Natural Sciences
Conservation Group

Newsletter

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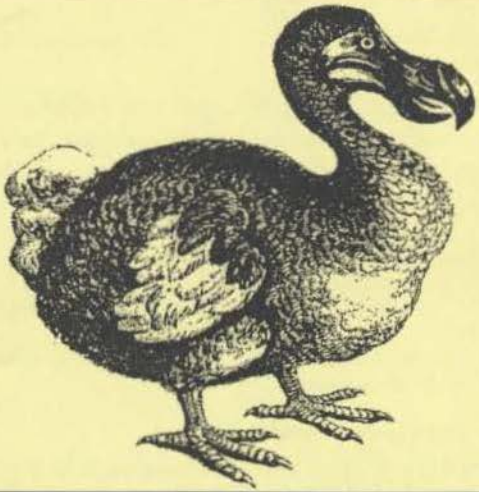
NATURAL SCIENCES CONSERVATION GROUP



AGM 2002 Norwich
Sponsored by Preservation Equipment

The Society

The Natural Sciences Conservation Group promotes: research and exchange of ideas; advances in technical and ethical standards; the public profile of the conservation and preservation of natural science collections and objects; training; and publications.

Membership

The Group is keen to open its membership to all those involved in the care and conservation of natural science objects and encourages their active participation.

Annual Subscription

Students (UK only)	£8.00
UK personal	£10.00
Overseas personal	£12.00
Institution	£25.00

Newsletter

The Newsletter is a forum for articles, views and opinions on the care, conservation and curation of natural history and associated material. The Newsletter is produced three times per annum (January, May and September) and is free to all members.

Advertisements

1/4 page	£15.00
1/2 page	£25.00
Full page	£50.00

Instructions for Authors

Material should be type-written and double-spaced in A4 format and if possible accompanied by a text file or Word document on disk (Dos-formatted). The pages should be numbered and the position of any tables and/or figures should be indicated on the hard copy. The names of animal and plant species should be underlined and the authority name given in full for the first time used, thereafter they may be omitted. All references should be given in full. Articles and other items for inclusion should be submitted to the Editor at least three weeks before the publication date.

Opinions expressed in the Newsletter are not necessarily those shared by the NSCG Committee, the Editor or the membership at large.

N.S.C.G. Committee Members

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NATURAL SCIENCES CONSERVATION GROUP

Editorial

Welcome to Issue 19 of the Newsletter...

Dear Members,

Well, this is my first issue as editor and I'm very pleased to be involved at such an interesting time for the NSCG. I'd like to thank Darren for all his help and I look forward to hearing from lots of you in the future, your views and your articles.

Thanks are also due to all the speakers who participated in our Conference in Norwich, and especially to those who sent papers to me for inclusion in the newsletter. Also, to Nigel Larkin who organised the conference (and the reviving drinks in the mornings!)

In this issue we have the first part of our conference report. (Look out for part II in the September issue). This includes papers presented which deal with the mechanics of moving collections and the innovative ways found to overcome the inevitable difficulties that were encountered along the way. I hope to be bringing news of our website soon, which is currently being designed for us, and also the ongoing discussions of the potential merger with the BCG.

I will make the standard editor's appeal for articles as well as for any interesting websites, items of news, meetings and events to be included in our 'Conservation Focus' section. Also, any interesting books that you think might benefit from a review or a recommendation to our audience, or science collection / collections management issues that could be shared.

Vicki Noble

Contributions for Issue 20, September 2002

All articles, news, adverts and other items for inclusion for the next issue of the NSCG Newsletter should be sent to the address below:

Vicki Noble [Editor, NSCG]
Department of Botany, Natural History Museum, LONDON, SW7 5BD
email: vicn@nhm.ac.uk

View From The Chair

Paul A Brown, 31st May 2002

Welcome to the 19th Newsletter and the first Newsletter edited by our new Editor Vicki Noble. She is suitably qualified for the job as she has a degree in English and a Masters in Mediaeval Manuscripts and now works in the Botany Department at the Natural History Museum. Both Darren and myself are most pleased and that we have such a willing and enthusiastic volunteer for the job. Thanks go to Darren for his three-year stint as editor during which he produced 7 Newsletters and edited 266 pages of text! We also welcome Nigel Larkin to the committee and we welcome back Donna Young after a gap of 3 years. Kate Andrew was voted on as Treasurer for a further term of office in the absence of any other volunteer for that post. Simon Moore, Sue Cooke and Gabriela MacKinnon were also voted onto committee for further terms of office.

We have just had our AGM and conference at Norwich Castle Museum. At this AGM and as discussed in Newsletter No 18 we voted on two proposals dealing with the proposed merger with the BCG. At their AGM in Newcastle, the BCG membership present overwhelmingly voted for the merging of our organisations. As directed, David Carter and myself have produced a list of eight names (for BCG: David Carter, Howard Mendel, Nick Gordon and Steve Thompson and NSCG: myself, Kate Andrew, Simon Moore and Donna Young.) We will attempt to select a neutral chair and will start meeting in July 2002. The remit of the group will be as stated in proposal 2 "to write a constitution for the combined organisation and recommend the mechanism for merging" and will take into account changes in charitable status, the structure of the new group to represent Conservation and other interests, the improvement of future publications, a new name for the combined 'group', a new membership fee and other financial matters. We will report back on our progress in future Newsletters and we will work hard to have a new constitution, which is agreed to by the Charities Commission, to present to next year's AGM. Next year's AGM will probably take place in Manchester, possibly Monday 7th – Tuesday 8th April 2003. It is unfortunate that GCG cannot join us at present but we would continue to keep close contact with them via Sue Cooke and Kate Andrew. I much prefer to have them on board as I do all accredited and non-accredited Natural Science Conservators.

