Newsletter of the Natural History Group
of the ICOM Committee for Conservation.

Issue No. 1
April, 1986

Dear Colleagues,

This newsletter is a new venture for the Natural History Working Group and is aimed at those with any interest in the preservation of natural science material in museum collections. Our colleagues on the ICOM International Committee of Natural History Museums and colleagues in the various national flora and fauna preservation groups throughout the world have quite rightly taken up the cause of the conservation of natural resources represented by living populations of animals and plants.

The perilous state of the enormous holdings as specimens of extant and extinct life-forms and earth science material has however gone largely unnoticed. Recent surveys carried out by curatorial groups indicate the size of the problem in the United Kingdom. Out of the total estimated 100 plus million specimens in UK collections upwards of 25 million are at risk or are deteriorating today. Taken as an indication of the situation worldwide as many as 500 million natural science specimens could be in jeopardy.

With spending on natural history collection conservation probably running at less than 1% of the sum spent on arts conservation the outlook appears bleak indeed.

If you are concerned enough to want to alter this state of affairs please join the working group. Conservation in the fine arts and antiquities fields has a long history. Relative newcomers to the discipline include stone-work and ethnography - both these groups now have active worldwide support for the conservation of their charges. Natural history has missed out for too long. It must benefit soon - hopefully before it is too late and extinction of species catches up with the decay of specimens in museum collections.

It is hoped that this newsletter will be of interest to you. One of its main aims is to act as a vehicle for the exchange of information so PLEASE WRITE in with any information on meetings, literature, methods, problems etc. Please also fill in the questionnaire at the end of this newsletter which will be of use for the production of future issues.

The title of the newsletter seems too long - a shorter one is desireable. One suggestion is AMBER (a sub-fossil plant survival which often preserves animals for millions of years), but we are open to better ideas.

Frank Howie

Velson Horie

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S. Wolf (Austin, USA)

WORKING GROUP PROGRAMME FOR 1984-87

1. Continuation of research into deterioration of materials in fields of geology, zoology and botany; development of appropriate conservation methods.

2. Identifcation of pests in natural history collections, their biology and control.

3. Continuation of research into low temperature long term storage for taxonomic material.

4. Examination/review of efficiency of wet storage methods in biological collections.

5. Conduct a survey of conservation facilities and extent of staff training in conservation in major natural history museums/departments.

6. Preparation of article/series of articles aimed at alerting museum governing bodies, politicians and public on precarious state of natural history collections world-wide.

7. Cross-fertilization with other ICOM Conservation Groups: e.g., Ethnology, Biodeterioration, Climate Control. F. Howie to join working parties of Biodeterioration (25) and Climate Control (17) with effect from 1984 meeting.

8. Consider feasibility of group meeting in 1986/87.

9. With active Assistant Coordinator, consider Newsletter for Natural History Conservation Group.

THIS ISSUE CONTAINS .....

A short article aimed at giving identity to the need for conserving natural science collections with updated information on some of the projects, currently underway.

Also included is a section on recent publications with a short bibliography of some recent papers of interest and a list of recent and forthcoming meetings. With your help these sections can be greatly expanded so please send in details of meetings large and small, other similar interest groups however local they may be, any references on preservation and conservation methods applicable to natural history specimens and papers and publications for review.

Finally your co-operation would be greatly appreciated by completing and returning the attached questionnaire.

CALL FOR PAPERS - Sydney 6-11 September, 1987

The ICOM -Conservation Committee in Copenhagen (1984) contained only a few, but very useful, contributions on Natural History Conservation. We need to build on this in order to show that the difficulties are being tackled and solved. Please send any proposed contributions for the 1987 Congress to the coordinators by October 1986.

MESSAGE TO OTHER ICOM COMMITTEES

"The Directory Board of the ICOM Conservation Committee, after its 7th Triennial Meeting in Copenhagen (1984), wishes to stress the need for increased attention to be paid to the management of Natural History Collections.

Material in Natural History Collections represents the cultural heritage in ways as important, both scientifically and historically, as other museum disciplines.

Natural History Collections in the world's major museums are the prime data bank of present and past events within which is locked not only taxonomic information, but also data on man's effect on the biosphere.

If Natural History Collections are to survive into the 21st and succeeding centuries and, indeed, survive the extinction of both species and eco-systems now occuring at an accelerating pace, then resources must be provided to encourage museum governing bodies and directors to give the preservation and management of the Natural History collection entrusted their (temporal) care much higher priority than hitherto.

