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INTERNATIONAL CENTRE FOR THE BTUDY OF THE PRESERVATION AND THE RESTORATION OF CULTURAL PROPERTY

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ANNUAL BULLETIN

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Do we value our cultural heritage? Do we want to preserve it?

One assumes we do. Furthermore, it can be proved that conservation ultimately saves money, although it certainly costs something daily to practice good maintenance and care of our cultural property. This practice demands rare professional skills, yet people and governments dislike paying a professional for his skill and they scarcely understand the high level of knowledge required for conservation or the great responsibility resting on the shoulders of all types of conservator/restorers, so the questions posed above must be asked and answered seriously.

Do we value our cultural heritage?

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We should, because works of art enhance life, lift us out of materialism into something eternal. Cultural property brings us messages from the past; but to understand these messages, education is needed. Children must be taught to read the elevations of buildings like poems, the sequence of urban spaces like novels and to discover the beauty and significance of an object in a museum. In all this, the history of technology helps.

No doubt, culture and education are partners. But in education the problems of meeting the needs of expanding populations and of the ever increasing store of knowledge are formidable. Therefore, the budget for education must be increased if standards are not to be lowered. In addition, the pressure on educationalists is so great that cultural education is often neglected in favour of more practical goals.

Likewise, as museums take charge of more and more cultural property with the object of preserving it, and the values of historic towns and buildings become more apparent, so the conservation budget must be increased. As both education and conservation are partners, they should not compete for one budget, especially as there is a backlog of work to be done in both fields.

Which is ultimately worth more to a nation: one mile of motorway, an obsolescent aeroplane, a unique wooden statue or a fine historic building in the land of our fathers?

Do we want to preserve our cultural heritage?

Assuming that those in charge have proper cultural and technical preparation, the methodology of conservation depends essentially upon regular inspections, formal reports and prompt preventive action. Reports should define the object as a whole in its context, describe its history and the materials it is made of, record how it has been used and abused, together with the state of its present condition. If any defects need keeping under observation, they should be noted and specially reported upon in the next regular inspection, which should be at a defined interval of, say, six months for books in a library or archive, one year for framed canvas paintings and textiles and every five years for historic buildings.

The person directly in charge of the care of the cultural property is responsible for making these reports to his superior.

Keeping a defect under observation enables the professional to avoid a "once for all" decision-making position that is so dangerous for cultural property. There should be no final solutions, as these break the principle of minimum intervention.

When the system of regular inspections for all designated cultural property has been established, priorities can be decided at a national level. The first priority is to prevent decay. As and when the backlog of past neglect is overcome and the policies of prevention begin to take effect, it will be found that the cost of caring for our cultural property is reduced and that more property can be looked after within the same budget.

The inspection should always give estimates of the cost of conservation and indicate the urgency of the work, using four main categories:

IMMEDIATE. If a building may collapse or an object fall apart, immediate action must be taken. The responsible professional should have delegated authority to take such action up to a certain limit, say 1000 US dollars.

URGENT, to prevent active decay, say termite attack or dry rot or rainwater penetration. Buildings should be made wind and watertight. Objects must be protected against a hostile environment such as high or low relative humidity or unsuitable storage conditions.

The above categories are the First Priority in any plan for conservation. We then come to:

NECESSARY work which should be done before the next inspection. For objects, the conservator/restorer will put proposals to the responsible curator and they will work out a programme for necessary work. For buildings, necessary work, such as structural consolidation or renewing roof coverings, should be done within 2-5 years of the report, provided the immediate and urgent work has been completed.

DESIRABLE work forms the last category. Provided there is no active decay, it may be desirable to remove layers which obscure the original painted surface of polychrome

sculpture, to restore missing parts of an object in order to present it more meaningfully, or to clean and redecorate the interior of a building. Regular painting of the exterior is necessary in most countries in order to preserve woodwork and plaster. An agreed policy of presentation must control what is desirable.

Desirable work should not be neglected, for it presents cultural property in such a way that its message becomes clearer to the public, which may not understand that the other categories are essential preliminaries to desirable work.

Bearing in mind the efficient organisation of works and the need to minimise decay by preventive action, the conservator/restorer will make a programme of works in the above categories. His proposals must respect the message and the authenticity of the property being treated, and take into account its environment, the financial resources of the property owner, and the practical organisation of the work. Estimates showing labour, materials, plant and overheads should always express the degree of doubt about costs that even the best cost consultant may have.

In theory, the minimum intervention to conserve cultural property is best. This minimum depends upon the environment, which may be favourable or hostile. It takes a great deal of skill and experience to know how little need be done to be effective, but this skill saves money. Just as a doctor may call in specialists for a second or even a third opinion in difficult cases, so conservator/restorers should be able to do likewise and have scientific advice as of a right.

The first priority is preventive maintenance and establishment of regular methodical inspection of all registered or catalogued cultural property. It takes time, even up to 20 years, to build up a national conservation service. The sooner a start is made the greater the saving of cost. The time to start is now before it is too late.

If governments value their cultural heritage, in order to preserve it at minimum costs, they should pass legislation to ensure regular inspection by competent conservaters. (B.M.F.)



General Assembly

The 10th General Assembly of the International Centre for the Study of the Preservation and the Restoration of Cultural Property took place from 20 to 23 April 1979 at the Palazzo Barberini. This assembly is a statutory meeting for administrative purposes which takes place every 2 years. The members are delegates from Member States who come to define ICCROM's future policy.

There were 38 countries represented, as well as 6 Associate Members. Unesco, ICOM and ICOMOS were represented by Percy Stulz. Tom Hume, and Ann Webster Smith, respectively.

After the inaugural speeches given by Giorgio Spitella, representative of the Italian Ministry of Cultural Property, and Sergio Romano, representative of the Italian Ministry of Foreign Affairs, the assembly elected its officers: Peter Lasko (United Kingdom), President; Abdelaziz Daoulatli (Tunisia), Vasile Dragut (Rumania), and Bunsaku Kurata (Japan), Vice-Presidents.

Having accepted the agenda, the assembly elected the following committees: Credentials, Candidatures for Council, and Programme of Activities.

After a splendid luncheon reception, generously offered by the Minister of Culture, Dario Antoniozzi, the assembly returned to work to hear the financial report of the director, Bernard M. Feilden. Due to inflation and the devaluation of the dollar, our reserves have been reduced. It was noted that the work of the Finance Committee, which was created 2 years ago, has greatly allieviated the director's task. This report was accepted.

The director continued with the report of activities. He underlined the importance, the variety and the increasing number of demands that formally arrive at ICCROM, and showed that the size of the staff has not grown at the same rate. He dwelt particularly on action undertaken in the training sphere, both in Rome and in Member States. He outlined the library's efforts in computerising its material and printing catalogues. The computer, which has been functioning for a year and a half, has revolutionised the work of the library and documentation sectors. In conclusion, the director noted the various kinds of technical assistance which have recently been developed and which certainly will be one of the strong points of the organisation's programme in the years to come.

Prior to the end of the session, at the president's proposal, Paul Philippot was named Director Emeritus by acclamation. Then a statuette commemorating the 20th anniversary was presented to the persons who were particularly instrumental in the Centre's creation (see article following page).

The next day, ICCROM staff members in charge of various departments reported on work in progress, showing slides of some projects. The report of activities was accepted.

The President presented a series of recommendations, prepared by Council, to the General Assembly. They were also accepted. Among the most important, we note

- renewal of the Director's contract for 2 years;
- nomination of the Director as legal representative of the organisation, with the possibility of delegating his powers;
- acceptance of "ICCROM" as the abridged name of the organisation (see article following page):
- authorisation of the Director to take steps to have ICCROM personnel included in the United Nations pension fund;
- stricter control of member states in arrears in their contributions:
- stricter control of non-member states that make use of benefits enjoyed by member states:
- the principle that the budget (based on member state contributions equal to 1% of annual Unesco contributions) should be increased. The Council and the Director are delegated to present a study of propositions to the 11th General Assembly.

On Sunday, an excursion within the walls permitted the delegates to discover a few of the rarely visited monuments of Rome: the underground basilica at Porta Maggiore, the excavations at San Clemente, the Scipione tombs, the gardens of Villa Medici and the private apartments of Palazzo Colonna.

On Monday, the Assembly accepted the recommendation presented by the United States of America:

"Considering that all Member States of Unesco will receive, later this year, a circular letter asking for suggestions and proposed priorities for 1981-1982.

The General Assembly calls on Unesco and its Member States, in developing the programme for the next biennium, to give greater priority to the support of conservation, research, training and practice, especially for these activities in developing nations".

The programme of activities for the biennium was then discussed. Numerous delegates took the floor and the Assembly agreed that ICCROM's work should develop as much as possible in the direction of technical assistance of all kinds.

This enthusiasm was somewhat dampened by the report of the Committee for Programme Activities, who noted that "The Committee is in general agreement with the programme as presented although we feel that new programmes for ICCROM should be clearly developed if new funds and resources are to be sought.

administration organisation Therefore a new plan should accompany any resolution presented to the next assembly". The programme of activities was then accepted.

The General Assembly then passed to the election of Council members for 1979-1981. The following were elected: Y. Alami, A. Almagro Gorbea. A. Ballestrem, J. Coural, K. Dabrowski.
A. Daoulatli, Y.O. Dawodu, V. Dragut.
V. Karageorghis, M. Koller, B. Kurata,
P. Lasko, T.Y. Lee, J. Lodewijks, A.
Naji, P. Perrot, R. Sengupta, S. Zaldivar Guerra.

The President then thanked the delegates and closed the 10th General Assembly. The members of the new Council met immediately after the assembly was over and re-elected Johan Lodewijks as President. Vasile Dragut and Paul Perrot were named as Vice-Presidents.

Brian Arthur has since been put on the Council to fill the post left vacant by the untimely decease of Krystof Dabrowski.



• 1959 - 1979: ICCROM'S Anniversary

part of the events to commemorate AS ICCROM's 20th anniversary, sculptor Peter Rockwell was asked to create a special award statuette in bronze Rockwell produced a hand holding the two halves of a broken object. lightly covered with scaffolding. This work symbolises the union of technique and human will in the conservation of cultural property. During the General Assembly, 11 copies of the statuette were presented by ICCROM's director to the persons who played a decisive role in creating the organisation. Those so honoured were: Cesare Brandi, Maurice Chehab. Hiroshi Daifuku. Guglielmo De Angelis d'Ossat, Piero Gazzola, Fritz Gysin, Stanislas Lorentz, Harold Plenderleith. Gianfranco Pompei and, posthumously, Paul Coremans and Arthur Van Schendel. During the presentation ceremony, Paul Philippot read citations recalling how each of the recipients had been involved in the birth of the International Centre for the Study of the Conservation and Restoration of Cultural Property. Dr. Plenderleith received a particularly warm round of applause after the reading of the following citation:

"One cannot overestimate the fundamental role that the Centre's first director. Dr. Harold James Plenderleith, played in its success. At the end of a brilliant career as chief of the British Museum Conservation Laboratory, he accepted the direction of this new international body, whose future in 1959 depended on many unknown factors. By taking on this task. Harold Plenderleith affirmed his faith in the interna-

tional organisation of conservation and also put at the service of this cause the competence and undisputed prestige which he had acquired during his career in a pilot conservation project. His presence in Rome, next door to the Istituto Centrale del Restauro (then under Cesare Brandi's direction) soon served to assure the rapprochement of the two conservation trends, humanism and science, which were to constitute the basis of the Centre's development. At the same time, he undertook an impressive series of missions, often under Unesco auspices, to all parts of the world. These missions enabled Dr. Plenderleith to bring the young organisation to the attention of those in need of assistance. As a result, the Centre gradually acquired, as an international scientific body, the personal prestige that he brought to its beginnings".

After the ceremony, there were many happy recollections of the original meetings and dinners where the idea of ICCROM first germinated. What was only an idea 20 years ago has, gratifyingly, taken shape and grown along the lines envisaged.

During this session a booklet entitled "ICCROM Comes of Age" was distributed. It this publication, the organisation's policy since its creation is presented by its 3 successive directors. A part of the booklet is also devoted to facts and figures about ICCROM's activities, statutes, Member States, and budget.



Bernard M. Feilden presenting Harold J. Plenderleith with the statuette commemorating ICCROM's 20th anniversary.

Our New Name

During the 10th General Assembly, the delegates discussed the shifting nomenclature of our organisation. After recognising that "Rome Centre" and "International Centre for Conservation" have led to confusion, the assembly voted in favour of the director's proposal to use "ICCROM" as an abbreviation of our full title. This name has the merit of brevity and, moreover, of being the same in all languages

This decision was registered with a notary public so that all future official acts will be done under the name ICCROM

Personnel

Filippo Nicolini left the accounting department in November, and has been replaced by Alessandro Menicucci.

- Vickii Richardson has moved to England and, unfortunately, has not yet been replaced.
- Connie Silver is returning to the United States; her replacement as the Mural Paintings Course assistant is Fiona Allardyce.
- Ruth Gross has left, and has been replaced by Liliana Vecchio as receptionist
- Monica Garcia has come to join the director's secretarial force

Computer Address List

We have been reporting every so often on progress with ICCROM's computer address directory, but perhaps our readers might be interested to see how it actually looks. A few sample addresses are reproduced below as they appear in our working directory. Each address is numbered so that any part of it (NAME, OFFI, TELP, CITY; etc.) can be quickly corrected when new information arrives or errors are noticed. Perhaps the most important field is the one marked CODS: it contains code words (which were made up as we went along) to identify each address by country, language of correspondence (COFRN or COENG) and any other salient characteristics. If, for instance, we wanted a list of former participants, we would simply ask the computer for PARTI. If we wanted only participants who were also earthquake specialists, we would ask for PARTI "and" QUAKE and get a shorter list

We can also request up to nine codes together, e.g. PARTI "or" QUAKE "or" ARTEC "or" ENGIN... and get a list, without duplications, of everyone who has one or more of the codes given. This provides a great deal of flexibility in providing information for various purposes. It also saves a great deal of secretarial time because the computer can print self-adhesive labels for any mailing list, large or small

Unfortunately, we do not have space here to explain all 430 codes, but they are not hard to decipher with a bit of thought because they are English words or abbreviations thereof.

