied 6 March 2001.
<b>University of Exeter (UK)</b>	<b>Archaeology Collection, Department of Archaeology*</b>	9 December 2000	Valerie Maxfield	Replied 13 December 2000.
	<b>Fine Arts Collection*</b>	9 December 2000	Gina Cox	Replied 11 December 2000.
	<b>Special Collections and Manuscripts*</b>	9 December 2000	Alasdair Paterson	Alasdair Paterson replied 18 January 2001.
	<b>Bill Douglas Centre*</b>	11 December 2000 (fax)	Hester Higton	Hester Higton replied 15 December 2000.



<b>University of Gent (B)</b>	<b>Zoological Museum*</b>	1 December 2000	Dominick Verschelde	Replied 6 December 2000
<b>Gloucester College of Arts &amp; Technology (UK)</b>	<b>Typography Teaching Collection*</b>	9 December 2000	Jill Hall	Replied 11 December 2000.
<b>University of Helsinki (FI)</b>	<b>University Museum* (OVERLAPPING, counts as study visit too)</b>	28 November 2000	Kati Hëinamies, Director	Replied 28 Nov. 2000. Many emails followed in the coming 4 years. I have met Kati H. personally, visited the Museum and interviewed her (Nov. 2003).
<b>Inter-university (France)</b>	<b>Etablissements d'enseignement supérieur et de recherche de la région des Pays de la Loire (Atlantech)</b>	26 May 2004	Catherine Cuenca, Conservateur du patrimoine Atlantech-Nantes	Interview in person in Paris. I had met C. Cuenca in Lille (April 2004).
<b>Université de Liège (B)</b>	<b>Musée de Zoologie*</b>	28 November 2000	Michèle Loneux	Replied 8 December 2000 only for the Musée de Zoologie; many emails followed.
	<b>Observatoire du Monde des plantes*</b>	28 November 2000	Alain Hambuckers	Replied 30 November 2000
	<b>Le Musée du Service de Préhistoire*</b>	1 December 2000	Marcel Otte	Replied 4 December 2000.
	<b>Patrimoine Artistique de l'Université (Liège) et Galerie Wittert*</b>	1 December 2000	Jean-Patrick Duchesne	Replied by Jean Housen, 1 December 2000.
<b>University of Lisbon (P)</b>	<b>Collection of the History of Pharmacy, Faculty of Pharmacy</b>	24 Apr. 2001	Pedro Sousa Dias, Professor, Historian of Science	Brief interview in person in Lisbon.
<b>UC Louvain (B)</b>	<b>Vertebrate Paleontology Collections*</b>	1 December 2000	Marie Claire Groessens-Van Dyck	Replied 1 December 2000; more emails followed, including more contacts in Belgium.
	<b>Invertebrate Paleontology Collections*</b>	9 December 2000	Luc Hance	Luc Hance replied 26 February 2001. Later there were more emails exchanged but the Department closed and Hance left UCL. Despite several attempts, present state of collections unknown.
	<b>Chirurgical and medical instruments collection*</b>	1 December 2000	Geneviève Aubert	Replied 1 December 2000.
	<b>Musée de Louvain-la-Neuve* (OVERLAPPING, counts as study visit too)</b>	9 December 2000	Bernard Van den Driessche	Replied 13 December 2000. More emails followed, I have met & interviewed B. VD Driessche. I have visited the Museum too (November 2004).

	<b>Pharmacology Collections (Salle Couvreur)*</b>	12 December 2000	Roger Verbeeck	Contact given by G. Aubert. Replied by Didier Lambert, 13 December 2000.
	<b>Musée de la Vie/Musée des Sciences*</b>	9 December 2000	Philippe Bertrand (scienceinfuse@afps.ucl.ac.be)	Philippe Bertrand replied 8 January 2001.
<b>Plymouth University (UK)</b>	<b>Arachnida and Lepidoptera Collection, Department of Biological Sciences*</b>	9 December 2000	Peter Smithers	Replied 11 December 2000.
<b>University of St Andrews (UK)</b>	<b>Heritage Collections</b>	5 December 2002 (phone)	Helen Rawson, Acting Keeper	Interview by phone. I had met Helen R. personally in St. Andrews (UMIS Conference, November 2002).
<b>University of the West of England (UK)</b>	<b>Bones and Models Collection, Library of the Faculty of Health and Social Care (Glenside Library)*</b>	11 December 2000 (fax)	Anne Boulton	Replied by email by Jan Nichols, Faculty Librarian, 14 December 2000.

## 5. Summary-table: table A5.3

Notes:

1. This table summarises tables A5.1 and A5.2. and lists all university collections and museums considered in this study. It also includes two non-university affiliated collections: the Hubrecht Collection (Hubrecht Laboratory, Utrecht) and the collections of the former Istituto Tecnico Toscano (today Fondazione Scienza e Tecnica, Florence).
2. Entries marked with \* indicate collections visited during the preliminary stage of this research (see appendix A2).

Country	HE Institution/ University	Museum/Collection/Project	Main Disciplines	Type	VISIT	INTERVIEW	Persons Interviewed
Belgium	Université Libre de Bruxelles	Jardin expérimental Jean Massart	Botany, Pharmacy	Botanical Garden	NO	YES*	1
		Ecomusée de la Région du Viroin-Treignes	Social History/Ethnography	Ecomuseum	NO	YES*	1
		Musée de Zoologie Auguste Lamere	Zoology	Museum	NO	YES*	1
		Musée de la Médecine	History of Medicine	Museum	NO	YES*	1
	Ghent University	Zoological Museum	Zoology	Museum	NO	YES*	1
	Université de Liège	Musée de Zoologie	Zoology	Museum	NO	YES*	1
		Observatoire du Monde des plantes	Botany, Pharmacy	Botanical Garden	NO	YES*	1
		Le Musée du Service de Préhistoire	Archaeology	Museum	NO	YES*	1
		Patrimoine Artistique de l'Université (Liège) et Galerie Wittert	Art	Collection(s)	NO	YES*	1
	UC Louvain	Vertebrate Palaeontology Collections	Palaeontology	Collection(s)	NO	YES*	1
		Invertebrate Palaeontology Collections	Palaeontology	Collection(s)	NO	YES*	1
		Chirurgical and medical instruments collection	History of Medicine	Collection(s)	NO	YES*	1
		Musée de Louvain-la-Neuve	Art, Anthropology	Museum	YES	YES	1
		Pharmacology Collections (Salle Couvreur)	History of Pharmacy	Collection(s)	NO	YES*	1

		Musée de la Vie/Musée des Sciences	Natural History, Natural sciences	Museum	NO	YES*	1
<b>Estonia</b>	<b>University of Tartu</b>	<b>Historical Museum</b>	Interdisciplinary	Museum	YES	YES	1
		<b>Art Museum</b>	Art/Archaeology	Museum	YES	YES	1
		<b>Zoology Museum</b>	Zoology	Museum	YES	YES	1
		<b>Geology Museum</b>	Geology	Museum	YES	YES	2
		<b>Science Centre Ahhaa Project</b>	Science/Astronomy	Science centre	PROJ.	YES	1
		<b>Botanical Garden</b>	Botany	Botanical Garden	YES	YES	1
<b>Finland</b>	<b>University of Helsinki</b>	<b>University Museum</b>	Interdisciplinary	Museum	YES	YES	1
		<b>Archaeology Teaching Collections</b>	Archaeology	Collection(s)	YES	YES	2
		<b>Old University Building</b>	University History	Historical Building	YES	NO	0
		<b>University Central Library</b>	University History	Historical Building	YES	NO	0
	<b>Technical University of Helsinki</b>	<b>Student Union Museum</b>	University History/Social History	Museum	YES	YES	1
		<b>Student Union Archives</b>	University History/Social History	Collection/ Archive	YES	YES	2
		<b>University Central Archive</b>	University History	Collection/ Archive	YES	YES	2
		<b>Collection of Instruments, Department of Forest Products Technology</b>	History of Science and Technology	Collection(s)	YES	NO	0
		<b>University Museum Project</b>	Interdisciplinary	Museum	PROJ.	YES	1
	<b>University of Turku</b>	<b>Archaeological Collections</b>	Archaeology	Collection(s)	YES	YES	1
<b>France</b>	<b>Université Bordeaux II</b>	<b>Musée d'ethnographie</b>	Ethnography; Physical Anthropology	Museum	NO	YES	1
	<b>Université de Bourgogne (Dijon)</b>	<b>Experimentarium</b>	Multidisciplinary	Centre for public understanding of contemporary research	YES	YES	2

		<b>Fonds anciens et précieux de la Bibliothèque universitaire</b>	Social History/University History	Collection(s)	YES	YES	1
		<b>Collections géologiques</b>	Geology	Collection(s)	NO	YES	2
	<b>Conservatoire National des Arts et Métiers</b>	<b>Musée des Arts et Métiers</b>	History of Science & Technology	Museum	YES	YES	8
	<b>Ecole Nationale Supérieure des Beaux-Arts</b>	<b>Collections contemporaines</b>	Art	Collection(s)	YES	YES	1
		<b>Collections Historiques</b>	Art	Collection(s)	YES	YES	1
	<b>Ecole des Mines</b>	<b>Musée de l'Ecole des Mines</b>	Mineralogy	Museum	YES	YES	2
	<b>Ecole Polytechnique</b>	<b>Collection d'instruments scientifiques</b>	History of Science	Collection(s)	YES	YES	1
		<b>Collection d'uniformes</b>	University History/Social History	Collection(s)	YES	YES	1
	<b>Université de Sciences et Technologies de Lille</b>	<b>Collection d'instruments scientifiques</b>	History of Science	Collection(s)	YES	YES	1
	<b>Université de Lyon Claude Bernard</b>	<b>Collections de Paléontologie</b>	Palaeontology	Collection(s)	YES	YES	2
		<b>Musée Testut-Latarjet d'Anatomie de Lyon</b>	History of Medicine	Museum	YES	YES	2
	<b>Université de Lyon Lumière</b>	<b>Musée des Moulages</b>	Art/Archaeology	Museum	YES	YES	2
	<b>Muséum National d'Histoire Naturelle</b>	<b>Muséum National d'Histoire Naturelle</b>	Natural History, Anthropology	Museum/Botanical Garden	YES	YES	2
	<b>Musée de l'Homme Antropologie (MNHN)</b>	<b>Musée du Quai Branly (project)</b>	Anthropology/Art	Project (Museum)	PROJ.	YES	2
	<b>Université de Montpellier 1</b>	<b>Jardin des Plantes</b>	Botany	Botanical Garden	YES	YES	1
		<b>Musée Atger</b>	Art	Museum	YES	YES	1
		<b>Musée d'Anatomie</b>	Anatomy	Museum	YES	NO	0
		<b>Musée de la Pharmacie</b>	History of Pharmacy	Museum	YES	YES	1

		<b>Musée du Droguier (Materia Medica)</b>	Materia Medica	Collection(s)	YES	YES	1
	<b>Université de Montpellier 2</b>	<b>Herbiers</b>	Botany	Collection(s)	YES	YES	1
		<b>Collections de Sciences</b>	Natural Sciences/History of Science	Collection(s)	YES	YES	1
	<b>Université de Paris 5</b>	<b>Musée de l'Histoire de la Médecine</b>	History of Medicine	Museum	YES	YES	1
	<b>Université de Paris 6 (Jussieu)</b>	<b>Musée/Collection de Minéralogie</b>	Mineralogy	Museum	YES	YES	1
	<b>Université de Strasbourg Louis Pasteur</b>	<b>Projet Jardin des Sciences</b>	Interdisciplinary	Project	PROJ.	YES	3
		<b>Observatoire Astronomique</b>	History of Astronomy	Astronomical Observatory	YES	NO	0
		<b>Collection d'instruments scientifiques</b>	History of Science	Collection(s)	YES	YES	1
		<b>Collection/Musée de minéralogie</b>	Mineralogy	Collection(s)	YES	YES	1
		<b>Collections d'enseignement de minéralogie</b>	Mineralogy	Collection(s)	YES	YES	1
		<b>Collection de paléontologie</b>	Palaeontology	Collection(s)	YES	YES	1
		<b>Herbiers</b>	Botany	Collection(s)	YES	YES	1
		<b>Collections d'anatomie</b>	Anatomy/Anthropology (Physical)	Collection(s)	YES	YES	1
		<b>Collections d'enseignement d'anatomie</b>	Anatomy	Collection(s)	YES	YES	1
	<b>Université de Strasbourg Marc Bloch</b>	<b>Collection d'Égyptologie</b>	Archaeology	Collection(s)	YES	YES	2
		<b>Collections d'archéologie greco-romaine</b>	Archaeology	Teaching collections	YES	YES	1
		<b>Musée des Moulages d'Antiques</b>	Art/Archaeology	Museum	YES	YES	1
	<i>[Inter-university]</i>	<b>Projet MuseUM (Montpellier 1, 2 &amp; 3)</b>	Multidisciplinary	Project	PROJ.	YES	1

	<i>[Inter-university]</i>	Observatoire de la Côte d'Azur (Nice)	Astronomy/History of Astronomy	Astronomical Observatory	YES	YES	1
	<i>[Inter-university]</i>	Etablissements d'enseignement supérieur et de recherche de la région des Pays de la Loire (Atlantech)	History of Science & Technology (20th century)	Collection(s)	NO	YES	1
<b>Germany</b>	<b>Freie University Berlin</b>	<b>Berlin-Dahlem Botanical Garden</b>	Botany	Botanical Garden	YES	YES	1
		<b>Berlin-Dahlem Botanical Museum</b>	Botany	Museum	YES	YES	1
	<b>Humboldt University Berlin</b>	<b>Animal Sound Archive</b>	Zoology	Collection(s)	YES	YES	1
		<b>Peat Knowledge Collection</b>	Topography/Geology	Collection(s)	YES	YES	1
		<b>Teaching collection of models of irrigation systems</b>	Technology	Collection(s)	YES	YES	1
		<b>Anthropology Collections</b>	Anthropology (Physical)	Collection(s)	YES	YES	1
		<b>Mori Ōgai House Museum/Memorial</b>	Social History	House Museum	YES	YES	1
		<b>Winckelmann Archaeology Collections</b>	Archaeology	Collections(s)	YES	NO	0
		<b>Collections of Instruments &amp; Models (Charité)</b>	History of Medicine	Collection(s)	YES	NO	0
		<b>Anatomical Museum (Charité)</b>	Anatomy	Museum	YES	NO	0
		<b>Anatomical Theatre (Veterinary) (Charité)</b>	Veterinary Anatomy	Historical Building	YES	NO	0
		<b>Museum of the History of Medicine/Rudolf Virchow House (Charité)</b>	History of Medicine	Museum	YES	YES	1
		<b>Robert Koch Museum</b>	History of Medicine	Museum	YES	YES	1
		<b>Dermatology Wax Models</b>	Dermatology	Collections	YES	NO	0
		<b>Helmholtz Zentrum für Kulturtechnik</b>	Interdisciplinary	Research Centre	YES	YES	4
	<b>Technical University Berlin</b>	<b>Collection of Architectural Drawings</b>	Architecture/Art/Design	Collection/ Archive	YES	YES	2
	<b>University of Leipzig</b>	<b>Collection of the History of Medicine</b>	History of Medicine	Collection(s)	YES	YES	1

		<b>Museum of Musical Instruments</b>	History of Music	Museum	YES	YES	1
		<b>Museum of Archaeology and Antiquities</b>	Archaeology	Museum	YES	YES	1
		<b>Botanical Garden &amp; Hortus Medicus</b>	Botany	Botanical Garden	YES	YES	2
		<b>Herbaria</b>	Botany	Collection(s)	YES	YES	1
		<b>Teaching Herbarium</b>	Botany	Collection(s)	YES	YES	1
		<b>Collection of Botanical Models</b>	Botany	Collection(s)	YES	YES	1
		<b>Egyptology Museum</b>	Archaeology	Museum	YES	YES	1
	<b>University of Martin-Luther Halle-Wittenberg</b>	<b>Christian Archaeology Collections</b>	Archaeology/Art history	Collection(s)	YES	YES	1
		<b>Art History teaching collection</b>	Art History	Collection(s)	YES	YES	1
		<b>Geiseltal Museum of Geology &amp; Palaeontology</b>	Geology/Palaeontology	Museum	YES	YES	1
		<b>Art &amp; Culture Collection</b>	University History	Collection(s)	YES	YES	1
		<b>University Museum</b>	Interdisciplinary	Museum	YES	YES	1
		<b>Science Museum Project (<i>Neue Residenz</i>)</b>	Interdisciplinary	Project (Museum)	PROJ.	YES	1
<b>Italy</b>	<b>University of Bologna</b>	<b>Palazzo Poggi</b>	Interdisciplinary	Museum	YES	YES	2
		<b>Osservatorio La Specola</b>	History of Astronomy	Astronomical Observatory	YES	YES	1
		<b>Museo di Fisica</b>	History of Science	Museum	YES	YES	1
		<b>Erbario</b>	Botany	Collection(s)	YES	YES	2
		<b>Orto Botanico</b>	Botany	Botanical Garden	YES	NO	0
		<b>Museo Botanico</b>	Botany	Museum	YES	YES	1
		<b>Museo di Mineralogia</b>	Mineralogy	Museum	YES	NO	0
		<b>Museo dell'Evoluzione (Antropologia)</b>	Anthropology (Physical)	Museum	YES	NO	0
		<b>Museo dell'Evoluzione (Anatomia Comparata)</b>	Zoology/Anatomy	Museum	YES	NO	0
		<b>Museo dell'Evoluzione (Zoologia)</b>	Zoology	Museum	YES	NO	0
	<b>University of Florence</b>	<b>Museo Zoologico La Specola</b>	Zoology	Museum	YES	YES	1



		<b>Museo di Antropologia</b>	Anthropology/ Ethnography	Museum	YES	YES	2
		<b>Orto Botanico Giardino dei Semplici</b>	Botany	Botanical Garden	YES	NO	0
		<b>Museo di Paleontologia</b>	Palaeontology	Museum	YES	YES	1
	<i>Fondazione Scienza e Tecnica</i>	<b>Collections of the former Istituto Tecnico Toscano</b>	Natural History/History of Science and Technology	Collection(s)	YES	YES	2
	<b>University of Milan</b>	<b>Osservatorio Brera</b>	History of Astronomy/Science	Astronomical Observatory	YES	YES	1
		<b>Simmetria, giochi di specchi</b>	Mathematics	Permanent exhibition	YES	YES	2
		<b>Topology teaching collections</b>	Mathematics	Collection(s)	YES	YES	2
		<b>Historical teaching collections</b>	Mathematics	Collection(s)	YES	YES	2
	<b>University of Naples</b>	<b>Museo Zoologico</b>	Zoology/Palaeontology	Museum	YES	YES	1
	<b>University of Pavia</b>	<b>Museo di Storia dell'Università (Gabinetto Volta)</b>	History of Science	Collection(s)	YES	YES	1
		<b>Museo di Storia dell'Università (Medicine Section)</b>	History of Medicine	Collection(s)	YES	YES	2
		<b>Orto Botanico</b>	Botany	Botanical Garden	YES	NO	0
		<b>Museo di Storia Naturale</b>	Natural History	Museum	YES	YES	3
	<b>Politecnico di Torino</b>	<b>Museo del Politecnico</b>	History of Technology	Museum	YES	YES	1
	<b>University of Turin</b>	<b>Museo di Anatomia Umana</b>	Anatomy	Museum	YES	YES	4
		<b>Progetto Museo dell'Uomo</b>	Interdisciplinary	Project (Museum)	PROJ.	YES	1
		<b>Museo di Antropologia Criminale Cesare Lombroso</b>	History of Medicine	Museum	YES	YES	3
		<b>Museo di Antropologia ed Etnografia</b>	Anthropology/ Ethnography	Museum	YES	YES	1
		<b>Research Collections of Human Palaeontology</b>	Palaeontology	Collection(s)	YES	YES	2
		<b>Orto Botanico</b>	Botany	Botanical Garden	YES	YES	1
		<b>Erbario</b>	Botany	Collection(s)	YES	YES	1

