M. Kaminitz



The

ETHNOGRAPHIC CONSERVATION NEWSLETTER

of

The Working Group on Ethnographic Materials

of

The ICOM Committee for Conservation

Number 4

August, 1987

## CO-ORDINATOR'S REPORT

Our programme for the 1984-87 period was an ambitious one and I am therefore very pleased to be able to report so positively on the progress that we have been able to make during this period. All of the projects planned for this period will have been completed by the end of this month, and in realizing them, we will have gone a long way towards achieving our main aims. These were to identify and reach as many people involved in ethnographic conservation as possible: to enhance opportunities for conservators and others with related interests to exchange information and to gather together and make available as comprehensive a collection of sources of literature on ethnographic conservation as possible.

The International Ethnographic Conservation Survey, has been successful in contacting a large number of people concerned with the preservation of ethnographic material, many of whom are now both using and contributing information to our publications programme. A total of 561 people from 54 different countries have been identified as being involved in ethnographic conservation. Whilst this is a substantial number, I am sure that there are still others whom I have not yet been able to contact, who are working either privately or for institutions, on the preservation of ethnographic objects, and who would like to use and contribute to the work of our Group. It is very likely that I may not have known the best paths of approach in some countries, particularly those where I am unfamiliar with the locations of ethnographic collections and how their care and curation is organised. If you know of anyone who is involved in ethnographic conservation whose name isn't on the enclosed list, please send me his or her full name and address and I will contact them.

The Working Group needs to continue to broaden its understanding of the different approaches and methods used for the preservation of ethnographic collections; we would particularly like to learn more from the countries from which so many of the major collections, now housed in international institutions originated.

Our publications programme has, I believe, outstripped our expectations. Through the creative efforts of Ann Howatt-Krahn, the Newsletter Editor, the Newsletter is now produced on a regular basis. It is attracting dialogue between a range of disciplines and providing information on the approaches and techniques used by different cultural groups in the conservation of their indigenous and imported cultural material. Articles are being contributed from an increasingly wide geographic base and published in the author's language as well as in English to encourage a wider readership. Richard Renshaw-Beauchamp has facilitated the distribution of the Newsletter through his substantial assistance with the mailing.

The Ethnographic Conservation Bibliography, the first such work ever to have been undertaken, is now complete, owing to the prodigious efforts and skilled information-tracking talents of Ruth Norton. The publication contains 800 entries, many of which were contributed by members who were able to tap some of the less readily available sources of published and unpublished information. Ruth and I would both like to thank Sue Valis, from the Australian Museum, for generously giving so much of her time, energy and patience towards sorting and entering the many references. The final edition is the culmination of many drafts, and, without Sue's help and accuracy, this project may never have been completed within the three years that we had planned.

Discussions are presently underway for the publication and distribution of the Bibliography, and I hope to be able to report on this at the ICOM Conservation Meeting in Sydney.

CONSERVATION DEPARTMENT
National Museum of the American Indian
Smithsonian Institution, Research Branch
3401 Bruckner Blvd.
Bronx NY 10461

A resume of the International Ethnographic Conservation Survey will also be available at the Sydney Meeting. This project sought to identify not only the people that are engaged in the preservation of ethnographic material, but also to identify the range and sizes of these collections, the extent or lack of facilities available for their protection and conservation, the range of work being carried out by conservators, and the nature of the problems that they are experiencing. I hope that the next and successive triennial programmes will be able to address many of these problems.

With the 1984-87 period nearly over and the new triennial period fast approaching, it's time to think about planning for our next series of activities. I wish that all of our members could participate in the Sydney Meeting, but I expect that won't be possible. For those who are able to attend, I would like to remind you that the Closed Meeting (members only) of the Working Group will take place on Sunday, September 8, from 14.00 to 17.00 at the Sydney Hilton Hotel. This is the Sunday before the main ICOM Meeting on Friday, 11 September, when papers will be presented in the area of ethnographic conservation. The purpose of this meeting will be briefly to review the 1984-87 programme and consider proposals and ideas for the next triennial period.

Also at the Closed Meeting, Professor Barrie Reynolds of James Cook University, will be presenting a paper, "The Scope of Ethnographic Materials in the Practice of Conservation", which is a development of his working paper "Towards a Definition of Ethnographic Materials", which was discussed at the interim Meeting of the Working Group in Ottawa, October '86. The Agenda for this Closed Meeting of The Working Group is enclosed with the Newsletter, together with the Programme for the formal Working Group Session to be held on Friday, September 11. During the Closed Meeting and again at the ICOM General Meeting Poster Sessions on the Tuesday and Thursday, we will be selling raffle tickets for the Stamp Collection, a pre-publication edition of the Bibliography and another mystery prize or two. This is to raise funds for our publications programme, so come armed with a few extra dollars from your friends and colleagues who may want to support our activities or just not want to miss out on the prizes. Many thanks to members who sent us stamps.

As you know, there have been many people who have contributed imagination, expertise and time to the Group's activities during the last three years. I don't think we would have got very far without all of the enthusiasm and support of many people: the Regional Co-ordinators who have made contact with other conservators in their countries and who have supplied information to them and relayed information back from them; Carolyn Rose who produced the ethnographic conservation poster for the conservation session of the 1986 ICOM General Assembly held in Buenos Aires; Benita Johnson, Lisa Mibach, Tom Stone, Sara Wolf Green, Arne Bakken, Karen Coote, Sue Gatenby and again Ann, Ruth and Carolyn, for recording, chairing and reporting on the Group's activities during the 1986 Interim Meeting held in Ottawa; the Canadian Conservation Institute which provided the space and backup support and facilities for this meeting. I would also like to record a very particular note of appreciation to Neil Dammerel of the Australian Museum, who has managed the records of the Group for the last two years. On behalf of our members I would also like to thank the Australian Museum for the consistent support that it has provided throughout the time that I, and many other members of the Conservation Division, have been working for the Group.

I look forward to seeing as many of you as possible in Sydney this September, and particularly to hearing your ideas for the future activities of our Group.

Sue Walston

SUE WALSTON, CO-ORDINATOR

* * *

## Information Exchange in Ethnographic Conservation: Editor's Newsletter Review for 1984-87

Dear Colleagues,

It is timely for us as we are about to move on from our Triennial Programme of 1984-87 to take stock of how communication in the Working Group for the Conservation of Ethnographic Materials has developed through The Newsletter.

For those of you curious about our history, The Newsletter was initiated in response to the needs expressed by the members of the Working Group; at the ICOM Copenhagen Meeting of 1984, colleagues agreed in principle to support a Newsletter as a means to seek out fellow ethnographic conservators and to exchange ideas in this area of conservation specialization.

To date, the overriding editorial policy has been to make The Newsletter as accessible and representative as possible, both in terms of cost (there is no charge) and in terms of keeping the dialogue open to reflect the various conditions, philosophies, resources and issues of our colleagues throughout the world.

Conservators of ethnographic materials recognize that this specialization in Conservation is distinguished in part by its connection with the sciences of anthropology and cultural ecology; conservators in ethnology also face diversity in objects in such areas

as materials, their origins and often aesthetic criteria.

Taking the number and distribution of newsletter subscribers as an indication of our community in this specialization, you may be satisfied to learn that by this issue, Number 4, the readership has expanded from the initial "Copenhagen 60" to 239.

This brings us to the practical side. There are substantial increases in production and distribution costs. To some degree, this was assisted by co-operation from institutions and organizations which I would like to thank once again; appreciation is extended to the Glenbow Museum, Canada for its past assistance (Issue 1.) With ICOM on our masthead on Issue 2 we also received our first annual grant of $200, thanks to chairman Christian Lahanier. On-going help in mailing comes from Regional Co-ordinator, Richard Beauchamp of the British Columbia Provincial Museum and the enthusiastic crew at the Australian Museum. I am truly grateful to Diane Giroux, Vancouver, for the layout and typing (Issues 2 and 3); and Kerry Hawkey, Beth Walding and Neil Dammerel for this special Australian issue (No. 4) in celebration of ICOM 87 in Sydney. It is also appropriate to thank Andrew Todd, partner in the practice of Howatt-Krahn Todd Conservators, for his endorsement of resources directed to the Newsletter.

There are plans to generate additional revenue for the Working Group's publications through a raffle in Sydney.

But of all the resources, the writers and correspondents are the most important - true gratitude to each and every one.

These authors have advanced generous and stimulating professional exchanges, not only in the expected areas of treatment and prevention, but also in such issues as conservation education and assistance to countries with fewer conservation advantages; material culture research; field studies; and valuable inter-disciplinary insights into our specialization.

These information exchanges are readily integrated with current aspects of the Working Group programme, such as the Bibliography and Survey. (Articles have been included in the Bibliography). To the best of our knowledge, this is the first and only periodical publication in the Conservation of ethnographic materials. This is a beginning.

From this foundation, we need to actively encourage more of a balance in international representation.

This special Australian issue is an example of one newsletter which centres on a particular area:- articles feature not only conservators, but also their colleagues in other, conservation-related activities in a given geographical area. This principle can be taken up in other countries for some issues, where a group of articles may be collected and forwarded to The Newsletter editor, making editorial and distribution services still available. This will be discussed in Sydney, but as we approach a new Programme for 1987-1990, I encourage each of you to put into action your conservation inquiries, to share news with your colleagues.

Participate through The Newsletter. When you do, you may be cheered to see the mailing list and where your colleagues are. Our communications base is building steadily to advance the care of ethnographic collections; we share the challenge of a dynamic and truly international specialization.