Member States and Associate Members

On 1 January 1980. Norway sent its formal request for membership in ICCROM. This brings the number of member states to 64

The Courtauld Institute of Art and the Archaeological Survey of India Chemistry Department applied to become Associate Members and were accepted by Council.

Telex

An error in our telex number crept into the last Newsletter. The number is ICCROM 613114 (not 613144). Please use the telex as much as possible in contacting us. It is more reliable, quicker, and less expensive than telegrams, and your message is delivered the same working day

Accounting

To facilitate our accounting procedures, it was neccessary to leave the Banco di Roma and open an account at the Banca Commerciale Italiana (COMIT). Therefore, please make all payments to:

COMIT Sede di Roma c/c N. 1574489/02 US \$

COMIT or Agenzia N. 12 c/c N. 1574489/01 Lit.

One special code, NOSHO, instructs the computer NOT to print mailing labels for anyone with that code. We use it for ICCROM staff so as to avoid wasting postage on mailing things to ourselves. We also use it for people such as former participants whose names we want to keep in our lists but whose mail has been returned by the post office. The following is a list of these "missing" persons in case anyone can supply us with more current addresses:

Agostini, J. Al-Sa'ab, L. Amoroso, F. Azeredo Pinto Melo e Leme, C Barucci, F. Caccianiga, M.L. Calabria, Cama Villafranca, J. F. Cardillo, T. Chea, P. Chuch, L. Ciancarelli, K. Ciembroniewicz,

G. Ciolia, J. Cornesse, A. Demetriou, D. Dimitrov, M. El-Shaboury. D. Falvey, H. Fodil, W. Ghetta, A. Giger, Ρ Giuliani, P. Grillo, Guaitoli, W. Haakma Wagenaar, S. Μ Kamrava.

H. Kelishadi, K. Khosrovani, B. Konz-Jenny; C. Kyrkitziotis, P. Laure,

B. Lentherie, N. Leromain, J. Lopez-Jean, A.

Maciejewska, F. Marabotto,

E. Melissa, G. Messe, E. Mohapp, P. Moreno, A. Navarro, B. Nguyen, K. Olsson, C. Payne, E. Probst, D. Puhr,

R. Queiro Filgueira,

A. Racheli, B. Rapisarda, R. Rodriguez Garza, Schmidt-Colinet,

M. Schwab, E. Schwarz, S. Sem, G.

Serra, S. Stamov, P. Theocharidis, E. Tjebbes, L. Tuczynski, P. Van Dun, L. Van Herck, Thank you for your help.

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Latest Publications

Architectural Conservation and Environmental Education

This bilingual (English-French), 24-page booklet contains the conclusions of a small meeting held at ICCROM some 4 years ago. During the meeting, the participants explored the means by which it might be possible to increase public awareness, especially among the young, of the environment in general and the historic environment in particular.

Price: Lit. 2000 (\$ 2.50)

Climate in Museums: Measurement by Gaël de Guichen

This bilingual (English-French), 80-page booklet, with 17 drawings and 14 photos, is primarily a teaching manual. It is a collection of technical cards which were originally developed to help ICCROM trainees, and are now being published for the first time. The booklet explains, as simply as possible, the phenomena of saturation, condensation, absolute humidity and relative humidity, and how they affect the conservation of collections.

A list is given of simple measuring instruments which are available on the market. The working principle of each instrument is explained, together with the instrument's advantages and disadvantages and information on prices and suppliers. A series of exercises is also provided.

This booklet is intended for those who are conscious of the vital importance of climate measurement in the conservation of collections, but who do not know how to put their knowledge into practice.

Price: Lit. 3000 (\$ 4)

Ancient Metals: Structure and Characteristics by Albert France-Lanord

This booklet also derives from the technical cards developed for ICCROM's training courses. It is bilingual (English-French), and illustrated with 64 colour plates, 7 black-and-white photos, and 8 drawings. It is intended to give a didactic introduction to the study of collections of metal objects by means of study of metallographic sections. The booklet concentrates on 6 metals used in antiquity, and shows the type of information that can be obtained by examining metal structure.

Curators, conservator/restorers and laboratory personnel working in museums may find this booklet of particular interest. Price Lit. 9000 (\$ 10)

Mosaic n. 1: Deterioration and Conservation

This volume is the English version of the proceedings of the 1st International Conference on Mosaics Conservation which were published in French in November 1978. It includes papers by H. Lavagne, I. Andreescu, G. Marinelli, A. Villa, M.L. Veloccia, L. Majewski, R. Wihr, C. Bassier, and P. Philippot, with 106 photos and 10 drawings.

Price: Lit 8000 (\$ 9)

IIC textbook series:

Publication of the book, *The Museum Environment* by Garry Thomson was already announced last year. This book is the first in a series of more than 20 titles which the IIC, with financial and editorial assistance from ICCROM, will print with Butterworths. We cannot overemphasize the importance of this series, which should provide a survey of basic knowledge in the field of conservation and restoration of art as well as archaeology and architecture.

This year "Glass - Including Stained Glass" by Roy Newton will be published.



Computerisation of the Library

The major project of computerising our library documentation has finally been carried out. Two volumes were printed in the spring of 1979 and are available for purchase at \$10 each One is the *List of Acquisitions 1977-1978*, which contains almost 3000 entries; the other is the companion *Subject Index*, which contains about 2500 key words. Publications catalogued by the library prior to 1977 (there are about 8000) will also be gradually incorporated into the new system. These two books can be ordered from the publication service of ICCROM or, if an institution has difficulty with foreign pay-

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ments, we can send the books on an exchange basis. In the latter case, one should write directly to the library. Remember that the *Subject Index* is available in either English or French. With these guides, the reader can compile his own bibliography. Upon request, we can send photocopies of articles mentioned or at least indicate where to find certain texts if the information in the list of acquisitions is insufficient.

We have reproduced below a page from the list of acquisitions and a page of the subject index in order to give you an idea of these works.

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	2.	Z6 ICCROM INDEX

Acquisitions

As our list of new acquisitions is only published every 2 years, we thought it would be helpful to mention a few interesting publications which have arrived at the ICCROM library in the interim. Of course, the list must be selective, as the Library

registered 1650 entries on conservation, including 1200 books and offprints in 1979. The following list provides a panorama of the latest arrivals and gives an idea of the vast range of subjects covered by our documentation.

ARCHAEOLOGY

HESSE, Albert, Manuel de prospection géophysique appliquée à la reconnaissance archéologique. Dijon, Centre de recherches sur les techniques gréco-romaines, 1978.

ARCHITECTURE - BUILDING MATERIALS

ADDLESON, Lyall, Materials for building. London, Newnes-Butterworths, 1972-1976, 4 volumes.

The assessment and mitigation of earthquake risks. Paris, UNESCO, 1978.

BRIGAUX, Guy, La Maçonnerie. Paris, Eyrolles, 1978.

- CLIFTON, James R. BROWN, Paul Wencil ROBBINS, Carl R., Methods for characterizing adobe building materials. Washington, National Bureau of Standards, 1978. (NBS Note 977).
- ELBERT, W. Coûts de la construction. Strasbourg. Conseil de l'Europe. Comité directeur pour l'aménagement du territoire et du patrimoine architectural. 1979. (Activité 18.23.2 -CDAT (79) 5).
- GIBSON, E. J., Ed. Developments in building maintenance. 1. London, Applied Science Publishers, 1979.

Greater London Council - Department of Architecture and Civic Design. Handbook for clerks of work. 2nd ed. London, The Architectural Press. 1979.

- **GUTIERREZ, Ramon et alii.** Arquitectura del altiplano peruano. Resistencia (Chaco. Argentina), Universidad nacional del Nordeste. 1979.
- Repair of buildings damaged by earthquakes. New York. United Nations Department of economic and social affairs, 1977.
- **STUMES, Paul,** *The W.E.R. (wood epoxy reinforcing) system manual* Ottawa, Association for Preservation Technology, 1979.

BOOKBINDING

BURDETTE, E., The craft of bookbinding. Newton Abbot. David & Charles. 1978.

CERAMICS

EVETTS, Echo, China mending. London, Faber & Faber, 1978.

CLIMATOLOGY - MUSEOLOGY

HOWER, R.O., Freeze-drying biological specimens. Washington, the Smithsonian Institution Press, 1979.

In search of the black box. A report on the proceedings of a workshop on micro-climates held at the Royal Ontario Museum, February 1978. Toronto, Royal Ontario Museum, 1979.

LEGISLATION

WILLIAMS, Sharon A., The international and national protection of movable cultural property. A comparative study. New York, Oceana Publications, 1978.

MURAL PAINTING - ROCK PAINTING

LEROI-GOURHAN, Arlette et alii, Lascaux inconnu. Paris, Editions du Centre national de la recherche scientifique, 1979.

The tomb of Queen Nefertari. Problems of conserving wall paintings. Warsaw. Conservator's Information Centre, 1973.

SCULPTURE

Principes d'analyse scientifique. La sculpture. Méthode et vocabulaire. Paris, Imprimerie nationale, 1978.

TECHNOLOGY

FELLER, Paul - TOURRET, Fernand, L'outil. Dialogue de l'homme avec la matière. Rhode-St-Genèse (Belgique), Albert De Visscher, 1978.

TEXTILES

Irene Emery Roundtable on museum textiles. 1974. Proceedings. Archaeological textiles. Washington, The Textile Museum, 1975.

Irene Emery Roundtable on museum textiles. 1975. Proceedings. Imported and domestic textiles in 18th century America. Washington, The Textile Museum, 1976.

Irene Emery Roundtable on museum textiles. 1976. Proceedings. Ethnographic textiles of the Western hemisphere. Washington, The Textile Museum, 1977.

International Classification

An international system for the classification of documentation on the preservation of cultural property is currently being discussed among institutions such as ICCROM, the British Museum, the International Institute for Conservation (which publishes Art and Archaeology Technical Abstracts), ICOM, and ICOMOS.

The ultimate aim is to unify our catalogu-

ing systems, especially the technical cards which include an abstract and information on the material(s) of the object, dating, provenance and products employed in restoration. Such unification would enable us to share the growing burden of classifying journals and books dealing with conservation and to exchange the information registered at each centre

ICCROM PUBLICATIONS

E: English F: Français I: Italiano Sp: Español

E	Bruno Mühlethaler, Lars Barkman, Detlef Noack: Consérvation of Waterlogged Wood and Wet Leather. 71 p. (1973). Lit. 3.000 (\$4
E	Paolo Mora: Causes of Deterioration of Mural Paintings. 74 p. (1974). Lit. 2.500 (\$3)
E	Giorgio Torraca: Solubility and Solvents for Conservation Problems. 2 nd edition 64 p (1978). Lit. 2.500 (\$3)
E,F	Karl-Werner Bachmann: La conservation durant les expositions temporaires. Conservation during Temporary Exhibitions. 46 p. (1975). Lit. 2.000 (\$2.50
F	Laura & Paolo Mora, Paul Philippot: La conservation des peintures murales 539 p (1977).
E,F	Problems of Conservation in Museums, Papers presented to ICOM Committee Washington and New York 1965.
	Problèmes de conservation dans les musées. Communications présentées au Comité de l'ICOM à Washington et à New York 1965. 224 p. (1969). Lit. 9.000 (\$10
E	Conservation in the Tropics: Proceedings of the Asia Pacific Conference or Conservation of Cultural Property (1972); edited by O.P. Agrawal. 216 p. (1975). Lit. 9.000 (\$10
F	Mosaîque N. 1 Détérioration et conservation. Actes du 1 ^{er} symposium interna- tional sur la conservation des mosaîques, Rome, novembre 1977. 104 p. (1978). Lit. 6.000 (\$8)
E *	Mosaics N. 1: Deterioration and Conservation. Proceedings of the 1 st International Symposium on Mosaics Conservation, Rome, November 1977. 120 p. (1980). Lit. 8.000 (\$9)
E.F.I	Catalogues of technical exhibitions, catalogues d'expositions techniques cataloghi mostre tecniche N. 1: Lighting-lumière-luce. 40 p. (1975) N. 2: Theft-vol-furto. 59 p. (1977) Lit. 1.500 (\$2)
E,F	International Index on Training in Conservation of Cultural Property. Répertoire international des institutions donnant une formation pour la conserva- tion des biens culturels. 138 p. (1978). Lit. 4.000 (\$5)
F	Jaime Iniguez Herrero: L'altération des calcaires et des grès utilisés dans la construction. 128 p. (1967). Lit. 4.000 (\$5)
F	Giovanni Massari: Bâtiments humides et insalubres - Pratique de leur assainis- sement. 526 p. (1971). Lit. 28.000 (\$32)
1	Giovanni Massari: L'umidità nei monumenti. 57 p. (1969). Lit. 2.000 (\$2.50)
E	Giovanni Massari: Humidity in Monuments. 47 p. (1970). Lit. 2.000 (\$2.50)
F	Edgar Schultze: Techniques de conservation et de restauration des monuments - Terrains et fondations. 177 p. (1970).
E,I	Guglielmo De Angelis d'Ossat: Guide to the Methodical Study of Monuments and Causes of their Deterioration. Guida allo studio metodico dei monumenti e delle loro cause di deterioramento.
E	Todor Stambolov, J.R.J. Van Asperen de Boer: The Deterioration and Conservation of Porous Building Materials in Monuments. 2 nd edition. 86 p. (1976)
F	Hans Foramitti: Mesures de sécurité et d'urgence pour la protection des biens culturels. 44 p. (1972).
F	Hans Foramitti: La photogrammétrie au service des conservateurs. 48 p. (1973). Lit. 2.500 (\$2:50)
E,F	Maurice Carbonell: Quelques aspects du relevé photogrammétrique des monu- ments des centres historiques. Photogrammetry Applied to the Study and Conservation of Historic Centres. 110 p. (1974).

Lit. 3.000 (\$4)

In order to facilitate perusal of this list of publications, this year's new items are marked with an asterisk.

We have had to increase slightly our publications price list, which has not been modified for three years. Orders should be addressed to us at ICCROM and payment mode to even the county force. made to our new bank account (see administration).