		<b>Archivio Scientifico e Tecnologico (ASTUT)</b>	History of Science, Medicine and Technology	Collection(s)	YES	YES	3
		<b>Mathematical Models</b>	Mathematics	Collection(s)	YES	YES	1
		<b>Museo di Zoologia</b>	Zoology	Museum	YES	YES	1
<b>NL</b>	<b>University of Amsterdam</b>	<b>Museum of Zoology</b>	Zoology	Museum	YES	YES	1
		<b>Entomology Collections (Museum of Zoology)</b>	Zoology	Collection(s)	YES	YES	2
		<b>Allard Pierson Museum</b>	Art/Archaeology	Museum	YES	YES	1
		<b>University Museum De Agnietenkapel</b>	University History/Art	Museum	YES	YES	1
		<b>Hortus Botanicus</b>	Botany	Botanical Garden	YES	NO	0
	<b>Hubrecht Laboratory</b>	<b>Hubrecht Embryology Collection</b>	Embryology/Medicine	Collection(s)	YES	YES	1
	<b>University of Groningen</b>	<b>University Museum</b>	Interdisciplinary	Museum	YES	YES	1
		<b>Medical Teaching Collections (historical)</b>	History of Medicine	Collection(s)	YES	YES	1
		<b>Pathology Museum</b>	Pathology/History of Medicine	Museum	YES	YES	1
		<b>Gerardus van der Leeuw Museum of Anthropology</b>	Anthropology/Ethnography	Museum	YES	YES	1
	<b>Leiden University</b>	<b>Hortus Botanicus</b>	Botany	Botanical Garden	YES	YES	1
		<b>Herbarium</b>	Botany	Collection(s)	YES	YES	1
		<b>Leiden Museum of Anatomy</b>	Anatomy/History of Medicine	Museum	YES	YES	1
	<b>TU Delft</b>	<b>Techniek Museum Delft</b>	History of Technology	Museum	YES	YES	2
		<b>Hortus Botanicus</b>	Botany	Botanical Garden	YES	NO	0
	<b>University Utrecht</b>	<b>Utrecht University Museum</b>	Interdisciplinary	Museum	YES	YES	6
		<b>Oude Hortus</b>	Botany	Botanical Garden	YES	YES	1
	<b>[Inter-university]</b>	<b>Stichting Academisch Erfgoed (SAE) Projects</b>	Multidisciplinary	Project	PROJ.	YES	1
<b>Portugal</b>	<b>Technical University Lisbon</b>	<b>Collection of Geology</b>	Geology/Mineralogy/Palaeontology	Collection(s)	YES	YES	1
<b>Sweden</b>	<b>Lund University</b>	<b>Embryology Collection</b>	Embryology/Medicine	Collection(s)	YES	YES	1

		<b>Historical Museum</b>	University History, Social History, Archaeology	Museum	YES	YES	1
		<b>Botanical Museum</b>	Botany	Museum	YES	YES	1
		<b>Zoological Museum</b>	Zoology	Museum	YES	YES	1
	<b>University of Uppsala</b>	<b>Gustavianum Museum</b>	Interdisciplinary	Museum	YES	YES	5
		<b>Botanical Garden</b>	Botany	Botanical Garden	YES	NO	1
		<b>Museum of Evolution (in project)</b>	Natural Sciences	Project (Museum)	PROJ.	YES	1
		<b>Natural History Collections</b>	Natural Sciences	Collections	YES	YES	1
		<b>Linnaeus' Collections</b>	Botany	Collection(s)	YES	YES	1
		<b>Herbarium</b>	Botany	Collection(s)	YES	YES	1
<b>UK</b>	<b>University of Aberdeen</b>	<b>Marischal Museum</b>	Cultural Anthropology/ Ethnography	Museum	NO	YES	2
	<b>Art Institute at Bournemouth</b>	<b>Design Collection</b>	Design/History of Design	Collection(s)	NO	YES*	1
	<b>University of Bath</b>	<b>Pitman Collection</b>	History of Technology/Phonetics	Collection(s)	NO	YES*	1
	<b>Bath Spa University College</b>	<b>Library Special Collections</b>	History, University History	Collection(s)	NO	YES*	1
	<b>University of Bournemouth</b>	<b>School of Conservation Sciences Collection</b>	Archaeology/Biology/ Forensics	Collection(s)	NO	YES*	1
	<b>University of Bristol</b>	<b>Biology Collections (Botanical Drawings)</b>	Botany	Collection(s)	NO	YES*	1
		<b>Biology Collections (Zoology)</b>	Zoology	Collection(s)	NO	YES*	1
		<b>Geology Department Museum</b>	Geology	Museum	NO	YES*	1
		<b>Theatre Collection</b>	History of Theatre/Theatre Design	Museum/Research Centre	NO	YES*	1
		<b>Special Collections at the University Library</b>	History, University History	Collection(s)	NO	YES*	1
	<b>University of Cambridge</b>	<b>Sedgwick Museum</b>	Geology/Palaeontology	Museum	YES	YES	2
		<b>Zoology Museum</b>	Zoology	Museum	YES	YES	1

		<b>Museum of Anthropology &amp; Archaeology</b>	Anthropology/ Archaeology	Museum	YES	NO	0
		<b>Whipple Museum</b>	History of Science	Museum	YES	YES	3
		<b>Kettle's Yard</b>	History, Contemporary Art	House Museum/ Gallery	YES	YES	1
		<b>Fitzwilliam Museum</b>	Art/Archaeology	Museum	YES	YES	4
	<b>Cheltenham &amp; Gloucestershire College of Higher Education</b>	<b>Geology Collection</b>	Geology	Collection(s)	NO	YES*	1
	<b>University College London</b>	<b>Petrie Museum of Egyptian Archaeology</b>	Archaeology	Museum	YES	YES	1
	<b>College of St Mark and St John</b>	<b>College Archive</b>	History of the College/Social History	Collection(s)	NO	YES*	1
	<b>University of Exeter</b>	<b>Archaeology Collection (Department)</b>	Archaeology	Collection(s)	NO	YES*	1
		<b>Fine Arts Collection</b>	Art	Collection(s)	NO	YES*	1
		<b>Special Collections and Manuscripts</b>	History	Collection(s)	NO	YES*	1
		<b>Bill Douglas Centre</b>	History of Cinema/ Social History	Collection	NO	YES*	1
	<b>University of Dundee</b>	<b>University Museum</b>	University History	Museum	NO	YES*	2
	<b>Gloucester College Arts &amp; Technology</b>	<b>Typography Teaching Collection</b>	History of Typography	Collection(s)	NO	YES*	1
	<b>University of Manchester</b>	<b>Manchester Museum</b>	Natural Sciences/ Archaeology	Museum	YES	YES	5
		<b>Wintworth Gallery</b>	Art	Gallery/Collection	YES	NO	0
	<b>University of Oxford</b>	<b>Museum of the History of Science</b>	History of Science	Museum	YES	YES	2
		<b>University Museum of Natural History</b>	Natural Sciences; Natural History	Museum	YES	YES	5
		<b>Collections Department of Geology</b>	Geology	Teaching collections	YES	YES	1
		<b>Ashmolean Museum</b>	Art/Archaeology	Museum	YES	YES	1
		<b>Pitt Rivers Museum</b>	Anthropology	Museum	YES	YES	1

		<b>Botanical Garden</b>	Botany	Botanical Garden	YES	NO	0
	<b>University of Plymouth</b>	<b>Arachnida and Lepidoptera Collection</b>	Zoology	Collection(s)	NO	YES*	1
	<b>University of Reading</b>	<b>Museum of English Rural Life</b>	Ethnography	Museum	YES	YES	1
		<b>Cole Museum of Zoology</b>	Zoology	Museum	YES	YES	1
		<b>Ure Museum of Greek Archaeology</b>	Archaeology	Museum	YES	YES	1
		<b>Zoology teaching collections</b>	Zoology	Collection(s)	YES	YES	1
	<b>RC of Surgeons of England</b>	<b>Hunterian Museum</b>	History of Medicine	Museum	YES	YES	2
		<b>Odontological Museum</b>	History of Medicine	Museum	YES	YES	1
		<b>Wellcome Museum</b>	History of Medicine	Museum	YES	YES	1
	<b>University of St Andrews</b>	<b>Bell Pettigrew Museum</b>	Natural Sciences; Natural History	Museum	YES	NO	0
		<b>Heritage Collections</b>	History of Science, University History, Archaeology	Collection(s)	NO	YES	1
	<b>University of the West of England</b>	<b>Bones and Models Collection</b>	Anatomy		NO	YES*	1

**6. Study visits to non-university affiliated museums: table A5.4**

Country	Museum	Date	Contact	Job titles (at the time of the contact/visit)	Notes
Finland	Museum of Science and Technology (Helsinki)	13 October 2003	Riina Linna	Resp. Education & Interpretation	A Museum belonging to a foundation, having several collections from the University of Helsinki and the Technical University of Helsinki.
		13 October 2003	Eeva Siltala	Resp. Collections	
	Folklore Archives, Finnish Literature Society (Helsinki)	13 October 2003	Ulla-Maija Peltonen	Researcher	Research collections. The University of Helsinki always had strong links with these societies (and there are many). Visit with Panu Nykänen.
	National Museum of Antiquities (Helsinki)	14 October 2003	Lena Söyrinki-Harmo	Chief Intendant, National Board of Antiquities	The National Museum has a significant collection from the University of Helsinki.
	Heureka, the Finnish Science Centre (Vantaa)	11 October 2003	Mikko Myllykoski	Experience Director	Although Heureka is autonomous, the University of Helsinki was among its founders (similar to the Exploratório Infante D. Henrique, Coimbra).
France	Muséum de Lyon/Musée des Confluences	18 May 2004	Chantal Schlecht	Chargée de Mission	
	Centre de Conservation et d'Étude des Collections (Muséum de Lyon)	18 May 2004	Jöel Clary	Conservateur	
		18 May 2004	David Besson	Conservateur	
	Muséum de Zoologie (Strasbourg)	9 December 2003	Marie-Dominique Wandhammer	Conservateur	
	Musée du Val-de-Grâce (Paris)	12 September 2002			Visit integrated in the Congress of the European Association of the Museums of History of Medical Sciences (Paris).
	Observatoire de Paris	12 December 2002			Visit alone.
Germany	Wunderkammer Franckeschen Stiftung (Halle)	7 June 2004	Jürgen Gröschl	Curator	For the majority of the 20th century, the Wunderkammer was part of Martin-Luther University of Halle-Wittenberg.
Italy	Museo di Storia Naturale (Milan)	26 March 2003			Visit alone.
	Istituto e Museo di Storia della Scienza (Florence)	12 January 2004	Mara Miniati	Former Deputy Director	The Museum has important collections of scientific instruments from the University of Florence.
		12 January 2004	Giorgio Strano	Curator	
		12 January 2004	Filippo Camerota	Deputy Director	
		12 January 2004	Paolo Galluzzi	Director	
		12 January 2004	Stefano Casati	Librarian	

	<b>Collections of the former <i>Istituto Tecnico Toscano, Fondazione Scienza e Tecnica</i> (Florence)</b>	13 January 2004	Paolo Brenni	Historian of Science (CNR), Curator of the Physics Collection	The ITT was a technical university; today the collection is cared for by the <i>Fondazione Scienza e Tecnica</i> , which is a private foundation.
			Anna Giatti	Collaborator of the Fondazione Scienza e Tecnica	
<b>Netherlands</b>	<b>Hubrecht Embryology Collection, Hubrecht Laboratory (Utrecht)</b>	7 May 2003	Jenny Narraway	Curator/keeper	Research collection from a non-university research laboratory.
	<b>Naturalis (Leiden)</b>	1 May 2003	Leo Kriegsman	Curator	Naturalis has several collections from Dutch Universities, namely the recent incorporations of geology collections.
	<b>Boerhaave Museum (Leiden)</b>	1 May 2003	Marian Fournier	Curator	The Boerhaave has collections of scientific and medical instruments from Dutch universities
		8 May 2003	Kees Grooss	Curator	
	<b>National Museum of Anthropology Volkenkunde (Leiden)</b>	1 May 2003	Willem J.J. Fermont	Head of Research	The Volkenkunde has anthropology collections from the University of Leiden.
<b>Portugal</b>	<b>Exploratório Infante D. Henrique (Coimbra)</b>	7 May 2001	Helena Caldeira		Although the Exploratório is autonomous, the University of Coimbra was among its founders and it's in the Board (similar to Heureka).
	<b>National Museum of Science &amp; Technology 'Dr. Mário Silva' (Coimbra)</b>	7 November 2004	Paulo Gama Mota	Director	In principle, the Museum will integrate in the future a foundation together with the museums of the Faculty of Sciences and Technology at the University of Coimbra. No visit, only interview.





[M. C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## Appendix A6: Complementary study visits and contacts

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**Table A6.1 – Interviews with university administration representatives**

Country	HE Institution/ University	Name	Date of contact	Job titles (at the time of contact)	Notes
Belgium	UL Bruxelles	Pierre de Maret	2 April 2004	Rector	Brief conversation.
Estonia	University of Tartu	Reet Mägi	9 October 2003	Director of Administration	Meanwhile, Reet Mägi has been appointed Director of the Museum of the History of the University of Tartu.
France	Université de Montpellier 2	Monique Vianey-Liaud	5 February 2003	Vice-President pour la Culture	
Portugal	University of Coimbra	Maria de Fátima Silva	29 May 2001	Pro-Rector for Culture	The Pro-Rector is directly responsible for the Sacred Art Museum and the Student Life Museum.
		Carlos Serra	9 May 2001	Responsible for PR	
		Pedro Casaleiro	Several emails 2003, 2004; interview 7 November 2004	Researcher (Museology)	
	University of Lisbon	José Barata- Moura	16 Aug 2001	Rector	
		Pedro Viegas	5 February 2001; 28 June 2001; 26 July 2002	Cabinet Director (to the Rector)	
		Fernando Costa Parente	Several conversations in 2000 & 2001	Pro-Rector	
		Luisa Cerdeira	6 June 2001; 18 January 2002	Director of Administrator	
	University of Porto	José Manuel Machado da Silva	7 May 2001	Professor, Dean of the Faculty of Sciences	Brief conversation.
	Technical University of Lisbon	Carlos Matos Ferreira	Email 4 January 2005; reply same day	President of the Higher Institute of Technology	Brief conversation.
Germany	University of Leipzig	Peter Gutjahr- Löser	4 June 2004	Chancellor	
	ML University Halle- Wittenberg	Patrice Wegener	6, 7 & 8 June 2004	EU-Referent	
Italy	University of Bologna	Walter Tega	14 March 2003	Vice-Rector	

**Table A6.2 – Contacts with relevant bodies**

Country	Government authority/Other	Dates of contact	Contact	Job titles (at the time of contact)	Notes
France	Ministère de l'Éducation Nationale	22 November 2000	Sent to sup-info@education.gouv.fr		Replied 23 November by M.F Coque, sending to michele.mathieu@education.gouv.fr
		23 November 2000	Michèle Mathieu		Replied 23 November, sending to Direction de la Recherche Bureau des Musées et du patrimoine scientifique et technique, Roland Bertrand.
	Ministère de la Recherche et de l'Enseignement Supérieur	28 November 2001; 4 February 2002; 8 July 2004	Roland Bertrand		
	Musée du Louvre (Paris)	Emails asking for a meeting 30 May and 20 June 2004	Yannick Lintz	Conservateur (Récolement des dépôts des départements des antiques)	Yannick Lintz is updating the track of old loans from the Louvre to French universities (for teaching or study). No follow-up.
Italy	Commissione Musei, CRUI	31 March 2003	Giacomo Giacobini	Representative of the University of Turin at the CRUI	
Netherlands	Ministry of Education, Culture & Science	7 May 2003	Charlotte E. van Rappard-Boon	Chief-Inspector for Cultural Heritage	
Portugal	Council of Rectors (CRUP)	Several emails and conversations (2000 & 2001)	Virgílio Meira Soares	Former Rector of the University of Lisbon, former President of CRUP	
	Rede Portuguesa de Museus (Portuguese Network Museums, Ministry of Culture)	Several emails and conversations (2001)	Clara Frayão Camacho	General-Coordinator	
		Several emails and conversations (2001)	Joana Sousa Monteiro	Vice-Coordinator	

**Table A6.3 – Contacts with selected experts & advisors**

Expert/Advisor	Date	Institution	Job titles (at the time of contact)	Notes
<b>André Guillerme</b>	5 February 2002; 4 December 2003; 26 May 2004	CDHT, CNAM	Historian of Science & Technology	
<b>Bernice Murphy</b>	29 May 2004	Australian National University (Canberra), ICOM	Researcher, Vice-President ICOM	
<b>Eilean Hooper-Greenhill</b>	11 September 2001	Leicester University	Professor of Museology	
<b>Eszter Fontana</b>	2 June 2003	University of Leipzig, ICOM-CIMCIM	Chair of ICOM-CIMCIM	
<b>Fernando Bragança Gil</b>	Many meetings and emails during the early stages of this research	Museum of Science, University of Lisbon	Director, professor	
<b>Henrique Coutinho Gouveia</b>	17 August 2001; 10 January 2002	Universidade Nova de Lisboa	Professor of Museology	
<b>Mara Miniati</b>	16 January 2004	Retired, IMSS	Historian of Science	
<b>Michel Van Præet</b>	1 December 2001	MNHN, ICOM-France	President ICOM-France, Advisor on museums to the University of Coimbra.	
<b>Michele Lanzinger</b>	28 November 2003	Associazione Nazionale Musei Scientifici (ANMS) Trento Natural History Museum	President of the ANMS Director Trento Museum	
<b>Paolo Brenni</b>	14 January 2004	CNR (Italy)	Historian of Science, Curator	
<b>Pietro Corsi</b>	14 September 2002	CNRS, La Villette, Université de Paris 1	Historian of Science	Meeting with Steven de Clercq and Dominique Ferriot
<b>Peter Stanbury</b>	2 & 4 June 2002, many emails between 2000 and 2004	Macquarie University, ICOM-UMAC	Chair of ICOM-UMAC 2001-2004	
<b>Sue-Anne Wallace</b>	Many emails between 2002 and 2004	Queensland University of Technology	Director QUT Precint (art)	

**Table A6.4 – Study visits to university museums and collections outside Europe**

HE Institution/ University	Museum/Collection/Project	Date	Interview	Job titles (at the time of visit)	Notes
<b>Australian National University (Australia)</b>	<b>Drill Hall Gallery</b>	3 October 2002			Visit integrated in UMAC Conference
	<b>Canberra School of Art Gallery</b>	3 October 2002			Visit integrated in UMAC Conference
<b>Macquarie University (Australia)</b>	<b>Art Gallery and Collection</b>	29 September 2002			Visit integrated in UMAC Conference
	<b>Australian History Museum</b>	30 September 2002			Visit integrated in UMAC Conference
	<b>Museum of Ancient Cultures</b>	30 September 2002			Visit integrated in UMAC Conference
	<b>Biology Museum</b>	30 September 2002			Visit integrated in UMAC Conference
	<b>Earth Sciences Museum</b>	30 September 2002			Visit integrated in UMAC Conference
<b>Sydney University (Australia)</b>	<b>Macleay Museum</b>	1 October 2002			Visit integrated in UMAC Conference
	<b>Nicholson Museum</b>	1 October 2002			Visit integrated in UMAC Conference
<b>NOT UNIVERSITY</b>	<b>Australian National Botanical Gardens (Canberra)</b>	4 October 2002			Visit integrated in UMAC Conference
<b>University of Oklahoma (USA)</b>	<b>Sam Noble Museum of Natural History</b>	18 September 2003	Ellen J. Censky	Director	
		16, 17 & 18 September 2003	Peter B. Tirrell	Deputy Director	
	<b>Fred Jones Junior Museum of Art</b>	22 September 2003			Visit integrated in UMAC Conference
	<b>Western History Collection</b>	22 September 2003			Visit integrated in UMAC Conference
	<b>History of Science Collection</b>	22 September 2003			Visit integrated in UMAC Conference
	<b>Charles M. Russell Center</b>	22 September 2003			Visit integrated in UMAC Conference



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## Appendix A7: Terminology Survey

The following is the result of a survey of terminology related to the university museum context. The objective was to investigate the existence of specific terminology, or, at least, special terms.

