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## Biology Curators Group Newsletter

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## Sciences 2: Communicating Science, 14 March - 18 March 1994

A look at how museums communicate science. This wide ranging course will examine techniques used in science and discovery centres, in exhibition, site interpretation, publication and education. Again the focus will be on developing techniques and knowledge which can be applied directly in the museum. It is for scientists of all disciplines.

Cost per course is £220. B&B accommodation is available at £13-£20 per night. I am afraid that the Department is no longer able to provide University accommodation for its part-time students, however, private accommodation lists will be sent on request. Contact: Department of Museum Studies, University of Leicester, 105 Princes Road East, Leicester, LE1 7LG. Tel 0533 523963, Fax 0533 523960.

*Simon Knell*

## PUBLICATIONS

*Preserving Natural Science Collections: Chronicle of our Environmental Heritage* is by W. Donald Duckworth, Hugh Genoways and Carolyn Rose. This American publication, now available through the National Institute for the Preservation of Cultural Property, synthesises information gathered from meetings, calls for public education about the importance and uses of natural science collections, and recommends the creation of a natural science conservation training programme. (Does that sound vaguely familiar?). Available from NIC, 3299 Street, NW, Suite 403, Washington, D.C. 20007 price \$16.50 incl p&p.

*Index Kewensis*. This important botanical publication is now available on compact disc at £995. The disc comprises the original publication plus all nineteen supplements published since 1893. Contact Janet Caldwell, Customer Services Manager, Electronic Publishing, Oxford University Press, Walton Street, Oxford, OX2 6DP (tel 0865 267979).

*Beetles of Somerset* by Andrew Duff contains details in 270 pages of 2298 local species giving a status summary, notes on dispersion, habitat, periodicity and national status with lists of all accepted records. Available from Somerset Archeological and Natural History Society, Taunton Castle, Taunton, TA1 4AD at £12.25 incl UK p&p.

*Passages from The Natural History of Selbourne, Naturalist's Journal and other writings* by Gilbert White is a selection of classics illustrated by the addition of wood engravings by Thomas Bewick. Available direct from Silent Books, Boxworth End, Swavesey, Cambridge, CB4 5RA for £11.20 incl p&p.

## MEETING REPORTS

### The care of spirit Preserved collections Seminar

The BCG seminar was a resounding success in spite of the IRA and their Reading bomb which resulted in one speaker and some delegates not making it past Cardiff and a second speaker being ill. Not many seminars these days have a waiting list for participants - thanks to Kathie Way and her superb organisation.

It was a singularly worthwhile day for all concerned - speakers and delegates alike - a full appraisal will appear in a future newsletter. It was good to see so many younger workers of the profession participating and a salutary lesson for some older members on how much we take for granted, how much we still don't know and how much we can still learn from each other. This was definitely a meeting in the Reg Harris tradition (see BCG Special Publication no 3 and the last Journal of Biological Curation). We obviously need a follow up meeting, with perhaps more time for a general discussion and maybe even a series of hands on workshops.

*Rosina Down,  
University College, London*

### SPNH Conference, Victoria, June 1993: Flood Disaster at the Texas A & M University

The Conference was opened with a talk by Dr Geoff Scudder of the University of British Columbia. He talked about the importance of research collections in museums to those scientists who are endeavouring to uncover the mysteries of the natural world. He quoted many historical examples of discovery through museum collection research, adding that much time and expense would have been saved if some famous naturalists had started their groundwork in a museum collection rather than in the field. Using this maxim and the importance of precise field data, he pointed out the mistakes made by Darwin with the Galapagos finches and the muddling of their original but vague collection data. This has been subsequently re-worked by Sulloway (1982). He also quoted Batesian mimicry, by the palatable Viceroy butterfly, of the unpalatable Monarch but then, ironically, wiped out by pesticides; the interbreeding of butterflies caused by glaciation of ecosystems and the parallel effects caused by global warming if the boreal regions were to warm up by 8°C. The mention of DNA caused much rustling of paper as he quoted the recent research into specification of Miocene termites in amber - the oldest DNA yet extracted (15-30M years) and the subsequent elaboration of this and DNA cloning by the film *Jurassic Park*. He finished by advising curators and conservators against the required pulverising of

type specimens to extract DNA, a cautionary ending to a thought-provoking introductory talk.

