SOCIETY FOR THE PRESERVATION OF NATURAL HISTORY COLLECTIONS

SEVENTH ANNUAL MEETING, JUNE 2-6, 1992

UNIVERSITY OF NEBRASKA STATE MUSEUM, LINCOLN, NEBRASKA

SOCIETY FOR THE PRESERVATION OF NATURAL HISTORY COLLECTIONS

PROGRAM AND ABSTRACTS

SEVENTH ANNUAL MEETING
UNIVERSITY OF NEBRASKA STATE MUSEUM
LINCOLN, NEBRASKA
JUNE 2 - 6, 1992

ACKNOWLEDGEMENTS

SPNHC-92 LOCAL COMMITTEE: Charles Messenger (Chairperson), Bruce Bailey, Gregory Brown, George Corner, Paul Erickson, Hugh Genoways, Peggy Hunt, Thomas Labedz, Deborah Meier, Karen Messenger, Ellen Stepleton, Skip Sterner.

SPNHC-92 PROGRAM COMMITTEE: Gregory Brown (Chairperson); Lynn Barkley (Pest Management Workshop); Paula Sumpter (Computer Workshop); Kathryn Makos, Elizabeth Dietrich, and Frank Howie (Hazard Assessment Workshop); Karen Messenger and Peggy Hunt (Discovery Center Workshop); Hugh Genoways (Collection Facilities Grants Workshop); Gerald Fitzgerald, Steve Williams, Rob Waller, and Grant Hughes (Technical Sessions).

TECHNICAL SUPPORT: Gail Littrell (Text Preparation); Mark Marcuson and Brett Ratcliffe (Cover Photo).

UNSM DIRECTOR, SUPERINTENDENTS, CURATORS:

Director:	Hugh Genoways
Ashfall Fossil Beds:	Rick Otto
Trailside Museum:	Dave Nixon
Anthropology:	James Gunnerson, Thomas Myers
Botany:	Margaret Bolick
Entomology:	Brett Ratcliffe
Parasitology:	Mary Lou Pritchard
Planetarium:	Jack Dunn
Public Programs:	Judy Diamond
Vertebrate Paleontology:	Robert Hunt, Michael Voorhies
Zoology:	Patricia Freeman

SPONSORS AND COMMERCIAL PARTICIPANTS

DELTA DESIGNS LTD. (representative: Bruce Danielson)
2800 NE Center Ave., P.O. Box 1733
Topeka, KS 66601

UNIVERSITY PRODUCTS, INC. (representative: Christine S. Allen)
517 Main Street, P.O. Box 101
Holyoke, MA 01041-0101

R. CUEVAS COMPANY (representative: Rudy Cuevas)
1721 NW 59th Terrace
Topeka, KS 66618-1803

OAK TREE SOFTWARE SPECIALISTS (representative: Helen Brown)
498 Palm Springs Drive, Suite 100
Altamonte Springs, FL 32701

BIOQUIP PRODUCTS (representative: Richard Fall)
17803 LaSalle Ave.
Gardena, CA 90248

STEEL FIXTURE MANUFACTURING (representative: Leland D. Allen)
612 SE 7th Street; P.O. Box 917
Topeka, KS 66601-0917

NEBRASKA BOOKSTORE (general manager: Jerry Mullinex)
1300 Q Street
Lincoln, NE 68508

PROGRAM SUMMARY

MONDAY, JUNE 1	1:00 pm - 4:30 pm	Registration at Morrill Hall
TUESDAY, JUNE 2	8:30 am - 4:30 pm	Registration at Morrill Hall
	8:30 am - 4:30 pm	Poster set-up, Morrill Hall
	9:00 am - 11:30 pm	Meetings of Committees and Council, Morrill Hall
	1:00 pm - 5:00 pm	Council meeting, Morrill Hall
	7:00 pm - 9:30 pm	Icebreaker, Morrill Hall
WEDNESDAY, JUNE 3	8:30 am - 4:30 pm	Registration at Morrill Hall
	8:30 am - 10:00 am	Poster set-up, Morrill Hall
	8:45 am - 12:00 pm	Technical session, Morrill Hall
	1:30 pm - 3:00 pm	General Business Meeting, Morrill Hall
	3:00 pm - 5:00 pm	Poster session, Morrill Hall
	7:00 pm - 9:30 pm	Council Meeting, Morrill Hall
	7:30 pm - 9:00 pm	UNSM Collections "Open House," Nebraska Hall
THURSDAY, JUNE 4	8:45 am - 12:00 pm	Technical session, Morrill Hall
	1:30 pm - 2:15 pm	Keynote Address, Morrill Hall
	2:35 pm - 5:00 pm	Hazard Assessment Workshop, I
	2:35 pm - 5:00 pm	Computers and Collections Workshop
	2:35 pm - 5:00 pm	Discovery Centers and Collections Workshop
	2:35 pm - 5:00 pm	Midwest Archaeological Center (NPS) Tour
	7:00 pm - 10:30 pm	Banquet and Dance, Student Union

