

# NEWSLETTER



Vol 4 No 5

## NFBR and BCG

The National Federation for Biological Recording was formally launched on April 15th at a conference held in Cambridge. The founding of the Federation may be seen as a direct result of the initiatives of the Biology Curators Group and follows directly from the BCG Seminar 'Biological Recording and the use of Site Based Biological Information' which took place in Leicester in September 1984. At this seminar an ad hoc group was set up to investigate ways of improving the situation for biological recording at a national and local level. The ad hoc group organised the Biological Recording Forum at Chelsea College in London in April 1985 which in turn set up a steering committee with a brief to prepare a draft constitution to be presented to an inaugural meeting of a properly constituted new organisation in 1986.

At a meeting in Cambridge attended by 80 delegates drawn from museums, the Nature Conservancy Council, the Natural Environment Research Council and the voluntary Nature Conservation Movement the draft constitution was adopted and a Council elected.

The Federation represents the concern of many scientists, conservationists, and amateur naturalists that the importance of biological recording is not sufficiently recognised and that funding and co-ordination are urgently needed. The Federation seeks to involve the many agencies active in biological recording and, in doing so, to help improve their effectiveness in gathering, managing and disseminating biological records. The immediate aim of the Federation will be to improve awareness of the importance of biological recording in all organisations concerned with the environment and to raise funds to support its work.

Some members may feel that this has taken the initiative away from BCG. The fact is, that museums are only one of a number of agencies active in biological recording and that any attempt to improve coordination at a national

level must have the support of all the agencies involved. It is the ambitious hope of the Federation that it will be able to persuade Government of the need for a properly organised and funded nationwide network of Biological Record Centres. One possibility might be for biological recording to be made a statutory function of Local Authorities and for Biological Record Centres to operate in a similar way to the Record Offices and their handling of local history archives. If this were to come about one would hope that museums would be given this responsibility as one of the few institutions which need such data for both research and interpretation and that their present work in this field would be recognised and formalised. There is still an important role for BCG in this but it might be that museums now need to share their expertise with other agencies through the medium of the Forum.

The Council of the Federation is made up of the following members. G. Stansfield (Chairman of Executive and Council), P.T. Harding (Secretary of Executive and Council), D.A. Roberts (Treasurer and member of Executive), L.S. Way (Publicity Secretary and member of Executive), C.J.T. Copp (Council and Executive), H.R. Arnold, Mrs. P.J. Copson, Dr. R. Earll, I.M. Evans, Dr. M. Game, E. Greenwood, G. Halfpenny, Dr. A.G. Irwin, Dr. F.H. Perring, C.W. Plant, J. Riggall, and G. Walley.

Since the inaugural meeting the Executive Committee has met twice and the Council once. There have also been two meetings of the Linnean Society's Biological Survey Working Group on which several Council members are represented.

Membership application forms (membership fee £5) and order forms for the Conference Proceedings will be circulated shortly. It is very much hoped that many BCG members and museums will join the new Federation.

Geoff Stansfield

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# Letters

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The justification for charging for specialist services at the BM(NH).

Dear Sir,

I understand from the Keeper of Entomology here that considerable interest is being expressed by curators in the practice of this Museum in charging for some of the services it provides.

I am responding on behalf of the Museum because the subject applies to all departments. I trust that this letter will serve as a guide to your Group on the Museum's past and current practices and possible future changes.

Treasury regulations have always required this Museum to charge at least the full cost of the services it provides (and higher market rates for commercial enterprises) unless there are clear reciprocal benefits for the Museum in which case Museum managers have discretion to waive all or part of the charge.

Until recently we levied charges only when (a) outside bodies provided funds to pay for our services or built bench fees into grants for visiting scientists or others, and (b) outside bodies declared that they required the Museum's services for commercial purposes. The current rates of charges are £2,000 per annum plus VAT for bench fees and a minimum of £12.90 plus VAT for each identification with higher assessed rates according to the amount of staff time and level of expertise necessary for the service. These rates of charge are reviewed annually and adjusted in line with the cost of the services.

We have not charged scientists or other staff of other museums or research institutions, or members of the general public - unless payment was offered - for our facilities and services as we have assumed that there will be reciprocal benefits in kind for this Museum in the longer term and that the services were required for non-commercial purposes. However, Government funding in support of this Museum is no longer sufficient for our facilities and services to be provided free of charge to everyone.

Therefore, we now ask staff of public bodies and members of the general public the purpose for which they require our services and we charge when we are told that the applicant is involved directly in, or as an agent for, a commercial or other adequately funded enterprise. In such charge cases we expect either the financiers, including publishers, to provide funds to pay for the highly specialised services of this Museum or the researcher, author or artist to pass on the charge to the financier.

This recent measure may produce insufficient additional income for the Museum to continue to provide free services - including loans from the national collections which are very costly in terms of manpower and postage - for professional curators and research scientists employed in other public bodies and for amateur biologists and geologists. A thorough review of the situation will be made later this year and it is possible that the Museum may have to interpret "clear reciprocal benefits" much more precisely than now and to charge in full or part where there is no real reciprocal benefit or the benefit is very much less than the cost. I will let you know in due course the outcome of this review.

