

The University of Manchester
The Manchester
Museum

MANCHESTER
1824



Nature behind glass:

historical and theoretical perspectives
on natural science collections

Programme and abstracts
[accurate to 13 August 2007]



The Manchester Museum,
The University of Manchester,
Oxford Road, Manchester M13 9PL

THURSDAY 6 SEPTEMBER

09.30– 10.30	Registration / Coffee		<i>Lobby</i>
10.30– 10.40	Nick Merriman, Manchester Museum Welcome/introduction		<i>Kanaris</i>
10.40– 11.25	KEY: John Pickstone, University of Manchester [Chair: Nick Merriman, Manchester Museum] <i>What is a natural about objects? Perspectives from the history of science</i>		<i>Kanaris</i>
11.30– 13.00	PANEL: TAXIDERMY [Chair: Henry McGhie, Manchester Museum] <hr/> Rachel Poliquin , MIT, USA, <i>Taxidermy, moral lessons, and the culture of death</i> Liv Emma Thorsen, University of Oslo, Norway <i>Between convention and invention: Paolo Savi and his natural history illustrations</i> Amandine Péquignot, Muséum National d'Histoire Naturelle, France <i>Taxidermy specimens: Clues for history of taxidermy and conservation</i>		<i>Kanaris</i>
13.00– 14.15	Lunch	Posters	
	<i>Conference/Lobby</i>	<i>Lobby</i>	13.30: MGHG AGM <i>Kanaris</i>
14.15– 15.45	PANEL: BOTANY [Chair: Arthur Lucas] <hr/> David Allen <i>From aide-memoire to trophy assemblage to data bank: The changing role of the herbarium, with special reference to the study of British flowering plants and ferns</i> Sita Reddy, Smithsonian Institution, USA <i>The Jungle Books: Ethnobotanical archives as museums of nature</i> Kerstin Smeds, University of Umeå, Sweden <i>Exoticism and calculated nature – Botanic exhibitions from the world fairs to the museums of natural history in the second part of the 19th century</i>		<i>Bragg</i>
15.45– 16.15	Coffee		<i>Martin Harris Centre</i>
16.15– 17.15	PANEL: EMPIRE [Chair: Joe Cain, University College London] <hr/> Paul White, University of Cambridge <i>Darwin and the imperial archive</i> Mary Anne Andrei, University of Virginia, USA <i>"Brightest Africa": Carl E. Akeley and the race to bring Africa to America</i>		<i>Bragg</i>
17.15– 18.00	KEY: Anne Secord, University of Cambridge [Chair: Joe Cain, University College London] <i>Private collections and the public good: Skill and desire in early 19th-century natural history</i>		<i>Bragg</i>
18.00– 19.30	Drinks reception (courtesy of the School of Arts, Histories and Cultures)		<i>Martin Harris Centre</i>

FRIDAY 7 SEPTEMBER (morning)

08.30– 09.00	Registration				Lobby
09.00– 09.45	KEY: Peter Davis, Newcastle University [Chair: Chris Whitehead, Newcastle University] <i>On the borders of natural history: Geographical isolation and collection building in the 19th century</i>				Bragg
09.45– 10.45	PANEL: MULTI-MEDIA [Chair: Kostas Arvanitis, University of Manchester] <i>Kanaris</i>		PANEL: DIORAMA [Chair: Chris Whitehead, Newcastle University] <i>Bragg</i>		
	Jennifer Gabrys, Goldsmiths College Kathryn Yusoff, Open University <i>Snow Globes: The frozen and transient scenes of nature</i> Mark Carnall, Grant Museum, UCL <i>Virtually, naturally or nature behind the screen: How the videogame industry is performing the role of the idealised post museum natural history museums</i>		Jane Insley, Science Museum, London <i>Little Landscapes – A history of diorama-making and use</i> Phaedra Livingstone, Ryerson Uni., Canada <i>Frame, gaze and shot: Visitor readings of a habitat diorama</i>		
10.45– 11.30	Coffee				Martin Harris Centre
11.30– 12.15	KEY: Tony Bennett, Open University [Chair: Helen Rees Leahy, University of Manchester] <i>Nature sometimes makes no jumps, and sometimes it does: Museums of natural history and ethnology, governance, and evolutionary temporalities</i>				Bragg
12.15– 12.30	Henry McGhie, Manchester Museum An introduction to 'A place for everything' at the Manchester Museum				Bragg
12.30– 14.00	Lunch	13.00: 'A place for everything' tour <i>Meet in MM Foyer</i>	13.00 Duncan Mountford Visual Presentation	Posters	
		13.30: 'A place for everything' tour <i>Meet in MM Foyer</i>			
	Conference/Lobby		Kanaris		Lobby

CONT...

FRIDAY 7 SEPTEMBER (afternoon)

<p>14.00– 15.30</p>	<p>PANEL: COLLECTING [Chair: Gina Douglas, Linnean Soc./SHNH] <i>Kanaris</i></p> <hr/> <p>Bettina Dietz, University of Munich, Germany <i>Réaumur's precarious objects</i></p> <p>Brita Brenna, University of Oslo, Norway <i>Collecting Nature in Ultima Thule: 18th- century collection culture seen through a Norwegian bishop's collection</i></p> <p>Arthur Lucas Paula Lucas <i>'Collectors' and 'collections': Resolving the ambiguities</i></p>	<p>PANEL: INTERNATIONAL CONTEXTS [Chair: Gordon Fyfe, <i>museum & society</i>] <i>Bragg</i></p> <hr/> <p>Aron Mazel, Newcastle University Gerard Corsane, Newcastle University <i>In the nature of things? Natural science and culture revealed through the shared and separate histories of the South African Museum and the South African Cultural History Museum</i></p> <p>Kokunre Eghafona, University of Benin, Nigeria <i>Natural history in Nigerian museums and concentration of collections in tertiary institutions</i></p> <p>Marieke Van der Duin, Amsterdam, N'lands Ilja Nieuwland, Amsterdam, N'lands <i>Science and the art of looking: University museums and the treatment of academic natural history collections</i></p>
<p>15.30– 16.00</p>	<p>Coffee</p> <p style="text-align: right;"><i>Martin Harris Centre</i></p>	
<p>16.00– 16.45</p>	<p>KEY: Sophie Forgan, Teesside University [Chair: Sam Alberti, University of Manchester] <i>Hero, muse or fossil? Reflections on the growth of the personality museum</i></p> <p style="text-align: right;"><i>Bragg</i></p>	
<p>20.00– 22.00</p>	<p>Conference Dinner</p> <p style="text-align: right;"><i>Manchester Business School</i></p>	

SATURDAY 8 SEPTEMBER

09.00– 09.30	Registration/Coffee <i>Lobby</i>
09.30– 10.15	KEY: Simon Knell, University of Leicester [Chair: Sharon Macdonald] <i>Fossil people: Studying research communities through their engagement with objects</i> <i>Kanaris</i>
10.15– 11.15	PANEL: RE-ASSESSING IN THE 20TH CENTURY [Chair: Sharon Macdonald] <i>Kanaris</i> Morgan Meyer, University of Sheffield Give me a museum and I will raise the world Karen Rader, Virginia Commonwealth University, USA Victoria Cain, American Association for the Advancement of Science, Cambridge, USA From natural history to science: Display and the transformation of American museums of science and nature, 1930-1965
11.15– 11.45	Coffee <i>Lobby</i>
11.45– 13.15	PANEL: RE-INVENTING IN THE 21ST CENTURY [Chair: Mick Worboys] <i>Kanaris</i> Simon Chaplin, Hunterian Museum, Royal College of Surgeons of England <i>Reinventing the HOUSE OF HORROR: Dissection and display in the Hunterian Museum</i> Johannes Vogel , Natural History Museum, London <i>Biodiversity publics: Nature, humans and machines</i> Rebecca Ellis, Lancaster University Nature under minus 150° Celsius: The relationship between frozen DNA and whole organisms as specimens of natural history
13.15– 14.00	Lunch <i>Conference/Lobby</i>
14.00– 14.45	KEY: Bernadette Lynch, University of Manchester [Chair: Piotr Bienkowski] <i>Amenable objects: Cultural perspectives on natural history specimens</i> <i>Kanaris</i>
14.45– 15.00	Concluding statements <i>Kanaris</i>

POSTERS [Displayed throughout in the Manchester Museum Kanaris lobby]

Bryony Bond, Manchester Museum	<i>Alchemy: Contemporary artists in the museum</i>
Bernadette Callery, Carnegie Museum of Natural History, USA	<i>Collecting curators: Connections between B. Preston Clark's Sphingidae collection, the Carnegie Museum and Andrey Avinoff</i>
Hannah Chalk, University of Manchester	<i>The role of university earth science collections in the climate change agenda</i>
Michael Cooper, Nottingham Museums	<i>Nottingham Museums Natural History Register Project 1999-2006 and its reconciliation with the baseline database</i>
Ellen de Kock, University of Johannesburg, South Africa	<i>TransformNation – naturally? The geological collection at Museum Africa, Johannesburg, South Africa</i>
Cristina Espada and Johan Olausson, Natural History Museum	<i>Portrait of Friedrich Welwitsch – Making historical natural collections more accessible through digitisation</i>
Patricia Francis, Bolton Museum	<i>Herbarium specimens and the visitor: Learning, teaching and engagement in the museum</i>
Susan Grayer, RHS Herbarium at Wisley	<i>Cultivating herbaria: A place for the horticultural herbarium in the 21st century</i>
Julie Harvey, Natural History Museum	<i>New perspectives: Exploring the Natural History Museum collections as a resource for arts and humanities research</i>
Joy Kearney, Radboud University Nijmegen, Netherlands	<i>Ornithology in the Dutch Golden Age – Evidence of bird expertise in the paintings of Melchior de Hondecoeter (1636–1695)</i>
Catarina Madruga, National Natural History Museum, Portugal	<i>Presentation and representation: The diorama at the natural history museum</i>
Sandra Elena Murriello, Campinas University, Brazil	<i>A century of museographic changes at a natural history museum in the South</i>
Hannah Paddon, Bournemouth University	<i>The value and use of biological collections in British museums</i>
Merle Patchett, University of Glasgow, and Kate Foster	<i>Lively geographies of dead animals</i>
Mike Rutherford, Jeanne Robinson and Richard Sutcliffe, Glasgow Museums	<i>Pick 'n' Mix - Multidisciplinary Displays in the new Kelvingrove Museum</i>
Richard Sutcliffe, Mike Rutherford and Jeanne Robinson, Glasgow Museums	<i>No Glass! Open display of natural history specimens at Kelvingrove Museum, Glasgow</i>
Chris Plumb, University of Manchester	<i>Don Saltero's Coffee House: Beans and Beasts 1695–1799</i>
Rebecca Smith, University of Manchester	<i>Gender representation in the natural history galleries at the Manchester Museum</i>