Please, if you have strong views on the subject, then write a letter to the membership for publication in The Newsletter, which is your vehicle to disseminate your views. Whatever the form of the new group, your views as Conservators will continue to be represented and valued both within the new group and in NCCR via Bob Entwistle and Simon Moore.

Combined Conference & AGM, 16 - 17 April 2002 Castle Museum, Norwich

AGM, 16th April 2002 :12.15 - 13.20

1. **Apologies for absence**
2. **Consideration for the Agenda**
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15. **Response to Renaissance in the Regions**
16. **Merger of NSCG with BCG**
17. **Any Other Business**

Chair's Report:

Welcome to our AGM, which is my first as chairman. We are losing Darren Mann who relinquishes his post as Editor of The Newsletter. Thank you Darren for all the hard work and long hours you have put in to the job. I also wish to thank Kate Andrew for all her hard efforts as Treasurer and also for her careful interest in researching into Charity business. She finishes her three-year term of office and is willing to be voted into post again as we consider that she is very capable of fulfilling the duty. Thanks also go to Bob Entwistle and Simon Moore for their continued representation of our interests on the National Council of Conservators and Restorers. Due to pressure of work, Amanda Sutherland had to relinquish her post as Secretary to Louise Cant. Sue Lewis of the Natural History Museum stood down from committee to work at the Canadian Conservation Institute and the Conservation Section of the Canadian Museum of Nature in Ottawa for one year.

We have continued our one-day seminar series with Simon Moore's "Sorted? No Fixed! Fluid Preservation – do we really understand it?" held at the Hampshire Museums Service centre at Winchester and sponsored by Stoezle Oberglas of Vienna; during which Simon, Julian Carter, Maggie Reilly, Andries Van Dam, Claire Valentine and Jenny Bryant certainly indicated that they knew their stuff! This was followed by a wonderful lunch and then an equally good set of afternoon store tours and conservation demonstrations. The next seminar will be held on June the 20th, will be hosted by Darren Mann at the Oxford University Museum of Natural History and is entitled "Insect Collections: From Preservation to Conservation".

Wider Conservation issues during the year have included the following. Re:Source (The Council for Museums, Archives and Libraries) has produced a working plan that reports a high level funding agreement with the Department for Culture, Media and Sport, which includes the establishment of regional museums hubs as recommended in Renaissance in the Regions, the Regional Museums Task Force Report, and the strengthening of Regional Agencies and funding for the Museums sector. Resource has recognised that there is "insufficient funding, unsuitable collection storage buildings and too few skilled staff" to cope, stating that "Conservation and collections must not be neglected" and that "Conservation is just as important as access!" One hopes that this new scheme, as voiced by Steve Thompson, will not sideline the small museums and let the larger regional museum hub centres keep what funding is available for themselves. Will this include a realistic increase in funding for Natural Science Conservation and Conservation services? We sincerely hope that, via NCCR and any regional hub contacts we might make, or have already, we can effectively consult and influence Resource over Conservation issues and make sure that Conservation really is at the

forefront for Museum funding! You have a copy of our NSCG Response to "Renaissance in the Regions" in your paperwork and Kate will talk to it and accept questions before we vote to adopt it. Another document that we will vote to adopt is the Museums Association new improved Code of Ethics for Museums.

On the down side, there have been cuts in Northampton with a possible part disposal of geology and natural history collections and layoff of staff after a 'Best Value' review indicated a need for rationalisation! Nottingham City Council is planning the closure of The Natural History Museum at Wollaton Hall and it's storage elsewhere with possible loss of staff as part of a £5 million redevelopment of the Hall as a Historic site. With the closure of the North-West Museums Service, Conservator posts have been reinstated within the Lancashire Museums Service.

As directed at last year's AGM, I set up a group to discuss closer ties with BCG/GCG which met at The Natural History Museum at South Kensington and which was chaired by Rob Huxley (President elect of SPNHC). This issue will be discussed and voted on under item ***16*** and NSCG will respond to the member's wishes.

Finally I wish to thank our hosts at Norwich Castle Museum, especially Nigel Larkin for much of the organisation, all the speakers today and Cliff Gothorpe, of Preservation Equipment Ltd, who is sponsoring our conference.

Discussions of Proposed Merger With BCG:

Paul Brown spoke in favour of the motion:
The meeting held last summer of NSCG and BCG committee members (& GCG observer) and chaired by Rob Huxley decided to run a straw pole to both NSCG and BCG memberships to gauge the support for a full merger. Both memberships replied with a yes majority, NSCG majority being exactly 66.6% of the 50% of the membership who replied. Last week at BCG's AGM, their membership overwhelmingly voted for the merging of our organisations. Any merger will probably not compromise our charitable status but will involve BCG either dissolving and joining us, or becoming a charity and then merging together with mutually agreed changes to form one Constitution. If AGM votes yes, a future joint committee will explore the best and legal way forward. It is unfortunate that GCG cannot join us at present but we would continue to keep close contact with them. I would much prefer to have them on board too so as to directly mirror SPNHC.
My personal view on the future safety and conservation of our Natural Science