The survey is not exhaustive and based on a selected sample of 94 articles (from journals and books), reports, and catalogues, written in English and French and published during the 20<sup>th</sup> century. All words and expressions were taken from professional museum literature. The survey is presented in the form of a table indicating:

- a) the precise term or expression;
- b) the reference for the publication in which it appears;
- c) the purported meaning and/or relevant comments.

The table begins with terms associated with the word *museum*, then with *collection*, then with *objects and specimens*, then with *jobs and staff* and finally with *exhibitions*. Common and trivial terms (e.g. 'zoology collection') are not included, unless there exists ambiguity about meaning or content. No definitions are given. The survey is discussed in chapter 3.

Term or Expression	Reference	Purported Meaning/Comment
Civic museum	Zeller 1985: 88; Coolidge 1956: 167	As a synonym for <u>non-university museum</u>
Independent museum	Odegaard 1963: 32	As a synonym for <u>non-university museum</u>
Public museum	Guthe 1966: 105; Reimann 1967: 39; MacDonald & Shaw 2000: 1; Laetsch 2000: 84; Borhegyi 1956: 309; Rodeck 1968: 34; Tirrell 2000: 159	As a synonym for <u>non-university museum</u>
General museum	Sawyer 1964-65: 337	As a synonym for <u>non-university museum</u>
Campus museum	Hester 1967: 246; Burcaw 1969: 15,16; Davis 1976: 116; Borhegyi 1958: 79; Rodeck 1968: 33,34; Black 1984: 20	As a synonym for <u>university museum</u>
Academic museum	Burcaw 1969: 16; Coolidge 1956: 167; Clercq 2001a	As a synonym for <u>university museum</u>
Academic collections and museums	Declaration of Halle, 16/4/00 (see appendix A10)	
University-affiliated museum	Kinsey 1966: 106	As a synonym for <u>university museum</u>
University-based museum	Ferriot 2002: 89	As a synonym for <u>university museum</u>
University-state museum	Tirrell 1991: 159	Museums that belong to a state

		university (USA)
College museum <sup>192</sup>	Sawyer 1964-65: 337; Freundlich 1964-65: 165	
Teaching museum	Eldredge 1978: 245; Rolfe 1969: 7; Ruthven 1931: 22; MacDonald 2000: 74; Warhurst 1984: 80; Rickards 1979: 78	To be used exclusively by campus students; same as <u>teaching museum</u>
Educational museum	Ortner 1978: 212	To be used exclusively by campus students
Musée de moulages	Mossière 1996: 10	The author gives other synonyms for musée de moulages: <u>musée de modèles</u> , <u>cabinet de copies</u> , <u>gyprothèque</u> , <u>musée de sculpture comparée</u> & <u>galerie d'études</u>
Science museum	Witteborg 1968: 25; Taub 1999: 730	The term includes <i>all sciences</i> (and not just exact sciences), e.g. title of the paper: "The role of science museums in teaching anthropological and biological concepts through exhibits"; same in Taub (1999)
Scientific museums	Tucci 2002: 18	The author uses the term in the sense of <u>museums of 'exact' sciences</u> (in accordance with ICOM)
Research museum	Grinnell 1910; Rolfe 1969: 7; Jonaitis 1995: 39; Niles Eldredge quoted in Nicholson 1991: 91; Ruthven 1931: 22; Rickards 1979: 78	
Working museum	Boylan 1999: 46	As a synonym for <u>research museum</u>
Research collections	Williams 1969: 303; Madden 1978: 161; Parr 1963: 23; Edson & Dean 1994: 75; MacDonald 2000: 69; Grinnell 1910: 165, Wolf 1980: 249	
Scientific collections	Parr 1958: 14; Jorge 1941: 82	As a synonym for <u>research collections</u>
Collections scientifiques (1)	Hudson & Legget 2000: 20	As a synonym for <u>research collections</u>
Collections scientifiques (2)	Van den Driessche 2000: 39	Meaning collections where exact sciences are represented
Study collections (1)	Collier 1962: 323; Guthe 1966: 103; Eldredge 1978: 274; Anonymous 1964-65: 46; Nicks 1991: 113; Kohlstedt 1988:417	As a synonym for <u>research collections</u>
Study collections (2)	Williams 1969: 303	For the exclusive use of students
Collections d'étude (3)	Keene 1995	Meaning collections only accessible for researchers ( <u>research collections</u> )
Sub-collection	Minsky 1976: 40; Clercq 2001b, 2003	
Student collections	Strachan 1979: 74	Meaning collections resulting from PhDs and monographs made by students
Cabinet of types	Owen 1964: 290	
Collection of type series	MacDonald 2000: 70	
Reference collections	Minsky 1976: 42; MacDonald 2000: 71; Reynolds 1979; Taub 2001: 13; Strachan	

<sup>192</sup> Institutionally speaking, a college *per se* cannot grant more than graduate degrees. A university, however, can be composed of colleges.



	1979: 68, 72	
Representative collections	Rolfe 1969: 7; Madden 1978: 162; Nicks 1991: 110	
Gift collection	Minsky 1976: 43	A collection that was donated
Bulk-stratigraphic collection	Minsky 1976: 40	Meaning unclear, supposedly the bulk resulting from field collecting in palaeontology
Characteristic collection	Love 1967: 36	As a synonym for <u>reference</u> and <u>representative collections</u>
Specialised collection	Ortner 1978: 212	For the exclusive use of specialists
Comparative collection	Boylan 1999: 45	
Comparative study collections	Swanson 1969: 9	
Comprehensive collection	Ortner 1978:213; Eldredge 1978: 245; Waller 1971: 386, Madden 1978: 160, 161	“Complete”, <u>reference collection</u>
Comprehensive collection of comparative bones	Madden 1978: 160	
Encyclopaedic collection	Olmi 2001: 11	Same meaning as <u>comprehensive collection</u>
Reserve collection	Willett 1986: 142; Nicks 1991: 113; Owen 1964: 290; MacDonald 2000: 74; Warhurst 1984: 80	Meaning unclear: I assume that it's simply the collection not on public display
Reserve material	Pearce 1974: 150	The meaning is unclear. Presumably, <u>backup collections</u> (S. de Clercq, pers. comm.. 21/5/02). It could also mean <u>storage collection</u> , but the author uses this term also in the same text, so it's unlikely
Working collection	ICOM 2004	
Assemblage	Saville 1999, 2002	Same as <u>working collection</u> , the bulk resulting from field work (in this case archaeological). Saville disagrees calling it <u>collection</u>
Field collection	Society of Museum Archaeologists 1993	Same as above
Archive repository	Owen 1995	Meaning unclear, possibly <u>reference collections</u>
Matériaux de référence et de recherche	Hudson & Legget 2000: 22	Meaning <u>research</u> and <u>reference collections</u>
Storage collection	Pearce 1974: 150	
Fundamental collections	Neustupn 1967: 57	Neustupn explains: “depositories”, so I suppose <u>reference collections</u>
Colecção pública [Public collection] vs. Colecção científica [Scientific collection]	Jorge 1952: 135	Meaning the collection that is on public display vs. the research collections, supposedly reserved
Teaching collections	Minsky 1976: 38, 39; Ortner 1978: 212; Waller 1971: 390; Merriman 2002: 76; Boylan 1999: 43, 52; MacDonald 2000: 69; Strachan 1979: 68, 72;	
Educational collections	Kohlstedt 1988: 422	Meaning <u>teaching collections</u>
Education program collection	Edson & Dean 1994: 75	Not exactly as a synonym of teaching collection because the term is used in a non-university museum context
Demonstration collection	Nicks 1991: 113	As a <u>teaching sub-collection</u> , composed of demonstration material
Collections à usage	Van den Driessche 2001: 132	As a synonym of <u>teaching collection</u>

pédagogique		
Collections didactiques	Hudson & Legget 2000: 21	
Collection muséale	Van den Driessche 2001: 132	Ambiguous meaning: possibly collection with 'museum' value, or 'display' value
Display collection	Nicks 1991: 112	The same meaning as public collection above
Systematic collections	Kinsey 1966: 108; Madden 1978: 160; Parr 1958: 16; Braun & Mares 1991: 434; Nicholson 1991: 106; Nicks 1991: 110	Collections of Systematics (the discipline)
Synoptic collections	Madden 1978: 159; Rodeck 1968: 33	Meaning <u>reference collections</u> (for identification)
Synoptic research collections	Madden 1978: 160	Meaning <u>reference collections</u> (for identification)
Associative collections	Nicks 1991: 111	Accurate meaning to be confirmed
Opportunistic collections	Nicks 1991: 111	Accurate meaning to be confirmed
Backup collections	Steven de Clercq, pers. comm. 21/05/2002	Duplicates and spare parts collected in the field as a replacement resource for research
Orphan collections	Boylan 1999: 53	Any collection that lost its original purpose
Permanent collection	Edson & Dean 1994: 75	Meaning unclear
Incidental collections	Recommendation # 1375, Council of Europe, 1998	Collections cared for and owned by institutions which main priority is not collection preservation and care
Raw data	Guthe 1966: 104	Collections that were just gathered in the field, waiting to be analysed, similar to working collections (Steven de Clercq, pers. comm., 21/05/02)
Study room	Jones 1967: 343	"where reserve material is available for inspection, but not on formal display"
Scientific specimens	Getty's Thesaurus (consulted in 23/05/02)	
Series of specimens	Braun & Mares 1991: 434	
Type specimens	Stanbury 2001; Boylan 1999: 47	
Voucher specimens	Braun & Mares 1991: 438; Boylan 1999: 47	
Types (1)	Héritier-Auger 1991: 45	In the sense of <u>type-specimens</u> , in a natural history context
Types (2)	Renfrew 1967: 113	Same as above, but in the context of archaeology
Modèles manipulables	Helden & Steenhorst 1998: 49	
Manipulations presse-bouton	Helden & Steenhorst 1998: 52	
Modèles animés	Helden & Steenhorst 1998: 49	
Objets historiques	Helden & Steenhorst 1998: 49	
Historical records	Declaration of Halle, 16/4/00	
Maquettes	Helden & Steenhorst 1998: 50	
Replique	Helden & Steenhorst 1998: 51	
Instruments mathématiques	Helden & Steenhorst 1998: 49	
Instruments obstétriques	Helden & Steenhorst 1998: 49	

Skeletal material	Warhurst 1984: 80	
Bird skins	Warhurst 1984: 80	
Study skins	Roselaar 2003: 253	Bird skins for study
Herbarium sheets	Warhurst 1984: 80	
Demonstration model	Clercq 2001a	
Instrumental systems	Brenni 2000: 16	As a synonym for instruments of the 20 <sup>th</sup> century
Pièces de référence	Van den Driessche 2001: 134	The author completes: "pièces de référence pour les spécimens de paléontologie". Therefore he speaks of reference objects, possibly even types
Objects of research	ECSITE Meeting Director's Forum, Lisbon, 16/03/02	Complete sentence: "The Deutsches Museum exhibits objects of research"
Object as source	Neustupn 1967: 57	
Object as evidence	Neustupn 1967: 57	
Museum scholar	Fleming 1969: 12	
Research scholar	Ricciardelli 1967: 11	
Scholar-naturalist	Whitehead 1971: 159	
Museum docent	Johnson 1971: 261	
Artist-teacher	Coolidge 1956: 169	
Teacher-curator	Coolidge 1956: 169	
Scholar-curator	Washburn 1967: 46	
Curator-professor	Jaffé 1967: 150	
Professor-curator	Jaffé 1967: 154	
Museum specialist	Auer 1970: 105	Not clear if the author means the curator, the teacher or the museologist
Research oriented curator vs. collection and exhibit-oriented curator	Washburn 1967: 46	Interesting the 3 functions suggested by Washburn when using these expressions: a) research, b) collection care, and c) exhibitions
Research scientists (!)	Burcaw 1969:16	
Museologists	Burcaw 1969: 16	
Museum historians	Schlereth 1980: 256	As a synonym for curators of history museums
Portable exhibition	Eldredge 1978: 274	Meaning unclear, possibly travelling exhibition
Period rooms	Schlereth 1980: 256	Rooms faithfully reconstructing a given historic period
Didactic exhibit(ion)s	Johnson 1971: 261; Jaffé 1967: 150	Exhibits in a teaching exhibition (exclusively to be used by students)
Students' gallery	Rolfe 1969: 9; A.S. Wittlin quoted in Seyd 1971: 180; Baramki 1970: 30	An exhibition exclusive for students, organised in a didactic manner
Galerie didactique	Van den Driessche 2000: 39	Exhibition exclusively to be used by students
Scholarly exhibition	Waller 1971: 390	Meaning unclear
Systematic display	Kinsey 1966: 111	Systematic in the sense of the process (i.e. methodical)
Taxonomic displays	MacDonald 2000: 71	In the context of archaeology, meaning an exhibition of artefacts typologically grouped
Systematic exhibits	Parr 1958: 13	Here, the meaning is precise: exhibits that display the discipline of Systematics
Public exhibition vs. reserved exhibition	MacDonald 2000: 78	In the context of archaeology
Display museum vs. working museum	MacDonald 2000: 83	In the context of archaeology
Student display	Seyd 1971: 180	A display designed by students

Scholarly catalogue	Hester 1967: 247	
Object-oriented research	Lindsay 1962: 238	
Discipline based study of museum material	Pearce 1995: 259	As a synonym for disciplinary research or subject-matter research
Museum-based research	Fenton 1995: 225	As a synonym for disciplinary research or subject-matter research
Subject-based expertise	Fenton 1995: 224	As a synonym of disciplinary knowledge, possibly even connoisseurship
Museum research	Fleming 1969: 13; Parr 1963: 21	
Systematic research	Parr 1958: 14; Braun & Mares 1991: 432	Research in the field of Systematics
Systematic study	F. Petrie, quoted in MacDonald 2000: 72	Systematic here employed as method
Curatorial research	Gilberto Silva Taboada, quoted in Nicholson 1991: 99; Hounsome 1984: 153	
Sampling methodology	Braun & Mares 1991: 434	When referring to the survey collecting done in the 19 <sup>th</sup> century expeditions
Taxonomic and systematic collecting	Warhurst 1984: 80	
Museum science (1)	Borhegyi 1958: 79; Nicholson 1991: 106	As a synonym for museology
Museum science (2)	Nicholson 1991: 106	As a synonym for the science/research produced in the museum; in the case of a natural history museum, it's Systematics
Museological discipline	Neustupn 1970: 67	As a synonym for the discipline represented in the collections (e.g. archaeology)
Scientific museology	Tucci 2002: 19	As a synonym for museology of science
Archival function [of university museums]	Rolfe 1969: 7	

Table A7.1 – Terminology survey.

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## Appendix A8: Historical synopsis of university collections and museums, with reference to precursors and significant events<sup>193</sup>

### Early 'teaching collections':

- c. 3000 BC: Introduction of the concept of State archives by the Sumerians (Lewis 1984).
- c. 2800 BC: *Hortus medicus* of Emperor Shen Nung of China. The *Sheng Nung Peng Tsao* is considered the earliest *materia medica*.
- 2<sup>nd</sup> millennium BC: Teaching 'collections' of the Larsa Schools, Mesopotamia (Woolley & Moorey 1982, Lewis 1984, Boylan 1999).
- c. 1500 BC: Garden of the King of Thebes, Egypt (Foster 1999).
- 1500s BC: Garden of King Thutmose III (reigned 1520-1504 BC), Temple of Amun, Karnak, Egypt; planted by Nekht (Foster 1999).
- 1400s BC (dated 1460 BC by Foster 1999): Menagerie of Queen Hatshepsut (reigned c. 1473-1458 BC), Thebes, Egypt, included monkeys, leopards, wild cattle, giraffe, and birds (Alexander 1979: 110).
- 9<sup>th</sup> century BC: Ashurnasirpal II of Assyria collected plants and seeds from abroad for home growing (Foster 1999).
- 700 BC: The beginning of animal menageries in Greece.
- 530 BC: Sumerian 'school museum', with historic artefacts and a 'museum label' in clay dating from 2000 BC, in Ur, Mesopotamia. The school was established by En-nigaldi-Nanna, daughter of Nabonidus, the last king of Babylon (Woolley & Moorey 1982, Lewis 1984, Boylan 1999).
- 4<sup>th</sup> century BC: Botanical Garden of Aristotle's *Lyceum* in Athens. The *Lyceum* also had a Menagerie, provided by Aristotle's former pupil Alexander the Great (Whitehead 1970).
- 4<sup>th</sup> century BC: Botanical Garden and Menagerie of the *Museion*, Alexandria, Egypt. The *Museion* was founded by Ptolomy Sotor, c. 290 BC (Lewis 1984, Boylan 1999), but according to Whitehead (1970) it was created by Ptolomy Philadelphus. There were also paintings, sculptures and casts for the instruction of artists (Boylan 1999).
- Hellenic and Roman periods: Academies "devoted to particular philosophical traditions would have had significant portrait collections, presumably on public display" (Boylan 1999).

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<sup>193</sup> This listing does not pretend to be exhaustive. The numerous universities established over the recent decades have not been included. When no references are provided, data were taken from directories or from the World Wide Web.