The Editor.
Ann Howatt-Krahn

(In Australia)

* * *

## Destinations for the Newsletter of the Working Group on the Conservation of Ethnographic Materials

| | |
|---|---|
| Australia | India |
| Austria | Ireland |
| Bangladesh | Japan |
| Belgium | Kenya |
| Canada | Malaysia |
| Cook Islands | Moscow |
| Denmark | Namibia |
| Ecuador | Nepal |
| England | Netherland Antilles |
| Fes Maroc | New Zealand |
| Fiji | Nigeria |
| France | Norway |
| Gambia | Papua New Guinea |
| Germany | Peoples Republic of China |
| Hawaii | |
| Holland | Phillipines |
| Hungary | Republic of Maldives |
| Iceland | Republic of San Marino |

Republic of Seychelles

Rome

Scotland

Singapore

Solomon Islands

South Africa

Spain

Suriname

Sweden

Switzerland

Taiwan

Tanzania

Thailand

United States of America

Vanuatu

Vatican City State

Wales

Yugoslavia

Zimbabwe

* * *

## ICOM COMMITTEE FOR CONSERVATION GUIDELINES FOR CO-ORDINATORS

### 1. WORKING GROUPS

1.1 Formation
Working Groups are established at the initiative of a Committee member or group of members who are interested in developing a programme of study and research in a specific area. The creation of the Working Group and its proposed programme are subject to approval by the Directory Board.

1.2 Dissolution
The Board shall review, at the time of each triennial meeting of the Committee, the activities carried out by each Working Group. If the aims of a given Working Group are fulfilled or if progress in fulfilling these aims is for various reasons unlikely, the Board may decide to dissolve the Working Group with the consent of the majority of members present at the meeting. Working Groups may also be dissolved at the initiative of the Co-ordinator and/or the Working Group members, or by the Board if there are no more active members in the group.

1.3 Amalgamation
Working Groups may be amalgamated in the initiative of the Co-ordinators and/or the Working Group members with the approval of the Directory Board, or by decision of the Directory Board.

### 2. CO-ORDINATORS

Co-ordinators are elected by a Working Group from among its members and approved by the Board or else appointed by the Board.

Co-ordinators are subject to a vote of confidence by their Working Group members at every triennial meeting. Should a Co-ordinator resign or not be confirmed by the Working Group, this group may propose a new Co-ordinator to the Board.

Co-ordinators may be removed from office by the Board for failure to fulfil their duties.

### 3. DUTIES OF CO-ORDINATORS

The duties of the Working Group Co-ordinators shall be:

* To submit to the Directory Board, at the time of the triennial meeting, a three-year programme including names and addresses of Working Group members;

* To present to the Directory Board by the first May of each year, a written progress report composed of:

i) A general statement of the activities of the Working Group for that period
ii) Any additions or deletions to the Group's membership
iii) Any suggestions or proposals that the Group wishes to bring to the attention of the Directory Board

* To propose to the Directory Board an Assistant Co-ordinator for that Group, to be confirmed by the Board;
* To submit one year in advance of each triennial meeting, a list of authors and titles of papers;
* To edit and approve for publication the above-mentioned papers within the time limits established by the Board;
* To provide a short written overview in the preprints on activities and any matters relevant to his/her Group;
* To present a brief introduction at the beginning of each triennial conference of his/her Group's scheduled activities of his/her Group during the triennial meeting, including: A roster of speakers, their scheduling and time allotment. Any poster sessions, discussion periods, etc; Any administrative procedures necessary for the continued functioning of the Group.

### 4. RESPONSIBILITIES OF CO-ORDINATORS

In accepting their offices, Co-ordinators of Working Groups undertake:

To devote the necessary amount of time to the administration and activities of their groups;
To find the means essential for the administrative operation of their groups;
To attend the triennial meetings of the Conservation Committee, the ICOM General Conference and meetings of Co-ordinators and the Directory Board;
To obtain from their own institutions or from sources other than the Conservation committee, the financial resources necessary to attend these meetings;

To inform the Board in advance of possible non-attendance of any of the above meetings;
To organise, where possible, meetings of their Working Groups within the time period between triennial meetings;
To attend meetings organised by specialists of related disciplines (e.g. Kother ICOM International Committees);

To disseminate information concerning their Working Groups' activities through the ICOM Conservation Committee Newsletter and other appropriate channels.

Ref: ICOM Committee for Conservation Newsletter No. 2 July 1984, pp.3-4.

* * *

Miss Reading

**DISCUSSION PAPER**

**THE SCOPE OF ETHNOGRAPHIC MATERIAL IN THE PRACTICE OF CONSERVATION**

Barrie Reynolds

Abstract

The paper is essentially a resource document intended to provide ethnographic conservators with practical advice on the definition of their area of concern and how this might be subdivided for working purposes. It discusses the objectives of material anthropology and emphasises the importance of documentation and of objects as artifactual documents. It suggests important areas where conservators and anthropologists could work more closely together for mutual benefit.

This paper is an expanded version of a working paper submitted to the Working Group on Ethnographic Materials, meeting in Ottawa in October, 1986. A summary by Sara Wolf Green of the discussion at that meeting is appended (appendix 1). The paper is intended as a resource document for the benefit of ethnographic conservators, with the overall aims of assisting them to a clearer understanding of the somewhat confused anthropological terminology and of indicating the interests anthropologists have in material culture. It also seeks to provide practical advice to the Working Group on the definition of its area of concern and on how best this might be subdivided for working purposes.

I am grateful to Miss Sue Walston for inviting me to prepare this paper and for her subsequent invaluable comments. I also very much appreciated her allowing me access to the replies to her 1988 Ethnographic Conservation Survey. These replies from 130 conservators in 19 countries have provided useful information on their understanding of

what is meant by the term ethnography, and on the range of ethnographic cultures and materials they cover and of the problems they encounter.

As a museum curator for twenty years and, for the past decade, through my responsibilities for the training of curators, I have always appreciated the importance of the relationship between the conservator and the curator. As a material anthropologist, focussing increasingly on the problem of extracting information from silent ethnographic collections, namely those that are ill-documented, I am also very much aware of the potential contribution that conservators can make to material anthropology. For various reasons this potential has as yet not been sufficiently realised.

**Ethnography:** The meaning of the term ethnography ranges from a descriptive text or monograph about a culture to being synonymous with ethnology and with the term, more broadly accepted today, anthropology, the study of human society. A precise definition is possible but would not necessarily be acceptable to all anthropologists. Since conservators are professionally concerned with the material aspects of anthropology, rather than the ideational and behavioural. I would suggest that attention be concentrated rather on these material aspects.

Over the past century, all these terms (ethnography, ethnology, anthropology) have had shifts in meaning, often considerable ones. New terms have been coined (for example, ecological anthropology, ethnoscience, ethnohistory, ethnoarchaeology) to focus on particular aspects or directions of anthropology; these too have undergone shifts in meaning over the years.

There are also variations in meaning for the same or apparently similar terms, between different countries/languages and their schools of anthropology. Thus anthropologie and technologie in France and anthropology and technology in Britain or again North America can have different meanings. Even within a country there can be different views on such basic terms as culture and material culture.

All this variation, confusing though it may seem, is understandable because anthropology, like other social sciences, is a dynamic discipline, still subject to evolution in its basic concepts. It will be possible, however, at the level required by conservators, to provide working definitions and an indication of some of the more usual variations.

**Anthropology** studies cultures regardless of time and space; all cultures, at any period of their existence and in any region of the world are valid subjects for study. However, there is usually the underlying principle that ethnography is concerned with people still living at the time their culture was studied and ethnographic collections made. That these collections might take many years before they finally arrive in a museum (perhaps via private collectors) makes no difference.

A second principle, within the museum field, is that ethnography has usually been concerned with non-industrial or pre-industrial societies. This is today subject to change. The corollary, that ethnography has been concerned primarily with non-Western societies, is also changing as these societies have achieved independence (and control of their own museums) and, within Western societies themselves, as historians, have become increasingly interested in their own recent material past. The distinction between ethnography and history has thereby become tenuous. Is a nineteenth century headdress worn at a famous battle, historical or ethnographic? Does this depend on which country and which museum possesses it? In any case, is this point of relevance to the conservator? Within a museum, or group of museums, ethnography (ethnographic collections) is in fact defined by the institution. The ethnographic conservator is expected to deal with the full range of material within that collection and, I suspect, has little opportunity to vary the definition. Normally, however, for practical reasons, museum ethnography excludes archaeological (i.e. excavated) material, focusses on hand-made or handcrafted objects and is concerned either with minority or foreign (exotic) cultures or with the folk culture of the country. Major Asian cultures (notably China, Japan, India) are sometimes the responsibility of special museum departments of their own. This is particularly so in the large international museums of the world. A similarly arbitrary distinction is often drawn between ethnographic collections in anthropology museums and ethnographic art collections in art museums and galleries. In fact, only the distinctions between archaeological (excavated) and ethnographic (collected) materials and between industrial and handcrafted products are valid for our purposes.

Ethnographic raw materials are mainly organic in nature though stone, metal, clay, ochres, minerals and soils are included. Often different materials occur in combination on the same artifact. A wide range of plant and animal products is used, including human bone, teeth and other materials. Human biological material . (namely skulls, skeletons and other specimens collected for the purposes of biological study) should not be considered as ethnogr phic. However, such material when used for cultural purposes (e.g. sacrificial heads) must be included. The essential point is that ethnography is concerned with humankind in cultural not biological terms.

Definitions
The area of interest may be identified as ethnographic material culture; this includes both artifacts (var. artifacts) and naturefacts.

**Artifacts** are objects made by humans for use. **Naturefacts** are natural objects (for example, sticks, stones) used by humans without deliberate change to their form.

**Material culture** comprises the portable objects, the fixed structures and the changes made by humans to their habitat, where the usage of such material items and changes is the product not of instinct but of learned ideas and behaviour.

