

## Editorial

Dear All,

It was very pleasant meeting with a number of you at the conference this year – I was very glad to announce that the forum on our website is up and running and I hope that you have had a chance to look at it and maybe post a question or two. You should by now have received your membership number in the post with your log-on id – please remember to register when you use the forum for the first time; when you get to the forum screen, there is a link on the bottom left corner which says, 'new user registration' - please click on this and enter the details that were on your membership card. You can then choose more memorable log on information and continue on to post questions as well as respond to questions that others have posted. As we are having slight problems with the hosting of our website, we would suggest that, for the present, you use the following link to post questions and answer posts on the forum:

[http://www.nhm.ac.uk/hosted\\_sites/natSCA](http://www.nhm.ac.uk/hosted_sites/natSCA)

Do contact me if you experience any problems, I'll look forward to seeing you on the forum!

Jess Marsh has joined the editorial team as Assistant Editor, so please feel free to contact her if you would like to send any papers or discussion documents, or if you need to discuss any potential submissions – welcome, Jess.

Gerald Legg has raised a worrying point about the Human Tissue Act which comes into force in September of this year (see inside for further details). The proposed fee for this year could be £5000, and any material that is dated between 100 years ago and the date of the Act (2006), seems to require a licence.

- Victoria Papworth

### ***Contributions for Issue 10, November 2006***

All articles, letters, news, adverts and other items for inclusion for the next issue of the NatSCA Newsletter should be sent to the address below by November 1st:

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## **Botanical Spirit Collections**

*Presentation given by Emma Tredwell (Spirit Collection Manager, RBG Kew Herbarium) on 17<sup>th</sup> November 2005 to the NatSCA Botany Collections Seminar.*

### **Overview**

The aim of this presentation was to give a brief history of fluid preservation, discuss why and how botanical material is preserved in spirit, and explain how the RBG Kew spirit collection is managed.

### **History of fluid preservation**

Spirit collections are also known as fluid-preserved or wet collections. Fluids consisting of oils and resins were used in ancient Egypt to preserve the organs of the dead as part of the process of mummification. Fluid preservation using 'spirit' began in the mid 17<sup>th</sup> century, when Robert Boyle (1627-1691) discovered that natural history specimens could be preserved in 'spirit of wine' (ethyl alcohol). Perhaps the next major event in the history of fluid preservation was the discovery of formaldehyde by Alexander Butlerov in 1859. Formaldehyde was found to be a much more effective chemical than ethanol for preserving plant specimens. In the present day there are a diverse range of chemicals used, including ethanol, methanol, glacial acetic acid, glycerol, formaldehyde and chloroform.

### **Why preserve in spirit?**

The traditional method of preserving botanical specimens is to press and dry them, so why are some preserved in spirit? Wet preservation is of benefit for fleshy flowers and fruit that do not make good dried specimens. In particular the 3-dimensional arrangements of flower-parts are better observed in spirit specimens than pressed and dried ones. Measurements taken from spirit material can also be more accurate than those from dried material, where shrinkage may have occurred. A further important use of spirit specimens is for botanical illustration, as spirit material retains a life-like appearance. In addition to this, the collection of flowers and fruit in spirit whilst on expeditions can assist in the rapid identification of the material on its return to the Herbarium. This is particularly true for orchids, where identification often relies on being able to see the flowers in a 3-dimensional state.

### **How to preserve in spirit – fixation and preservation**

The aims of fluid preservation are to keep the specimen in a life-like form, protect it from agents of decay and dehydration, minimise shrinkage and swelling and hence to preserve the specimen indefinitely for future use.

To achieve these aims you must first fix the plant tissue to prevent degradation, as plant cells will normally begin to break down following the death of the plant. A fixative such as formaldehyde or glutaraldehyde can be used to form covalent bonds (cross-links) between the molecules composing the tissue. Ideally, fixation should be done as soon as possible after the plant is collected.

Alcohols such as ethanol are known as 'pseudofixatives' as they do not form covalent bonds, but instead disorder the protein and alter patterns of hydrogen bonding.

After fixation it may be desirable to transfer the specimen to a preservative such as ethanol, isopropanol, glycerol or phenol. The preservative must be germicidal, as safe as possible to work with and have no adverse chemical reactions with the plant specimens. The preservative should also protect the specimen from becoming brittle and it may also be desirable if it can help maintain the colour of the specimen.

### **Spirit mixes**

At Kew we store all botanical spirit specimens in 'Kew Mix'. This contains 5% formaldehyde (to fix the tissues effectively), 5% glycerol (to prevent the material from becoming brittle), 53% industrial methylated spirit (to act as a preservative) and 37% water (to achieve a desirable dilution).

Due to the toxicity of formaldehyde, we transfer specimens to a different mix when they are removed from the collection for study. This is called 'Copenhagen Mix' and contains 70% industrial methylated spirit, 28% water and 2% glycerol.

### **The RBG Kew spirit collection**

Victor started the spirit collection at Kew in 1930. S. Summerhayes, who was the curator of the orchid herbarium at that time. As a result of the incorporation of existing collections, the spirit specimens themselves date back further than that, some as far as the 1830s.



The spirit collection currently consists of over 69,000 plant specimens preserved in fluid and stored in glass jars. The collection is rich in diversity, with 371 plant families represented. Jar sizes range from 70ml to 3,000ml, with some out-sized jars for specimens such as the flower and fruit of *Aristolochia grandiflora*, and the male cone of *Encephalartos hildebrandtii*. The RBG Kew spirit collection is probably the largest botanical spirit collection in the world. It is also one of the world's largest and most diverse collections of orchids in spirit.

**The storage environment**

The collection is stored at a constant temperature of 12-16 °C in order to minimise evaporation and to protect the specimens from extremes of temperature. The specimens are kept in mobile banks of drawers with larger jars on static shelves with sliding doors to protect specimens from daylight. The storeroom is fitted with sensors to allow 24-hour monitoring of both flammable and toxic gas levels. The specimens are given a unique number and arranged numerically to reduce the handling that would be involved in curating a systematic arrangement.

All work involving the opening of the jars is carried out in fume hoods in an adjoining laboratory.

**Choice of materials**

The jars currently in use are made of glass with straight sides and wide mouths. A variety of lids have been used within the collection, including metal (which can become rusty), glass stoppers and plastic screw-on and snap-on lids. Plastic snap-on lids have been found to be effective at preventing evaporation and are easy to handle, but those made of PET can split after some time in use. A UniPin fine line pen (black 0.8, from Mitsubishi Pencil Co. Ltd.) is used for handwritten internal labels. Archival paper is not used, although we are aware that Resistall has been recommended for this purpose.

**Record keeping**

Each spirit specimen is given a unique number and all the label data are recorded on the Herbarium Catalogue database. This is part of the electronic Plant Information Centre (ePIC) and can be accessed at <http://www.kew.org/epic/index.htm>. All label data are entered, including the plant name, location, collection details, plant description, and notes. This also includes links with dried herbarium specimens, the living collection, illustrations, photos and slides.

**Spirit collection maintenance**

The specimens are checked on a rotational basis for evaporation, breakage, and deterioration. A record is kept of all loans, both internal and external to Kew.

When plant parts are dissected they are placed in vials and returned to the jar for future reference. When new determinations are made they are added to both the jar label and the database.

**Content and uses of the RBG Kew spirit collection**

Orchid specimens currently account for about half of the collection (31,200 + specimens), but the following plant families also have a large presence in the collection: Asclepiadaceae (3,000 +), Lentibulariaceae (2,000 +), Araceae (2,000 +), Euphorbiaceae (1,600 +), Palmae (1,200 +) and Rubiaceae (1,100 +).

The collection is used predominantly for taxonomic research, by both local and international researchers. It is also used for other scientific study, for example in the fields of entomology, palynology, ethnobotany, plant anatomy and developmental biology. Botanical illustrators regularly use the collection as a valuable source of life-like material to make drawings from. In addition the spirit specimens are, on occasion, used for historical research.

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## The Myco-herbarium at Hampshire County Council Museums Service: Storage and Preparation Issues

*Presentation given by Simon Moore*

*(Natural Sciences Conservator, Hampshire County Council Museums, Libraries and Archives Service)  
on 17<sup>th</sup> November 2005 to the NatSCA Botany Collections Seminar.*

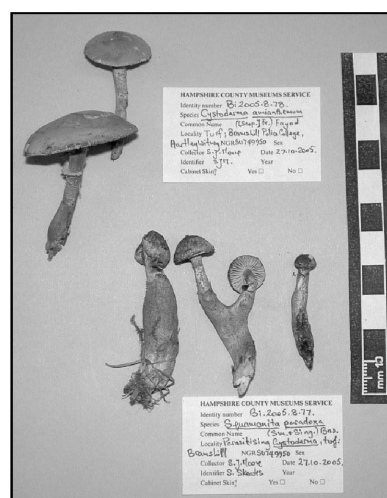
**Abstract**

The herbarium of macrofungi at HCCMS now contains over 2000 specimens. Of these, 90% are from Hampshire and over half of these are from the fungal rich New Forest. Apart from 345 specimens prepared by controlled air-drying, collected in 1974 by the then Keeper of Biology Simon Davey, the remainder of the collection has been freeze-dried. The advantages of using this technique over air-drying are shown.

**Introduction**

Hampshire has one of the richest and most diverse mycotae in the UK, largely due to the presence of the New Forest, which combines a mix of differing habitats – pinewood, deciduous, heathland, grassland, marsh and the ubiquitous presence of horse dung. Over 2,500 species have been recorded from there alone (about 88% of the British mycota) and the number increases each year. There are several groups of local experts, notably the Hampshire Fungus Recording Group (HFRG) comprising knowledgeable amateur mycologists who obtain permits to search the most remote and often restricted areas of the County. The resulting finds frequently comprise some unusual or rare species, many of which find their way to the HCCMS collections if the author is present on a particular foray day.

Figure 1: Archival photo of the rare and ominously named Powdercap Strangler, *Squamanita paradoxa* and its host the Powdercap, *Cystoderma amianthemum*



**Preparation**

Specimens are quickly frozen to prevent deterioration, although spore prints are taken from some to aid in identification. The spore prints are left to dry so that they adhere to the appropriately-coloured background. After at least 24 hours freezing at -23°C, the specimens are moved into an Edwards EF2 freeze-dryer (c. 1970) and freeze-dried at -25°C and at a vacuum decreasing to 0.01 atmospheres. After a few days the smaller fungi are ready, the larger and fleshier specimens or hardened brackets can take up to 2 weeks. The specimens are weighed once or twice a week to check their weight loss and once constant weight has been achieved they are transferred to a dehydration chamber (30% RH) to warm up to room temperature. They are then transferred to airtight polystyrene boxes, identified and labelled with all of their data recorded. Spore prints are stored with them as well.

Slide preparations of spores mounted in lactophenol blue will soon also become part of the collection.

About 10% of the specimens are sliced sagittally down the mid line and mounted on herbarium sheets within folders so that the generative cells can be examined more easily.

**Pros and Cons of freeze-drying**

Despite the sensitivity of freeze-dried specimens (see below), they are no more light or moisture sensitive than air-dried specimens. The chief advantage of this process is that the overall morphology of each fruiting body is unaltered from the day it was collected.

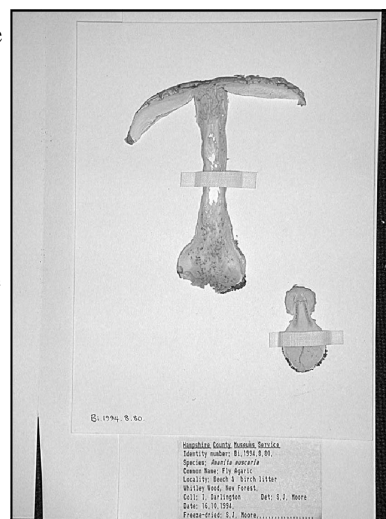


Fig. 2 Sagittal slice of *Amanita muscaria*, mounted on herbarium sheet with linen straps

There are those who have misconceptions about freeze-drying and worry that cell walls will collapse during the process. Bear in mind that freeze-drying maintains cell walls at exactly the same dimension as when the specimen was part of the living fungus. These do not thaw during the process so that exact cellular dimensions are correctly maintained.

Quenching specimens in liquid nitrogen will prevent tissue rupture through gradual growth of ice crystals (as in a freezer) and is certainly an advantage if available.

Purchasing a new freeze dryer is expensive and beyond the budgets of many smaller heritage organisations. Most will go for reconditioned models and these can be expensive to maintain, but over a long period, as compressors and vacuum pumps eventually need replacing and refrigerant gas leaks need topping up.

**Storage**

Fungal specimens are stored in airtight polystyrene boxes, the more fragile on beds of acid-free tissue or polyester batting for larger specimens. Batting is not used for specimens with characters that could snag. The boxes are stored in Treston plastic drawers arranged systematically in metal cupboards.

These units are kept in a room that is maintained at 45% RH to prevent partial rehydration of the specimens. The low RH also discourages pests from coming near although wooden cabinets and shelving would warp slightly in the longer term.

Some myco-pigments are light sensitive or slightly change their chemical composition on drying. Pale hydroids (hedgehog fungi) become mid brown after a few weeks and other genera (cf. *Maramiellus*) are similarly affected. The bright red pigment of the Fly Agaric (*Amanita muscaria*) fades to orange.



Fig. 3 Storage drawers of mycenoid fungi.

**Recording and data-basing**

Specimen finds are initially put into an Excel spreadsheet and then transferred onto a MODES database. For each specimen entry, the accession number is added together with its scientific name and authority, its synonyms or outdated classification, its English name, its locality split into five parts: parish, site name, association, Watsonian Vice County and grid reference. The finder's and identifier's names are also recorded and the date of its find together with any notes about the individual specimen and a cross-reference for its pictorial file since each entry, for a different species, is accompanied by a photograph with a scale and the find label .

The data is now available on our website:  
[www.hants.gov.uk/museum/biology/index.html](http://www.hants.gov.uk/museum/biology/index.html)

**Suppliers**

For polystyrene boxes: Stewart Plastics, The Stewart Company, Stewart House, Waddon Marsh Way, Purley Way, Croydon, Surrey. CR9 4HS. Tel.020 8603 5700.

For plastic shelving units: Treston, Finland - via Key Industrial: [www.keyind.co.uk](http://www.keyind.co.uk) Tel. 0845 6040660.

## Conserving Lightfoot's Algae

*Presentation given by Jenny Bryant (Curator of Algae, Natural History Museum, London)  
on 17<sup>th</sup> November 2005 to the NatSCA Botany Collections Seminar.*

*Flora Scotica* (1777) by the Reverend John Lightfoot was the first flora of northern Britain in which Linnaean binomials were used; eighteen of these were newly published algal names (Dixon, 1983). In 1791 Lightfoot's collection was in the possession of Queen Charlotte (wife of George III) and was already in poor condition when examined by Samuel Goodenough. He suggested that it needed specialist care (*l.c.*). Subsequently, the collection was moved to Saffron Walden Museum, thence to RBG, Kew (K). However, the algal specimens remained at Saffron Walden, to be rediscovered in an attic (in poor conservation conditions) in 1958 (Dixon, 1959). From there they were first transferred to K and then to BM.

In 2003 the collection (of approximately 600 specimens) was the only major historic item remaining in the backlog of the BM algae section and a start was made to incorporate it. The state of the original specimens and paperwork was found to be poor and extremely fragile. Preliminary examination showed that many brittle specimens would deteriorate substantially if they were handled. They bore the original binomials, as no updating of nomenclature or re-identification had been attempted.

Emma Ruffle, then one of the BM team of herbarium technicians, was consulted and we agreed protocols for the consolidation and mounting of the material. Emma was chosen for her expertise in paper conservation, proven carefulness and attention to detail. She used her conservation skills and dexterity to stabilize the specimens and render them sufficiently safe for the further handling necessary during nomenclatural update and data entry.

The specimens were first taken out of the 18<sup>th</sup> century paper covers; annotations on the covers were removed and kept with the specimens. Some of the specimens were so delicate or fragmented that they had to be put into folds of Japanese tissue before they could be put into herbarium packets. Bespoke packets, prepared from archival paper, were made for the large specimens. No specimens were put in the press and all were encapsulated using the original or archival paper. Labels were repaired using Japanese tissue and some were held in Melinex sleeves when either too fragile to mount or with annotation on both sides. The main conservation aim was to minimize future handling of the fragile material.

During the conservation and incorporation of the collection the BM curator found some previously unrecognised Type specimens and two of the earliest named algal records for the Greater London area. An interesting development on the day of the workshop was that the conference delegates from Plymouth Museum recognized some of the writing on the Lightfoot material as being the same as for collections in their charge (probably that of Samuel Goodenough).

### *References*

Dixon, P. S. 1959. Notes on two important algal herbaria. *Br. Phycol. Bull.* 1: 35-42.

Dixon, P. S. 1983. The algae of Lightfoot's *Flora scotica*. *Bull. Br. Mus. Nat. Hist. (Bot.)* 11: 1-15.

Lightfoot, J. 1777. *Flora scotica*, vols 1 & 2. London.

### ***Self-destruct acidification in carrageenophyte algae***

During the 1980's and 1990's marine algae specimens in the BM herbarium were found to be suffering acidification. This self-destruct process is caused by spontaneous hydrolysis of sulphate half-ester groups associated with carrageenan, a commercially important algal product (see Nelson and Falshaw in Taxon, vol. 48, 1999). The deterioration has no known trigger and if the acidification remains unchecked it destroys the specimen and the sheets filed above and below. Physical removal of the affected parts, which become blackened and sticky, and re-mounting can halt the process, but not in all cases. In order to monitor this problem photocopies are made before and after remedial curation and a regular check of the affected carrageen containing genera is carried out. The phenomenon is a worldwide problem in herbaria and was *not* noted prior to the 1980's.

## **A Course on Fluid Preservation at Oxford University Museum of Natural History**

**3<sup>rd</sup>-6<sup>th</sup> April 2006**

**- Lisa Conyers**

The Zoological Collections at Oxford University Museum of Natural History (OUMNH) hosted a course on the techniques required to maintain historical collections of fluid preserved specimens on 3<sup>rd</sup>-6<sup>th</sup> April 2006. The course was devised and run by Simon Moore of Natural-History-Conservation.com and the Hampshire Museums Services, sharing his 20 plus years of expertise in this field of Museum Conservation, with the local organisation by myself

Having recently started working in the OUMNH, I found myself in the unenviable position of having to 'sort out' the collections within the Invertebrate Spirit Store. Having had little previous experience I decided I better find somebody who could help, hence approaching Simon Moore. He told me he had been contacted by staff at other Museums who were also in the dark about the best way to tackle and treat deteriorating specimens. The ensuing negotiations resulted in the Zoological Collections at the OUMNH providing the venue for this course.