E	Tomislav Marasovic: Methodological Proceedings for the Protection and Revitali
	Lit. 3.000 (\$4
E.I	Ingrid Brock, Paolo Giuliani, Cristian Moisescu: The Ancient Centre of Capua
	 Analytical Methods for Orban Planning. Il centro antico di Capua - Metodi di analisi per la pianificazione architettonico- territira (200 - (200)).
	Lit. 5.000 (\$8)
E	Pietro Gazzola: The Past in the Future. 2 nd edition. 138 p. (1975). Lit. 3.000 (\$4)
E.F	Architectural Conservation and Environmental Education. Conclusions of the meeting, ICCROM, February 1975.
*	Conservation architecturale et éducation a l'environnement. Conclusions de la conférence, ICCROM, février 1975. 24 p. (1979).
	Lit. 2.000 (\$2.50)
E F *	Gaël de Guichen: Climate in Museums: Measurement. Technical cards. Climat dans les musées: Mesures. Fiches techniques. 80 p. (1979).
	Lit. 3.000 (\$4)
۲ E	List of Acquisitions of ICCROM Library. 1977-1978. Liste des acquisitions de la bibliothèque de l'ICCROM, 1977-1978. 319 p. (1979). Lit. 9.000 (\$10)
E *	Subject Index of ICCROM Library 1 st edition. 329 p. (1979). Lit. 9 000 (\$10)
F *	Table des matières de la bibliothèque de l'ICCROM. 1 ^{ere} édition. 326 p. (1979).Lit. 9 000 (\$10)
E F	Albert France-Lanord: Ancient Metals: Structure and Characteristics. Technica cards.
*	Métaux anciens: Structures et caractéristiques. Fiches techniques. 80 p. (1980). Lit. 9.000 (\$10)
E *	Bernard M. Feilden: Introduction to Conservation. Unesco. 82 p. (1979). free/gratuit
E,F	OTHER PUBLICATIONS ON SALE Giulio C. Argan, William J. Murtagh: Historic Districts. Les districts historiques 38 p. (1975).
	Lit. 2 500 (\$3)
C	Lit. 28.000 (\$32)
E.F	Robert G. Tillotson: Museum Security, La sécurité dans les musées. ICOM. 243 p. (1977)
	Lit. 14.000 (\$15)
F	La lumière et la protection des objets et spécimens exposés dans les musées et les galeries d'art, ICOM, 2 ^{eme} édition. 50 p. (1977).
E	Synthetic Materials used in the Conservation of Cultural Property (photocopies).
F Sp	Matériaux synthétiques utilisés en conservation (photocopies). Materiales Sintéticos empleados en la conservatión de bienes culturales
	(totocopias). 30 p. (1968). Lit. 2.500 (\$3)
E.F	ICOM Committee for Conservation. Proceedings of 5 th Triennial Meeting, Zagreb. October 1978. 3 volumes.
	Comité de l'ICOM pour la conservation. Actes de la 5 ^{erne} réunion triennale. Zagreb, octobre 1978. 3 vol. (1978).
	Lit. 60.000 (\$70)
E	The Conservation of Stone I. Proceedings of the International Symposium. Bologna, June 1975, 789 p. (1976). Lit 16 000 (\$22)

Liliane Masschelein-Kleiner: Liants, vernis et adhésifs anciens. IRPA. 105 p.
 * (1978).
 Lit. 4.000 (\$4)

E Paul Stumes: Wood Epoxy Reinforcement. System Manual. APT. 84 p. (1979). * Lit. 4.000 (\$4)



course

Organisation of courses in Rome is one of ICCROM's principal activities and also one of the most noticeable during the first 6 months of the year, when 4 courses function simultaneously. This activity is also one of the most expensive, as each trainee costs approximately \$ 200-300 weekly. Since the creation of the course on Preventive Conservation in Museums 5 years ago, no new courses have been added. Some Member States, however, have asked to have more training given in French, so in 1981 an attempt will be made to make the courses on Conservation of Mural Paintings and Conservation Science fully bilingual.

Courses organised at ICCROM

It is unfortunately necessary to limit places in our 4 annual courses in order to keep our teaching more immediate and active. Consequently there are waiting lists, of different lengths, for the courses. Yet, different lengths, for the courses. each year there are trainees who do not appear when courses begin, after having been accepted long before. Many different reasons are given, but the majority of cases are due to the fact that the trainees have not received authorisation from their employers. This is truly unfortunate because it is often too late by then to contact people on the waiting list. We would like to call this situation to the attention of the organisations that send us trainees; it would be greatly appreciated if they could let us know as soon as possible if personnel who have been accepted for ICCROM courses will not be free to come.

Architectural Conservation - Course A

This was the 15th year this course has been organised by the Architecture Faculty of the University of Rome and ICCROM. It was coordinated by Stefano Marani, with the assistance of Riccardo della Negra and Antonella Lattanzi, and included 81 Italian and 22 foreign students.

This year the program was more specifically articulated around a series of theoretical lessons on the methods of conservation, along with practical application, lectures, discussions, seminars and work site visits. The course and the exercises were reorganised around specific topics which could be treated in one week periods.

11 participants from the preceding course have presented their theses and obtained their diploma from the university.

Architectural Conservation Course B

This fifteenth course in Architectural Conservation was organised from January 10 through June 22. The already wellestablished programme was this year attended by 20 participants from 16 countries (Afghanistan, Bangladesh, Bulgaria, Cyprus, Finland, India, Japan, Paraguay, Peru, Poland, Sri Lanka, Sweden, Switzerland, Thailand, U.K., U.S.A.) and all were awarded a certificate of attendance.

Following the earlier practice, but this year with special attention in the newly structured field work programme, participants prepared their individual or group reports on conservation of historic buildings and historic environment, using the buildings and neighbourhood around ICCROM as examples.

Special emphasis was put on the use of the technical equipment and the laboratory in the study and analysis of conservation problems under the guidance of the staff and visiting specialists.

General coordination was done by Jukka Jokilehto assisted by Alejandro Alva-Balderrama, and with the help of Simonetta Peroni, Roberto Marta and Sergio Lucarelli. (J.J.)

Conservation of Mural Paintings Course

The Course was given in French from February 7 - June 7, with eleven participants from eight countries attending (Austria, Belgium, France, Italy, Peru, Portugal, Switzerland, Turkey).

In collaboration with the Istituto Centrale del Restauro, with Professor Paolo Mora, Course Consultant, and Paul Schwartzbaum, Course Coordinator, the Course continued its 12 year history of disseminating to conservator/restorers from all over the world the philosophy and methods for the conservation of mural paintings that have been developed by the Istituto Centrale del Restauro during its many years of experience in the field.

New professors added to the course this year included T. Hermanes and M. Stefanaggi. This enabled the course to expand its consideration of the types of conservation problems encountered in the colder climates of Northern Europe. Moreover, C. Giantommasi conducted several visits to his recent conservation work sites in Rome and Spello.

The Course assistants were M. Hanaire, E. Santona, C. Silver, and L. Spada. A major development in the Course in 1979 was the opportunity given to the participants by the Soprintendenza alle Gallerie, Rome, to collaborate in planning a major mural painting conservation intervention at the Crypt of San Crisogono, an extremely important Paleo-Christian Basilica, discovered and excavated in 1907. The frescoes, dating from the 4th, 8th, and 11th centuries. although found in good condition during excavation, have steadily deteriorated. The Crypt of San Crisogono was studied in detail to provide course participants with a comprehensive and complex case study in the examination and documentation of the causes of deterioration of mural paintings.

Participants made measured drawings of the crypt, analyzed the problems of humidity and climate, and identified the salts and micro-organisms found on the surfaces of the frescoes. Participants made proposals for conservation, based on the results of their examinations.

Shortly after the completion ot this work. the Soprintendenza alle Gallerie. Rome. undertook the conservation of the frescoes. The measured drawings pro-vided by ICCROM were utilised by the conservators to document their treatments, and the analyses and proposals for conservation were consulted in determining treatments

The Soprintendenza alle Gallerie and the Conservation of Mural Paintings section, are now collaborating on the publication of the various aspects of this conservation project, to appear in the Bulletin of the Soprintendenza alle Gallerie, Rome. (P.S.)

Course on Conservation Science

The 1979 programme reproduced the 1978 one with the following exceptions: the metals section was re-organised, as Dr. Black took over the teaching on metal structure and properties, while Chris Wheatley demonstrated conservation processes;

C. Tersigni (a consultant petrographist for the laboratory) set up a short practical course in microscopy which was optional but was attended by all the participants; — The role of Dr. Wachter in the paper section was expanded to a full week. The

rest of the programme was supplied, as usual, by the Italian State Archives.

Field trips brought the students to Venice, Vicenza, Bologna (main interest stone conservation), to Florence (main interest wood) and to Fabriano (main interest paper).

The course was attended by 17 participants from 13 nations (Austria. Bangladesh, Canada, France, India, Italy, Malaysia, Norway, Sweden, U.K., U.S.A., Yemen, Yugoslavia). "Guest" participants were admitted for single seminars, lasting one or two weeks; in particular 1 "guest" was accepted for the chemistry section, 2 for wood, 1 for ceramics, 4 for paper. General coordination was done by Giorgio Torraca, assisted by Lena Wikström and with the help of Christina Borruso.

Preventive Conservation in Museums

This is the new name given, at the Council's request, to the course formerly entitled "Security and Environment in Museums - Fire, Theft, Climate and Lighting". The name was changed in order to give a better idea of the orientation of the course, which stresses prevention - the primary form of conservation.

21 participants were enrolled for the course, but at the last moment 3 Ruma-nians, 1 Tunisian, 1 Algerian, and 1 Central African were unable to come. Although the class size was reduced, it meant that each participant was better able to understand the problems of the others. This course has been held for 5 years now,

and the amount of information offered has grown to the point that we had difficulty keeping the course within the 2 weeks scheduled for it. This problem was discussed with the participants at the end of the course, and various solutions were proposed:

- eliminate one of the topics offered;
- reduce free time:
- extend the course time to some dearee

The third solution was thought best, so this year the course will last 2 weeks and 2 days - from 25 September to 10 October (and will be held in English). We hope that this 2-day extension will not make it difficult for curators, for whom the course is intended, to come.

Trial courses in English-French

The Conservation Science course, which began in 1975, has always been given in English. As a trial measure, it will be given for the first time in both French and English in 1981. We recall that this course is addressed to curators, restorers, and museum laboratory personnel. Its aim is to make them aware, through an experimental approach, of the basic principles of deterioration, conservation and restoration of collections, after discussing the principles in seminars. Moreover, it seeks to provide a common language for specialists who come from different fields but who are all concerned with conservation. Although it is a pratical course, it is not intended to teach techniques or to train restorers. The course will begin in February. Depending on the number of applications, it may eventually be repeated in 1982. Additional information can be sent on request.

As a trial measure the Mural Paintings Course and the Conservation Science Course will be made bilingual (English-French) in 1.981. In view of this late announcement, the deadline for applications is postponed to May 15, 1980.

Courses outside **ICCROM**

Course on Stone Conservation

Under a contract awarded by Unesco, ICCROM organised the 3rd Course on Stone Conservation in Venice. The pro-gramme was coordinated by G. Torraca. The Course took place from September 12 to November 9

It was attended by 17 participants from 13 different nations.

The organisation in Venice was supervised by L. Lazzarini and V. Fassina, assisted by G. Pignatelli and A. Merzagora. The Unesco Venice Office cared for administration and lodging problems.

In addition to their course work, the participants took part in the international conferences on Brick Conservation (22-23 October) and Stone Conservation (24-26 October) which took place in Venice at the Cini Foundation: A certificate of attendance was given to all participants, with the exception of two local trainees who did not reach the required standard.

Conservation Workshop Tour

This study tour, which already has its precedents in the past, was organised by ICCROM with the financial support of Unesco and the German Democratic Republic and in collaboration with various national organisations. The Tour lasted about one month, from June 23 through July 19

The 23 participants represented 11 countries as well as various disciplines in conservation: architects, planners, historians and archaeologists. During the Tour a great number of conservation specialists were met in the six countries visited - all told, about 60 persons guided the group in different instances.

The subjects in the programme and the types of sites varied from country to country and gave an extremely rich and interesting cross section of the cultural property of various countries and the problems that are met in everyday practice



Visit to a restoration work site at Dresden.

In Austria, present restorations were visited under the quidance of the experts of the Bundesdenkmalamt; in Czechoslvakia, SURPMO had organised seminars dealing especially with the historic town of Prague: in the German Democratic Republic, thanks to the generous hospitality of the Institut für Denkmalpflege, several towns were visited, in particular Dresden and Weimar, for examples in conservation, restoration and reconstruction: in the Federal Republic of Germany, conservation of the city of Bamberg and of historic buildings in and around Munich was discussed with the Landesamt für Denkmalpflege; in France, the cities of Colmar and Strasbourg, particularly their cathedral works, and the city of Bern in Switzerland, gave interesting case studies for discussion.

For each participant the tour was certainly a great experience, providing him or her with new material upon which to reflect and case studies to which to refer in building up and improving the understanding of conceptions in conservation of cultural property. (J.J.)

Participants' Questionnaire

Last January. we sent out a questionnaire to our former course participants. We were interested in verifying their addresses and, more important, in learning of their present activities in conservation and availability for participation in an eventual network of young professionals. Postal delays — both outgoing and incoming — have hindered our progress, but we now have enough replies on which to base an analysis.

The overall picture so far -- out of a total of 782 questionnaires sent out, 254 (32.5%) replies have been received:

- 32 questionnaires (4.1%) were returned undelivered by the post office. marked "addressee unknown", "no forwarding", etc.;

- the remaining 496 (63.4%) presumably received their questionnaires but have not answered. We would still like to hear from them, of course.

The chart below summarizes the 254 replies received.

	Currently employed or studying in conservation	Working in government service, museum or university	Senior position *	Interested in teaching	Available for ICCROM missions
YES	93.3%	65.7%	34.7%	69.3%	89%
NO	4.3	29.5	60.5	13.4	3
NOT ANSWERED	2.4	4.8	4.8	17.3	8

* This question was not asked specifically, but deduced from job descriptions, so the figure may be slightly high or low.