FRIDAY, JUNE 5	8:30 am - 12:00 pm	Late Registration for Pest Management Workshop, Morrill Hall
	9:00 am - 12:00 pm	Hazard Assessment Workshop, II
	9:00 am - 12:00 pm	Collection Facilities Grants Workshop
	9:00 am - 12:00 pm	Museum Climate-Control Tour
	9:00 am - 12:00 pm	Museum of Nebraska History Tour
	1:30 pm - 5:00 pm	Pest Management Workshop
	6:15 pm - 9:00 pm	Tour to Raptor Recovery Center
SATURDAY, JUNE 6	9:00 am - 5:00 pm	Pest Management Workshop, continued
	8:00 am - 8:00 pm	Field trip to Ashfall Fossil Beds
	9:30 am - 4:30 pm	Field trip to Henry Doorly Zoo

PROGRAM

MONDAY, JUNE 1

1:00 - 4:30	REGISTRATION (Morrill Hall)

TUESDAY, JUNE 2

8:30 - 4:30	REGISTRATION (Morrill Hall)
8:30 - 4:30	POSTER SET-UP (Morrill Hall)
9:00 - 11:30	BUSINESS MEETING OF COUNCIL AND COMMITTEE REPRESENTATIVES (Auditorium, Morrill Hall)
1:00 - 5:00	BUSINESS MEETING OF COUNCIL (Resource Center, Morrill Hall)
7:00 - 9:30	ICEBREAKER (Morrill Hall)

WEDNESDAY, JUNE 3

SESSION 1 (Auditorium, Morrill Hall)

Moderator: Gregory Brown, Division of Vertebrate Paleontology, University of Nebraska State Museum

8:45 **Opening Announcements** by Gregory Brown, University of Nebraska State Museun

8:50 **Welcoming Address** by Hugh Genoways, Director, University of Nebraska State Museum

9:00 **Natural Science Collections: The Need for Globally Integrated Preservation Strategies** by Frank M. Howie, Natural History Museum, London, United Kingdom

9:20 **Retrospective Madrid: The 1992 International Symposium** by John Simmons, Museum of Natural History, University of Kansas, Lawrence, Kansas

9:35 **Documenting Methodologies: Within Institutions, Within Disciplines** by Ann Pinzl, Nevada State Museum, Carson City, Nevada

9:50 **Re-organization of Collections and Research at the Canadian Museum of Nature** by Gerald R. Fitzgerald* and Patrick W. Colgan, Canadian Museum of Nature, Ottawa, Ontario, Canada

10:10 **Human Skeletons: Promoting a New Activism Among Museum Staff** by Karl J. Reinhard, Department of Anthropology, University of Nebraska, Lincoln, Nebraska

10:30 Refreshment Break

10:50 **Studying Native American Skeletal Collections for the Benefit of Modern Tribes: What is there to Learn?** by Karl J. Reinhard, Department of Anthropology, University of Nebraska, Lincoln, Nebraska

11:05 **Unauthorized Collection of Fossil Vertebrates on Federal Lands in Northwest Nebraska: A Case Study** by Hannan E. LaGarry-Guyon, University of Nebraska State Museum, Lincoln, Nebraska

11:20 **Preparation/Conservation Methods in Paleontology: Are They Compromising the Integrity and Potential Research Value of the Specimen**? by Julianne Snider, Illinois State Museum, Springfield, Illinois

11:35 **An Inexpensive Storage System for Large Fossil Slabs** by Janet B. Waddington, Royal Ontario Museum, Ontario, Canada