Only in this way can the level of care rise to that given most other museum disciplines.

The standard of technology current in Natural History Collections must rise with the appointment of scientifically adept conservators and technicians and a climate of exchange of information between these individuals needs to be encouraged."

PUBLISHED IN ICOM NEWS
(1985) Vol 38, No. 1, P.6.

CONSERVATION AND THE SPECIMEN

Conservation in the museum is the activity concerned with both the preservation and enhancement of information embodied in the chemical, physical and biological make-up of the object. It can be seen as separate in theory (though rarely in practice) from examination, cataloguing and evaluation. These other activities are carried out for research, display and education. This working group covers a wide area of subjects, i.e. botany, zoology, palaeontology and the earth and planetary sciences, and includes most of the natural world that can be given an accession number.

Natural science objects are subjected to various treatments during their passage into a museum. It is both these treatments and the fate of stored material that this working group has been formed to study and improve. Treatments may be passive or active; they frequently involve physical alteration, e.g. removing matrix from fossils or minerals, or chemical alteration, e.g. fixing biological material or changing the moisture content by adjusting the relative humidity of the surrounding air.

a. Preparation. Animal skins are mounted in lifelike positions, fossils are extracted from matrix, plants are pressed and attached to herbarium sheets etc. Many of these tasks are carried out by the taxidermist, preparator or collection specialist. Frequently materials are added to prevent deterioration after preparation (stabilisation). This stage usually causes the greatest alteration in the object, and can have important effects for the future preservation of the specimen, in some cases causing premature loss of material.

b. Storage and display. Environmental stresses such as heat and humidity can distort an object, pollutants can soil or corrode it, light can catalyse degradation. Provision of poor storage and use of pesticides and fumigants can bring about short and long term damage unless closely monitored and controlled. Good short and long term facilities for storage and handling can contribute greatly to the survival of collections, these however need to be adequately determined and defined.

c. Reproduction With scarcity of original material replication of palaeontological and osteological material is becoming increasingly common. In terms of reducing the handling of important material this is welcomed, however, moulding materials must be chosen which cause least harm to the original.

d. Preservation Unstable minerals and biological material will, after periods of storage, deteriorate due to inadequate preparation methods or inadequate storage environment. Deterioration processes, when they are understood, can be halted or slowed considerably rendering the object more stable. This may involve chemical treatment and consolidation with polymers, which reagent or resin to use therefore becomes of prime importance.

e. Restoration Objects which are incomplete or which have undergone distortion may require additions and alterations to enable them to be used in display. The extent of such restoration should be in keeping with the ethical consideration of the discipline concerned.

Each of these stages in the life of a museum object results in changes. Each intervention causes physical and chemical changes. The conservator has a duty to understand these changes for two reasons; firstly the changed object is used as evidence of the material world, frequently as the primary source, e.g. type specimens

and unknown physical or chemical changes in the object may result in conclusions which are wrong. Secondly, the conservator must be able to formulate appropriate treatments for storage, preservation, etc. It is possible to cause considerable damage to an object if incorrect assumptions are made about its present state and the effects of the treatment proposed.

The aims of the working group are therefore:

1. To understand the structure of the objects in sufficient detail to enable 2,3 and 4 to be realised.
2. To understand the preparation and deterioration mechanisms of the objects.
3. To formulate conservation methods.
4. To define the changes which can ethically be made to an object.
5. To establish standards for documenting the treatment of specimens.
6. To provide a forum for free discussion, cooperation and publication towards achieving these aims.

Velson Horie
Keeper of Conservation
Manchester Museum, U.K.

UPDATE ON PROJECTS

A three year investigation into the changes in mammal skins mounted for display has been commenced at Manchester Museum in cooperation with the Biochemistry Department of Manchester University. Problems associated with skin deterioration include; soiling, hair loss, discolouration, insect damage, deterioration of skin structure and tearing. Fresh skin samples will be treated with a variety of traditional and modern taxidermy techniques ranging from arsenical soap to freeze drying and subjected to acclerated ageing processes.

The researchers would welcome samples of localized skin from old specimens of mammals that have deteriorated beyond use or display. Please send to:-

C.V.Horie , Manchester Museum, The University, Manchester M13 9PL

The Guild of Taxidermists (United Kingdom) has a travelling exhibition about natural history conservation methods as practised today. Contact The Secretary, Taxidermists Guild, c/o Hampshire County Museum Service, Chilcomb House, Bar End, Winchester, UK.