- 3<sup>rd</sup> century BC: the School of Alexandria begins to perform dissections.
- 1230 AD: Menagerie of the Tower of London, owned by Henry III.
- 9<sup>th</sup> century AD: Monastery Garden of Saint Gall, near Lake Konstanz, Switzerland.
- 14<sup>th</sup> century AD: Marco Polo reports on his visit to Kublai Khan's great animal collection at the court of the Great Kahn in Khanabalik (Beijing).
- 1500s AD: Cortez finds botanical gardens in Istapalan and Chalco, Mexico; the Aztecs had made considerable study of medical botany (Alexander 1979). Montezuma's zoo was reportedly visited by Cortez in 1519 (Alexander 1979).
- 1575 AD: Holburn Physic Garden, London.

### **Eleventh century:**

- 1088: University of Bologna, Italy. Although not fully documented, 1088 is generally accepted as the date of foundation.

### **Twelfth century:**

- 1140: Roger II of Sicily creates the first degree in Medicine at Salerno, Italy (Clin 1994). The teaching of Medicine at Salerno (apparently to both genders) lasted from the late 11<sup>th</sup> to the early 15<sup>th</sup> centuries (Siraisi 1996). Statutes granted by Emperor Federico II in 1231.
- 1180: Beginning of the teaching of Medicine at Montpellier, France.
- 1188: University of Reggio, Italy (functioning until the late 13<sup>th</sup> century).

### **Thirteenth century:**

- 1211: University of Paris.
- 1214: First Chancellor conferred in Oxford, England. There is no clear founding date, but teaching took place in Oxford in some form from 1096 onwards and developed rapidly from 1167, when Henry II banned English students from attending the University of Paris. In 1231 the masters were recognized as a *universitas* or corporation.
- 1215: University of Arezzo, Italy. Discontinued during the 1260s, re-established in 1355, but definitely closed in 1373.
- 1218-19: University of Salamanca, Spain.
- 1220: École de Médecine de Montpellier, France.
- 1222: University of Padua, Italy.
- 1224: University of Naples, Italy.
- 1226: University of Cambridge, England (migration of students and professors from Oxford).

- 1228: University of Vercelli, Italy. Discontinued during the 14<sup>th</sup> century.
- 1229: University of Toulouse, France.
- c. 1235: University of Orléans, France. Recognised as *studium generale*, 1306.
- 1246: University of Valencia is granted the recognition of *studium generale* by the Pope. Although teaching occurred, the University itself would only be founded until 1411.
- 1246: University of Sienna, Italy. Discontinued in 1252, re-established in 1357.
- c. 1250: University of Angers, France. Recognised as *studium generale*, 1337.
- 1254-1260: University of Seville, Spain. Founded jointly by the King of Spain and the Pope, this *studium* may not have been university *sensu stricto* (cf. Verger 1996). It was discontinued during the 1270s.
- 1260: Medicine first taught at Bologna, Italy (Verger 1996).
- 1263-4: Merton College, Oxford, England.
- 1267: First Director of the Faculty of Medicine in Paris appointed (Clin 1994).
- 1288: University of Lisbon, Portugal. Discontinued in 1308 and transferred to the University of Coimbra, created in 1309 (Carvalho 1996).
- 1289: The École de Médecine of Montpellier officially becomes a university. The informal designation 'University of Medicine' had been in use since the École had been created in 1220.

#### **Fourteenth century:**

- 1300: University of Lerida, Spain.
- 1303: University of Rome. Discontinued during the late 13<sup>th</sup> century, re-established in 1431.
- 1303: University of Avignon, France.
- 1309: Botanical and Medical Garden, Salerno. Used for teaching medicine, it was organised by Mattheus Silvaticus (also known as Pandectarius), doctor to the King of Sicily, who already grew domestic and foreign plants since at least 1297. Pandectarius' *Liber pandectarum medicinae* is one of the first medical incunabula to be printed.
- 1318: University of Treviso, Italy. Discontinued during the late 14<sup>th</sup> century.
- 1332: University of Cahors, France.
- 1333: Botanical and Medical Garden of Venice, Italy.
- 1339: University of Grenoble, France, but discontinued shortly after.
- 1339: University of Verona, Italy. The existence of this university is controversial (cf. Verger 1996). The *studium* vanished during the 15<sup>th</sup> century.
- 1343: University of Pisa, Italy. Discontinued c. 1360, but re-established during the late 15<sup>th</sup> century.
- 1347: University of Prague.

- 1349: University of Florence, Italy. Transferred to Pisa in 1472.
- 1350: University of Perpignan, France.
- 1354: University of Huesca; discontinued during the first half of the 15<sup>th</sup> century, re-established in 1464.
- 1361 (April 13): University of Pavia; discontinued and transferred to Piacenza in 1398; re-established in 1412.
- 1364: University of Kraków; discontinued before 1370, but re-established in 1397.
- 1365: University of Orange; University of Vienna.
- 1369: University of Luca.
- 1379: University of Erfurt.
- 1385: University of Heidelberg.
- 1388: University of Cologne.
- 1389: University of Buda (discontinued c. 1400; re-established in 1410 and definitely closed in 1460).
- 1391: University of Ferrara (discontinued in 1394; re-established in 1430).

#### **Fifteenth century:**

- 1402: University of Würzburg (discontinued after 1413).
- 1404: University of Turin.
- 1409: University of Leipzig (migration of professors and students from Prague); University of Aix-en-Provence.
- 1411: University of St. Andrews, first university in Scotland (according to Rawson (2004) established sometime between 1410 and 1414).
- 1419: University of Rostok.
- 1425: University of Louvain (included a Faculty of Medicine right from the beginning).
- 1431: University of Basel (discontinued in 1449 and re-established in 1460); University of Poitiers.
- 1432: University of Caen.
- 1441: University of Bordeaux.
- 1446: University of Gerona; received Magna Charta in 1446, but only became a genuine university during the 16<sup>th</sup> century (Verger 1996).
- 1450: University of Barcelona.
- 1451: University of Glasgow.
- 1452: University of Valence (France); University of Trier.
- 1456: University of Greifswald.

- 1460-61: University of Nantes; closed in 1735, when the Law Faculty was transferred to Rennes. Therefore, the date adopted for the foundation of the University of Rennes is also 1460-61.
- 1464: University of Brugge.
- 1469-1499: During these 30-years, 39 editions of Pliny's *Natural History* and 11 'editions' of Aristotle natural history works were issued (!) (Whitehead 1970).
- 1470: *Studium* of Venice (School of Medicine, authorised to grant the degree of doctor).
- 1471: University of Genova (officially opened in 1513).
- 1474: University of Zaragoza.
- 1475: University of Copenhagen.
- 1476: University of Mainz; University of Tübingen.
- 1477: University of Uppsala
- 1483: University of Palma de Mallorca.
- 1489: University of Sigüenza (Spain).
- 1495: University of Aberdeen.
- 1498: University of Frankfurt am Oder (officially opened in 1506).
- 1499: University of Alcalá de Henares (Spain).

### **Sixteenth century:**

- 1505: University of Wrocław, discontinued due to vigorous opposition by Krakow University. Re-established in 1702 by Leopold I of Habsburg and named the Leopoldine Academy after him. Renamed University of Wrocław in 1811.
- 1517: First official dissection in Strasbourg (Le Minor 2002).
- 1531: Beginning of the construction of the *Neue Residenz*, University of Halle-Wittenberg (finished in 1540), where the Geiseltal Museum is currently located.
- 1532: Records show the *hortus medicus* of the Reguliers monastery in Amsterdam (which was to become the *hortus botanicus* of the Atheneum Illustre) having burnt-out (Ursem 1994).
- 1543: *De humani corporis fabrica* by Vesalius (1514-1564) published. The first page depicts an anatomical theatre that existed, albeit temporarily, in Padua.
- 1544: Under the rule of Francis I, surgeons are considered equivalent to doctors in France (Clin 1994).
- 1545: In May, the senate of the Venetian Republic orders the foundation of the Botanical Garden at the University of Padua. Founder: Francesco Bonafede; first catalogue published in 1591 (Alexander 1979)
- 1544 or 1545: Botanical Garden, University of Pisa. Moved to a new site in 1562 or 1563, under the supervision and patronage of Ferdinando I de' Medici, when a natural history

museum was also constructed (cf. Olmi 2001). Founder: Luca Ghini, invited to work in Pisa by Cosimo I de' Medici between 1543 and 1544. According to Fernandes (1986), Ghini invented the herbarium, but Lewis (1984) states that Ghini probably organised the first scientific herbarium, which is a different thing, while Galassi (1991) states that Ghini probably invented the method of drying plants between paper.

- 1545: Botanical Garden, University of Padova.
- 1546: Botanical Garden, University of Florence.
- 1546: Picture Gallery of Christ Church College, University of Oxford.
- c. 1550: Conrad Gesner's Museum. On his death, this was bought by Felix Platter, who also had his own museum. Both museums became part of the Natural History Museum of Basel (Alexander 1979; Whitehead 1970).
- 1551: Ulisse Aldrovandi begins his herbarium at the University of Bologna (Soldano 2000).
- 1563: School of Human Anatomy, University of Turin. There are no records of collections until the first decades of the 18<sup>th</sup> century (Giacobini 1997).
- 1565: Samuel Quiccheberg publishes his famous treatise on museography *Inscriptiones vel Tituli Theatri Amplissimi* (Mauriès 2002).
- 1566: Botanical Gardens of the Universities of Ferrara, Sassari and Bologna (date for Bologna sometimes given as 1568; cf. Paiva 1981). Botany had been taught in Bologna during the Middle Ages as part of medical courses (Cristofolini *et al.* 1993).
- 1566: Académie de Strasbourg, which became University of Strasbourg in 1621.
- 1575: University of Leiden.
- 1577: Botanical Garden, University of Leiden.
- 1578: University of Vilnius, Lithuania.
- 1580: Botanical Garden, [University of] Leipzig (Paiva 1981).
- 1584: Publication of the first catalogue of Francesco Calceolari's collection (Verona) by Giovanni Battista Olivi. The second catalogue was published in 1622 by Andrea Chiocco. Calceolari owned a pharmacy and turned three rooms of his museum into a place of teaching and study (Olmi 2001).
- 1585: Publication of the only written record of one of the earliest societies, the little-known *Ottiosi* ('men of leisure'), founded in Naples by Giambattista della Porta (Whitehead 1970).
- 1586: Antonio Giganti (1535-1598) draws an inventory and plan of his museum in Bologna, contemporary to Aldrovandi's (Laurencich-Minelli 2001). Giganti was the secretary to two Bologna clerics.
- 1587: Aldrovandi publishes *Index alphabeticus rerum omnium naturalium in musaeo appensarum incipiendo a trabe prima*, describing his museum. He is also a pioneer in catalogue publication (Ray 2001).

- 1587: Botanical gardens of the University of Leiden (Rooseboom 1958). Founder and designer: Charles l'Ecluse. Rooseboom (1958) claims that these were the first outside Italy, but this remains uncertain (cf. e.g. Leipzig above). According to L.A. Tjon Sie Fat (1992, *De Tuin van Clusius, het ontstaan van de Leidse Hortus*), in 1587 Leiden University decided to use 'an empty place' behind the Academy Building for the Herbal Garden. The formal establishment of the *Hortus Academicus Lugduna-Batavus* took place on 9 February 1590, but the first plantation was not ready before 1594. Charles l'Ecluse – better known as Carolus Clusius (1526-??) – was appointed in 1592 and arrived, at the age of 67, with his plant collection in the autumn of the following year. He was assisted by the hortulanus Clutius (Dirk Cluyt). The garden was rectangular, 39.9 m long and 30.9 m wide. In 1600, the *Ambulacrum* was built at the southern end, where a considerable collection of botanical, zoological, geological and anthropological objects were displayed (S. de Clercq pers. comm., 11 August 2002).
- 1591 (?1596): Gabinetto di Storia Naturale, University of Pisa. Today Museo di Storia Naturale e del Territorio (Certosa di Calci). Founded by Grand Duke Ferdinando I, using a number of specimens from the de' Medici palaces in Florence, especially the Uffizi. Part of the mineralogy collections was returned to Florence in 1669.
- 1593: Henri IV asks physician and professor Richer de Belevall to create a Jardin de Plantes in Montpellier to support the teaching of medicine.
- 1594: Anatomical Theatre, University of Padua: first permanent anatomical theatre in Europe and still in existence today.
- 1595: Aldrovandi's museum in Bologna amounted to 11,000 animals, fruits and minerals, 7,000 plants 'dried and pasted' into 15 volumes, and 8,000 *tempera* illustrations. Ulisse Aldrovandi (1522-1605) was Professor *de fossilibus, plantis et animalis* at the University of Bologna and Director of the Botanical Garden. His collections – which included common objects, a feature that distinguished them from the normal renaissance mannerist cabinet and studiolo (Olmi 2001) – were later incorporated by the university, together with those of Ferdinando Cospi (catalogue of 1677).
- 1596: Natural History Cabinet, University of Pisa.
- 1597: Anatomical Theatre, Leiden University (Rooseboom 1958), built on the bequest of Peter Paauw, Professor of Anatomy, who had visited Padua's anatomical theatre. Included an anatomical cabinet with specimens and curiosities.
- 1597: John Gerard (1454-1612) publishes his *Herball*, often considered the first plant catalogue, but apparently almost entirely based on a translation of *Stirpium historiae pemptades sex* (1583) by Flemish botanist Rembertus Dodoens (Encyclopaedia Britannica 2002). Around 1562, in Holborn (London), John Gerard built one of the earliest study gardens in England. The *Herball* is said to be the catalogue of the Holborn garden.

- 1598: Botanical Garden, University of Montpellier (Paiva 1981).

### Seventeenth century:

- 1603: Aldrovandi donates his collection and library to the Senate of Bologna. In 1617, the whole collection was transferred to the Palazzo Pubblico, arranged in six rooms and provided with a keeper who allowed access to scholars (Laurencich-Minelli 2001).
- 1603: Amsterdam's Surgeon's Guild founded – there was an anatomical theatre of which now only the dome remains (Rooseboom 1958).
- 1604: Improvements at the Faculty of Medicine (rue de Bûcherie, Paris) lead to the construction of the first anatomical theatre and botanical garden (Clin 1994).
- 1606: Accademia dei Lincei.
- 1614 (August 23): University of Groningen.
- 1619: Hortus medicus, Strasbourg: created by the mairie but for teaching and study of medicine (Le Minor 2002).
- 1620: Beginnings of the *Jardin royal des Plantes médicinales*, predecessor of the Muséum national d'Histoire naturelle (Eidelman & Van Praët 2000).
- 1621: Botanical Garden, University of Oxford. First curator: John Tradescant the Elder "although surviving evidence of his influence there is scarce and indirect" (MacGregor 2001: 134).
- 1621: University of Strasbourg.
- 1626: Hortus Medicus, University of Altdorf (Nuremberg): the founder was Leipzig-born Professor of Botany and Medicine Ludwig Jungermann.
- 1630-31: Anatomical School, University of Oxford (Christ Church College), included a collection of 'natural curiosities' (Boylan 1999).
- 1632: *Athenaeum Illustre*, predecessor of the University of Amsterdam.
- 1632: University of Tartu, founded by Gustav II Adolph of Sweden. The University was closed in 1656 and reopened in 1802.
- 1634 (or 1633): Astronomical Observatory on top of Leiden University Academy Building, said to be the first in a Dutch university (S. de Clercq, pers. comm. 11 August 2002).
- 1635: Jardin des Plantes, Paris. A small cabinet of curiosities, the *Cabinet du Roi*, is also created.
- 1636: Utrecht University. The university was founded in 1634 as 'illustrious school', university without *jus-promovendus*, which was granted two years later (S. de Clercq, pers. comm. 9 August 2002). Books and documents confiscated from churches and convents during the Reformation became the nucleus of the University Library (S. de Clercq, pers. comm. 11 August 2002).



- 1638 (17 January): Hortus Medicus, Atheneum Illustre, predecessor of the University of Amsterdam (Ursem 1994). In 1635, Amsterdam was struck by an epidemic of plague, which was so severe that almost half of the population perished. Merchants, apothecaries, pseudo-medical doctors and 'real' doctors sold all sorts of remedies. In 1636, the City of Amsterdam established a training and certification programme for physicians, enforcing them to pass an exam (the *keur*). The Hortus Medicus was established to support training and was placed under the supervision of a group of physicians from the *Athenaeum Illustre*. In 1638, the first director, Johannes Snippendaal, was appointed and remained in this position until 1648. The first exams took place on 27 April 1638, when the first plants came into flower and were visible enough to be recognized (B. Ursem, Director of the Botanical Garden of Delft University, *pers. comm.* 13 August 2002). Recently, the garden has used another date to commemorate its beginnings, i.e. 20 October 1682. At that date, the Hortus Medicus moved to the present location at the Plantage Middenlaan and changed its name into Hortus Botanicus.
- 1639: Botanical Garden, Utrecht University. On 11 March 1639, the City of Utrecht decided "(...) *dat men het bolwerk Sonnenburgh sal doen approprieren ende beplanten met cruiden nodig tottet oefnenen van studenten in de medicijnen (...)*" In 1723, the Hortus moved to the present location of the 'Oude Hortus', now the garden of Utrecht University Museum. Since 1996, the museum itself is situated on the site of the Theatrum Academicum (S. de Clercq, *pers. comm.* 11 August 2002).
- 1642: Astronomical Observatory, Utrecht University, on top of Smeetoren (S. de Clercq, *pers. comm.* 11 August 2002).
- 1642 (or 1643): Anatomical Theatre, University of Copenhagen. Built under the direction of Olaus Worm (Schepelern 2001). This theatre was destroyed in 1728.
- 1649: Anatomical Theatre, University of Bologna. This was altered in 1733-34, destroyed by bombs during the WWII, but reconstructed in the 1950s.
- 1657: Ferdinando Cospi's Museum joins Aldrovandi's at the Palazzo Publico, Bologna.
- 1660: Hans Sloane born. "Like Ulisse Aldrovandi, Sloane typifies that rare phenomenon, the man of means who combines wealth, social position and scientific ability to the general advancement of science, not as a mere patron, but as an active participant" (Whitehead 1970: 52).
- 1660: The Royal Society, London.
- 1661: L'viv University (Ukraine).
- 1662: University of Basel purchases the Amerbach collection to prevent it leaving the country and installed it in the new university library building; public access was granted in 1671 (Lewis 1984). Note that this antedates the Ashmolean by 12 years. Bateman (1975: 159) stated that the Basel museum "was probably the first [university museum]".