One of the most interesting parts of the inquiry was the response to our question, "How can ICCROM help you?" Only 39% of the 254 respondants answered this question, but many made a number of different suggestions. The ideas expressed can be grouped roughly under the following headings:

Opportunities for professional growth

As seen in the chart above, there is keen interest among our former participants in gaining experience and using their skills on short-term projects in other countries. A few would also like to change jobs altogether. Others are looking for advanced training, internships, or refresher courses in their fields. A job offer column in the Newsletter was suggested but, unfortunately, we do not publish frequently enough for this to be practicable. Another suggestion of merit is to publicise our programme more, in order to enhance the value of our certificates in official circles and convince administrations of the need for trained conservators.

Training and research

Some specific ideas for improving our courses in Rome were received: for instance more explanation of the urbanistic problems of historic centres (legal, sociological, economic), and more information on the methods and materials used in the Far East. Courses in museum studies, ethnographical and archaeological conservation were also proposed, as well as full length training for conservators. (Our policy on the latter is that basic training should be done at the national level.)

Organisation of conferences, seminars, or refresher courses (especially for museum workers) in different countries was also frequently mentioned, and some would like more people from their organisations or countries to be trained in Rome. Publication of basic conservation textbooks was recommended (this is the aim of the ICC-ICCROM-Butterworths series over the next ten years).

There were a few requests for funding or supervision of individual research, and some general research topics were also indicated, e.g. testing of stone preservatives, building materials, UV filters, and measurement of the sensitivity of various materials to UV.

Information

The demand was high for information of all kinds. People want to know what's going on in the way of new processes and materials, recent publications, conference schedules, work accomplished (a Newsletter exchange column?). People want to know where to go for technical advice, how to set up a laboratory, how to contact other conservators (professional associations, a directory of ICCROM trainees). People want advice on conservation teaching methods and the best products and suppliers of materials for conservation work. And, as mentioned above, people are interested in knowing of opportunities for jobs, missions, or further training.

There were also a few direct requests for laboratory materials or technical advice which were acted upon by Dr. Torraca.

Comment

The intense desire for information indicates commendable professional zeal, but also testifies to a general sense of isolation, due perhaps to geographical distance or to the fact that many conservators must work without team support. The Newsletter attempts to meet this need, and we are endeavouring to make it still more informative, but there are several other ICCROM services, publications and projects that can also be helpful. If you need specialised bibliographical information, order the new library computer subject index and list of acquisitions which will help you in selecting publications. Or, you can simply write directly to the library.

 If you are interested in mosaics, ask to be put on the mailing list for the Mosaics Newsletter.

 If you are working in stone or adobe, ask to be included in the relevant specialised list.

— If you need technical advice, write and clearly state your problem. *Please* do not vaguely ask for "everything new in stone preservatives" — we can't possibly answer this kind of request properly. On the other hand, if your problem has our experts stumped, we may be able to refer you to someone who can help.

 Finally, use the Newsletter to see what other ICCROM projects, such as local seminars or the travelling exhibition, you can promote in your own country. And... please keep in touch!



courses in conservation. Problems quickly follow because there are few teachers in this field, and even brilliant practitioners or specialists may prove to be less brilliant as teachers. A concerted effort is needed within the profession to improve training programmes, teacher training, and didactic material. ICCROM is working on various projects with this aim in mind.

Every year, a number of institutions and organisations decide to start

Questionnaire on teaching material

For the past 25 years, ever since the creation of restoration schools, it has been common to see courses attended by 10. 20 or even 30 students. This phenomenon is encouraging, but one must admit that the didactic material in use — if it exists at all — has not been very carefully studied, and that the burden of theoretical training is still carried by a few teachers.

In order to survey what teaching material is currently available, a questionnaire was sent last September to all the institutions listed in the *International Index on Training in Conservation of Cultural Property*. The questionnaire asked what material was being used — books, slide series, films, technical cards, video-cassettes, models, etc. Replies are beginning to come in; if the information they contain is of interest, ICCROM might consider publishing a catalogue of didactic material in order to promote exchanges and help coordinate efforts.

Permanent Exhibition

The permanent exhibition on preventive conservation in museums, organised at ICCROM. was set up in 1975 with sections on lighting and fire. In 1976, the section on theft was added, and in 1977, climate control. Thanks to suggestions from visitors, the lighting part has been slightly modified, enlarged and renewed. This section has also been moved in order to leave more space in front of the lecture hall.

Travelling exhibition

After leaving Zagreb, the travelling exhibition on climate control and lighting was presented by the Romanian ICOMOS Committee in Bucharest from November 3-30, 1978. Tamara Dobrin, Vice-Minister of Culture, inaugurated the exhibition, which had a total of 15,000 visitors. It was then presented at the Museum of Art at Cluj from December 2-30, and at the Regional Museum of Banat at Timisoara from January 16-30, 1979, and had 6,535 and 5,200 visitors, respectively. During this period, demonstrations were specially organised for curators. The exhibition then went on to Hungary, where it was taken in charge by the Institute of Conservation and Methodology of Museums. It was set up in the hall of honour of the Hungarian National Gallery A catalogue in Hungarian was published, and guided visits were given upon request. Gaël de Guichen was invited to hold 3 one-day seminars, from March 6-8, in which 200 curators and conservators participated.

The exhibition was visited by 34,682 people. After these travels, the exhibition returned to Rome for much-needed repairs. Then in October and November it went on to the Cerralbo Museum in Madrid, where Mrs Sanz Pastor presented it during the meeting of the ICOM Committee on Architecture and Museum Techniques

Information on the cost of this material will be sent on request.

Conference on Teaching Material:

Some restoration specialists feel that restoration cannot be taught. It is a gift. Others agree that theoretical concepts are a necessary part of interventions that respect an object's message, and that such concepts can be learned much more quickly in courses and with the aid of suitable didactic materials. To discuss this problem, and to study and compare different types of current teaching materials. ICCROM and the ICOM Conservation Commitee working group on Training of Restorers are organising an invitational workshop from September 1-6, 1980. During this week, one day will be devoted to films, half a day to books, another to slides, one to video-cassettes, and a last day to other means - models, cards, etc. Professional teachers, as well as educationalists and creators of teaching material, will be present. In order to permit group work, the number of participants is limited to 40.

Training Index - 1980 Edition

Since the 1978 computer edition of the *International Index on Training in the Conservation of Cultural Property* was published, we have continued to collect information for a revised and 3rd expanded edition, planned for June 1980. An inquiry was sent out to all the institutions listed in the Index, asking them to update their listings. This material, as well as a number of new course listings, will be included in the new edition.

DIMOS

The Istituto Centrale del Restauro (ICR) has begun a pilot project in publishing a series of didactic manuals for a course on the maintenance of mural paintings, mosaics and stuccos (DIMOS). These manuals are destined to be used by other agencies recently created in Italy. The text in Italian is accompanied by technical cards and a slide series with written commentary. At present, 6 brochures and 162 slides have been produced for the chapter on "Technique of execution and materials"; 5 are in preparation for the chapter on "Factors of deterioration".

More information can be obtained from:

Istituto Centrale del Restauro 9 Piazza San Francesco di Paola 00184 Rome





Views of ICCROM's travelling exhibition at the Cerralbo Museum in Madrid.







A general view and a detail of the Torcello mosaics showing the irregular surfaces and previous restorations.

Teaching and Research

Research Training Units

In 1978 ICCROM started for the first time a research programme of its own, the opportunity being offered by several scholarships provided by the European Community. The programme, however, has certain characteristics which make it somewhat different from the usual research projects.

In the first place, it is based on the work of small teams of students who, having completed an ICCROM course, remain at ICCROM for an extra period of study but only for a limited period of time (6-7 months). Its main value lies therefore in the advanced training of young specialists.

In the second place, the supervision of the work of the students is carried out in part by young consultants from specialised institutions in Rome and partly by ICCROM staff members: the latter, unfortunately, are also engaged in other operations, so they provide only a periodical participation.

The first programme was carried out in 1978-79 as described in the previous Newsletter. It produced several internal reports which are now being summarised in two English reports that will be made available to interested persons outside of ICCROM. Even with the limitations imposed by its particular organisation, the project yielded some quite interesting results, especially in the field of mechanical properties of mortars, and important testing techniques in the ICCROM Laboratory were acquired. A secondary, effect was that of also securing the cooperation of two university laboratories for other ICCROM programmes, beyond the immediate scope of the research project. One of the two research lines will be continued in the 1980 Research Training Unit, namely the study of mechanical, chemical and physical properties of traditional mortars compared with those of modern materials. The final aim of this study is to define mortars suitable for use in the conservation of ancient masonry because they do not cause 'damage by their excessive strength or thermal expansion, by the release of soluble salts or, finally, by inhibiting water transfer and evaporation.

The second research line of 1978-79 will be stopped, temporarily, insofar as research is concerned. The cross-sectioning and petrographic study of mortars will continue, however, at the ICCROM laboratory as a routine practice with a view to collecting a large number of samples from various periods and areas. Comparative studies will then be carried out, we hope, in a near future.

A new line of work will start in 1980; it concerns the study of structural stabilisation of old masonry and rock structures. The project includes the research of equipment for drilling and injection available on the market, and the testing of grouting and filling materials, both organic and inorganic. The aim is to introduce such a discipline in the training programmes at ICCROM. The results obtained will be presented at the Conference on "Cements, Mortars and Mixes for Injections used in Conservation" to be organised in Rome in the autumn of 1981. It is also foreseen that the research team will take part in field operations in earthquakedamaged historic districts or in rock stabilisation experiments in rock monuments.

Also in the second Training Research Unit, all the scholarships will be awarded from the European Community programme. (G.T.)

ICCROM Supports Research

The Mosaics of the Church of Santa Maria Assunta, Torcello

As reported previously, ICCROM is supporting the common effort of several international funds active in the preservation of cultural property in Venice. The private funds set up an International Torcello Committee which, in turn, appointed a Technical Committee that works in close connection with the relevant Italian authorities. The Technical Committee includes an ICCROM representative. The whole programme is activated with great energy and passion by Sir Ashley Clarke and is now entering its third year of activity.

A great merit of the International Torcello Committe is that of having tackled the problem of the mosaics in a very long perspective by aiming to understand the deterioration processes, and to control them, rather than to produce spectacular, but often transitory, results by impressive restoration work on the mosaics themselves. It must be appreciated that this is not an easy position to take for a committee that is spending money collected from private donors who more often than not wish to see some tangible results of their gifts.

In the first phase, now being completed, the Committee set out to identify the major immediate threats to the mosaics, and came to the conclusion that water penetration from the outside because of defective masonry and roofs, was to be dealt with first. A series of works, commissioned in part by the Committee, was executed in the East apse and on the West front to ensure that no rainwater could reach the back of the mosaics because of faults in the construction.

The second phase, which was started over six months ago, includes a one year study of the microclimate in the church and an accurate survey of the condition of the mosaics. The survey has already been completed for the south chapel and the west wall, leaving only the mosaics of the main apse. With the cooperation of art historian Irina Andreescu, from the Dumbarton Oaks Institute of Byzantine Studies. a detailed study of the various restorations and modifications which the mosaics underwent in several phases of their existence is being carried out. A section of the west wall mosaic was first restored in the 12th century!

Some restoration techniques used in the past involved total destruction of the original mosaic, others caused some disfigurement. others. finally, were more respectful but ineffective. One restorer replaced the originals with copies because they were disfigured beyond repair... then sold the originals on the antiquarian market (most of these came back, eventually, and were re-applied to the wall).

A mosaic, it appears, is not the unchangeable, eternally young, rock-solid object that it seems when viewed from far below. It undergoes a lot of suffering and disfiguration in its unstable equilibrium, that is, a heavy weight precariously attached to masonry by insufficient adhesion that may be rapidly destroyed if just a little water finds its way behind it. Conservation is difficult and, if not carried out with extreme care, serious damage may be inflicted on the work that we wish to preserve.

The Torcello Committee has engaged the services of Larry Majewski (of New York University. Conservation Center) and Paolo Mora (of the Istituto Centrale del Restauro) to study the most respectful way to ensure the re-establishment of adhesion to the wall, where it is compromised. It was concluded, after a first phase of examination (and the experimental removal of a small section near the apse), that removal and application on a new support would cause unacceptable damage and that conservation without removal would have to be tried.

Corrosion of marble tesserae, the oldest material used for its white colour (white glass was used by later restorers). will have to be studied and controlled as there is serious damage in several cases.

Air pollution studies in Torcello are under way, but it appears that, luckily, sulphur dioxide is low. Stones suffer, however, from algae and lichen invasion, due to the high humidity (and low pollution!); cleaning and disinfection procedures have been specified and are being applied now.

The climatological research should result in proposals for the control of humidity in the church. It is not clear, however, whether a drastic reduction of relative humidity in the air is possible (without great damage to the stone-mosaic floor) or even desirable as it might be followed by alternating processes of de-hydration and re-hydration of soluble salts and acceleration of deterioration of some materials (e.g. plasterwork). (G.T.)

Mosaics

The International Committee for Mosaics Conservation, for which ICCROM acts as Secretary, has published the English edition of the proceedings of the 1st conference, which was held in Rome in 1977 (see under "Publications"). Publication of the proceedings of the 2nd conference (Carthage 1978) have been delayed because the board was unable to meet this year. Agreement on the final text must be obtained by correspondence, which is complicated by linguistic difficulties.

Corpus Vitrearum

ICCROM continues to print and distribute the technical bulletin of the working group on the conservation of stained glass. This specialised newsletter appears 3 or 4 times a year, and can be obtained by subscription. Orders should be sent to:

> Dr. Bruno Mühlethaler Musée Nationale Suisse Postfach 3263 CH-8023 Zurich Switzerland

Museum Storage

In the majority of establishments, museum storage areas are rarely seen by official visitors. Conservation and storage conditions of collections are seldom ideal; sometimes they are frankly bad. This situation has been pointed out by ICOM and Unesco and, with their support, the Smithsonian Institution organised a meeting on this subject in 1976 in Washington, D.C. The results of this meeting took form in a booklet published by Unesco: "Handbook for Museum Collection Storage", by E. Verner Johnson. This booklet deals primarily with the best utilisation of available space, and is abundantly illustrated with very instructive drawings. Perhaps now the moment has come for further study of some other serious aspects of storage, such as disinfection, disinfestation, climate control, dust removal, and suitable installation of storage facilities in both old and new buildings.