Collections is that we need to develop a yet stronger voice. This we already have on NCCR hopefully, and the larger membership of a new combined conservator & curator group could give us more muscle and a higher profile in this group as well as with other organisations. We are not in competition with curators who are becoming more aware of conservation considerations, and I am sure they care about the conservation of their collections as much as we do! Jerry Weber reports that Paper Conservators merged successfully with the Archivists of the Society of Archivists without them or NCCR recognising any 'watering down' of their Conservator status. Conservators within SPNHC do not consider themselves a neglected minority within that group! My view, as stated in Newsletter 6, was that we might be swamped by the views of curators and collections managers but, I now consider that 'it is he or she who shouts loudest that is heard' and that in a new group, we would continue to represent Conservators views and rights maybe even more effectively than we do now.

Robert Entwistle spoke against the merger:
I wish to belong to the Natural Sciences Conservation Group and not be part or a sub section of a larger group. The BCG has more members and conservators would find themselves swamped in this larger group and lose their identity as a distinct unit. At present the group is well run, well supported and well funded, and the NSCG had little to gain from this merger. I am worried that little thought has gone into the details and make up of the new group, how it would function and how the interests of the conservators would be safeguarded.
When the group was first formed it contained conservators and curators, both of who were interested in natural sciences conservation, and I am worried that this merger might alienate those conservators remaining in the NSCG.
I see the merger as a step back to 10 years to before the NSCG was formed, when there was no group solely interested in natural sciences conservation, and the merger mainly as a cost saving exercise promoted by some members of both groups.

Discussion:
Sue Cooke said that many members of the group already saw the merger as a fait accompli, and so had not bothered to register their opposition. Dominique Rogers commented that the NSCG had a dedicated seat on the NCCR, and asked how conservators would be represented on the committee of the new group. Kate Andrew said that the group had a year to sort these details out. Steve Thompson also said that the vote would not be ratified till the next AGM, and there was a year for the BCG and NSCG to sort out the details.

Paul Brown suggested that we needed a majority of 66.6% of the members at the meeting to vote for the 2 resolutions in order to proceed with the merger. Discussion followed as to whether the resolutions affected the constitution or not. Howard Mendel and Darren Mann said that since the proposals did not affect the constitution, we only need a majority vote to continue *[as indicated in item 15.1 Powers of Amendment of the Constitution. The Constitution would be changed at next year's AGM where a 66.6% majority would be required]*.

It was decided by Paul Brown to vote on the 2 resolutions *as published in Newsletter 18* without further comment.

Proposal 1 *To merge Biology Curators Group and Natural Sciences Conservation Group to form a single organisation.*
Votes cast for the resolution 20, against 5, abstentions 4. [69% voted for the motion, thus satisfying the moral (if not constitutional) requirement of 66.6% majority, ie by one vote].

Proposal 2 *Subject to both organisations voting in favour of the proposal to merge, the chairmen of the respective groups are directed to set up a joint committee; to write a constitution for the combined organisation and recommend the mechanism for merging; to be presented to the Annual General Meeting in 2003 at a joint meeting (NSCG/BCG).*
Votes cast for the resolution 24, against 1, abstentions 4

Election to the Committee:

Five committee member posts were up for re-election
Simon Moore proposed by Paul Brown and seconded by *Donna Young*
Donna Young proposed by Paul Brown and seconded by Simon More
Gabriela MacKinnon proposed by Kate Andrew and seconded by Paul Brown
Sue Cooke proposed by Simon Moore and seconded by Louise Cant.
Nigel Larkin proposed by Kate Andrew and seconded by Maggie Reilly.

Nominations were taken from the floor for the post of editor.
Vicki Noble was proposed as editor by Darren Mann and seconded by Dominique Rogers.
The above were unanimously elected *en block*.

Pleas email if you would like full minutes of the AGM
vicn@nhm.ac.uk

SVPCA/SPPC BOOKING REMINDER

Dear VPers, as well as Preparators and Conservators

The Symposia on Vertebrate Palaeo and Comparative Anatomy, and the Symposium for Conservators and Preparators, are scheduled for the period 10-14 September 2002 and the details and booking form were circulated in the 2nd circular.

Unfortunately, because of administrative delays in the Department here, the forms went out a little late (not posted until early May) and contained an end May deadline for booking accommodation. This has put a lot of pressure on you all to finalise arrangements quite quickly. The deadline for talk and poster abstracts is the end of June so there is not quite so much pressure for these.

This information, including a downloadable conference booking form, and a web-page on which short abstracts can submitted, is up on the SVPCA website:

http://www.svpca.org

A great many of you have not yet finalised your applications in order to book places, talks, posters and accommodation at the meeting. Our closing date was the end of May - primarily because of pressure to confirm conference booking figures with the accommodation officer at Emmanuel College, but I will try to hold them off. In the meantime....

PLEASE SEND IN YOUR BOOKING FORM SOON!