Yours sincerely,  
R. Saunders  
Secretary  
British Museum (Natural History)

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One solution to Jenny Clack's problem on sealing museum jars.  
(Newsletter 4(4) p.89)

Dear John,

I read with interest Jenny Clack's letter in the recent edition of BCG Newsletter regarding her problems with the storage and display of spirit preserved material. This museum faced similar problems some years ago when we decided to phase out the traditional method of storing specimens in the old style museum jars. Our substantial collection of spirit preserved material had badly discoloured over the years, obscuring the details of the specimens and in the majority of cases the labels were barely legible. Also the true shape of the specimen was somewhat distorted by the quality and design of the old glass jars. As many of these specimens are continuously used in student practicals for teaching purposes, a high standard of presentation was required. Our problem was solved by the use of 5mm thick acrylic boxes. These were manufactured to our specifications by a local supplier. Three different sizes were selected to suit our needs and to simplify production. These were supplied with tightly-fitted centreplates and lids with a filling hole drilled in one corner. This hole was threaded to accommodate a 2BA nylon screw.

The actual technique involves removing the specimen carefully from its glass jar and washing it in water overnight. The specimen is then placed on the acrylic centreplate and a rough outline drawn. Small holes are then drilled around this outline to facilitate the use of strong cotton thread for securing the specimen if required. A 1% solution of propylene phenoxetol is used as the preservative fluid as we found that alcohol severely damaged the acrylic. The box complete with specimen is filled to about 3/4

full with the preservative and the lid is secured with acrylic cement. After the cement has dried completely all remaining air bubbles are removed before final topping up. The nylon screw bound with teflon tape to avoid leakage is then placed in position.

We started using this method about eight years ago and have found no adverse effects since. In fact some enhancement of colour has been achieved by the use of phenoxetol which I must point out is a preservative only and not a fixative. Specimens presented as described are visually much superior than in the old system, enabling an uninhibited all-round view of the object. They are also much stronger and far easier to store as their boxed shape facilitates stacking, unlike their glass counterparts.

As this method is only used when specimens are required for display purposes, we have recently begun using 'Grathwol' glass jars imported from Copenhagen for long-term storage of specimens. These are available in a variety of sizes and come complete with tightly fitted plastic lids. Evaporation of fluid from these jars is negligible and other workers have reported no loss of fluid after five years of use. They are particularly suitable for our situation as specimens can easily be removed for close examination if required.

Yours sincerely,  
Martyn Linnie  
Dept of Zoology,  
Trinity College, Dublin

More views on the RSPB's policy on the use of stuffed birds.  
(Newsletter 4(3) p.61 and 4(4) p.92)

Dear John,

Following Steve's request for views on the use of stuffed specimens (BCG Newsletter, 4(3) can I offer a rather belated reply?

I confess that I am not familiar with the actual terms of the agreement to which the RSPB, amongst others, are signatories. I am, however, very familiar with the symptoms - i.e. the refusal to use mounted specimens - as a group of the Young Ornithologists Club (YOC) meets regularly at Woodspring Museum. It is a subject that I have often debated with YOC leaders

I would say that no-one has yet explained to me why wings are acceptable, but whole animals are not. Indeed the idea that dismembering a corpse makes it more respectable seems to be more the product of muddled thinking than of serious consideration of the issues at stake. I suppose the argument is that it is unlikely that anyone shooting a bird illegally is likely then to rip its wings off.

My concern, however, is with displays of such specimens although my comments below could apply equally to the use of specimens in displays, lectures or educational services.

Without claiming that mounted specimens are 'real things' I think that it is still valid to argue that such specimens can communicate certain kinds of information much more effectively than, for instance, photographs, diagrams and/or cine films or videos. (Equally there are other kinds of information for which the other media are more suitable.) Mounted specimens for instance, apart from their obvious three-dimensional quality, might be considered most suitable for illustrating size, form, structure and to some extent, colour (obviously some pigments are transient after death). For instance, most people who have studied pictures of buzzards in books, and seen the same birds soaring high above them, are still genuinely surprised when they see the size of the actual animal. Similarly, the structure of wings, bills, claws, feathers etc. is better seen and appreciated 'in the flesh' as it were (no pun intended). It is surely preferable to use accidentally killed animals for this purpose rather than captive live ones (I realise that the Agreement outlaws the use of live birds and I think that this policy is more easily defended).

Apart from what the specimens can teach about the animals themselves, they can also teach observational and reasoning skills - one of the most important attributes of the budding naturalist. "What shape is the bill/foot/wing etc)" "Why might it be that shape?" If we discourage the asking of these questions we risk producing endless generations of book-fed naturalists incapable of applying principles of reasoning to their observations and believing everything that has been written by their predecessors who were lucky enough to have access to Museum displays to develop their own critical skills.

In my view, to ignore this potentially valuable educational resource is foolish. Surely both the cause and science of conservation is advanced by the dissemination of information. A better knowledge of birds may convince people that they are in fact worth conserving.

Having considered the study of specimens, it does beg the question as to where one draws the line: if it is wrong to exhibit dead specimens, is it equally wrong to publish data obtained from carcasses in popular publications (e.g. NEW NATURALIST Series etc.)? What at first sight seems a simple division between public presentation and scientific research is possibly not so clear cut. Furthermore, when licences can be obtained to photograph schedule 1 birds at the nest and even to shoot birds for scientific purposes, does it not seem rather elitist to attempt to deny public access to specimens that have died a quite innocent death?

Another factor to bear in mind is whether, or not, members of the public would be as likely to bring in victims of weather, traffic, windows or pets, given that there would be no apparent tangible public benefit in doing so. The result would be not only the loss of much scientific data (locality records, measurements etc.) but also a reduced likelihood of discovering illegally killed animals and acting accordingly.

The argument of the signatories to the agreement seems to be based on two premises: firstly, that some people on seeing stuffed specimens will want to go out and acquire their own. As far as I know, there is no evidence to support this and I would contend that would-be collectors would find their way into such activities without any prompting from museum displays or examples at lectures.