Key, Panel, Poster Abstracts [alphabetically by first author]

From aide-memoire to trophy assemblage to data bank: The changing role of the herbarium, with special reference to the study of British flowering plants and ferns

David E. Allen

Preserving most kinds of plants is much simpler than preserving most kinds of zoological material. First dried under pressure, botanical specimens can then be stored either loose in paper folders or, more onerously, mounted on sheets of a suitable size. Mounting heightens the visual impact of specimens and strengthens their tolerance of handling, but, best of all, the sheets allow space for – and thereby positively stimulate – written documentation (and in considerable detail, if wished). Documenting a sheet additionally avoids the risk of disconnection of loss to which separate labels are subject. The earliest European herbaria surviving, formed in the 1530s, are of the mounted type, and bound albums long remained the preferred mode among the less scientifically inclined. The extending of documentation to geographical provenance, however minimal, was becoming usual by the late eighteenth century and by the mid-nineteenth was sufficiently universal to serve as a major source for establishing species distributions. Today, in a well-studied area like Britain herbaria continue to have value principally for taxonomic study of (often newly) critical groups, in providing datum-lines for attempts to measure the rate of decrease of individual species and as depositories for the checkable evidence of recorded finds of novelties and rarities.

"Brightest Africa": Carl E. Akeley and the race to bring Africa to America

Mary Anne Andrei

In the 1880s and into the early twentieth century, the African continent was a great source of enthrallment for the American public. Several factors were responsible for the fascination, including the international lecture tours of journalist and explorer Henry Morton Stanley (famous for his search and rescue of missing missionary David Livingstone); popular books on African exploration from writers such as Stanley and the French explorer Paul Du Chaillu; and the opinion of American Evangelicals that Africa was the laboratory of Christianity. At the same time, major metropolitan areas across the United States saw a boom in the establishment of new museum buildings designed with larger public exhibition space in mind. Museum administrators eager to win public support thus saw an advantage in developing exhibitions that focused on the exotic large mammals of the African Continent. The first museum to unveil such an exhibit was Chicago's Field Museum of Natural History. Carl E. Akeley's group of two African bull elephants locked in a fighting pose was opened to the public in 1909. In the spirit of competition, the American Museum of Natural History also desired an African elephant exhibit, but unlike the Field Museum, they were willing to entertain Akeley's idea to design a large family group. President Henry Fairfield Osborn and Director Hermon C. Bumpus hired Akeley away from the Field Museum to mount the world's first large group of elephants. The Carnegie Museum in Pittsburgh and the National Museum in Washington, D.C., also entered into the competition. By 1940 the result was an African hall in every major metropolitan museum in America inspired by Akeley's dream to bring together his improved method of taxidermy and his idea of curved back dioramas into a permanent artistic record of Africa's fast disappearing wildlife.

Nature sometimes makes no jumps, and sometimes it does: Museums of natural history and ethnology, governance, and evolutionary temporalities

Tony Bennett

This paper will address the relations between late nineteenth- and early twentieth-century natural history and ethnology museums and the role that evolutionary thought played in narrating the relations between nature and culture across those between the primitive and the

civilised as sometimes continuous and, at others, as separated by an unbridgeable gap. The implications of these differences for the ways in which the addressees of such displays were to place and manage themselves in relation to the new vistas of deep time will be examined, paying particular regard to differences between the operations of such museums in the British, American and Australian contexts.

Alchemy: Contemporary artists in the museum

Bryony Bond

Alchemy is the Manchester Museum's first sustained research programme for artists. Funded by Arts Council England, Alchemy supports artists to work with Museum collections and access University expertise in the creation of new work. As much concerned with the process of discovery, as the presentation of a final outcome, Alchemy not only aims to reinvigorate Museum displays and present alternative voices through a public programme, but works with Museum staff to cultivate an atmosphere of self-reflection and to raise the possibility of new understandings of collections and the academic disciplines the Museum engages with.

This 'poster' explore the work of the current Alchemy artists, including Ilana Halperin, Nick Jordan and Jacob Cartwright, whose work interrogates how we understand nature through art as well as science. For example, Nick and Jacob cite the following quote from naturalist and author Richard Mabey, as initiating their ideas about a new kind of ecology: "It is through myth, story-telling, art, metaphor and play that we make overall sense of our place in the world. Given that language and imagination are what define our species, it is through these that we make our most truly human, and therefore most authentically ecological engagements with the world."

Collecting Nature in Ultima Thule: Eighteenth-century collection culture seen through a Norwegian bishop's collection

Brita Brenna

In 1758 the newly appointed bishop in the Northernmost parts of Norway, Johann Ernst Gunnerus, began a most successful collecting project. He urged the clergy of his diocese to send him natural observations and specimens, and experienced immediate success. Specimens and reports soon arrived in great quantities to fill the chambers of the bishop's house. The bishop also collected and observed together with his assistants on several visitation journeys and he initiated exchanges of specimens with scholars in other countries. The collection was donated to the Royal Scientific Society of Norway after the bishop's death in 1773, and was as such described and catalogued. These descriptions and catalogues together with the correspondence and scientific articles by the bishop will serve as the empirical material for this paper.

Bishop Gunnerus has been named the first scientist in Norway, a country which at this point in time was in union with Denmark, and had no scientific institutions. The collection and the practice of collecting nature was important for making the bishop into a man of natural knowledge. The bishop had no previous training in natural science, being interested in theological and philosophical questions, before arriving in Norway. Finding the Norwegian nature undescribed and uncollected might have been one of the impulses for the turn his scholarly work took, towards natural history and collection of nature. The collection was a source of power which could be utilised in negotiating with foreign men of letters, with the administrative power in Copenhagen, with the clergy around in the countryside, – and, not least, it was *the* important source of knowledge. How the bishop negotiated power and knowledge through objects and observations of nature will be the central theme for this paper.

A second theme will be the transition of the collection from a private to a public space. What did the transfer of the objects from private to public imply? Were there any substantial differences in the meaning, the order, and the composition of the collection when it moved from the "semi-private" household of the bishop to the "semi-public" rooms of the scientific society?

Seeing the collection and the objects in the collection as relational entities, this paper will investigate how different attachments changed the meaning of the collection and its objects.

From natural history to science: Display and the transformation of American museums of science and nature, 1930–1965

Victoria Cain and Karen Rader

“Science or natural history?” asked Laurence Vail Coleman in his 1939 study on American museums. As Coleman noted, the nation’s museums of natural history had begun to change their names in deference to the nation’s changing scientific landscape. “Science was gaining ground,” he wrote, though it had not replaced natural history altogether in American museums. Still, Coleman concluded, the term “better describes the present scope of this most venerable museum field.”

“Science museums” might have seemed more contemporary to founders, patrons and audiences than those bearing the dusty title of “natural history,” but this modernization came at some cost. Museums’ shift from natural history to science undermined museums’ distinctive contributions to research through fieldwork and devalued the importance of collections. What role could museums, long defined by their collections of physical objects, play when scientific research was increasingly preoccupied with processes and subjects invisible to the human eye? As newer forms of scientific research and education no longer required the close scrutiny and preservation of objects, what role should curators play? What authority did they retain? Would – should – the opinions of staff members in museums’ education departments ultimately matter more than those of their counterparts in scientific departments?

Some museums rapidly embraced their new identities, and smoothly integrated “science” into halls long devoted to natural history. By the 1940s and 1950s, many museums once devoted to survey collections of specimens – collections presumed to tell the story of the history of the earth and life upon it – had incorporated the physical sciences into their halls. They began to experiment with exhibits on applications of both physical and biological sciences, and devoted whole halls to the evolution of industry. This new content demanded new methods: museums moved away from the static collections and dioramas associated with natural history, and began to introduce more active, experience-based exhibitions.

Other museums, however, struggled to acknowledge and display new currents in scientific research and engineering without changing their identity as natural history museums. At these institutions, efforts to mount new ‘hands-on’ exhibits became a battleground for scientific expertise, where educators, exhibit staff, and curators debated the relative value of education and research as museum missions. By the 1960s, the American museum landscape had been transformed by these conflicts: older science museums competed for visitors and resources with “new” style science museums, which were among the most popular cultural institutions, but could achieve a coherent identity only through appeals to expertise in progressive science education.

Our paper, “From Natural History to Science: Display and the Transformation of American Museums of Science and Nature, 1930–1965,” will explain how and why many museums moved away from the content and methods of natural history. It will explore the diverse motivations for that shift, and its varying consequences for museums’ roles as educational institutions and as institutions of research. Ultimately, it will trace how debates over museum content and display strategies reinforced a profound transformation in the institutional history of twentieth century American science and technology: namely, the separation of research and public education.

Virtually, naturally or nature behind the screen: How the videogame industry is performing the role of the idealised post museum natural history museums.

Mark Carnall

Natural History museums are behind in both museum theory and digital representation. Many Natural History museums firmly subscribe to the “old museology”. Authoritative, imperialist and unquestionable in their displays. Natural History museums are also noted for their absence in the literature and discussion of “new museology” and “post museum” theory: the exploration of education through experience, debate, intangible collections and vocal histories. It is hard to conceive of intangible natural history collections; the ideas of the post museum fit better with social history and archaeology museums, yet there has been relatively little discussion of how this could be accomplished in natural history museums.

Similarly, as with most other types of museums, natural history museums are years behind in the realm of digital culture and the use of digital technologies in education and display. Virtual exhibitions, online experiences and educational museum games on the web are woefully mismatched with the presumed demographic they are aiming for. The common problems being: the use of technology for its' own sake, the use of technology that isn't concurrent digital media and virtual exhibitions designed by the technologically illiterate for the technologically literate audience. Regardless of how acclaimed these exhibitions may be in the museum world, for many visitors this is disenfranchising, jarring and ultimately ineffective.