Many thanks,
Dave Norman and the Host Committee

Papers presented at the 2002 Conference

Part I - The Mechanics Of Moving or 'Nuts, Bolts, Magnets and Springs'

You've Got To Move Before You Move

Oskar Brandenburg and Andries J. van Dam, Leiden Museum of Anatomy

The Leiden Museum of Anatomy houses the largest anatomical collection in the Netherlands, which consists of 20.000 macroscopic specimens and 1.3 million microscopic specimens. This collection represents medical education and research of the last four centuries. The fact that the collections are stored at different locations at the old academic hospital and have always been stored without environmental control makes maintenance difficult. Recently, the Museum of Anatomy planned to move to new accommodation. The change of accommodation will provide the museum with a unique opportunity to improve their collection management and care. The mission of the move, whilst minimizing the transit risks, was to improve the storage conditions, enhance the accessibility and keep control of the cost.

A precise and efficient plan is necessary in order to benefit the utmost from this situation. The activities necessary to make the move run smoothly can be divided into three phases.

- Selection and de-accessioning
- Conservation
- Actual move

The main purpose of selection and de-accessioning is to maintain or upgrade the quality of the collection. Due to the decrease in the size of the collection, the collection becomes more manageable. Collections are divided in an A, B, C or D-category.

- Category A contains objects or collections that are indispensable and absolutely unique within the Medical Collections of the Netherlands; they show an essential phase or visualise an important event in the development of science and / or are a clear remembrance of those who were or are of cogent importance to Dutch culture, science or academic history.
- Objects or collections which are attractive or presentable and often used in exhibitions fall into Category C. They can be a carrier of publicised data or contain information that is important for testing new discoveries or new scientific understanding.
- Those objects that do not fulfil the A and B requirements, but nonetheless have an important role within the institutions and the Medical Collections of

the Netherlands are designated C. In general these objects or collections are of local importance.

- The remainder that do not fit into the policy of the collection plan and don't have a scientific value within the Medical Collections of the Netherlands will be considered for de-accessioning. These can be those that are in an irreversibly bad physical condition, have no documentation at all or are over-represented in the collection. Even though this will reduce the expenses of the actual move, it should never influence the decision-making process.

Before moving the objects, the conditions should be measured in order to avoid possible damage of the objects during the transportation of the museum collection. To be able to move an object, the object should first of all be in a stable physical condition. For instance, skeleton mountings should be stable and containers should be well sealed. Secondly, the collection should be free of fungus and pests. This will reduce the risk of biological infestations. Thirdly, objects that lack registration should be given a minimal registration. When the new storage facilities are ready, an additional movement-registration can be applied. This will enable the museum to track down and follow each object during the move. The final phase is the actual move, which revolves around three main activities, namely packing, transport and unpacking and placing at the new location. In order to reduce risks of damage to the specimens during the move, the museum has developed standardized packing and storage methods

Due to high building costs in our country, the Board of Directors demanded that the Museum try to reduce storage space as much as possible. Cost saving solutions have been considered by the museum, however solely the ones which did not interfere with the previously mentioned aims. With regard to the move the museum collection has been divided into three groups of objects:

- The dry collection (for instance, skeletons, bones and models in wax)
- The wet collection (all fluid preserved specimens)
- The microscopic collection

During the move, the packing methods should provide physical support and protection as well asuniformity and efficiency in materials and methods. An efficient manner to reduce costs is to pack the collection in such a way that it is able to integrate directly into its new storage system. This way, the packaging forms part of the storage system. To provide improved long-term storage, the packing materials to be used should be durable and emission free, while specific needs should be catered for, for example, the packing methods for the dry and microscopic collection must be dust-free. It is preferable to use light and easy to handle materials, but packing used for only transport purposes can be of a lower standard in quality. A storage system should provide physical support and protection, and

should enhance the accessibility while maintaining an efficient use of space. A well-designed storage system improves collection management, by enhancing accessibility but at the same time avoiding unnecessary manipulation of objects. It is actually the main form of preventive conservation.

As mentioned previously, the financial aspect should be taken into consideration by trying to occupy less space in comparison with the old situation. This can be accomplished by two ways. Firstly, the well-known Compactor-system®. These units make it possible to reduce the walking paths between the cabinets, which can double the storage capacity or reduce the storage area necessary. However, this method is only applicable for storing the dry and microscopic collections. Storing the wet collection with the Compactor-system® involves a very high risk of damage to our fragile glass specimen containers. Consequently, for the wet collection the museum has chosen another space saving solution. Replacing cabinets with small shelf depth with cabinets with deep drawers increases the storage capacity by about 50%. When using cabinets with fixed shelves, the object can only be accessed at the front. In order to store the object in a more accessible manner, the jars are not placed behind one another, which makes it necessary to use shelves with small depth, and consequently more pathways. Placing the jars in deep drawers enables you to place them behind one another, because now you have access from four sides; namely both sides, the front and above. To avoid movement of the jars when using the drawer, the inside is covered by soft polyethylene foam. A small part of the collection consists of jars with a small bottom surface. Those jars will easily topple over when the drawer is opened. For this reason, the museum has developed support elements made of corrugated polypropylene board and Ethafoam® blocks glued together with a low-melt Ethylene Vinyl Acetate, better known as EVA. Sometimes these supports become bulky and therefore inefficient. To eliminate this problem, another kind of support is developed for these very unstable jars, slightly slanting and integrated in the drawer. The jars are deliberately placed off the perpendicular in such a way that they receive support from the back and ensure that they do not fall over. The side is made of curved steel boards, covered with polyethylene foam at the sides. Blocks of Ethafoam® separate the jars.

Packing methods and materials

For transport, the fluid preserved specimens are placed in boxes on wheels.