From Dr Scudder's series of ideals and how a museum collection should be maintained and used there followed a series of 5 highly useful talks about coping with disasters and saving specimens at any cost. These talks were based on the flooding with hot water of a series of sub-basement storerooms, 20 feet below ground level, and containing the vertebrate part of the Texas Cooperative Wildlife Collection at the Texas A & M University during the night of the 30 October 1992. Kathryn Vaughan outlined how the disaster had been caused by a burst hot water main with subsequent flooding to a depth of 41 inches. How the workers had to cope voluntarily with unsafe conditions: darkness, electrical hazard, alcohol vapour - race against time versus personal safety. She outlined the emergency measures that were taken: computers with their precious data were the first to be removed (one hard disc was already submerged!) and with volunteer conservators working round the clock both animal skins and some 1.5M museum jars were removed with great rapidity but carefully. There were scarcely any jar breakages and although some dilution of fluids was noticed the specimens were subsequently found to have hardly suffered at all (stressing the need for good fixation). The skin cabinets were awash and dirty water flowed out as these were raised to ground level; the submerged skins that had not suffered too badly were immediately loaded into freezer trucks and sent to Fort Worth for freeze drying. At this point the importance of using waterproof ink for labelling was endorsed! George Baumgardner continued this talk informing us how documents were freeze-dried and then adherent mud was scraped off and how metal lids on jars were quickly replaced with plastic before corrosion products appeared. Some of the wooden specimen cases were damaged slightly during the moving and some others warped; many of the steel fixture cabinets contained up to 1.5 gallons each of water inside their framework and had to be drilled and drained!

Animal pelts gave more severe problems, especially those that had been submerged - the warm water quickly removing tanning salts from them and causing rapid deterioration. Catherine Hawks, who was called in to supervise the salvage of the pelts told us that some skins had gelatinised to protein glue and were a hazard in themselves. Part-gelatinised skins could be treated with alcohol immersion and the gelatinised protein removed; with much manipulation these skins were eventually saved. Less seriously affected skins were blotted and turned by volunteers, to air dry them. A combination of sunshine and breeze helped while the volunteers, gloved to protect against the more toxic

tanning salts, manipulated the drying skins repeatedly so that they would not become stiff. The chromium salt-tanned skins survived the best although some tide lines appeared on a few and other differently-treated skins. The results from the different tannages provided valuable information about the treated skins' hydro-thermostability - the temperature at which intra-molecular forces are greater than the inter-molecular forces causing the collagen fibres to swell and lose their tensile strength so that the skin starts to fall apart or gelatinise. Pelts with alum tanning, which gives a soft-to-the-touch and pretty white leather look, were found to dissociate above 35°C.

Aldehyde (oil tans) and polyhydroxy (phenolic and vegetable) tannages fared somewhat better. Mineral salt (chromium) tanning, which is less good to look at and to the touch, was found to have kept the temperature/shrinkage range to a minimum having the highest hydrothermal stability - skins could even survive intact in boiling water for a few minutes!

Steve Williams told us how skeletal material was dried carefully so as not to overdry, which can lead to cracking. Saturated skulls were frozen (causing some cracking anyway!), and were then dried in the huge freeze drier of the BMS Catastrophe Unit at Fort Worth. The less stable skins were freeze-dried in a large Virtis machine but the near 60°C of the hot water had caused some collagen distortion leading to cutaneous shrinkage.

Sally Shelton summed up the series of talks with a bottom line about prevention being better (and cheaper!) than cure. Bearing in mind that there was no insurance the freeze-drying bill came to \$200K, which was excellent value considering the power used, wear and tear and operation of the unit. The total bill came to about three-quarters of a million dollars to save 52K mammals, skins and 14K birds. She outlined how rapid decisions and responses had had to be taken in difficult and sometimes hazardous situations. She hoped that a greater awareness would prevail about the dangers of storing underground and a better awareness of preventive conservation through building design. She earnestly hoped that complacency would not be brought about by what she calls the Tornado Theory (we would say about lightning striking twice). Instead she advised a network system to be set up to get help more quickly and easily with a list of emergency conservators, freeze-driers, fresh storage cases, cardboard boxes and poly-bags for instant delivery together with an address for a trucking company with refrigerated lorries.