Hampshire County Museum Service (United Kingdom) has commenced a seasonal survey of insect and arachnid pests associated with storage museum material.

British Museum (Natural History) (United Kingdom) has commenced a survey on curatorial methods for the wet storage of biological material; N Armes has completed a Ph.D. Thesis on the life history and control of the museum pest beetle Anthrenus sarnicus; surveys and investigations into the control of pests in various collections of entomological, botanical and zoological material have been commenced in conjunction with pest control experts from the Ministry of Agriculture, Fisheries and Food; work is continuing on developing improved methods for fixing and storing parasitological Palaeonotology Department. For further information contact F. Howie BM(NH), London SW7 5BD UK.

Canadian Conservation Institute. Research is at present underway on a number of topics of interest to natural history curators including the conservation celluolose-based materials e.g. waterlogged wood and bark scrolls; the characterization and conservation of leather and skins; hair slippage and the stability of baleen; research into the environmental stability of argillite; effects of biocides on stored and displayed material; light fastness of natural materials , e.g. wood, feathers and fur. For further information Contact K. J. Macleod, CCI 1030 Innes Road, Ottawa, K1A OM8, Canada.

Museum of Natural Sciences, Ottawa. Research into the stability and treatment of hydrate minerals continues in the Mineral Division. Contact R. Waller, Mineral Science Division, National Museum of Natural Sciences, Ottawa, Canada.

Smithsonian Museum, Washington. The implementation of integrated pest management strategies for the control of insect pests in various types of collections is well under way. Contact Wendy Jessup, Smithsonian Museum, Washington, USA.

Carnegie Museum of Natural History. Research into the effects of past treatments on collection of historically important mounted specimens in various US Museum collections has been commenced. Contact Catherine A Hawks, Carnegie Museum of Natural History, 5800 Baum-Boulevard, Pittsburgh, PA 15206, USA.

Groups with interest in Natural History Collection Conservation.

Biology Curators Groups (UK): Secretary, Dr. P. Wheatcroft, c/o British Museum (Natural History), London SW7 5BD, UK.

American Society of Ichthyologists and Herpetologists (Curation Newsletter): Comm. Chairman K.E. Hartel, Museum of Comparative Zoology, Harvard University, Cambridge, Mass. USA.

American Society of Mammalogists (J of Mammalogy): Managing Editor, Dr. C. Jones The Museum, Texas Technical University, Lubbock, 79409, USA.

Geological Curators Group: Chairman P.S. Doughty, Ulster Museum, Botanic Gardens, Belfast, BT9 5AB, UK.

Guild of Taxidermists: Chairman, D. Ferguson, Glasgow Museums and Art Galleries, Kelvingrove, Glasgow. G3 8AG, UK.

American Institute for Conservation: Contact, S.J. Wolf, Materials Conservation Laboratory 10100 Burnet Road, Austin, Texas, 78758 USA.

United Kingdom Institute for Conservation Secretary: R. Child, Welsh Folk Museum, St. Fagans, Cardiff, Wales, UK.

Leicester University, Department of Museum Studies: Contact G. Stansfield, 105 Princess Road East, Leicester LE1 7LG, UK.

ICCROM: G de Guichen, 13 Via di San Michele, 00153, Rome, Italy.

Please send any information on other groups, large or small, which have any interest in natural history specimen conservation to the Coordinators.

RECENT PUBLICATIONS

Science for Conservators. A series of three volumes published by the UK Crafts Council 1982-1984. Book 1: An Introduction to Materials is written for the conservator with little or no science background and suceeds in systematically and simply taking the reader through the symbolism of chemistry, chemical reactions and atomic and molecular structures. This volume leads into Book 2: Cleaning and Book 3 : Adhesives and Coatings. These subjects are given the same clear and concise coverage. Available from Crafts Council, 11/12 Waterloo Place, London SW1Y 4AU. ISBN 0 903798 61 1

The State and Status of Geology in UK Museums Miscellaneous Paper No. 13, The Geological Society London. P.J. Doughty, 1981. A report conducted on behalf of the UK Geological Curators Group on the standing of geological collections in Museums and University collections based on data covering nearly 300 Museums in the UK during late 1970's. The report highlighted the poor state of conservation and lack of curatorial care in more than half the surveyed Museums with probably more than 15 million specimens at risk.