Putting foam rubber between the jars is a simple but efficient method of avoiding damage during transport, with the advantage that the jars remain visible. Vulnerable jars with thin glass are wrapped in thirteen-millimeter thick air-cap-foil before being placed in boxes and the less vulnerable screw top jars are placed in standard air-cap-foil pouches.

The storage and packaging of microscopic preparations demands care to avoid breaking the glass or cracking the glass cover slip. It's preferable to store slides flat for the following reasons (Goodway, 1995). The resins used as mounting media can be unstable, become brittle, crack or never harden completely. Also the adhesive on paper labels can dry out and loosen. Storing the slides vertically could allow the samples and labels to fall off, which makes it impossible to identify them. The museum has developed a storage system for the microscopic slides. The slides are placed on a corrugated polypropylene board with a framework, which protects the slides from damage. Slides are protected from dust and light by placing the boards in an acid-free cardboard box. In this condition the collection can be transported without damage. The use of a translucent board allows the boards to be placed on a dazzle-light, which makes it easy to survey the condition of the mounting media of the slides.

The dry collection consists of skeletons, bones, and models in wax. Ligaments and preserved skeletons are fragile objects, and for this reason it's preferable to pack the skeletons so that contact-damage is avoided. The skeletons are placed in a half-open box made of acid-free cardboard and the pedestal is fixed with polyethylene to a foam plank. The support rod emerging from the pedestal is fixed with a wire to the back of the box. A piece of Ethafoam® is curved around the skeleton as an extra buffer. The box will also form part of the new storage system. The packing and storage method of loose bones provides object-cushioned support. The bones are packed in cardboard boxes. To protect the objects, the box is divided in partitions by folded soft polyethylene foam. This is a quick and cheap method to protect the bones during transport.

Bones of fetuses are extremely vulnerable. Together with their pedestal, the bones are placed in a box . The rod of the foot is pinched in a little cut in an Ethafoam® plank, which is fixed with EVA on the bottom of the box. The packed bones are ready for transport and can be directly placed in the new storage system. At a later

stage, the boxes will be provided with a window in the lid made of PET – foil that prevents unnecessary manipulation of the objects.

Models in wax are also very vulnerable. It is recommended to pack in such a manner that damage, caused by packing-material is prevented. By fastening only the wooden foot on a board, it is possible to transport the objects in a box without the risk of contact damage. The bigger ones are placed on a wooden board and fixed with strips of corrugated polypropylene board. Using headless nails makes it easy to apply and remove the stretched strips. Little models are fixed with Ethafoam® blocks. After transport the models are placed without board in a stable, dust-free cabinet.

Conclusion

Although the presented methods are different, we have accomplished the reduction of a large variety of packing and storage materials. The museum has developed packing methods that are able to integrate directly into it's new storage system. As a result, the whole microscopic collection will be packed and stored in identical boxes to the major part of the dry collection. Both collections can be stored in uniform cabinets. This gives not only a higher efficiency in packing and moving, it also reduces the costs of the storage system. For the wet collection the museum has chosen a storage system with deep drawers. This will increase the storage capacity and enhance the accessibility.

In our opinion, it is essential that activities such as selection and de-accessioning and conservation are part of planning the move of a museum collection. These projects are necessary to achieve the expected improvement in collection management. In other words "You have got to move, before you move".

References:

Adviesgroep Rijksdienst voor de Beeldende Kunst, Den Haag. 1996. Om het Academisch Erfgoed, rapport, opgesteld in opdracht van de Staatsecretaris van Onderwijs, Cultuur en Wetenschappen. 140 pp.

Nederlandse Museum Vereniging. 2000. *'Leidraad voor het afstoten van museale objecten'*, Museumwijzer (2) www.museumvereniging.nl

Goodway, M. 1995. Storage for microscopal preparations. Pp. 269 in *Storage of Natural History Collections: Ideas and Practical Solutions, Volume II.*(C.L. Rose and A.R. de Torres, eds.) Society for the Preservation of National History Collections. 346 pp.

"THE MOVE" in Norwich, 2000-2001

Tony Irwin, Natural History Department - Castle Museum Study Centre

While Norwich Castle Museum was being redeveloped (should I feel guilty at never having bought a lottery ticket?), the opportunity was taken to improve the storage facilities of the Natural History collections. One aspect of this involved designing a cabinet system that was flexible enough to accommodate both the botany and vertebrate collections. The solution we adopted was to settle on a double-door steel cabinet that could be fitted out for different functions. A central vertical panel divides most of the cabinets, so that the magnetic seals on each door close on a flat surface. Doors are hinged so that they can fold back flat against adjacent cabinets, and so that doors on adjacent cabinets can be opened simultaneously.

The left-hand door on "double width" cabinets is fitted with a steel flange onto which the right-hand door can close. Double width cabinets are used with steel shelves (for large mounted birds and mammals), or with crates doubling as plastic drawers (for large bird skins). Both shelves and drawers are supported on adjustable runners. The "single width" cabinets are fitted with adjustable runners, which take plastic trays for smaller mounts and skins of birds and mammals, or with fixed steel shelves for herbarium folders and boxes of cryptogams.

"Stop the topple!"