If you have any spirit preserved historical specimens in your collections and want to maintain their integrity, then I would highly recommend attending this course, which is specifically designed to teach the history, techniques and tricks of the trade to deal with these notoriously difficult to maintain specimens.

Attendees on the course travelled from Manchester, Bolton, Newcastle, Bristol and London and even as far as the National Museum of Australia in Canberra. Each and every one of us had different backgrounds, varying responsibilities in our establishments with a diverse range of experience and knowledge, but we all were responsible for the care and curation of each of our museums' spirit preserved specimens. The diversity of the attendees also provided an opportunity to question procedures in other institutes, and whether other systems could supplement our own procedures.

The course comprised a combination of presentations and practical work, in which specimens, provided by the host institution, were supplied in various states of distress as a means of identifying problems and how to proceed with remedial treatment. The conditions we tackled included dehydrated specimens, contaminated preservation fluid, fungal growth inside the jars, damaged specimens and detached specimens. In addition to work carried out on the specimens, we were also shown techniques in glass cutting, drilling and grinding, making glass needles and polypropylene stoppers, how to make a specific gravity detector, identification of preserving fluid, celloidin repair of specimens and jar sealing.

This course has shown that the majority of specimens, no matter how dreadful they look, are capable of being treated and restored as close as to their original condition as possible.

Many institutions find the task of caring for their spirit collections problematic, as quite often jars are stored in the most unsuitable of locations, usually many deep on shelves, in areas with poor lighting and ventilation, etc. However, once a collection has been brought up to an acceptable standard of curation a maintenance programme can then be implemented, which should reduce the risk of specimens being left to deteriorate once again.

Attending this course has given me the confidence to deal with the problems the specimens under my care present to me. I have a better understanding of how the specimens will react to the treatment, and that I am not inadvertently damaging them further. I also feel confident to tackle specimens which I may have previously thought as beyond help, as they may in fact not be such a lost cause after all.

## Human Tissue Authority - Notes From The Public Display Seminar (22.6.06)

**-Dr Gerald Legg, Keeper of Natural Sciences,  
Booth Museum of Natural History, Brighton**

The Human Tissue Act 2004 provides a new legal framework for the storage and use of tissue from the living and for the removal, storage and use of tissue and organs from the dead. A seminar was held at the Royal College of Surgeons on 22<sup>nd</sup> June 2006 at which representatives from the Human Tissue Authority (HTA) were present and explained the Act and its ramifications.

As far as the Human Tissue Act is concerned the principle points that directly effect museums are:

- What are human remains in the meaning of the legislation?
- The age of the material and its date of acquisition in relation to the commencement of the Act – how old is it?

Human remains include whole bodies or parts thereof, but exclude hair and nails. For museums like ours this legislation concerns bodies or parts thereof from the dead, and in our case includes skeletal and pathological material. The age of the material is critical in terms of exemption. No licence is required to store/display the body of deceased person or parts of such a body if the person died before 1<sup>st</sup> September 2006 (the date the relevant section of the act commences) **and** at least 100 years have elapsed. The need for *consent*, a key part of the Act, is not applicable to 'older' material and need not concern us as it is inappropriate with respect to our 'anonymous' human tissue.

One of the most important regulatory functions of the HTA is licensing. A licence is likely to be required for the use for public display of human bodies and human tissues. The Act lists among the licensable activities:

*' the use, for the purpose of public display, of –  
- the body of a deceased person, or  
- relevant material which has come from the body of a deceased person.'*

*References to 'public display' in relation to the body of a deceased person do not include:*

- display for the purposes of enabling people to pay their final respects to the deceased,*
- or*
- display which is incidental to the deceased's funeral*

*An activity will be excluded (from this Section of the Act) if:*

- it relates to the body of a person who died before the day on which this Section comes into force or to material which has come from the body of such a person, **and***
- at least 100 years have elapsed since the date of the person's death.*

What is also important is 'display' and includes 'storage', so if material that falls within the licensable definition of the Act but is not displayed a licence is still required. This is further complicated by the need to include storage and display as separate licensable *activities* within a licence. If material is in more than one building then in some circumstances more than one licence is required! However, there is provision to include *satellites* within a single licence.

For licensing purposes each institution applying for a licence will have a *Licence Holder*, which, should ideally be the corporate body rather than an individual. The Licence Holder will appoint a *Designated Individual* responsible for the implementation of the Act and to ensure the act is adhered to. It is not appropriate to go into the details of this at this stage but only to comment that the person concerned must be of sufficient calibre and have an appropriate scientific background and understanding of the Act.

Once an institution is licensed the HTA inspect the Licence Holders to ensure standards are maintained.

Should other museums and we need a licence? This is the critical and potentially, at least at the present time, expensive problem. Do our remains predate August 31<sup>st</sup> 1906, i.e. are they more than 100 years old as of the commencement of the Act? In some cases this is difficult to say. The HTA's comment on this was 'if



*in doubt get a licence*'. Fine for them to say but they went on to explain that their funding was largely through licensing so they are out to make money to run the bureaucracy. Everyone was staggered when they suggested that the first year's fee would be £5000 whether you are Ditchling Museum with a box of slides or a major medical college like UCL. They claimed that they needed to determine who needs licensing before they could settle on a cost. In other words they do not really know who has human tissue and so have no idea how much 'income' they will make. We argued that it would be better to have the first year free or nominal and then judge what the rate or rates should be. Their 'one size fits all' solution was scorned, but it did not seem likely that they would budge.

As far as the HTA was concerned institutions that have human tissue should know all about the Act and be ready to deal with its consequences. This was clearly not the case, and was obvious to me since I was the only representative from any minor museum. Ignorance of the law was no excuse. An important comment made in connection with this was when small institution do learn that they have material that could be licensable they would dump it rather than go through the trouble and expense of licensing. By dumping it was hoped this was not literal, but rather, the material would be quickly offered to other larger establishments, much in the same way as happened with firearms. Alternatively material will be ignored and not 'declared', but when asked if they were having a human tissue police (tongue in cheek comment) it was said there would be no proactive searching for collections of human tissue and strict policing. In fact if anyone is found to be in breach of the Act they are not liable to prosecution but would have to put matters right one way or the other. No thought had been given to the consequences for those larger museums in terms of additions to their collections and the subsequent cost involved in curation etc. The points were made strongly to the HTA.

It was clear that the position of small museums with the odd collection of a retired doctor's set of pathology slides or odd medical skull had not been considered during the drafting of the Act.

It is interesting to add that not only museums are affected by this Act, but also the media, particularly those involved in filming. All major TV organisations were expressing concerns over filming and raised points that had not come to light during the drafting of the Act. An example – BBC film 'Trauma'. When filming the BBC ask for consent from all concerned in the hospital they are in. Fine, but if someone they are filming dies and they carry on filming that now deceased person probably didn't think, 'Oh, in case I die while you film, I'll give my consent for you to carry on'! Even using film from abroad comes under the legislation when it is screened in the UK. A minefield for the media lawyers.

The HTA strongly acknowledge the Department of Culture, Media and Sport (DCMS) guidelines on human remains in museums, a summary of which need not be given here. The HTA did confirm that the DCMS guidance did, '*while tissue from the living and recently dead (and some consensus reached in the form of the Human Tissue Act 2004), there has been less analysis of these issues associated with older human remains. These older remains are of course not subject of this Code of Practice.*' By 'older' presumably, although not stated, more than 100 years old.

Critical comments had to be in by 28<sup>th</sup> June. These included the problems raised above, notably those of small museums, and the exorbitant fees likely to be charged in this first instance.

**The Human Tissue Act 2004 – Problems with Small Institutions: Museums**  
**-Dr Gerald Legg, Keeper of Natural Sciences,**  
**Booth Museum of Natural History, Brighton**

Having read the Code of Practice and attended the informative seminar at the Royal College of Surgeons I would like to make the following observations.

Despite HTA claims that the Act and Code of Practice have been well publicised it is obvious to me that many institutions will be unaware of the far-reaching implications of the Act. It was clear from the delegates at the seminar that few small museums were represented indicating that most will be quite unaware of the Act and its potential impact on their modest if not minimal collections of human remains. This in part is the fault of the museums' sector, particularly the Museums Association, in not properly consulting with its

members so they were aware of the impact and also, perhaps more importantly, they have not been able to put the case for museums to the HTA. If that had occurred then perhaps things would have been more appropriately considered.

Please consider the following points:

1. The Act clearly was not meant to penalise small museums. Applying it without any 'exemption' (even if this was just an initial exemption) is like cracking a nut with a pile driver. There will be many museums that have acquired small amounts of human tissue (as defined by the Act) that are less than 100 years old, for example the odd skeleton or part thereof or the 50 or so pathology slides from a local Edwardian doctor. Documentation may be minimal, if at all present, although it may be obvious that the material is 'about' 90 years old. None will have 'consent', but as I believe it, this would not be a problem with such material as it is completely anonymous. Without original invoices or other documentation how can a small museum prove the age of an old medical skeleton, skull or set of reference slides? Many small institutions will either be in ignorance of the regulations or just ignore them and forget about the odd box of slides.
2. You say, if in doubt apply for a licence. Fine, but as your proposed licence fee is probably more than the entire museum budget for some establishments this is quite ludicrous. As I understand it the HTA is largely self-funding, the licence fees paying for the bureaucracy hence the high level. High fees might be appropriate for huge tissue banks and even museums with large collection but can not be justified for small institutions. It was said at the seminar that the suggested fee was set for the first year as the HTA did not know what the income would be, did not know how many institutions were out there and that after this trial period the fees would be reviewed. Surely, as one delegate said, it would be more sensible to have a low fee, if any at all, for the initial year. After this initial period it would then be possible to make a rational judgement as to what to charge, and perhaps even have exemption categories or a sliding scale of charges.
3. If small institutions discover they have material less than 100 years old and will have to pay £5000 for the privilege of holding them, what will happen? Something like as occurred with the Firearms Act Amendments when they came into force: museums rapidly disposed of weapons, whether they were covered by the change in legislation or not. This caused the quite unnecessarily destruction of many weapons and also forced other museums into the position of having to consider accepting material that would otherwise have been lost. Fine – if a small museum has human remains less than 100 years old, let it give it to another museum that can afford the licensing. No, the larger establishments should not be put into that position. The collection and acquisition of items has to fall within Collections/Disposal Policies. There are direct financial implications when taking in collections as curation costs money, something people all too often forget or do not realise (curatorial time, conservation work, storage space, insurance, ...). Therefore it should not be taken for granted that larger establishments will take in the collections from those that can not consider a licence.
4. Budgets for most museums are built around the April-April financial year and so they will not have funding in place in September; the licence fee will be beyond their financial planning for the year 2006-2007.

Might I suggest that:

Could either a minimal or exempt licence fee be applied for the first year when things are settling down and the HTA knows the extent of the problem and what collections are around.

Small museum collections, as given above, should be totally exempt. Presumably this would entail some legal adjustments: an Amendment to the Act that would have to go before Parliament? Or could the definition of human tissue be interpreted through a judge's ruling to somehow exempt the problematical collections?

An article be written about the Act and museums and published in appropriate journals once the HTA has acted upon the results of the consultation and decided what it is going to do in the light of the comments received. There is a need to broadcast what is going on and not to assume that everyone knows.

## Papers from the Conference

**World Museum Liverpool  
April 27 - 28, 2006**

**'Selling Natural Science:  
Developing concepts and ideas for galleries and other  
public resources'**

**Paul Manners, Project Executive, BBC Learning  
Inspiring action**

*The BBC is developing a major new pass participation campaign to inspire a million people to get actively involved in nature conservation. Called Breathing Places, and inspired by visionary ideas from the 19th century about urban green space, it will be launched in Springwatch on BBC2 in June of this year. Paul's talk will outline the thinking behind the campaign, highlighting particularly the role of audience research in shaping the key campaign messages and activities.*

### **Action**

Encouraging participation, not simply debate

### **Scale**

Big enough to make a measurable impact

### **Sustainability**

Continuing long after the broadcast in many places, in many forms

### **Inspire, engage, and entertain**

Using the creative skills of the BBC to do what other learning or campaigning organisations cannot

### **Partnerships**

Working with commercial and public sector partners, not just the BBC

### **Outreach**

Direct contact with people in their communities

### **Understanding the audience: 1**

**- Market research by BBC Worldwide, 2002**

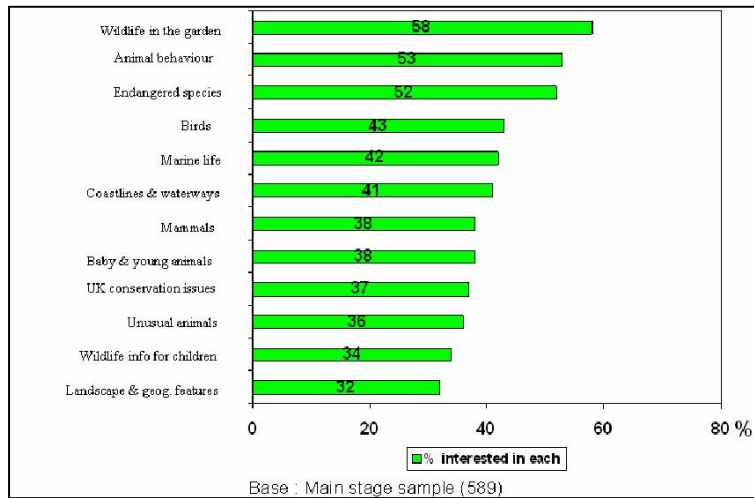
#### *MARKET SIZE 1*

Omnibus research shows that 63% of adults aged 15+ in Great Britain are interested in “natural history” (described as “the area that covers nature, wildlife and animals, and the environment, whether in the UK or worldwide”)

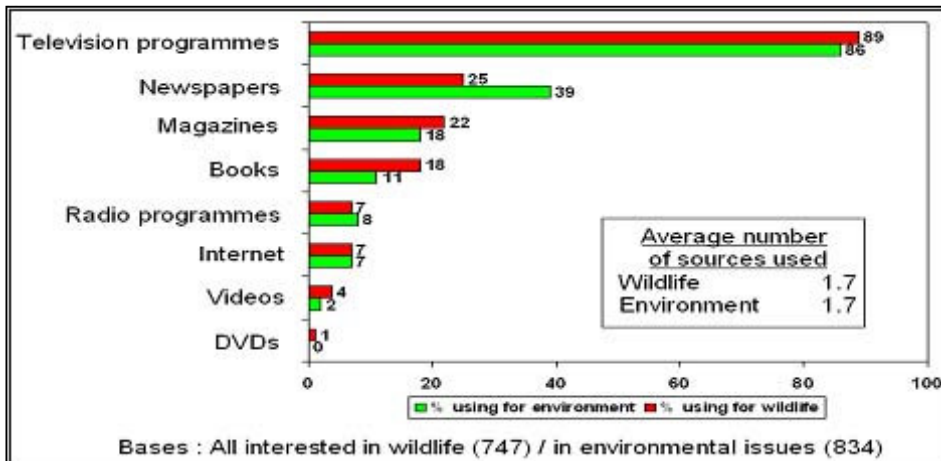
Population of Great Britain (aged 15+) is 48,402,000

Broadest market size = 30,493,000 (15,145,200 households)

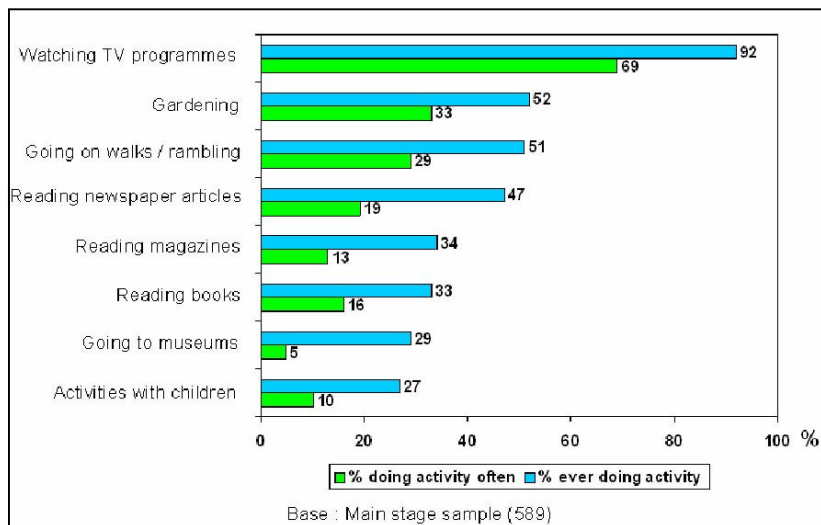
The key 12 interests of the public:



Information Sources used by the public for finding out about wildlife / environment:



The Key 8 activities and the percentage of time doing these:



Child-led	8m	'I'm into nature and wildlife because of the children.'
Nature Enthusiasts	5m	'I really want to get more involved – I love nature.'
Passive preservationists	3.5m	'We should try and keep natural things / the environment as they should be.'
Helpless Backyarders	5.6m	'I'm interested in nature and stuff but it's all just too much.'
Concerned campaigners	2.1m	'Let's make a difference'
Armchair action	5.3m	'I love the programmes...'

### **Understanding the audience: 2**

#### **- Research into audience behaviour**

*The impact of sustainable development on Public Behaviour*, commissioned by COI on behalf of DEFRA; Andrew Darnton, March 2004

*Carrots, sticks and sermons: influencing public behaviour for environmental goals*, A Demos/Green Alliance report for DEFRA, 12/2003

*Rules of the Game*, Futerra for Defra, 2005

*Findings from this research:*

Policies to drive behaviour change for sustainability should aim to change behaviours, and make changing attitudes a secondary objective.