Publications on these subjects are not particularly attractive and therefore the literature is not very extensive, especially if one thinks of the needs of curators of "developing" museums, (which are sometimes found even in highly developed countries). Therefore, we are trying to collect information.

If you have tackled this problem, if you have had some successes or disappointments with it, please send your results to ICCROM and we will study the best way of sharing this information. It could turn into a very interesting manual.



climate

Climate Conference

In November 1978, with the financial assistance of the Direction of French Museums and Unesco, ICCROM organised a conference on "Climate Control in Museums". The participants realised that this problem, so vital for the conservation of collections, is not only a technical one, but primarily a question of attitude. After dividing into 5 working groups, the participants formulated recommendations to those who bear a part of the responsibility for the conservation of our heritage. The working groups thus prepared messages to:

- government officials and the public;
- museum administrators and directors:
- architects and designers:
- curators;
- conservator/restorers and laboratory personnel.

The final text is published here for the first time. A wider diffusion of this message is envisaged, either through publication in Museum magazine, or through national ICOM bulletins, or by printing a small bilingual brochure.

Messages to government officials and the public

Working group: K. Assimenos. R. Lafontaine, R. Matthai, G. Mitchell, G. Scichilone.

Rapporteur: R. Matthai.

- 1. Works of art are a common heritage for which everyone is responsible.
- All objects whatever their age, origin or material react to the surrounding atmosphere. This reaction causes irreversible deterioration to the works of art.
- One of the most important functions of museums and related cultural institutions is to preserve for future generations the artistic, historical, scientific and architectural heritage.
- 4. Danger to this heritage may be posed by:
 - air pollution;
 - harmful lighting levels:
 - biological factors;
- vibration;
 - natural disasters:
 - vandalism:
 - lack of forethought for reasonable precautions;
 - lack of maintenance;
 - shortages of energy:
 - improper and uncontrolled levels of humidity and temperature which are vital for preservation.
- 5. Some of these dangers exist in almost all cultural institutions, and require immediate and continuing remedial and preventive action by institutional staff and by those who make the laws and regulations controling the operation of cultural facilities.

Messages to administrators, directors of museums and general secretariat

Working Group: R. Brill, A. Erdös, B.M. Feilden, J. Peltonen, P. Torre, P. Wilson, Rapporteur: B.M. Feilden

- All objects whatever their age, origin or material, react to the surrounding atmosphere. This reaction causes irreversible deterioration to the works of art
- 2. The danger to this heritage may be posed by:

- air pollution:

- harmful lighting levels;
- -- biological factors:
- noise and vibration:
- natural disasters;
- vandalism;
- lack of forethought for reasonable precautions;
- lack of maintenance:
- shortage of energy;
- improper and uncontrolled levels of humidity and temperature which are vital for preservation.
- All administrators must understand the principles and practice of conservation so that they are receptive and responsive to the recommendations of conservation staff in respect of preservation of cultural property.
- 4. In commissioning a new building, or adapting an existing building, the administrator should take into account conservation considerations such as: thickness and insulation of walls, incorporation of cellular-buffering materials, screens or false walls, fire retardant material, windows, and consult the appropriate people
- 5. The administrator should bear in mind that the siting of engineering plant should not present a hazard to his collection (e.g. water pipes trunked away from exhibition and storage areas).
- The administrator should obtain advice and data on local climate conditions before siting a new museum.
- 7. Whilst the whole budget must be allocated to promote the objectives of the museum and the funding authority, conservation activities are a specific part of the budget. Depending upon a large number of variables, the nature of the collection and climate control being major considerations, the director should allocate sufficient funds for conservation

- When new objects are purchased, the estimated cost of their conservation should be kept in mind by the director so that undesirable sacrifices in the conservation budget do not have to be made.
- 9. Money spent on climate and light control is money well spent.
- Funds should be put less into active restoration and more into simple (and sometimes complex) technology for the preservation of the collection.
- 11. The administrator of a small museum may be everything but he must monitor climate in the museum and show cases.
- 12. He should also monitor light and pollution by simple means and make personal contact with conservators, security and fire experts, and use their advice as it applies to his individual museum problems.
- He should seek advice of conservators with regard to display of the cultural property in his care so as to prevent avoidable damage.
- 14. The director of a museum should organise regular inspections, records and documentation of all objects by curators together with conservators. After a first inspection, it may be possible to select a representative sample. Conservators should advise on the frequency of formal inspections which will depend upon climatic conditions in the museum and the characteristics of the objects. After such inspections, conservation work will be found to be necessary in some cases. It is the curator's responsibility to see that this is done and to find the technical resources inside or outside his museum.
- Objectives should be agreed with professional staff each year and reviewed
 periodically. Professional staff must accept responsibility for the cost effectiveness of their work.
- 16. Prevention of decay, and climate control are the concern of the conservator, if there is one. The conservator should report direct to the director.
- 17. There should be an objective report on the state of the collection and comments upon climate control submitted annually to the trustees and published.

Messages to architects and designers

Working Group: M. Bubaker, G. de Guichen, G. deW Rodgers, O. Mahgiub, P-Percival-Prescott, J. Pottecher, B. Ramer, C. Viry. Rapporteurs: G de Guichen, G deW Rodgers.

- Keep in mind that museums serve in terms of preservation and that presentation should never be carried out at the expense of preservation.
- 2. Museums should not serve solely to become a vehicle for personal architectural design expression.
- All objects whatever their age, origin or material, react to the surrounding atmosphere and especially to relative humidity and light. These reactions cause irreversible deterioration to the works of art.
- Danger to this heritage may be posed by:
 - air pollution:
 - harmful lighting levels;
 - biological factors;
 - vibration;
 - natural disasters;
 - vandalism;
 - lack of forethought for reasonable precautions;
 - lack of maintenance;
 - shortages of energy;
 - improper and uncontrolled levels of humidity and temperature which are vital for preservation.
- 5. The architect must know what is relative humidity, how to measure it and how to control it.
- Any successful outcome will be the result of close cooperation at all stages between administrators, technical advisers, curators, conservators, who brief the architects. They must provide the architects with written reports.
- The architect is the person responsible for the choice of the solutions. Any errors made for the preservation of the collection will be due to his negligence.
- 8. The project must have sufficient flexibility of design to recognise future needs for modification.

In case of a *new construction* the siting must never present a hazard to flood, contamination, extreme dryness, extreme humidity, specially near the sea.

- --- The construction must be a protection from external changes of climate.
- The material must be durable, easy to maintain and internal material must be acid-free and basic-free and have a good moisture absorbent capability.

In the case of ancient buildings.

- Very careful study must be done in order to assess the feasibility as a museum.
- At least a year of recorded climatic conditions carried out in various areas of the building will decide the best spaces for the preservation of collections.
- Any modification must be an adequate protection for external changes of climate.

- New material must be durable, easy to maintain, non-acidic, non-basic and buffering, i.e. moisture absorbent
- Highest priority must be given to storage area and the conservation workshop.
- A "hospital" for specially delicate objects should be planned.
- for designers
- Examples of objects badly damaged during their stay in a showcase are numerous.
- 2 Exhibition designers have the responsibility of providing display components which will preserve objects not damage them.
- Under all circumstances, the designer has to take into account the demands for good preservation, especially avoiding neat from lights.
- 4. Lighting components should be external to showcases. Designers should be aware of and follow the proper requirements for lighting objects susceptible to deterioration by lighting. This will involve the proper installation of lighting fixtures.
- The climate immediately around the object should not be disturbed by the maintenance or repair of the display components.
- 6 Materials used in display should be both stable and durable.
- 7 A showcase must protect the objects against the entry of harmful environmental agents. In particular museums, an airtight enclosure may be necessary to provide the required microclimate.
- 8 There must be easy access by conservation staff to the contents of the display for maintenance and emergency actions.
- 9 Exhibitions should be designed to provide security against theft and damage.
- 10. In trying to control climate, the simplest methods are the best.

Messages to curators

Working Group: M. Goodwin, Y. Herreman, F. Howie, G. Lewis C. Sanz-Pastor, G. Thomson. Rapporteur: G. Thomson.

- All objects whatever their age, origin or material react to the surrounding atmosphere. This reaction causes irreversible deterioration to works of art.
- One of the most important functions of the curator is to preserve for future generations the artistic, historical, scientific and architectural heritage.
- 3. The object comes first.

- 4. Danger to this heritage may be posed by:
 - air pollution:
 - -- harmful lighting levels:
 - biological factors:
 - vibration:
 - natural disasters:
 - vandalism:
 - lack of forethought for reasonable precautions;
 - --- lack of maintenance;
 - shortages of energy:
 - improper and uncontrolled levels of humidity and temperature which are vital for preservation.

These dangers exist in all museums.

- Co-ordination from the start between curator. restorer. architect. designer, engineer. administrator is essential.
- Training in basic climate control should be included in all curatorial training programmes.
- Climate control should not be obtrusive, should not interfere with the processes of museology
- An officer should be chosen with special responsibility for climate control liaison. He has to be a senior member of the museum staff, preferably a restorer/conservator or an informed curator.
- Every installation (e.g. air-conditioning plants, electrical system, recording equipment) has to be maintained, and maintenance should be allowed for in advance. Breakdowns damage the objects in the museum.
- 10. The curator must decide whether Class I or Class II climate control is required for his collection. *
- The curator should insure that no object, whether on exhibition or in storage, being moved within the museum or on loan, suffers adverse climatic conditions, or changes in condition.
- 12. If loan conditions cannot be met by the borrowing museum, the loan must be refused.
- The curator should consider establishing "hospital" areas where special climatic conditions can be maintained for "sick" items.
- 14. In case of strikes or power cuts, the curator should designate an emergency operated, environmentally controlled area for susceptible material. Because of the diversity of sensitive objects, the area could be zoned for difficult humidity and temperature levels.
- 15. The curator should organise together with his technical staff inspections of the storage area, followed by a written report.
- * See the Proceedings of the ICOM Committee for Conservation Zagreb 1978. Thomson G 78-18 1

Messages to conservator/restorers and museum scientists

Working Group: E Andersen, A Burton, B. Glover, M. McParland, S. Miura, J Shenav, N Stolow.

Rapporteur: N. Stolow.

 Dangers to museum collections may be posed by:

- air pollution:
- harmful lighting levels;
- biological factors:
- vibration:
- natural disasters;
- vandalism:
- lack of forethought for reasonable precautions;
- lack of maintenance;
- shortages of energy:
- improper and uncontrolled levels of humidity and temperature which are vital for preservation.
- 2 The conservator/restorer and the museum scientist are responsible for checking the physical state of the collection on show and in storage, for reporting to the curator and for advising him in making the best choices for the preservation of the collection.
- Careful visual and scientific records should be made of the physical condition of the objects in the collections attributed to environmental effects; e.g. structural changes, surface defects, and biological contamination.
- 4 A programme of monitoring should be undertaken over not less than one year, internally - storage, selected gallery areas, and also external environments. Such monitoring must cover relative humidities, temperatures, and other relevant data. The instruments and methods must be accurate and consistent.
- 5 On the basis of the evaluation of the examination of the objects and the environmental data, the conservator will recommend that certain objects will require specific conditions of relative humidity and temperature and that less sensitive works may be exposed to more variable climates.
- 6 Where it is necessary to adapt higher or lower levels of relative humidity and temperature, long periods of conditioning must be determined according to the objects' specific needs.
- The climatic conditions for borrowed objects may require special levels of humidity and temperature and these should be provided.
- 8. Unless someone else has been nominated, the conservator/restorer is in charge of maintaining the proper climatic condition for the collection.



technical



Sansovino's statue in Venice — placed in the Logetta



drawing of the damaged area

Technical assistance to Member States takes various forms. It ranges from missions through replies to letters to providing bibliographies. Although these last two types of assistance demand a great deal of time, they will not be discussed here; we shall only report on activities which took place outside of Rome. It should be noted that in most cases technical assistance programmes try to include programmes of training for personnel on the spot; otherwise, ICCROM's action would have no follow-through.

Venice

March-October. The Loggetta is an ornate entrance to the bell tower in St. Marks Square in Venice. It was designed and built by Jacopo Sansovino around 1537 and was an addition to the old bell tower. Mounted in the four niches of the Loggetta are bronze statues, and it was one of these that thieves tried to steal in July 1977. It is about 140 cm high and weighs about 120 kg. It proved to be much too heavy for them so they let it fall to the ground, smashing several fragments from the base. This meant that the statue would no longer stand upright by itself.

The Soprintendenza decided that the statue should be restored and replaced on the Loggetta. ICCROM was asked to do this work, which was carried out in 1979 by Christopher Wheatley with a grant from the American Express Foundation. The restoration was made difficult because of the weight of the statue, so any restoration to the base had to be very strong. As the use of heat was not allowed, this excluded all forms of welding and brazing, leaving only the resin adhesives but even the toughest of these would not have been strong enough. To overcome this problem, an internal support was made to remove the weight from the rime of the base and distribute it over the un-damaged area. So that the new support would fit exactly, it was made by using the lost wax bronze cast technique, using a model taken from the inside of the statue. The model was made in wax and reproduced the inside shape of the statue exactly

The statue was replaced on the Loggetta, but this time more and much stronger points were used. (C. W.)



 section through statue showing damaged area



section through new insert.

Jordan

6-13 April. Amman. Unesco Contract. Paul Schwartzbaum, Christopher Wheatley and Isabelle Dangas completed the cleaning and museum installation of a Chalcolithic mural painting from the site of Teleilat Ghassul. This mission concluded a project which included an inspection mission in February, 1978, and a mission to consolidate and recompose the painting, in November, 1978.

This mural painting on mud brick was recovered in 1977 from the excavation of the Teleilat Ghassul site (c. 3000 B. C.).