- 1662: William Croone reports on the use of spirits of wine in specimen preservation to the Royal Society. For more information on the development of preservation techniques, see Whitehead (1970).
- 1663: Anatomical Theatre, Uppsala University, built under the supervision of Olof Rudbeck the Elder.
- 1665: Botanical Garden (Hortus Medicus), University of Uppsala. Founder: Olof Rudbeck the Elder.
- 1666: Académie Royale des Sciences, Paris.
- 1670: Theatrum anatomicum, University of Strasbourg. Anatomical preparations are preserved for teaching and study and gradually originate a Cabinet of Anatomy (Le Minor 2002).
- 1674: Anatomical Theatre, Royal College of Physicians (London), designed under the direction of Robert Hooke.
- 1675: The creation of the Theatrum Physicum at Leiden University marks the foundation of the Leiden Cabinet of Physics (Clercq, 1997).
- 1682: *Haagse Academie van Beeldende Kunsten* (The Hague Academy of Fine Arts) is founded by a group of artists. It had a fine and representative plaster cast collection for study and research; opened to the public in 1888 (Rheeden 2001).
- 1683 (May): Ashmolean Museum, University of Oxford. For a complete and picturesque description of the Ashmolean's complex history, see Whitehead (1970). For a description of the early Ashmolean, see MacGregor (2001).
- 1691: Beginnings of the construction of the new anatomical theatre at rue de l'École de Médecine, Paris, specifically designed for surgeons (Clin 1994). Finished in 1694.
- 1694: Gustav Adolf II donates the Augsburg Art Cabinet, given to him by the Lutheran Council of Augsburg in 1632, to Uppsala University. Today, it still exists in the Museum Gustavianum.
- 1694: the Abbey of Saint-Vincent, Besançon, (currently known as the Musée des Beaux-Arts et d'Archéologie) is the first museum in France "specifically for the public benefit" (Lewis 1984: 11, Poulot 2001).
- 1695: First 'modern' chemical laboratory in the Netherlands (Prof. Barchusen), established in the basement of bastion Sonnenburgh (then Hortus Botanicus), Utrecht. The remains are still visible today (S. de Clercq, *pers. comm.* 11 August 2002).
- 1696: University and State Library Sachsen-Anhalt, Martin-Luther University of Halle-Wittenberg.
- 1697: First dissection at Tartu University.
- 1698: Botanical Gardens, Martin-Luther University of Halle-Wittenberg.

- 1698: Cabinet of Natural and Artificial Curiosities, founded by August Hermann Francke, Professor of Halle University (integrated in the Martin-Luther University of Halle-Wittenberg during Soviet occupation and transformed into a foundation in 1991).

### **Eighteenth century:**

- c. 1700: There were 20 botanical gardens in Europe, mostly associated with universities (Alexander 1979).
- 1706: The purchase of the first physical instrument (air pump by Jan van Musschenbroek) marks the beginning of the Utrecht Cabinet of Physics (S. de Clercq, *pers. comm.* 11 August 2002).
- 1711: Istituto delle Scienze, Bologna, by Luigi Ferdinando Marsili.
- 1717: Peter the Great buys Frederik Ruysch's and Albertus Seba's natural history collections and takes them to St. Petersburg. For more than 60 years, Frederik Ruysch (1638-1731) was Professor of Anatomy at the University of Amsterdam, specialising in the injection of wax and mercury into vascular systems for didactical purposes (Whitehead 1970). For more information on Ruysch, see Rooseboom (1958). Albertus Seba (1665-1736) was an apothecary and merchant whose dealings with shipments from the East Indies included the purchase of curiosities (Whitehead 1970).
- 1724: Collège de Chirurgie, Faculty of Medicine, Paris.
- 1724: Theatrum Academicum, Utrecht University, situated at the back of the Hortus Botanicus. Used for medicine (anatomy, botany, natural history, natural philosophy, etc.); see Haneveld (1978).
- 1726: Astronomical Observatory La Specola, University of Bologna.
- 1727: Caspar F. Neickel's *Museographia* published in Leipzig (Alexander 1979).
- 1728: Dr. John Woodward's fossil collection bequested to the University of Cambridge, later originating in the Sedgwick Museum, the oldest museum in Cambridge.
- 1729: Botanical Garden, University of Turin.
- 1730: Museo di Mineralogia, Geologia e Paleontologia, University of Turin (included Botany).
- 1735: Carolus Linnaeus begins publishing his *Systema Naturae*.
- 1735: Zoology Museum, University of Lund.
- 1739: Museo di Zoologia, University of Turin.
- 1739: Giovanni Poleni appointed Professor of Natural Philosophy at the University of Padua. Poleni began a collection, which became the core of the Museum of History of Physics (Peruzzi & Talas 2004). The Museum does also include older instruments, dating from the 16<sup>th</sup> century.
- 1739: Naturwissenschaftliches Museum, Coburg, Germany.

- 1741: Linnaeus becomes Professor at Uppsala University. There were no collections at the time, these only started when Linnaeus reputation began to grow (Whitehead 1971).
- 1743: Ulisse Aldrovandi's collection finds its way into the University of Bologna's museum.
- 1744: Anatomical Theatre, École de Médecine, Paris.
- 1744: Anatomical Theatre of the University of Louvain (octagonal), at the corner of the rue des Récollets and rue des Capucines, ordered by Henri Joseph Réga (1690-1754) and used until 1877 (Aubert 1998). Réga was also responsible for the reorganisation of the Botanical Garden and for the creation of an anatomy museum.
- 1746: Princeton University.
- 1752: First modern zoo at Schönbrunn, Vienna, established by the Franz Joseph I.
- 1753: Following a donation of collections by Hans Sloane, the British Museum is officially founded and opens to the public in Montagu House in 1759.
- 1755: Much of the Ashmolean natural history collections are destroyed in a fire, including Tradescant's dodo (only one leg and the head were saved).
- 1755: Royal Botanical Garden of Madrid, but only definitely established in the Prado in 1781.
- 1759 (10 January): British Museum. There were three departments: Printed Books, Manuscripts and Medals, and Natural and Artificial Productions (Bateman 1975).
- 1761: Herbarium, University of Cambridge.
- 1763: Anatomical Theatre, University of Turku, Finland. In 1759, Professor of Medicine Johan Leche, who supervised the construction work, suggested to enlarge the plans. He wanted, among other things, a *laboratorium chemicum* and to raise the ceiling in order to create an upper floor where there was to be a storage room for chemicals and another one for "[mineral and] naturalia collections" and for "future apparatus of experimental physics that should be displayed in public", after the example of Lund (the "magnifique apparatus Menlösianus" of Prof. Daniel Menlös, who donated it to the University of Lund). The big fire of 1827 destroyed the building and "the natural history collections" and only one drawing of the façade survived (M. Myllykoski, *in litt.* 3 September 2002).
- 1765: Freiberg Mining Academy created, which included mineralogy collections (Hamm 2001).
- 1768: James Cook begins his first voyage of exploration.
- 1768: Royal Botanical Garden of Ajuda, Lisbon. This was the first botanical garden in Portugal. The Garden of Ajuda included a museum of natural history (the building still exists) and was open to the public once a week (Abecasis 1999). Earlier, there had been a *hortus botanicus* under King D. João IV in Xabregas, Lisbon. In 1918, the Garden of Ajuda became part of the Technical University of Lisbon, thereby becoming a university botanical garden (Monteiro *et al.* 1999).

- 1769: Department of Zoology, University of Halle-Wittenberg. A Natural History Cabinet was established. Previously, there were only zoology teaching collections at the Faculty of Medicine (Gattermann & Neumann 2003).
- 1771: Museum of Natural History of the University of Pavia, by Lazzaro Spallanzani (1729-1799).
- 1772: Official foundation of the Royal Botanical Gardens of Kew, which became a national institution in 1840 (Alexander 1979).
- 1772: Official foundation of the Natural History Museum, University of Coimbra (included the Botanical Garden).
- 1772-1775: James Cook's second voyage of exploration.
- 1773: Botanical Garden, University of Pavia. A panel at the entrance of the Garden reads (translated from the Italian): "The Botanical Institute of the University of Pavia stands on the ancient Lateran Presbytery of Saint Epiphany. The cloister is the only remaining part of the structure and despite being largely restructured, still retains some 15<sup>th</sup> century remains, for example the terracotta corbels deriving from the same casts as those of San Lanfranco. The Botanical Garden was rearranged in 1773, during the reign of Maria Teresa of Austria, by the botanists Brusati and Borsieri. Wooden greenhouses were designed and created by the architect Giuseppe Piermarini and later replaced by the present iron and glass ones. Giovanni Antonio Scopoli (1777) greatly reformed the Garden by increasing the botanical specimens and establishing it as one of the most avant-garde centres of study and research in Europe".
- 1775: Grand Duke Pietro Leopoldo creates the Royal Imperial Museum of Physics and Natural History in Florence. Its origins date back to the Medici (Alexander 1979: 47). The natural history collections, together with the scientific instruments from the Accademia del Cimento (previously at the Uffizi) were all assembled under one roof. When the University of Florence was created in 1922, the collections were integrated in the university (natural history remained there while physics went to the Istituto e Museo di Storia della Scienza).
- 1777: Utrecht, foundation of *Natuurkundig Genootschap* (Physical Society, 'for the study and promotion of experimental physics'). The instruments were kept – and used – together with those of the university and expensive instruments were bought jointly. An inventory of the instruments of the Academy and the Physical Society, compiled in 1838, counted 1238 items: 671 of the Society and 567 of the Academy. The remaining instruments are now in the Utrecht University Museum (H.J.M. Bos, 1968, *Mechanical instruments in the Utrecht University Museum*; S. de Clercq, *pers. comm.* 11 August 2002).
- 1777: Cabinet d'Histoire naturelle, University of Perpignan; became town museum in 1840 (Bourgat 2002).

- 1778: Linnaeus dies. For an account on the fate of his collections and why they did not stay in Sweden, see Whitehead (1971).
- 1778: Teyler's Museum in Haarlem founded by Pieter Teyler van der Hulst.
- 1778: Alessandro Volta (1745-1827) becomes Chair of Experimental Physics at the University of Pavia and stays until 1805.
- 1780s: A Cabinet of Mechanics is created in the University of Krakow (teaching collection) (Jasiuk 2001).
- 1781: Collection of the Royal Society transferred to the British Museum.
- 1783: Antonio Scarpa becomes Chair of Anatomy at the University of Pavia and remains so until 1804. Creates the Cabinet of Anatomy, the collections of which were later integrated in the University Museum.
- 1783: Hunterian Museum, University of Glasgow. William Hunter's collection; William Hunter was the brother of John Hunter, who in turn donated his collection to the Royal College of Surgeons, London (S. Mason, pers. comm. 13 September 2002).
- 1783: École des mines (Hôtel des Monnaies), Paris. The Musée was probably created at the same time and René Just Haüy (1743-1822) was its first curator.
- 1785: Anatomical Theatre (later renamed Aula Scarpa), University of Pavia. Architect: Leopoldo Pollack, inspired by the École de Chirurgie of Paris and the Josephinum in Vienna.
- 1787: The Hunterian Collection (founded by the surgeon-anatomist John Hunter) opens in Leicester Square, London.
- 1787: L'École de Dessin of Dijon (founded in 1766) opens a Muséum and a Gallery (Poulot 2001).
- 1788: Linnean Society of London founded.
- 1788: Georges-Louis Leclerc, comte de Buffon, *intendant* of the Jardin du Roi, dies after having completed 36 volumes of his monumental *Histoire naturelle générale et particulière* (Whitehead 1971).
- 1789: French Revolution.
- 1790: Musée des Monuments Français of Alexandre Lenoir in the Convent of the Petits-Augustins (today École Nationale Supérieure des Beaux-Arts). A museum bearing the same name and including part of the collection was later created at the Palais Chaillot (Sallois 1995).
- 1793: The Louvre opens to the public.
- 1793 (June): Creation of the Muséum National d'Histoire Naturelle, Paris.
- 1793: Ménagerie du Muséum (Paris). "C'est l'un des jardins zoologiques les plus anciens à exister de nos jours encore: seuls ceux de Schönbrunn et de Madrid sont de dates antérieures" (Pieters 1981: 220).

- 1793: Cabinet of Anatomy, Faculty of Medicine, University of Lyon, founded by Marc Antoine Petit (1766-1811). Transformed into Museum of Anatomy in 1877.
- 1794: Conservatoire National des Arts et Métiers, Paris. Teaching began in 1819 (Ferriot *et al.* 1998, Alexander 1979).
- 1794 (May): École Polytechnique.
- 1794 (24 December): The Convention decrees the establishment of three schools of medicine in France: Paris, Strasbourg and Montpellier, aimed at training doctors and surgeons. Furthermore, the Convention stipulated that each school should possess a 'conservatoire' encompassing a Cabinet of Anatomy with teaching collections, a collection of surgical instruments and a collection of medical natural history.
- 1795 (16 October): Opening of the Cabinet de Collections (mostly anatomy) at the École de Médecine, Paris (three rooms on the first floor). First curator: Jean-Baptiste Thillaye (Clin 1994).

### **Nineteenth century:**

- 1801: Berlin Botanical Garden, University of Berlin (today the Berlin-Dahlem Botanical Museum). Founder: Carl Ludwig Willdenow (professor of Alexander von Humboldt).
- 1802: University of Tartu is re-founded on orders of Tsar Alexander I of Russia.
- 1802: Zoologia Museum, University of Tartu.
- 1803 (19 April): Art Museum of the University of Tartu.
- 1803: Beginning of the construction of the Anatomical Theatre, University of Tartu; works would be finished in 1805. Further expansions during 1825-1827 and 1856-1860 (R. Mägi, *in litt.* 20 July 2005).
- 1805: Zoologisk Museum, University of Copenhagen.
- 1806: Museum of the Royal College of Surgeons – Hunterian Museum, London, mainly from John and William Hunter's collections (cf. Duggan 1964). Not to be confused with the Hunterian Museum, University of Glasgow.
- 1808: Napoleon issues a decree creating the University of Liège. The University itself, however, argues that the institutions created under Napoleon cannot be considered "établissements universitaires" (<http://www.ulg.ac.be/institution/>, consulted 19 August 2002). The University of Liège recognises King Willem I of the Netherlands as its founder in 1817.
- 1808: Beginning of the construction of the Astronomical Observatory at the University of Tartu. Works would be finished in 1810. The tower, originally domed, was rebuilt in 1825 for the Fraunhofer refractor (R. Mägi, *in litt.* 20 July 2005).
- 1810: University of Berlin.

- 1810: Zoological Museum, University of Berlin (see Ahrens 1925). The Museum opened to the public in 1814.
- 1812: Cabinet of Mineralogy, University of Wrocław. In 1880, the Cabinet would be transformed into a Museum, open to the public. Today, it is named Museum of Mineralogy of the Geology Institute and reopened in 1946, still administered by the University (Jakubowski 2001).
- 1813: Initial drawings donated by Jean François Xavier Atger to the École de Médecine of Montpellier. Until 1833, he would donate c. 1,000 drawings. Today, the collection is the Musée Atger at the Library of the Faculty of Medicine, University of Montpellier 1.
- 1814: Museum Przyrodnice (Zoology), University of Wrocław.
- 1814-1815: Museum of Zoology, University of Cambridge.
- 1815: The Netherlands, Law on Higher Education. The Universities of Leiden, Groningen and Utrecht become State universities. For support of education, each should have a Cabinet of Medicine with anatomical, physiological and pathological preparations and instruments, a Cabinet of Physics, with scientific instruments, models and apparatus, an Astronomical Observatory, with astronomical instruments, a Chemical Laboratory, a Natural History Cabinet, comprising zoology and comparative anatomy, a Cabinet of Geology and Mineralogy, and a Botanical Garden and Herbarium (S. de Clercq, *pers. comm.* 11 August 2002).
- 1816: A survey reported that many Dutch collections had been transferred to Paris during the French occupation. Leiden University managed to get some back, but the University of Utrecht lost all medical and natural history collections, while the collections of the Cabinet of Physics and the Astronomical Observatory mostly survived (S. de Clercq, *pers. comm.* 11 August 2002).
- 1816: University of Utrecht purchases the anatomical collections of Jan Bleuland (Haneveld 1978).
- 1816: Fitzwilliam Museum, University of Cambridge, by the bequest of the VIIth Viscount Fitzwilliam of Merrion.
- 1817: Merging of the universities of Halle and Wittenberg.
- 1819: Archaeological Museum, University of Pavia, founded by Pietro Vittorio Aldini.
- 1819: Cabinet of Zoology, Warsaw University. Functioned until 1953. Today, the collections are in the Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw (Jakubowski 2001).
- 1819: The Prado in Madrid opens to the public. During its early days, it also displayed natural history specimens (Lewis 1984).
- 1820: Cabinet of Engravings, University of Halle-Wittenberg.
- 1820: Botanical Garden of Edinburgh University moves to its current location.



- 1820: Joseph Banks donates his herbarium, natural history library and botanical collection to the British Museum (Alexander 1979). Banks acted as naturalist on Cook's first voyage (Horwitz 2002).
- 1820: Museum Przyrodnicze (Zoology), University of Wrocław, opens to the public (Jakubowski 2001).
- 1820 (9 August): The 's Rijks Museum van Natuurlijke Historie (National Museum of Natural History) is founded in Leiden (today designated 'Naturalis'). "The Minister of Education, Anton Reinhard Falck, advised the King that rather than to have the collections scattered over the universities, there should be one central national museum, similar to those in England and France" (Holthuis 2001: 19).
- 1821: Botanical collections, University of Wrocław.
- 1823: Musée Atger, Université de Montpellier.
- 1830: Luigi Rolando establishes the Museum of Anatomy at the University of Turin (Giacobini 1993, 1997).
- 1830s: Charles Lyell (1797-1875) publishes his *Principles of Geology*. In 1863, he would publish *The Geological Evidences of the Antiquity of Man*, incorporating evolutionary theory and having a major impact on archaeology (Greene 1995).
- 1832-1836: H.M.S. Beagle's voyage around the world, with naturalist Charles Darwin on board.
- 1833: Marischal Museum, University of Aberdeen (A. Taylor, pers. comm. 3 December 2002).
- 1834: Université Libre de Bruxelles and Université de Malines (Aubert 1998).
- 1834: Astronomical Observatory, University of Helsinki.
- 1835: Musée Dupuytren, Faculty of Medicine, Paris – collections of pathological anatomy (Delmas 1995).
- 1836: Danish archaeologist Christian Jürgensen Thomsen, first Director of the Danish National Museum, proposes the Three Age System for the chronology of prehistory, i.e. Stone, Bronze and Iron. His successor, Jens Jacob Asmussen Worsaae, subdivided the Stone Age into Palaeolithic, Mesolithic and Neolithic. These classifications had a major impact on archaeology, comparable to the impact of Linnaeus' *Systema Naturae* on natural history.
- 1836: Musée de l'École des Beaux-arts, Paris. Founder: Louis Peisse (Mossière 1996).
- 1836: Botanical Garden of the University of Porto.
- 1837: University of Athens.
- 1837: National Museum of Ethnology (Volkenkunde), Leiden.
- 1837: Polytechnic Academy of Porto, predecessor of the University of Porto (created in 1911). Vocational training existed in Porto since 1762, with the creation of the *Aula Náutica*.