Secondly, that schools (and Museums?) are likely to indulge in trading in specimens. If the continued adherence to this agreement is really because of a threat from "...collecting and trading in eggs and stuffed birds for use in schools", then the signatories not only ignore the weight of legislation to prevent such activities, but appear to have a very low opinion of the integrity of both schools staff, and, by implication, natural history curators. I suggest it is time for some active lobbying.

Yours sincerely,  
Alec Coles  
Assistant Curator  
Woodspring Museum, Weston-super-Mare

P.S. I can honestly say that in the last five years I have come across no-one either in the Museum, at lectures or anywhere else who has believed we kill for our displays (and I have done hand counts at WI's etc.). Despite this Steve's point is well taken and notice to this effect in our Natural History Gallery might be a good idea. I know that Bristol Museum produces a handbill explaining what should be done if animals are found dead, and how they use specimens brought in.

# Committee News

## AGM

The AGM was well attended this year and there were several changes in committee membership. This is the new line-up.

Chairman: Tony Irwin, Norfolk Museums Service  
Secretary: post vacant  
Treasurer, Membership Secretary and Advertising Officer: Adam Wright, Coventry Museum  
Editor: John Mathias, Leicestershire Museums Service  
Special Publications Editor: Steve Garland, Bolton Museums

Committee:  
Geoff Stansfield (1984) University of Leicester  
Geoff Hancock (1985) Glasgow Museum  
Graham Walley (1985) Nottingham, Wollaton Hall Museum  
Phil Collins (1986) St. Albans Museum  
Gordon Reid (1986) Horniman Museum, London  
Steve Moran (1986) Inverness Museum  
Howard Mendel (1986) Ipswich Museum  
Derek Whiteley (1986) Sheffield Museum  
Di Smith, GCG representative (co-opted)

Committee business has been rather fragmented this year with Penny Wheatcroft stepping down as Secretary after the AGM and no-one else volunteering for the job; despite the election of five new committee members we still have one vacancy.

## PUBLICATIONS

There is no news of the publication of the CARDIFF CONFERENCE REPORT (was it really four years ago?) or the BERNICE WILLIAMS REPORT. I understand that Peter Morgan spoke on the Williams Report to the MA Conference in Aberdeen, so the Conference Proceedings should bring us up to date. Still in Aberdeen, Peter Davis gave a rousing talk on the achievements of BCG over the past ten years and highlighted some of the problems we face during the next ten. I hope to publish the text in the next Newsletter.

## COLLECTIONS

The dispersal of some of the natural history collections from the Grosvenor Museum in Chester has gone ahead as planned and the position there is now stable. Fiona MacKenzie will summarise the movements in the next Newsletter. Some concern was expressed at the last Committee meeting about the current



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status of Calke Abbey collections following their purchase by the National Trust (who seem to employ no biological curators or conservators despite owning large natural history collections); enquiries are being made.

There has been some concern in recent months over the fate of the natural history collections at Swansea Museum now that the University has finally decided to withdraw its financial support. Dr. Isaac, the curator, is to move to the Adult Education Department of the University when the building closes to the public. Other sources of funding have been approached (like the County and District Authorities) but nothing has yet been promised. The National Museum of Wales is exploring the possibilities of taking over the museum and maintaining it as a branch museum, but this is not yet decided. In the meantime, the collections will be transferred to safe (but probably inaccessible) storage at the University or the NMW.

BM(NH)

The BM(NH) policy on charging continues to intrigue the Committee and there were two distinct views expressed at the last meeting. We agree that charging for services like serious enquiries from other institutions (or individuals), and charging for lab space, use of rooms and access to collections (which presumably includes access to type specimens) should be deemed unacceptable by the scientific community at large and therefore opposed. However we disagree about charging for entrance to the displays; Penny Wheatcroft, wearing her Union hat, is fighting that policy tooth and nail (and she certainly has my support) whereas other Committee members work in museums which levy entrance charges and feel it is beyond the remit of BCG to take a stance on this issue. So, it is not BCG policy to oppose entrance charges at the BM(NH) although the Committee did agree to circulate literature from the 'anti' lobby with this Newsletter.

MANUAL

The first meeting of the editorial group for the MANUAL FOR BIOLOGICAL CURATORS has taken place. Now that the project is finally under way I hope to report progress regularly in the Newsletter. Initial discussion covered format, structure, content and funding, but apart from the decision to adopt loose-leaf format, nothing concrete was decided. The next meeting on content should be more productive.

CURATORIAL COURSE - do you want one?

About two years ago, BCG and GCG sponsored a Natural Sciences Curatorial Course at Leicester University Department of Museum Studies. It was aimed at the in-post curator and at students taking the MA Diploma (although it had no official standing with the Museums Association). There was a strong bias

in favour of specialist practical curatorial matters, a subject area many people feel is neglected in official Diploma training. It may be possible to run a similar course next year (1987) if there is sufficient interest. If you think you might be able to attend a week-long course, probably based at a museum rather than Leicester University, in the summer of 1987 please let the committee know, either through me (John Mathias) or any committee member. We would like to discuss this at the next meeting on November 12th, so please send in replies by then.

SUBSCRIPTIONS

The Treasurer reports we are about £600 down on subs this year. If you have not paid your sub for 1986, please do so now.

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## Diary

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Friday 5th December 1986

GCG meeting on the theme 'Geology and the Media', also AGM. Manchester Museum. BCG members welcome. Contact: Richard Porter, Manchester Education Service.

Friday 10th and Saturday 11th April 1987

BCG meeting centred around the new Natural History Gallery at Sheffield Museum; full programme to be announced. AGM at Sheffield Museum on 10th. Contact: Derek Whiteley at Sheffield Museum.