Behaviour change campaigns should be:

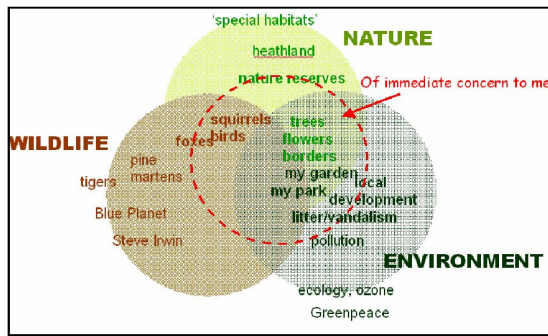
- Action oriented: participation is the key influencer of behaviour
- Focussed on a narrow range of behaviours
- Community led
- Immersed in local issues

### **Understanding the audience: 3**

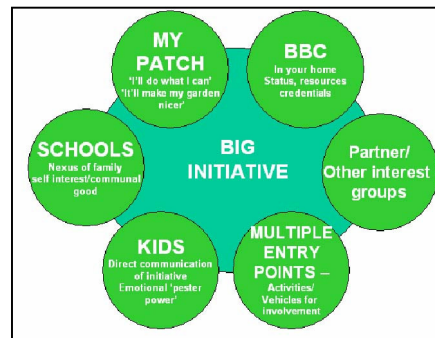
#### **- Focus groups**

*There are two key drivers for interest in natural history and the environment:*

- Kids
  - Kids are the key to getting people to join in – schools are the most meaningful locus of community spirit
  - Nature is an important focus for family activities – spending time doing something with the kids
  - Also a sense of the welfare of the next generation and the legacy we are leaving for them
- Local
  - 'My patch' is a very powerful concept
  - Making 'my patch' nicer is more relevant than 'global conservation', 'sustainable development', etc...
  - Making projects very local, providing a clear sense of the impact of work done, and a clear reward for effort will be the most effective approach
  - People in the cities are, if anything, more passionate than those living in suburban or rural settings



*Key elements of the campaign*



*Focus of Audience Interest*

*Breathing Places*

J.C. Loudon: 'Hints on Breathing Places for the Metropolis, and for Country Towns and Villages, on Fixed Principles' (1829)

'We hope that the legislature may not think it unworthy of their attention to take into consideration the subject of breathing places, on some systematic plan, calculated for the benefit of all ranks in all parts of the British metropolis'

A radical plan for London, based on concentric circles of half a mile in width alternating between buildings and green space...enabling everybody, no matter what their status to have a green space no more than a quarter of mile from their home.

**Definitions:**

**What is a breathing place?**

- A space that people care for, for the benefit of wildlife and people
- Anything from a small community space to a major landscape project

**What is nature-friendly?**

Three simple actions are involved:

- Providing food
- Providing shelter
- Providing water

*Upcoming BBC Broadcast activity*

Springwatch II: BBC2 May / June 2006  
 Autumnwatch: October 2006

Nature's Calendar: throughout 2007  
 Springwatch: BBC2 2007  
 Nature of Britain: BBC1 Autumn 2007

Back to the Wild: BBC1 2008

Greatest Wildlife Garden: BBC2 2008/9

BBC Nations and Regions: Ongoing  
 CBeebies and CBBC  
 Radio 4

*Partnership infrastructure*

- A steering group to define the high level objectives and outcomes of the campaign
- A BBC-led campaign delivery team to coordinate all aspects of campaign delivery, including liaison with external partners
- Two BBC-funded workstreams to mobilise and resource external partners, led by organisations with relevant expertise in mobilising participation in Communities, and with Children and Young People
- 12 regional delivery teams to coordinate the effective delivery of the campaign across the UK
- A partnership stakeholder group for regular consultation, advice and information sharing

*A few simple conclusions*

- Start with the audience
- Keep it simple
- Make it purposeful and the impact tangible
- Work in partnership – both with your own sector, but also by looking outside to new partners

[breathingplaces@bbc.co.uk](mailto:breathingplaces@bbc.co.uk)

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**Susie Fisher, Director, The Susie Fisher Group**  
**What do people want from a Natural History Gallery?**

*The Horniman Museum has a Natural History gallery of the old school, with wood and glass cases full of stuffed animals and a display structure untouched since the 1950's.*

*Committed now to refurbishing and restructuring, the Museum consulted its local audiences to find out how they felt about Natural History. What did they know, what was the shape of the subject in their minds, what were they looking for? Would anything be left of the old Victorian gallery? This paper explores the tight-rope walk between preserving the old, introducing the new and leaving the visitor delighted, thoughtful and informed about Natural History.*

*The Horniman has a Natural History Gallery of the Old School*

- It has barely changed since 1900. Even including a face-lift in 1950.
- It has a spectacular collection of Victorian stuffed animals and birds, all with their Latin names on tiny typed labels in mahogany and glass cases.
- There are organising principles e.g. Armour, Motion, but these are very hard to spot.
- It is all housed in a balconied and barrel-vaulted hall with the proportions of a small cathedral.
- The Horniman itself has an enviable relationship with its audience. It is beloved and used by the local community. One generation introduces it to the next, in a mixture of nostalgia and investment for the future. It is full of children.
- It offers much to engage people, an imaginative new Gallery of Musical Instruments, extensive park and gardens, an ethnographical collection and an aquarium.

But The Natural History Gallery is perceived by many as the heart of the Old Museum.

*question*                      *against this demanding background, what does a modern audience want from a natural history gallery?*

**Picture the dilemma**

The gallery has become an icon in its own right.  
 "It's like a time warp, being in an Indiana Jones movie."

Peoples' musings suggest that this is where they get in touch with their better selves.

"You come in here and it's calm and quiet. You've got time to think, just time to be. No one rushing you along."  
- Parent Visitor

Has it come to symbolise a seat of learning, a belief in the redemptive power of the old traditional institutions, in an older, more traditional society?

"I feel age. I feel it's old. I feel I'm walking into the past, it's the building. I just like the layout and everything, the art."  
- Visitor over 60

The imposing grandeur of the building combines with a reverence for learning to assume the proportions of a religion.

"In Milan I went into the big cathedral and had a similar experience." - Adult Visitor

*questions*

- *with so many symbolic issues tied up in the place, is any kind of change possible?*
- *how is natural history to assert itself against such a loaded background?*

### **Three useful audience segments emerge:**

1. Adults with children
2. Adults visiting without children
3. Teachers

The theory is that each of these is a state of mind and that people slip easily from one state of mind to the other. This means that we all have within us the desire to teach, to muse and to be gobsmacked by turns. This suggests that a gallery should be able to stimulate each of these experiences by turns. This leads to personal satisfaction of a high order.

#### **1. Adults with children**

"I think the older they get, and each year you come, the more they'll see of it. That's why I don't have an issue with them walking round quickly"

- Parent visitor

#### What's the purpose of the visit?

To expose children to the learning of the Museum, to let them see the animals up close, to keep them amused, to set them on a path of learning and understanding.

#### What's the mood of the visit?

Running from one end to the other.

Stopping short, nose-to-nose with a strange animal.

Adults showing their own favourites to the children.

"Oh come and look at this, you'll like this!" Parent visitor

Children asking off the wall questions - "What do hedgehogs eat?" It's short, noisy, excited.

*implication*            *this will be a cumulative process, many visits, a little at a time. children's' needs are paramount.*

#### **2. Adults without children**

"We want to learn at our level and at our own pace. You want something to inspire you and look into it more." Adult visitor

"I'm not going to study something. I'm going to spend my time on something, which I like. I pick up bits



and pieces. I can't remember everything. Adult visitor

What's the purpose of the visit?

To do something good for yourself. Away from the usual blaring media.  
To explore, have things revealed, be engaged and fascinated. Taken out of yourself.

"I study on the internet and TV. Here I just walk round and enjoy." Adult visitor  
"I was in the fossils for ten minutes. I feel I'm doing a little something. Not just in front of the telly." Adult visitor

What's the mood of the visit?

Dreaming, light hearted, wandering, drifting. Time out, no pressure. Uplift, mysteries revealed. The unexpected. Exploring.

"You can have a little wander. Go round several times." Adult visitor  
"It's a nice change to see something different." Adult visitor

*implication*            *this is not a formal learning agenda. drifting and chance play a part. it is about sudden fascinations, mysteries revealed.*

**3. Teachers are on a mission**

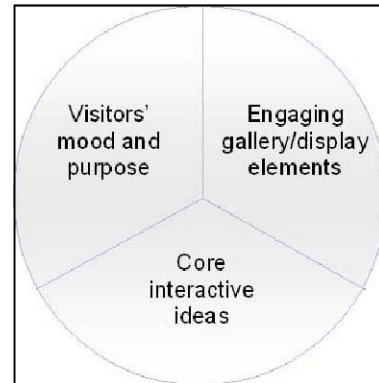
"As a teacher, you do certain topics at certain times of year. Can they have changing exhibitions?" Teacher

"They should group in habitat and show camouflage." Teacher

"They could have research areas upstairs." Teacher

What's the purpose of the visit?

To underpin the biology curriculum, to make the theory more real, concrete.  
To demonstrate particular principles.  
To have access to experts and high quality teaching aids.  
To see the real thing, the collections and build enthusiasm.



What's the mood of the visit?

Mind expanding, out of school, task orientated. Exciting. Intimidating. A big memorable day. Intellectual satisfaction for teachers themselves.

*implication*            *these are goal orientated visits leavened with the unexpected of the collections. everyone feels relieved, freer? if the goal can be achieved.*

What strong ideas emerge?

Seeing real animals close to.  
Seeing animals in their habitats.  
Exploring animals I might see in everyday life.  
Hands on experience for me.  
Vision bytes.

All of these lent themselves to all three agendas. They are the pillars on which the gallery interpretation can confidently rest.

Seeing real animals close to

“You can see what you’re studying in real life. You don’t get a chance to see things close up on TV. TV’s not real.” - Adult Visitor

“You can’t visualise the size of things. It’s good to see what they’re really like.”  
- Parent Visitor

Stuffed animals are essentially real animals. And this makes them precious. Their diversity leaves you awestruck.

You can see the size and the detail.

You can be ‘nose to nose’, with only a pane of glass between you.

You can see up close; fur, scales, spines, ears, eyes, noses, paws, tails.

You can gaze as long as you like.

Today’s media may blur the distinction between real and mythic animals (think ‘Lord of the Rings’). To see strangeness in the animals and to know they are real is potent against this background.

*implication            the museum’s stuffed collection is the only environment where visitors can be guaranteed real animals, ‘nose to nose’.*

Seeing animals in their habitats

“A badger doesn’t live in a glass case. Where it lives makes it interesting.” Parent Visitor

“They should have something visual behind, pictures of the landscape, the context. Get them asking questions about the environment.” Teacher

For all their advantages, stuffed animals are dead. Visitors want them brought to life, without losing the integrity of the account. This encourages the visitor to become an observer.

An evocation of habitat; vegetation, a view of the terrain, other creatures alongside.

A view of the animal moving, flying, attacking, eating.

Noises and smells, what call the animal makes.

The environment it faces at different times of day and what it does in it.

“You might have a little screen and see the bird in flight.” Parent Visitor

“Just to hear what the animal sounds like.” Parent Visitor

“It’s putting them in their natural setting is the most important.” Teacher

*implication            stuffed animals work well alongside technology and intelligent display techniques, which allow visitors to see the animal in life.*

Animals I might see

“Habitat. My kids don’t know what a hedgerow is. We get the history without getting the fundamental basics.” Teacher

For town children, farm animals and wild animals in the UK are almost as unfamiliar as the animals of the African Veldt. There is an added thrill to finding out about creatures you might actually be able to see in real life.

This extends to the creatures of the town also; pets, urban foxes, birds, insects. What’s needed here is a further degree of explanation, insight, and illustration. The relevance of these creatures is already established.

*implication            the animals on display can be everyday as well as exotic. there is a yawning gap in knowledge about their biology and behaviour.*

Hands on experience

“I think a room would be nice, to have an interactive section.” Parent Visitor

Most visitors are drifting around enjoying the ‘wow’ of the exhibits. Learning is ad hoc, informal.

Hands on experience is held to be the most effective way of focusing young people (and older) on a learning task. Popular are

Models to take apart and reassemble (e.g. bone structures).

Puzzles and challenges (touch the animal skins and group them by family; mammal, reptile, etc.).

Experiments (microscopes, differences between light and dark activity, etc.).

Living cultures (beehive, ant colony, pond life).

It is the doing and its attendant problem solving which generates the learning and the insight.

It is most effective when mediated by a kindly expert.

*implication*            *hands on is a complementary way of exploring the animals. it will work best when the tasks are related to the displays.*

Vision Bytes

‘See it in one’

The principle is the same as for sound bytes. The essence is that the visual display is rigged so that it clearly expresses a single idea. By looking at it, without words, the visitor can grasp the idea.

These vision bytes can become stepping stones for the gallery as a whole. The fundamental ideas are expressed unambiguously without words. The visitor cannot fail to ‘see’ the key ideas. The complexities can then be built on a firm foundation.

The easiest ideas to express in this way may be:

A sequence of events over time (e.g. evolution of the horse’s hoof).

A defined action (e.g. an owl catches a mouse).

Cause and effect (e.g. this fish dies out, that bird goes hungry).

*implication*            *vision bytes and sound bytes may be the preferred level of explanation for this generation. a compromise between wordy paragraphs (not read) and technical details (not understood).*

**Interpretation**

All these approaches are popular. The gallery that uses them will be entertaining and will engage. But the skill surely lies in linking them to the fundamental questions which a Natural History Gallery hopes to address. This is hard.

First we have to identify the questions which visitors raise themselves. These will be the way into the wider issues of Natural History in the 21<sup>st</sup> Century.

*What questions do everyday people raise?*

“It would be interesting to see the evolving of a particular species.” Visitor over 60

“Does anyone here believe in God? I don’t but I believe there’s something up there that started all this.”  
Parent Visitor

“I find myself drawn to the varieties that are extinct. I feel very sad about it.” Visitor over 60

**What lives on earth?**

This is about the full diversity of living things.  
Animals                      Humans                      Plant life                      Hard Remains (e.g. fossils)

**What kinds of environment do they live in?**

**How does life on earth change?**

Creation and Extinction.  
Evolution over time.  
The order of things e.g. numbers of large and small species, brain sizes, insects compared with mammals, etc.

*comment                      there seems a clear understanding that animals change over history but much less understanding of how the environment is involved in species adaptation.*

*What questions do teachers raise?*

“There is interdependence to teach and adaptation is tied to interdependence.”                      Teacher

**What lives on earth?**

Plant kingdom, animal kingdom, hard remains

**What is the range of habitats?**

Earth, sea, endangered?

**Who were the great naturalists?**

**How do living things adapt?**

This is the core question.

**How do you describe the web of interdependent ideas that answer this question?**

Habitat, food chains, life cycles, Evolution, Extinction, Creation.

**Formal subject areas all contribute to the core issue of adaptation**

Classification, Genetics, Form and Function, Animals and ageing, Micro organisms.

*comment                      teachers see an interdependent web of ideas founded on the core idea of adaptation. they argue that you can’t understand any one aspect fully unless you understand the rest.*

**The challenge is to communicate this web of ideas, centred on adaptation**

The teachers have the answers and they are couched in urgent unmistakable terms which can be under-

stood by anyone.

“There are questions about how the animals are changing.” Teacher

“How does the animal get its dinner?” Teacher

“The habitat has a knock on effect. If this fish goes, what does that bird eat?”Teacher

*comment - this is a dynamic view of natural history. everything is in the process of change. There are causes and effects. Human beings also contribute to cause and effect.*

### **So how, ideally, would we tie all these strands together?**

Are we looking for:

A habitat which shows where an animal sits in relation to his dinner?

A hands on experiment to change the environment of a living colony to see if you can change its behaviour?

A vision byte to show how a tadpole becomes a frog?

### **And how will it all look in this world of internet and computers?**

Horniman visitors were not, by and large, impressed with garish metal and plastic.

“It can be quite a subtle thing. It doesn’t have to be too, you know, all lights, buzzing and clashing.” Parent Visitor

They wanted to preserve the feel of Nature itself. As though they were Naturalists observing animals in their habitats. Natural materials are a help.

Displays were asked to create the illusion of natural environments e.g. an English woodland, the jungle at night, sea life.

And they would like confident stage craft to help achieve this; Ambient sound, Dramatic lighting to mimic time of day, Video illustrations, video backdrop, Living specimens, including plant life,

Water interactives were interpreted as hands on objects and challenges, not simply pushing buttons and playing with machines.

*Comment - a natural history gallery which feels in tune with nature has a certain pleasing unity of purpose.*

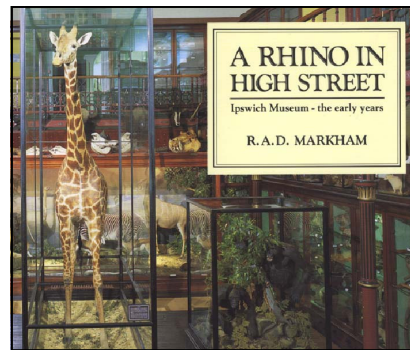
### **And the Horniman dilemma? Would they be allowed to change anything?**

Well, good sense prevailed.

Consider two ends of the spectrum.



Paris, Modern



Ipswich, traditional

- Paris was judged too arty and alienating
- Ipswich was a disappointment, nothing new
- Horniman should pursue a middle path, keeping its cathedral architecture, the icons, which reassure about scholarship and integrity...but with a trusting invitation to develop the display of its wonderful collections, just as we have been discussing here.

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**Simon Chaplin, Senior Curator, Hunterian Museum, Royal College of Surgeons**  
**Beautiful bits that bob: redisplaying John Hunter's collection in the 21st century**

*The Hunterian Museum at the Royal College of Surgeons in London re-opened in February 2005 after a three-year, £3.1million facelift. At its heart is the collection of the 18th century surgeon and naturalist John Hunter, with over three thousand preparations of human and comparative anatomy and pathology. This paper explores the interpretation and design strategies which the project team followed to present an unusual and highly specialised scientific collection to a new public audience.*

**Opportunities and challenges**

- The Hunterian museum houses a unique collection of 52,000 objects.
- It holds important historical resources with 3,500 Hunterian specimens, 7,000 instruments and 500 paintings and drawings.
- It also houses important scientific resources, including important primate material and human and comparative anatomy and pathology.

**Challenges**

- The infrastructure of the building was outdated
- The environment and security of the building was poor.
- The space was inflexible
- The building was physically inaccessible
- The Interpretation of displays and exhibits was poor.
- The design was confused
- The museum was intellectually inaccessible

**The Hunterian Museum Project**

Challenge: to make the collections accessible, relevant and secure for our target audiences

Accessible and Authoritative displays		Explorer	“I liked the personal information about what happened to patients, but left wanting to know more.”
Resources/facilities for teaching & research		Student	“There is so much I can use here.”
Engaging but Expert information		Surgeon	“I still find inspiration in Hunter’s work.”
Emphasise Visual appeal		Artist	“I don’t know how many times I said ‘amazing!’”

The project involved clearing over 3000 objects from the old displays and a further 10,000 from on-gallery storage. Over 4000 have gone back on display in the new museum.