Many mounted birds are top-heavy so that they are easily unbalanced and fall over (sometimes like dominoes). Storing them on a shelf makes access difficult, and reaching for one at the back of the shelf can lead to others being disturbed or knocked over. Access is easier if they are stored on a sliding drawer or tray. Even then, they may be prone to falling over, particularly if stored in mobile units. Suspending the mounts from a vertical screen provides better access, but places strain on heavier specimens, which were designed to stand vertically. During our reorganisation, it was decided that storing the birds on sliding trays was the best solution, providing a way could be found to fix the birds so that they did not topple. We considered adhesive putty, restraining elastic, cut-out shapes in polythene foam, turn buttons, pegboard, wire clips and lots of other complex, tedious and probably expensive solutions. We finally decided to go for a simple, relatively cheap, solution that is temporary, infinitely adjustable, adaptable for different bases and prevents the birds sliding and toppling.

"Mr Tippy tests the tanagers!"

The key to the system is a steel tray insert. Into our standard polythene tray is dropped an epoxy powder-coated flat steel sheet, (other systems could use all steel trays.) The bird bases are fitted with pieces of magnetic sheet (if the base is almost or absolutely flat) or three or four small magnets (if the base is irregular, or if the base is largely covered by writing or a label). The sheet magnets are cut into rectangles from strips of 1mm thick magnetic plastic, and fixed using double-sided adhesive tape. (The tape will not last forever, but it should be easily replaced.) If the base is not flat, then magnetic adhesion on the steel is poor. In this case, the base is fitted with three or four small ceramic magnets, about 10mm diameter or square. These are held in place with a blob of hot melt glue. It is important to apply all the magnets at the same time to ensure that they all make good contact with the tray. To do this, the magnets are placed on a steel plate, in the correct position, and then hot melt glue is applied to all of them. The mount is then placed carefully in place and gently pressed onto the glue. When the glue sets, the magnets should still be sitting flat on the steel plate. If any of the magnets come off or do not make good contact, then they can be easily re-fixed. An advantage of this system is that it protects any writing or labels under the base of the mount from damage.

Larger, heavier mounts are less inclined to topple, but their momentum, sometimes causes them to slide within the tray. To prevent this, flat lengths of wood have plastic magnetic sheet applied to them, then they are placed on the steel sheet to ensure that they sit flush with the surface, and the mount bases glued to them with hot melt glue. The combination of the plastic's high coefficient of friction, together with the magnetic effect, stops any tendency to slide. Using these systems, then entire bird collection was moved by road in cartons in which the trays had been fastened (using foam adhesive pads). Only in one box (of more than two hundred) had the birds fallen over during the journey. The packing process was very straightforward, and no packing materials came into contact with the birds. The trays, with their birds, were removed from the cartons and slotted straight onto runners in the new cabinets.

Costs:

- steel tray inserts - £4.50 each (specially manufactured for us by Balmforths (they've gone bust), but we have quite a lot spare - please enquire!
- magnetic rubber sheet - 6 sheets 300 x 50 cost £2.33 - thus a 50mm x 50mm square costs 9.1p

- small magnets - bag of 300 costs £20.73. This works out at approximately 7p per magnet, or 20p to 30p per mount. We got both through the Eastern Shires Purchasing Organisation (ESPO), but any schools- or craft-suppliers should be able to get them.
- Cost of double-sided tape and hot melt glue is negligible.

The Bungee Trolley.

One minor hurdle we faced was how to move the insect collections. In the end we held out for the completion of a link between the Castle and our new premises, so that we could move the drawers and boxes there ourselves, rather than by road. The cabinets were emptied and all the drawers and store boxes were wrapped in bubble-wrap and packed in large double-wall cartons fitted with cloth tape handles. But when we came to start the move we discovered that the architects had specified a textured floor covering for the link, so that the solid-wheel trolleys we had were going to vibrate and shake the insects apart! One sleepless night later, we had the answer – the trolleys were fitted with a plywood shelf supported on "bungee rope". The boxes sat on the platform and were held in place with elastic straps. With this system, no vibrations were transmitted to the boxes and the insects all travelled safely.

Tony is very happy to be contacted directly for more details about suppliers and equipment:
tony.irwin.mus@norfolk.gov.uk

The Packing and Shipping of a Natural History Exhibition
Mark Hunt, Technical Services Manager, Constantine

The exhibition in question was "Voyages of Discovery", generated by the Natural History Museum in Early 2000, and then packaged into a long term touring show to various venues in the US. The NHM describes the exhibition thus:
"Voyages of Discovery reveals the stories of Captain Cook, Charles Darwin and many other pioneers of scientific exploration. They brought back priceless scientific specimens and exquisite works of natural history art, which changed the course of the natural sciences and have a legacy of importance to this day"

Constantine was employed to handle the packing and transport of this exhibition, including the transfers in the U.S. We work regularly with the Natural History Museum, and with other collections of Natural History, Ethnographic, scientific and similarly fragile material. Packing and shipping international exhibitions of Museum objects, be they specimens, artefacts or art, is a specialised field combining the requirements of international shipping and the technical understanding of the objects to be moved. This particular exhibition, for those of you who didn't see it, included a large number of fragile original specimens.