September/October 1987 (date to be fixed)

BCG meeting on the use of live animals in museum displays; full programme to be announced. To be organised by Adam Wright and Gordon Reid and held at Coventry Museum.

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STOP PRESS

Derek Whiteley (Sheffield Museum) has agreed to become acting Secretary of the Group. The Committee would like to thank Penny Wheatcroft for all the work she has put into the Secretaryship over recent years, particularly after moving to the BM(NH) when her involvement with BCG was not encouraged by the Museum authorities. We are all grateful for, and have benefitted from, her energy and commitment.

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# In the Press

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The current issue of *STUDIES IN CONSERVATION* (vol.31 no.3, August 1986) has an interesting article on ultrasonic cleaning methods for feathers in ethnographic collections (authors Gerry Barton and Sabine Weik). Aqueous solutions were tested, the main variables being immersion time and detergent formulation; structural feather damage was assessed using scanning electron microscopy, and colour change by using a spectrophotometer.

The results showed that feathers can be cleaned very successfully by this method: of six detergents tested only one failed to remove dirt; optimal cleaning time was two minutes; there was no effect on pigment colour and only a very slight darkening of structural blues (due to slight changes in barbule surface structure caused by the ultrasonic vibration). The best cleaning agent was a mixture of anionic and non-ionic detergents (the formulation is given in the paper).

There may be applications here for the biological conservator. I don't know of any old bird material that has been cleaned ultrasonically - perhaps someone should give it a try and let us know the results.

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Most of us are from time to time called on to produce displays, publications, signs and other bits and pieces which in some way or other interpret the environment. The scale and intensity may vary from new galleries to nature trail signposts; success (assuming it can be measured) can prove elusive. There now exists in Manchester a Centre for Environmental Interpretation (it is part of the Poly) with the aim of improving generally the standards of environmental interpretation. The Centre offers courses, hosts seminars, gives advice and produces a very useful bulletin called *ENVIRONMENTAL INTERPRETATION*. The latest issue I have seen (December 1985) is called 'Focus on Interpretive Publications' and is well worth a read. It is available from the Centre for Environmental Interpretation, Manchester Polytechnic, John Dalton Building, Chester Street, Manchester M1 5GD.

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A special issue of *THE BULLETIN D'LIASON DES MUSEES D'HISTOIRE NATURELLE* published by the Inspection Générale des Musees d'Histoire Naturelle de Province, 57 rue Cuvier - 75005, Paris, is devoted to a wide-ranging bibliography of taxidermy. (Numéro spécial 1er trimestre 1986, ISSN 0755 2440).

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A new collections-based society has been formed in North America. Following the 1981 Workshop on the Care and Maintenance of Natural History Collections held in Ottawa (Proceedings of 1981 Workshop on Care and Maintenance of Natural History Collections, *SYLLOGEUS* No 44 National Museums of Canada, 1983), and a second workshop held in Toronto in 1985, it was decided to set up a new *SOCIETY FOR THE PRESERVATION OF NATURAL HISTORY COLLECTIONS*. The Society came into being in 1985 and now publishes a twice yearly newsletter *COLLECTION FORUM*.

*COLLECTION FORUM* aims to encourage studies and publish results about the basic requirements for collecting, fixing, preserving, storing, and displaying natural history collections. Emphasis will be on the development and application of technologies concerning the proper management of natural history collections. They include studies in computer technology, biochemistry, conservation, physical chemistry and other associated fields.

Membership details are available from Shirley Albright, New Jersey State Museum, 205 W. State Street, CN-530, Trenton, NJ 08625, USA. The Editor is Dan Faber, National Museum of Natural Sciences, Ottawa ON K1A 0M8, Canada.

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The June issue of *CURATOR* (Vol 29 No 2) reports an interesting study carried out by Stephen Williams and Catherine Hawks of the Carnegie Museum of Natural History on the most suitable inks to use for label-writing in dry-preserved vertebrate collections. Twenty-four black inks available on the American market were tested and graded for the following properties: pH; corrosiveness and opacity; total solids; drying time; colour value; resistance to light; resistance to fluids; cost. Not all of the inks are available in the UK, but top of the list was Rotring 17 Black (which is the standard refill/cartridge drawing ink for Rotring pens, ref 591017 for 23ml bottle). I would think this is the most commonly used ink anyway. Pelican 17 Black and Pelikan 50 Special Black were both rated as acceptable. Other familiar inks which were down-graded on various counts were: Koh-I-Noor Universal; Parker Super Quink; Pelikan inks Super Black India, Black and Brilliant Black; Staedtler-Mars; Windsor and Newton. I recommend that anyone who has worries about the ink they use for permanent collection records consults this article; perhaps someone will carry out a similar study on all the inks available here.

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The NATURAL HISTORY GROUP OF THE ICOM COMMITTEE FOR CONSERVATION produced its first NEWSLETTER in April of this year; it has no title yet. The Group membership is worldwide but the newsletter co-ordinators are Frank Howie (BMNH) and Velson Horie (Manchester Museum, from whom it is available). There is a Natural Sciences Conservation Questionnaire in the newsletter which I would urge all curators/conservators to complete. The 'update on projects' section lists a series of pest control and specimen deterioration investigations currently under-way at home and abroad and there is news from the BM(NH) that Nigel Armes has recently completed a PhD thesis on the life history and control of the museum pest beetle Anthrenus sarnicus, which should eventually be of benefit to us all (Geoff Stansfield gave a short bibliography on A. sarnicus in the last BCG Newsletter p.88). The subscription fee is £5.00.