For the purposes of museum conservation, the most important of these are, of course, portable objects. Some anthropologists (usually non material anthropologists) question whether material culture is part of culture or whether culture comprises only ideas and behaviour. Material culture, on this line of thinking is therefore a misnomer, being a product of culture. Similarly, some anthropologists argue that material culture includes the related belief systems, behaviour and technological processes, as well as the tangible objects themselves. Others have sometimes used the term technology as a synonym for material culture. **Technology** is best used, however, to refer to the processes of manufacture and usage of objects of material culture.

These are certain basic terms. Obviously, conservators would also be interested in more precise terminology, both for artefact types and methods of manufacture, and of their component parts. This is already developed for some areas, such as fibrework (Emery), knotting (Ashley), tapa (Kooijmann).

**Material Anthropology**
Those who study ethnographic material culture are variously called anthropologists, ethnologists or ethnographers. Each of these terms, however, applies equally to those who study non-material aspects of culture. Since material culture is a subject of study within other disciplines, including archaeology, history, human geography and psychology, the term material culturalists is also too imprecise. It is also a dreadful term. A number of us today prefer to be called material anthropologists. This exactly describes our field of interest, the anthropological study of ethnographic material culture. However, the term is very new and is still in process of broad international acceptance.

**Ethnographic materials and their subdivisions**
For the Working Group on Ethnographic Materials it should be possible to isolate certain ranges of artifacts (and materials) that were better covered by other Groups. Rock Art (24), Stone (10) and excavated materials (7) are obvious examples. In addition, however, Furniture (26), Leathercraft (18), Glass and Ceramics (20), Metals (22) and so on appear worthy of consideration.

Possibly, however, these Working Groups may be more concerned with sophisticated industrial products of essentially Western technology. Of significance to the ethnographic conservator is that the artifact, no matter of what type or material, often lacks basic documentation on its component materials and its methods of manufacture. Furthermore, it is often ephemeral in nature, never intended for an indefinitely long life. Accordingly, the Group may well have to accept that while, for given artifacts and materials, there is an overlap of interest with other Groups, there is also a continuing responsibility within the Ethnographic area. This is a problem that would need to be examined, type by type, by conservators themselves to determine the precise extent of this responsibility at ICOM Conservation level.

A logical conservation subdivision would be by component materials:

Inorganic:

(i) metals - iron, tin, copper, bronze, brass ores;
(ii) other - stone, clay, ceramics, glass, earth, salt, ochres.

Organic:
(iii) faunal - skin, bone, waxes, ivory, shell, hair, eggs, feathers, sinew, quills, insects.

(iv) floral - wood, resins, bark, leaves, roots, grasses, reeds, flowers, fruits.

Paints, pigments, glues and lacquers can be divided as appropriate between the above groups but perhaps it would be more useful to treat them separately, because of their like functions. Similarly, composite artifacts (for example, a hafted stone axe or a wooden drum with snakeskin head) may not fit comfortably into the grouping and therefore merit separate consideration.

An alternative method of subdivision is by culture and region thus:

**Africa**: Bantu, Hamitic, Bushmen.
**Oceania**: Aboriginal, Melanesian, Micronesian, Polynesian.
**Americas**: Inuit, North American Indian, Central American Indian, South American Indian etc.

and write further regional subdivisions by country, culture and climatic zone as appropriate.

The advantage of this approach is that it takes into account the regionalised nature of most anthropology collections; as well as the fact that the literature on these collections is similarly regionalised, often very different artifacts and technologies being covered within the same volume, and the common environmental and cultural background of the range of artifacts. In addition, within cultures and cultural regions, distinctive technological styles are often evident. These may be dictated by the tools available (notably metal or stone), the extent of technological knowledge (welding or not; casting, precision work) and above all the common mental approach and value systems of the people concerned, for example, in such processes as lashing things together with cord or nailing them; or in treating processing and equipment with either care or with neglect and indifference).

These two alternatives, material and cultural, both have validity. Nor are they mutually exclusive. It is as important to have conservation specialisation on Polynesian cultures as it is on tapa or barkcloth (which also occurs, of course, in other regions of the world). Again, the special study of wooden arti-

facts in central Africa and in Australia is each of importance. By such a dual overlapping system of subdivision, conservators would be able to advise and complement each other. This pattern is similar to what already occurs in material anthropology where one finds researchers specialising in given regions and cultures (Maori, Bushmen, Inuit), others in particular artifact types (costume, weapons, canoes); yet others in particular materials and technologies (tapa work, ceramic clays, basketry fibres). It would of course, be valuable to build direct links, where these did not exist already, between conservators and material anthropologists in parallel fields. Presumably the ICOM Ethnography Committee could provide useful help.
In all this it is important, however, not to lose sight of the overall objectives. Material anthropologists and museums of anthropology acquire and study objects not just for themselves but to understand better the material aspect of the culture of a people and through this their culture as a whole - their technology, their beliefs and value systems, their art, organization and economy. In other words, objects are sources of information, not examples of exotica, particularly for societies that lack written records. They are indeed artifactual documents. As such their primary value must be the information they contain.

Anthropology curators, unlike their archaeological colleagues are still coming to grips with this viewpoint. All too many have seen the preservation of the physical form of an artifact as the total objective, refusing to allow sampling for analysis. Fortunately, this attitude is now changing and curators are becoming increasingly aware of the potential of modern laboratory techniques of analysis, particularly for the identification of component materials. Sampling of woods for herbarium identification and of resins for chromatographic analysis are but two approaches. Obviously, the use of infra red and ultra violet photography and of other non-damaging techniques are especially welcome. With microscopy they can provide invaluable information on hidden features, on latent designs, on tools and methods employed in manufacture, and on usage and associations with other artifacts and materials.

Ethnographic conservation appears to be following a parallel course to that of museum anthropology. Throughout this century we have seen the dramatic changes in direction within museums, from an initial emphasis on massive acquisition programs to one on communication through exhibitions and education programs. The 1960s and 1970s saw the emergence of museum conservation as a powerful discipline, very much in response to the concern with the physical preservation of objects. In the 1980s the recognition of the importance of documentation and information content is increasing.

Conservators learn much of anthropological importance from their work with an artifact. As an anthropologist I would warmly appreciate the addition of their information, on a systematic basis, to the curatorial collection record of the artifact. Rarely, however, have I encountered this in my study of museum collections in different continents.

Conversely, conservators depend heavily on the information, particularly technological, available to them from anthropology. Sue Walston and I have, on a number of occasions over the years, discussed the frustrating inadequacy of this information. The solution she once proposed of a centre specialising in the field of technological study was an admirable one. I still have hopes that one day it will come to fruition.

ICOM Conservation and ICOM Ethnography appear the best able to address this joint problem of increasing the anthropological (particularly technological) data available to conservators, and of ensuring the systematic transfer to curatorial collections records of anthropological information gleaned in the process of conservation. To this I would add specifically, the joint development of reference collections of raw and processed materials for use in the identification and understanding (and perhaps repair) of artifacts; also the development of laboratory techniques, using conservation skills and experience, for the anthropological analysis of artifacts. We need to know far more about what an object is made of, where it comes from (both geographically and culturally speaking), how was it made and how was it used. If field data

cannot provide this information, the laboratory must.

In conclusion, I would reiterate that it is possible to provide basic working definitions of anthropological terms for the benefit of ethnographic conservators. It is also possible to suggest subdivisions and limits for the field of material to be covered. Finally, it is possible to develop effective working links between conservators and anthropologists with common interests, even though they may be in very different regions and institutions. Most important I believe they must work more closely together.

After all, their overall goals are the same in understanding the human world and helping to preserve its heritage.

References


Ashley, C.W. The Ashley Book of Knots 1944

Bowden, Bruce F. and Barrie Reynolds 'The chromatographic analysis of ethnographic resins'; Newsletter; Australian Institute of Aboriginal Studies. 1982, No. 17, pp. 41-43.

Emery, Irene The Primary Structure of Fabrics 1977

Kooijmann, S. Tapa in Polynesia 1977

Reynolds, Barrie 'Ethnology collections and their management in Australian Museums', in COMA Bulletin, 1981, No. 9, pp. 8-20.

'If anthropology museums would stop collecting.....' in Museum Studies in Material Culture (in press) Susan Pearce, Editor.

and

Margaret Stott (Eds), Material Anthropology: contemporary approaches to material culture, 1987.


Footnote

Barrie Reynolds is the Foundation Professor of Material Culture and Director of the Material Culture Unit, James Cook University, Townsville, Australia. As an anthropologist he has worked in museums in Zambia and Canada and now trains graduate researchers and curators.

Appendix 1

**Ethnographic Conservation: A Working Definition**

[Summary of ideas and comments from the Interim Meeting of the ICOM Committee for Conservation Working Group on Ethnographic Materials, October 4, 1986, compiled by Sara Wolf Green, Conservator]

1. APPROACH

Ethnographic Conservators are individuals who approach the preservation/treatment of artefacts from an anthropological perspective through concern for the preservation of any evidence of cultural context or cultural change in living and non-living cultures.

II. CONTEXT

There is no fundamental differentiation between ethnographic and folk collections. Ethnography includes materials from our own indigenous cultures as well as materials from groups without a written record, or those that were in place before the dominant culture arrived.

Ethnographic artifacts are generally collected as part of the study of a group's way of life. As such, these artifacts are in themselves documents of culture as the maker has provided little or none of the documentation regarding function and use.

These objects will include those made entirely from indigenous resources, and objects or materials from other cultures (industrial or non-industrial) which may or may not have been modified in use or function. Objects produced in industrial societies which have been collected from non-industrial societies are considered to be ethnographic artifacts when the end use of the artifact derives from a context within the non-industrial society.

III. FUNCTION

The type of objects considered to be ethnographic may be utilitarian, ceremonial or decorative, but all have a function within the culture.