The list of exhibit items covered the specimens that were collected, the equipment that was used to find and collect them, and the documentary illustrations and notebooks of the expeditions, as well as several sundry items. The specimens fell into two main groups – Herbarium and botanic examples mounted on paper, and zoological items either loose or, in the case of butterflies and beetles, pin mounted on self contained trays. The first thing that we had to agree was the various specifications for the packing and handling of the collections. The museum issued a list of display environment and transportation conditions. This included preferred wrapping methods and materials, methods of shock absorption, crate structure and identification, as well transport requirements including the use of couriers and the general preference for air shipment over other methods. We were able to interpret this, and update it in certain areas. For example, there are many commonly held misconceptions about airfreight and conditions in aircraft holds. Nowadays, all but the very oldest planes plying the most obscure routes, are temperature and pressure equalized, which means that the conditions that exist in the passenger cabin are the same as those in the freight compartment. There are commonly applied standards governing the construction of packing cases to accommodate freight shipments, based on a model defined by the Tate Gallery nearly 15 years ago. This was adapted to the specific requirements of the samples and other objects.

Aside from the traditional ply and timber construction, we defined such things as the lid fixings, in this case two part re-usable fixings, which are good for touring exhibitions where the cases will be subject to repeated opening and closing. We decided on large blocked feet to aid manual handling, as well as the method of waterproof sealing, the maximum height of each case so that it would fit on internal U.S. flights, the type of foam used to form the lining, and the rough grouping of objects so that similar material would be packed together. I also suggested that the Museum choose a colour. A painted case has twofold benefits. Firstly it improves the water resistance of the case. Secondly, and most importantly where a courier is concerned, the shipment becomes easily recognisable. When you are in a large commercial freight shed at a hub airport in the mid-west, the ability to distinguish your crates amongst the millions of others can save a lot of anxiety.

Our next task was to make a detailed assessment of each specimen or object. This involved taking accurate measurements, and checking that all items were "ready for transport". Specimens were presented in such a way as to reduce the risk of damage from vibration, temperature and humidity change (this does still happen on long journeys). It is, in a sense, a risk assessment process for each exhibit. Those that were not sufficiently consolidated were placed into smaller internal boxes, many of which were bought in from G.Ryder and Preservation Equipment. This meant that each specimen could benefit from an individual packing solution, and still be housed in a crate that contained other material. For example, Solander format boxes were bought in for flat specimens mounted on paper. Each box could contain several sheets, and due to the variety of boxes, the range of sizes could be safely accommodated without very small sheets being in large boxes and then be at risk of movement in transit. There were also a group of specimens in sealed glass spirit containers, all of which travelled upright in individual foam lined compartments, wrapped in polythene. In this group there were also two fish that, although stored upright in spirit containers, were considered too large and hence at risk to travel in that orientation. The solution was to take them out of the jar, wrap them in a spirit soaked muslin and put in a polythene bag. They then travelled flat, in a purpose made box. In the grouping of objects, we had a general policy of keeping like items together. Hence, all of the books in one case, all of the birds in another, all of the bottles in another and so on. As like items tend to be the same sort of size they can be economically put together. As freight shippers, we have to be aware of cost, and hence the most efficient combination will be the one that keeps the overall packed volume down. The handling benefit from this kind of combination is that in a touring exhibition, the material is repeatedly handled, in and out of it's packing, by a variety of couriers at different locations. We feel that it is better if one case is packed in one way, and another is packed differently, rather than containing several different methods in one crate.

By its very nature, Natural History material often comes under the auspices of CITES, or the Convention on International Trade in Endangered Species. It also attracts the attention of National bodies, in the US it is the Fish and Wildlife Service of the Department of the Interior who administrate endangered species legislation. Any shipment into the US has to have been approved otherwise it will be impounded at customs and refused entry into the country. With a complex group of material such as this exhibition represented, we relied on accurate information from the Museum and the various collections so that we could be as specific as possible in our application. It should be noted, that such applications need to be made in plenty of time - in the US a *minimum* of 5 weeks is required for CITES applications and material must have an export licence from the country of departure and an import licence for the country of destination. The import licence can-

not be granted without a copy of the export licence. Fish and Wildlife are notoriously difficult to work with. A variety of permits can be required (for example, there is a "migratory birds" permit), and such things as eagle feathers are absolutely embargoed. Only certain ports are cleared to receive such shipments, and our advice is to check out any sort of organic material a good time in advance with a reputable agent. Even with Natural History material, normal cultural licences are required, and, very importantly, CITES licences are required even if specimens are historic – as they were in the case of "Voyages of Discovery". If the country of destination is not part of CITES, you will not get an export or import licence. Fortunately, in this case we were working with good lead in times, and hence the applications were completed without a hitch. So, with all of the arrangements made, all that remained to be done was for the items to be packed at the Museum, and transported to Heathrow. Piece of cake. As Robert Burns once wrote, on seeing a hibernating dormouse being dug up by a plough – "the best laid plans O' mice and men gang aft aglay". Planning has to be backed up with practical problem solving, and that is what was required when the material was being packed up. This begs the question – what are we trying to achieve in the packing of objects for transportation?

- The object itself must be consolidated – in other words no loose parts that are liable to fall off, and prevented from vertical, horizontal and lateral movement within its primary packing container.
- Packing materials must be *complementary* to the object and not do harm to the item it is supposed to be protecting. For example, it should be able to shock absorb in relation to the weight and size of the object – soft foam would be appropriate to pack an egg, hard foam would cause it to break.
- There should be an element of insulation in the packing, normally in the thickness of the foam lining.
- The packing case itself should be sturdy enough to withstand any hazard including drops and skirmishes with forklift trucks.