From the Editor

I apologise for the late arrival of this Newsletter. The change-round in editor, format, content, printer and envelope sticker-downer has taken longer to organise than I anticipated.

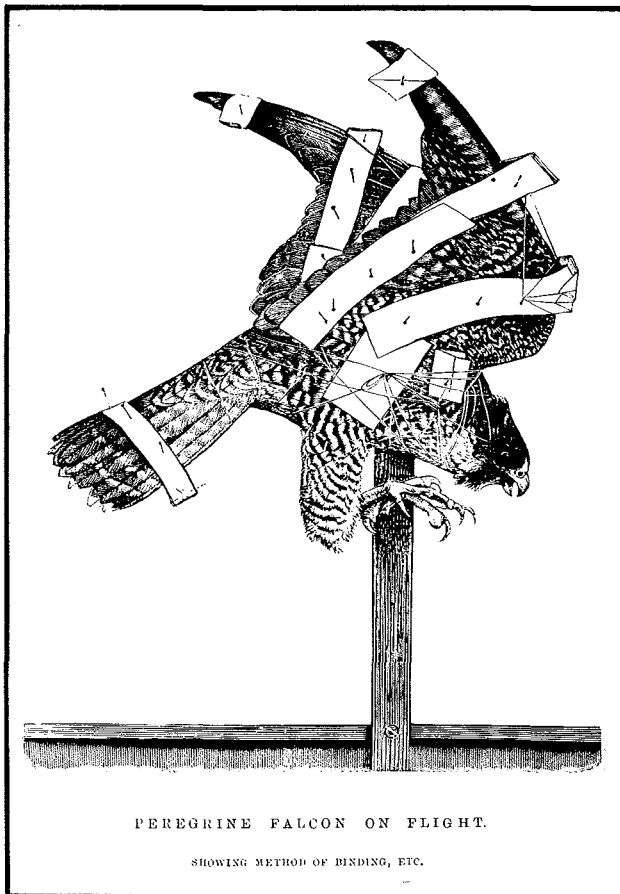
I hope everyone agrees that the double-column format is an improvement. It is certainly more economic of space than the old style Newsletter and this means I have been able to have it printed by offset litho rather than the photocopy process. Text illustrations, photographs, line drawings or half-tones can now also be reproduced to a high standard so I hope the visual content of the Newsletter will improve over the next few issues. This Newsletter is a bit of a hybrid; the new style is developing but there are still some wrinkles to iron out.

The change in content is more difficult to achieve. I would like to make the Newsletter 'newsier' - by this I mean carrying more information on events, publications, people, politics and general goings-on. I don't want this approach to appear to trivialise the Newsletter because it must retain its established position as a forum for debate and information exchange. 'Letters', 'Reviews' and short articles on collections, techniques, recording etc. will continue to be features, but I would like the 'Diary' and 'In the Press' columns to expand through greater input from members.

If the Newsletter progresses in this direction there will clearly be a need for a more 'serious minded', perhaps more permanent type of publication to take longer, properly refereed research and review papers. The Committee have in mind to establish a 'Journal of Biological Curation' (working title only!) with a preliminary first issue date of Spring 1988 to fill this gap. A full prospectus for the new journal will appear early in 1987.

This revision of the Group's publishing activities gives it a very ambitious programme: Newsletter, Journal, occasional Reports and the Handbook project. The first two of these particularly can only succeed through regular contributions from members, and I will end with the usual plea for support - words, pictures and ideas please.

John Mathias  
Editor



PEREGRINE FALCON ON FLIGHT.  
SHOWING METHOD OF BINDING, ETC.

An illustration from Practical Taxidermy by Montagu Browne: see Alec Coles' letter on the uses of mounted birds in museums.

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# Techniques

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A Clean and Safe Gravimetric Method to Differentiate Spirit, Formalin and Other Fluid Preserving Media.

Many of us spend a part of our job among glass bottles of old fluid-preserved specimens containing goodness-knows-what preservatives. A great many curators are still old-fashioned enough to use a standard fixative such as 10% formalin (4% formaldehyde solution) as a storage medium rather than one of the more modern preservatives such as those containing propylene phenoxetol (Steedman, 1976). There inevitably comes a time when these fluids need renewal or topping up, and the unfortunate curator has to determine what each jar contains. Since additional signs or labels in or on the jar obscure the view of the specimen, the curator has to resort to sniffing at the fluids and contravening many health and safety regulations. To obviate this, and the dangers of headaches, cancer or anaemia, the following simple panacea is proposed.

Remove the teat from a dripper bottle (preferably the sort which has a small reservoir in the pipette just below the teat). Place a plastic ball or smooth-sided knob of plastic of an appropriate specific gravity (e.g. 0.9) into the reservoir. Replace the teat. When testing for alcohol or formalin draw off enough fluid to half-fill the reservoir. If the ball floats you have formalin or some aqueous-based preservative. If the ball sinks you have alcohol (between 30% and 100%). Remember to tap the pipette against the side of the jar to dislodge any air bubbles from the float that might otherwise give a false reading. If the ball sinks slowly, then you probably have a mixture of alcohol and some other aqueous fluid.

For additional hydrometric distinctions further balls (or knobs of plastic) will be required, preferably of different colours. By drilling them half-way through and inserting different (minute) sizes of lead shot, specific gravity distinctions of 0.1 can be detected between fluids although you will have to make many flotation tests to obtain the critical weight of the lead shot so that it is just right to float or sink the ball as required. With three balls you could also distinguish glycerol-containing preservatives from alcohol and formalin.