Fossils, Minerals and rocks: Collection and Preservation Ronald Crondier and A.R. Woolley. Published by the British Museum (Natural History) and Cambridge University Press, 1982. This small book covers basic field and laboratory procedures for amateur collectors and contains useful information for the professional vertebrate fossil collector. ISBN 0521 2476 5.

Proceedings of 1981 Workshop on Care and Maintenance of Natural History Collections. Edited by Daniel J. Faber, published as Syllogeus No. 44 by the National Museums of Natural Sciences, Ottawa, 1983. This volume contains the proceedings of the 1981 Workshop held in Ottawa. Thirty papers covering specimen collection methods, preparation of invertebrates, vertebrates and plant specimens, storage methods for insects and humidity-sensitive minerals, specimen documentation and restoration of old, poorly-preserved invertebrates are included as well as a useful bibliography of papers and books on care and maintenance of natural history collections. Available from the Museum of Natural Science, Ottawa, Ontario, Canada.

A Selective Bibliography on Preservation, Macro and Micro-anatomical Techniques in Zoology. R.H. Harris, published by the Biology Curator's Group: Report No.3, preparation of zoological material including fixation, freeze drying, histology staining techniques, injection, embedding and corrosion techniques and reconstitution. This volume is indispensible to all practising preparators and conservators of biological material. Available from Steve Garland, Sheffield City Museum, Weston Park, Sheffield S10 2TP, UK.

Biological Museum Methods. George Hangay and Michael Dingley. Academic Press, 1985. Published in two volumes; Volume 1 concentrates on vertebrate preparation methods with a short history of taxidermy; Volume 2 covers preservation methods for plants and invertebrates. The publishers have attempted to cover almost impossible ground in trying to bring together a large number of the known techniques, past and present, used for preparing, preserving and displaying biological material in museums, colleges and universities. Scheduled for publication in Australia, September 1985; USA and Europe, December 1985.
ISBN 0 12 323302 X

The Dangers and Handling of Hazardous Chemicals in the Geologic Laboratory. Alic Riedmiller, Phoebe Hauff and Richard Mathias, Geological Survey Circular 924, Washington 1984. Useful guide to the safe use of a range of toxic chemicals used in geotechnology. Available from Branch of Distribution, Eastern Region, US Geological Survey, 604 South Pickett St., Alexandia, VA 22304,USA.

Health and Safety in Natural History Museum - A Preliminary List. Janet Waddington and Julia Fenn, 1985. A useful bibliography covering both general and specific references to the hazards experienced whilst working on the preparation, preservation and exhibition of Natural History specimens. Sections on biocides, adhesives, solvents, ventilation, waste disposal and information sources in North America are included. Copies are available from J. Waddington and J. Fenn, Invertebrate Palaeontology and Conservation Departments, Royal Ontario Museum, Toronto, Canada.

Selected List of References on Occupational Health Hazards in Museums: UK Health and Safety Executive, library and Information Services, 1985. This list which will be regularly updated contains both specialized museum health and safety references and a list of organisations in the UK which are concerned with museum safety and health. Further information is available via the HSE computer data base HSE-Line and via Prestel, page 575614a.
The Selected List is available from HSE Library and Information Services, Broad Lane, Sheffield S3 7HQ, UK.

Adhesives and Consolidants: Preprints of the Contributions to the Paris Congress, IIC, September 1984. Edited by Norman Brommelle, Elizabeth Pye, Perry Smith and Garry Thomson. State of the art papers on the use of all types of resins in conservation, ranging from traditional animal and vegetable glues and shellac to silicones and acrylic polymers. Available from the International Institute of Conservation, 6 Buckingham Gate, London. WC2N 6BA. U.K.

ICOM Committee for Conservation: Preprints of the 7th Triennial Meeting Copenhagen, 1984. Two volumes. ICOM in association with the J. Paul Getty Trust. Available from ICOM, 1 Rue Miollis, 75732 Paris, France and Internation Centre for Conservation, 13 via di San Michele, 00153, Rome, Italy.

Geology in Museums: A Bibliography and Index Geological Series No. 6, National Museum of Wales, 1983, Tom Sharpe. Useful cross-indexed list of references on all aspects of geology in Museums, including a large section on conservation. ISBN 0 7200 0281 8.

MEETINGS

21-22 May 1985: 2nd Workshop on the Care and Maintenance of Natural History Collections. Royal Ontario Museum,Toronto. Organisers: Janet Waddington and Dave Rudkin. Proceedings to be published early 1986.