* * *



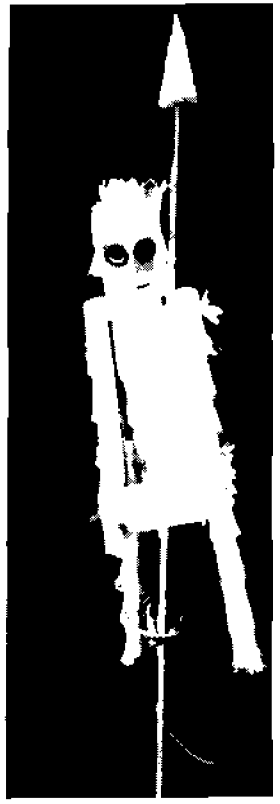
SHOLA: A PLANT MATERIAL USED IN MAKING INDIGENOUS ARTEFACTS

Shola is a perennial undershrub growing wild in marshy, water-logged areas. Its stems are stout, simple or slightly branched; leaves are odd-pinnate; flowers are axillary and rarely terminal; fruits are long stipilate lomentum. In English, shola is called sponge wood, and also 'hatplant'. During British rule in India, fashionable shola hats were made for English men and so the English named the plant as 'hatplant'. The Botanical name of shola is Aeschynomene aspara Linn. It is native to India (West Bengal and Assam) and Bangladesh. The shola plant grows in April and May. It has to be cut in December and January. Generally the height of the plant is 2 metres and the diameter of its stem is about 5 centimetres.

The stem of this plant is cut into cylindrical pieces and dried in the sun. The other layer of the stem is very thin and it can be peeled off easily leaving only the white core. This simple core of

wild plant has been utilised for indigenous art decorations.

From very early times, images of gods and godesses, beautiful coronets for the marriage ceremony and harvest dance were being made out of shola pith. Various types of toy figures, masks, flowers, festoons, garlands and wreaths are made out of the light and lustrous inner portion of this plant. Artists meticulously worked out every detail of a shola artefact in exquisite taste.



Warrior: a shola figure. Height: 26 cm.

Shola is used as a float for the fishing line and also for making rafts. Shola can be used in cylindrical pieces or as sheets. Suitable canvases for water colour paintings were being made by joining thin sheets of shola. During religious festivals, faces of gods and godesses were usually painted on this type of canvas. Religious and folk stories were also illustrated on shola canvases. Its small branches are used in bundles for stuffing the bodies of animal or bird figures. The accompanying materials for making a shola artefact are bamboo pieces, paper, jute, cotton thread and various vegetable dyes.

Shola is a very light material. Its specific gravity is lighter than cork. The bark is very thin, similar to onion scale. When dried, the bark of the shola turns grey from green. In its dried condition, shola contains very little water. Because the bark of shola has water repellent properties, it was found to be suitable as a float for fishing lines.

The principal chemical constituent of shola is cellulose; it also contains fats, waxes, lignin and other impurities in the natural state. It is white in colour and slightly acidic, its pH being 5.

Water colour is very much acceptable on shola materials. The adhesive commonly used is a starch paste made from flour obtained by grinding the seeds of Tamarindus indicas Linn, a common tree of this region. It was found to be a very suitable binding media for shola.

Shola has characteristics similar to paper. Depending upon natural and environmental conditions, shola is subject to attack from several sources. Light, heat and moisture brings photochemical and oxidative changes in this material. Dust and dirt also causes deterioration in it.

Physically, shola is not strong. It is considered as a delicate material. Care is taken in handling, transporting and storing shola artefacts.

For checking the growth of fungus in shola materials the optimum temperature should be 20-24o C and the relative humidity 55%.

Museums in Bangladesh and India have good collections of shola objects. To solve problems in restoring and conserving shola artefacts, the conservator of ethnograhic materials needs special observation, study and proper analysis of the material.

Correspondent:
S.A.M. Monawar Jahan
Keeper
Conservation Laboratory
Bangladesh National Museum
Dhaka.

* * *

## MICROSCOPIC MATERIAL CULTURE

Many variables need to be considered when designing appropriate procedures for handling and storing artefacts from ethnographic collections. A significant variable is the research value of the items in a collection, although this is a difficult variable to measure, partly because it fluctuates according to current research interests at any particular time. The condition of the artefacts, as they lie in shelves or are moved into display, also changes and it is obvious that their condition is often related to their research or exhibition value at any one time. Recent advances in use-wear and residue analysis have greatly improved the research potential of ethnographic collections generally. In this article we describe how the microscopic study of archaeological and ethnographic artefacts contributes to prehistory. Secondly, we present some implications of this study for museum conservators.

It is well known that under extraordinary conditions, such as in peat bogs or dry caves, organic material survives in archaeological deposits, whether preserved as whole bodies, fragments or as microscopic traces on artefacts. For example, Briuer (1976) examined techniques for identifying animal and plant residues on stone tools from dry cave deposits. Briuer (1976: 478) cited Locard's exchange principle which states that when 'two objects

come into contact there is always a transference of ma erial from one to the other', but preservation of these residues was thought to be unusual. Loy (1983) was the first to suggest that the survival of blood and other organic residues was much more common than anyone could have anticipated. He pioneered recognition and identification techniques and argued that preservation of blood was dependent upon archaeologically common depositional conditions such as a high proportion of clay. Tom Loy has since been exploring wider implications of blood residues for the biological sciences.

An integration of techniques for examining use-wear and residues was proposed by Fullagar (1986), whose main interest was to determine the functions of archaeological stone tools. Drawing on the classifications of use-wear analysts (e.g. Keeley 1980; Kamminga 1982), seven major classes of tool function were outlined for Australian stone tools. These were based on the nature of the material worked and included animal carcass, bone, skin, wood, non-woody plant, shell and stone. But having provided details of the use of a single stone tool, an almost instantaneous archaeological event, how can people be brought into the picture? Despite the problems of ethnographic analogy in archaeology, we believe that Australian prehistory depends enormously upon what can be learnt from living Aboriginal culture.

A major continuing, research project by Meehan (e.g. 1982, 1987 and Meehan et al. 1979) has been to investigate the technology of subsistence in Aboriginal Arnhem Land. Understanding the material culture associated with current subsistence is seen as a prerequisite for studying the archaeological remains from excavated sites in the region. Some artefacts used by Aboriginal people in northern Australia today are also found in archaeological deposits in that area, demonstrating continuity in technology through time; examples include, bivalve shells used as scapers, and pebbles used to process plant food and to soften bark fibre for string making. In other cases artefacts found in an archaeological context have counterparts in contemporary Aboriginal subsistence, but they are made from introduced material. For example, wooden spearpoints, some of which have been recovered from excavations in the Anbangbang shelter in Kakadu National Park (Jones 1985), nowadays are manufactured from metal. By observing the way in which artefacts are made, used and discarded by people today, we may be in a better position to interpret residues and use-wear found on archaeological artefacts. The generalised nature of many Aboriginal artefacts means that residues and use-wear on a single item may be the result of several different procedures: wooden digging sticks used to dig for plant foods are also used to manipulate coals in a cooking fire; and flat spear-throwers, as well as being used to launch spears, provide a base for sharpening digging sticks and crushing plants. Preliminary analysis of the archaeological material has already begun (see Jones 1985) and recent microscopic examination of selected items at the Australian Museum indicates some potential problems of interest to both Field ethnographers and conservators.

Betty Meehan and her colleagues have excavated archaeological material and collected ethnographic artefacts, many of which have been deposited in the Australian Museum. Richard Fullagar has examined microscopically over 100 of these and other items in the Australian Museum's Anthropology Division. The range of artefact materials include tooth, bone, shell, wood, metal, stone, hair, bark, resin and feathers. The main objective of this study has been to provide details of tool manufacture and use, although non-utilitarian artefacts have also been examined. Ultimately the evidence from the microscopic study will be integrated with ethnographic data to provide a basis for reconstructing how the archaeological artefacts were made and used.

In general terms, the recent research into use-wear and residues has obvious implications for handling and storing artefacts. Consequently, the Australian Museum has recently organised the repackaging of some excavated bone, stone and shell tools into individual plastic bags (Lampert and Sim 1986). Ideally, all items ought to be stored individually in plastic bags, but this is impractical for various reasons. The sheer number of items may make this impossible either in the field or in the laboratory. On the other hand, some plant and materials, which are put directly into plastic bags, will rot unless they are firstly dried or otherwise treated.

Some artefacts which were examined had paper labels attached by a string binding. Several items, such as small shell graters, had the string attached to utilised edges. These gastropod shells were used to grate yams, and starch residues from these plants had accumulated on their ulitised edges. The string seemed to have removed some residues, introduced scarring and could have imitated use-residues.

A further problem arises with contaminating residues after the artefacts have been collected. The use of cotton gloves is sometimes recommended for handling museum objects, although the cotton fibres can get caught and become attached. This is not often a great problem for the purposes of interpreting residues from use, since cotton fibres can be distinguished. But large numbers of cotton fibres present problems particularly on the used surfaces of wooden artefacts. On rough surfaced wooden spear points fragmented cotton fibres were found to mimic or obscure residues from use. We suggest that rubber

or plastic gloves are more appropriate.

Given that residues survive much more commonly than previously thought, we suggest that all artefacts in ethnographic collections, not just stone tools, have a considerably increased research potential. But it is important to document all handling procedures, and to minimise contamination. Just as archaeologists have learnt not to scrub artefacts spotlessly clean as they are excavated, conservators may have to preserve some of the microscopic traces, and perhaps tolerate dirty objects. Conservators should be aware of these developments, only because they may have to modify some of their practices, such as cleaning objects for display. Given their scientific training, it is hoped that conservators may be able to advise archaeologists and ethnographers about more appropriate procedures.