Aldehyde detector papers (impregnated with leuco-basic fuchsin - Schiff's reagent), commonly used for detecting formaldehyde, are by comparison messy and have a limited shelf life. With several hundreds or maybe thousands of jars to test, the method described here will save much time and considerably lessen the risk of inhaling of noxious fumes than those involving impregnated papers.

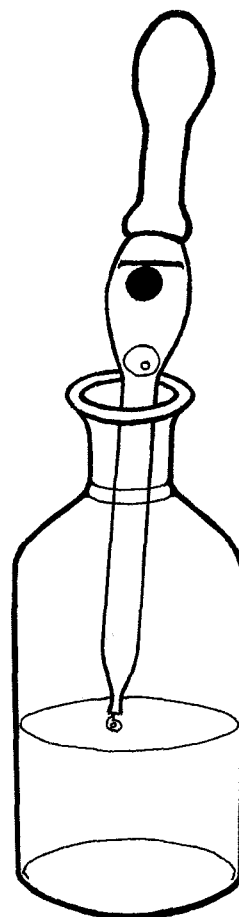
Acknowledgement:

Thanks are due to Paul Cornelius who helped me in devising this idea and to the Engineering Section of the Central Services Department of the British Museum (Natural History).

Reference:

Steedman, H.F. 1976. ZOOPLANKTON  
FIXATION AND PRESERVATION.  
The Unesco Press, Paris

Simon Moore  
Department of Zoology  
British Museum (Natural History)  
Cromwell Road  
London SW7 5BD



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The following article was sent in by Velson Horie, Keeper of Conservation at Manchester Museum, in response to Jenny Clack's request for information on sealants for museum jars (see also Martin Linnie's letter on the subject). It first appeared in CONSERVATION NEWS no 20, March 1983. I am grateful to Velson Horie and the editors of CONSERVATION NEWS for permission to reproduce it in full.



## Sealing of Museum Jars with Silicone Mastic

Whole and part animals are preserved intact for future study by immersing them in preservative solutions - in some cases for more than a century. Museum jars, which were made over many years and which are still in use, were made in glass roughly formed (blown moulded?) into a rectangular section. The top was then ground off flat. In order to seal the jar, a lid of flat glass is stuck over the ground top with an adhesive containing waxes or rubber. A hole drilled in the lid is used to fill the jar completely with preservative when the adhesive is firm. The hole is covered with a microscope cover slip, sealed in place with the same adhesive.

This container system has so many disadvantages that other types of container are now used. The jar is heavy and fragile, and the seal between the jar and lid frequently breaks down - thus allowing the fluid used as a preservative to escape by evaporation or spillage. However, transferring specimens into more suitable containers presents difficulties due to the expense, the limited range of sizes available and the adverse reaction between the fluid and the plastics used for some jars.

Various solutions are used for preservation - the primary aim being to inhibit the growth of microorganisms, such as bacteria and fungi, in the necessarily wet conditions in the jar. The preservatives used at the Manchester Museum for the 'spirit collection' are (solutions used for testing purposes are in brackets): (a) formalin (10% formaldehyde in deionised water, not buffered); (b) ethanol solution (70% 74 op IMS in deionised water); (c) Phenoxytol solution (1% Phenoxytol, 5% propylene glycol in deionised water); (d) glycerine/acetate solution (30ml glycerine, 2g potassium acetate in 90ml deionised water). An additional test solution (e) was the ethanol solution with 0.1% formaldehyde added.

Maintaining a spirit collection can be time-consuming, because of the frequent topping-up and resealing. This results in specimens being neglected, damaged and, in some cases, destroyed. The sealing of the jars was obviously at fault and, if this could be improved, much harm and handling of the container would be avoided.

Requirements for the adhesive/sealant are: to stick the glass surfaces together; to resist the effects of the various chemicals involved retaining adhesive and cohesive strength; to allow for easy opening of the jar for study of the specimen; to be resealable; not to harm the specimen.

Most adhesives have poor long-term adhesion to glass in the presence of water, due to the hydrolytic nature of glass, and it is for this reason that sealants for museum jars are unreliable. Only those materials that react with glass will retain a good bond. Coupling agents that react with both the glass surface and the adhesive are commonly used to

increase the resistance of the join to water. Silicone sealants are widely used to join glass to itself and other materials, because, in the main, the sealants have good adhesion to glass without coupling agents.

A grade of silicone sealant (Silastic 738 RTV), which does not release acetic acid, was chosen for testing. Acids in the preservative can contribute to the breakdown of the organic material. For maximum adhesion, it is necessary to use a coupling agent (Dow Corning 1200). The procedure adopted for sealing the test solutions into the jars was in line with the manufacturer's recommendation.

The ground top of the jar was degreased with Genklene and acetone. The top of the jar and the mating surface of the lid were painted with the coupling agent (a clear mobile liquid). The jar was filled with the appropriate test solution (a - d), using a funnel to avoid splashes on the primed surface. The primer was allowed to dry for one hour. The sealant was applied to the jar top from a collapsible tube in a thin (2-4mm) bead. The lid was placed over the top and pressed lightly down to eliminate all air passages. The jar was left for 24 hours for the adhesive to cure. The process of priming and sealing was repeated on the filler hole and cover slip for the lid. The jars were not filled completely, in order that the air space remaining might increase the stresses on the join. The jars were rested on their sides, so that the solution came in contact with the adhesive.

Within a couple of weeks, the join on the jar containing formalin was leaking solution out and air bubbles in. This result was repeated in further tests. The test solution (e) was made up and sealed into a jar, in order to check that the join would withstand solutions used with specimens that had been inadequately washed out after fixing with formaldehyde.