Building work commenced in June 2003 and was completed in September 2004. Gallery clearance, content development and exhibit installation was undertaken by the eight permanent museum staff plus two short-term contract posts.

**Vital statistics**

- Cost: £3.05million (£1.5m from external funders)
- Display area: 733 sq m (from 675 sq m)
- Staff: 6 full-time, 1 half-time, 2 short-term contract

**Measuring success**

- 10,000 objects were rehoused and 4,200 put on display
- An accessible, secure, and environmentally controlled space was created
- This included a platform which can be used for events and public programmes
- Partnerships with other organisations such as UCL and Kingston University were developed for teaching.
- Annual visitor figures increased from 14,000 to 32,000.
- The museum received media attention and positive feedback.

### Future challenges

- Operations
- Maintain revenue support: to keep admission free
- Snagging and updating: air handling, interactives, displays
- Change the staff structure: increase the use of volunteers, there are now up to 30



### Still to do

- Encourage access to the collections by researchers
- Improve the collections information
- Develop more teaching partnerships
- Seeking project funding

**Key message:** *A specialist collection is no bar to public access*

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### Kevin Walsh, Executive Officer (Programme Development)

#### Oxford University Museum of Natural History

#### 'Feeling Good': a new approach to displays

*Oxford University Museum of Natural History is a listed Victorian architectural treasure, in which we display and present twenty-first century science. A fourteen month project is now complete that has seen a new approach to our fossil galleries, and an entirely new display on the theme of evolution, plus the introduction of a number of touchable specimens. Presenting science to a diverse audience has many challenges, and the project has needed to balance advice from a wide range of specialists.*

Oxford University Museum of Natural History is a listed Victorian architectural treasure, in which we display and present twenty-first century science. We are a university museum open to the general public with free entrance, and attract more than 300,000 visitors annually. The museum is divided into four 'collections'. The first and largest of these is Entomology, with over 5 million specimens, including the world's first pinned insect. Zoological collections have over 300,000 specimens, including the only body parts of the Dodo. Geological collections contain over 350,000 specimens of fossils, including the first dinosaur ever to be described. Mineralogical collections contain over 30,000 minerals and 100,000 rocks.

The mission statement of the museum is 'to assemble, preserve and exhibit the University's natural history collections and to promote research, teaching and public education in the natural sciences based on the university's collections'. Much of the emphasis in the twentieth century was on research and teaching within the university, but this century there is an increased focus on public education, which was the main reason the museum was opened in 1860.

A redisplay programme commenced in 1997, and is due to be completed by 2008. The main phase of this was during 2004 and 2005, funded by a £780,000 Millennium Commission/Wolfson grant. The purpose of redisplay was to modernise the displays while retaining the style and grandeur that the Victorian architecture demands; and also to attract new audiences to the museum. This main phase is now complete after fourteen month's work. It has seen a new approach to our fossil galleries, and an entirely new display on the theme of evolution, plus the introduction of a number of touchable specimens. Presenting science to a di-



verse audience has many challenges, and the project has needed to balance advice from a wide range of specialists.

Most exhibits are in glass cases, vertical ones roughly two metres square, and horizontal table cases of approximately 1 by 1½ m. The Lower Vertebrate displays were amongst the first to be replaced. These included our fish, reptile and amphibian specimens, all arranged in twelve vertical cases. One of the controversial aspects of the new Lower Vertebrates was to what extent plastic casts of fish should be exhibited. Several members of staff would have preferred these kept to a minimum, but the zoologists pointed out that a cast taken from a living fish and recreated in full and correct colours is in fact more 'Real' than an incomplete and faded nineteenth century dried specimen. This provides an interesting example of what is considered 'authentic' in a museum context.

We radically changed the way in which we displayed our Invertebrates. Previously we only had fossil invertebrates, but now incorporated recent specimens, both dried and pickled. We also included high quality images of the organisms in their environment, and some models. The constraints of the table cases (depth, temperature range) meant we had to develop a new style of container for pickled specimens. After several experiments we settled on specially commissioned Perspex boxes, with release valves, and a variety of mounting media.

'History of Life' is our stratigraphic palaeontology display, containing 2000 fossils in 34 vertical cases. We made our text more concise and readable, and installed Foamex backing panels and cold cathode lighting. This dramatically improved the appearance and visibility of the fossils. We also commissioned a biological artist to produce reconstructions of animals, and incorporated these into the Foamex back panels. The reconstructions were placed at a low level in the case, so that children could clearly see them. As well as the reconstructions, we included research images (such as Chalk SEMs) and images to show outcrops of the rocks from where the fossils were obtained. Some of these were obtained from free or cheap Internet sites, such as Flickr, sxc.hu and Dreamstime.



Touchables were a major part of the new display



The first touchables were a series of rocks, minerals and fossils, first on display in 2004.

These touchables included a large ammonite, a fossil tree, large specimens of pyrite and quartz, a stromatolite, a meteorite and gneisses. The second touchables display led on from a temporary exhibit entitled 'Feeling Good!' This was initially aimed at Blind and Partially Sighted people, and contained a variety of objects, including taxidermy. It proved popular not only with the visually impaired but also with many other visitors, so we decided to make it into a permanent exhibit. To this end we constructed two large tables with a dozen or so objects, each on wooden bases, attached to the tables. We sourced material for the Touchable Tables from mineral fairs and taxidermy companies, as well as more unusual sources, such as a cheetah, which came from HM Customs. The two Touchable Tables contain a variety of objects – birds, beasts and rocks, including the ever-popular British small mammals – a fox, a badger, an otter and a rabbit.

Not every one approves of touchable taxidermy, some museum professionals have described it as gratuitous fondling, or taking touchy-feely too far. However, we believe that touchables are fully justified for educational reasons – that the visitor not only uses different senses, but also gets a much better idea of size, shape and texture. We think this closer contact with the collections breaks down barriers, and the Touchables have proved almost universally popular with our visitors. As part of the formative evaluation of the Touchables exhibit we held a session with a girls' school to gauge reactions to a stuffed Shetland Pony we hoped to in-

clude. The reactions were entirely positive to having the specimen on display, but we did learn from the group that they wanted information on the animal and its name. Hence Mandy the Shetland Pony who died peacefully at Knaresborough Zoo, in 1982, is now fully labelled.

One of the positive benefits of the renewal of our History of Life fossil displays has been a change of audience. Previously they were mainly used by undergraduate Earth Science students, now this group has been augmented by school students using the displays as a resource for art. Not to be outdone, we have also used the arts in our science teaching – a recent Evolution workshop for sixth-form students included a theatrical performance.

One evaluation technique we use is an open comment Visitors' Book. This has revealed a hugely positive response to our new displays, and especially to our Touchables.

The benefits of our new approaches to display have been several, including a doubling of visitors in the last five years, the winning of The Guardian's family friendly museum of the year award, a real enthusiasm for the new displays from a wide range of audience types, and an increase in donations by tens of thousands of pounds.

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**Louise Cracknell, Interpretation Manager – Darwin Centre Phase 2**

**Emma Freeman, Interpretation Manager – Special Exhibitions**

**Michael Harvey, Interpretation Manager – Gallery Development**

**Darwin Centre and beyond – access to collections and access to ideas at the Natural History Museum**

*The Natural History Museum is embarking on a range of substantial redevelopment projects over the next five years, and beyond. In 2002, the first phase of the Darwin Centre was opened, giving museum visitors an unprecedented level of access to both the museum's Zoology collections, and to its curators and researchers. 2008 will see the opening of the second phase of the Darwin Centre Project, one which is more ambitious in scope and builds on the lessons learned from Phase 1. In parallel to the work being carried out on this project, the Museum is also planning a longer-term redevelopment of its permanent galleries while maintaining a yearly series of major temporary exhibitions. In this session, staff from the Museum's Interpretation and Design department will explore the challenges inherent in developing a museum for the 21<sup>st</sup> Century, and the approaches the Natural History Museum is taking to dealing with them.*

#### **New public spaces at the NHM – changes and challenges**

Last year, the UK government produced a consultation paper setting out its vision for museums and their role in 21<sup>st</sup> century life (Department for Culture, Media and Sport, 2005). Among its recommendations is a call for the opening up of collections to greater public access. In parallel to questions about collections access, the paper also asks how museums can strengthen their commitment to education as a core priority and how a strong research culture can be built within the sector.

These are questions that museums have been exploring for a long time. Over the course of three brief papers, we will briefly explore how some of these themes relate to the Natural History Museum, with particular reference to the ongoing Darwin Centre developments and to future plans for the use of collections in new permanent and temporary exhibitions. In doing so, we would also like to explore some broader questions about the relationships between researchers and collection managers and their colleagues in front-of-house, education and exhibition development, and about the museum's aspiration for an increasingly 'specimen rich' public experience.

In the coming years, there are many different aspects of the Museum's on-site visitor experience. In terms of gallery spaces, there are special exhibitions – the NHM offers a new one of these each year – so these need to work very much in the here and now. In the medium term, the Museum is developing a public offer for Darwin Centre Phase 2 – which is scheduled to open at the end of 2008. And in the long term, our per-

manent galleries – which represent the next big public project for the Museum after DC2 – are being planned to concept stage.

Louise Cracknell:

**Darwin Centre Phase 2**

- This is the biggest project the Museum has undertaken since it moved to South Kensington in 1881
- **Different to the rest of the Museum** in that the other galleries focus on ‘what we know’ about nature and the Darwin Centre focuses on ‘how we know’
- It is also unique in bringing together and placing equal importance on the three elements of collections, research and the public offer.
- The **strategic aims** of the Darwin Centre include:
  - Bringing people, specimens and scientists together in innovative ways
  - Providing an inspiring insight into scientific work and exposure to the collections
  - Creating dialogue and public participation in issues that concern them

- **The building**
  - Is on the site of the old Entomology building
  - Consists of a glass outer shell and an inner concrete cocoon that will house the Entomology and Botany collections
  - The new research laboratories are in the northern zone next to the cocoon
- **The public offer has 3 main elements** that tie in with a vision of a 21<sup>st</sup> century museum – they involve increasing access to the collections and to our science – how and why we do it.



- The Atrium – is primarily a place to enjoy the architecture of the building and also to gain an introduction to the idea that the Museum’s collections are much more extensive than the specimens seen on gallery and that they are used in research
- Explore – is a self-guided journey inside the collections cocoon with views into working science spaces and collections storage areas. Interpretation of these views will help visitors explore why we have the collections and how they are used in relevant scientific research. Explore provides a compelling way to talk about the process of science. This is an increasingly important part of the National Curriculum and aims to create scientifically literate citizens who understand ‘how science happens’ and can make informed judgements on the way scientific issues are reported in the media. Explore also answers calls for increased transparency about publicly funded science.
- Sir David Attenborough Studio – is the next step on from the current Darwin Centre Live space. It will have a capacity of 150 (75 seated) and is the place where visitors can meet our scientists, hear them talk, ask them questions and engage with the issues that concern them.
- **Challenges** in selling our science in the Darwin Centre
  - The three elements (collections, research and public offer) often have conflicting needs and priorities. For example a space must function for scientific activities but also enable the interpretation to tell the story of the research facility. We have been working together with the laboratory managers and have scientists seconded to the Public Offer team to ensure we work together to solve such issues.

- The nature of the dry collections means that for pest management reasons we cannot allow the public to truly go behind the science and walk around the collections areas opening drawers. So if we are to increase access to the collections what other forms can this access take? We will be working on this with our designers over the next stage of our work.

Emma Freeman:

### **Special Exhibitions**

Imagine it's the Easter holidays, you're taking your kids, nephews, younger brother for a day out. Where do you go - Alton Towers, Paint-balling, cinema Ice Age II, Shopping at Bluewater, Natural History Museum. These are some of the activities that the Museums SE exhibitions are competing with. At £8 or £9 per entrance fee, visiting an exhibition can be an expensive day out so it has to be worth it. Since National Museums went free 5 years ago it has become increasingly important for the Museum to generate means of income, beyond government funding. Special Exhibitions are a key element in raising funds for large-scale public projects, like Darwin Centre Phase II, which is the biggest public funded project at the Natural History Museum since it was built in 1881.

Special Exhibitions at the Natural History Museum are a series of temporary, changing blockbuster exhibitions, often for families with children aged 7-11. They often tour internationally. Their primary aim is to make money for Museum projects. They can therefore be seen as the showbiz end of the Museum - they need to be a crowd puller in order to generate income. They are also a key vehicle for pulling first time visitors into the Museum and encouraging repeat visits. Once they are in the door, they'll visit other exhibitions and the more likely they are to come back again.

Because they often tour, Special Exhibitions are also an opportunity to outreach our science to venues internationally and to increase visitation to the Museum.

- DinoJaws opens this June. It is the biggest temporary exhibition on dinosaurs we've ever created with 11 of the most technologically advanced dinosaurs ever made. Fifteen percent of visiting parties come to the Museum specifically to see dinosaurs so they are often our 'hook'. Dino Jaws will be a fun, highly interactive exhibition about dinosaur diets. Families will work together as scientists, examining fossils to work out what different dinosaurs ate.
- Antarctica opens May 2007. The Museum are developing it in partnership with the British Antarctic Survey to develop an blockbuster exhibition with high impact and an international focus.

Our main challenges are creating Special Exhibitions that:

- Are educational blockbusters about natural history that families will pay for
- Meet educational desires of the parents and the entertainment desires of the kids.
- Are a decision choice for a day out
- Can tour - specimens are very difficult to tour safely, particularly abroad.
- Are relevant to host venues as wide ranging as France, Poland, Korea.
- Are commercially viable

What we are doing:

- Understanding more about our potential audiences. Finding out what will appeal to them? What will they expect to see in an exhibition about Antarctica? How can we challenge and surprise our visitors? How can we market the exhibition so it appeals?
- We are creating flexible exhibitions that can be personalised by host venues who wish to add their own content
- Replacing specimens with models that can be kept outside of cases and engage the senses such as touch and smell
- Including additional opportunities for income generation such as simulators, photo opportunities – families would actually welcome paid for elements for in the shop.
- Taking advantage of international programmes eg International Polar Year and partnerships such as BAS

Michael Harvey:

### **Permanent Gallery Development**

After DC2, the museum's next task will be to revisit the permanent galleries, and redevelop exhibitions that at between 20 and 30 years of age are beginning to appear somewhat tired. The museum has come to see a specimen-rich offer as being inextricably linked with the communication of the processes of natural history in general and of NHM scientific processes in particular. Richard Lane, our Director of Science has characterised the research collection as a scientific instrument, like a radio telescope or a cyclotron, which is used by scientists from all over the world. This is something that lies at the heart of what the museum is, and the museum wants to share that with its visitors. I say "the museum wants" quite deliberately – because this is an aspiration which has been clearly articulated across all sectors of the museum – directorate, public engagement departments and at all levels of the science departments. These aspirations come at a time when we are seeing calls for greater openness in science from both government and non-government organisations. Notably, the House of Lords' 2000 report into Science and Society looked not only at public understanding of science but also public trust in science (House of Lords, 2000). And as I have mentioned at the start of this paper, we also have a democratic imperative – the museum holds the national collection and, as such, must respond to calls for greater public access to the nation's collections – natural history and otherwise.

What are the practical steps that the NHM is taking to ensure access to both the collections the museum holds and the scientific ideas it generates in both this new phase of the DC, and in the conceptual work for the renovated permanent galleries? What does it mean for other functions of the museum? Two key challenges are those of bridging the divide between the scientific and public elements of the Museum.

One of the key issues is the divide between the museum's science and public functions. Last year the NHM held two staff workshops to explore this issue. The workshops concluded that there is indeed a division between the two areas, and that it is based on long held prejudices (many of which are inaccurate) and historical differences on both sides.

Along with many other museums, the NHM has changed dramatically in the last 30-40 years – both internally and externally. Different aspects of museum work have become more professional – where a museum scientist might once have entirely driven the development of an exhibition, specialist interpreters, content researchers and designers now produce those exhibitions. Where museum directors were once selected primarily for their scientific record they must now be professional in a greater range of fields and are often no longer from a purely scientific background.

The workshops concluded that these changes have led to the development of silos of expertise and activity (spoken of in 'tribal' terms), which can be difficult to breach. The workshops also concluded that the situation is improving, and that elements of the DC project has helped to break down barriers and increase mutual respect – through closer interactions such as DC Live (wherein scientists work directly with a the DC Live team in the NHM Department for Learning to develop and present their public sessions). A key recommendation of these workshops was that it is in day-to-day cooperation that these divisions are

broken down. Moving forward to the development of DC2 and the permanent galleries, the museum has set up half-time secondments whereby staff members from science work in the offices of the programme and exhibition development teams. This has the advantage that, throughout the development of the DC2 public programme and the future permanent galleries, the interpretation, learning and design teams will have direct daily access to representatives from science. Even at this early stage in this work, these secondees are shaping our thinking about the practicalities of the museum's aspirations. They are able to give us a picture of where greater specimen access may cause problems, and we are able to explore solutions at an on-the-ground level rather than going up and down the various hierarchies (which is a genuine relief in a organisation of over 900 people).

Through our daily contact with these curators, we are exploring questions such as:

- If we want to place more of the collections in the galleries and provide access for the public, how can we continue to ensure access for research?
- How can we enrich the information recorded with the specimens to capture data that may be useful in the public domain as well as in the scientific?
- What are the strengths and weaknesses of the current collection when it comes to suitability for display? We have a commitment to make more of the collections accessible, but the vast majority of the 70 million specimens were never intended for display. In the DC, this is not a problem as we are explicitly providing access to research collections, and the mode of storage is explained from the outset. In our permanent galleries, the display-quality of the specimens becomes more significant.

### Conclusion

We are not for a moment suggesting that the Natural History Museum is the only organisation exploring these possibilities, nor that we have it entirely right. Our intention in preparing this paper has been to give a flavour of what is a very exciting time for the museum. The DC project is the largest the NHM has embarked on since the opening of the Waterhouse building in 1881, and the Life Galleries have been largely untouched since 1989. I hope we have given a sense of the fact that these physical changes in the museum parallel some key philosophical directions that we, the government, our funders and many of our fellow museums are also exploring.