It was found in 33 major pieces and many fragments altogether measuring 4.14 m². The conservation treatment carried out was the following:

- powdering pigment was strengthened with a 10 percent solution of Paraloid B72 in acetone:
- the painted surface was protected with facings of Japanese paper and surgical gauze applied with starch paste;
- to avoid mechanical stress during handling, the painted surface of each piece was fitted with a mould of plaster of Paris;
- plaster and gauze applied to the backs of the pieces during lifting operations at the excavation were removed with a mechanical shaft and bit. The mud brick was reduced to a uniform thickness of 5cm.
- a plaster of Paris mould was made of the reduced backs of each piece, to ensure safe handling and to serve as an individual supportive receptacle during consolidation.
- the facings were removed form the painted surfaces. A 50 percent solution of Wäcker Stone Strengthener H in Wäcker solvent was poured into the back mould and absorbed by the mud brick through capillarity;
- each piece was individually mounted on polyurethane foam:
- the 33 pieces were assembled in five separate blocks of pieces, each block secured together with polyurethane foam.
- the foam mounts of the blocks were reinforced with a stratum of fiberglass mat adhered with polyester resin,
- the blocks of the painting were assembled and secured to a specially constructed wooden support in the Amman Museum;
- joins and lacunae were filled with a stucco made from the powder of the original mud brick mixed with very dilute PVA emulsion. (P. S.)

Jerusalem

14-15 April Paul Schwartzbaum, collaborating with resident engineer Architect Isam Awwad, carried out an examination of the mural paintings in the dome of the Al Aksa Mosque, damaged by the disastrous fire of 1969 In November, Mr. Schwartzbaum assisted in the organisation and initial stages of the emergency reattachment of the loose plaster, necessary to permit the programme of architectural conservation to continue. This mission, comprising Phase I of the eventual conservation and restoration of the paintings, was undertaken under a contract between ICCROM and the AI Aksa Restoration Committee. The work was carried out by Laura Spada Scandura, Carmelo Scandura and Nicolo Leto, November 4 -December 27

Florence

4-14 May. The Opificio delle Pietre Dure has been organising a restoration course for the last two years. Gaël de Guichen lectured for the entire week devoted to the environment of collections. During this short time he endeavoured to train someone who might later be able to supervise the students' work and run this course in the future

Denmark

22-31 March. At the request of the Royal Danish School of Conservation, Gaël de Guichen gave a week's course to secondyear students on climate and lighting control in museums. Material specially developed for demonstration practical work for ICCROM's Conservation Science Course in Rome was also used for this course and part of it left to the School. The exchange of ideas that took place while planning this course was extremely beneficial to both parties.

Assisi

July. Istituto Centrale del Restauro. Fresco Conservation Campaign, Upper Church of San Francesco, Assisi. Under the direction of Paolo Mora and Laura Mora, Paul Schwartzbaum assisted in the conservation of the "Glorification of the Virgin" by Cimabue.

Brazil

6-17 August. The Museology School in Sao Paolo, started in 1978, invited Gaël de Guichen to lecture on climate and lighting control. This course was organised by Waldisa Pinto Russio who had attended a seminar on the same subject two years previously in Rio. During his stay, Gaël de Guichen also lectured to a group of museum directors on the topic "Are Museums Today Suited to their Purpose?". 19-31 August Gaël de Guichen was also invited by Amicom-Brazil to give a refresher course in Rio for curators who had attended the course two years ago. From this seminar it would appear that museum curators face great difficulties, more often than not administrative, in obtaining the technical material needed to control climate and lighting in museums. Requests for this material should be included in budgetary forecasts if this problem is to be overcome

This seminar was followed by a one-week course on climate and lighting control, attended by 32 museologists.

Turkey

10-17 September. Bernard M. Feilden visited Göreme with Cevat Erder in order to inspect the restoration work, now nearing completion. of the Tokali Kilise church At the invitation of the ICOMOS Turkish Committee, he then went to Eastern Turkey with Necip Inceler to examine the state of conservation of the monuments there. A report was made to the Turkish authorities at the conclusion of this mission

10 September - 23 October. ICCROM Joint Project with the Ministry of Culture Department of Antiquities to conserve the frescoes of Tokali Kilise ("Buckle Church"), Göreme Valley, Capodoccia, Turkey.

The work, which began in 1973 following a request of the Turkish Government presented at ICCROM's 1971 General Assembly. is ICCROM's oldest and most ambitious conservation intervention.

The project at its outset had two goals:

- to conserve and restore one of the almost three hundred painted early Byzantine churches in this area as an example for future preservation efforts;
- to create, train, and equip a local team of Turkish specialists who through a continuing programme of preventive maintenence and emergency consolidative treatments would ensure the preservation of mural paintings in the entire "Göreme" area.

Today these goals have largely been realised. The work in Tokali Kilise has been completed and the church will be open to the public in the fall of 1980. A programme of emergency interventions and preventive maintenance has been in operation for the past two years, during which time the paintings of Elmali and Karanlik Kilisi have been treated. Moreover, a trained team of young Turkish professionals has been developed and to date four of the "Göreme Team" have completed ICCROM's Conservation of Mural Paintings Course. (P.S.)



Göreme, Tokali Kilise. Detail of one of the paintings before and after restoration.

Over the years, many conservation professionals have contributed to the project and perhaps this is an appropriate moment to acknowledge their efforts.

Goreme team members

A Askoy	Turkey	1979
M. Amin	Sudan	1974
J. Amoore	France	1974
R Bouquin	France	1975-76
J. Burckhardt	Switzerland	1975-79
I. Dangas	France	1975-79
M Hanaire	France	1978
A Idil	Turkey	1973-77
R Isler	Turkey	1977-79
H. Leitner	Austria	1979
R. Ozil	Turkey	1973-79
J_ Perero	France	1973
T_ Robouch	Lebanon	1975-76
N. de Rothschild	France	1973
P. Schwartzbaum	ICCROM	1976-79
G. Şiçmanoğlu	Turkey	1977-78
S. Şiçmanoğlu	Turkey	1977-78
C. Silver	USA	1977-78
J. Vidal	France	1973-74
S. Yavuz	Turkey	1973-79

Perhaps special recognition is deserved by:

Cetin Anlagan of the Department of Antiquities who was the Turkish administrator of this project.

Cevat Erder of the METU who has been instrumental at all levels in the success of the project.

Revza Ozil, Samiye Yavuz, and Ridvan Işler, the veterans of the Göreme Team and Isabelle Dangas and Paul Schwartzbaum who have been in charge of this project since 1976.

Split

30 October - 3 November. Upon the invitation of the Split Centre for Urban and Architectural Studies, Jukka Jokilehto lectured to the Conservation Course.

Bogota

5-19 November. The Colombian Cultural Institute and Unesco invited Gaël de Guichen to lecture to a museology course being organised for the first time to train museum technicians.

There were 24 participants from 8 Latin American countries.

In spite of climatic differences in the various countries, similar conservation problems exist, emphasizing the necessity to continue this experience at a regional level.

Bordeaux

20-21 November. The International School at Bordeaux organises a refresher museology course for French-speaking countries. 25 participants, all of whom hold responsible positions, came from 18 different countries. Gaël de Guichen gave a two-day seminar on museum conservation and during this time he was able to meet other colleagues, many of whom carry the burden of responsibility at the same time for museums, excavations, libraries and immovable property, without, however, having sufficient means to face the complex problems encountered.

York

19-23 November As part of the plan of cooperation between the Institute of Advanced Architectural Studies in York and ICCROM, Jukka Jokilehto was invited to lecture on conservation to the Diploma Course of the IAAS.

While he was there, he also delivered a public lecture on Finnish architecture to the Anglo-Scandinavian Society in York.

Sri Lanka

27 November - 9 December. At the request of the government of Sri Lanka and under the contract of Unesco, Jukka Jokilehto went to advise the Department of Archaelogy of Sri Lanka on the organisation of the documentation and the inventory for movable and immovable national cultural property. During the mission, the main archaelogical sites and historic towns, as well as several monastic complexes, were visited. A report was made to Unesco.

Greece

28-30 November. As part of the Campaign for the Preservation of Stone Monuments in Greece. R. Martin and G. Torraca were asked by Unesco to act as international consultants. A committee of 5 (Greek experts and authorities plus international consultants) met in Athens and prepared a plan of activities which included:

- support of the scientific laboratory to be established by the Department of Antiquities in Athens;
- scholarships for young professionals from Greece for specialisation abroad;
- scholarships for young international specialists for periods of studycooperation in Athens;
- an international seminar on the conservation of white marble (by invitation only) to be held in June 1980 in Athens.

Montenegro

12-15 December. Bernard M. Feilden was invited by the Unesco National Commission in Belgrade to study the damage caused to cultural property by the April 15 earthquake, and to discuss the assistance ICCROM might contribute. This project could be a major involvement for ICCROM and for past participants.

Ethiopia

6 January - 23 February, 1980. Phase II of the joint project of ICCROM, UNDP, Unesco. and the Department of Cultural Affairs, Youth, and Sport of the Provisional Socialist Republic of Ethiopia, to conserve the paintings of the Church of Debra Berhan Selassie. Gondar, was launched on January 6. Mission members were Carlo Giantomassi, Donatella Zari. Paolo Virilli and Paul Schwartzbaum. This mission will continue the work done by past ICCROM teams at Debra Berhan Selassie and ICCROM's role in the training of young conservator-restorers in areas where there is insufficient qualified personnel.

Cairo

12-14 December. At the request of ICOM. Gaël de Guichen went to Cairo with Luis Monreal. The Egyptian Department of Antiquities intends to modernise Cairo Museum and has nominated an advisory committee of international specialists to advise it in this important task. The specialists nominated are: Shehata Adam, Werner Kaiser. Geoffrey Lewis, Kamal El Mallakh, Christiane Desroches-Noblecourt, Paul Perrot and Giovanni Urbani.

The committee met for the first time on December 12, 13, and 14 in Cairo to examine the proposals put forward by ICOM to act initially as consultants in the planning of the project during 1981 and later to provide technical assistance when the project is carried out from 1981 to 1985. ICOM has requested ICCROM's cooperation for all matters concerning conservation in storage areas, and conservation-restoration problems of collections on display. This project is a major involvement for ICCROM for the next five years. It will include making a study of the state of the collections, and of the climatic conditions in storage and display areas, estimating storage space needs, and the setting up of standards for environmental conditions in the museum. This project will be carried out in collaboration with a team of Egyptian specialists, and the whole project will be financed by a loan from the World Bank.

Thailand

Bangkok 13-31 December. Working in collaboration with Mr. Arphorn Na Songkla and Mrs Wannipa Na Songhkala of the Department of Fine Arts, National Museum, Bangkok, Paul Schwartzbaum helped to plan a proposed course on the Conservation of Mural Paintings, to be given in Bangkok in late 1980. Envisioned as serving both local and regional needs to prepare additional qualified personnel, the project hopes for funding from the Ford Foundation, which provided the grant for the initial study. The Course has received an offer of extensive collaboration from the National Research Laboratory for the Conservation of Cultural Property. Lucknow, India.

conferences a cooperation

Tunisia

8-12 January. Meeting on "The Quality of Life in the Urban Traditional Environment", organised by the National Institute for Art and Archaeology. Azar Soheil-Jokilehto represented ICCROM.

Edinburgh

30-31 March. Symposium on metals conservation, organised by the Scottish Society for Conservation and Restoration. Christopher Wheatley represented ICCROM.

London

2-3 April. Meeting on preventive conservation of museum collections, organised by the UK Group of the IIC. Christopher Wheatley represented ICCROM.

Split

3-8 April. Seminar on "Methods of Research and Protection of Urban and Architectural Heritage". organized by the recently founded "Centar za Architekturu i Urbanizam - Split". Jukka Jokilehto represented ICCROM and gave a talk on "Conservation on Archaeological Sites".

London

8-10 May. Conference on "Sulphur Emissions and the Environment", organised by the Society of Chemical Industries. Giorgio Torraca presented a report on the action of sulphur on stone. He also lectured on stone conservation to students at the Institute of Archaeology, and gave a talk at the Courtauld Institute about ICCROM's activities.

Toronto

28 May - 3 June 8th annual meeting of the American Institute for Conservation Paul, Schwartzbaum gave a paper on "Conservation of Mural Paintings" He also participated in a round table discussion on the conservation of mural paintings in North America

Poland

8-20 June Bernard M. Feilden went to Poland to meet several conservation experts. The journey proved particularly fruitful as Poland is one of the European countries where problems of the conservation and restoration of cultural property have been studied for many years and which has a large number of training centres in this field.

Cefalu

2-4 July. Meeting on the preservation of Sicilian monuments from pollution. Bernard M. Feilden gave a talk on "The Philosophy of Maintenance".

Oxford

28 August - 3 September. Conference on "The Conservation of Wall Paintings" organised by the Wall Paintings Subcommittee of the Council for Places of Worship, and the Cathedrals Advisory Committee. Paul Schwartzbaum presented a paper on "Principles of the Conservation of Mural Paintings".

Leicester

17-22 September. Plenary meeting of the ICOM International Committee for the Training of Personnel. Cynthia Rockwell gave a, brief presentation on ICCROM's training programme, and participated in the working group on Inventory of Museum Studies Programmes.

Udine and Venzone

13-14 October. 1st meeting of the committee for the restoration of the cathedral of Venzone. Friuli. Sergio Lucarelli represented ICCROM.

Prague

22-26 October. Meeting on "Regeneration of Central Parts of Cities in Socialist Countries". At the invitation of SURPMO and the Czech Scientific Society, Jukka Jokilehto delivered a paper on the aims of training in conservation of historic towns.

Venice

22-23 October. Conference on Deterioration of Brick and Masonry, organised by the French Committee for Venice and the Italian National Research Centre. Giorgio Torraca gave the General Report on the Deterioration of Porous Materials.