Both of these problems could be solved by examining an unlikely source of inspiration; that of the videogame industry. Stigmatised by the media, yet increasingly recognised as an industry that goes beyond entertainment and into education. This paper looks at some of these games. Many touch on high-concept natural history themes. The Pokemon series of games, from their conception, were an exercise in purveying biodiversity and taxonomy. The acclaimed Animal Crossing: Wild World explores themes of collecting and natural cycles, over 200 species can be caught in different environments. The game also works in real time; insects and fish only appear at the same time of year as their real life counterparts. Players can also choose to donate their specimens for display in the town museum, sell them or display them at “home”. Zoo Tycoon is a game where players get to build manage and run their own zoo from rearing different animals through to making financial decisions and improving overall park performance.

It important to remember that these games are being bought and played by the same audiences using the same machines that are targeted by the overly simple museum interactive games. In addition, this is how natural history museums can use intangible collections to catch up with other museums in twenty-first-century discussions and practice of museological theory. These technologies can facilitate object based learning. Fossil material and microbiology are prime candidates for virtual representation. Aspects such as size, texture, colour and gross morphology can be conveyed through object observation and handling. Aspects such as how the parts move, how it feeds, what it eats, what eats it, the differences between males/females or adults and juveniles, how it communicates with others members, whether it is a gregarious animal or solitary etc. In the past written descriptions, paintings, photographs, videos and documentaries have been used to compliment the exploration of the natural world in museums. Now it is time to work with the newest mode of communication and interpretation to educate, inspire and innovate in natural history museums.

POSTER: The role of university earth science collections in the climate change agenda

Hannah Chalk

This research aims to deconstruct the roles of University Earth Science Collections (UECs) in the UK and Republic of Ireland, focusing on their characteristics, meanings and cultural nature in contemporary and historical contexts. The contemporary theme of ‘Climate Change’ provides an opportunity to explore current conventions of museological practice as well as providing an authentic case for examination and scrutiny. This approach allows the analysis and

interpretation of the various roles of UECs in research and public engagement to be determined and quantified.

Universities have a long history of generating and disseminating knowledge, and in the Earth Sciences, this has led to the accumulation of vast collections. Distinguishing University Collections from those held by other institutions is the unique combination of scholarship and research with specialised collections, resources and people. UECs, in particular, have undergone significant changes over the last century; suffering from a decline in the popularity of Earth Sciences from the 1920s, as well as the decrease in funding and support characteristic of the museum sector in general.

Despite their often-negative image, Earth Science specimens and samples comprise a distinct type of collection that can be accurately described as 'the real thing'. That these items are not in situ is the only difference between the specimen of rock in a collection and the outcrop from which it was taken, and even this issue can be addressed by detailed recording on site. The quality is particularly pertinent considering the rate at which new technologies are developing, and the improved precision and sensitivity that they provide. The 'unlimited' possibilities that Earth Science specimens represent should theoretically provide sufficient justification for their ongoing care and preservation. In reality, the frequent reports of deterioration, deaccession and disposal of Earth Science collections suggests this 'latent value' is either being overlooked or underrated.

The need for more research into the values and meanings of Earth Science specimens and collections is reinforced by their relevance to the contemporary issue of climate change. Central to the understanding of modern climate change and its potential impacts on humanity, is the study of past climatic change. Physical evidence of the processes and mechanisms of climatic change through the planet's history have been preserved in earth science collections across the globe. The relevance of Earth Science collections to Climate Change creates a new context in which to consider the concepts of their value and meaning.

Reinventing the HOUSE OF HORROR: Dissection and display in the Hunterian Museum
Simon Chaplin

In February 2005 the Hunterian Museum at the Royal College of Surgeons reopened its doors to the public. With over 3500 preparations of human and animal anatomy and pathology from the collection of the surgeon and naturalist John Hunter (1728–1793) the Hunterian Museum was dubbed 'Britain's new HOUSE OF HORROR' by the *Daily Mail*. Public reaction was rather more positive: the museum was shortlisted for the 2006 Gulbenkian Prize and has earned praise from visitors and critics. This paper explores the background to the Hunterian Museum and its refurbishment and discusses how a critical analysis of the aesthetic philosophy of John Hunter's original museum helped to inform its redisplay 250 years later.

POSTER: Nottingham Museums Natural History Register Project 1999–2006 and its reconciliation with the Baseline Database
Michael P. Cooper

From November 1999 to December 2006 the Natural History Register Project developed a database of 4,840 records, plus a paper archive of several thousand documents, recording some 3,285 acquisition events in the Nottingham Natural History Museum from its establishment in 1867 to 2006. It was the most thorough project of its type ever attempted in Nottingham City Museums and Galleries (NCMG). Information was derived from a wide variety of sources including existing (incomplete) paper registers and specimen lists; council committee minutes, annual reports and financial records; museum and Town Clerk's correspondence; keepers' and taxidermist's records; local naturalists' society records; and books and reports on local natural history. The project examined archive material from the Nottingham Natural History Museum at Wollaton Hall, from NCMG Archives in the Documentation Centre at Brewhouse Yard, from Nottingham Castle Museum, Nottinghamshire Archives Office, the Nottingham Local

Studies Library, the Manuscripts and East Midlands Collections of the Hallward Library in the University of Nottingham, and the archives of the Natural History Museum, London. All sources used are referenced in the database; published works and archives in the collections of the NCMG Documentation Section are catalogued in the Registry and Archives Database. A Natural History Registry was established to store hardcopy of referenced documents in fire-proof cabinets. The project has also collected and collated full sets of natural history museum committee papers and annual reports, necessitating the digital imaging of several thousand pages from other archives to fill gaps in our own collection. The committee minutes and annual reports have been transcribed into an Access database. The Natural History Register has been reconciled with the Natural History Baseline Inventory (1991–1996) and the reports of the Natural History Store Audit 2000–1 to identify surviving specimens and add key cross-reference information. Completion of the Natural History Register Project fulfils two key requirements (register and reconciliation) of Museum Accreditation and MDA SPECTRUM long lacking in the museum service.

The project has taught us an enormous amount about the collections, and reunited a great deal of valuable information with the original specimens in both the natural history and the humanities collections (especially archaeology, ethnography and industrial history all of which were once in part the domain of the Natural History Museum). Nevertheless, much collections information remains unknown and unknowable through the loss or mismanagement of collections documentation; and the value of many documents is compromised by the loss or lack of dating, authorship or context.

The Natural History Register and associated Registry and archive, along with a report on the history of the museum and collections, played a key role in a Peer Review of the collections by officers of the Natural History Museum, London in 2002. They have played a major role in the redevelopment of the museum in 2004–07. Supporting documentation was generated to demonstrate the scope of the task and the resolve with which it was approached, to give the NH Register the authority necessary to allow it to play its proper role in the future development, use and management of the collections. This detailed account also goes some way to providing a history of the documentation methods used in our natural history collections both before and during the project. Such histories are rare in museums, and useful when trying to understand legacy documentation.

On the borders of natural history: Geographical isolation and collection building in the nineteenth century

Peter Davis

In the nineteenth century, and even today, north Northumberland and the Scottish Borders are sparsely populated areas, with scattered townships in a predominately rural landscape. The local people – ‘borderers’ – had earned a fierce reputation for acquiring land and livestock by illegal means, and were a significant irritant to those in seats of power and authority. But did the border naturalists of the nineteenth century share these reiver characteristics? Did they have the ambition to ruthlessly acquire collections, status and knowledge, despite being far from the intellectual powerhouses of London, Oxford and Cambridge? Did they also create waves in the refined sea of nineteenth-century natural history?

Three border personalities – Sir William Jardine, Prideaux John Selby and George Johnston – shared a fascination for natural history and for collecting. They worked closely together on a number of major publishing projects, established societies and formed major collections. Their correspondence reveals their ambitions and their drive to make a contribution to science, but also their frequent frustrations with the responses from many of the notable figures of the day, who seemingly felt – as George Johnston expressed it – ‘that little good could come from Berwick’. This paper will explore the lives and interactions of these three individuals and their attempts to influence the scientific establishment. It will suggest that for these provincial naturalists, isolation, in effect, acted as a catalyst to action, and ultimately led to

institutions that have survived into the twenty-first century and to major collections which grace today's museums.

POSTER: *TransformNation – naturally? The geological collection at Museum Africa, Johannesburg, South Africa*
Ellen de Kock

The geological collection at Museum Africa in Johannesburg, South Africa, is more than a hundred years old and is intimately associated with the mining history and the development of the City of Johannesburg. This geological collection is the largest and best in South Africa and compliments the early years of Johannesburg's mining history. Emerging out of the separate collections of the Transvaal Chamber of Mines and the Geological Society of South Africa, the City of Johannesburg took over custodianship of the Geological Museum in 1927 and housed it within the Johannesburg Public Library Building and the Afrikana Museum. In these early years scientific endeavour was blooming and this led to rapid growth of the collection and the appointment of several dedicated curators. In 1994 the Afrikana Museum moved to new premises in Newton, Johannesburg, and was renamed Museum Africa, both signs of beginning transformation of the country. The geological collection was not placed on public display until 2000 (six years after the opening of Museum Africa). At this time the display style of the collection had not changed at all; it merely showed a systematic mineral and geology display as it had in all the previous years of its existence.

In recent years funding was obtained for a new display that will emphasize not only the artifacts, but also the educational value of the collection. Transformation is expressed in the refurbishment of the geological display, but the collection itself relies still very much on the specimens that were accumulated in its early years of existence (Fig.3). The geological museum is therefore in a transition stage with the visual display adapted to the needs of the public. But a large part of the collection will still be in storage and not accessible without prior arrangement. The management structure of Museum Africa (as the administrative body for this museum and collection) has also experienced transformation.

Transformation is connected to human societies and everything they produce. These days it is a fashionable, almost obsessive concept in South Africa. At this point in time, the geological collection is not seen as part of the people's heritage. One reason could be that the link between geology to mining, and the wealth of the City, is perceived as a negative association to the dominance of Western European and therefore white culture.

Unlike art or history displays in South African museum, geological objects are freestanding from society or community. The concept of transformation with regards to natural history collections is therefore an open one, where parts of it can be transformed (e.g. new displays, new collection policies) but the process can never be complete. The geological museum has to find a midway between the traditional museum idea and the transformation ideal.