REFERENCES

Briuer, F.L. 1976 New clues to stone tool functions. American Antiquity 41(4):478-484

Fullagar, R.L.K. 1986 Use-wear and residues on stone tools: functional analysis and its application to two south-eastern Australian archaeological assemblages. Unpublished Phd thesis, La Trobe University, Melbourne

Jones, R. (ed.) 1985 Archaeological Research in Kakadu National Park, Australian National Parks and Wildlife Service, Special Publication 13, Canberra

Kamminga, J.1982 Over the Edge: Functional Analysis of Australian Stone Tools, Occasional Papers in Anthropology 11. Anthropology Museum, University of Queensland, Brisbane

Keeley, L. 1980 Experimental Determination of Stone Tool Uses. A Microwear Analysis. The University of Chicago Press, Chicago

Lampert, R. and Sim, R. 1986 Residues on artefacts: implications for handling and storage. Australian Archaeology 22:157-159

Loy, T. 1983 Prehistoric blood residues: detection on tool surfaces and identification of species of origin Science 220:1269-1271

Meehan, B., Gaffey, P. and Jones, R. 1979. Fire to steel: Aboriginal exploitation of pandanus and some wider implications. In P. Laver. (ed.)Readings in Material Culture Occasional Papers in Anthropology 9:73-96

Meehan, B. 1982 Shell Bed to Shell Midden. Australian Institute of Aboriginal Studies, Canberra

Meehan, B. 1987 The technology of subsistence in Aboriginal Arnhem Land: a preliminary report. Interim report to ARGS. Unpublished ms.

Correspondents:
Richard Fullagar - Research Associate, Anthropology Department University of Sydney, N.S.W. 2006 currently working in the Anthropology Division, Australian Museum, 6-8 College Street, Sydney N.S.W. 2000.

Betty Meehan - Scientific Officer, Division of Anthropology, Australian Museum, 6-8 College Street, Sydney N.S.W. 2000

* * *

## A Preliminary Evaluation of Acrylic Emulsions for the Adhesion of Flaking Paint on Ethnographic Objects

At the Australian Museum a primary area of investigation is the selection of resins which may be suitable for the adhesion of flaking paint, or pigment on ethnographic objects. Several studies have been undertaken here and these studies are often related to solving the problem of flaking paint, or pigment associated with individual objects. This preliminary investigation outlines the range of tests we normally carry out when a range of resins, in this case acrylic emulsions, are being evaluated for the proposed treatment of an object and when a practical quick indication of their properties is necessary in order to meet gallery deadlines. This investigation is the third study in a series which draws on information already obtained. Although in this case, a suitable adhesive was not found, it was felt that the information contained in this report may assist other conservators who are interested in the results of some preliminary investigations into the properties of acrylic emulsions.

### Acrylic Emulsion Evaluation

A short project was undertaken in May 1984 to identify the accelerated light ageing and working properties of acrylic emulsions and to determine whether one of these resins might be suitable for the treatment of flaking, unbound pigment on an ethnographic object (Aboriginal Shield, Sydney District E. 77861).

The object of the flake adhesion technique was to introduce the resin underneath the paint flake, with as little penetration into the paint film as possible, i.e. to use it as a "pressure sensitive" * adhesive rather than an impregnating agent.

*DEFINITION
Adhesive; pressure sensitive: to adhere to a surface at room temperature by briefly applied pressure alone. (1)

Resins tested were as follows: see Table 1
Acronal D.300 was included in the study because it has been found to have excellent working properties and is widely used in other parts of the world. Paraloid B-72 and Neocryl B700 were included as standards for the accelerated light ageing tests.

Properties investigated were as follows:
1. Resin application - working properties.
2. Accelerated light ageing tests - solubility
   - colour change
3. Flexibility.
4. Surface tension.

Resins included in the study were as follows:
a) Acrylic emulsions:
   Primal AC-22
   Primal AC-235
   Primal AC-6501
   Acronal D.300

The Primal acrylic emulsions were selected on the basis of recommendations made by the Technical Manager, Rhom and Haas, (Sydney, Australia) following detailed discussions related to object type and associated problems.

b) Controls for the study:
Paraloid B 72 (ethyl methacrylate copolymer) - considered to have excellent ageing properties.(4)
Neocryl B 700 (butylmethacrylate homo polymer) - considered to have poor ageing properties.(4)

EXPERIMENTAL
a) Sample preparation
Custom-made aluminium frames (external dimensions 25 x 75 mm x 1 mm) internal dimensions (20 x 60 x 1 mm) were purchased. These frames had been punched out from an aluminium sheet. The frames were secured onto standard glass microscope slides (25 x 75 mm) using Wacker RTC-M533 silicone rubber (manufactured by Wacker Chemie GmbH Munich).
Commerical stock concentrations of the 4 acrylic emulsions, B-72 (30% w/v toluene) and Neocryl B-700 (30% w/v toluene) were poured into the sample holders. In some cases several applications were necessary to fill the sample holder. 9 samples of each resin were prepared for testing with cured sample thicknesses approximating 1 mm for all resins.

b) Artificial accelerated light ageing
6 samples of each resin were used in the artificial accelerated light ageing tests. 3 of these were covered with aluminium foil. Samples were aged according to the Australian Standard, "Methods of test for Textiles, Part 4, Colourfastness Tests: AS2001.4.21" (2). British Blue Wool Standards 1 - 8 (3) were included, and the ageing continued until a change in Number 6 was noted. Conditions inside the ageing apparatus were surface temperature 32 degrees Celsius, air temperature 27 degrees Celsius, relative humidity 30 - 35%.

c) Natural ageing
The remaining 3 samples were covered with aluminium foil and kept in the laboratory as absolute controls. (Lab conditions 20 + 2 degrees Celsius, 50 + 3% RH).

EVALUATION
a) Colour change
Two methods were employed to evaluate colour change after artificial accelerated light ageing.
1. Visual appearance was determined by 2 people. A colour evaluation booth was set up using a flat white table top as a background, with Philips TL 37 as a light source.

2. Appearance was also determined instrumentally using a Minolta Chroma Meter II Reflectance (tristimulus colour analyzer). Chromaticity was measured using the XYZ colour expression system in addition to the L*A*B* system and colour deviation $\Delta E_{ab}$ using Illuminant C (6774K).

Summary of Results from Table 2: Colour change deviations between exposed and unexposed

artificial accelerated light ageing sample:

B-72: no perceivable colour change

B-7Ø: slight colour change

AC-22: colour change (moving from slightly yellow to yellow)

AC-235: colour change (red to green, yellow to slight yellow)

AC-65Ø1: slight colour change

Acronal: colour change (yellow to slight yellow).

b) Ease of removability

Procedure:

A cotton wool swab soaked in solvent (acetone or toluene) was rolled over the test surface for the period of 1 minute and the results assessed subjectively (4). Tackiness to touch was also used as a means to assess resin solubility after contact with solvent.

**Summary of Results from Table 3:**

Changes in removability after ageing.

B-72: no perceivable change. Very soluble in both solvents, before and after ageing.

B-7Ø: minor solubility in both solvents.

AC-22: no change, very soluble, more soluble in acetone.

AC-235: definite change in solubility parameter. Very soluble in both solvents before ageing to minor solubility after ageing.

AC-65Ø1: no change, minor solubility.

Acronal: no change, very soluble, more soluble in acetone.

c) Determination of working Properties

All resins were assessed by evaluating their working properties such as the ease of application and manipulation on 3 different types of experimental surfaces:

Surface 1: Wooden substrate, bound pigment, coarse particles, generally large lifting areas and cracks.

Surface 2: Wooden substrate, unbound pigment, coarse and fine particles, lifting areas associated with thick layered pigment.

Surface 3: Bark substrate, unbound pigment, fine particles.

TECHNIQUE

A small quantity of resin was applied with a fine paint brush underneath the raised flake or along the crack-line. In some cases lightly moving the partially detached flake up and down by a gentle pumping action was necessary to draw the resin underneath, although often capillary action drew the resin in. Once the area to be treated had accepted as much resin as necessary, (i.e., when the resin could not be made to flow underneath the partially detached flake anymore) gentle pressure was applied to the flake surface with a dampened cotton wool pad (distilled water was used for the acrylic emulsions, toluene or p-xylene for B-72). Slight pressure from the dampened cotton wool pad helped in absorbing excess resin and at the same time helped to re-attach and align the flake onto its original position. Pre-wetting of the area underneath the flake was sometimes necessary to reduce the surface tension and facilitate the acceptance of the resin. In the study, acetone was used as the pre-wetting agent.

EVALUATION

Primal AC-65Ø1

Dilution of the commercial stock concentration was necessary to enable the resin to be effectively manipulated and to flow underneath the raised flake. For experimental surfaces 1 + 2, pre-wetting dramatically increased the effectiveness of the application. On experimental surface 3, characterized by a very fine-particled pigment type and no apparent binding media, AC-65Ø1 did not perform well. It required a considerable amount of manipulation before an effective result could be obtained. Problems seemed to be associated with obtaining a satisfactory flow underneath the flake. Pre-wetting helped to relieve this problem to some extent.

Primal AC-22

Dilution was required for AC-22 to help reduce the surface tension and allow the resin to flow underneath the flake. AC-22 generally performed well on experimental samples 1 + 2 and 3. Pre-wetting aided in the flow underneath the flake but it was not necessary for all applications.

Primal AC-235

Irrespective of dilution of pre-wetting AC-235 did not perform well on experimental samples 1 + 2 because it was difficult to manipulate, although it gave acceptible results for experimental sample 3 (compared to AC-22).

Paraloid B-72

B-72 spread quickly through the pigment layer rather than being confined to the underside layer of the flake. Clean-up with the solvent pad was uncontrollable leading often to a "sticky mess" primarily due to the flow of the resin. If too much resin was applied, a gloss or/and darkening of the treated area tended to occur.