11:45 **Mounting Casts of Skeletons: A Technique for Preserving Original Specimens** by David L. Dyer, Museum Studies Program, University of Nebraska, Lincoln, Nebraska

12:00 Lunch Break

1:30 - 3:00 GENERAL BUSINESS MEETING (Auditorium, Morrill Hall)

3:00 - 3:30 REFRESHMENT BREAK (Poster Gallery, Morrill Hall)

3:00 - 5:00 POSTER SESSION (Poster Gallery, Morrill Hall)

Simple Ways to Use Archival Foams in Paleontological Collections Storage by Elana Benamy* and Ted Daeschler, Academy of Natural Sciences of Philadelphia, Philadelphia, Pennsylvania

Utilization of Lithium Chloride Solutions for Controlling Relative Humidity in Microenvironments by Sarah Beyer and Stephen Williams*, Museum of Texas Tech University, Lubbock, Texas

A Menu Driven Software Package for Managing Specimen Data in Biological Research Collections by Kevin Bowers and Stephen Williams*, Museum of Texas Tech University, Lubbock, Texas

Policies and Procedures for Destructive Sampling Requests by Paisley Cato, Virginia Museum of Natural History, Martinsville, Virginia

Preserving DNA in Liquid-Preserved Museum Specimens by Anna Goebel, Department of Environmental, Population and Organismic Biology, University of Colorado; and John Simmons*, Museum of Natural History, University of Kansas, Lawrence, Kansas

Actual Condition of the Preservation of Zoological Collections at the Yucatan Peninsula by Carmen Pozo* and J. Enrique Escobedo-Cabrera, Museo de Zoologia, Centro de Investigaciones de Quintana Roo, Mexico

Effect of Relative Humidity on Cranial Dimensions of Mammals by A. Michelle Wallace, Stephen Williams*, and Clyde Jones, Museum of Texas Tech University, Lubbock, Texas

Evaluation of Disposable Ink Pens for Permanent Records in Museums by Rose Wood and Stephen Williams*, Museum of Texas Tech University, Lubbock, Texas

7:00 - 9:30 BUSINESS MEETING OF COUNCIL (Resource Center, Morrill Hall)

7:30 - 9:00 UNSM COLLECTIONS "OPEN HOUSE" (Nebraska Hall)

THURSDAY, JUNE 4

SESSION 2 (Auditorium, Morrill Hall)

Moderator: Hannan E. LaGarry-Guyon, Division of Vertebrate Paleontology, University of Nebraska State Museum

8:45 **The Institute of Museum Services Conservation Assessment Survey: How a Museum-wide Survey Can Benefit Natural History Collections** by Hans Georg Kuck, Natural History Museum of Los Angeles County, Los Angeles, California

9:00 **Conservation and Management of In Situ Dinosaur Trackways** by Sally Y. Shelton, Texas Memorial Museum, Austin, Texas

9:15 **Conserving Invertebrates - How Much is Enough?** by Sheila C. Byers, Royal Ontario Museum, Toronto, Ontario, Canada

9:30 **Ashfall Fossil Beds: Problems of In Situ Preservation of Skeletons in Volcanic Ash** by Gregory Brown, University of Nebraska State Museum, Lincoln, Nebraska

9:45 **Asbestos Control in the Museum Environment** by Kathy Makos, Smithsonian Institution, Washington, D.C.

10:00 Refreshment Break

10:20 **OSHA Health Standards Update** by Kathy Makos, Smithsonian Institution, Washington, D.C.

10:40 **New ASM Standards for the Management and Care of Recent Mammal Collections** by Stephen L. Williams* and Laura L. Janecek, Co-Chairs, Subcommittee for Reviewing Collection Standards, Systematic Collection Committee, American Society of Mammalogists

10:55 **A Survey of Pollutant Concentrations in Mineral Collection Cabinets** by Robert R. Waller* and Katherine J. Andrew, Canadian Museum of Nature, Ottawa, Ontario, Canada; and Jean Tetreault, Canadian Conservation Institute, Ottawa, Ontario, Canada

11:10 **Summary of the Workshop on Computerization of Natural History Collections, University of California at Berkeley, May, 1992** by Julia Golden*, Department of Geology, University of Iowa, Iowa City, Iowa; and Paula Sumpter*, Milwaukee Public Museum, Milwaukee, Wisconsin