Réaumur's precarious objects

Bettina Dietz

[Abstract unavailable.]

Science and the art of looking: University Museums and the treatment of academic natural history collections

Marieke van der Duin and Ilja Nieuwland

As the eighteenth century drew to a close, many European and North American academic institutions began to acquire extensive natural history collections, assembled out of all the strange objects that a rapidly expanding world provided. Not only is this testimony to the rising ambition of the Western world, but also to the increasingly important role that the study of nature came to play in Western intellectual life. Moreover, the increasing value placed by

society as a whole in the academic world provided scientific organisations with the opportunity to expand these collections.

But the scientific profession has changed dramatically since those days. Many natural history collections have arisen out of the need for academic study material and have remained the property of academic institutions, even in an age in which they are no longer the focus of academic investigation and have, as such, been replaced by newer and more advanced methods. This places the keepers of these collections in a dilemma: for, if academic research and education do no longer require the maintenance of extensive natural history collections, what use can they serve in an academic environment? Should they be treated as historical objects, as part of the university's or institute's history? Or should they be donated to, for instance, educational institutions that can further interest and support for the university's work?

For that reason, it is essential for keepers of academic natural history collections to analyse the shifting information structure of the objects in their care, from their primary scientific role, to their visual explanatory capacities and their cultural, historic value. Additionally, it must be taken into account how scientific research itself has changed – particularly in the twentieth century. Objects of science are said to be highly compatible with contemporary educational aims because of their self-explanatory power and visual clarity. This applies mainly to collections that have been assembled in the period in which academic research relied heavily on visual techniques. New (destructive) techniques and a focus on a different, microscopic scale, certainly have reduced the expansion of such collections. Over time, their identity will inevitably shift from their primary scientific profile to an historic one.

University museums need to develop awareness of these questions and acquire an identity both as a keeper of historical material related to academic research – and therefore part of the university itself – and as a representative of the academic world to an increasingly estranged public. Issues of the presentation of these collections, educational use as a form of functional preservation, dilemmas of restoration (restore the object's visual clarity or stabilise the historic object?) as well as the research goals of the university museum itself will be addressed in this paper.

Natural history in Nigerian museums and concentration of collections in tertiary institutions

Kokunre Agbontaen Eghafona

The indigenous use and preservation of plant and animal species, and the general concept of artifacts collections prior to the establishment of formal museums in Nigeria are discussed in this paper. The establishment and organization of the National Commission for Museums and Monuments as an offshoot of the then colonial government is examined in light of museum collections in the various museums in the country. These categories of collections under the national museum's purview and public interest in them are discussed. Specifically, this paper examines the issue of natural history collections, and main reasons for their focus in the particular locations of Nigeria's tertiary institutions. Quantitative and qualitative study on the role of natural history collection to a cross section of the Nigerian populace is carried out. A discussion of the findings and implication of the results are provided.

Nature under minus 150° Celsius: The relationship between frozen DNA and whole organisms as specimens of natural history

Rebecca Ellis

The material culture of Natural History Museum collections is rapidly changing to keep abreast with shifts in the practices of contemporary taxonomic research. More often than not, taxonomists will rely as heavily upon frozen samples of DNA as they do upon whole organism specimens displayed and archived in museums. To meet such needs, liquid nitrogen cooled vats at temperatures below -150° Celsius now archive millions of frozen tissue specimens in the

bowels of many of the world's most prestigious Natural History Museums (e.g. Ambrose Monnell Collection in New York's American Museum of Natural History).

This proliferation of deep frozen storage goes hand in hand with simultaneous developments in global information flow. The convergence of the taxonomic and bioinformatic communities, for example, is ensuring that access to digitized images of both whole organisms and of their sequenced molecules is available to all on the web. As an anthropologist of science I am interested in theorising the changing meaning of specimens and of collections as both become made up of the relationship between parts (DNA sequences) and wholes (organism) and in their virtual forms, break beyond the physical walls of museums.

In seeking to explore possible changing meanings of specimens and collections, this paper will focus upon certain issues of concern raised by some scientists about the relationships between frozen molecular and whole organism specimens. One way by which taxonomic research is validated is to ensure that all research materials are vouchered; they point back to a specimen in a curated collection. Whilst frozen tissue specimens cannot always be traced to whole organism examples, it is argued by collection curators that tissue and molecular specimens can themselves act as vouchers.

Such a claim is not a simple matter however, as currently, the ability of selected DNA sequences to identify species is a matter of hot debate. How can we be absolutely sure, it is asked, that a group of frozen molecules represent a biological species if we can't trace the relationship between the molecular and the whole organism specimen. Furthermore, the collection of tissue samples through to the extraction and processing of DNA sequences can be a delicate and hazardous procedure; DNA can be altered or damaged in the process, thereby exacerbating the concerns of many about the capacity for molecules to represent organisms. Quite clearly, the faster and easier the global flow of ensuing taxonomic information, the greater will be the concerns about data traceability and quality. Further understanding of these new dynamics in taxonomy and collection curation should contribute to a theorising of what it means for a natural history museum to house a collection which exceeds and reconfigures material boundaries.

POSTER: *Portrait of Friedrich Welwitsch – Making historical natural collections more accessible through digitisation*

Cristina Espada and Johan Olausson

For the last two years the Botany Department at The Natural History Museum, London has been participating in the African Plant Initiative (API), a project funded by the Andrew W. Mellon Foundation, which aims to digitise and database all African type specimens from the world's herbaria.

The specimens comprising The Natural History Museum's herbaria have been collected over three centuries by various collectors but when it comes to African material in general and African type specimens in particular, few other collectors are so comprehensively represented as Friedrich Welwitsch, both in terms of quantity, quality and accuracy in description.

Welwitsch was born in Austria in 1806 but later moved to Portugal where he obtained a commission as plant collector. He spent seven years in Portuguese West Africa, currently Angola, where he made over 5000 collections, many of them new to science. It was here Welwitsch discovered the remarkable plant which he named *Tumboa*, but which J. D. Hooker later renamed *Welwitschia* in his honour. Welwitsch's collections are unique, particularly because of the large amount of information included on the labels.

On his return from Africa, and finding it necessary to compare his specimens with those of British Institutions, Welwitsch obtained permission from the Portuguese Government to base himself in London where he was close to The Natural History Museum and Royal Botanic Gardens, Kew. He devoted the remaining nine years of his life to studying and arranging his collections. However, the Portuguese Government grew impatient with his progress and ultimately suspended his salary of £2 per day. Welwitsch died in 1872 and his will directed that his studies and collections should be offered to The Natural History Museum for purchase.

Following a lengthy legal dispute with the Portuguese Government, one set was retained by the Museum and the remainder of the specimens returned to Lisbon.

Although Welwitsch's achievements in economic botany eventually disappointed his Portuguese benefactors, his collections "far exceeded in number, quality and documentation any made before then in tropical Africa and remain up to this date a valuable source of information" (Stearn, 1973).

Hero, muse or fossil: Reflections on the growth of the personality museum

Sophie Forgan

Museums devoted to a single personality date from the first half of the nineteenth century. They took their place alongside other forms of commemoration as sites of pious pilgrimage, sources for inspiration and emulation, or as curious remains preserved for the edification and entertainment of tourists. The genre is dominated by literary and artistic figures, but there are also many devoted to scientists, medical men and engineers. Newton's home at Woolsthorpe or Darwin's Down House have long been popular with visitors, as well as more distant sites such as Hugh Miller's cottage in Cromarty or George Stephenson's birthplace in Wylam-on-Tyne. Since 1970 however there has been an explosion of new foundations. This paper probes some of the reasons for the popularity of this particular type of museum and the degree to which the modern personality museum differs from its predecessors. It will explore the focus on 'personality', its intellectual context, the potency accorded to sites and objects (both personal and scientific) in expressing relationships between character and achievement, the different narratives proposed and the cultural journeys that visitors might undertake. In this way we may hope to understand the significance of this particular form of memorialisation, both in terms of current museological practice and for its consequences for the public culture of science.

POSTER: Herbarium specimens and the visitor: Learning, teaching and engagement in the museum

Patricia Francis

The use of herbarium specimens in taxonomic studies, ecology and historical botany is understood by the people who study and work in these immediate areas. It is arguable that people out-side these areas have little comprehension of why this type of specimen is prepared or kept long term. Herbarium specimens too are unique amongst museum natural history objects which in addition to being originally collected to not be displayed are also the only type where the living thing has to be completely altered in form to allow them to be preserved – changing from 3-D object to 2-D specimen. Other natural history reference collections have display alternatives; with botany only models and photography but "not the real thing" can capture some of the essence of the living plant. The fragility of the herbarium specimen also poses a challenge to their accessibility.

With the current debate amongst the museum profession as a whole as a result of "Collections for the Future" report (Museums Association, 2005) institutions are challenged with finding new ways to ensure that their collections really are for everyone. In order to explain and hence justify the long term care of such herbarium specimens it is important to widen access fully to these collections. Their original importance and significances needs still to be fully supported and explained but the specimens must be put to new uses and users.

At Bolton Museum herbarium specimens are being directly used to promote engagement and learning at all levels. Some recent and on-going examples: Formal learning at primary level an ecological approach starting with herbarium specimens. Revisiting a well-recorded area 100 years after herbarium material was collected there; Formal learning at secondary level using an aesthetic approach. Looking at the architectural form of plants using a contemporary art temporary exhibition, herbarium specimens and living plants for a GCSE Applied Art project; Formal learning at tertiary level using a traditional ecological and taxonomic approach. Students examining and extracting data directly from herbarium sheets; Informal learning applied to

specialist group visits and special events promoted through the museum using a historical approach; Informally in displays for family learning where exhibitions both temporary and permanent challenge the use of herbarium specimens.

Snow globes: The frozen and transient scenes of nature

Jennifer Gabrys and Kathryn Yusoff

This paper will examine the snow globe as an example of “nature behind glass.” The snow globe presents a landscape within a submerged and drifting scene. It is at once fixed and dynamic, and in this respect is an ideal window into the unorthodox natural history of Walter Benjamin. Benjamin was a well-known collector and essayist on natural history, a natural history that was bound up with transience. Theodor Adorno suggests that even the “totality” of Benjamin’s work could be considered a form of “natural history,” with its focus on the “frozen or obsolete elements of civilization.” Drawn as he was to fossils and ruins, figures that seem transfixed, Benjamin particularly favoured “small glass balls containing a landscape upon which snow fell when shook.”