SUMMARY

Taking into account the working properties of the resin and accelerated light ageing results, AC-235 was discounted because of its poor ageing characteristics and working properties. AC-22 performed well but also had a significant colour change after ageing. AC-6501 performed reasonably well and had a slight colour change after ageing.

Since AC-22 performed well but AC-6501 had the best "overall" results, two further investigations were carried out in an attempt to understand the working property differences between AC-22 and AC-6501.

Differences in surface tension and flexibility were evaluated.

Flexibility

Sample preparation:

a) Stock concentrations of AC-22 and AC-6501 were thickly coated onto a strip (20mm x 100mm) of undyed cotton fabric and also onto lightweight acid free cardboard. After curing the samples were evaluated. Evaluation involved flexing each strip and observing the stressed area under a binocular microscope.

b) Stock concentrations of each resin were thickly coated on to a piece of silicone release film and allowed to cure.

RESULTS

| Resin | Test Substrate | Evaluation |
|---|---|---|
| AC-22 | cotton | flexible, good rebound |
| | cardboard | flexible, good rebound |
| | silicone release film | flexible, good rebound |
| AC-6501 | cotton | inflexible, stiff, cracking and splitting |
| | cardboard | inflexible, stiff, cracking and splitting in area of stress |
| | silicone release film | stiff and inflexible |

Surface Tension

Sample preparation:

A drop of each resin was placed onto a very clean glass microscope slide and the angle of wetting evaluated. (5)

Result

AC-22 in its stock concentration, formed a low drop on the surface indicating a small angle of wetting. AC-6501, in its stock concentration, remained as a rounded drop indicating a large angle of wetting.

CONCLUSION

None of the Primals tested exhibited all of the properties needed to enable any of them to be used with confidence for the long term stabilization of partially detached flakes.

AC-6501 appeared to have the best artificial accelerated light ageing properties, although its flow properties and lack of flexibility eliminated it for flake adhesion. Although AC-6501 had the lowest viscosity value; (refer to Table 1), this was not as significant as the surface tension in obtaining a reasonable flow for application purposes. Different dilutions of AC-6501 were investigated in an attempt to reduce the surface tension problem.

AC-22 proved to have the most satisfactory working properties, but the large colour change after artificial accelerated light ageing, indicated that the resin was unstable and could not be considered for conservation use. Table 1 showed differences also in the minimum film-forming temperature (important for the initial film formation) and emulsifying system (non-ionic or anionic) which may also influence the surface tension of the resin.

Although Neocryl B-700, used as a "bad" standard, was expected to crosslink and discolour on artificial accelerated light ageing, it did not. This was due to the low amount of ultra-violet light emitted by the ageing lamp. (Ageing apparatus light source spectrum compares favourably to the Philip TL 37).

Table 1. Some typical properites of acrylic emulsions

| Type | Manufacturer | Composition | Percentage weight by solids stock concentration | pH of stock | MFT*1 (°C) | T300*2 (°C) | Tukon*3 Hardness | Emulsifying agent | Specific gravity | Viscosity (cps) |
|---|---|---|---|---|---|---|---|---|---|---|
| Primal (Rhoplex) AC22 | Rhom and Haas | n-butyl methacrylate methylacrylate | 44.5±0.5 | 9.5±0.5 | 7-9 | +15 | 1.0 | Non-ionic | 1.06 | 1200 |
| Primal (Rhoplex) AC235 | " | " | 46.5±0.5 | 9.5±0.5 | 7-9 | +18 | 1.0 | Non-ionic | 1.057 | 800 |
| Primal (Rhoplex) AC6501 | " | " | 50.0±0.5 | 9.5±0.5 | 18-20 | - | 1.0-1.5 | Anionic | 1.08 | 400 |
| Acronal D300 | BASF | polyvinyl acetate, polyvinyl chloride, n-butylacrylate | 50.0±1.0 | 4.5-6 | 17 | - | - | Anionic | - | 800-1300 |

Figures taken from technical data information provided by the manufacturer.

*1 Minimum film forming temperature is related to surface tension and particularly film stiffness. It is the temperature below which particles will not flow together and form a satisfactory film.

*2 T300°C is the temperature at which the torisonal modulus of an air dried film is 300 $k/cm^2$, a relative parameter of film stiffness.

*3 Tukon hardness test.

Acronal, a terpolymer made up of acrylic ester, polyvinyl acetate and polyvinyl chloride and used widely in Europe for similar applicatons, was also evaluated. It performed well in the resin application evaluations. It demonstrated good working properties but a poor response to artificial accelerated light ageing. (Acronal even discoloured after being exposed to standard controlled conservation laboratory conditions). Under accelerated ageing conditions, it appeared to bleach. This bleaching effect was thought to occur because of the chloride component; $Cl_2$ or HCl may be formed from the vinyl chloride component. Some chloride-based resins are known to be highly reactive to light as well as being corrosive. In addition, Acronal has a relatively low Glass Transition Temperature (26°C) which is considered unsuitable for use in climates where ambient temperatures

regularly exceed this value. Temperature in uncontrolled museum areas in Sydney (Australia) often reach this level. The resin when it softens, traps particulate matter which is extremely difficult to remove.
Due to these results, treatment of the object for which the evaluation of acrylic emulsions was being undertaken, was postponed until a more satisfactory resin could be found.

NOTE:
Further development of resin testing and evaluation techniques has been carried outby the authors and other conservation staff at the Australian Museum since this project was undertaken. A progress report will be presented at the 8th Triennial Meeting of the Conservation Committee in Sydney, September, 1987.

REFERENCES


1. Australian Standard 1349 - 1974. "Glossary of terms used in the Adhesive Industry".

2. Australian Standard 2001.4.21 1979. "Methods of tests for Textiles. Part 4. Colourfastness tests. Determination of colourfastness to light source. (Mercury vapour tungsten filament, internally phosphor-coated lamp)".

3. British Standard 1006:1978 BOIC LFS1 Reference Standards 1 to 8.

4. FELLER, R.L. (1975) "Studies on the Photochemical Stability of Thermoplastic Resins".

ICOM Committee for Conservation Reprints, 4th Triennial Meeting. Venice, 75.22.4: 1-11.

5. MASSCHELEIN - KLEINER , L. (1985) Ancient Binding Media, Varnishes and Adhesives. (English translation of Liants, vernis et adhesifs anciens, 1978). ICCROM Technical Note series. ICCROM. Rome. Page 3.





Correspondents:

Sue Walston, Head
Materials Conservation
Division,
Australian Museum
6-8 College Street
SYDNEY NSW 2000
AUSTRALIA

Sue Gatenby, Conservator
Materials Conservation
Division,
Australian Museum
Address as above.


* * *

## The Use of Norland Optical Adhesives NOA61 and NOA63 in the Repair and Restoration of Fragmented Glass Beads on Ethnographic Objects

### 1 Introduction

Many ethnographic objects are decorated with glass beads. This decoration is vulnerable to both physical and chemical damage over a period of years. Superficially the effects can be the same in that the most obvious symptoms are cracked and broken beads. In the case of chemical deterioration (1), there will be other symptoms such as sweating or a crusty deposit on the surface of the glass (alkaline solution or deposit) relating to the chemical composition of the glass and its reaction with its storage and environmental conditions, which may prove unsuitable. Such problems will have to be identified and treated as appropriate, but this is not within the scope of this Paper.

Purely physical deterioration is usually the result of stress from mishandling and bad storage, but where the glass remains chemically stable, the degree of damage will differ. Beads may be broken if handled incorrectly, or scratched and cracked through constant movement of opening drawers containing the beadwork decoration, where the beads are unsupported by additional cushioning material such as acid-free polypropylene supports.

Since beads are often still attached to their organic substrates, an organically inert adhesive which can be bonded in situ, is required. An additional advantage when bonding such tiny fragments with the aid of a binocular microscope, is that bonding should not be immediate and should allow for slight realignments without the application of a solvent which could

be deleterious to the organic substrate. It must also retain its colour, clarity and reversibility in the long term if used to bond colourless beads, and mix well with colour paste additives if colour matching is required.

Norland optical adhesives, NOA61 and NOA63, were found suitable for this purpose. These are epoxy methacrylate adhesives that bond under ultra voilet light and can be successfully used providing the organic substrate is screened from the damaging light source. Black paper was used to screen the substrate from the damaging rays which will cause the organic fibres to fade and become embrittled with age.

These adhesives have certain advantages over alternative adhesives.

1. They are one-part systems that contain no solvents.

2. They are clear, colourless liquid photopolymers which are suitable for application by syringe and will fast cure when exposed to ultra-voilet light.

3. They may be applied direct to the prepared break edges of a cracked glass bead in situ.

4. A short pre-cure with ultra-voilet light of sufficient duration to set the bond allows it to be moved without disturbing alignment.

5. The cost of UK 19.50 per 1 oz bottle (as at February 1987) is reasonable in view of its efficiency and lack of waste.

The Norland optical adhesives have proved successful in the repair and restoration of cracked and broken glass beads which are chemically stable. They allow for repairs in situ, for realignment of the break edges during repair and after repair, they exhibit excellent optical properties which are retained in the long term (3).

References

1. Loughead, S., and Shaw, J., "The Deterioration of Glass Beads on Ethnographic Objects", Bead Study Trust Newsletter No. 7 (1986)

2. Robson, M.A., "Clear Colourless Adhesives for Glass - Interim Report", Conservation News No 30 (1986) p.14-16.

3. Robson, M.A., "Glass Adhesive Investigation 1983-86. Final Report and Assessment". Unpublished Paper, shown Jubilee Conservation Conference (1937-1987), London (1987).