Latin America

1 October - 14 November The object of the Director's mission to Brazil, Argentina, Chile, Bolivia, Peru, Ecuador and Colombia with conferences in Guatemala and a call at Churubusco, Mexico, was to meet as many people as possible concerned with conservation, to discuss and orientate himself to their problems, so that the work of ICCROM may be made more relevant to their needs

It is of course difficult to list here all those persons, but in almost every country a programme was prepared which enabled him to visit the Ministry of Foreign Affairs. the Ministry of Cultural Affairs or their representatives, and the Chairmen of ICOM and ICOMOS. He also gave 16 seminars and lectures. Although the mission was rather long to save travel costs. it was most instructive and satisfying to find so many enthusiasts. High praise is due to the work of the Cusco and Churubusco Centres, who are closely associated with ICCROM and who have established excellent training programmes of their own. It was interesting to find that ICOMOS Argentina had advanced proposals for training within the University of Buenos Aires, and that Ecuador and Colombia had established conservation centres, whilst Chile was proposing to set up a central conservation laboratory. At the Unesco-financed conference on earthquakes in La Antigua Guatemala, it was gratifying to find eight past participants taking a leading role.

Inventories were well advanced in some countries, and these are the first important step. Generally there was a realisation that prevention was better than cure and that to make one hundred historic buildings "wind and watertight" was a better investment than a single major restoration. However, all countries have to develop their preventive maintenance strategy (see editorial). In some countries, because the distances are so great and the local resources scanty, there is need for a mobile conservation team for monuments. Central laboratories for scientific conservation covering the whole spectrum of conservation have been established in some countries, but need expansion and govermental support. However, the progress that has been made since Harold Plenderleith's mission in 1964 is truly immense and a tribute to the cultural vitality of Latin America.

As all over the world, preventive conservation in museums, archives, and archaeology present great problems at one end of the spectrum of conservation, whilst at the other, the large scale economic and social problems of historic centres need solution by conservation methodology. There is a crying need for well-trained specialists in these fields. What surprises did this mission hold? First the climate, which depends more on altitude than latitude. Second, besides the richness of the Baroque, the great value of the remaining 19th century architecture was remarkable, and third, there is incredible potential for industrial archaeology in Latin America, if action is taken before it is too late. (B.M.F.)



miscellaneous

Other Activities

Evening lecture

On April 3, 1979, ICCROM organised a lecture by Albert France-Lanord on the "laboratory excavation" of a Merovingian tomb from the basilica of Saint Denis. The remarkable colour film that accompanied the lecture enabled us to appreciate the delicate work which permitted identification of the type and colour of the deceased's clothing. despite the inchoate mass in which it was found.

Exhibition at San Michele

The Rome Soprintendenza ai Monumenti organised a 460 m² exhibition in San Michele's Courtyard of the Oranges. As the theme was the restoration of San Michele, 57 m² were put at ICCROM's disposal. Sergio Lucarelli and Roberto Marta used this space to display part of the photogrammetric survey of the hospice, and a study of the possible colour of successive renderings in the Spinster's Courtyard. This study was based on microsections of the lime-plaster which were collected by participants in the 1973 Architectural course, and on work continued since that time.

University of Washington, Seattle, USA

The University of Washington's programme "Architecture in Rome" was held, once more, at ICCROM from October to December 1979. The programme was based on lectures on historical and cultural developments in addition to study assignments on Rome's Rioni (guarters).

A total of 21 students took part in the programme. guided by the faculty: Astra Zarina, Gordon B. Varey and assistant Richard Berg.

MIT, USA

The Department of Architecture of the Massachussetts Institute of Technology (MIT) held a 6 week programme at ICCROM from the beginning of November to December 1979. Seven graduate students, guided by Chester Sprague, pursued individual research projects on the relationship between physical form, use of spaces and social structure.

Appropriate technology

The Venice Charter recommends the use of traditional techniques for conservation. Often these techniques were abandoned too quickly and replaced by methods which originally seemed simpler or more suitable and which, in the long run, proved to be unfortunate. The case of cement as a substitute for lime mortar is one of the most evident. We are also witnessing the rapid disappearance of craftsmen who are skilled in traditional techniques. There is still time, however, to collect some traditional lore and, in some cases, to do an about face.

Unesco would be interested in publishing a book recounting cases where traditional techniques have proven more advantageous than modern techniques.

For further information, write to Raj Isar, Division of Cultural Heritage, Unesco. 7 Place de Fontenoy, 75700 Paris, Send examples with photographic documentation rather than theoretical arguments or justifications.

Pollution and stone

We have been asked for well-documented examples of stone attacked by air pollution. Dated photos should show the condition of the stone now and in the past and, if possible, in some interim stages. General views and detailed photos accompanied by an explanatory text will be welcome.

Calendar

1980

27 February

Making Conservation Pay. National Conference. London, England.

Architectural Press and Polytechnic of the South Bank

For information: Conference Department, The Architectural Press. 9, Queens Anne's Gate London SW1 H9B England.

3-5 March

Preservation and Restoration of Photographic Images. Rochester, New York, USA.

Rochester Institute of Technology, College of Graphic Arts and Photography.

For information: Andrew Johnson Rit-Garc 1 Lomb Memorial Drive Rochester, N.Y. 14623 USA. 30 March - 3 April

Conservation of Metal and Wood Artifacts. The Henry Francis du Pont Winterthur Museum, Winterthur, Delaware USA.

American Association for State and Local History.

For information: AASLH

1400 8th Avenue South Nashville Tennesse 37203 USA

14-19 April

Centenary of Viollet-Le-Duc's Death. Paris, Galleries nationales du Grand Palais France.

For information: Mr. Pierre Marie Auzas Ministère de la Culture et de la Communication 3, rue de Valois, 75001 Paris - France.

1980

22-25 April

23-25 May

28-31 May

England

4 July

July

7-12 July

Canada

Ottawa.

Elgin Street

Lorne Building

Canada K1A OM8.

Ontario

USA

15-25 July To Restore Restored Monuments Toulouse - Mirepoix - Carcassonne - St Papoul, France French Section ICOMOS For information: M. Yves Boiret French Section ICOMOS Hôtel de Sully 62, rue Saint-Antoine 75004 Paris - France 20-22 August Annual Meeting of the AIC (American Institute for Conservation). San Francisco. American Institute for Conservation. For information: AIC 1522 K Street N W Suite 804 Washington, D.C. 20005 USA 1-6 September Conservation - Rehabilitation - Recycling. Quebec, Canada Laval University School of Architecture and the Quebec Order of Architects. For information: Congress C.R.R Ecole d'Architecture Université Laval Québec - P.Q 8-13 September Canada G1K 7P4 29 June - 6 July Architectural Conservation. West Dean, West Dean Craft College Seminar sponsored by the Victorian Society. For information: H. Lowenthal O.B.E 87 Elizabeth Street London SW1 9PG 8-13 September England Conservation of Iron. National Maritime Museum, Greenwich, London, England, Archaeological Research Centre National Maritime Museum and British Museum For information: Conference Officier. National Maritime Museum Greenwich London SE10 9NF England. 15-21 September Paris, France Archaeology: "Filling Lacunae". Vez-ICOMOS prem, Hungary Institute of Conservation and Methodology in Museums. Meeting cancelled. **Conservation of Contemporary Art.** 22-26 September Ottawa, Canada The National Gallery of Canada. For information: Conservation Sym-England. posium, Restoration Conservation and of Paper Conservation. Laboratory National Gallery of

For information: Mr. Alan Bell Cambridge University Library West Road Cambridge CB3 9DR England

27

25 September - 10 October

29 September - 4 October

only

2-4 October

Canada.

Course on preventive Conservation in Museums, Rome, Annual Course at IC CROM for Curators (this year in English)

Mud Brick (Adobe) Preservation Ank

ara, Turkey ICOMOS Turkish Committee By invitation

For information: The Secretary of the

Muzesi Ankara, Turkey

Annual Meeting of the APT. Quebec

Symposium

Anadolu Medeniyetleri

Congress Organisation. Postfack 302360 D 2000 Hamburg FRG

The Preservation, the Restoration and the Presentation of Early Textile Machinery. Diepenbeek, Belgium The International Committee for the Conservation of the Industrial Heritage

For information: T.I.C.C.I.H. ence c/o Voetbalstraat 4 B-9000 Gent, Belgium.

Teaching Material used in Conservation Training, Rome, Italy By invitation only

For information: ICCROM 13 Via di San Michele 00153 Rome Italy

Conservation Within Historic Buildings. Vienna, Austria. The International Institute for Conservation of Historic and Artistic Works. For Information: IIC

6, Buckingham Street London WC2N 6BA England

Earthquake Engineering. Seventh World Conference. Istanbul, Turkey The Turkish National Committee on Earthquake Engineering.

For information: Organising Committee 7WČEE Deprem Arastirma Enstitusu Yuksel Caddesi N. 7-B Ankara, Turkey.

Meeting of Experts in Photogrammetry. For information: M. Maurice Carbonnell Institut géographique national 136 bis rue de Grenelle 75700 Paris, France,

Conservation of Library and Archive Materials and Graphic Arts.Cambridge, The Society of Archivists and the Institute

Canada. **ICOM** For information: ICOM

Maison de l'UNESCO 1 rue Miollis 75015 Paris, France

14-16 October

European Historic Towns. 4th Conference. Fribourg, Switzerland. Council of Europe

For information: Council of Europe 67006 Strasbourg France

November

Cements, Mortars and Mixes for Injections Used in Conservation. Rome, Italy.

For information: ICCROM 13 Via di San Michele 00153 Rome Italy

International Society of Photogrammetry. XIV" Congress. Hamburg FRG

For information Hamburg Messe

Textile Machinery Confer-

APT. The Association for Preservation Technology.

For information: Mr. Patrice Lapointe 1130 Raymond Casgrain 4. Québec P.Q. Canada 15 October - 5 November.

Demonstrations on the conservation of oriental art on paper, Venice, by Dr. Masuda of the National Institute of Cultural Property, Tokyo. For information: Unesco Venice Office 63 Piazza San Marco

Conference of ICOM on the World

sponsibilities. 12th General Conference.

1 rue Miollis

ICOM International Committee for Con-

servation. 6th Triennial Meeting. Ottawa,

Museum's

Maison de l'UNESCO

75015 Paris, France

Re-

15 October - 4 November

Mexico City, Mexico.

21-25 September

For information: ICOM

the

Heritage,

ICOM

1981

30124 Venice, Italy

Obituaries

The world of conservation was saddened this year by the loss of three personalities: Krystof Dabrowski, Piero Gazzola, and Arthur Van Schendel. In the name of the

Krzysztof Dabrowski

Krystof Dabrowski represented Poland at the IX and X ICCROM General Assemblies. His wide knowledge of the problems of the profession led to his election to the Council, where he was greatly



appreciated for both his work and his personal qualities. Following the tradition of his predecessors, he worked closely with ICCROM and made valuable contributions from his broad archaeological experience. Through him the Director's mission to Poland in 1979 was arranged but sadly he was then under special treatment in London.

He made what seemed a miraculous recovery and we hoped that he could come to Rome to give a series of lectures as planned.

Sadly we received the news of his death on November 25. We shall always remember his courage, resilience and cheerfulness, and give thanks for his help to ICCROM.

Piero Gazzola

There are few people to whom the Centre is as indebted as to Prof. Piero Gazzola. As a partisan enthusiast of both the idea of the Centre and of its creation in Rome, Prof. Gazzola, representative of the Italian Government to the Centre Council, spared



ICCROM Council, of which they were members, and on the part of us all, we extend our sincere condolences to their families.

no effort in assuring the installation and growth of the new body. Yet, in addition to his interventions for the location of headquarters and its expansion and equipment, there was also his constant intellectual inspiration and active participation in the development of a wide ranging humanistic policy. He carried out this policy through teaching, expert committees, and missions in the particularly vital and complex field of architectural and urban conservation. An additional result of our daily personal contact with Prof. Gazzola is the close ties that have grown up between the Centre and a sister organisation which was also the fruit of his inspiration and indefatigable efforts: the International Council on Monuments and Sites (text of the citation read upon the presentation of the ICCROM award)

Arthur van Schendel

Arthur van Schendel must be recognized today as one of those whose action was definitive in the creation and development of the Centre. His sudden death on February 6, 1979 pointed up still more clearly ICCROM's indebtedness to him after 20 years of activity. Former President of IIC and then of ICOM, Arthur van Schendel always joined his interest in international organisations with his national career, which brought him to the post of Director-General of the Rijksmuseum. He put his professional and international experience, united with the profound humanity that underlay an acute sense of the legal requirements of any organisation, at the Centre's service first as Vice-President, then as President of Council during the crucial years when



the Centre rose to become an organisation of worldwide status in the conservation field.

He dealt with all the problems caused by this rapid growth — whether they were of a legislative, administrative, financial, political, or personal nature — with an exceptional blend of warmth, correctness, and political acumen, and with a concern that was both discreet and efficacious. For the Centre, he always combined, with the same calm, the qualities of specialist, administrator, and friend (text of the citation read upon the presentation of the ICCROM award).



open forum

Starting with this issue of the Newsletter, we have decided to open a column called "Open Forum" in which we invite our lecturers to discuss approaches to the problems of conservation and restoration.

As the problem of storage is a pressing one, we have asked Robert Organ, Chief of the Conservation Analytical Laboratory at the Smithsonian Institution, to publish the paper he presented at the International Conference on Museum Storage in Washington in 1976.

• The Lessons of Nature

I have chosen this subject because there are two ways of going about solving a problem. One way is to break it down into its elements, study one intensively, go on to the next element, study that intensively, and then eventually integrate all of these various results of study into the solutions of the main problem. This is an excellent method, it is the one used in our universities: it is very necessary for the education of the young: and it is especially important because we believe the results.

On the other hand, there is another method of solving problems. This is to look at the thing generally, recognise in the situation some "laws of nature", and go along with them. If one does that, a very difficult problem can often be solved with just a few minutes of consideration and one can then get on with the job This is the method that I am forced to use because we just do not have manpower to study all the little elements of a big problem. I am going to try to share some of these ideas, these lessons of nature, with you.

Problems of museum storage: the mere fact that we can pick out a problem from the general continuum of ideas results in the possibility that we can pick out a solution. For our problems of museum storage, there obviously are solutions. The kind of solutions we have can be costing more for some people than for others, according to whether we are in a big organisation like the Smithsonian or whether we are in some other kind of organisation in, say, a developing country. Since this conference is international, we should try to pay some attention to both kinds of possibility.