- 1838: Zoological Society of Amsterdam. Apart from managing a zoo, the Society had a collection of stuffed animals.
- 1840: Musée d'Anatomie, Université de Lyon, created (together with the École préparatoire de Médecine). Current name: Musée Testut-Latarjet de Médecine et d'Anatomie (Ruppli 1996). Other date for the Musée: 1854 (J.-C. Neidhart, interview 19 May 2004).
- 1841: Jardin des Plantes of Montpellier (Faculté de Médecine) opens to the public.
- 1846: Botanical Garden, University of Cambridge.
- 1847: Musée Orfila, Faculty of Medicine, Paris (comparative anatomy). The Musée Orfila was inspired by the Hunterian Museum in London (cf. Clin 1994, Delmas 1995). In 1953, the Museum moved to the rue des Saints-pères, where it is still located today (Delmas 1995).
- 1848: University of Turin – separation of the Faculty of Sciences and Mathematics from the Faculty of *Lettere* and Philosophy.
- 1851: The Musée d'Anatomie de Montpellier moves to its present location (opened to the general public only in 1945).
- 1851: University of Manchester.
- 1852: The Hermitage, St. Petersburg, opens to the public.
- 1852: Mineralogy Museum, L'viv University (Ukraine).
- 1853: Botanisches Museum, University of Wrocław, opens to the public (Jakubowski 2001).
- 1854: the Royal Museum, formerly at the University of Edinburgh and founded in 1815, becomes government-owned. Note that the National Museums of Scotland encompass other museums besides the Royal Museum.
- 1854: Istituto Tecnico Toscano, Florence. Teaching began in 1857.
- 1854: Musée Testut-Latarjet de Médecine et d'Anatomie, Université Claude Bernard de Lyon.
- 1858: Smithsonian Institution, Washington D.C.
- 1859: *On the Origin of Species* by C. Darwin published.
- 1859: Museum of Comparative Zoology, Harvard University, based on specimens collected throughout the 1840s (Kohlstedt 1988).
- 1859: Politecnico di Torino. At the time designated 'school of engineers of Torino', it became the Regio Politecnico di Torino in 1906.
- 1860: Oxford University Museum of Natural History officially created, bringing together Tradescants' geology and zoology and Christ Church's anatomical collections.
- 1862: Museo Industrial Italiano, Politecnico di Torino. Predecessor of today's Museo e Archivio del Politecnico.
- 1865: Museum of Pathological Anatomy, University of Coimbra.

- 1869: Museum of Anthropology and Ethnology, University of Florence. The first anthropological university museum in Europe, according to the *Bulletin of the Museum of Natural History of the University of Florence*, n° 2 (April 1997), p. 1.
- 1869: American Museum of Natural History, New York.
- 1871: Cavendish Laboratory, Cambridge University. In the English-speaking world, the transition from lecture-demonstration based science teaching to practical laboratory-based science teaching reached its peak between the 1870s and the 1880s. In German-speaking universities this happened somewhat earlier, in the first decades of the 19<sup>th</sup> century (Holland 2002).
- 1872: Universitets Museet, Tromsø University, Norway.
- 1872: Cast Collection of Kaiser Wilhelm Universität, (German) University of Strasbourg, opens to the public. Today, the collection is in the University of Strasbourg Marc Bloch.
- 1873: Cast Collection of the University of Prague opens to the public.
- 1876: Geology Museum (Geology Department), University of Bristol.
- 1877: The Bayerisches Nationalmuseum in Munich purchases the collection of the Institute of Physics of the University of Würzburg (Mayring 2000).
- 1877: The *Atheneum Illustre* of Amsterdam is formally recognized as a university.
- 1879: A zoological collection is initiated at the University of Amsterdam. An agreement made during the 1880s between the University and the Zoological Society (see 1838 above), merged the two collections.
- 1878: Musée d'Ethnographie du Trocadéro, Paris (Musée de l'Homme in 1937). Founder: Paul Rivet.
- 1880-1883: The British Museum's natural history collections are transferred to the new premises at South Kensington and thereby separated from antiquities and archaeological artefacts. British Museum (Natural History) becomes officially independent in 1963.
- 1881: Museum of Mineralogy Giovanni Capellini, University of Bologna.
- 1882 (30 May): The University of Oxford accepts the offer of Pitt Rivers' Collection (Petch 1998). An annex was built on the eastern side of the natural history university museum. H.N. Moseley becomes Head of the Department of Zoology and Comparative Anatomy and E.B. Taylor is appointed Lecturer in Anthropology, the first of its kind in Britain. Note that the creation of a teaching position in Anthropology had been a demand of Pitt Rivers when donating his collection.
- 1883: Pitt Rivers Museum, Oxford University.
- 1885: Benedykt Dybowski Zoological Museum, Ivan Franko Lviv (Lvov) National University. The collections came from the Lvov Cabinet of Natural History (established 1823) (Roselaar 2003).
- 1885: Manchester Museum, University of Manchester. The collections had their origin in the Manchester Society of Natural History (1821), to which the collections of the

Manchester Geological and Mining Society were added in 1850. In 1867, the University of Manchester took responsibility for both collections and the Museum opened in 1885.

- 1889: Institut de Botanique de Montpellier (at the Jardin des Plantes), founded by Charles Flahault.
- 1889: Galerie de Zoologie, Muséum National d'Histoire Naturelle, Paris.
- 1890: Musée des Moulages, Université de Montpellier.
- 1890: Mineralogy and Geology collections of the Muséum d'Histoire naturelle de Strasbourg (town museum) transferred to the University of Strasbourg (Institut de Minéralogie et Geologie) (Leypold 1996).
- 1890: Botanical Museum, University of Groningen (today the collection is in the Groningen University Museum).
- 1891: Geological Museum of the Camborne School of Mines, University of Exeter (today named Camborne School of Mines Geological Museum and Art Gallery).
- 1893: Petrie Museum of Egyptian Archaeology, University College London (MacDonald 2002).
- 1894: Musée d'Ethnographie, Université de Bordeaux II (Mériot 1996).
- 1895-96: René Koehler, Zoology Professor, initiates the zoology collections at the Faculté de Sciences de Lyon, today in the Université Claude Bernard.
- 1896: Musée d'Histoire de la Médecine et de la Pharmacie, created by Alexandre Lacassagne. The Musée would be donated to the Faculté of Médecine of Lyon in 1913 (today part of the heritage of the Université de Lyon Claude Bernard).
- 1897: Kyoto University.
- 1898: Galerie de Paléontologie, Muséum National d'Histoire Naturelle, Paris (Eidelman & Van Praët 2000).
- 1899 (19 June): Musée des Moulages, Université de Lyon II (Mossière 1996, Etienne 1988). First curator: Henri Lechat. First location at the Faculté de Droit et des Lettres. The beginnings of the collection date from 1893 (Ruppli 1996).

### **Twentieth century:**

- 1900: Musée de Sismologie et du Magnétisme Terrestre, Université de Strasbourg (Strasbourg being part of the German empire at the time).
- 1907: Donation to the Royal College of Surgeons of the collection of the Odontological Society of Great-Britain (now Odontological Museum).
- 1908: Anatomical Museum, University of Groningen.
- 1909: Society of 'Friends of the Fitzwilliam Museum' (University of Cambridge) formed.

- 1911: Museum and Laboratory of Mineralogy and Geology, University of Porto. Collections date back to 1885 and the Museum reopened to the public under the name Museum of Mineralogy Montenegro de Andrade in 1990.
- 1911: Museum and Laboratory of Anthropology, University of Porto. Permanent exhibition has been open to the general public since 1970. Recently, the Museum changed its name into Museum of Archaeology and Pre-History Mendes Corrêa.
- 1911: College Art Association (USA).
- 1914: Opening of the Institut de Paléontologie Humaine, Paris, at the initiative of Prince Albert I of Monaco. Human palaeontology was presented in exhibitions from the start, but this was interrupted by WW I (Hurel 2000). The Institut was finally inaugurated on 23 December 1920. Today it is linked to the MNHN and the CNRS.
- 1916: Museum and Laboratory of Zoology, University of Porto. Collections date at least back to 1885. The Museum changed its name into Museum of Mineralogy Augusto Nobre.
- 1917: Botanical Garden, University of Delft. The Garden has an interesting background story. In 1902, Prof. M.W. Beijerinck, a founder of modern microbiology, chose the young Gerrit van Ittersson as his assistant. In 1907, van Ittersson became Professor of Anatomical Microscopy at Beijerincks Laboratory. Van Ittersson gave lectures and, although anatomical microscopy was not compulsory, the lectures became very popular. In 1908, van Ittersson got his own space in the old building of the magistrates' court at Oude Delft 81. This house had a backyard and van Ittersson used it as a garden and nursery to grow plants for his lectures and research. He focused on crops of useful plants in a technical way and thus laid the fundamentals of what became to be called 'technical botany'. Soon the location at Oude Delft 81 became too small. Van Ittersson applied for a new laboratory at the Polytechnic School, as the University was called at the time. The government acquired a stretch of land, just behind the old house. The permission to create a new laboratory and an accompanying garden was delayed until 1911, in which year van Ittersson was invited to become director of the research station of the sugarcane industry at Pasoeroean on Java in the former Netherlands' East Indies. Students asked van Ittersson not to leave and persuaded him to stay as professor at the Polytechnic School of Delft. Van Ittersson agreed on the condition that he could have a new laboratory and a garden to grow plants for research and education. The Minister of Education accepted his request, but it took several years to bring the necessary funds together. During 1913-1914, the Municipality of Delft was constructing new roads in the Wippolder, southeast of the town. The Polytechnical School of Delft asked the firm who carried out the job to create the right soil conditions for the new garden in the very wet polder. The total project costs amounted to 90,000 guilders, an enormous sum at the time. The garden-floor was raised up to 40 cm and received an adequate draining system. After this the laboratory was

build. In the summer of 1917, the garden was planted and it opened in October 1917 (B. Ursem, pers. comm. 13 August 2002).

- 1919: A substantial collection of numismatics and Greek and Egyptian antiquities is transferred from the Art Museum at the University of Tartu to the Soviet Union. The collection is still today at the Art Museum of Voronezh.
- 1920: Scott Polar Research Institute Museum, University of Cambridge, named in memory of Captain R.F. Scott.
- 1922: The University of Florence is re-created.
- 1924: Roland Bonaparte (1858-1924) dies and his daughter donates his herbarium to the Faculté de Sciences de Lyon, together with the cabinets and library. Two years later, another important herbarium, by Michel Gandoger, would be donated to the Université de Lyon Claude Bernard, making it one of the most important in France.
- 1925: Museum of the History of Science, University of Oxford opens to the public as the Lewis Evans Collection on the top floor of the Old Ashmolean Building. It would be only officially created in 26 February 1935. First Curator: Robert T. Gunther, who had been listing and collecting instruments at the university at least since 1916 (Bennett 1997).
- 1921: Official opening of the Musée de l'Histoire de la Médecine, Paris (Clin 1994). The Guide de l'OCIM (Ruppli 1996) states that this museum was created in 1769 (supposedly under a different name) and re-opened to the public, completely restored, in 1994.
- 1926: Museum of Anthropology and Ethnography, University of Turin.
- 1928: Utrecht University Museum Foundation is created. A substantial collection of physics (c. 1000) had been found in one of the attics of the University in 1918 and this Foundation was formed to organise a museum. The Museum would only be officially founded in 1936 in the sequence of the commemorations of the 300 years of the University of Utrecht (S. de Clercq, pers. comm. 11 August 2002).
- 1930: Courtauld Institute of Art, University of London. Provenance: donation by Samuel Courtauld (Boylan 1999). The Institute would later become autonomous from the University and a higher education institution in its own right.
- 1930: Istituto e Museo di Storia della Scienza (IMSS), Florence. The Cabinet of Physics, founded at the University of Florence in 1775 (together with the Natural History Cabinet) by Pietro Leopoldo of Lorraine is 'given' to the IMSS (M. Miniatti, *in litt.* 2 November 2003).
- 1931: Boerhaave Museum (National Museum of the History of Science and Medicine), Leiden.
- 1932: University Museum, University of Pavia.
- 1933: Museum of the History of Medicine Maximiano de Lemos, University of Porto.
- 1934: University Museum, University of Groningen.

- 1934: Museum of Sketches for Public Art (Skissernas Museum), University of Lund. The main idea behind the creation of this art museum was to collect sketches and models for art in architecture to document the creative process, or what its founder, Ragnar Josephson (1891-1966), Professor in Art History, called 'the birth of the work of art'. After renovation, the Skissernas Museum re-opened in 2005.
- 1934: Geiseltal Museum (Geology and Palaeontology), Martin-Luther University of Halle-Wittenberg.
- 1936: University Museum, University of Utrecht, is officially established.
- 1937: Creation of the Palais de la Découverte, Paris, originally integrated in the University of Paris. Later, the institute became autonomous, but remained under the Ministère de l'Éducation nationale. Founder: Jean Perrin.
- 1938: Museum of Physics, University of Coimbra.
- 1939: As the Zoological Society of Amsterdam nears bankruptcy, the Municipality of Amsterdam and the Province of North-Holland together bought all its possessions. The zoological collection and library became part of the University of Amsterdam.
- 1941: Part of the Museum of the Royal College of Surgeons destroyed by bombing (Kirkup 1993).
- 1944 (4 November): Whipple Museum, University of Cambridge, created. In the beginning, the collection was stored in Fitzwilliam's basement, but on 5 May 1951 the Museum opened its doors at the present location and, curiously, became known as the 'Newton Museum' (Bennett 1997). The original donation by Robert Whipple included nearly 2,000 antique instruments and books.
- 1945: The curatorship of the Sedgwick Museum becomes attached to a university lectureship (Price 1989a).
- 1946: The old Botanical Garden and Museum of Humboldt University are integrated in Freie Universität Berlin (Weber 2002).
- 1946: Agricultural Museum, Lackham College, UK.
- 1947: University of British Columbia Museum of Anthropology, Canada.
- 1947: Musée Préhistorique de Penmarch, University of Rennes (France). The Museum existed already since 1919 (private association), but it was donated to the University of Rennes in 25 August 1947.
- 1948: University of Bergen. Upon its foundation, the university incorporated the natural history collections of Bergen's City Museum, which in turn had been founded in 1825 (Roselaar 2003).
- 1950: Musée national de l'Éducation, Rouen.
- 1950 (March): Museum of the History of Medicine, University of Louvain – moved to Louvain-en-Woluwe when the university was divided into French and Dutch sections.

Today, the museum is closed to the public and is considered “une réserve assez heteroclite, faute de budget et de personnel” (Aubert 1998: 367).

- 1951: Theatre Museum, University of Bristol.
- 1955: Donation of the Albert Couvreur history of pharmacy collection to the Université Catholique de Louvain (Faculty of Pharmacy). After the divide of 1968, the Couvreur Collection came under the French section (campus de Louvain-en-Woluwe).
- 1961: Korean Association of University Museums (KAUM).
- 1960: Robert Koch Museum, Institute of Microbiology, Humboldt University Berlin. The Museum was founded to mark the 50<sup>th</sup> anniversary of the death of Robert Koch. However, the Museum had to wait 22 years – the 100<sup>th</sup> anniversary of the discovery of tuberculosis – to be provided with an adequate display space (albeit still minimal).
- 1968: Ethnographic Museum Gerardus van der Leeuw, University of Groningen.
- 1968: The University of Louvain is divided into the Université Catholique de Louvain and the Katholieke Universiteit van Leuven, triggering a divide of heritage, books, archives and collections (Aubert 1998).
- 1968: The collections of antiquities and natural history of the Royal Norwegian Scientific Society (1767) enter the Norwegian University of Science and Technology at Trondheim to form the Vitenskapsmuseet of the university (designated Museum of Natural History and Archaeology in the English language section of their website). The collections had first been assembled in 1760 by Gerhard Schøning and Peter Friderich Suhm at the former Trondhjemske Selskab (Trondheim Society).
- 1969: School of Conservation Sciences Collection, University of Bournemouth, UK. The collection relates to the activities of the Centre for the History of Defence Technology (CHiDE) and the archives generated by consultancy and students’ work. It includes archaeology, natural history, artefacts related to the history of the CHiDE (radios, transmitters, etc) and archives (Arnold-Foster & Weeks 1999).
- 1970: Collection de Minéraux, Université Pierre et Marie Curie, Paris, opens to the public at its current location. The beginnings of the collection date from 1809, when the Chair of Mineralogy was created at the University of Paris (Ruppli 1996).
- 1972: Sacred Art Museum, University of Coimbra.
- 1972: Musée de la Pharmacie ‘Albert Ciurana’, University of Montpellier I.
- 1973: Natural History Museum of the Institute of Biology, Copernic University of Toruń, Poland (Jakubowski 2001).
- 1974: At the occasion of its 75<sup>th</sup> anniversary, the École de Médecine de Lyon decides to create a Museum (open in 1978). Today the Musée Dentaire, Université de Lyon Claude Bernard.
- 1975: Donation of the house and collection of Prof. Abel Salazar to the University of Porto. In 1990, the House-Museum Abel Salazar opened to the public (historic house).



- 1976: Natural History Museum, University of Worcester, opens to the public. The beginnings of the collection date from the 19<sup>th</sup> century Zoologisches and Botanisches museums (Jakubowski 2001).
- 1976: Museum of Tartu University History.
- 1978: Vrolik Museum, University of Amsterdam. Willem Vrolik jr. died in 1863 and, knowing that his widow wanted to sell the collection, the director of the Zoological Society of Amsterdam collected money and purchased Vrolik's collection in 1865. In 1939, the Society's collections, including the Zoological Museum, were incorporated by the University of Amsterdam and the Vrolik collection went to the Anatomical Laboratory. In 1978, the human specimens of Vrolik's collection became the Vrolik Museum at the Academic Medical Center (Nespoli 1999).
- 1978: Helsinki University Museum (history of the University of Helsinki). The Museum opened to the public in 1983; it was renovated in 2003 when it expanded its collections and moved into a new site.
- 1978: Sainsbury Centre for the Visual Arts, University of East Anglia, UK. The Centre resulted from a donation made to the University in 1973.
- 1978: Hunt Museum of Decorative Art, Limerick University, Ireland.
- 1979: Musée Dentaire, Université de Lyon (Ruppli 1996).
- 1979: Musée de Louvain-la-Neuve, Université Catholique de Louvain.
- 1979: Salle Allende, Université Libre de Bruxelles (art gallery & collection).
- 1979: Museo d'Astronomia della Specola, University of Bologna.
- 1980: Association of College and University Museums and Galleries (ACUMG), USA.
- 1982: The Museum of Physics, University of Bologna, is recognised by the Department. G. Dragoni collected instruments at the University throughout the 1970s (G. Dragoni, *pers. comm.* 12 March 2003).
- 1983: Museum of Physics, University of Naples Federico II. The Museum had been closed to the public, but was renovated and opened in January 2005.
- 1985: Creation of the Museum of Science of the University of Lisbon. Opened to the public in March 1993.
- 1985 (27 September): Jardin des Plantes Médicinales, Faculté de Médecine, Université Catholique de Louvain (campus de Louvain-en-Woluwe) inaugurated.
- 1986: Hortus Botanicus Amsterdam becomes a private foundation, independent from the University although still receiving an annual subsidy (Ursem 1994).
- 1986: Cité des sciences et de l'industrie, Paris.
- 1987: Athens University Museum.
- 1987: University Museums Group (UMG), UK.
- 1988: *Magna Charta of Universities*; 250 rectors of European universities sign the Charta, in which the cultural relevance of universities is explicitly mentioned.