11:25 **Recomputing at the Canadian Museum of Nature: An Update on the Development of a New Collection Database System** by Peter Frank, Canadian Museum of Nature, Ottawa, Ontario, Canada

11:40 **Design and Selection of Storage Cabinets for Natural History Collections** by Bruce Danielson, Delta Designs Ltd., Topeka, Kansas

12:00 Lunch Break

1:30 KEYNOTE ADDRESS: **Charting a National Agenda for the Preservation of Natural Science Collections** by Lawrence L. Reger, National Institute for the Conservation of Cultural Property, Washington, D.C. (Auditorium, Morrill Hall)

2:15 REFRESHMENT BREAK (Morrill Hall)

2:35 - 5:00 HAZARD ASSESSMENT WORKSHOP, I (Auditorium, Morrill Hall)

Health Hazard Assessment Survey Techniques for Natural History Collections by Frank Howie, Natural History Museum, London, U.K.

Sampling Methods and Respiratory Protection by Kathryn Makos, Smithsonian Institution, Office of Environmental Management and Safety, Washington, D.C.

Evaluation and Control of Exposure Hazards from Chemical Preservatives by Elizabeth Dietrich, National Museum of Natural History and Kathryn Makos, Smithsonian Institution, Washington, D.C.

2:35 - 5:00 COMPUTERS AND COLLECTIONS WORKSHOP (Convene at Morrill Hall entrance)

FINS-Atlantic Geoscience Centre Field Inventory Database by Iris Hardy* and Larry Johnston, Geological Survey of Canada, Bedford Institute of Oceanography, Dartmouth, Nova Scotia, Canada

Treatment of Locality Data in Computer Databases for Natural History Collections: Some Cautionary Notes by Jens V. Vindum and David B. Catania*, California Academy of Sciences, San Francisco, California

A Database for Frozen Tissues and Karotype Slides by Susan M. Woodward* and Wendy E. Hlywka, Royal Ontario Museum, Toronto, Ontario, Canada

Demonstrations of ANCS and other database programs for both IBM and MacIntosh systems

2:35 - 5:00 TOUR OF MIDWEST ARCHAEOLOGICAL CENTER (Convene at Morrill Hall entrance)

2:35 - 5:00 DISCOVERY CENTERS AND COLLECTIONS WORKSHOP (Resource Center, Morrill Hall)

Presenters (Peggy Hunt and Karen Messenger, University of Nebraska State Museum; Kimball Garrett, Los Angeles County Museum; and Linda Kunze, Henry Doorly Zoo) will conduct a panel discussion on the use of museum and zoo specimens for public education; the panel will be followed by a practicum and group discussion.

7:00 - 10:30 ANNUAL BANQUET AND DANCE (Nebraska Union. Banquet sponsored by Delta Designs Ltd.; dance sponsored by University Products, Inc.)

FRIDAY, JUNE 5

8:30 - 12:00 LATE REGISTRATION FOR PEST MANAGEMENT WORKSHOP (Morrill Hall)

9:00 - 12:00 HAZARD ASSESSMENT WORKSHOP, II (5th Floor, Nebraska Hall)

Local Exhaust Ventilation Design for Museum Operations by Frank Howie, Natural History Museum, London, U.K.

Demonstration of specially-filtered vacuum cleaning techniques by Kathryn Makos, Smithsonian Institution, Washington, D.C.

Tour and mock inspection of UNSM collections and laboratories.

9:00 - 12:00 CLIMATE-CONTROL SYSTEMS TOUR (Discovery Theater, Morrill Hall)

9:00 - 12:00 MUSEUM OF NEBRASKA HISTORY TOUR (Convene at entrance to Morrill Hall)

9:00 - 12:00 COLLECTIONS FACILITIES GRANTS WORKSHOP (Auditorium, Morrill Hall)

Federal Grant Programs for Natural Science Collections by Betty Brewer, Program Officer, Institute of Museum Studies, Washington, D.C. and Leonard Krishtalka, Program Director, National Science Foundation, Washington, D.C.

Dr. Brewer will describe grants available through the programs of the Institute of Museum Services including CAP, MAP, GOS, and CP. These vital federal programs provide support for natural science museums, and include grants awarded to smaller museums on a non-competitive basis.