I am reminded of having seen a photograph of a dam being constructed in India. When this was being done - it was an earth dam - it was done by women taking baskets to the soil, filling the baskets with earth with their hands, and carrying the baskets on their heads to the site of the dam where they were poured out. There were many, many women doing this and obviously the work was being done perfectly satisfactorily. Compare that to photographs of dams being constructed in the U.S. where we have one man controlling an enormous earth mover by means of a tiny lever under his hand. He transports enormous loads of earth in each operation. Again, a perfectly satisfactory solution in its own context. Nevertheless, there are some by-products of the methods of construction which one should be thinking about. Consider how concerned those Indian women were with their dam. If, when it had been built, seepage threatened it, you can imagine them going to it and thrusting their arms in to fill the gap, because they had a personal involvement with this thing which they had created. Consider on the other hand what happens to the big U.S. dam. If it fails: "It wasn't my fault. I did what the drawing showed, and it was wrong", or "The control lever didn't work properly and it didn't put the earth in the right place". There is much less involvement if There is much less involvement if we are operating things by pressing buttons. It seems to be a law of nature that the more we see of an object and the more we work with it, the more we feel for it and understand its needs.

Let me refer you to the description of compaction storage-first class machines if properly designed, perfectly correct in the proper environment. But we do lose an intimate contact with most of the objects stored away in darkness even though we can open up a way into this compaction just by pressing the right button.

The point I am trying to make is that if we want a satisfactory environment for museum objects we in some way have to achieve an intimate personal feeling of its importance and its relevance to our own job. Whether we get it through building shelves by ourselves or whether we get it through designing or through constantly repairing the button-pressing mechanism, somehow we have to achieve a continuous feeling of personal responsibility in order to have an economical and effective operation. If our concern is to be for the objects themselves, then it is with them that we must work, observing, drawing, measuring, photographing.

Another unspoken idea about museum storage is that we intend to perpetuate the stored objects — they are not being held temporarily. One of the laws of nature is that a human body_alters, decays, when the person leaves it — is no longer interested in keeping it renewed. In the same way, it is the dead trees that are seen in the forest to be losing their form, to be decaying and nourishing bracket-fungi. We can't evade this law.

So, we expect bodies to have a limited life. I think we have to accept the same kind of concept for museum objects and recognise that they came into existence, persisted while they were useful as art or as a tool, and they will begin to go out of existence as soon as we cease to care for them actively. Eventually we have to deaccession them as no longer useful.

Now, concerning ordinary bodies, we can postpone this death to some degree. As we grow older and the body begins to wear out, we can give it greater care: choose diet carefully, exercise moderately. Later on, have a nurse. Still later on enter a nursing home where perhaps one is carefully looked after physically by the nurses and mentally by a therapist. So, we can postpone death to some degree, but it costs something.

It is possible also with museum objects to extend their lives, at a cost.

We can also use arithmetical laws: so many people come into the world, so many people go out of the world. This relates to accessioning and deaccessioning. If we have three accessions each year and at the end of fifteen years we have only three deaccessions, we have gained forty-two accessions to the collection. And if by taking greater care of our collections we have a longer period before we need to deaccession them, then we have a greater number of objects in the collection. So greater care will result in a need for increased storage area or for active limitation of accessions. I am not suggesting that anything is good or is bad. I am just pointing out facts to be faced.

Another concern: That is, how much care do we need to put into our objects to make them last a little longer? It is hard to decide this from an external general point of view. There is one simple law and that is that if you ignore an object completely, that is, give it no care at all, it will only persist if it is in an environment that does not attack it. We could relate this to Newton's law of motion, that a body continues in its state of rest, or of uniform motion in a straight line, except insofar as it be compelled to change that state by an external impressed force. In other words, whether in motion or at rest, it will stay that way unless something is done to it unless the environment affects the object.

So what does this mean for objects in the collection?

One example that we have to consider is the attack by the environment on a metal. Consider a shiny copper coin, for ex-ample. You know how long this lasts in the usual environment (assuming you do not spend it!). It soon loses its surface shininess. If we want to preserve the polish indefinitely, we have to take ex-treme measures. We have to put it into a vacuum, free from air that will oxidise or tarnish it. We probably ought to cushion it inside the vacuum chamber so that it cannot be abraded when shaken about. Of course, if we want to see it, to admire it, to value it, as visitors to museums do, it has to be inside a container made of glass. Now of course we have another problem because we have to look after the glass. But I suppose it is a protective shell and guards the penny. If it is destroyed, then we just make a new one with modern material. But having now our penny preserved for all time inside of this glass box. what good is it? As art students we can admire it. We can put various kinds of light on it and decide how beautifully the punch for the first impression was made. But a student who wants to know more about the object - in three hundred year's time, what did those people use to make their pennies? - he will have to analyse it, to have contact with it. One might want to measure the quality of the surface finish. This necessitates contact with the surface. So there is a penalty. Extreme care for the object in order to prolong its life to the maximum means that the object is inaccessible.

There are some objects which do justify extreme care: for example, the Declaration of Independence, which is in a box of inert gas, supervised regularly to make sure that the gas is still there and still protecting the object. In other words, we can look at it, we have it 'forever', but we cannot touch it: it is completely inaccessible. There is a parallel in nature, called Heisenberg's uncertainty principle, according to which we cannot determine both the velocity of a particle and its position simultaneously. We may know its speed, we may know its position, but not simultaneously. We find a similarity with museum objects. One cannot simultaneously preserve them and be able to handle them. We have to recognise this. As a result, we may choose for some objects a shorter life span.

Now let us think briefly about the amount of care that we have to give to increase their life span. The kind of care we have to give is to minimise the attack of the environment on the object and to pay the costs in manpower, storage conditions, control devices, and so on that are involved. The cost is expended on two things: there is control of inanimate conditions like relative humidity, temperature, light and dust, concentrations of oxidising gas. This is control that we cannot leave entirely to machines, because machines will let us down. They are made that way, they have to wear out, they are not self-renewing like humans. There has to be some human care involved even if a machine takes over a lot of one's efforts. If we have machinery to control all of these things, we have to monitor the situation to make sure that the machine is still working, because it will either break down erratically, or will have to be taken out of service regularly for preventive maintenance. Meanwhile, somebody has to replace the work of the machine. Of course, there are accidents - things breaking down before their time, the human engineer going off on vacation and taking the keys with him, and things like that. So we cannot leave this kind of control to machinery alone; there have to be supporting systems and human interest. Control of the animate part of the environment, of course is another thing, All of the living things have to be controlled in some way if we are going to minimise their effect on the objects. Let me describe some examples.

Take a cover of a book where one can see a patch which is different from the rest of the book. There is also some damage at the top. The damage at the top was done by human agency — carelessness; the patch was made by falling water. The book happened to lie underneath an airconditioning duct. One weekend the fan stopped blowing and the humidifier went on humidifying, so the water condensed in the duct, crept through joints between lengths of duct and dripped down over the book cover. Now, take the painted part of a harpsichord There is damage on one edge where the paint has flaked away. This also was caused by water leaking out of an air-conditioning system where only water vapour should have been. This particular accident should not recur because a device has been added to the duct which will detect flowing air and will turn off the humidifier if the flow ceases

Another example: Chinese arrows. with feathers. A number of feathers have come unglued. There are red stains from dvestuffs This happened because water dripped into the storage area, not this time out of air-conditioning ducts but through human inattention from a laboratory on a higher floor. There, a processing solution leaked and fell on the floor and worked its way along down through cracks in the ceiling on to these objects. It is a law of nature that water "finds its lowest level". If objects are stored underneath water, without protection, sooner or later they will be wetted

Now, a brightly colored shield made of iron and painted. At the bottom are some patches of rust and there is damage along the edge. Rust develops when relative humidity is too high. There must be control.

Next, a painting on glass. The paint is lifting from the glass. Scrape marks on the top might have been caused because the painting had been stacked in a rack and was withdrawn carelessly, allowing the already loose paint to be scraped off. Here was lack of human care compounding deteriorating condition.

Another example, a pamphlet. It is suffering from human uncare, from a student rolling up the edges of the pages with his fingers, leaving fingerprints all over it, evidence of the human part of the animate environment. Black spots — fly specks represent insect attack from the environment. This damage was preventable. Some kinds of close interest taken in objects are ill-informed and damaging

The back of a cane chair has been pushed through by human agency. It was probably being picked up carelessly and the weak, dessicated brittle cane was just pushed through. It is customary to blame such happenings on inadequate training of personnel. In fact, the inadequacy lies deeper: attention given to the object has been too shallow and brief to develop understanding of its needs.

Finally, a beautiful wooden carving from a Chinese gateway suffered from what is called "inherent vice". The panel is about two metres long and six or seven centimetres thick. It is nicely carved but extremely weak because the small elements of the pattern are joined by extremely thin cross-sections to the principal mass. Some pieces simply fell off during transportation from one part of the museum to another, from one storage space to another storage space. Very close attention to this massive object would have been needed to discover this particular weakness. After repair it was 'packed for transport' even for movement of only a few tens of metres. The final so-called law of nature that I have to mention is not very well recognised except by technical people It is called Murphy's law. This says that if it can happen, it will happen. So, if water can find its own level by dripping out of a duct, this will happen sooner or later, and we should cover objects up, even if they are inside cupboards, because if water can pass through at the hingeline, it will. Simple covering can be provided even in undeveloped countries. If the fire marshal objects to inflammable plastic, one can purchase Tedlar instead, a fluorinated substance that burns less readily

If water can drip through a ceiling from the laboratory on the floor above, it will. If the air can become humid because of faulty machinery so that documents pucker (which makes a lot of work for conservators) it will, so we should either prevent faults or be prepared for them. The storage area should contain quantities of moisture ballast, stabilising material, so that even if the air-conditioning does go out of order and if the engineer does go on vacation and forgets to leave the key, the objects will still enjoy stable conditions for at least several days. The procedures can be very simple even with furniture. One may just lay cotton sheeting or wadding or blanketing all over the surface while conditions are still good and then a piece of polyethylene overlapped and sealed to trap the air. For a first level of defence that is good enough and very helpful.

If flies can leave deposits on objects, they will. If dust can fall on objects, it will. So protect them. If the relative humidity can fall and cause something to crack as a result of humidity change, it will, so protect against it by the use of moisture ballast.

If paper *can* be creased by people handling it, then it *will* be creased, so make people wear gloves so that they cannot fingerprint the paper, and train them to use folders properly so that they do not crease or even bend brittle paper.

Training is just as important for curatorial people, professional people, as for museum technicians, if we want to preserve a collection indefinitely.

Murphy's Law has a parallel in science. The second Law of Thermodynamics states that the total amount of entropy in nature is increasing (increase in entropy is a ratio, of heat taken up isothermally and reversibily, to the temperature at which the heat is absorbed). In less technical terms, this means that for a very large number of particles distributed in space, as in a gas, their distribution tends to become more disorderly. Even more simply, 'confusion increases'.

This law applies in the inanimate world of physics. But living things organise nature for their own benefit. Man brings order into his environment. To create a water supply he can organise the collection, transport and packing together of hundreds of thousands of baskets of earth to make a dam. Then the water which must by natural law fall until it 'finds its own level', finds this at a place from which man can tap it for the generation of electricity or for the watering of crops.

Thus, a person's competence might be measured by the degree to which he

commonly diminishes surrounding confusion. The person responsible for museum storage will not oppose natural laws unless he has available immense resources of energy and manpower, commensurate with those in nature he opposes, and unless he is prepared to reduce the confusion that head-on conflict will generate. Instead, he will select among natural inclinations and foster those which further his intentions.

In order to prolong the lives of his objects he will be interested in them, will look at them repeatedly, noting any changes that occur in them and altering their environment to minimise these.

He will calculate the magnitude of the task and calculate manpower needed. Only five minutes spent observing and recording one object, applied to each of 24,000 objects, amounts to one man-year. Two inspections per annum amount to two man-years. He will obtain an adequate storage area. Based on the observation that most archaeological objects of compact shape can fit into a volume of 20x20x25 cm, it is possible to calculate that, allowing an equal volume for access (actually, this is too little) then 24,000 such objects will occupy about 820m3. For these to be within easy view and reach, a floor area no less than 410m² must be provided. Such calculations require only simple arithmetic.

He will control the environment, keeping away those living things which would convert his museum objects to their own uses as foodstuffs, doing so preferably by adjusting the environment so that these creatures avoid it. He will select for its service only those humans who take an interest in the objects, who are willing to sublimate their natural drives to touch and handle, and who are willing to replace these by better-than-usually-educated visual communication.

He will use Murphy's Law in two ways. First by organising machinery and space so that adverse conditions cannot occur and second, by adopting procedures that protect the objects against all other unforeseen hazards. Concerning machinery, I do not care to rely entirely on it because it lets us down. Even computers do this: our computer people say that they can only guarantee that the system will be working for four days out of five. This standard of performance is not good enough for a museum collection which needs protection for twenty-four hours each day and for three hundred and sixty-five and one quarter days each year. In the climatic field we can reinforce engineering (active) methods by static methods of control. Active methods are needed in difficult climates, but moisture-ballasts can be used to store humidity for 'down-times' if the volumes of air can be limited. These static methods keep on working when the machines give up. Even temperature stabilisation by static methods may become feasible in developed countries as research in the use of solar energy progresses. It is already known in less technically developed areas where buildings having thick and massive walls possess this property.

Perhaps the most important 'Lesson from Nature' is that among inanimate things confusion increases-machines break, objects fall and shatter, water corrupts and destroys. The ultimate in safety for collections can only be obtained through the perpetual and far-seeing vigilance of many humans operating at their highest levels of interest in the objects placed in their care and for their study. Machinery cannot supplant them. If machinery is to aid them, it should be of the kind that aids nature and does not supplant it by brute force. We need a class of professionals whose job-descriptions require them to care for the objects that they study. We need to be able to pay for them. To the degree that they are successful they will turn out to be among the most competent of mankind.

We regret to inform you that, for economical reasons, the English and French editions have had to be published separately. If you wish to receive the French version, kindly let us know.

Pour des raisons d'économie, et à notre grand regret, l'édition française et l'édition anglaise ont dû être imprimées séparément. Si vous désirez obtenir l'édition française veuillez nous le faire savoir.

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Cover: An 18th century view of the Ospizio of San Michele where ICCROM is now located.