From these “microcosms,” these instances of “nature behind glass,” or of a frozen record, Benjamin was able to imagine a nature of prehistoric and extended duration; as well as a nature that emerged with the Industrial Revolution. The seemingly progressive and rapid innovation of this era settled from transience into a more sedimentary fossil record of culture. This conception of a natural history that looks both ways, and that considers the dynamism of nature and history (and of museums that move), is critical to our understanding of snow globes, both as devices that capture but also allow for speculative projection.

In this paper, we will then consider examples of snow globes that collect scenes of nature; and we will also consider how the snow globe might be an ideal device for projecting natures to come, particularly with dramatic and dynamic alterations in climate. The drifting snow could as likely be imagined as an apocalyptic ash; the submerged landscapes becoming images of ruined or flooded landscapes. We will then consider these expanded natural histories offered by an investigation into qualities of snow globes.

POSTER: Cultivating herbaria: A place for the horticultural herbarium in the twenty-first century

Susan Grayer

[Abstract unavailable.]

POSTER: New perspectives: Exploring the Natural History Museum collections as a resource for arts and humanities research

Julie Harvey

The Natural History Museum is internationally recognised for the richness and diversity of its collections. In addition to the world famous collection of fossil dinosaurs the Museum also houses 70 million specimens of plants, animals, fossils and minerals, collected from every country and ocean in the world. For well over a century the Museum has been recognised for the quality of its curatorial work and scientific research on these collections, but as Prof. Brian Cathcart (Kingston University) has stated, “as far as the arts, humanities and social sciences are concerned, the remarkable thing is that this extraordinary resource is almost untapped.” The Museum collections have a human story as well as a scientific one, recorded in personal diaries, correspondence, expedition logs, manuscripts, catalogues, archives and the largest collection of natural history artwork in the world. Further, the museum itself as a cultural institution of world standing, with traditions, educational experiences and millions of visitors, offers an exceptionally rich field of study.

The New Perspectives Project is a collaboration between Kingston University Faculty of Arts and Social Sciences, (FASS) and the Natural History Museum to reveal the potential of this resource for arts and humanities interdisciplinary research. The aims of the project include:

increasing access to a unique range of research sources at the NHM; establishing new interdisciplinary academic networks; and disseminating research results to both new academic and NHM public audiences, through a range of learning activities. Four fields have been identified as key areas of future research: history, art studies, museology and sociology/ education/ philosophy.

With the assistance of a panel of invited experts from a number of UK institutions a set of new exciting research themes will be proposed in 2008. To manage and deliver a wide range of new research and innovative learning activities the project is working to establish a new Centre of Historical and Cultural Research at the NHM.

Little Landscapes – A history of diorama-making and use

Jane Insley

The Science Museum opened its introductory gallery in 1930 to huge acclaim and an instant explosion in visitor numbers. Its popularity was largely due to the extensive use of dioramas as an interpretative technique, and the fact that the quality of the models was spectacular. The same studio of artists was responsible for about 40 of the 100 or so dioramas that are formally registered on the museum's database, and was followed a generation later by a second wave of fine landscape modellers whose work can still be seen on the museum floor.

Representation of the external non-built environment in this way is as culturally determined as the natural history habitat diorama, whose history has been studied recently by Wonders and others. However, my argument is that, for the Science Museum dioramas at least, the tradition from which they spring is landscape painting rather than a scientific equivalent of naturalistic taxidermy, and that they are every bit as effective for affective education as the natural history ones.

As the need to show ex-live specimens is not a constraint for science and technology museums (usually), the finest examples of dioramas use skewed perspective from immediately the other side of the glass from the visitor. The second generation of diorama makers used pared down versions of the original effect which attempt to retain the essence of the illusion of perspective. Examples of these will be shown.

The Science Museum dioramas should be seen in the context of subject areas as diverse as natural history, military history, geology, dolls houses and architecture, theatre and archaeology. In addition, the story of the diorama makers ties together the histories of the Imperial Institute and its successor institutions the Commonwealth Institute and the Museum of Trade and Empire (Bristol), the Science Museum and the Geological Museum in South Kensington, and some of the more iconic battlefield models now in the hands of the Imperial War Museum, National Army Museum and the Tower of London.

POSTER: Ornithology in the Dutch Golden Age – Evidence of bird expertise in the paintings of Melchior de Hondcoeter (1636–1695)

Joy Kearney

In the Netherlands, the prosperity and peace, coupled with the founding of the Dutch East India Company in 1602, meant that many citizens began to form their own collections of curiosities from all over the world. Animals and birds, shells and minerals, as well as all manner of artifacts and utensils were available, and many objects of colonial origin made their way to Holland via the East India Company ships. The concept of the 'kunstkabinet', 'rariteitenkabinet' or cabinet of curiosities was very popular in the Netherlands in the sixteenth and seventeenth century. Such collections provided evidence of man's interest in the natural world and of an important awakening of interest in scientific investigation.

Some artists of the period specialised in painting shells, such as Balthasar van der Ast, while others, such as Melchior de Hondcoeter, painted exotic birds and animals. Such creatures had been brought back to the Netherlands from countries such as Indonesia and Sri Lanka. The Dutch female painter Maria Sybilla Merian even left the Netherlands and went to

Surinam to make detailed drawings and paintings of natural history subjects which are accurate and true to life. However, the painters who remained in the Netherlands continued to observe and paint from dead mounted specimens or indeed from the living specimens that survived the long voyages and were kept in the menageries and bird gardens beloved of the wealthy merchants and landed gentry.

The importation of exotic birds and animals from the Dutch colonies for apparently decorative reasons was documented by the painters that were attracted by such an innovative and challenging subject, and principal among them was Melchior de Hondecoeter (1636–1695). His mastery of such a wide variety of different feathered creatures was unmatched. In de Hondecoeter's case, understandably, the wide variety of unusual and exotic birds in his paintings sets one thinking about the origins of the genre, and De Hondecoeter's biography by Houbraken, in his 'Grote Schouburgh', does not mention the origins of de Hondecoeter's feathered subjects at all. The geographical origins, however, are easy to investigate, and seem to encompass all of the Dutch colonies, and it is certain that the East India Company played an important role.

Melchior de Hondecoeter's work reflects the interest in birds prevalent in the second half of the seventeenth century. Museum collections further confirm this interest in birds and animals. Birds were no longer seen as mere objects but were collected and painted for their own sake and in a way that paid tribute to their natural beauty and their place in the cycle of nature. The birds appearing in the work of the Breughels, for example, were 'local' birds for the most part, in other words native species. Painters depicting the natural world were simply doing just that, with no other motive than to record nature. With the rise in popularity of menageries, particularly among the royalty and aristocracy, the painting of birds took on a more exotic nature. Menageries were, after all, tiny microcosms of worldly power and colonialism. Birds and animals were collected and brought back from abroad during conquests, and were kept as trophies by the victorious. Thus we find birds from Asia, Africa, South America and Australasia in seventeenth-century Dutch and Flemish paintings, drawn from life using menagerie specimens, all of them identifiable with zoological accuracy. Not only birds, but many kinds of exotic creatures, such as monkeys, lizards and other curiosities frequently add a touch of the exotic to seventeenth-century Dutch and Flemish still life painting. Dutch still life painting frequently sheds light on the particular interests and preferences of the collectors of the Dutch 'Golden Age'.

Fossil people: Studying research communities through their engagement with objects
Simon Knell

In 1972, Martin Rudwick published his groundbreaking *The Meaning of Fossils*, a book which interrogates the history of scientific engagement through which these objects gained human significance. My own work, as a museologist and historian of science, has attempted to extend this interpretation still further. In my first large-scale study, published as *The Culture of English Geology, 1815–1851*, I attempted to understand the social politics of possessing fossils during the period when the new science established itself. In doing so I also reflected on what this told us about geology and museums. I followed this up with a smaller but similar study of the late twentieth century. The present paper reports on what I visualise as the second of a trilogy of studies of fossils in society. It is concerned with a closed palaeontological research community. By looking at how that community engages with its fossils the study attempts to understand how that group has negotiated progress over a 150 year period. Again this is a study of collections, but here its focus is particularly on scientific interpretation; it is the fossils in the minds of science rather than as material entities which interests me. The focus of this group's research is the conodont, a microscopic and enigmatic fossil which has been the subject of controversy and sensational speculation throughout its existence. In a material sense the fossil is insignificant and yet science has managed to make it an object of great utilitarian value. In this session, however, I do not intend to tell the story of the fossil but rather to reflect on why I believe such

studies extend our understanding of material culture and the ways in which historians and museologists can use objects to interpret the world.

Frame, gaze and shot: Visitor readings of a habitat diorama

Phaedra Livingstone

Through a postdoctoral research fellowship at the University of British Columbia, I conducted a visitor study and feminist analysis of the framing and reading of large mammal habitat dioramas. Building on the theoretical model developed in my doctoral research, this study responds to Donna Haraway's assertion that the American Museum of Natural History's iconic large mammal dioramas frame a visitor's gaze as a masculine experience. Her analysis of scientific epistemologies informing the collection and presentation of taxidermy specimens is an important contribution, but Haraway's work is not adequately articulated with respect to the visitor experience, particularly in light of recent attention to diversity in visitor identity and learning. My study therefore examines habitat dioramas at the Royal Ontario Museum (Toronto), the American Museum of Natural History (New York) and the Royal British Columbia Museum (Victoria), and visitors to the ROM *African Savannah* (lion) diorama. The ROM's diorama clearly references the design elements of the AMNH lion diorama, making it a suitable comparison to Haraway's study. Visitor responses to the ROM diorama were collected through observation and intercept interviews probing both scientific and aesthetic comprehension. During the interview, visitors were also asked to photograph the diorama and to provide the rationale for framing the photo as they did. Illustrated by visitor quotations and photos, this paper will report on trends in visitor responses to the ROM diorama, the competing representation paradigms involved, and will offer suggestions for future interpretive planning using large mammal specimens.