The jars can be opened by cutting through the silicone rubber bead with a scalpel and can be resealed with fresh sealant after cleaning the cut surfaces with acetone. In the event of the system failing, it is unlikely that the jar can be reused with another sealant without regrinding the top of the jar.

After 15 months, the jars containing solutions (b) to (e) show no sign of solution loss. Indeed, one jar, when opened, was slightly overpressurised. Air diffusion through silicone rubber is quite rapid and loss of solvent might have been expected even through the small area of sealant exposed, but this was not the case.

Velson Horie  
Manchester Museum

[Velson points out that the range of silicone adhesives has increased in the five years since this test was completed, and it may be possible to improve on the Silastic 738 RTV used here.]

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# Book Reviews

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AMPHIBIAN SPECIES OF THE WORLD - A  
TAXONOMIC AND GEOGRAPHICAL REFERENCE  
edited by DARREL R. FROST

Published by Allen Press Ltd and Association  
of Systematics Collections, Lawrence, Kansas,  
USA.

The book sets out to provide an up-to-date  
and complete checklist of all known amphibian  
species. For each of the 4014 species  
recognised by the book, the following data are  
provided:

1. Current name, authority, citation
2. Original name
3. Current location and museum collection  
number of type specimens (where known)
4. Type locality
5. Distribution
6. Comments

Whilst most of this information is standard  
for checklists, I found the comments in  
particular most interesting. These include  
information on synonymy, sub-generic  
affinities, further references to distribution  
records, and where relevant, protected status.

Similar details are supplied at generic,  
sub-family and family levels throughout the  
text. At these higher taxonomic levels, names  
of all contributors and reviewers for that  
particular section are given. A full list of  
contributors and reviewers and their addresses  
is given before the main text, thus allowing a  
source of contact for those requiring extra  
information. This list reads like a  
herpetological "WHO'S WHO" of amphibian  
researchers - as the publishers justifiably  
boast, the publication involves 59  
professional herpetologists from 21 countries.

AMPHIBIAN SPECIES OF THE WORLD additionally  
includes two useful appendices:

- (i) Full titles for all the  
abbreviation of book and journal  
titles included in text.
- (ii) Full titles and addresses for all  
abbreviations of museums referred  
to in the text.

There is also a complete alphabetical index to  
all species listed in the text. I found this  
useful, because one can approach at either  
generic or specific level and still be  
successful, e.g. Bufo calamita is listed under  
both Bufo calamita and calamita, Bufo. Thus  
if one is working with a superceded name one  
has a reasonable chance of success.

It is easy to be critical of checklists - we  
all know they are out of date before they are  
published (nearly 33% of the 4000 species  
referenced have been discovered in the last 25  
years), and I found it very annoying that the  
notes on protected status referred only to

species listed by CITES and the United States  
of America Endangered Species Act. Surely  
when so many international authorities were  
involved, it would have been relatively easy  
to include major legislative measures on a  
world-wide basis.

The original intention to include synonyms,  
subspecies and their citations proved  
impractical in terms of sheer bulk, but this  
is no great drawback since much of this  
information is available in more manageable  
chunks elsewhere, e.g. in DAS TIERRICH.  
The nomenclature used in AMPHIBIAN SPECIES  
OF THE WORLD is that which has been adopted  
by CITES, and without doubt will be  
(deservedly) the standard world checklist  
until well into the next century.

The publication is certainly not cheap -  
current \$85 - and unlikely to be the sort of  
thing that the majority of museums will rush  
out and buy. However, those undertaking  
research on Amphibia will certainly be well  
advised to obtain a copy.

As one currently actively (?) engaged in  
producing a similar checklist for oriental  
lizards, I can wholeheartedly vouch for the  
colossal amount of work involved in  
publications of this nature, and thus the  
price (to me at least!) seems fair.

If it's good enough for CITES ....

Adam Wright  
Herbert Art Gallery and Museum, Coventry

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BRITISH PYRALID MOTHS - A GUIDE TO  
THEIR IDENTIFICATION  
by BARRY GOATER.

Published by Harley Books. Price £18.95.  
ISBN 0 946589 08 9

The Pyralidae is one of the larger families of  
British Lepidoptera; the current total being  
208 species. This new book will certainly  
stimulate interest in them by providing an  
up-to-date identification guide. It is the  
first guide to this family to be published  
since BRITISH PYRALID AND PLUME MOTHS'  
by B.P. Beirne in 1952 and has far superior  
text and colour plates. Each species is  
illustrated with photographs of set specimens  
by Geoffrey Senior and a frontispiece  
illustrates the various subfamilies in resting  
poses; a very valuable plate for beginners.  
The availability (or rather, non-availability)  
of Beirne's work has always been a problem, as  
reflected in this work by the often vague  
distributional information. This will  
certainly be rectified in future years.

For the museum natural scientist the book has  
the added advantage in that it includes many  
regular enquiries. There are the big 'micros'  
such as the Garden Pebble and Mother of Pearl  
which "I can't find in South (or Skinner), but  
they must be in it 'cos they're very big!";  
the pest species of the genus Ephestia (flour

moths) and the subfamily Galleriinae (wax moths) and finally the alien China Mark moths now established in numerous water-garden centres throughout Britain.

If you think the price is high, it is a very well-produced book, and secondhand copies of Beirne currently sell for over £30!

S.P. Garland  
Bolton Museum

THE DRAGONFLIES OF GREAT BRITAIN  
AND IRELAND by C.O. HAMMOND,  
revised by R. MERRIT.

2nd edition, 2nd impression, 1985. Published  
by Harley Books. Price £9.75 (paperback).