## MATERIALS AND SUPPLIERS

Norland Optical Adhesives NOA61 and NOA63, Industrial Science Ltd. 205A Welsbach House, Broomhill Road., London SW18 4JQ.UK.

Correspondent:
Maureen A. Robson
Conservator - Antiquities
29 Park Avenue,
HOCKLEY
Birmingham B18 5ND
England

* * *

## THE DEVELOPMENT OF A TREATMENT TO RE-SECURE MATS OF INSECT-DAMAGED FUR

This is an abstract of a paper produced in 1985 as part of the assessment for a degree of:

Bachelor of Applied Science in the Conservation of Cultural Materials at the Canberra College of Advanced Education, Australia under the supervision of Ms. Ruth E. Norton.

The aim of the project was to develop a treatment method to secure fur detached from objects by insect attack. The insects consume the first 2 to 3 millimetres of the fur at skin level leaving clumps or mats of fur completely or partially detached from the underlying skin. It was considered necessary for all the root ends of a detached mat of hair to be secured so as to retain the appearance and integrity of the fur.

Experimentation was done to identify suitable adhesives for use with fur. Six adhesives were identified which possessed the correct viscosity, strength (wet and dry) and drying properties. It was necessary for the hairs to be held without the adhesive being visible or causing hairs to become matted together.

A treatment method was devised to isolate the adhesive from the skin of the object. The detached mat of fur was held between the fingers and adhered to a medium-weight Japanese tissue. The dry fur/adhesive/paper composite could then be laid onto the object in the original location of the fur.
The method developed appears to be a suitable solution to a problem which has been very little researched in the conservation field. Experimentation was qualitative and further quantitative data and aging tests would be required before methods and materials can be recommended for use.

A full article on this subject will be submitted to the ICCM [Institute for the Conservation of Cultural Materials Inc. (Australia)] Bulletin for publication in late 1988; in the meanwhile a copy of the thesis is available on request from Canberra College of Advanced Education.

Ref.: "Student Projects" in this newsletter.

Correspondent: Jennifer Dickens,
c/o Canberra College of Advanced Education
PO Box 1,
Belconnen A.C.T. 2617
AUSTRALIA.

* * *

**Student Projects in the Conservation of Ethnographic Objects:**

**Conservation of Cultural Materials, Canberra College of Advanced Education**

1. The Development of a Treatment to Re-secure Mats of Insect-Damaged Fur, by Jennifer Dickens, 1985.

2. The Mending of Feather Vanes, by Gina Drummond, 1986.

3. Analysis and Documentation of the Effects in De-ionized Water in Oxidation and Reduction-fired Terra Cotta Samples, by Therese Mulford, 1982.

4. The Condition and Treatment Record for a Polychromed Wooden Inner Coffin Lid from Egypt, 22nd Dynasty, by Kerry Head, 1984.

5. The Suitability of Threads for use in the Conservation of Baskerry, Sarah Slade, 1985.

6. Restoration of the Flexibility of Degraded Monocot Leaves, Beata Tworek, 1985.

7. The Preparation and Reactivation of Polymer Films and Reinforced Polymer Films for the Repair of Plant Fibre Material, Philippa M. Hinman, 1983

To order copies of these papers, enquiries can be directed to the Conservation Division, above at P.O. Box 1, Belconnen A.C.T. 2617, Australia. The papers range from 50-100 pages at a cost of approximately $0.05 per page.

* * *

## STORAGE OF THE ETHNOGRAPHIC COLLECTION AT THE BRITISH COLUMBIA PROVINCIAL MUSEUM

The Ethnology Collection consists of over 11,000 artefacts from the indigenous cultures of the province. Most of the collection is stored at the Museum complex except for the large over-sized pieces such as totem pole sections and canoes. The storage area in the curatorial building is climate controlled at a temperature of 20 C with relative humidity averaging 55%. There is a recording thermohygrograph in each of the two storage rooms. Fluorescent lights are fitted with ultra-voilet absorbing sleeves and where windows are present, the venetian blinds are permanently drawn. The lights are on only when someone is actually present in the room to remove or return an object. The storage area is not used for doing curatorial research. When staff, students or visiting scholars are working with the collection a technician will bring the artefacts to a designated area set aside for such purposes.

Presently we have an insect pest management plan in place and a technician checks the window ledges and associated ventilation ducts twice a week for the presence of insects, especially clothes moths and carpet beetles. If any artefact is found to be infected the artefact is put in a clear polyethylene bag, the air is withdrawn and the contents placed in a deep freezer at -20 C for 48 hours.

One of the storage areas is a locked windowless room which contains 40 cabinets (158x71x61cm.) each fitted with up to 13 drawers depending on the size of the contents. The cabinets are made of sealed plywood. The drawers are lined with foam and acid-free tissue. All cabinet doors are kept locked and are labelled with the culture group and the general contents of each drawer. A variety of mounts and containers are used for the artefacts inside the drawers. Round bottomed items are enclosed on an acid-free card "ring" to prevent them from rolling around when the drawers are opened and closed. Ethafoam (1) is often used in wedges to keep objects separated. Some pieces are wrapped in Air-Cap (2) sheeting and other pieces are put into Fome-cor (3) boxes padded with Ethafoam. Moccasins are stuffed with acid-free tissue and Mylar (4) or card is used to support the shape of the heel. Dried food, pigment bags, fish skin artefacts and other brittle, flakey or powdery items are put into clear polyethylene bags. Drawers containing silver, gold, or copper jewellery are clearly marked with a reminder to use cotton gloves when handling such objects and a pair of gloves is provided in those drawers. Silver artefacts with simple sulphide tarnish are not cleaned unless going on display. A large collection of carved goat horn spoons are held in place by a long strip of acid-free card folded over lengthwise with slots cut for the handle of each spoon.

The other storage area in the curatorial building contains larger items: masks, baskets, prints, clothing and ceremonial regalia, paddles, arrows, mats, etc. Ceremonial blankets, tunics and robes, dance aprons and cedar bark capes are stored flat in large shallow solid wood drawers (231x153x4cm) lined with Ethafoam. Plain textiles without applique are rolled on cylinders, interleaved with acid-free tissue wrapped in polyethylene and hung by an inserted rod from a frame. Cedar bark mats are stored on flat sliding wooden trays (240x123 cm) spaced 6 cm apart. Framed silkscreen prints by native artists are filed in metal print drawers. Each is mounted onto an acid-free window mat with Mylar interleaving.

Canoe paddles are held between two angled wooden bars about 10 cm apart with Ethafoam padding on the inside edge. One of the bars is attached to the wall. The paddle is inserted, handle downward and is wedged between the two bars just short of its widest point. (Fig. 1).

Oversize masks used in the winter dances are mounted onto their own individual carrying tray. Each mask has a mount which is form fitted to the interior of the head and this is screwed onto a hinged metal stand which is screwed onto the carrying tray. The lower beaks of some of the bird masks are supported from below to take the stress off the leather hinges in the jaw. (Fig. 2).

The rest of the collection is stored in Lundia (5) sliding shelf units. All the shelves are lined with Ethafoam. Individual mounts and supports are provided when necessary (e.g. baskets with convex bottoms, collapsed baskets, basketry rain hats). Very fragile and/or brittle artefacts have an individual carrying tray in order to minimize handling.

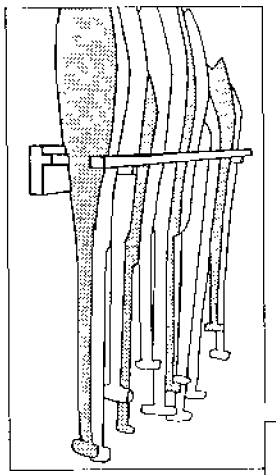
1. Ethafoam (TM) : a low density closed cell expanded polyethylene foam manufactured by Dow Chemical Company.

2. Air-cap (TM) : two layers of polyethylene film with rows of cells containing trapped air.

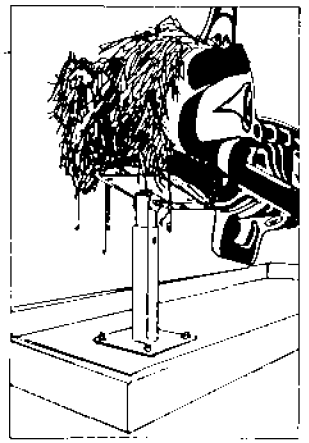
3. Fome-cor (TM) : foamed polystyrene sandwiched between a clay impregnated paper manufactured by Monsanto Chemicals and available in most art supply stores.

4. Mylar (TM) : clear polyester sheeting manufactured by DuPoint Chemical Company.

5. Lundia (TM) shelving : wooden units, sliding on tracks; adjustable shelves.



(Fig. 1).



(Fig. 2).

Correspondent:
David Hillman
Conservator,
British Columbia Provincial Museum,
Victoria, B.C. Canada.

CASE STUDIES: SUPPORT SYSTEMS FOR FRAGILE ETHNOGRAPHIC OBJECTS

During preparations for the relocation of the Australian Museum's collections to new storage facilities, many objects were identified as being extremely fragile, and required the construction of special support systems to enable the objects to be moved safely. These support systems were also to act as long-term storage systems for the objects on relocation to the new storage areas.

Material from Malakula Island, Vanuatu (New Hebrides) was found to be the most fragile in the collection. The solution to the support problems of two groups of these fragile objects is given below.

1. Support System for Puppets (Figure 1)

Method of Manufacture of Puppets:

The "puppets" or "heads-on-sticks" are constructed by first wrapping a leaf bundle around the top of a stick, and then applying cobweb over the top. A vegetable fibre and/or mud mixture is modelled over the surface of the bundle, and pig tusks are also added. The face is then painted (with loosely-bound and friable pigment).