26 May 1985: American Institute for Conservation: Object Speciality Session, Conservation and Natural History Collections. Mayflower Hotel, Washington. Program Organiser: Sara J. Wolf, Materials Conservation Laboratory, Texas Memorial Museum, Austin, Texas. Selected papers to be published in AIC Journal, 1986.

17-19 May 1985: 11C Canadian Group. Halifax, Canada. Organizer: Edward Paterson, Halifax.

29 July - 2 August 1985: Pest Control in Museums. Organizer: Jim Black, Institute of Archaeology, Gordon Square, London. Wc1H 0PY

24-26 September 1985: International Committee of Natural History Museums of ICOM, Organizer: W. Klansewitz Forschunginstitut Senckenberg, Frankfurt am Main. Papers read on the problems of obtaining information and materials for conserving natural history specimens in tropical areas.

23-24 January 1986: Geological Conservation. Contact Organizer: Chris Collins, Geological Curator Group, Earth Sciences Section, Leicestershire Museums Service, 96 New Walk, Leicester LE1 6TD, UK.

26 October - 4 November 1986: ICOM 14th General Conference and 15th General Assembly, Buenos Aires, Argentina. Contact: ICOM Secretariat, Maison de L'Unesco, 1 rue Miollis, 75732 Paris Cedex 15.

The GEOLOGICAL CURATORS' GROUP announces that its eargerly awaited "GUIDELINES FOR THE CURATION OF GEOLOGICAL MATERIALS" will be published by late August 1985.

The "Guidelines" consist of nearly 200 A4 sized pages, typeset by The Universities Press, and available as a loose-leaf book in a ring-binder. Discussions, practical advice and recommendations are presented covering aspects of Entry and Acquisition, the documentation of specimens and their history, Specimen Preservation, Occupational Hazards, and the Uses of collections. There are 200 references and three appendices on: Adhesives of use in the museum; apparatus, materials etc with names and addresses; and the national Geological Site Documentation Scheme.

This thought-provoking, yet practical, book is a must for curators having geological materials in their care, and will be of interest to other curators. For the first time it sets standards of curatorship at which to aim; standards not only for vitally important documentation procedures, but for a wide range of subjects, such as the arranging and housing of collections, specimen preparation and conservation, field collecting, the scientific importance and uses of collections, and the disposal of

of materials. By following the recommendations collections should have a safe and useful future.

Price with a ring-binder	£19.50
Without a ring-binder, but prepunched	£17.00

(Reduced prices for Fellows and GCG Members)

Orders, with payments to: The Publications Officer,
The Geological Society,
Burlington House,
Piccadilly, London. W1V 0JU

Natural Sciences Conservation Questionnaire

Little information is available about the numbers of people working in this field, their specialisations and their resources. This questionnaire will enable the coordinators of the working group to direct help and resources to underdeveloped areas, both geographically and by subject. If you are not involved in natural sciences conservation or do not wish to be contacted by the working party again, please fill in your name and address on this page and return to the coordinator. Your name will be taken off the mailing list.

For the convenience of the coordinators, please reply in English, French or German if possible. Please pass a copy of the form to any colleagues who might be interested in the working group.

Confidentiality.

It is hoped to use and make public as much information as possible. However if you wish to keep any response confidential, put an X in the box provided. This information will be used only for statistics where the respondent cannot be identified.

[ ] Name .....

[ ] Address of employment (add employing institution if different)

.....

.....

.....

[ ] Address for correspondance (if different)

.....

.....

.....

[ ] Job title .....

[ ] Job description (specialisation, responsiblities in order of importance)

.....

.....

[ ] Education (please give subjects of specialisation)

University .....

Professional .....

[ ] Conservation facilities available: Yes _____ No _____

[ ] Are these shared with other disciplines: Yes _____ No _____

[ ] Which disciplines: .....

[ ] Resources available to conservation laboratory/workshop

space: m^2 _____ daylight: Yes _____ No _____

library: Yes _____ No _____

Equipment: list major items of equipment available (e.g. fume cupboards)

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Number of people in laboratory working on natural science conservation _____

[ ] Is any investigative/development work being undertaken: Yes _____ No _____

Please give details

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[ ] Which conservation techniques are most in need of development, research, improvement?

.....

.....

[ ] May we put this information on computer file: Yes _____ No _____

If you wish to receive future working group newsletters tick here _____.

To cover the costs of production and postage please send £5 or equivalent.

Details of ICOM membership (which is not necessary for working group membership) can be obtained from your national representative or through the coordinators.

Return To:

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