Considering that this was all caused by backed-up drains! A lesson to be learned with today's low budgeting and having to place irreplaceable objects, even if they had low market value, in a storage area below ground

level where there is risk of such inundation, and the requirement of personal safety and safety-approvable procedure against the rapid deterioration timeclock.

### Reference

SULLOWAY, F. J. 1982: *Darwin and his Finches the evolution of a legend*. Cambridge, Mass. USA.

*Simon Moore*  
Hampshire County Council Museums Service  
Winchester

### The Zemaljski Museum Sarajevo

The Zemaljski Museum, or Land Museum of Sarajevo is situated on the banks of the fiercely contested Miljacka River, and has suffered considerable damage from missiles since the outbreak of war in Bosnia. The museum housed wide-ranging collections started under the Austro-Hungarian regime in 1885. The courtyard housed an important collection of 14th and 15th century limestone tombstones, but both the courtyard and the building itself are now severely damaged. The famous botanical garden dating from the museum's foundation is at risk from inhabitants desperately seeking firewood, and the collections in the museum building are unprotected from the elements. Most of the natural history collections have been destroyed by the lack of controlled environment. A group of local people are trying to take what action they can to save the remaining collections and stabilize and weather-proof the building. Support in the form of funds and materials is urgently needed from the international community. For further information contact Bosnia-Hertzeogovina Heritage Rescue UK, 9 Canterbury Mansions, Lymington Road, London NW6 2EW, tel 071 433 1142. (This note originally appeared in *Tak Tent*, the newsletter of the Scottish Museums Council, no.7 Oct 1993).

### Natural History Enquiries at Bolton

In an attempt to learn more about our enquiry service the Natural History staff decided to monitor enquiries in great detail on a random day each month. This process is ongoing, but I thought that other members might find our results of interest. They are a 'per year' total.

#### By type of enquiry:

	Number	Hours	Time/ Enquiry
Telephone	2110	108	3 mins
Personal visitor	2050	151	4
Letter	112	24	13
	4272	283	4 mins

#### Subject of enquiry:

General	759	67	5 mins
Records Centre	365	57	9
Entomology	450	29	4
Other Zoology	450	22	3
Botany	112	5	2
Geology	329	24	4
Aquarium	280	8	6
Barometer			
Readings	56	4	4
BCG Business			
(Chairman)	197	22	3
For other			
Museum sections	760	25	2
General			
Museum enquiries	515	17	2
Total	4273	280	4 mins

Three staff handle the bulk of the enquiries so the direct service occupies less than 6% of our time!

Definite value for money! We hope.

### Charging for enquiries at Bolton

Pressure to generate income resulted in the Natural History Section having to charge for enquiries from commercial organisations. We have to bring in £500 per year to 'break even'; anything over that can be spent as part of our budget. This was a worrying development, but **all** of our regular users happily pay, although we probably undercharge in real terms. We hit our target the first year, narrowly exceeded it in the second and have already passed it this year. Occasional enquirers pay £15 + VAT for a 'quickie', more if it takes longer. Several regular users have been persuaded to save money by paying an annual fee, based on their level of use of the service. In addition, we recharge our Environmental Health Service. Most Environmental Health Departments get costs awarded in successful prosecutions so, rather than complicating paperwork by also claiming our costs each time, we agreed on an annual recharge. Brief advice on the phone is still free, but anything in writing becomes chargeable. We have had no complaints.

Bolton Museum now also charges for commercial hire of specimens and for schools' services for non-Bolton, private and opted-out schools. If you charge for hiring or lending specimens, remember that you must register as a Seller of Dead Birds with the DoE! This costs some money so is not worth it unless you hire regularly.

*Steve Garland*  
Bolton Museum