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### **Will Watts, Dinosaur Coast Project Officer, Scarborough Museums & Gallery** **Redisplaying the Rotunda Museum**

*'The Rotunda Museum is unique. It is perhaps the only museum whose design, original displays and even the stone of which it is built combined to express the logic of William Smith's ideas and the, then, brand new science of geology' (Professor Simon Knell, University of Leicester). The Rotunda Museum in Scarborough first opened in 1829 and over 175 years later it is the subject of a £4million redevelopment scheme due for completion in 2007. This paper will explain the rationale for the redisplay of the Rotunda Museum. How we plan to present Smith's ideas, in the context of the aspirations and diverse interests of the Scarborough Philosophical Society and its Museum, return the Museum to the cutting edge of science through the 'Shell Geology Now' gallery and provide the gateway to the wider geological heritage of the Yorkshire Coast through the Dinosaur Coast Visitor Centre.*

In 1827 a meeting was held in Scarborough to discuss the possible formation of a philosophical society and the building of a museum. Attendees at this meeting included Thomas Hinderwell a local natural historian and holder of large, varied and important collections from the area. Also present was William Smith, the 'father of English Geology' recently employed by Lord Derwent at the nearby Hackness estate as land steward.

Two years later in August 1829 the dream of a Scarborough based philosophical society with its own museum was realised with the opening of the Rotunda Museum, built to designs suggested by William Smith who also acted as foreman of works. The museum housed the collections of Hinderwell and other local collectors and covered a huge range of subjects from geology and natural history, through ethnography to social history, a truly cross subject display. Although the museum originally featured geology in pride of place this soon changed as other subjects became more prominent, including natural history and archaeology. These changes in interest coupled with the expansion of the museum through the addition of the two

wings in the 1850's saw the geology redisplayed in one of the lower galleries, no longer using Smith's concept of sloping shelves holding objects to mirror their natural 'stratigraphic' position in the field.

By the 1950's the museum had passed into the ownership of the local authority and all the geology and natural history was transferred to the recently opened Wood End Museum. The Rotunda now focused on social history and archaeology up until 2005. Forming part of Scarborough Museums & Gallery Service (along with Wood End Museum and Scarborough Art Gallery) the Rotunda has long been recognised as being of international importance and unique to Scarborough but local authority resources did not allow this importance to be realised.

During the 1990's the lack of resources to develop new exhibitions led the service under Dr Jane Mee to look at different ways of giving existing and new audiences access to the collections. These outreach projects included the Dinosaur Coast, run in partnership with Whitby Museum, North York Moors National Park Authority, English Nature, MLA Yorkshire (and its predecessors) and funded by both the ERDF and the HLF. The Dinosaur Coast project has delivered over 30,000 usages over its first 6 years, a figure that makes a substantial contribution to overall service visitor figures. The original aim of the project was to make more use of the geology collections held by Whitby and Scarborough, the ultimate reward of the project has been the establishment of a permanent geologist of the museum staff, and a demonstration that geology and natural history can be popular to visitors.

Following a review of service provision in the 2000's a decision was taken to transfer the operation of the museums & gallery service to an independent museums trust, at the same time plans to redevelop all the sites were drawn up. Building not only on its unique history but also on the success of the Dinosaur Coast outreach project it was agreed that the Rotunda should be redeveloped to reflect its origin and links to Smith, to highlight current geological research on the coast and to act as a gateway for visitors to the coast.

The total cost of this project will be circa £4million, with funding secured from the HLF (£2m), Yorkshire Forward (£500k), Shell (£300k), various other corporate sponsors and individual donations the museum closed in January 2006 and building work is expected to begin in August 2006. The museum consists of three main galleries (none of which are big) and each gallery will have a unique and challenging role to play.

The Gateway to the Dinosaur Coast Gallery will present visitors with a physical installation representing the coast, highlighting stories relating to the area, showing how the geology underpins these stories and giving people the knowledge and confidence to go out onto the coast to explore for themselves, hopefully then returning to the museum to follow up their discoveries. An exciting space using physical interactives, fossil identification workstations and toddler play stations.

Shell Geology Now is the second of the ground floor galleries and will showcase current geological research on the coast, including dinosaur footprints, coastal erosion and hydrocarbons exploration. This space will have a modern laboratory feeling and will attempt to highlight the relevance of geology to everyday life. The design team is working with the academic researchers in these fields to ensure the displays reflect the latest thinking in these areas, in return the museum showcases the work of the various institutions we are working with.

The final gallery and arguably the most important (certainly the most challenging) is the Rotunda gallery. The original 1829 circular gallery with its grade two listed 1850's cases will tell the story of William Smith, Scarborough in the 1830's, the early Scarborough Philosophical Society, the characters involved and much more, all underpinned by blocks of geology displayed as suggested by Smith on sloping shelves. This hugely challenging brief is being met by the Scarborough Museum team along with Event Communications Ltd the designers for the project. When completed the gallery will reflect the original intentions of the museum and display material from across the broad spectrum of the Scarborough collections.

The finished museum will provide a unique experience for the visitor that builds on (in this author's opinion) the three key elements for a successful museum, real people; the visitors and staff, real objects; over 1000 of them will be displayed, and real places; an awe inspiring 175 year old museum located yards from the stunning Dinosaur Coast.



**Richard Sutcliffe, Research Manager (Natural History)  
Culture and Leisure Services (Museums), Glasgow City Council  
Kelvingrove's new natural science displays - ten years in the planning**

*Kelvingrove Museum and Art Gallery in Glasgow will re-open in July 2006 after a complete refurbishment of both the building and its contents. The approach of the displays is multi-disciplinary, with particular attention to accessibility - both intellectual and physical. The long and often hard path from conception to final delivery will be described.*

**Introduction**

The original Kelvingrove Museum opened in the former Kelvingrove House in Kelvingrove Park in 1872. An extension was added in 1876, but even so it soon became too small for its purpose and it was decided to build a much larger building to accommodate the city's growing collections. The building was mainly funded by the proceeds from the International Exhibition held in Kelvingrove Park in 1888. The current building opened to the public as part of the 1901 International Exhibition on 2 May 1901. It officially opened as the Art Gallery & Museum on 25 October 1902.



Kelvingrove Art Gallery and Museum, Glasgow

By the 1990s, Kelvingrove's facilities were no longer up to required standards and it was starting to look its age. Areas had to be cleared of exhibits to protect them from damp and poor ventilation. The electrics were of particular concern, as the circuits were becoming overloaded with all the electrical equipment now required in a modern museum. The decision was made to fully refurbish and re-display the entire building. Kelvingrove closed to the public on 29 June 2003.

**Planning**

The planning had started back in 1996. From the start it was agreed that all non-original features of the building, such as temporary walls, offices in galleries, etc would be stripped out of the building, so that the architecture of the building could be seen to advantage.

A considerable amount of audience research was undertaken. Visitors and non-visitors alike were consulted. Demographic surveys were carried out and focus groups and advisory panels were set up, including an Education Panel and a Junior Board. Story titles were evaluated and different styles of labels and computer interactives were tried out at Kelvingrove and other museum venues.

Initial funding was obtained from the Heritage Lottery Fund (HLF) to do prototypes of two stories (Italian Renaissance Art and St Kilda) in 1999/2000. These addressed issues relating to modular systems, conservation, IT, text, etc and were fully evaluated by both staff and selected visitors. Scottish Natural Heritage were closely involved at the planning stages, and awarded a large grant towards many of the natural history displays, which were relevant to Scotland. In total the cost of the renewal of Kelvingrove was £27.9 million. The aim was to create modern facilities, services and displays while ensuring the restored building itself can be seen to its best effect and enjoyed by all visitors.

Key changes in the internal layout to Kelvingrove include a new temporary exhibition space, a conference and lecture theatre, education rooms, a restaurant, and shops, as well as new lifts, staircases, toilets etc. There will also be the Campbell Hunter Education Wing, which is due to open in 2007.

**The Building**

Before work on the building could begin, everything had to be de-installed, packed and transported from Kelvingrove to new purpose-built stores at the Glasgow Museums Resource Centre (GMRC). The only objects to stay were a single piece of sculpture; the Egyptian granite sarcophagus of PaBaSa and Sir Roger the Asian elephant, which were all too heavy to move. They remained (carefully protected) in the building.



Meanwhile, on site at Kelvingrove the building was gutted – new areas were excavated under previous floor levels to form a new lecture theatre and kitchens. The basement was re-developed to create an exhibition space, restaurant, education rooms, shop and offices. Two new glazed conservatories were added to form extensions to the new restaurant and education facilities. New lifts, stairways and extra toilets were installed. Recent office additions and partitions in public areas were removed and the stonework was cleaned. The whole building was re-wired and repainted. By late 2005 the building works were completed and the task began of installing the new displays.

### The Displays

There are approximately 100 stories and about a quarter of them contain natural history objects. The building is divided into two main themes: Expressive Arts (in the east side of building) mainly covering art and related objects, but with a few natural history specimens; and People and the Environment (in the west side of building). As well as four galleries devoted almost entirely to natural history this part includes a Cultural Survival gallery, a Conflict gallery, including arms and armour and the Holocaust, Early Settlers, with Scottish archaeology, and Glasgow Stories, from sectarianism to James Watt.

A multi-disciplinary approach has been employed where possible, with a few natural history objects turning up in very unexpected places.

A few examples of stories from the **Life Gallery** give a feeling of the displays:

**Sir Roger** the Asian elephant is the first animal you meet as you enter the Life gallery. He lived at the Scottish Zoo in Glasgow in the late 1890s, but in 1900 he had to be shot after he developed musth and became violent. A baby elephant, called Kelvin, is displayed beside him. Visitors will be able to work out how much he weighs in an interactive.

The most obvious exhibits here form the **Nature's Record Breakers** display. These are basically a Guinness Book of Records and contain a wide variety of objects.

The skeleton of the **Baron of Buchlyvie** – a Clydesdale horse - was another record breaker – having been sold for a record amount of money back in 1911. This multi-disciplinary exhibit includes a silver statuette of the horse, medallions and some of his horseshoes.

The museum ran a poetry competition and the winning poem '**Flying is like ...**' is based on specimens of insects, birds and other flying creatures in the museum. Some of these are in a case, but the birds are suspended high up in the gallery, flying alongside the Spitfire.

There are also some geological stories in this gallery. **Understanding a Landscape** looks at the rock types and the geological processes that have determined the present day landscape of the lower Clyde. The display is centred on an oil painting by John Knox showing a view looking down the Clyde – *The First Steamboat on the Clyde* (about 1820). Lights and images will be projected onto the painting to tell the story.

**Mineral Beauty** features some attractive minerals from the collection, together with associated jewellery. There is also a display of fluorescent minerals.

**Our Solar System** is about Fulton's Orrery, reputed to be one of the best examples ever made, dating from the 1830s. Several meteorites are also displayed.

**The Creatures of the Past** gallery contains stories about:

- Age of Fish
- Fossil Reptiles from Elgin
- Fossils under your Feet
- Tracks, Trails and Dinosaur Tales
- Scotland's Lost Wildlife
- Wildlife in Danger.
- Hunting

Scotland's Wildlife gallery contains stories about:

Aliens  
 Birds from your Window  
 Camouflage  
 Famous Scottish Wildlife  
 Life in Scottish Lochs  
 Wild about Glasgow  
 A Fish's Tale

The other area devoted to natural history is the **Environmental Discovery Centre**. This is an area where school groups can have hands on experience of natural history, but which is also open to other visitors when classes are not booked in. The space is all about biodiversity, including sections on key features of plants, invertebrates and vertebrates; variety in shells, seeds and gulls; and woodlands and seashore habitats and food chains. It also has an observation beehive.

Other stories feature major natural history elements - **St Kilda: Living with the Land**, with Soay sheep, St Kilda Field Mouse and sea birds; **The Last Pearl Fishers in Scotland** examines the Freshwater Pearl Mussel, *Margaritifera margaritifera* and related species. **Animal speak** is aimed at young children and explains how animals communicate. **Animal Armoury** has some amazing juxtapositions between armour and animals – such as gauntlets and Armadillos.

An Object Cinema – **Arctic Lives**, which looks at the way of life of the Inuits, also includes several Arctic animals. There is also an area called the **Mini Museum**, especially for pre-5s. This includes a number of zoological specimens relating to feet and faces.

If visitors want to know more about some of the stories, or individual objects, they are directed to the **Study Centre**. This area has a large number of extra specimens on display, but with minimal interpretation, representing some of the vast number of objects in storage. Here visitors can consult books or speak directly to knowledgeable staff. They can also access the museum's Public Access System, which has more detailed information about many of the objects on display within the museum.

Throughout Kelvingrove, the emphasis has been on accessibility. There are more interactives and lots of objects are on open display – some of which can be touched.

Generally there is also much more information than previously available, despite the fact that curators were limited to only 30 word labels and 100 words for text panels. Many of the labels are 'investigatives' and pose questions – encouraging visitors to look more closely at the objects to discover the answers.

All the text was initially written by curators or research assistants and then edited in consultation with an Education and Access curator, Research Manager and the museum's Managing Editor.

### Problems

It is inevitable that with such a large project there have been a few problems.

- First of all too much was happening at the same time – decanting the entire building, opening GMRC, re-structuring the Museum Service at the same time - and then starting to work on the new Riverside Museum part way through!
- It was decided to change designers several months into the design phase of the project, which in effect lost about 9 months off the schedule.
- Costs of cases meant that some original designs were reduced in scale, or meant that some specimens had to be put on open display
- Staff changes caused all sorts of problems and one story (A Fish's Tale) had 4 different curators working on it at different times!
- There was a general lack of understanding of 'natural history issues', as the designers regarded many of the objects like art objects and didn't want to have specimens in context, sitting in their habitats. Indeed, with the exception of a couple of small examples, there are no dioramas in the displays, despite the wishes of curators.
- There was difficulty obtaining some key specimens such as a Ruddy Duck for Aliens and Hares and Ptarmigan for the summer winter diorama. A few objects had to be dropped because they couldn't be sourced.

- There was a general consensus that there are not enough labels in the displays. This is partly because standard size labels take up too much space. Some objects are fully labelled; others are not.

Despite these problems, most of the displays look really good. All the new displays will be evaluated and there will be changes made to any displays, which are not working, or could work better.

Kelvingrove Museum re-opens 11 July 2006. A new Museum for a new Millennium

For up to date information, see [www.glasgowmuseums.com](http://www.glasgowmuseums.com)

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### **Paul Richards, Curator of Natural History, Sheffield Galleries & Museums Trust** **Street safari: The next generation**

*The refurbished Weston Park Museum in Sheffield opens in 2006. A key element of the What on Earth! gallery will be the process of field natural history itself. It will provide tools for observation, identification and active involvement in the recording process. Street safari is an HLF funded project to take these concepts out of the museum into a North Sheffield community. It aims to link people, via the museum with experts from the local natural history society, develop skills and provide equipment for the ongoing recording of the area. It is increasing awareness of the value of natural history and presenting opportunities to get directly involved in the scientific process. Street safari has so far proved very effective in not only cascading these skills down to the next generation of naturalists, but has provided significant new biological records for a very under-recorded area of the city.*

#### **Weston Park Museum**

: The city museum has been closed for 3 years, but later this year we will be opening the newly re-furbished Weston Park Museum in Sheffield. This £17m project has largely been funded by £12.1m of HLF money. As part of this process we have had to pack up and move our entire collections, build a new store and totally gut the existing City museum. We return, bigger and better than before with a new natural science gallery called 'What On Earth!' and for the first time a dedicated display about our unique weather station.

When designing the gallery, with the appropriate acronym, WoE, we unsurprisingly began as any of you would with a very similar brief to the strap-line of this conference, "To promote the understanding of natural science and create an increased awareness and fascination of the natural world".

We all try to be unique in our response to this challenge, but that pretty much sums up the foundation of our aims.

The new gallery is divided into 5 main theme areas with the last being Nature Lab:

- Close to home
- Ancient lands
- Weird & wonderful
- The Power of nature
- Nature lab



This has a different style to the rest of the gallery and is the main 'hands-on' bit. In here we look at the process of how to be a field naturalist, through areas called Watch, Identify and Take part.

The first two are self-explanatory.

- *Watch* has binoculars, ID charts, live bees and ants, encouraging visitors to observe the world around them.

There is also a video conferencing area which will allow us make live links to other organisations, field activities or talks such as those presented at the Darwin centre where people in Sheffield can directly interrogate speakers beyond the city.

- *Identify* has resources to help work out what you have seen and how to classify it.

- Resources for identification
- Computer interactive
- Reference collections
- Literature
- Enabler
- Classification

- *Take Part* is where we go one step further and provide the means for people to tell us what they have seen and become involved in the scientific process. It looks at the area of biological and geological recording and provides a 7-day a week, free, access point for the input of information. (A further *Find Out* area offers an output point for data of all kinds). The main interactive in *Take Part* is a new front end to the RE-CORDER 6/classic database called *Nature Notebook*. We have developed this alongside the web-based version of RECORDER with Dorset Software and Luxembourg natural history museum. In a nutshell NN allows anyone, without training to enter a valid biological record directly into the database via a validation process. It can be set up for any area and for any range of species as long as they exist within the taxon dictionary. We have chosen to use 200 species that our local recorders deem to be the most easily identifiable based only on a photograph and brief description.

The reason for our emphasis on recording is very much down to the environmental activity that exists in Sheffield. For those of you that know the city you may be aware that we are not only the greenest city in Britain in terms of our trees and moorland, but also from an environmental awareness point of view, with well over 50 active individual environmental groups. It has also been suggested that we are one of the top 5 most well-recorded cities in the world. (The evidence for which we are working on with the University of Sheffield!) There is therefore a very good infrastructure for field activity, but still many surprisingly under-recorded areas. As anywhere else, there is also a falling uptake of field natural history in younger people and the expertise is rather falling off the end....



In an attempt to halt some of these declines and as a means of taking the gallery out beyond the museum, we developed *Street Safari* with funding from the HLF *Your Heritage* fund. It is basically Nature Lab on the road. Before nature lab itself existed! It also serves a function in providing some display elements for the gallery through community produced material and research results.

The primary aims of Street safari are to:

- empower local communities** in the understanding and recording of their immediate local environment,
  - develop skills** required for recording biological information,
  - provide community based workshops** to cascade skills from experienced naturalists down to children, local groups and individuals,
  - deliver ongoing community input** into WPM and to the wider scientific community,
  - develop the relationship** between the Sorby NHS, SGMT and local communities to enable a co-ordinated approach to skills sharing.
  - promote WPM** as a central point of contact for the society.
- And to **carry out natural history recording** in an under-recorded part of a well recorded city and to feed these records into the database at the City Ecology unit.

Street safari has been running for just over a year, with its own 3-day a week project officer, Peter Clegg. The project is working within one of Europe's most deprived areas, to the north of the city. The process has been to attempt to offer a wide influence across all ages and interest levels in the area, refining down towards specialist training and recording events by the end of this year.