Dr. Krishtalka will discuss grants for natural science collections from the Program for Research Collections in Systematics and Ecology, now administered through the cluster for Long-Term Projects in Environmental Biology at the National Science Foundation.

10:00 - 11:00 REFRESHMENTS AVAILABLE (Poster Gallery, Morrill Hall)

1:30 - 5:00 PEST MANAGEMENT WORKSHOP (Auditorium, Bessey Hall)

6:15 - 9:00 RAPTOR RECOVERY CENTER TOUR (Convene at entrance to Morrill Hall)

SATURDAY, JUNE 6

8:00 - 8:00 ASHFALL FOSSIL BEDS FIELD TRIP (Convene at entrance to Morrill Hall)

9:30 - 4:30 HENRY DOORLY ZOO FIELD TRIP (Convene at entrance to Morrill Hall)

9:00 - 5:00 PEST MANAGEMENT WORKSHOP (Auditorium, Bessey Hall)

PEST MANAGEMENT WORKSHOP
5-6 JUNE 1992

GETTING THE BUGS OUT OF THE SYSTEM:
MUSEUM PESTS FROM BACTERIA TO BEETLES

INSTRUCTORS: Mark Gilberg (Conservation Scientist), Jim Harmon (Harmon Preservation Pest Management), Wendy Jessup (Wendy Jessup and Associates), David Pinniger (Agrisense), Kim Robinson (National Park Service), Michael Rust (University of California, Riverside), Tom Strang (Canadian Conservation Institute).

TOPICS:

Designing and implementing an integrated pest management program
Practical approaches to museum pest control
Traps and practical methods for using them in the museum setting
"Ageless" and museum applications
Health considerations
Laws relating to pesticide use in museums
Freezing as a means of pest eradication
Micro-organism deterioration of dry and wet specimens
Effects of treatments on natural history specimens
The effectiveness of heat as a means of eradicating pests
Oxygen deprivation environments - the use of nitrogen
Oxygen deprivation environments - the use of CO2
Museum pest identification
IBM software program for museum storage

SCHEDULE:

I. A worksheet is mailed in advance to pre-registrants

II. FRIDAY, JUNE 5 BESSEY HALL AUDITORIUM

1:30 - 2:00	Introduction and Overview
2:00 - 3:30	Presentations
3:30 - 4:45	Mini-workshops and commercial displays
4:45 - 5:00	Discussion of evening assignment
5:00	Informal social

SATURDAY, JUNE 6 BESSEY HALL AUDITORIUM

9:00 - 10:00	Panel and participant discussion of previous assignment
10:00 - 12:00	Mini-workshops and commercial displays
1:00 - 3:30	Presentations
3:30 - 4:00	Wrap-up and discussion of take-home projects
4:00 - 5:00	Informal discussions with instructors

III. Post-workshop project

ABSTRACTS

SIMPLE WAYS TO USE ARCHIVAL FOAMS IN PALEONTOLOGICAL COLLECTIONS STORAGE

BENAMY, ELANA and TED DAESCHLER, Malacology/Invertebrate Paleontology; Vertebrate Biology; Academy of Natural Sciences of Philadelphia, 1900 Benjamin Franklin Parkway, Philadelphia, PA 19103-1195

Paleontological collections at the Academy of Natural Sciences are being methodically rehoused using archival foams (Volara and Ethafoam) to stabilize and cushion specimens and provide a barrier between specimens and potentially damaging paper and wood.

In the Vertebrate Paleontology collection, metal drawers are lined with Volara secured in the corners with hot glue. In places, Ethafoam planks with cutouts to accommodate specimens are placed on top. Shelving for large specimens is lined with Ethafoam and supports are prepared for awkwardly-shaped specimens using scraps of Ethafoam.

In the Invertebrate Paleontology collection, drawers are lined with Volara, as are individual specimen trays. Using Volara scraps from the lining of drawers, strips are cut to wind around specimens to isolate them from each other and the tray. Larger specimens have collars of Volara tied around them using cotton string.

UTILIZATION OF LITHIUM CHLORIDE SOLUTIONS FOR CONTROLLING RELATIVE HUMIDITY IN MICROENVIRONMENTS

BEYER, SARAH R. and STEPHEN L. WILLIAMS, Museum of Texas Tech University, Lubbock, Texas 79409-3191

The utilization of saturated salt solutions at known temperatures has been used by the museum community for establishing desired relative humidities in microenvironments. To alleviate the expense of acquiring different chemicals, the authors investigated the feasibility of using different concentrations of lithium chloride for establishing and controlling relative humidity. Much of the information about the relationship between concentration and relative humidity was extrapolated from the literature. Subsequent testing demonstrated the usefulness of this information and how it might be used for initiating controlled changes in microenvironments.