Conclusion

There are a couple of areas that I think are commonly misunderstood and wrongly specified. When specifying inert materials, consider how long your object is really going to stay within its packing materials If travelling to an exhibition, the likelihood is a few days. Are the packing materials really likely to have an effect in such a short time? Perhaps a more compatible material would be appropriate. Plastazote is often overused - how has it become such a ubiquitous material? It's not particularly easy to work with and it's too hard to act as a practical packing material for anything under about 20 kilos in weight, even in the softer grades. There are several other types of foam that will contain and support an object just as well.

Hardiness of Anthrenus II

Simon Moore, Conservator of Natural Sciences - Hampshire CC Museums Service
email: simon.moore@hants.gov.uk

You wouldn't think that the humble carpet beetle could be so difficult to prevent from eating our collections! In a former note, I outlined how its eggs survived freeze-drying, lying dormant in a pipistrelle carcass.

Once again this tiny beetle has survived efforts to prevent recurrence. A case of Shelducks and chicks from our hands-on SEARCH unit at Gosport was treated for *Anthrenus* infestation last October – the telltale larval skins were removed and the plumages checked for damage and conserved where necessary. As a preventative, some crystals of naphthalene were added inside the case before it was sealed with no gaps at all.

In May this year, the case was returned to me with a fresh outbreak – the chicks in particular had a sprinkling of adherent and bristly, brown skins! I checked the case for apertures and cracks – nothing! How did they get in there? Perhaps they were 'beamed' in star-trek-style!? I also thought that the naphthalene must have already evaporated and dissipated, but not so. As I opened the case just a crack to insert a hygrometer, I was nearly laid out by the wave of naphthalene vapour! The RH was down to 42%. There was fresh damage but not too serious, so the conservation work was repeated and the case resealed and checked.

What we can learn from this is that *Anthrenus (verbasci)*, in some stage of its life cycle, can survive –20 degrees C, a vacuum down to 0.1 atmospheres and a heavy concentration of naphthalene vapour – discouraging but at least the low RH had brought about the demise of the larvae. I will not, however, be advising anyone to store their taxidermy at low RH levels since the only effective cure is (as usual!) vigilance.

CONSERVATION FOCUS
News & Views From The World And The Web

Call for Nominations - SPNHC

The Election Committee of the Society for the Preservation of Natural History Collections announces that the Chair will NOW receive nominations for the 2003 election until 31 October 2002.

Members participating in this election will be selecting two Members-at-Large to take office in June 2003. The Members-at-Large serve three-year terms on Council and will work closely with both other Council members and the Committee Chairs to continue the implementation of "Five Year Goals and Objectives".

To submit a nomination or for more information on the election process please contact the committee chair, Richard K. Rabeler
email: rabeler@umich.edu

American Institute For Conservation

It's time to start thinking about 2003...
Call for Papers: The History, Philosophy, and Ethics of Conservation
for the General Session, 31st AIC Annual Meeting
June 5-10, 2003
Arlington, Virginia
Crystal Gateway
Marriott Hotel

The deadline for submission of an abstract is August 1, 2002.

Submissions can be e-mailed to:
info@aic-faic.org

Conservation News Re-Launched

The United Kingdom Institute for Conservation (UKIC) is delighted to announce the re-launch of Conservation News in an entirely new format, redesigned and now incorporating Grapevine, the indispensable listings of events, courses and job opportunities. The new magazine, which is being published six times a year, reflects the contemporary concerns of professional conservators, and provides for the many and varied interests of the Institute's membership.

If you are a paid-up member of the Institute you should be receiving your May copy about now. If not, you may join. See our website for details (www.ukic.org.uk) or contact us on +44 (0)20 7721 8721 or ukic@ukic.org.uk

Don't miss out!

11th Symposium of Palaeontological Preparation and Conservation

9-10 September 2002 Sedgwick Museum and Department of Earth Sciences, University of Cambridge
Contact: Leslie Noè, email lnoe01@esc.cam.ac.uk

BA Festival Of Science 2002

University of Leicester 9 - 13 September 2002
'Science and the Quality of Life'
Come to the BA Festival of Science for the chance to debate, discuss and dissect the scientific issues which have an impact on your life. Also, all those who book for the full week will receive a ticket to 'David Attenborough in conversation' taking place on Monday evening in de Montfort Hall.
For further information about the Festival, accommodation, tickets and how to book, please visit the BA website.
http://www.the-ba.net

GCG Workshop: Identifying fossils 3: Corals

27 November 2002 The Manchester Museum

The workshop will comprise two sessions. In the morning a review of cnidarian systematics and geological history will identify the various groups of corals which are commonly found as fossils. We will also briefly consider other fossil cnidarian groups such as the jellyfish, conulariids, hydrozoans etc.

The afternoon session will begin with a review of coral skeletal morphology and will continue with a practical session concentrating particularly on rugose corals, which usually form the major part of a museum fossil coral collection. We will look at the techniques of studying corals, including acetate peels and thin sections and will attempt to identify a variety of corals using identification keys.

Course Fee £10.00
There will be a chance to view the new galleries at Manchester Museum which are due to open in July.

For further details or to book a place contact:
John Nudds at The Manchester Museum,
e-mail john.nudds@man.ac.uk

Request For Information

POLAR BEARS

Calling all natural history museum departments. I'm currently doing a survey of polar bears in collections in the UK and require information pertaining to these animals. If you have a polar bear in your collection could you please send information about their location, age, sex, when acquired and any other data available to:
Bryndis Snaebjornsdottir - email: Bsnae@aol.com