During the two years we have been moving SNHS activity from the more traditional (and safe!) peak district side of the city to holding more events within reach of the community in north Sheffield. We have held guided walks, moth trapping, garden bug hunts, craft events, children's university courses, and specific re-

ording projects within school grounds, private gardens and allotments. It has introduced the concept of biological recording, why we do it, why they should do it and how, by getting involved, they can experience the work of a real scientist. This has produced thousands of new records including new species for the north of England

The year ahead has more walks and specific identification training and workshops, training for local teachers in the Education action zone and the provision of a 'legacy' unit for the community which will ensure that the equipment and materials as well as the skills will be left behind when the funding comes to an end. This will include the Nature notebook software, which can be run on a laptop and taken directly out to record in the field. A display within the gallery will promote the work of street safari within the museum.

Unfortunately due to building delays we have not had a museum while most of this is taking place, but this has helped us to resist the opportunity to ferry people across the city and instead have had to bring the museum to them.

Once open, one element, which will directly link the two, will be the flexible community display boards that will be in the gallery. The first two displays will be produced by our community groups to present the results of their recording projects in north Sheffield. This will hopefully draw some of our street safari audience to Sheffield 10 and show S10 what they're missing in wild north of the city.

The main question you could be asking is, "Have the street safari participants really encountered the museum or even the SNHS?" Although some use has been made of the museum specimens, we have primarily been looking at our data collections with Street Safari and the real natural history beyond the museum. I don't really care to be honest whether they've consciously been aware of it as a museum project or not. My concern is for inspiring a generation and selling a personal involvement message. Getting a non-traditional natural history audience to "Take part".

...But the reality is that the museum profile has been raised enormously, rather miraculously considering there isn't one! They have now made links with the staff and Sorby NHS, contributed to the collections, made a direct contribution to the displays and experienced the essence of the gallery without ever crossing the threshold.

They've influenced and shaped the interactives and added a great deal of knowledge to the datasets. But I will only really be satisfied, if I see further records generated from that community without our direct prompt. Ultimately I would be more pleased if I start seeing active naturalists emerging from that community in years to come, than if 50 new people visit the museum.

A key aim of the WoE gallery was to inspire in people a desire to look at the real thing, with less emphasis on facts and information giving. Street Safari is allowing us to go out and through sharing our own enthusiasm, inspire people exactly where they are. And instead of us just giving them information, they are giving it to us. By working in North Sheffield and talking to the people there we have discovered some of the most fabulous wildlife sites in the city and been able to put it into wider context so that the locals can appreciate it more. But also so that other parts of the city can realise that there is more to this area than drugs and murder.....And I suppose we may get some extra visitors.

Street safari could be easily applied as a model in other towns and cities. We hope to produce a report that includes more than just results for HLF, but also timelines, resources and tips for anyone wishing to do something similar and improve on it. Ideally we would like to continue spreading Street safari to other areas of the city. We have a few funding irons in the fire and it remains to be seen whether we will be able to continue in the future. But from this year we will at least finally have a base from which to launch.

## Leander Wolstenholme, Curator of Botany, The Manchester Museum Displaying the Undisplayable

*Not all collections lend themselves to public display. The reasons for this are numerous and include lack of gallery space, conservation considerations or simply that the specimens themselves are visually unappealing. Whilst some objects and specimens have been collected with display in mind e.g. paintings, sculptures, stuffed animals etc., many museum specimens were never intended for display. With gallery display ruled out, what are the most effective ways of engaging the public with undisplayable collections? This presentation explores some wierd, wonderful and rather odd ways of interpreting natural history collections.*

Some collections seem to sell themselves with very little effort. For example mummies, dinosaurs and stuffed animals always seem to go down well with visitors. It's too easy for those sorts of objects. They just sit in a case and look great. Other collections, on the other hand, don't seem to have the same appeal. Take, for example, the botany collections at The Manchester Museum. I think it would be fair to say that most people would consider herbarium specimens to be visually on the wrong side of less than stunning. And that's the really good stuff. When it comes to packets of mosses and liverworts the word undisplayable, if it was a word in the first place, would find a very welcome home for its definition.

It's not only the visual appeal of the specimens that is a cause for concern but also conservation considerations. Due to the delicate nature of dried plant material the possibilities for display over a long period of time are limited. Having visited many museums, the most herbarium sheets I recall ever having seen on display were at Bolton Museum in 2003 when 25 specimens were on show, mounted in frames, for a period of a month.

The botanical collections at Manchester are very large, composed of approximately 1 million plants. Even if we'd managed to display the magnificent total of 25 specimens as Bolton did in 2003 it would comprise only 0.0025% of the collection. Taking this into consideration, if you then read something along the lines of:

'putting the **visitor** at the centre of **everything** we do'

Emma Anderson, North West Hub Project Manager  
Renaissance North West newsletter (2006).

This can be a matter of concern for a Curator of Botany when 99.9975% of the collection for which you are responsible has never been near a visitor and the chances of visitor contact in the future look very slim. Don't get me wrong, visitors are a very good thing. In fact the more visitors to museums the better and the broader the range of socio-economic groups the better. It's just that if the collection for which you are responsible was never intended as a visitor attraction in the first place it can be pretty testing thinking of ways to display it. However, once you've got over the initial shock and start to view things in a more positive light you can think of the whole thing as an opportunity to be as creative as possible. With botany collections, and other similar collections, you've really got to work it – the main thing is not the objects themselves but the stories they have to tell.

So, what are botanical displays generally made up of, if not actual herbarium specimens? Here is the botany top five, in reverse order:

**5. Photographs.** It might be best to think a display along the lines of Wildlife Photographer of the year or similar to envisage these displays. They are visually appealing displays, relatively easy to set up but generally don't involve any museum specimens at all – or if they do they are there as an adjunct rather than the main focus of the display.

**4. Illustrations.** This category includes books too. Similar in many ways to photographs, they make for nice visually appealing displays and the books and illustrations on show are often actually from botanical collections.

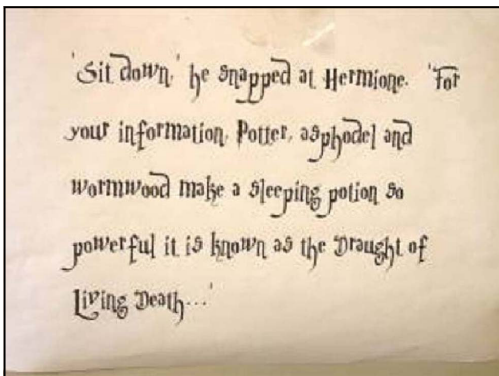
**3. Big Seeds.** Who can resist a massive pine cone or better still the legendary Coco de Mer. Is

there a museum anywhere in the world that doesn't have a *Coco de Mer* on display? No wonder it's on the IUCN Red List of Threatened plants.

**2. Living Plants.** Living plants are the easiest way of putting plants to the public – look at the popularity of parks and gardens and shows such as the Chelsea flower show. However, when your plants are flat, brown, dry and stuck a sheet of paper, somehow they seem to have less appeal.

**1. Plant Models.** It's a sorry museum that doesn't have a plant model on display.

Traditional gallery displays are probably never really going to work for herbarium specimens. So, how can botany collections be used to engage the public? Exploiting popular culture has worked really well both at the World Museum Liverpool and at The Manchester Museum. The film *Master and Commander* was launched in 2003 and the opportunity of jumping on the back of a film with 10 oscar nominations that featured a ship's naturalist as a key character was too good to miss. This was especially true as the World Museum Liverpool has collections from the Forsters who were the naturalists on Captain Cook's 2<sup>nd</sup> voyage, David Douglas and Archibald Menzies. The display of specimens in the Natural History Centre also featured a large poster with Russell Crowe glowering at the specimens below. Some found this a little hard to stomach but, at the end of the day, if the poster grabbed people's attention and drew them to the display, it can only have been a good thing.



The next exploitation of popular culture came when Harry Potter and the Half-Blood prince was published in July 2005. To celebrate the occasion we held a Young Wizard's Day at the Manchester Museum. It helps if your museum does actually look like Hogwarts and Manchester Museum certainly does with its grand staircases, gothic arches and meandering passages. J.K. Rowling is superb because real plants feature in the books and her facts are well researched. We were able to bring people on a tour of the botany collections. Positioned at stations en route were volunteers and members of staff bedecked in wizard costumes reading quotes about plants from the books and showing specimens of the plants named and discussing

their real-life medicinal and cultural uses. The tour finished with a potion-making class complete with bubbling mixtures of vinegar, bicarbonate of soda, food colouring and dry ice. The event proved to be extremely popular and we received very positive feedback.

Leading on from that when the film 'The Chronicles of Narnia: The Lion, The Witch and The Wardrobe' was released just before Christmas 2005, a Narnia day was held at the museum. Once again, this involved dressing up in Narnia costumes and, once again was extremely popular. However, on this occasion, the story line in Narnia wasn't quite so plant friendly but did allow a number of stuffed animals to be displayed. However, that turns out to be displaying the displayable rather than displaying the undisplayable. With any public programme event it's always hard to keep the focus on the actual plant specimens. Whether, its craft activities or drawing, the focus and emphasis of the event often relegates the actual specimens to a side-show.



As well as the events described above, we also tried many other ways to get the Manchester botany collections on display in 2005 including:

**Meet the Curator** – This was simply a curator sitting on the gallery documenting specimens. We thought that it might generate lots of questions and interest but it didn't really work. We also had objects for people to draw. This was much more popular.

**National Potato Day** – Everyone knows that National Potato Day is 29<sup>th</sup> January (don't they?). This event involved potato printing, a potato generated battery, potato facts, illustrations and specimens. Again, in this



instance, the specimens became sidelined

**Step into Spring** - A craft workshop making daffodils and spring flowers but also featuring specimens from the collection.

**Sunny Sunflowers** – A craft workshop making sunflowers from a variety of materials but also featuring specimens from the collection.

**Handling Table** – A regular session on the galleries where visitors can handle objects and ask volunteer demonstrators about the specimens. The handling table uses 3 botany items.

**Life Through Time Exhibition** – A temporary exhibition with one botany case featuring the largest (Coco de Mer!), smallest (orchid seeds), fastest growing (bamboo) etc.

**Say it with Flowers – Valentines Day** – An event focussed around the work of the former Professor of Botany at the University of Manchester, David Valentine involving music and poetry reading. This event was very focussed on David Valentine’s specimens.

**The Bureau of the Centre for the Study of Surrealism and its Legacy: Exhibition** – An installation by artist Mark Dion in the Temporary Exhibition Gallery. This uses 38 strange and bizarre botany items (including, of course, plant models!)

**Herbarium Tours** About 20 tours throughout the year

**Talks to interested societies** – taking specimens out and about giving talks.

The following table summarises all the specimens that were used from the botany collections in 2005 for various events. We feel that in terms of display and interpretation of specimens, 2005 was a very good year. Nonetheless, after all that, we still only managed to utilise 0.0398% of the collection.

<b>Event/Display</b>	<b>No. of Specimens Displayed/Used</b>
Master and Commander	6
Harry Potter Day	20
Freaky Fruits	15 x 2 sessions = 30
Sunny Sunflowers	5 x 2 sessions = 10
National Potato Day	15
Meet the Curator	20
Say it with Flowers	30
Handling Table	3
Life Through Time	6
Bureau of Surrealism	38
Herbarium Tours	10 per tour x 20 = 200
Talks to Societies	20
<b>Total</b>	<b>398</b>

If we continued to utilise the collections for display and interpretation at this rate, over 100 years we would have managed to display 3.98% of the collection, assuming that none of the specimens we re-used or re-displayed in more than one event or display.

In conclusion botany collections are generally very large and only a very small percentage can realistically ever be displayed. Trying to display and interpret the collections can be creative, fun and popular. But botany collections are clearly not about display. If you were only to retain specimens that could be displayed, you could reduce your botany collection to about 1000 items – probably less.

So what are botany collections for? One of the main donors of specimens to the Manchester herbarium was Charles Bailey (1838-1924). He gave over 350,000 specimens to the herbarium. The motivation for his



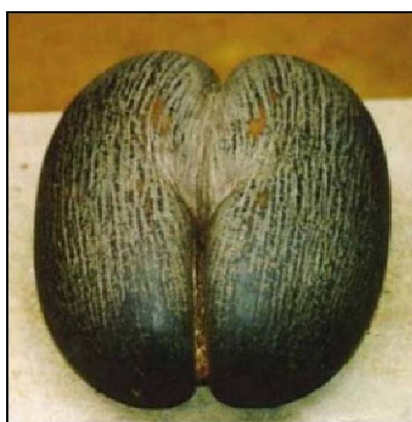
collection was that he

‘...endeavoured to obtain specimens of each species from as many different countries as possible, so that the changes a species undergoes as a result of climatic influences could be clearly recognised. This meant, of course, that each species was represented by many sheets in the herbarium’ (Weiss, 1930)

This statement about environmental change seems ever more poignant today. Botany collections are about many things but most of all they are about data. The challenge is to use that data for maximum public benefit. Going back to the quote earlier on from Emma Anderson, it seems a mistake, certainly in terms of botany collections, to put the ‘visitor’ at the centre of everything. It is much more effective to put the ‘user’ at the centre of everything.

**Reference:**

Weiss F.E. 1930. Three Manchester Botanists. *Notes from the Manchester Museum*. No. 33



**Henry McGhie, Head of Natural Sciences, The Manchester Museum, The University of Manchester**  
**Representing nature in museums: the roles of attitude and authority**

*The Manchester Museum is in the process of recontextualising its Natural History galleries with a view to redevelopment. ‘Natural history’ has been considered to be in decline for over 100 years and the role of museum natural history stands in question. In this talk, some of the preconceptions and changing attitudes to ‘nature’ and ‘natural history’ will be touched upon. The changing role of museum galleries, from presenting a particular world view to one which advocates global citizenship and earth stewardship, will be explored. As a specific example, the representation of gender in a natural history gallery will be explored.*

In this article, I will explore some of the issues which our redevelopment faces, in terms of what we might want to say and what the public might want to hear. Unfortunately, I do not plan on coming up with solutions here, but to recognise some of the issues and tensions which exist.

So what is natural history; what is a natural historian? Do we think of Gilbert White, communing with nature in order to make sense of his own place in the world? Or do we think of imperialists such as Joseph Banks, using knowledge of the natural world to drive political movements? The answer is that natural history covers both aspects, White’s ‘Arcadian ecology’ and Banks’s imperialist technoscience, are merely two different facets of the same movement. It is interesting to note that the three stated aims of the forthcoming Linnaean tercentenary, namely creativity, curiosity and science, encapsulate both of these strands.

Natural history has been considered to have become a ‘deeply unsexy’ subject (eg. Secord 1996). Fewer and fewer universities offer courses in natural history and many museums have rebranded themselves as natural science institutions. In its original meaning, natural history meant the description and enumeration of things, not necessarily restricted to plants, animals, minerals or phenomena. A ‘natural history’ was re-

quired in order for the fields of experimentation and analysis to proceed; it was a kind of ‘definition of terms’. Natural history has been separated from the fields of investigation and analysis since renaissance times, these latter fields being referred to as natural philosophy, which was long considered as a loftier enterprise. It is natural philosophy, with its scientific method and question-based research, which is the real progenitor of ‘natural sciences’.

Museums have always been important locations of natural history and are clearly identified with the subject in the public mind. This can be demonstrated by interrogating the internet for web hits: searches for terms related to ‘natural history and museums’ outnumber those of ‘natural sciences and museums’ many times over. I also note here that interpretations and investigations of nature are traditionally confined to a scientific viewpoint within museums, although visitors will more often engage with displays and objects on an emotional level.

Natural history museums are very characteristic of a particular period during the latter half of the 19<sup>th</sup> century; most of the more prominent museums which have opened since that time have been branded as science museums or science centres. These latter institutions are more concerned with the process and production of knowledge, rather than with the raw materials upon which knowledge was produced. This reflects a shift in the method of knowledge production, from object to text to media.

So what did natural history museums seek to demonstrate? Why were they opened in the first place? It has been argued that museums can only be understood in terms of their social governance (Bennett 1995: 28):

“The conception of the museum as an institution in which the working classes- provided they dressed nicely and curbed any tendency towards unseemly conduct- might be exposed to the improving influence of the middle classes was crucial to its construction as a new kind of social space.”

In the Victorian mind, an educated society was a more controllable society. Museum displays demonstrated human superiority over nature and the separation of human society from the ‘natural’ world: even the Natural History Museum had its statue of Adam on the roof (until it was blown off during the Blitz). By extension, museum displays perpetuated imperialist beliefs of Western superiority over non-Western cultures.

When we discuss ‘nature’ many of us probably have some idea of green spaces, farmland, woods and rolling hills, with birds and butterflies. Many would separate ‘nature’ from ‘humanity’, certainly from urban living. Yet these beliefs have a cultural dimension: the British model of the countryside developed in response to rising industrialisation; the belief that human society had somehow fallen ‘out of balance’, with the innocent belief that before industrialisation it was somehow in balance. The construction of the rural idyll of Constable’s ‘*Haywain*’, or the sublime nature of Wordsworth and others. Much has been written about cultural constructions of nature and criticisms thereof, but, as one writer puts it:

“*To protect the nature that is all around us, we must think long and hard about the nature we carry inside our heads*”  
(Cronon 1996, p. 22).

American environmentalist Michael Soulé distinguished between a number of constructions of ‘nature’, ranging from the idea of the great provider, the paradise, the place for physical exercise, the new age temple. To give an example of how quickly public perceptions can change, I think of the example of ‘*Emmerdale Farm*’, formerly the territory of men with mutton chop sideburns and ferrets in their pockets. This image, which had clearly fallen from favour (as evinced by declining viewer numbers), was replaced by the much snappier ‘*Emmerdale*’: the ‘farm’ element was dropped, to be replaced by hang-gliding and other leisure activities and associated conspicuous consumption.

Of course, different people have different attitudes to animals based upon their cultural background and individual experiences. Stephen Kellert devised a questionnaire which categorised individuals’ attitudes to animals in terms of eight classes of attitude and associated behaviours (Table 1). Kellert’s questionnaire has been used to investigate attitudes to animals with relation to gender, occupational group, social group and nationality. This has demonstrated that nationality has an important impact on attitude (Figure 1). Interestingly, Kellert has also demonstrated that those who have a scientific background (as most natural sciences curators do) have a strong affinity with one particular attitude, the scientific. They (we) tend to explain things in terms of how they work, their mechanics. This has been found to be of only minor interest to the ‘general public’ (whatever that is), who are likely to identify with animals primarily in humanistic and mor-

alistic terms (Fig. 2).