I expect that in fifteen years time someone will write an article for THE BIOLOGY CURATOR (as BCG newsletter will be known by then), reviewing the century's significant or most influential natural history books. Cyril Hammond's book surely will be among them. The impetus given to the Odonata Recording Scheme and the formation of a British Dragonfly Society are two major expressions of this book's influence. More remarkable than these, however, is the astonishing distraction which has afflicted such a large and single-minded body as British bird-watchers. Seldom has such a large shift in taxonomic attention been wrought by a single book. Long may it continue!

Yet this increased popularity might prohibit improvements in this book. I confess to feeling more at home with a dichotomous key than a field guide, and I suspect many entomologists would appreciate a key to species, not just genera. Space on the text pages could be used for hints on separating species in the field, rather than leaving the novice to decide from text characters and plates how to tell one from another. I still fail to see why Sympetrum nigrescens should enjoy side views which are denied to the other species in this genus.

I also regret the absence of synonyms from the check-list. A statement to the effect that first edition Agrion are now Calopteryx and S. scoticum is now S. danae would be welcome. Of course these synonymies are of no consequence to those who use English names, but I resent the need to employ contrived, 'vernacular' labels in order to understand nomenclatural changes.

The second edition added text and figures for Coenagrion lunulatum as well as updating the maps for all species. Several corrections and additions to text and captions were made. The second impression of this edition includes a short account of further important records up to 1985.

Those of you who have access to the 1977, 1983 and 1985 printings might care to compare the colour plates. Anax imperator and Aeshna isosceles demonstrate colour variation beyond that found in life. Clearly experience must temper our interpretation of these paintings.

In 1986 we are promised three further books covering the British dragonflies. I doubt that any of them will replace this classic which, thanks to its less expensive paperback format, will remain first choice for anyone working on this group. Because it is a classic, there may be a temptation not to alter the text. Hopefully a third edition will acknowledge the present faults and make an effort to correct them.

A.G. Irwin  
Norfolk Museums Service

WHERE THE CRANE DANCED  
by C.H. KEELING

Available from Clam Publications, 13 Pound  
Place, Shalford, Guildford, Surrey GU4 8HH.  
Price £5.85 post paid. Optional extra - a set  
of 14 photographs, price £1.70.

This booklet is a follow-up to Mr. Keeling's WHERE THE LION TROD and continues the theme, which is basically a foray into the history of British zoological collections and menageries. Establishments from as wide an area as Aberdeen to Exmouth are discussed as well as estate menageries and travelling menageries. Museum curators may find that a high percentage of their foreign vertebrate material actually originated from fallen stock at these early zoological collections.

Mr. Keeling obviously has a passionate interest in the subject and has very strong views, which surface regularly. These are that a zoological collection is a special and powerful educational tool and that many early owners and keepers learned much valuable information about their charges, much of which is now lost or disregarded.

This is a very enjoyable read, and is absolutely bursting with facts. The only thing lacking is an index to help find references to places in the text.

I look forward to his third publication which will deal with Ashover Zoological Garden in Derbyshire, which Mr. and Mrs. Keeling founded in 1955; now sadly closed.

S.P. Garland  
Bolton Museum

RYE'S BEETLES - A CATALOGUE OF E.C.  
RYE'S TYPE SPECIMENS IN BOLTON MUSEUM  
by E.G. Hancock

Published by Bolton Museum and Art Gallery,  
1985.

This is a 30 page photocopied booklet stapled together in thin card covers. Its primary aim is to catalogue the type specimens of species, which were described by Rye and which are housed at Bolton Museum. This is done with full transcriptions of all labels attached to the specimens and relevant details extracted from the various catalogues associated with the collection. Also included is a list of species, which were described by Rye and whose types are kept elsewhere. Rye's collection arrived at Bolton already incorporated in the large and important collection of P.B. Mason, who acquired many of the outstanding beetle collections of the late 19th Century. Type material associated with other authors is thought to be included in these collections and a list of these authors can be found in the introduction.

Apart from the catalogue of types there is an interesting biographical section, which gives a glimpse of the sense of humour prevalent amongst Victorian coleopterists and includes some useful family details. There are also sections on the history of Rye's collection and a concise introduction to type terminology.

Not all the sections are listed in the contents, which could lead to some confusion, and I would have preferred to see more information on Mason's manuscript catalogue and how it relates to the specimens. However these criticisms are minor when one considers the informative and entertaining manner in which it is written. Undoubtedly this will be a useful publication to researchers wishing to consult Rye's types and all those interested in 19th century entomology.

Derek Lott  
Leicestershire Museums Service

Museums Computer Group

The Museums Computer Group was formed to provide an informal forum for the exchange of information and ideas between people involved in any way with the use of computers in museums.

Forthcoming meetings of the group are provisionally scheduled as follows:

April 10-11 1987	Museum of London
October 1987	Merseyside Museums
April 1988	Nottingham, Wollaton Hall Natural History Museum
October 1988	British Museum (Natural History)/Science Museum

For further information and inclusion on the mailing list, please contact either Charles Pettit (Chairman), Manchester Museum, The University, Manchester M13 9PL or Mary Hider (Secretary), Leicestershire Museums Service, 96 New Walk, Leicester LE1 6TD.

Newsletter copy dates (revised due to the delay in publication of Volume 4 no 5)

Volume 4 no 6	November 28th 1986
Volume 4 no 7	February 20th 1987
Volume 4 no 8	June 5th 1987
Volume 4 no 9	September 18th 1987

Subscription rates are £6.00 for individual membership and £10.00 for institutional membership. Contact Adam Wright, Herbert Museum, Jordan Well, Coventry, for application forms.

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