Condition:

The puppets had previously been stored resting on the back or side of the head which had caused the area to become flattened. Many of the heads had become loose where they were attached, and were prone to turning around suddenly when picked up. Because of this, the object could only be moved by holding onto the stick and head. The method of handling was awkward and resulted in loss of the pigment and disruption of the cobweb.

Purpose of Support System:

The aim of the support system was to enable the object to be moved without having to handle the fragile areas, and without the head swivelling around the stick.

It was desirable that the object not rest on the back of its head in order to prevent further flattening of the leaf bundle. A horizontal support system was necessary, as the puppets could not be stored in

an upright position (as when displayed) without the head beginning to slide down their sticks.

Each puppet was measured to determine its greatest width and length and 2 to 3 centimetres was added to these dimensions to establish the dimensions of the base board; in this way, the baseboard, by which the object would be handled, would be large enough to provide protection for the object.

An acid-free, double corrugated board (Archivart Multiuse, Conservation Materials Ltd) was used for the baseboard and cut to size. Two blocks of polyethylene closed cell foam (1) were cut using a breadknife with a serrated edge, and they were glued to the baseboard using Staybind (tm) 202N (ethylene vinyl acetate copolymer, internally plasticized, alkaline-buffered, International Adhesives and Resins Pty Ltd).

Prior to placing each puppet into the support system, a piece of 2 mm thick polyethylene foam sheet (Tapex Pty Ltd) was wrapped around the stick and securely tied with cotton tape. This was done to prevent the cut surface of the foam from abrading the object. Where a head was found to be loose on the stick, additional support to prevent it from turning was provided by gluing shaped restraining block or chocks to the baseboard on either side of the head. The chocks were cut from the foam and shaped with the breadknife to the same profile as each head. Strips of polyethylene foam sheet were applied over and around the rough edges of the chock. Using 3M's Jet Melt Bonding System No. 3764 (unplasticized ethylene vinyl-acetate resin, paraffinic hydrocarbon wax, and a hydrocarbon resin blended with polyethylene).

The puppets were then placed into their supports. They can now be examined and moved about safely by handling only the baseboard.

2. Support System for Dance Headdresses

A group of headdresses of varying condition were also fitted to a special support system. (fig. 2 and 3).

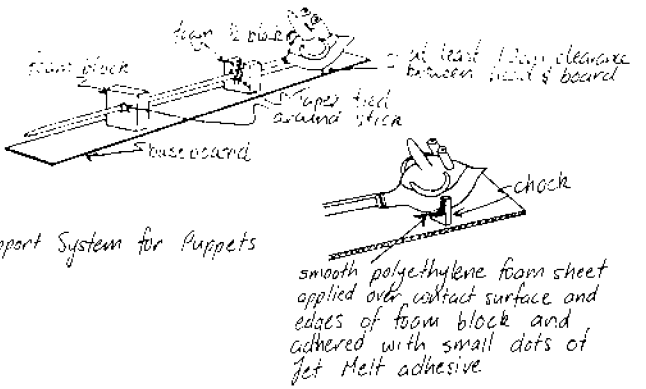



Figure 1 Support System for Puppets

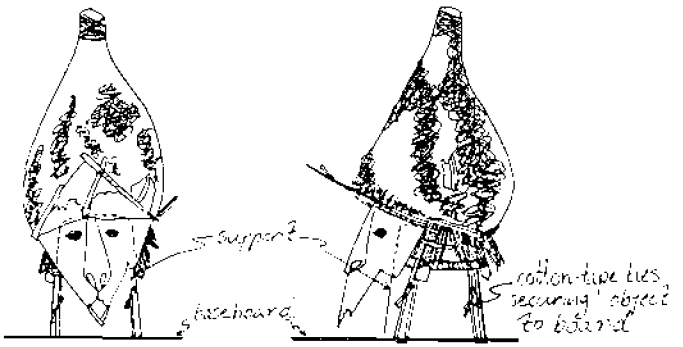



Figure 2. Support System for Dance Headdresses

Method of Manufacture of Headdresses

The headdresses are made by building an internal conical frame from a material resembling cane, to which large leaves had been loosely bound around with a plant fibre. Cobweb has been applied over the surface of the leaves, and a curly plant filament applied over the top of the cobweb, which holds the filaments to the deaddress. The frame extends down from the head of the object, and sits over the wearer's head and shoulders. Plant fibre tassels are attached and hang beneath the face of the headdress.

Condition

These objects which are unable to be stood upright on their frames had previously been laid on their sides. The plant material had become flattened, and had also begun to fall away from the object.

Support Systems:

A baseboard was cut to the width and length of each headdress, some additional allowance being made to ensure that there was enough board to handle the object safely. Where the dancer's head would fit into the frame, a support was cut from polyethylene foam and shaped to fit inside. The top edges of the support were bevelled to allow easy insertion of the support, and then polyester fibre wadding (Dacron ) was hand-sewn around the foam. To prevent the foam and polyester from snagging on the plant material, a piece of polyethylene sheeting was wrapped around this internal support and tacked with sewing stitches. The support was attached to the baseboard by gluing, and the polyester wadding and polyethylene sheeting were secured to the board by sewing.

When the glue was dry, the headdress was carefully placed over the support, and the fragile plant fibre tassels inside the frame were carefully arranged to prevent further damage. (fig.2)

Those headdresses which had a sound frame were secured to the baseboard by inserting cotton-tape ties through the board and tying them around exposed areas of the frame where plant material had already been lost. The ties were gently tensioned when tied to prevent the headdress from being tipped over.

Three of the headdresses could not be secured in this way as their original, internal frames were unsound. A lightweight, square, three-dimensional wooden frame was attached to the baseboard to surround the object mounted on the support. (Fig. 3). A second piece of board was cut to fit into the wooden frame, to correspond with the upper part of the headdress, and a circle was cut out in the middle of this board. To prevent abrasion to the headdress, a piece of polyethylene foam sheet was sewn around the edges of the cut-out hole. The board was then placed over the object and the point of the head inserted through the hole in the board.

The board was held in place from underneath by gluing small supporting wooden blocks to the frame of the support system.

The baseboard was attached to the bottom of the frame using a pressure sensitive hook and loop fastening system (Velcro USA Inc).
The headdresses are now standing upright, are soundly supported, and can be easily and safely moved.

Instruction have been provided and attached to the support systems for the safe removal and correct handling of the objects.

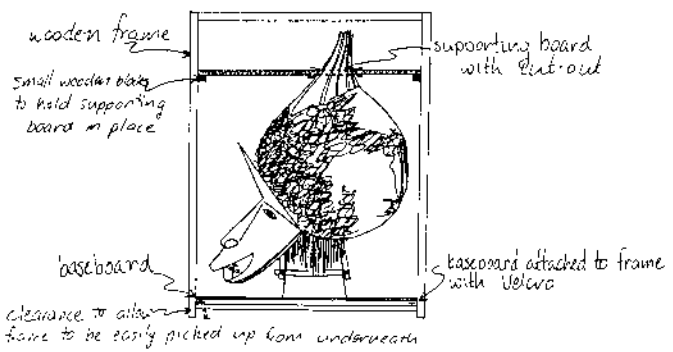



Figure 3 Support System for Unsound Dance Headdresses

1. Our source in Australia for the foam block was Skellerup Leisure Products Pty Ltd and the product is known as Pack Foam.

   In other countries, polyethylene closed cell foam, is available as Ethafoam, (tm), and is manufactured by Dow Chemicals Ltd.

Correspondent:

Gina Drummond
Materials Conservation
Division
The Australian Museum
6 - 8 College Street
SYDNEY NSW 2000

* * *

The

ETHNOGRAPHIC CONSERVATION

NEWSLETTER
of
The Working Group

on Ethnographic Materials
of
The ICOM Committee

for Conservation

is available free of charge to conservators, scientists, curators, and others with a professional interest in the care and research of ethnological collections.

The next issue is planned for February, 1988; for this issue the deadline for articles is January 30, 1988. ARTICLES ARE WELCOME AT ALL TIMES! Back issues are available on request, and will be included in the regular mail-out of subsequent issues.

Authors are asked to submit articles in English. As an option one is also welcome to submit another copy of the article in the language of his or her country of origin in order to share this work with colleagues at home. We prefer that articles, notes, and letters for publishing be typed and double-spaced.

PLEASE PROVIDE CHEMICAL COMPOSITION IN ADDITION TO BRAND NAMES OF CONSERVATION MATERIALS, SINCE COMMON NAMES OR TRADEMARKS VARY INTERNATIONALLY.

* * *

DISCLAIMER:

The Newsletter provides a forum for ideas, but this does not imply an endorsement for any treatment, products or procedure; it cannot, therefore, be responsible for the recommendation or application of same. This same principle of neutrality applies to individuals and institutions; the Newsletter is not a judge of ethics in regard to either of the aforementioned or of their articles published herein.



INQUIRIES OR SUBMISSIONS FOR NEWSLETTER

*** Please forward inquiries regarding the Newsletter, as
*** well as articles, to:

*** Ann Howatt-Krahn
Assistant Co-ordinator and
*** Editor
ICOM - CC Working Group on
*** Ethnographic Materials
c/o Howatt-Krahn Todd
*** Conservators Ltd.,
123 West 14th Avenue - Suite C
*** VANCOUVER, BRITISH COLUMBIA
C A N A D A
*** V5Y 1W8

*** For information regarding our Working Group, please contact
*** Co-ordinator, Sue Walston,
ICOM-CC Working Group on
*** Ethnographic Materials
c/o Materials Conservation
*** Division
The Australian Museum
*** 6-8 College Street,
Sydney N.S.W. 2000
*** AUSTRALIA

*** For information regarding ICOM (The International Council of
*** Museums) and the ICOM Committee for Conservation,
*** please contact:

*** Maison de l'Unesco
1 rue Miollis
75732 Paris Cedex 15
FRANCE