*Table 1. Attitudes to animals (from Kellert 1980).*

<b>Kellert's 'attitude'</b>	<b>Description</b>	<b>Example of associated behaviour</b>	<b>Benefits</b>
Moralistic	Concern for ethical treatment of animals	Membership of animal welfare organisations	Mental health
Humanistic	Interest in individual animals	Ownership of, and affinity with, pets	Companionship
Naturalistic	Interest in wildlife and outdoors	Walking as leisure activity	Physical and mental health
Ecologistic	Interest in how animals interact	Membership of conservation organisations	Mental health
Scientistic	Interest in how animals work	Collecting, observing closely	Mental health
Negativistic	Fear or avoidance of animals	Avoidance of proximity to animals	Avoidance of physical or emotional harm
Dominionistic	Interested in mastery and control of animals	Recreational hunting and fishing	Mental health
Utilitarian	Interest in practical and material value of animals	Hunting and fishing with a view to providing food	Consumptive benefits

My intention has been to explore some of the issues around what it is we are trying to say? Why are we saying it in the first place? How does that relate to what people want to hear? To conclude, I will quote from Thomas (1983):

“The work of many anthropologists suggests that it is an enduring tendency of human thought to project upon the natural world (and particularly the animal kingdom) categories and values derived from human society and then serve them back as a critique or reinforcement of the human order, justifying some particular social or political arrangement on the grounds that it is somehow more ‘natural’ than any alternative.”

Rather than believing that natural history displays are separate from human society, we should perhaps be considering what it is that we are trying to promote to our visitors, in order that they can make sense of their own place in the world.

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**Rebecca Smith, Curatorial Assistant- Natural Sciences,  
The Manchester Museum, The University of Manchester**  
**Case study: Gender and the natural history galleries at The Manchester Museum**

This case study was based on research I carried out as part of my part-time MA in Art Gallery and Museum Studies at Manchester University. We had been asked to critique an object, gallery or institution from a particular standpoint – I chose the natural history galleries as these are my favourite part of the museum (as I still work almost full-time, it made sense to choose an institution that I knew well). I chose a feminist standpoint because recent news stories and developments in the workplace had touched upon how fragile the results of the women's movements had become.

I surveyed the galleries looking at all the specimens, and using our database (KE EMu) for additional information. The key points I surveyed were: the number of male and female specimens; the number of species represented by male, female and juvenile specimens; the relative position and posture of male and female specimens; the information provided in the text relating to gender, and the style of language used. When I discussed the findings of my survey with colleagues, I received mixed reviews. Some thought that I was making a fuss about nothing, and that my results were due to lack of thoroughness, or personal bias. Other colleagues were more interested, and took the time to look on the galleries themselves. We decided to mount a temporary intervention on our natural history galleries to highlight the findings, to coincide with International Women's Week. In the following slides, I will explain the results I found, and how we represented these in our intervention.

One of the limitations of my research was that in some cases, it is difficult to determine whether specimens are male or female, particularly in the limited time I had to complete my research. However, where the sex of specimens was determinable, there are clearly more male than female specimens on both the bird and mammal galleries.

I was also interested to see how well each species was represented. On the mammal gallery, only a small proportion of species were represented by a male and female specimen. The bird gallery had better representation, but in both cases only 5 species were represented by just a female specimen. To draw attention to this bias in numbers and representation, and to touch upon the hidden females that live in the stores, a beautiful specimen of a female Nyala was put on temporary display for the duration of the intervention.

In the bird gallery, where there were more species represented by males and females than the mammal gallery, it was interesting to note the postures and positions these were in. Where a male and female of a species were displayed together, in the 69% of pairs at unequal height, the male was usually positioned above the female.

Where there was a difference in the posture they had been mounted in (35% of pairs (this was more subjective)), males were usually more erect or dominant in posture. In many cases, the difference in height and posture was historical, and a taxidermist had determined this when specimens were mounted together. However, in species where the female and male specimens were mounted separately, the positioning of male specimens above females still occurs. To show this in our intervention, we simply used vinyl circles to highlight examples, with a text explanation at the side of the case.

It was interesting to note the way in which language is used in the text on the galleries. The mammal gallery contains a number of specimens that have a particularly strong identity, some of which are very popular with visitors. It is interesting to compare the interpretation of these specimens. The fact that Mr. Potter's Cow is named through her (male) owner is rather telling. The text for Maharajah and Old Billy refers to 'him' and 'his', whereas Mr. Potter's Cow is referred to simply as 'the cow' or 'the specimen'. Her gender is not referred to in the text, and she is thus represented as an object rather than a once living individual. This is particularly inappropriate since the remains of Maharajah and Old Billy are skeletal, whereas Mr. Potter's Cow is a taxidermy specimen, and is therefore more lifelike to her audience.

More generally, the text tends to present the perceived roles of male and female animals in an androcentric way. The words 'female' and 'mother' are more or less interchangeable in the mammal gallery text. The word 'parent' is used often in text, although the word 'father' is not used once on either the mammal or bird gallery. Statements such as *'The more powerful males have harems of between 5 and 20 fe-*

*males* [Californian Sea Lion] and *'Males with a territory have harems of about 50 females'* [Northern Fur Seal] suggest that males have ownership of females, rather than females being the decision-makers in the courtship process. As there is text with almost every specimen in the galleries, we decided to draw attention to some of this by enlarging it and displaying it in front of popular specimens, so that it was less likely to be ignored.

To some extent, the specimens that are on the galleries are constrained by biases in collecting as well as display. An example of this is shown in the case of Lord Egerton's antelopes. A sample of his notes are shown to the side of the case, which indicate that out of 22 animals collected, only 4 were female. There may be various reasons behind this. More recent choices affecting which specimens are to go on display also play a part on the bias seen on the galleries today.

Undoubtedly the most contentious part of the intervention was to conceal the male specimens in the antelope case. Some visitors felt that they had been denied the chance to see what they had come for. This was something that concerned me about this part of the intervention. However, the point that many female specimens are permanently concealed by being kept in store was an important one, and the antelope case intervention was also balanced by the additional female Nyala being on show.

The intervention was on display for 5 weeks, rather than the original 1. I am rather relieved that it's down now, as the social acceptance of anti-women jokes was getting quite tiring! I hope that it may have prompted visitors to question the authoritative voice of museum interpretation, which can be out of date in some surprising ways. At the very least, it has promoted debate in our museum about the function of our displays, and ways to update galleries in a low-cost but eye-opening way.

Feel free to email any comments to [rebecca.m.smith@manchester.ac.uk](mailto:rebecca.m.smith@manchester.ac.uk)

This research can be seen in full on the Manchester Museum's website:  
[/www.museum.man.ac.uk/information/pdfs/feminist\\_critique\\_nat\\_hist.pdf](http://www.museum.man.ac.uk/information/pdfs/feminist_critique_nat_hist.pdf)



Concealing male specimens in the antelope case

## A Tale of 2 Standpoints - Andrea Hallaway

At this year's NatSCA annual meeting in Liverpool a difference of opinion occurred. Emma Freeman had just finished her presentation entitled 'Darwin Centre and beyond: access to collections and access to ideas at the Natural History Museum' and it was question time. William Lindsay (Royal College of Art / V&A Conservation) asked with no hesitation,

"But why Alton Towers?"

He was referring to Emma's identification of Alton Towers as being among the key attractions with which the museum considers itself in competition. Special exhibitions are a vehicle to bring visitors in and support the permanent displays, but are often criticised for being sensationalist, over-simplistic and sometimes inaccurate, with too much of an emphasis being placed on generating revenue. A back and forth confrontation ensued with William making the valid point that the museum was a very different place to Alton Towers, with different aims and values, so why should it put itself in the same competition boat? Emma's response was that whether we like it or not, surveys have shown that families looking for a day out may well choose either a museum or a theme park.

Unfortunately this matter went unresolved due to time concerns. But I couldn't stop thinking about this conflict of opinion. I have worked in both Public Engagement Group and Science at the Natural History Museum, and whilst a part of me wants to stay true to the traditional and ideological values of our scientific institution, which believes in scientific educational entertainment for its audience, I also appreciated the need to acquire funding to achieve this noble status. If the reality of this means competing with a non-educational theme park in order to entice our audience for their own benefit then so be it....It could be argued, however, that if we were willing to compete with, and therefore try to create theme park type exhibitions (high entertainment value but low/no educational value) just to generate money, at what point would we have to kiss goodbye to our proud and much coveted reputation as being one of the leading natural history museums in the world? If we kept doing what some would consider low quality special exhibitions designed only for high visitor numbers, we would also run the risk of becoming known only for these.

But on the flip side of the coin, it's not like these special exhibitions are pure trash; in fact they are exhibitions put together with the utmost of interpretive care, with strict and well considered learning outcomes just like the permanent exhibitions. The only difference is that the special exhibitions have to be a (pregnant pause in preparation for this most unpopular phrase...) *Block Buster*. It has to make money for the museum and therefore topics are chosen largely for their popular appeal rather than more ambitious, in depth subjects that may be chosen for permanent displays. The thinking is that permanent exhibitions might aim to encourage people into learning or experiencing something they didn't necessarily realise they wanted to know. Special exhibitions topics are chosen with the intention of having guaranteed instant popular appeal.

Anyway, all this was just my (rather extensive) initial thoughts on the matter. I seemed unable to budge from the middle of a rather uncomfortable fence and commit to one side of the argument or the other. I needed to do more solid investigation work to really understand this issue, and where better to start than on the internet. I wanted to find out whether we really did compete with the likes of Alton Towers for family days out, so I typed '*days out families*' into Google. Sure enough, on the first site I was presented with, Alton Towers was highlighted in all its eye-catching glory. One click away, under *Southeast England inc. London* and the 5<sup>th</sup> on the list was our very own *Natural History Museum*, and then in brackets just to avoid any confusion...*(the one with all the dinosaurs)*. So, from this initial exploration I think I can safely assume that the Natural History Museum does seem to be in competition with other non-educational attractions across the country.

Then I looked up the mission statements of both places in question; The aim of The Tussauds Group, which owns several large theme parks including Alton towers, is '*to dazzle visitors with the most captivating city centre attractions in the world and the most diverse and exciting portfolio of theme parks in Europe*'.

The Natural History Museum's vision reads;

*We are one of the leading natural history museums in the world. Our ambition is to be recognized as the world leader. We aim to share our knowledge, engage people's curiosity and encourage both their enjoyment of the present and responsibility for the future of our planet.*

It was clearly time to speak to the persons involved so I arranged to meet William. William is concerned with authenticity in museum exhibitions. By this he means to question the truth of the exhibition's content and how much the museum should interpret evidence within them. For example he wonders what experience visitors are supposed to be getting from a dinosaur exhibition. Dinosaurs are fossils and they are extinct so why are we, the Natural History Museum, trying to recreate them with animatronics when we don't actually know what they looked like? If the reason is purely to attract and entertain families with children, with no consideration towards educational value, it is frighteningly similar to the aims of Alton Towers.

And how does our museum define of success anyway? Looking back at the museum (he used to work here) William recognised a cultural shift imposed on staff with the introduction of an admission charge in the early 1990's. A product now had to be marketed because of the charge, and visitors were now customers and had to be treated with more care and as a result were perceived differently. Although the museum is now free again, those values of seeing the visitor as the customer seem to have stuck. We still appear to be obsessed with visitor numbers and increasing them, even when, particularly in school holiday time, the galleries become uncomfortably packed. What is the museum's ethos now to its public, as it seems that numbers = success = value. Is this really a good measure of success? For example is it deemed a triumph if another crowded special exhibition about dinosaurs pulls in the target amount of people and therefore money, even though the visitors may have experienced little or no satisfaction from the content and environment?

William also questioned why the museum wants to promote itself as a theme park when clearly it is not? And why do different principles appear to apply to different areas of the museum, for example permanent exhibitions aiming to adhere to the museums vision, whereas the purpose of the special exhibitions is to make as much money as possible. What's more, if we keep doing exhibitions on dinosaurs are we not in danger of appearing to have run out of other ideas? At what point do we stop compromising? The museum needs to be unique and true to its vision, even when forced to compete for visitors.

Another point that came up in our discussion was; when is the decision made by the visitor of where to go? The night before: the week before: after a good solid bit of researching or possibly on a friend's recommendation? And why does it not appear to be as simple as going to one place for entertainment and another for education? Finally, William suspects that the museum aim got distorted when money and visitor numbers became the driver to communicate with the public, rather than a good visitor experience and proven learning outcomes. It was time I went to talk to Emma on the subject and get some answers to these questions.

The museum wants to strengthen its position as one of the UK's top visitor attractions. We recognise that there are many different pulls on people's leisure time, the museum is just one of them so we want to make sure we are just as attractive or more so, than their other options for a day out. At £8 per visitor, special exhibitions need to be well worth the value and provide an excellent day out. In order to do that we are looking at research that shows many visitors come to the museum for an entertaining day out with their friends or families, as well as to find out something new. We can learn from other leisure industries such as theme parks, in order to use entertainment as a hook. Emma feels that making a distinction between entertainment and education is false.

Since going free the museum attracts double the amount of visitors, so we are keenly aware that we need to provide more for them to do, and we have needed to increase our revenue to cope with this since the government does not pay for it. And lets not forget that these paying exhibitions are a major source of funding for projects such as Darwin Centre 2. Emma is also keen to point out the benefits and opportunities of special exhibitions. They allow us to outreach valuable science knowledge and museum collections. As a result other institutions (museums, science centres etc.) are interested in this exhibition for their outreach programmes. For example a special exhibition currently being worked on called 'Antarctica' is now endorsed as an 'International Polar Year' project.

I asked Emma if she thought doing another dinosaur exhibition would eventually 'dumb down' the image of the museum, or run the risk of becoming known for one topic only. She said that the decision to do a dino-

saur exhibition every three or so years partly came about because the theme is so popular it is an almost guaranteed success and meets our business objectives. But to create a new and exciting exhibition with fresh new objects, experiences and inspirations on a tried and tested subject is quite a challenge. What they allow us to do is experiment with new ideas, technologies and experiences in order to reach visitors increasingly sophisticated demands from us. This is the life work of the NHM scientists involved in these exhibitions, and more importantly these exhibitions still get the process of science across. Also, here have been many other successful special exhibition themes in the past few years including 'Voyages of Discovery', 'Diamonds', 'Antarctica' etc.

The museum is getting much better at using market research to inform topics for special exhibitions. A fairly new process is in place for deciding new special exhibition themes: a forum on the museum intranet where staff can make suggestions. From this the front runners are tested in market research and feasibility studies. So it does seem that employees have direct influence over subject matter, and maybe we can look forward to being more experimental with special exhibition topics, pushing boundaries and trying new technologies. I asked Emma if there was any method in place to stop special exhibitions becoming so crowded that it becomes a poor experience. She said that regarding the newly opened Dino-Jaws, it has been designed to have a 40 minute dwell time, which is optimal in a content rich, hands on exhibition.

A new strategy for the museum called the 'virtuous circle', aims to extend the visitor experience beyond the museum visit. We aim for the visitor journey to start and end with the website – this will allow visitors to plan their visit so they can explore, experience and learn at the museum (getting hands on, experiencing the collections, perhaps meeting scientists) then return to the website to explore in more detail. The idea is that the museum is the inspiration point. The web allows for more self-directed, thorough learning. If visitors have a good time in special exhibitions they may come back to see the permanent exhibitions and have a more in depth experience. In view of this there is a real effort to link special exhibitions with the permanent galleries.

So what is my conclusion to all this?

I think that yes, the museum ought to maintain its authenticity and integrity in special and permanent exhibitions alike. But how far do we take this authenticity? Strictly speaking we don't know what dinosaurs looked like, but we have evidence to suggest how they might have been and animatronics is the key to firing people's imaginations, arousing their curiosity and finding out more. However, I do think there is a danger of losing integrity in special exhibitions if the emphasis is placed too heavily on the necessity to be a block buster.

I do believe that the team involved with interpreting special exhibitions aim to ensure that visitors are provided with a fulfilling and rich experience, although sometimes I think this can be a challenge when faced with similar topics year on year. I also have concerns about the achievability of the virtuous circle strategy. I think it's a great idea and a great resource but is it not a bit unrealistic to think that even half of our visitors will complete the circle? We have already identified that many of our target audience visit us for fairly superficial reasons like a fun, social day out, and I think it highly unlikely that this will change much, without a drastic increase in outreach work and advertising in order to get people aware of the website (the beginning of the process) in the first place.

As for the Alton Towers thing that started off this whole affair. Well, I would like to believe that people come to the Natural History Museum in order to feel stimulated, to learn about the process of science and our science, to experience something new etc. I would like their reasons for choosing to go to Alton Towers to be different and for the two places not come into the same category. But this is what I feel and the distinctions I make. I love museums and I have a strong interest in science, I do not have a young family and I do not, at the moment, consider Alton Towers a particularly satisfying or value for money day out. But if market research shows that we are competing with theme parks for visitors then that is a fact. It doesn't mean to say that we are turning into one just because we entice our visitors in by the promise of scaring young children with moving dinosaurs.



## A Personal View of the Conference

- Simon Moore

The new and upcoming face of Liverpool as the UK's European City is a refreshing view given the Government's gradual conversion of the Heritage Sector into an extension of the Educational curriculum. Liverpool Museum is now titled as The World Museum Liverpool with its Clore Natural History Centre and many other upgraded features. The Clore NHC was used as a role model for our own SEARCH educational facility at Gosport.

Following a very courteous welcome from Steve Judd, the Keeper of Liverpool Museum, Paul Manners from BBC Learning opened the presentations with a talk Inspiring Action. With a market size of roughly 30M people in the UK he informed us that Natural History (sic) was the second most popular interest, largely inspired by children. His aim is to inspire 1 million people and involve them. Using an early 19<sup>th</sup> century visionary's idea of creating bands of green space in an urban environment, Paul highlighted the importance of researching into understanding the audience in shaping the BBC's new project entitled Springwatch to be launched in June this year.

Suzie Fisher, as an independent consultant, viewed the setting up of new displays at the Horniman Museum blending new displays into a late Victorian gallery and in particular a behavioural study of gallery visitors. What did they want to see on display? As one young visitor aptly put it: "Stuffed animals are real and being nose to nose is awesome!" She introduced the term *Vision Byte* as a measure of information that is going to have some impact (be remembered). She concluded that having animals (particularly) mounted in informative natural habitat dioramas was what people wanted the most.