"Collectors" and "collections": Resolving the ambiguities

Arthur Lucas and Paula Lucas

"Collection" and "collector" each have more than one connotation. To explore these ambiguities it is useful to think of the supply chain from the wild/the field to the cabinet/herbarium/garden/zoo/spirit store/gallery. What we will call the initial collector, CI, and the ultimate collector, CU, often required middle-men to mediate. A CI can be a CU, and even a middleman, seriatim or simultaneously. Investigators into the motivations of "collectors" and "collection builders" need to be aware of these distinct roles, a need that is reinforced by the fact that both have at times been described (or described themselves) as "naturalists".

Drawing upon the archives of the Natural History Museum we shall illustrate the argument by reference to the relationship between Walter Rothschild of Tring, a CU *par excellence*, examples of his sponsored, opportunistic and casual CIs, and the London middleman, the "Natural History Agent" Oliver Janson. We will also use the world-wide correspondence of Ferdinand von Mueller, Government Botanist of Victoria from 1853 until his death in 1896, who at various times acted as a CI, a CU and a middleman.

Amenable objects: Cultural perspectives on natural history specimens

Bernadette Lynch

If, upon entering the museum, all objects become 'cultural artefacts', subject to interrogation and amenable to interpretation from a host of perspectives, including a range of worldviews, and if the museum, as institution, is committed to the development of ethical, reciprocal relationships with a wide range of users, what then of the natural history 'object'?

This paper explores just how amenable the natural history specimen might be to a wide range of interpretations. We now know that relations with objects that are encountered by an individual visitor in a museum can involve a host of personal projections. The virtue of inviting the visitor to think again, to go back to beginnings, to question anew, means the museum can

find itself doing the same. This has the advantage of enabling us, museum and visitor, to ask again what things mean – as if we were asking for the first time. No longer taking ‘things themselves’ for granted, we may find ourselves experiencing an attitude of “methodic unknowing, where things are not just facts, data, objects, possessions, and become questions.” We may acquire what Paul Ricoeur called a ‘second naivete’ capable of conducting old inquiries in new ways.

The paper borrows from psychoanalytic and postcolonial theory in arguing that natural history collections in museums may be amenable to being transferred as ‘standing for’ something else, both personally and sometimes culturally. Hence, in a distinct split with the museum’s past practices, it is not always the objects in museums in and of themselves that are centrally important, but rather the relations inspired by these objects.

POSTER: *Presentation and representation: The diorama at the natural history museum*
Catarina Madruga

Diorama describes the act of *seeing through*, it has often been said. It is a device that simultaneously displays nature and its representations according to symbolic values. The diorama is read here as a prevailing visual display and a specific museological device of the Natural History Museum. It is a presentation and a representation of scientific contents. It is part of the history of the natural history museum as well as it is part of the history of knowledge in natural sciences.

Each field of knowledge builds a specific vocabulary for producing and presenting its finds and concepts. The modern museum, along with the modern paradigm, was above all a visual construct. As such, what are the ways through which the natural history museum presents itself nowadays? As the diorama loses its power and influence in the modes of display available, how should the museums relate to it and to classic taxidermy techniques?

In the nature of things? Natural science and culture revealed through the shared and separate histories of the South African Museum and the South African Cultural History Museum

Aron Mazel and Gerard Corsane

Through the Cultural Institutions Act 119 of 1998 the South African government amalgamated several national museums in Cape Town to create the Southern Flagship Institution (later renamed Iziko Museums of Cape Town). This brought together the South African Cultural History Museum (SACHM) and the South African Museum (SAM) after having been separated years earlier in 1963/1964, during the apartheid era. At that time the ‘Historical Collections’ of the SAM were transferred to the newly formed Cultural History division of the SAM under its own Director. The newly created SACHM was housed in the historic Old Supreme Court building (renamed Slave Lodge in 1998) in central Cape Town, which co-incidentally had been the first home of the SAM in 1825. The actual legal division of the two institutions took place some years later through the promulgation of the Cultural Institutions Act 29 of 1969.

A most controversial aspect of this division was that the Archaeology and Anthropology collections, which overwhelmingly related to the indigenous populations of South Africa, were retained by the SAM, generally considered to be a natural history museum, while the ‘Historical Collections,’ which formed the basis of the SACHM, included material related to the European colonisation of South Africa as well as collections from Europe, ancient Egypt and ancient Rome. This division resonated with the apartheid policies that the South African Government were implementing at time and served to promote the view that black South Africans were uncivilised and inferior to white South Africans, as reflected in the fact that the collections originating from the former belonged in a natural history museum.

While the circumstances surrounding the creation of the SACHM – and the implications thereof – have been discussed by previous commentators (e.g. Summers 1975; Davison 1990, 2004), we do not believe that it has been explored in sufficient depth. According to Summers

(1975), the origins of the split can be traced back to the 1920s when the idea of a Historical Museum at the Castle of Good Hope (in Cape Town) was mooted, and Roux (pers. comm.) has commented that there was a move afoot early in the 1940s to start a 'history museum' in Cape Town as it was felt that the aspect was being neglected by the other museums. However, insufficient linkages have been made between these – and other – initiatives and the eventual splitting of the SAM in to two museums and these are investigated in the paper.

While the primary thrust of the paper will be to explore the history and implications of the division of the SAM, a secondary component of the paper will be to consider the possible effect that the split had on the SAM continuing to display the controversial 'Bushman' Diorama (1959–2001) for several decades, despite criticisms of it (e.g. Hudson 1975) and calls for it be closed.

Give me a museum and I will raise the world

Morgan Meyer

'Give me a laboratory and I will raise the world' – such is the title of a seminal paper by sociologist and philosopher of science Bruno Latour (1984). What I want to do in this paper is to draw on Latour's way of conceptualising the laboratory to explore a museum of natural history. Drawing on actor-network theory, I will explore to what extent museums and laboratories are 'equal though different' (Kraft and Alberti 2003).

Bennett (2005) contends that 'the laboratory analogy is [...] a productive one in drawing attention to the ways in which the museological deployment of [...] knowledges [...] brings objects together in new configurations, making new realities and relationships both thinkable and perceptible'. The natural history museum resembles the laboratory in that the natural and the social order are reconfigured (Knorr-Cetina 1999). Just as laboratories are places that provide an 'enhanced' environment that 'improves upon' natural orders in relation to social orders, so does the natural history museum. Museums are relational units that gain power by instituting differences with the environment: differences between the reconfigured order in the museum and the arrangements found in everyday life. An important gain is achieved through the transport, naturalisation, and translation of animals into the ordered space of a natural history museum. Animals are made comparable by immobility, by installation, by naturalization – what lived dispersed in singular states of the world unifies and universalizes under the precise glance of the naturalist (Latour 1996). Thus, I will argue that through these reconfigurations and translations, a museum of natural history is capable of 'raising the world', in that it disciplines, stages (and 'backstages'), and eventually 'brings home' the 'natural world out there'.

VISUAL PRESENTATION

Duncan Mountford

This presentation will focus on the visual richness and multiple artistic interpretations inherent in the natural history collection, especially the object rich collection, and will use imagery – slides, video – taken in the stores of two natural history museums, Wollaton Hall in Nottingham and Derby Museum. The slides are of the natural history specimens in storage, and range from individual specimens to complete displays. The video sequences are similar, and have been edited with sound tracks that highlight the melancholia of the situation. The video imagery focuses on the melancholia of the museum stores. The objects in a museum can always provoke reflection and memory, and this can be associated with a feeling of loss. The objects in the museum store can equally imply a loss of knowledge, the consigning of certain ways of accessing an understanding of the natural world to forgetfulness. Reference in the presentation that will accompany the visual presentation will be made to the H.G. Wells novella *The Time Machine*, which contains a description of an abandoned museum of the far future and draws implication from the dismissal of knowledge this structure demonstrates. The presentation will also make a plea for the retention of the object rich natural history museum as both scientific and artistic/cultural resource, and will argue that natural history museums are unique in their connection of contemporary artistic and scientific thought.

POSTER: *A century of museographic changes at a natural history museum in the South*
Sandra Elena Murriello

The *Museo de La Plata* was conceived, at the end of the nineteenth century, as a natural history museum. Located in the capital of the Province of Buenos Aires, Argentina, it was born as a first line institution inspired in the latest museographic tendencies. Nowadays, the *Museo* is still considered by the academic community as well as by the domestic and international public opinion, as constituting a highly appreciated cultural possession. Its palaeontological collections and exhibitions are what – right from the start – gave the highest reputation and fame to the institution. Among them, special attention is given to South American fossils of the Cenozoic Era, considered unique in the whole world.

As a traditional natural history museum, it is based on its objects and, through the years, they were presented to the public in different ways, moved and reorganized within the seven palaeontological rooms always following the evolutionary foundation principles. Based on written and photographic documents and on oral interviews to key actors, this study presents the museographic changes of the palaeontological exhibitions of the museum during the last century. A five period organization is proposed as a frame to analyze the political and scientific criteria which lead to the museographic changes.

POSTER: *The value and use of biological collections in British museums*
Hannah Paddon

Biological collections are an undervalued resource in museums today. The collections are instrumental resources in biodiversity studies, as reference collections, as inspiration for artistic installations and as educational tools for the whole of society. So, why are biological collections being sidelined? Is it due to the difficult conservation techniques employed to preserve and conserve them? Or the large storage spaces needed to manage them? These collections, some of which have ties to the great biological collectors, will be lost forever if their importance is not recognised.

The research, being conducted as part of an AHRC scholarship at Bournemouth University, will seek to identify and promote the use of biological collections in museums and highlight their importance socially, economically, educationally and historically. This will be accomplished through key objectives: to investigate and describe the evolution of biological collections in Britain; to document and analyse the historical and contemporary uses of biological collections in British museums; and to understand the future of these collections in terms of their use and value.

The research will consider case study museums across Britain, investigating in-depth the issues affecting the use of biological collections in each museum. Preliminary research has shown that departmental and institutional records can be useful tools in understanding the evolution of biological collections, their collectors and the changing aspects of display and interpretation, audience perceptions and conservation techniques.