- 1988: Design Study Collection, Arts Institute, Bournemouth, UK.
- 1989: The position of Director of the *Zoologisches Forschungsinstitut und Museum Alexander Koenig* in Bonn becomes attached to the newly created Chair of Systematic Zoology at the University of Bonn. The Alexander Koenig Museum is a federal museum (North Rhine-Westphalia) with collections of national and international significance, partly dating from the 19th century.
- 1989: Ecomusée du Viroin-Treignes, Université Libre de Bruxelles.
- 1990: Academic Museum, University of Coimbra.
- 1990: Museo di Storia della Fisica, University of Padua.
- 1991: Archivio Scientifico e Tecnologico, University of Turin.
- 1991: Osservatorio Brera Collection (Istituto di Fisica Applicata), University of Milan.
- 1992: Council of Australian University Museums and Collections (CAUMAC).
- 1993: University Hospital Museum, University of Groningen.
- 1993: Astronomical Observatory, University of Coimbra, established; the collections date from the 18<sup>th</sup> century (original 18<sup>th</sup> century building demolished in the 1950s).
- 1994: Geology Museum of the Institute of Marine Sciences, University of Szczecin, Poland (Jakubowski 2001).
- 1994: Grande Galerie de l'Evolution, Muséum national d'Histoire naturelle (Paris).
- 1994: Centre de Culture Scientifique de l'Université Libre de Bruxelles (CCS) à Charleroi-Parentville.
- 1994 (20 December): Musée de la Médecine, Université Libre de Bruxelles.
- 1995: Museum of Science, University of Porto.
- 1996: Forum of Brazilian University Museums is created.
- 1996: Utrecht University Museum is renovated and re-opens in a new site lead adjacent to the Old Botanical Garden.
- 1997: Stichting Academisch Erfgoed (SAE), Dutch Foundation for Academic Heritage.
- 1997: Bill Douglas Centre for the History of Cinema and Popular Culture, University of Exeter opens to the public after a donation made to the University in 1994.
- 1997: Museum Gustavianum, Uppsala University.
- 1997 (11 November): Museo e Archivio del Politecnico (Turin).
- 1997: Kyoto University Museum (on the occasion of the centennial of Kyoto University).
- 1997: Botanical Garden of the University of Padua designated World Heritage Site by UNESCO.
- 1998: University Museums in Scotland (UMiS).
- 1998: The Council of Europe issues a Recommendation aiming at the protection of 'incidental collections', i.e. those owned by institutions whose main purpose is not collecting and caring for collections (Recommendation # 1375).

- 1999 (September): The Italian Conference of Rectors (CRUI) creates a special Commission for University Museums and Collections (the *Commissione Musei*) (Garuccio 2005).
- 1999: Natural History Museum of the Faculty of Biology, University of Bialystok, Poland (Jakubowski 2001).
- 1999: The Council of Europe initiates a European Project (jointly coordinated by its Cultural Heritage Committee and Higher Education and Research Committee) on university heritage. The project would last until 2001 and result in a publication (Sanz & Bergan 2002) and a Draft Recommendation on university heritage.
- 2000: Geology Museum of the Faculty of Biology and Earth Sciences, University of Lodz, Poland (Jakubowski 2001).

### **Twenty-first century:**

- 2000: Declaration of Halle and the establishment of UNIVERSEUM.
- 2000: Museo Palazzo Poggi, University of Bologna.
- 2000 (10 April): Inauguration of the renovated Musée des Arts et Métiers, CNAM. The Musée had been founded in 1794 but had undergone considerable stagnation during the 20<sup>th</sup> century (on the renovation, see e.g. Ferriot *et al.* 1998, Ferriot 2000a,b, Jacomy 2000).
- 2000 (10 May): Permanent exhibition *Simmetria, giochi di specchi* opens to the public, Department of Mathematics, University of Milan.
- 2001 (July): First meeting in Barcelona of ICOM's International Committee for University Museums and Collections (UMAC).
- 2001: *Experimentarium*, Université de Bourgogne, Dijon.
- 2002: Asociación de Museos y Colecciones Universitarios Españoles (AMCUE).
- 2003: Helsinki University Museum moves to the historic Arppeanum building, integrating other museums at Helsinki University: the Museum of Medical History, the Museum of the History of Veterinary Medicine, the Museum of the History of Dentistry and the Collections of Craft Science.
- 2003 (July): Renovated Museum of Manchester, University of Manchester, opens to the public.
- 2004: The final Draft Recommendation on the Governance and Management of the University Heritage is approved by the CDESR and the CDPAT of the Council of Europe. It is hoped the Recommendation will be signed by ministers of education in 2005.
- 2004 (June): Renovated courtyard at the Fitzwilliam Museum, University of Cambridge.
- 2004 (3 December): Greek University Museums and Collections Working Group, within the auspices of ICOM-Greece (Theologi-Gouti 2005).

- 2004 (2 June): Renovated Groningen University Museum.
- 2005 [January]: Museum of Physics, University of Naples Federico II.
- 2005 [February]: Museum of Evolution, University of Uppsala.
- 2005 [February]: Renovated Hunterian Museum at the Royal College of Surgeons of England (London).
- 2005 [May]: The Petrie Museum of Egyptian Archaeology (University College London) receives the UK's Heritage Award for Excellence "for its ability to remain relevant after 103 years" (London Net, in <http://www.londonnet.co.uk/In/talk/news/headlines.html>, accessed 2 June 2005).
- 2005: Helsinki University Museum is awarded the Museum Achievement of the Year Prize by the Finnish National Committee of ICOM. The reasons cited for the award were the following: "the Museum has succeeded in merging the many small collections of the University into one interesting and coherent whole" (K. Hëinamies, *in litt.* 25 May 2005).
- 2005: Lewis Glucksman Gallery, University College, Cork was designated 'Best Public Building' in Ireland.
- 2005: Declaration of the Council of Europe on University Heritage is to be signed by ministers of education from the countries represented in the CoE.
- 2005: New building for Museum of Musical Instruments, University of Leipzig.
- 2005 [July]: Renovated Museum at the Royal College of Surgeons of Edinburgh.
- 2005 [July]: New building for the Museum of English Rural Life, University of Reading (UK).
- 2005 [Autumn]: Renovated and expanded Sainsbury Centre for Visual Arts, University of East Anglia, UK.
- 2005 [September]: Renovated Museum of Human Anatomy, University of Turin.
- 2005 [10 September]: Museum of the North, University of Alaska.
- 2007: UniSA Art Museum (new building), University of South Australia.
- 2008: Panopticon, University College London.

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[M. C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## Appendix A9: A note on funding

If existing at all, annual budgets – excluding staff – provided by the university for museums and collections are typically low and possibly less than 10% of the budget of a non-university museum of similar size and type, with several important collections having to survive on € 500-700 annually<sup>194</sup>.

Funding of many university collections is at crisis point, yet the issue is rarely properly formulated. The low regard and lack of voice of university museums in university executive bodies accentuates the problem.

Typically, university museums such as the Pitt Rivers Museum, Musée des Arts et Métiers, the Oxford University Museum, the Ashmolean Museum, the Manchester Museum, run by museum professionals and holding collections of international importance, have more autonomy and easier access to external funding. Consequently, they may not feel the problem of funding as acutely as more specialised, smaller or less well-known university museums or collections.

Funding mechanisms of public higher education systems across Europe are heterogeneous. Countries like the UK and the Netherlands have substantial tuition fees, whereas in Sweden and Germany access is free. Some countries have a stronger tradition of private donations to universities than others, while almost all universities presently establish business partnerships with the private sector, particularly in applied science, industry and new technologies. Funding of universities is a complex matter and is intensely debated today. Nevertheless, one aspect seems consensual: the present public funding mechanism is not favourable to the cultural and scientific heritage of universities – including museums, collections, botanical gardens, manuscript collections of university libraries, and monuments and buildings of

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<sup>194</sup> For instance, the Museum at the Department of Geology, University of Bristol survives on £ 300 from the University budget per annum (L. Loeffler, *in litt.* 9 Dec. 2000), the Musée de Zoologie, Université Libre de Bruxelles on c. € 4,000 yearly (M. Jangoux, *in litt.* 11 Dec. 2000), and the Chirurgical and medical instruments collection at the Université Catholique de Louvain on “absolutely nothing!” (G. Aubert, *in litt.* 1 Dec. 2000).

historic significance. Universities are funded by governments by way of mathematical formulae the parameters of which vary from country to country, but basically depend on teaching and research output (number of students, scientific papers published, researchers, research institutes, etc.). As a result, museums have much less potential for adequate funding than other university units<sup>195</sup>. Typically, the general guidelines and policies for higher education public funding are discussed between the national conferences of rectors (Conférence des Présidents d'Université in France, Conferência de Reitores das Universidades Portuguesas in Portugal) and local or central governments.

Consequently, universities fund their museums and collections in a rather *ad hoc* manner, which often means irregularly and insufficiently. Assured funding for at least three to five years at a time is essential for proper planning. When university museum collections are used for teaching and research, they are eligible for funds from research projects (either national or European) and may eventually even fit the conditions of the formulae. In some countries (e.g. UK), there is a strong tradition of private funding. Many university museums apply for funds from national, regional or local governments on a project basis. However, there are only three solutions if indeed universities are to fund their collections in a structural and long-term way: a) university museums and collections become not only relevant but indispensable for teaching and research, thus eligible to formula-funding; b) the present parameters of the usual formula are changed in order to explicitly include collections; and/or c) sustainable public funding is sought outside the formula, but with an emphasis on 'sustainable'. From a current perspective, option a) seems rather unrealistic, although university collection could indeed be used much more for teaching and research (cf. chapter 6); b) would signify that the third mission (cultural role and community service) of universities is taken seriously, but for a variety of reasons is unlikely to happen at any time soon<sup>196</sup>. Therefore, in the short- to middle-term and regardless of

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<sup>195</sup> This is why they are often considered 'financial burdens'. 'Formula funding' was recognised by all my interviewees as a system that is adverse for museums, collections, and heritage in general. It may create paradoxical situations: two universities, one from 1350 with substantial heritage and the other founded in 1985 receiving the same amount of money if they have comparable teaching and research outputs.

<sup>196</sup> Changing their concept of 'culture' and repositioning their social role would require a major mentality leap for contemporary universities and signs actually point in a rather different direction. Additionally, if this leap were to happen at all, synchronous and adequate funding by governments is equally unlikely to happen – today, governments seem to be eager to restrict funding of universities rather than giving them more.

other occasional funding sources, universities need to seek funding for their collections outside their 'normal' budget (option c).

In fact, this is already common practice in many universities today. New university museums, especially those established since 2000 and other major investments (see chapter 6), are not funded from within the university's annual budget and funds have usually been provided by the private sector, the Ministry of Culture or an equivalent agency, the European Union, or local governments.

Some of these new projects raise concerns for two reasons. In the first place, some do not seem to be sustainable in the long-term. Permanent funding for operational costs, staff and collections care after the inauguration are insufficiently guaranteed. A museum does not and cannot sustain itself financially and neither should it be supposed to be so. Universities may not yet have realized that museums are not and most likely will never be sources of income. The opening of a new museum (or the renovation of an old one) is a major and serious decision, requiring a long-lasting commitment by the university. Secondly, many collections are being left behind, particularly those most 'difficult' to display to the public – e.g. research collections in a variety of disciplines (e.g. herbaria), geology physical anthropology and other natural history and medical research collections. Who is going to pay for the proper care and housing conditions of university collections that have limited display appeal, yet are of significant scientific interest? The right answer to this question has as yet to be found – and is in fact rarely even asked.

The UK has managed to achieve stable funding for some (32 at present) of its museums and this number appears to grow. In Italy not only have rectors become interested in university collections, but they have also begun to lobby for them and to create legislation especially for university museums. The Netherlands has succeeded in transforming three stagnated herbaria into one of the most important herbaria for contemporary science in the world – successful in terms of research, teaching and obtaining funds. More examples of good practice can be found and they all have one thing in common: they resulted from engaged and fruitful collaboration.

For sustainable funding, vision, coordination and collaboration between universities at a national level is essential. Sustainable funding for collections comes for all

universities in a country or for none at all. It requires a) a common position from universities (i.e. at national conferences of rectors) and its negotiation at the highest level (i.e. with governments); b) curators who are aware of the special significance of university collections and who publicly and strongly advocate; c) engaged rectors with sensitivity and vision; d) the collaboration of all universities (old and new) in a given country and e) governments that are concerned with the advancement of societies. As long as university museums continue to act in isolation, seeking external funds for this or that building, staff member or exhibition, mostly without support from university administrations and ignoring other universities, funding will not be stable and university heritage will continue to be at risk.

[M. C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## **Appendix A10: Relevant Declarations and Position Statements**

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## Magna Charta Universitatum

Signed by 80 European universities, including the President of the European Conference of Rectors and a representative from the Council of Europe.

Date: 1988 (University of Bologna)

Accessible for download at: <http://www.magna-charta.org/magna.html>

### Preamble

The undersigned Rectors of European Universities, gathered in Bologna for the ninth centenary of the oldest University in Europe, four years before the definitive abolition of boundaries between the countries of the European Community; looking forward to far-reaching co-operation between all European nations and believing that peoples and States should become more than ever aware of the part that universities will be called upon to play in a changing and increasingly international society, consider:

- 1) that at the approaching end of this millennium the future of mankind depends, largely on cultural, scientific and technical development; and that this is built up in centres of culture, knowledge and research as represented by true universities;
- 2) that the universities' task of spreading knowledge among the younger generations implies that, in today's world, they must also serve society as a whole; and that the cultural, social and economic future of society requires, in particular, a considerable investment in continuing education;
- 3) that universities must give future generations education and training that will teach them, and through them others, to respect the great harmonies of their natural environment and of life itself.

The undersigned Rectors of European universities proclaim to all States and to the conscience of all nations the fundamental principles which must, now and always, support the vocation of universities.

### Fundamental principles

1. The university is an autonomous institution at the heart of societies differently organized because of geography and historical heritage; it produces, examines, appraises and hands down culture by research and teaching. To meet the needs of the world around it, its research and teaching must be morally and intellectually independent of all political authority and economically independent of all political authority and economic power.
2. Teaching and research in universities must be inseparable if their tuition is not to lag behind changing needs, the demands of society, and advances in scientific knowledge.
3. Freedom in research and training is the fundamental principle of university life, and governments and universities, each as far as in them lies, must ensure respect for this

fundamental requirement. Rejecting intolerance and always open to dialogue, the university is an ideal meeting-ground for teachers capable of imparting their knowledge and well equipped to develop it by research and innovation and students entitled, able and willing to enrich their minds with that knowledge.

4. A university is the trustee of the European humanist tradition; its constant care is to attain universal knowledge; to fulfil its vocation it transcends geographical and political frontiers, and affirms the vital need for different cultures to know and influence each other.

### **The means**

To attain these goals by following such principles calls for effective means, suitable to present conditions.

1. To preserve freedom in research and teaching, the instruments appropriate to realize that freedom must be made available to all members of the university community.

2. Recruitment of teachers, and regulation of their status, must obey the principle that research is inseparable from teaching.

3. Each university must - with due allowance for particular circumstances – ensure that its students' freedoms are safeguarded and that they enjoy conditions in which they can acquire the culture and training which it is their purpose to possess.

4. Universities - particularly in Europe - regard the mutual exchange of information and documentation, and frequent joint projects for the advancement of learning, as essential to the steady progress of knowledge. Therefore, as in the earliest years of their history, they encourage mobility among teachers and students; furthermore, they consider a general policy of equivalent status, titles, examinations (without prejudice to national diplomas) and award of scholarships essential to the fulfilment of their mission in the conditions prevailing today.

The undersigned Rectors, on behalf of their Universities, undertake to do everything in their power to encourage each State, as well as the supranational organizations concerned, to mould their policy sedulously on this Magna Charta, which expresses the universities' unanimous desire freely determined and declared.

Bologna, 18 September 1988

## Magna Charta Universitatum

Signée par 80 universités européennes, le président de la Conférence européenne des recteurs et un représentant du Conseil de l'Europe.

Date: 1988 (Université de Bologne)

Site de téléchargement: <http://www.magna-charta.org/magna.html>

### Préambule

Les Recteurs des Universités européennes soussignés, réunis à Bologne à l'occasion du IXe centenaire de la plus ancienne d'entre elles, quatre ans avant la suppression définitive des frontières intra-communautaires et dans la perspective d'une collaboration élargie entre tous les peuples européens, estimant que les peuples et les Etats doivent prendre plus que jamais conscience du rôle que les universités seront appelées à jouer dans une société qui se transforme et s'internationalise, considèrent:

1. que l'avenir de l'humanité, en cette fin de millénaire, dépend dans une large mesure du développement culturel, scientifique et technique qui, lui, se forge dans les centres de culture, de connaissance et de recherche que sont devenues les vraies universités;
2. que la tâche de diffusion des connaissances que l'université doit assumer envers les nouvelles générations implique aujourd'hui qu'elle s'adresse également à l'ensemble de la société - dont l'avenir culturel, social et économique exige notamment un effort considérable de formation permanente;
3. que l'université doit assurer aux générations futures une éducation et une formation leur permettant de contribuer au respect des grands équilibres de l'environnement naturel et de la vie.

Ils proclament devant les États et la conscience des peuples les *principes fondamentaux* qui doivent soutenir dans le présent et le futur la vocation de l'université.

### Principes fondamentaux

1. L'université, au coeur de sociétés diversement organisées du fait des conditions géographiques et du poids de l'histoire, est une institution autonome qui, de façon critique, produit et transmet la culture à travers la recherche et l'enseignement.

Pour s'ouvrir aux nécessités du monde contemporain, elle doit être indépendante de tout pouvoir politique, économique et idéologique.

2. Dans les universités, l'activité didactique est indissociable de l'activité de recherche afin que l'enseignement soit à même de suivre l'évolution des besoins comme les exigences de la société et des connaissances scientifiques.



3. La liberté de recherche, d'enseignement et de formation étant le principe fondamental de la vie des universités, les pouvoirs publics et les universités, chacun dans leur domaine de compétence, doivent garantir et promouvoir le respect de cette exigence fondamentale.

Dans le refus de l'intolérance et dans le dialogue permanent, l'université est donc un lieu de rencontre privilégié entre professeurs, ayant la capacité de transmettre le savoir et les moyens de le développer par la recherche et l'innovation, et étudiants, ayant le droit, la volonté et la capacité de s'en enrichir.

4. Dépositaire de la tradition de l'humanisme européen, mais avec le souci constant d'atteindre au savoir universel, l'université, pour assumer ses missions, ignore toute frontière géographique ou politique et affirme la nécessité impérieuse de la connaissance réciproque et de l'interaction des cultures.

### **Moyens**

La réalisation de ces objectifs, dans la cadre de semblables principes, exige des *moyens* efficaces et donc adaptés à la situation contemporaine.

1. Pour préserver la liberté de recherche et d'enseignement, les instruments propices à sa réalisation doivent être fournis à l'ensemble des membres de la communauté universitaire.

2. Le recrutement des enseignants, ainsi que la réglementation de leur statut, doivent être commandés par le principe de l'indissociabilité de l'activité de recherche et de l'activité didactique.

3. Chaque université doit garantir à ses étudiants, tout en respectant la spécificité des situations, la sauvegarde des libertés et les conditions nécessaires pour atteindre leurs objectifs en matière de culture et de formation.

4. Les universités - et notamment les universités européennes - voient dans l'échange réciproque d'informations et de documentation comme dans la multiplication d'initiatives scientifiques communes les instruments fondamentaux d'un progrès continu des connaissances.