After coffee, Kevin Walsh, who is Executive Officer at Oxford University Museum of Natural History outlined the 11 year programme (from 1997 to 2008) for new displays in the central gallery and how certain tactile aspects have had a definite and positive feedback from the public. He also had to approach the dilemma of creating new displays that would not clash with the Arts & Crafts architecture of the Museum. The aim was to appeal to a more universal and less academic audience without compromising the educational aspect of display ethics.

Simon Chaplin then spoke eloquently about the Royal College of Surgeons' Hunterian Museum re-vamp. As before, he had to make John Hunter's collection and all of the other anatomical display specimens more universally appealing. With a £3.5M budget he led a small team to transform the old display area, combining an outdated infrastructure with poor interpretation, into something *au courant* and which would make the sometimes rather gruesome aspect of human anatomy less unappealing to a more public audience. The result was a triumph of design, a 'crystal gallery' of glass that cunningly used space without giving the appearance of overcrowding. The results have been reflected in the sustained high visitor figures since.

William Lindsay, formerly head of the NHM's palaeontology conservation unit and now leading RCA and V&A conservation, also talked eloquently about what the public wants, the public gets, taking into account the complex balance of ethics and authenticity in natural history displays. His first slide included an image of mice on toast (as a cure for children who wet their beds) – typical, I thought, of the present (and not-so-past) trend to use shock tactics to get public attention. He spoke of a 'Museum of Jurassic Technology' with animatronic dinosaur dynamism – that's what brings in the public but more of museum precision and less of the theme park where sensationalism can sometimes sacrifice accuracy by use of artistic licence.

Michael Harvey - Interpretation Manager for gallery development, Emma Freeman - Interpretation Manager for special exhibitions and Louise Cracknell - Interpretation Developer for the new Darwin centre (phase 2) at the Natural History Museum showed the projected new buildings and display areas and the dilemma (and dangers) of pandering to public taste – polar bears in the Antarctic was used as an example since Suzie Fisher had used such an image during her talk about the tightrope of balancing accuracy against public demand. The project of Darwin phase 2 seems to be peerless for the time being, certainly Mike Harvey's glib explanation might need a slight pinch of salt when it comes to reality; we shall await further developments.

The first day concentrated on the Museum department stores: I visited the Geology and Botany stores. Of note were the (very) mildly radioactive minerals stored in normal sliding drawer cabinets, with yellow haz-

ard labels marking the drawers. These minerals are not so much a radiation hazard or emitters of radon, else they would be in required storage. There were some most impressive collections of specimens from nearby Derbyshire's mineral rich Peak District and included a local and significantly-sized meteorite. A question about Iridium levels sparked a quick discussion about the dinosaur extinction event. The Botany collections are now in a much better curated state since my last visit and Donna Young has since completed work on the Royle Herbarium. There are still a few minor potential problems in the form of open pigeon hole storage and runners in the floor for the roller-racked herbarium cabinets. It was also good to see that they have a quarantine room for incoming material.

Henry McGhie, Head of Natural Sciences and Rebecca Smith, Curatorial Assistant from Manchester Museum started the second day's presentations. Henry stated how the term Natural Science was much less known as opposed to Natural History, judging by a statistical survey of website hits (also according to Soulé's *Construction of Nature*, 1995 and Keller's *Attitude to animals*, 1980). His role has recently been a process of elevating the gradual decline of Natural History in their Museum by addressing the changing attitudes to nature versus natural history. He also told us of the popularity of Edible Insect Days and educating the public into a much-underused food source!

Rebecca gave an eye-opening account of sexism in vertebrate displays. How these are, or have been, accidentally (or purposely) biased towards the sometimes more spectacular male specimen whether by superior positioning or by an absence of the female and how this might relate to public opinion. For those who have been long in the Sector, somehow this has been a rather sub-conscious (or Freudian) imbalance, although it might equally reflect what is going on in the natural world!

A local team - Mike Graham (as manager), Steve Cross and Paul Finnegan each related about their various educational sectors in the Clore Natural History Centre and the Bug House and their interactions with both the public and school groups. Latterly using the Mersey Ferry service as an occasional Natural History Roadshow and bringing public awareness into the realms of planktonic sampling and other aspects relating to the cleanliness of the River Mersey. Paul also mentioned the mental condition of Delusory Parasitosis where people can experience itching or see in their mind's eye something they dislike such as an imaginary spider – some thing I often come across with dealings with spider phobias.

Paul Richards who is Curator of Natural History at Sheffield Galleries and Museums Trust gave a didactic account of the soon-to-be-opened Weston Park Museum and, while the main building was undergoing this refurbishment, bringing Natural History, via an HLF Grant, to the public with an open-air Street Safari Project. This was aimed at helping people, especially those involved with local naturalist groups, to hone their identifying and other related skills. This project was also and particularly aimed at encouraging and improving biological recording levels in a significantly under-recorded area.

After coffee, Leander Wolstoneholme, Curator of Botany at the Manchester Museum, gave a somewhat hilarious presentation but which nonetheless underpinned the problem of bringing a rather dry subject into the Public Eye by cunning means. As most botanists (quite rightly) will tell you there is a woefully small amount of actual botany on display in museums that is not window dressing for dioramas. Capitalising on both Narnia and Harry Potter mania with Herbology and Potion making, he was able to introduce children and parents to botany by a much more appealing route.

Although some might rather look down on such a cunning approach yet we cannot ignore the results and the positive feedback from an increasingly demanding younger sector of the public.

Richard Sutcliffe who is Research Manager (Natural History) for Glasgow City Council gave a detailed account of the huge and multi-disciplinary project costing £27.9M, 10 years in the planning, of Kelvin-grove's new natural science (sic) displays. His enthusiasm for this project showed in his presentation and left us somewhat boggling at its enormity. The re-vamped Museum is scheduled to re-open in July this year.

The final speaker was Will Watts, the aptly-named Dinosaur Coast Project officer who has been engaged in the challenging task of adapting an eccentric building – the tower-shaped Rotunda Museum at Scarborough which was set up by William Smith in 1829. The local geology collections required a re-display programme, again combining recent display technology without compromising the unusual shape of the building and adapting its in-built cabinets. The museum is due to re-open in 2007. I was, once again put in mind of William Lindsay's talk the previous day of combining ethics, accuracy and appeal. Throughout the Con-

ference presentations, the difficulty of combining these required epithets was echoed repeatedly and how the problems had been successfully overcome.

During the afternoon, the tours concentrated around the Museum's educational facilities: entertaining and educating children into the art of Egyptian mummification using an adapted anatomical dummy. Paul Finnegan's Bug House is an ideal educational experience and tool of aspiring entomologists. The leaf cutter ant display was most impressive incorporating a suspended rope so that the ants can march to and from with cut-up leaf fragments to culture their fungus gardens, housed under glass domes. The rope is completely uncovered so that full visibility is maintained and bringing a sense of the jungle to the display.

### **An Introduction To The British Historical Taxidermy Society**

Martin Dunne and Adrian Sailor founded the B.H.T.S. in 2004. Both founder members being keen collectors of historical taxidermy. It has been evident for many years that there was no representative body for the collector of taxidermy, particularly those with an interest in the historical aspect. The Society was soon born. Now up and running it represents the largest group of collectors of historical taxidermy in the U.K. With many members being recognized authorities in particular areas of interest. We are also proud to have Dr. Pat Morris and Christopher Frost as our Patrons, two of the most respected names in the taxidermy fraternity.

The society held its' inaugural meeting at The Natural History Museum, Tring, in November 2005 where members enjoyed a behind the scenes tour and a talk by Pat Morris on the history of taxidermy. This was a resounding success with members attending from all corners of the U.K. who found the museum staff extremely accommodating.

Whilst the Society is still in its infancy, our aims are clear; to provide a forum for collectors of taxidermy, natural history and associated subjects. We aim to promote, preserve and further our knowledge of the subject and its past practitioners. We are also in the process of forming a society library, which has acquired its first publications through acquisitions and donations.

Our aim in 2006 is to create an archive of ephemera and related material. Plans of a central databank on historical taxidermy, its practitioners past and present are also well in hand. In fact, we are accepting donations both from members and collectors, via the Internet and in traditional paper form.

Looking further ahead, we are assessing the possibilities of creating a B.H.T.S collection of historically important taxidermy. This obviously creates its own problems for a society such as ours, housing and funding such a collection being the most obvious.

We believe all our aims are achievable and with the level of support we have so far enjoyed, we feel the society will at last bring together a much overlooked fragmented pool of information, to one central point benefiting collectors and researchers alike.

Any enquiries please contact: -

Martin Dunne (chairman)  
Tel: 07749189201  
e-mail: taxidermy1@hotmail.com

Adrian Sailor (secretary)  
Tel: 01785223215  
e-mail: ar.sailor@homecall.com

### Book Review

**Merchant Rex: A guide to the restoration of antique taxidermy specimens**  
**Norman Cottage Publication. ISBN 1 902 474 104. Price £9.00.**  
**- Simon Moore, Senior Conservator of Natural Sciences,**  
**Hampshire County Council Museums, Libraries & Archives Service**

Rex Merchant's book on the Restoration of Antique Taxidermy Specimens has just appeared, published by himself and at a cost of a mere £9, it covers how to assess damage, to repair groundwork, rectify problems with birds and mammals (quoted as animals), fish, case repair and various other associated items. Unfortunately the book is full of errors and gives the impression that it has been produced in a hurry. The final chapter (more than half of the book) is devoted to a useful list of taxidermists with thumbnail details. His list is rather selective since he mentions himself but other contemporary taxidermists such as the late Don Sharp or others still living – Derek Frampton, James Dickinson, Emily Mayer, Mark Winston-Smith, Sean Douglas or Jack Fishwick to mention but a few are omitted! I nearly missed the entry for Ward, Rowland as it is listed after Wright and Wyatt.

His citation ethics are also highly questionable! Apart from a brief mention of Christopher Frost's "outstanding book" as an addendum at the end of chapter 10, he has cited no other sources at all: Christine Taylor's *Directory of Hampshire Taxidermists* (1997), (Ed.) Sue Herriott's *British Taxidermists, a historical directory* and material from websites, to name a few, are not mentioned anywhere although he has obviously lifted their research text, almost word for word. It is very handy to have all this information collated in a small pocket volume, but there is not even a reference or bibliography list, which the reviewer finds highly unethical. The fact that he is making money from this and has an author's copyright notice at the start of the book AND a copyright marking on each page with his name, is unbelievable hypocrisy!

The (plagiarised) part could be really useful but some of it is outdated (Guermonprez collection transferred from Bognor Regis Museum to Portsmouth about 30 years ago!). The technical part could be really useful too but it suffers from inaccuracies concerning the present legality of bird egg possession, COSHH regulated fumigants &c. Poor use of English (effected vs. affected), with occasional syntax errors doesn't help: it would appear that the author didn't ask a competent reviewer to examine the text. The author appears to be an authority of self publication and has even written a book on the subject (*Publish books my way: a personal account of writing, designing and marketing my own books*, a Norman Cottage Publication, 2000) so it is strange that the present work is so amateurishly presented with its titles merging into the cover photograph.

Overall the work is shameful: it could have been a really useful and worthwhile, handy reference book. To this end I hope that it might run to a second (and immediate) printing with a radical overhauling of the text so that it looks more professionally written, with more careful research and updating, a list of cited sources and a proper list of acknowledgements before he has the effrontery to copyright his own work to such an extent.

I have just heard that Rex Merchant has been shown the error of his copyright ways and decided to withdraw the book and recall sold copies for a refund; this being the case I hope that he will reissue it in time, bearing in mind the many criticisms, and produce what could turn out to be a really useful book.

## NatSCA Biochemistry Seminar

Jodrell Laboratory,  
Royal Botanic Gardens, Kew  
9<sup>th</sup> November, 2006

9.00-9.15	MEET UP (Coffee and tea available.)
9.15 – 09.30	WELCOME, and general introduction: brush-up of terminology. Remember those benzene rings? [S.Moore]
9.30 - 10.00	Introduction to biochemistry: brush-up of proteins, amino-acids, enzymes <i>et al.</i> [David Lampard, Ipswich Museum]
10.00	Experienced biochemists arrival by this time please.
10.00 – 11.00	Effects of fluid preservation on zoological tissues, including drying out and rehydration. [Amandine Péquinot, Musée d’Histoire Naturelle, Paris]
11.00 - 11.30	Coffee and tea break.
11.30 - 12.00	Effects of fluid preservation of DNA. [Jules Carter, Cardiff]
12.00 – 12.40	Effects of fluid preservation on botanical tissues, also incl. herbarium drying. [Bob Stoddart]
12.40 – 13.00	[space]
13.00 - 14.00	Lunch
14.00 – 14.45	Effects of Anoxia treatment on Natural Science Specimens with demonstration [Chris Collins, NHM]
14.45-15.30	Effects of Thermolignum treatment on Natural Science Specimens with demo [Adrian Doyle, NHM]
15.30 - 15.45	Coffee, Tea
15.45 - 16.15	Digestion of tissues by invading fungal mechanisms. How are tissue elements altered? [Bob Stoddart]
16.15 - 16.45	Fading – how do pigments become degraded by light, fluid preservatives, drying (especially dried insects – Odonata)? [AN Other]
16.45-17.15	Final discussion and close. [Simon Moore and participants]

\*\*\*Any speakers available for the last two slots would be most welcome.\*\*\*

To speakers: please advise me if your intended slot is too long or short, also if the title is correct.

Simon Moore [simon.moore@hants.gov.uk](mailto:simon.moore@hants.gov.uk)

### **Natural History Conservation Bursaries granted by HLF for Icon**

The Institute for Conservation (Icon) has been wholeheartedly supported by the Heritage Lottery Fund to address the shortage of skilled conservators within the field of conservation. Icon's partners in the scheme are: English Heritage, MLA, Cultural and Creative Skills Sector Skills Council, Cymal and the National Trust

This scheme will provide 17 funded practical placements designed for graduates and individuals new to the field. The successful applicant will receive an educational stipend of £14,500 p.a. The internships' will run for 6, 12 and 24 months over a four year period and in this time Icon will be able to establish and raise further funds for a work-based training scheme.

Natural History conservation is one area that has been fortunate in receiving this HLF funding. Other disciplines offering placements are stained glass, stone, preventative, textile, conservation science, ceramic, ethnography, metals, archives and books. The HLF has granted £1m towards a scheme of work-based training placements across all fields of conservation. The Icon bid is one of 10 such training schemes to be supported by HLF across the wider heritage sector.

The National Museum of Wales (NMW) is one of 60 UK based organisations that has been chosen for this scheme. Interviews will be held within the summer and once appointed; the successful candidate will begin their one year internship within the museum from September of this year.

The National Museum Wales is notable in that it has a conservators within the fields of geology, zoology and botany which will provide a comprehensive training for the successful candidate.

For further information visit <http://www.icon.org.uk> or write to  
The Training Development Manager  
Icon, PO Box 23769  
Edinburgh EH3 5XP

**NEWS**

*Notices, Adverts & Meetings*

**Notices:**

**ICON & HLF Bursary Scheme**

We are delighted to let you know that Icon has opened its Training Office in Edinburgh, from Monday 15th May - within the Royal Society of Edinburgh's buildings. The office will deal with the HLF Training Bursary scheme and other training initiatives for Icon across the UK, as well as providing a contact point for Icon Scotland Group. Please do get in touch, or call in on us if you are in Edinburgh.

**Contacts:**

Carol Brown - Training Development Manager - 0131 240 5032 - hlfbs@icon.org.uk

Gillian Drybrough - Administrator - 0131 240 5038 (also fax number) - gdrybrough@icon.org.uk

You can now direct any conservation careers or training enquiries to: training@icon.org.uk

**Our address:**

22-26 George Street  
Edinburgh  
EH2 2PQ

**Meetings:**

**GCG Programme**

**GCG Workshop – Geological Archives**

11 October 2006. World Museum Liverpool, (Date to be confirmed).

All in hand. Details will be published in June Coprolite. (Tony Morgan Leading this)

Tony Morgan, World Museum Liverpool. 0151478 4286  
tony.morgan@liverpoolmuseums.org.uk

**GCG Seminar and 33rd AGM - 4 and 5 December 2006**

Learning with Geology Collections, Plymouth City Museum & Art Gallery  
Session to be fully published in November Coprolite. Helen Fothergill organising.

Helen Fothergill, Plymouth Museum. 01752 304774  
helen.fothergill@plymouth.gov.uk

**Study Visit : Liverpool/Manchester**

To be arranged. General Contact, Steve McLean, Hancock Museum. 0191 222 6753 s.g.mclean@ncl.ac.uk

**Meetings:**

**16<sup>th</sup> International Meeting of the  
SOCIETY FOR THE HISTORY OF NATURAL HISTORY**

*September 21 - 24, 2006*

**Hosted by Redpath Museum  
(McGill University), McCord Museum and the Jardin Botanique  
Montreal, Canada**

**Theme:  
*Natural Science in the New World: The Descriptive Enterprise***

The history of natural history in Canada is not as well known as it should be, but it is rich. One of the first descriptions of the New World was Jacques Cartier's account of "diamonds" at the mouth of Rivière du Cap-Rouge in 1541. This episode gave Quebec's Cap Diamant its name and the saying "faux comme des diamants du Canada". French, English, Italian, and other European explorers described the flora, fauna, and natural resources of the land and helped generate the explosion of natural history knowledge that constituted the scientific revolution and enlightenment.

Meetings exploring these topics will be held at the Redpath Museum and the Jardin Botanique de Montréal, with special visits to the Biodôme de Montréal, the Insectarium, the Blacker-Wood Rare Books Collection and the Osler Medical Library at McGill, and the McCord Museum.

**Dublin Blaschka Congress**  
September 28 - 30, 2006, Dublin

September 2006 will see the first-ever international meeting focused on the work of glass artists Leopold and Rudolf Blaschka. These 19th Century artists produced a fusion of science and art which has never been equalled. Art and science museums worldwide hold Blaschka sculptures, which are increasingly recognised for their historical, technical, and artistic importance. Bridging the gap between science and art puts the Blaschka's work in a unique position, which is long overdue for serious study.

The Dublin Blaschka Congress will be hosted in Ireland by the partnership linking University College Dublin and the National Museum of Ireland (Natural History), in collaboration with the Natural History Museum (London). Conference proceedings will include major contributions from some of the world's leading glass scholars: David Whitehouse (Corning Institute of Glass, USA), Susan Rossi-Wilcox (Harvard University, USA), renowned Blaschka scholar Henri Reiling, and Chris Meechan (National Museum and Galleries of Wales).

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