The poster will pose questions to delegates covering the issues of the 'use' and 'value' of biological collections. It will also seek opinions on: the designation scheme, MLA and DCMS; biodiversity issues including genetic, species and ecosystem diversity; global issues such as climate and habitat change and the perceived future for biological collections. It will also give delegates the opportunity to bring to light information relating to their collections, the problems associated with biological collections, the users of collections and how they are making biological collections 'count' in their institutions. This information will be sought through both questionnaires and conversational enquiry throughout the conference.

POSTER: *Lively geographies of dead animals*
Merle Patchett and Kate Foster

A geographer and an artist shared the questions: what is a zoological specimen and how can it be used? This co-enquiry brought together a geographical perspective on material culture with an environmental artist's scrutiny of context and processes of making. Use of a 'rigorous particularism' to specific individual specimens expanded upon a well-rehearsed representational approach with a conventional focus on how humans have made meaning from zoological collections. Moreover, by scrutinizing the contexts and histories of individual specimens the specimens themselves became less fixed representations of nature and more unstable assemblages of animal parts, materials and craft work. Their disarticulation therefore opened out the possibility of exploring the lively geographies of their making. By this, we mean a focus on past and emergent practices and processes that enable, drive and produce 'zoological' material, over different sites and on different scales. This is underpinned by interest in how beings of all kinds 'continually and reciprocally bring one another into existence' (Ingold 2006: 10). This form of relational thought combined with a 'make-do' method provided the tools to work with three points of converging practice: i) the skull of an extinct animal that proved far from 'dead', ii) the skill of taxidermy which alerted us to enchantment-in-the-making and iii) an opportunity to exhibit in a university zoology museum allowed us to insert, experimentally, different realities and possibilities of animal lives. These three examples of collaborative work will be presented in our poster and we invite your responses.

Taxidermy specimens: Clues for history of taxidermy and conservation
Amandine Péquignot

Using old taxidermy handbooks and documents, we can follow the history of taxidermy, the evolution of tanning recipes, and stuffing/mounting techniques over three centuries. Some methods may have been lost because taxidermists did not keep records or publish their methods. In addition, each taxidermist had his own methods and could change his practices during his lifetime. For these reasons, the specimen and its exhibition must be considered as a historical witness for taxidermy, a source for a better understanding of the techniques and a representation of scientist knowledge over the centuries.

By different examples from the Muséum National d'Histoire Naturelle such as the oldest collection of the institution called the *Cabinet du Roy* (eighteenth century), 200 deaccessioned stuffed birds prepared during the period from 1812–1897 or some specimens from Duc d'Orléans's collection prepared by Rowland Ward studio (nineteenth century, London), the author will show how mounted specimens can be exploited in different ways to reveal historic informations about taxidermy techniques. In addition, when all the historical preservation information is collected, how it can give us some clues toward understanding the current conservation status of this type of collection.

What is a natural about objects?
Perspectives from the history of science
John Pickstone

When, where, how and why were there 'natural objects'? I approach this central question through a history of the West, from the sixteenth century to the present, drawing on a variety of literatures. I link the creation of natural objects to the development of 'Historia' in renaissance Europe, to supposed 'disenchantments', and the development of taxonomy. But I keep symbolic meanings in the frame, stressing the place of the natural within the cultural. Later, from around 1800, natural objects could also be surfaces – covering deeper truths and relations determined by constituent elements, newly revealed by disciplinary analysis. How then, in nineteenth- and twentieth-century museums, academies and popular knowledge, were objects related to elements as well as to meanings? And how did these 'plays on levels' become more conscious

in our post modern museology? Finally, how might this historical analysis bring artefacts and 'art objects' into the same frame as natural objects and their elements; and how might our deconstructions of the natural illuminate its fascination?

POSTER: *Don Saltero's Coffee House: Beans and Beasts 1695–1799*
Christopher Plumb

In 1695 John Salter, the former valet to Sir Hans Sloane, opened a coffee house in Chelsea. The first London coffee house had opened in 1652 and by the 1690s the coffee house was an established social institution in Restoration London. 'Don Saltero's' was a shrewd investment for John Salter – not least because it offered customers a little extra for their cup of coffee. Hans Sloane had given a number of duplicate specimens from his collection to Salter as a means to attract thirsty and curious business and this collection grew in size as new specimens and curiosities were donated by generous aristocratic, genteel and respectable patrons.

The assorted natural and ethnographic curiosities that occupied glass cases, shelves and niches in Don's Saltero's were regularly inventoried and published in *A Catalogue of Rarities To be seen at Don Saltero's Coffee House in Chelsea*. This two pence catalogue ran to eighteen editions between 1729 and 1795 and is a valuable and rich resource for research into spectacle, exotica and natural history collecting in the seventeenth and eighteenth century.

In this poster I interrogate Don Saltero's as a prominent case study in the relationship between the 'culture of collecting' and political cultures. I suggest that the spectators and donors of rarities including a sea unicorn's horn, seal embryo, tiger, Cromwell's sword, and King William's coronation shoes perceived this material as significant in shaping political and personal identities. The coffee house had earned itself a reputation in the Interregnum and Restoration as a location for sedition and a promoter of 'free speech'. It later became a facilitator for polite society and a site for the 'penny university' – the public dissemination and verification of new scientific knowledge. Don Saltero's coffee house operated in this context and as one of the first public collections offered 'something special' to its customers and donors who were eager to be associated with its increasingly fashionable and patriotic character.

I consider the relationship of Don Saltero's public 'museum' to other sites of display including other early collecting institutions that chose to define themselves against the 'disorder' and specious nature of coffee house specimens. By tracing the patrons, specimens and publications of Don Saltero's it is possible to trace the rise and decline of coffee house collecting alongside the establishment of the museum institution as a orthodox site for display. In its heyday of the 1730s and 1740s Don Saltero's offered to its clientele the opportunity to view rarities and exotica whilst drinking a cup of coffee. These same customers might equally have paid to see the living exotica and specimens elsewhere in the city – in coffee houses, taverns, shops, the Leverian Museum or the British Museum. London in this period was a rich hunting ground for those who wanted to look at animals.

Lingering relics and cautionary tales: The unnaturing of taxidermy
Rachel Poliquin

As taxidermy sits increasingly badly with the current emphasis on nature as a source of intrinsic value, truth, and authenticity, sensitivities to animal welfare, and theoretical uncertainty about the ability of science to make nature meaningful, natural history museums are beginning to question the ethics of exhibiting dead nature. Most are no longer collecting animals for public display, and many museum – especially those with nineteenth-century roots – are beginning to emphasise the historical and moral significance of their collections. A mounted finch is somehow less charged if we know it was collected by Charles Darwin: it becomes a valued cultural artefact rather than just a dead bird. Similarly a stuffed quagga or great auk are not so much specimens as warnings, offering a dark moral lesson on nature's fragility. In other words, some natural history museums are transforming themselves into museums of cultural history and, in the process, only further accentuating culture's confidence to make nature meaningful to

humans: stuffed animals are not so much pieces of nature but cautionary tales, biographic memorabilia, or relics from past generations.

If museums are distancing themselves from the rawness of death, many contemporary artists are harnessing that same rawness and wrongness of taxidermy to draw attention to nature as unknown and unknowable within human-made systems of thought. Artists such as Damien Hirst, Thomas Grünfeld, and Mark Dion have all used taxidermied animal parts literally to turn meat into meaning in order to present unsettling visions of animal identities and experiences, whether human or otherwise.

My paper will focus on contemporary natural history museums and investigate the current motivations and receptions of various displays of nineteenth-century taxidermy. I will also examine the use of taxidermy in contemporary conceptual art in order to question more deeply how and why taxidermied animals have recently been re-imagined not as documents of nature but as cultural artefacts illustrating or critiquing past and present human-animal interactions.

The jungle books: Ethnobotanical archives as museums of nature

Sita Reddy

This paper explores ethnobotanical museums and in particular ethnobotanical archives – botanical texts, medicinal gardens, herbaria – as dynamic sites of intellectual and cultural conflict over natural history. Now more than ever, as the process of globalization raises questions about the fluidity, preservation, and authenticity not just of ‘culture’ but also of ‘nature’, ethnobotanical archives are attracting renewed interest both as repositories that safeguard nature (‘the original nature museums’), and as centers of controversy in heritage disputes over knowledge. As collections and displays of natural objects, they are bound up in questions of permanence and transience, difference and identity, wonder and resonance – issues that lie at the heart of ‘natural museology’. But as collections of textual or codified indigenous knowledge, they are also bound up in questions of representation, access and ownership – issues that move the museological debate on natural collections (from behind glass) squarely into the politics of local, state and national control over natural heritage. If ownership and control are the new realities and tropes of international museum heritage law and policy, the ethnobotanical archive has quickly emerged as an important site on which, and through which, these claims of ownership are being made.

Against this background, the paper locates the regional ethnobotanical archive as an extraordinary lens into global disputes over local natural knowledge. Drawing on a close historical reading of the Indian ethnobotanical archive ranging from seventeenth-century colonial horti and flora to twenty-first-century national databases of traditional knowledge, the paper traces some of the problems, ambiguities and paradoxes of making nature legible. Relying on James Scott’s notion of legibility as the central problem of statecraft, particularly in the organization of the natural world, the paper argues that the very process of archive creation, of ‘legibilizing nature’, works as a double-edged sword. Although the underlying bureaucratic impulse of the archive is to manage and regulate disordered nature, it also simultaneously produces new cultural objects (texts, inventories, databases) that transform the nature of knowledge; and new cultural subjects – or biological citizens – who transform the politics of knowledge through contested claims of ownership.

The paper will focus on key moments of transformation in the history of the Indian ethnobotanical archive, each revolving around the production of a different object or text: the seventeenth-century colonial botanical masterpiece *Hortus Indicus Malabaricus* (or the ‘Garden of Malabar’ that went on to significantly influence Carl Linnaeus’ taxonomy); the nineteenth-century British *Flora Indica* that established Indian botanical outposts for the gardens of Empire; the twentieth-century *Ayurvedic pharmacopeia* and *materia medica* developed for the new postcolonial Indian state; and the 21st C. electronic database Traditional Knowledge Digital Library (TKDL) compiled to prevent foreign patents in the age of intellectual property. Examined together, they demonstrate that neither these texts, nor the ethnobotanical archive, nor even

nature itself, can be treated as monoliths in museum practice. They also reveal the unintended consequences that legibility sets into motion. Each of these state-based claims over local nature inspire surprising counterclaims by indigenous groups that challenge important assumptions underlying ownership of local knowledge.