C'est pourquoi, retrouvant en cela leurs sources, elles encouragent la mobilité des enseignants-chercheurs et des étudiants et considèrent qu'une politique générale d'équivalence en matière de *status*, de titres, d'examens (tout en préservant les diplômes nationaux), et d'attribution de bourses, constitue l'instrument essentiel garantissant l'exercice de leurs missions contemporaines.

Les Recteurs soussignés, au nom de leur Université, s'engagent à tout mettre en oeuvre afin que chaque État et les organisations supranationales concernées puissent s'inspirer progressivement des dispositions de cette Charte, expression unanime de la volonté autonome des universités.

Bologne, 18 septembre 1988

## **Declaration of Halle**

### **Academic Heritage and Universities: Responsibility and Public Access**

Organisation: UNIVERSEUM Network  
Date: 2000 (Martin-Luther University of Halle Wittenberg, Germany)  
Accessible for download at: <http://www.universeum.de/>

Universities must acknowledge their wide cultural roles. Academic collections and museums provide special opportunities for experiencing and participating in the life of the University. These collections serve as active resources for teaching and research as well as unique and irreplaceable historical records. In particular, the collections of the oldest European universities provide windows for the public on the role of the university in helping to define and interpret our cultural identity. By valuing and promoting this shared academic heritage, our institutions demonstrate a commitment to the continued use of these resources by a broad public.

The Royal College of Surgeons of England, the University of Amsterdam, the University of Humboldt Berlin, the University of Bologna, the University of Cambridge, the University of Groningen, the University of Halle-Wittenberg, the University of Leipzig, the University of Oxford, the University of Pavia, the University of Uppsala, the University of Utrecht.

Halle, 16 April 2000

## Déclaration de Halle

### Patrimoine académique et universités: Responsabilité et accès au public

Initiative: Réseau UNIVERSEUM

Date: 2000 (Université de Halle Wittenberg, Germany)

Site de téléchargement: <http://www.universeum.de/>

Les universités doivent avoir conscience de l'importance de leur rôle culturel. Les collections et les musées universitaires fournissent des occasions particulières de réaliser des expériences et de participer à la vie de l'université. Ces collections servent de ressources actives pour l'enseignement et la recherche tout en constituant des archives historiques uniques et irremplaçables. En particulier, les collections des plus anciennes universités européennes sont des témoins du rôle joué par l'université dans la définition et l'interprétation de notre identité culturelle. En valorisant et en développant ce patrimoine académique commun nos établissements témoignent de leur engagement pour une utilisation continue de ces ressources par un large public.

Royal College of Surgeons of England et les universités d'Amsterdam, Humboldt Berlin, Bologne, Cambridge, Groningen, Halle-Wittenberg, Leipzig, Oxford, Pavie, Uppsala et Utrecht.

Halle, 16 avril 2000

## **AAM Position Statement**

### **University Natural History Museums and Collections**

Initiative: American Association of Museums (AAM)

Date: November 2003 (published in *Society for the Preservation of Natural History Collections Newsletter* **18** (2004): 2).

The American Association of Museums (AAM) expresses its deep concern that a significant number of America's natural history museums and collections affiliated with universities are currently threatened with severe financial cutbacks, dispersal of collections, and outright closure. At risk are collections of irreplaceable objects, such as geological, palaeontological, zoological and botanical specimens, anthropological and historical artifacts, and archives. These collections are held in trust for the public; they are the priceless heritage of this and future generations; and they constitute critically important resources for new knowledge.

University museums provide unique contributions to the public good through education and research. Their collections are a shared legacy, serving as a constantly growing database to document the diversity and history of life on earth, to develop strategies for the management of natural resources, and to find solutions to some of the world's most pressing problems, from biodiversity conservation to the discovery of new medicines. In addition, exhibits and programs in university museums help to advance broader understanding of the scholarly and scientific enterprise.

AAM urges university administrators, trustees, state legislators, and alumni to do everything in their power to preserve, protect and support their university museums and collections of natural and cultural history. Temporary financial difficulties must not be allowed to interfere with the overriding responsibility of the governing authority to be effective stewards of these collections and to safeguard the public interest by assuring continued access to them.

AAM strongly urges the leadership of universities, and their museums to work together to develop creative financial and organizational strategies that will secure their museums and collections for future generations.

AAM also strongly urges universities, museums, governmental agencies, foundations, and other stakeholders to begin a national dialogue with the aim of providing long-term stability for America's university museums of natural history and their irreplaceable collections. A major aim is to strengthen connections to constituencies that can speak in support of these important museums.

## University Museums and Collections

### Importance, Responsibility, Maintenance, Disposal and Closure

Organisation: UMAC, the International Committee of ICOM for University Museums and Collections

Date: 2004

Accessible for download at: <http://publicus.culture.hu-berlin.de/umac/guidelines.html>

#### Importance

University collections reflect the history, heritage and standing of a university and the nation. Collections are the contributions of generations of scholars and other dedicated persons. A collection made over years or a century or more that has been dispersed by a decision of the moment can never be re-assembled.

Collections within universities are built with scholarship over time and show the evolution of knowledge and scholarship. University collections often contain unique material not represented in other museums.

The objects in collections contain information of importance to future research. Interest in specific fields of knowledge waxes and wanes over time; therefore, it is not possible to predict a collection's value, or lack of it, to future scholars.

University collections and their curators are important interdisciplinary links for the community. Collections enhance teaching and research. They promote a positive image of the institution and provide welcoming access points to the campus. The collections in universities are ideally placed to connect disparate pieces of knowledge into lucid maps.

University collections stimulate intellectual development. The important role that collections play in our heritage is deepened during a student's time at the university. Commitment to preservation is fostered and influences decisions made throughout life in both work and leisure.

'Reading information' contained within an object is a significant source of new knowledge. The real objects in university collections are important research tools in an increasingly digital world and are ideally adjacent to scholars.

University collections are an appreciating research asset and often appreciate financially.

#### Responsibility

Any collection within a university initiated by a member of staff and subsequently maintained by university funds, whether formally authorised or not, is the responsibility of the university. The university is responsible for the tangible and intangible heritage inherent in the collection, which is part of the regional, national or global distributed collection.

Senior university management are responsible for university collections. They have, *de facto*, been entrusted with this duty. The actual ownership and relevant legal obligations may vary from place to place, but the responsibilities must be ascertained and clearly understood.

A university having one or more collections should have a policy regulating and guiding the operation of its collection/s. In general these will reflect the goals of the university as well as the aims of research, teaching and community service. In turn the role of museums and collections should be mentioned in the university's own strategic plan. Examples of

exemplary university museum policies are available on the Internet (select references available free of charge from UMAC).

Professional ethical standards must guide the way in which collections are run. In addition, the policy will, in some detail, address the procedures for acquiring objects, initiating new collections or closing existing collections. UNESCO, the International Council of Museums (ICOM) and local and National museum associations publish information on professional museum standards.

### **Maintenance**

A person should be designated as responsible for a collection or museum. This responsibility should be recognised in that person's duty statement. If the person designated does not have museum experience, training must be provided. Adequate funds, time and on-going training should be available to enable the discharge of the responsibility.

A senior officer should be delegated to supervise the person responsible for the collection or museum.

The collection should have a formal policy. At the very least this should state that the objects will be legally obtained, documented records will be kept, preventive conservation will ensure the long-term survival of the collection, and it will be regularly accessible.

The existence of the collection should be made public and the needs of visitors (in person or by virtual means) facilitated, especially in regard to research and/or publish material in the collection.

### **Disposal and Closure**

The disposal method/s must be in conformity with professional ethical standards and legal requirements.

Professional museum ethics require funds raised by disposal to be re-utilised in the remaining collection/s.

The request to close or disperse should provide evidence of written documentation indicating that the university (or other authority) is the legal owner of the objects and is entitled to dispose of them. Reference to the terms of bequests or source/s of funding is essential.

Collections or museums should never be sold, dispersed or closed for reasons such as a sudden requirement for space, financial savings, the resignation or termination of staff or for any capricious reason without wide and sustained consultations. Dispersal or disposal of collections reduces resources available to teachers, students, scholars and the national and international community.

Publicity surrounding disposal of objects may endanger future donations and research funding.

The consultation process should be followed by a formal written request detailing the reasons by the head of the appropriate unit or Faculty to the Chief Executive Officer (such as the Rector, Principal, Vice-Chancellor, Vice-Principal or Provost).

Each and every object to be de-accessioned should be documented.

The reason/s for closure or dispersal should be clearly stated. Where the reason/s is/are lack of relevance, poor condition, inadequate funds or requirement for the space, details of the consultations and the arguments for and against, should be given.

The recommended method/s of disposal (for example, transfer firstly to another university museum, secondly to any other museum) should be listed in order of priority. Each must safeguard the long-term survival of objects of scientific, artistic, social and educational value.

The aim of a closure procedure should be first and foremost to safeguard the long-term future of the objects in order to preserve the knowledge contained therein, and secondly to make adequate provision for affected staff.





[M. C. Lourenço, 2005. *Between two worlds: the distinct nature and contemporary significance of university museums and collections in Europe*. PhD dissertation, Conservatoire National des Arts et Métiers, Paris]

## Appendix A11: Survey of *Cladistics* and *Systematic Biology*

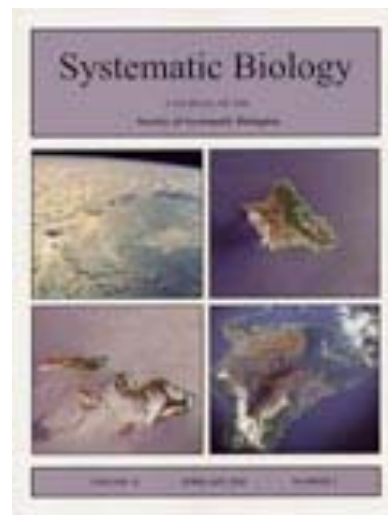
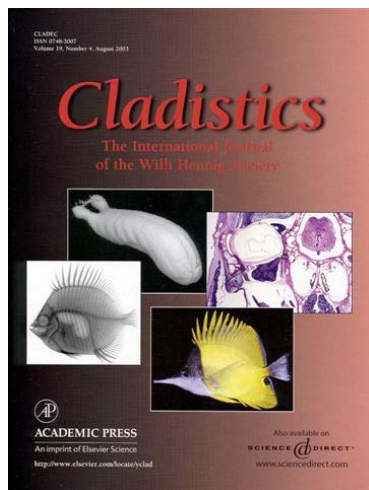
One of the most important criteria for research within any scientific community is the approval of peers through papers published in professional journals.

Are natural history museums publishing papers on systematics?

Are university museums of natural history publishing and, if so, which ones?

To obtain an insight in the frequency with which different institutions publish results of their research, a survey of three volumes of two renowned international journals in the field of systematics – *Cladistics* and *Systematic Biology* – was carried out.

Methodology simply involved listing the institutional provenance of authors of papers in each issue of the two journals published in the years 2000, 2001 and 2002. The content of papers was not considered. Only research papers were included, not reviews, letters, or editorials. The survey comprised a total of 147 articles in *Systematic Biology* and 72 articles in *Cladistics* (table A11.1).



*Cladistics* is the journal of the Willi Hennig Society and “publishes both empirical and conceptual papers on systematics, and encourages debate and other useful dialogue about systematic methods. It has wide scope and publishes papers in zoology, botany, morphology, molecular biology, ontogeny, biogeography, ecology and systematic philosophy”<sup>197</sup>. *Cladistics*

<sup>197</sup> From the Editors’ website at <http://www.cladistics.org/journal/instructions.html>, accessed 10 September 2003.

was established in 1984. It published four issues per volume/year until 2001 and thereafter six issues per volume/year.

*Systematic Biology* is the journal of the Society of Systematic Biologists. It publishes "original theoretical or empirical studies that explore principles and/or methods of systematics. Systematics is considered broadly to include phylogenetic studies of biogeography, palaeontology, development, genes, and/or anatomical/cellular/molecular traits of taxa. Empirical papers chosen for publication are judged to be of interest to a broad systematics audience because they represent exemplary case studies involving some important contemporary issue or issues. These may be unusually thorough explorations of data, applications of new methodology, illustrations of fundamental principles, and/or investigations of interesting evolutionary questions<sup>198</sup>". *Systematic Biology* was established in 1951 and in 2002 also increased its output from four to six issues per volume<sup>199</sup>.

Systematic Biology			Cladistics		
Volume & Date	Issues	Number of Articles	Volume & Date	Issues	Number of Articles
51 (2002)	1	8	18 (2002)	1	5
	2	9		2	5
	3	7		3	6
	4	5		4	4
	5	10		5	4
	6	14		6	3
50 (2001)	1	15	17 (2001)	1	7
	2	9		2	3
	3	11		3	10
	4	19		4	6
49 (2000)	1	11	16 (2000)	1	4
	2	7		2	3
	3	12		3	5
	4	10		4	7
		<b>147</b>			<b>72</b>

Table A11.1 – *Cladistics* and *Systematic Biology*: volumes and issues surveyed.

## Results

The results are in tune with the interdisciplinary and inter-institutional nature of science. The average number of authors per article was 2.3 (2.2 for *Cladistics* and 2.4 for *Systematic Biology*). Authors came from different institutions – universities, but also museums, national parks, conservation groups, and the industry. Authors from the academic world were predominant (table A11.2), but more came from university departments and institutes than

<sup>198</sup> From the Editor's website at <http://hydrodictyon.eeb.uconn.edu/systbiol/info/instrauth.html>, accessed 10 September 2003.

<sup>199</sup> The mere fact that both journals raised the number of issues per volume by 50% illustrates that not only is there research in systematics, but the volume of output is increasing.

from university museums. Note that the affiliation of an author does not necessarily imply that he or she did not do collection-based research, because in order to confirm this aspect the contents of each paper would need to be examined.

	<b>Cladistics</b>	<b>Systematic Biology</b>
Number of articles	72	147
Number of authors	158	360
Number of university authors (departments, institutes, museums)	105	287
Number of non-university authors (independent groups, parks, non- university museums, industry)	53	73

Table A11.2 – Number of articles, number of authors and affiliation (*Cladistics* and *Systematic Biology* 2000-2002).

The number of museum affiliated authors is detailed in table A11.3. The survey shows that:

- Researchers from museums are publishing, although they only represent 28% (147) of the total number of authors (518).
- More researchers from non-university museums (96 authors) published than from university museums (51 authors).
- The three museums outside higher education that contribute most in terms of number of authors are the American Museum of Natural History in New York (24), the National Museum of Natural History in Washington D.C. (16), and the Swedish Museum of Natural History in Stockholm (11 authors).
- The two museums inside higher education that contribute most in terms of number of authors are the Muséum national d'Histoire naturelle in Paris (7) and the Museum of Zoology at the University of Michigan Ann Arbor (7).
- Apart from the Muséum in Paris, two museums visited during this research – the Zoology Museum at the University of Cambridge and the University of Leiden Branch of the Dutch National Herbarium – appear on the list with significant contributions (particularly Cambridge), thus confirming my own observations that they were active in collection-based research.

Museums outside the higher education system	Cladistics	Systematic Biology	Total	'Worldwide' Position
Australian Museum	7	1	8	5
American Museum of Natural History,	18	6	24	1
Royal Ontario Museum	1	1	2	10
New York Botanical Garden	1	0	1	
Carnegie Museum of Natural History	1	3	4	8
South Australian Museum	1	0	1	
National Museum of Natural History USA	2	14	16	2
Field Museum	0	9	9	4
Herbarium (Smithsonian)	0	2	2	10
Buffalo Museum of Science	0	1	1	
Bermuda Natural History Museum	1	1	2	10
<b>National Museum of Natural Sciences Madrid</b>	1	0	1	
<b>Swedish Museum of Natural History Stockholm</b>	11	0	11	3
<b>Natural History Museum London</b>	1	5	6	7
<b>Royal Botanical Garden Madrid</b>	2	0	2	10
<b>Kew Botanical Gardens</b>	0	6	6	7
<b>Total</b>	<b>47</b>	<b>49</b>	<b>96</b>	
<b>Higher education museums</b>				
Museum of Biological Diversity (Ohio State University)	2	0	2	10
Ohio State University Herbarium	3	0	3	9
Museum of Zoology (Univ. of Michigan, Ann Arbor)	5	2	7	6
Dep. of Zoology & M.L.Bean Life Sciences Museum (Brigham Young University, Provo)	1	3	4	8
Sternberg Museum of Natural History (Fort Hays State University, Hays, Kansas)	1	0	1	
L.H. Bailey Hortorium (Cornell)	2	0	2	10
Museum Vertebrate Palaeontology (Berkeley)	0	4	4	8
Dep. Zoology & Burke Museum (Univ. Washington)	0	2	2	10
Museum of Comparative Zoology (Harvard)	0	3	3	9
Natural History Museum (Univ. of Colorado, Boulder)	0	1	1	
Red Path Museum & Department of Biology (McGill University, Montréal)	0	1	1	
Harvard Herbarium	0	2	2	10
Dep. Zoology & Texas Memorial Museum (University of Texas)	0	1	1	
Museo de Zoología (Facultad de Ciencias, Universidad Autónoma de Mexico)	0	1	1	
Georgia Southern Museum (Georgia Southern Univ.)	1	0	1	
Museum & Dep. of Zoology (Michigan State Univ)	0	1	1	
<b>Muséum National d'Histoire Naturelle Paris</b>	7	0	7	6
<b>Nationaal Herbarium Nederland (Leiden branch)</b>	1	0	1	
<b>Botanical Garden (University of Valencia)</b>	1	0	1	
<b>Museum of Zoology Cambridge</b>	0	2	2	10
<b>Zoologisches Institut &amp; Museum (University of Hamburg)</b>	0	1	1	
<b>Botanical Garden (University of Lausanne)</b>	0	1	1	
<b>Botanical Garden (University of Hamburg)</b>	0	1	1	
<b>Zoological Museum (University of Copenhagen)</b>	0	1	1	
<b>Total</b>	<b>24</b>	<b>27</b>	<b>51</b>	
<b>Total of museum authors</b>	<b>71</b>	<b>76</b>	<b>147</b>	

Table A12.3 – Number of authors from museums outside and within the higher education system. European institutions are given in bold. In the right column, the relative position (1-10 only) of each institution in terms of number of contributing authors (*Cladistics* and *Systematic Biology* 2000-2002).

This survey does not allow for far-reaching conclusions about the course of collection-based research in natural history museums. It is too limited and there is no indication about the substance of research published.

Size of collections is important, but not proportionately in relation to the number of contributing authors. Obviously, large museums have more researchers and therefore are likely to publish more. The number of relatively small museums – including university museums – that are almost on a par with the largest and better staffed collections in the world seems significant. Further research is necessary to determine in what ways this may be relevant.

There is a predominance of American museums (university and non-university) compared to European ones. To most professionals, this will hardly come as a surprise. When I interviewed the Director of the Botanical Garden of the University of Lisbon, he said: “Today, the biggest worldwide expert on Portuguese flora is from the USA. The last major Portuguese botanist has been dead for some decades” (F. Catarino, interview 12 April 2000).

Certainly, it would be interesting to expand this survey, taking these aspects into consideration and also comprising geology, anthropology, archaeology, history of science and medicine and other scientific journals.