Reading the ethnobotanical archive through these disputes over indigenous knowledge will complicate the straightforward historical narrative of “botanical borrowings” by the West, and reverse typical understandings of “margins” and “centers” in globalizing trajectories of ethnobotanical exchange. The paper will end by speculating on the future of natural collections in the information age, given that new museums of nature (much like ethnobotanical archives) could well be repositories and registries of information as well as physical collections of things.

POSTER: *Pick 'n' Mix - Multidisciplinary displays in the new Kelvingrove Museum*
Mike Rutherford, Jeanne Robinson and Richard Sutcliffe

Before Kelvingrove Museum in Glasgow was refurbished, its displays were arranged traditionally by subject area. Natural History, Ethnography, Art, and Human History had their own galleries. In the new displays, objects from these different disciplines are displayed side by side. Whilst natural history objects are engaging in their own right, this new approach enables the objects to tell stories and to reach new audiences. Unusual combinations of objects act as a visual grab. Such combinations encourage visitors to look at a wider variety of objects in a new light and to think about the bigger picture. Why is the spider monkey sitting on a mahogany chair? What do a narwhal tusk and a rapier have in common? What can an oil painting tell you about geology?

Private collections and the public good: Skill and desire in early nineteenth-century natural history
Anne Secord

The individualist, private nature of British science in the early nineteenth century is well known. Less explored are the ramifications that this social organisation of science had for the development and production of scientific knowledge in this period, not least for the building up of collections of natural objects. Taking botany as my primary example I shall examine the pains and pleasures involved in the making of collections, and the ways in which techniques of accumulation produced the persona of the private collector dedicated to the public good. The changes that this persona underwent in the scientific reform movement of the 1830s serve to underline the continuing prevalence and importance of private collectors and collections at this time, and allow us to reassess the impact they had on the development of British science in a period when botany was one of the few sciences with professional practitioners.

Exoticism and calculated nature – Horticultural exhibitions from the world fairs to the botanic gardens and the glass house in the second part of the nineteenth century
Kerstin Smeds

“*Que faisait-on à ce bal?*” (what did one do at this ball?), asked Victor Hugo when enthusiastically describing the opening festivities of Jardin d’Hiver in Paris in 1848. And he replied himself: “*On y dansait un peu, on y faisait un peu l’amour, et surtout on parlait politique*” (one danced a little, made a little love, but particularly one discussed politics).

In this paper I will discuss the interaction and mix of exoticism, politics and science in the development of the Glass House (Conservatories, Wintergärten, Jardins d’hiver), Horticultural exhibitions and Botanic gardens between 1850 and 1900. The starting point is the Western history of Utopia, South Sea exoticism/anthropology, and the development of the Glass House. Beginning with the Great Exhibition in London 1851, there was an urge to integrate Nature into the great “exhibitionary complex” of taxonomy, evolution and fair. The development of the exhibition of Industry and that of Nature has been an intertwined story in the “Cartesian program

of mastering and possessing Nature” of the Western world. My point of view is epistemological, philosophical and historical.

The Glass House is an experimental field of display and control....trying to combine actually incompatible entities and concepts: the Divine creation together with sensual and worldly entertainments of Man. The Glass House is a miniature of Civitatis Dei, a micro model of the divine universe, of classification and order, but at the same time a place where Man has gained absolute control over Nature. In spite of its scientific and taxonomic ambitions the Glass House/ Palm House is also a locus amoenus, a playground for Man, with great erotic and social potential – a place of utopian dreams. I will draw epistemological parallels between the concepts of “garden”– hortus conclusus – and “exposition”, and scrutinize and compare the systems of display in both. One focus is on the horticultural and exotic departments at the “expositions universelles” in Paris 1855 and 1867 and the parallel development of Jardin d’hiver, Jardin des Plantes and the Museum of Natural History in Paris.

POSTER: *Gender representation in the natural history galleries at the Manchester Museum*

Rebecca Smith

I undertook a feminist critique of the natural history galleries at the Manchester Museum, and detected androcentric biases in the displays. Male specimens dominated female specimens with respect to number, the postures and positions in which they were displayed, and in the quantity and style of language used in interpretative text. The reasons for these biases were various, reflecting both historical and current views of gender within the museum and society beyond. In response to these findings, and the reactions they received from museum colleagues, the museum staged an intervention on the natural history galleries, exposing the biases found within.

POSTER: *No Glass! Open display of natural history specimens at Kelvingrove Museum, Glasgow*

Richard Sutcliffe, Mike Rutherford and Jeanne Robinson

Kelvingrove Museum in Glasgow re-opened to the public in July 2006 after a £28,000,000 refurbishment. A major part of the philosophy of the new displays is to have fewer physical and intellectual barriers to visitors. As a result, many objects, including large numbers of natural history specimens, ranging from a froghopper to Sir Roger the elephant, are now on open display. Instead of physical barriers, 'psychological barriers' were used in some areas to prevent specimens being touched. The advantages and disadvantages of this approach will be discussed.

Between convention and invention: Paolo Savi and his natural history illustrations

Liv Emma Thorsen

Paolo Savi (1798–1871) was director of the Natural History Museum in Pisa during the period 1823–1840. He was a scientist and taught zoology, comparative anatomy, geology and mineralogy at the university of Pisa. Savi is famous for his *Ornitologia Toscana*, published in four illustrated volumes between 1827 and 1851, and known as the father of Italian ornithology. Savi initiated a large-scale collection of more than 5000 new specimens. An impressive number of the collected birds and mammals were mounted and exposed in the museum. According to the sources, Savi himself was the master of these works. In 1838 he wrote that “l’arte di preparare gli animali è arrivata nel Museo Pisano ad una perfezione che non è facile il trovare altrove” – the art to prepare animals, in the Museo Pisano has reached a perfection which is hard to be found elsewhere.

Several scholars have pointed at the different conventions underlying representations of birds compared to mammals in the tradition of natural history illustrations dating back to the

second half of the eighteenth century. While birds very often have been presented sitting with their wings folded – an astonishing fact since human avian fascination arise from the fact that birds can fly – mammals, and especially carnivores, have been made protagonists in dramatic and animated tableaux (Irmscher 1995, Salvi 2002, Wonders 1993). Typically of Savi's compositions is the struggle between the wild and the tame in which the wild animal is interpreted not only as aggressive and ferocious, but also as sublime. Another striking feature is the expressive realism in the presentation of the struggle, showing blood, intestines and agony.

In this paper, I will discuss Savi's taxidermy tableaux in the light of these two traditions by examining and contrasting some of the animal groups to the illustrations in Savi's Tuscan ornithology. The principal theme in my discussion is the relationship between the illustration, the interpretation of the animal in question and the formalization of the interpretation.

Biodiversity publics: Nature, humans and machines

Johannes Vogel

Natural History Museums have unique opportunities to bring the wider public and Science closer together. Natural History Museums are world leading scientific institutions, exploring biodiversity and discovering the natural world and collections are at the heart of this 300 year old endeavour. However, these traditional, 300 year old practices, are currently undergoing rapid change through 'geneticisation' of biology in general and biodiversity in particular. Facing up to scientific challenges of the twenty-first-century museums can engage with their visitors about this, through exhibitions, increasingly via the World Wide Web, but also through direct engagement and learning. With an ever greater convergence of biology and policy modern society needs critically engaged and scientifically literate citizens. Natural History is part of people's everyday life, thus, museums have the opportunity to connect with people via their experiences, practices and needs. Using the unique combination of collections, research and public engagement we can built on peoples interest and existing knowledge to foster 1) better engagement, 2) encourage the practise of science by non-scientists, 3) a better understanding of (biological) science and thus encourage scientific citizenship.

Darwin and the imperial archive

Paul White

'The imperial archive' is an expression used predominantly by literary scholars to describe a vision that emerged in the Victorian period of an empire ruled by knowledge rather than brute force. This view of knowledge as a form of governing power gained a new impetus from emerging disciplines of geography, biology, and anthropology. Networks of collectors and surveyors issuing from institutions like the British Museum, the Royal Geographical Society, and the India Office supplied civil bureaucracies with facts gathered at a distance, facts that were both discrete and comprehensive, cumulative and unifiable. Such an archive has been seen not as a facet of imperial control, however, but rather as a substitute for fragile territorial dominion: a "fantasy of knowledge collected and united in the service of state and Empire" (Richards). Darwin's evolutionary theory is regarded as crucial to this programme, providing a unifying framework in which information about peoples of the world could be placed, and a legitimation of European conquest. Historians of anthropology and post-colonial scholars have tended to agree about the complicity of Darwinian theory in the proliferation of racialist discourses that seem, in turn, to underpin imperial practices of collecting, ordering and display in the period, such as the census of British populations in the colonies launched in 1869 by the Ethnological Society, that involved the mapping and measurement of native peoples for the purposes of racial taxonomy.

In addressing this question of Darwin's relation to imperial culture, I want to take a different approach. Rather than look primarily at Darwinian theory, or as Darwin scholars have often done, to look at his biography or publications, I want to examine instead his own imperial archive, to look at the practice of building such an archive, as it were, from the ground up, and

in its migration from private collection to public display. Darwin's zoological and botanical collecting, pursued through a world-wide network of correspondents, is now well known. Still relatively unexplored however is his large and varied collection of materials on human evolution, in particular, on emotional expression, gathered through scientific questionnaires and photography.

I will argue that there was a distinctive difference in the ways in which Darwin pursued knowledge of non-Europeans, as compared with the techniques by which other naturalists sought to generate a science of colonized peoples. This comparison of how the imperial archive was actually assembled will serve to highlight and critique some of the assumptions behind scholarship on imperial history and anthropology. If the 'imperial archive' appears detached from the application of force, it is because the colonial 'context' has been erased from the original material in its collation and transfer to print. In many cases, the emotions Darwin gathered from non-European peoples could only be generated in circumstances of imperial dominion, and in settings where British control was absolute. On the other hand, the movement of such materials from private to public knowledge was in itself highly fragile and contingent. Darwin's collecting was informed by new technologies of observation, measurement and display, whose implementation was far from straightforward or authoritative, and in the case of ethnographic photography, ultimately uncontrollable.