A MENU DRIVEN SOFTWARE PACKAGE FOR MANAGING SPECIMEN DATA IN BIOLOGICAL RESEARCH COLLECTIONS

BOWERS, KEVIN L. and STEPHEN L. WILLIAMS, Department of Biological Sciences, Museum of Texas Tech University, Lubbock, Texas 79409

Recent technological advancements in microcomputer hardware and in database-oriented programming languages for IBM and IBM compatible PCs have allowed the Museum of Texas Tech University to develop a user friendly, database management system dedicated to biological collections. The key features are: 1) a menu driven format for ease of use, 2) rapid database queries and cross-referencing, using any combination of the 21 user defined search criteria, 3) flexible report writing with user designed report templates, 4) restricted access database management utilities for maintaining, editing, and updating collection records, and 5) use of DBASE file formats for compatibility. These features will facilitate database management, enhance information retrieval, and encourage standardization and quality of data in biological collections.

ASHFALL FOSSIL BEDS: PROBLEMS OF IN SITU PRESERVATION OF SKELETONS IN VOLCANIC ASH

BROWN, GREGORY W., University of Nebraska State Museum, Lincoln, Nebraska 68588-0514

Ashfall Fossil Beds is a new state park (opened in 1991) designed to interpret and exhibit in situ an extraordinary assemblage of Late Miocene animals preserved in their death positions in volcanic ash. The excavated portion of the fossil beds is covered by a 30 by 60 foot steel and wood frame building capable of protecting the exposed fossils from direct weather (rain, sun, wind) but currently incapable of providing any temperature or humidity control.

Mode of deposition and characteristics of the volcanic ash such as particle size and shape, chemistry, and sedimentary microstructure are apparently responsible for the preservation of such unusual and transitory evidence as crane feather impressions and muscle tendons, and rhinoceros footprints and stomach contents. These same characteristics, however, present serious impediments to successfully stabilizing the exposed fossils and their ash-matrix supports. Reasonable penetration of clean and dry fossil bone with solvent-based consolidants is possible, but no adequate method has been found to stabilize the supporting ash: consolidant penetration is limited to less than 1 centimeter.

After one year, fossil bones show no evidence of direct degradation due to exposure. Damage is confined to freeze-thaw displacement and breakage of bones in areas where the ash matrix was saturated with water. Where the ash is dry, both consolidated and unconsolidated bone remain in very good condition, though unconsolidated ash is very susceptible to disaggregation and collapse.

Temperature control will be installed before next winter, and research on a suitable stabilization process is continuing.

CONSERVING INVERTEBRATES - HOW MUCH IS ENOUGH?

BYERS, SHEILA C., Department of Invertebrate Zoology, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, Canada M5S 2C6

During a major reorganization of the invertebrate collections at the Royal Ontario Museum from an expedition-based collection to a phylogenetic organization, many inherent conservation needs of the specimens were recognized. Dry mollusc specimens representing approximately 38% of the collections demanded the greatest commitment in terms of both conservation and expenditures, followed by the wet collections (52%), microscope slide collections (10%), and reprint and photographic collections. Parameters such as offgasing from oak, plastics, and various fabrics, pH of containers and labels, metal cap corrosion, dermestids, and relative humidity were considered problematic. To remedy these conditions, preventative conservation efforts were directed toward improving the holding facilities, specimen containers, drawer liners, stuffing for shell vials, container lids, liners, and stoppers and labels. Products have been chosen for their conservation quality, local availability, cost, accessibility, and ease of use. The products chosen have solved a majority of the problems, although some challenges remain. Concurrently, preliminary attention has been given to the treatment and preservation of these invertebrates, specifically those groups being actively researched; however, further investigation in this area is warranted.

POLICIES AND PROCEDURES FOR DESTRUCTIVE SAMPLING REQUESTS

CATO, PAISLEY S., Virginia Museum of Natural History, 1001 Douglas Ave., Martinsville, Virginia 24112

Numerous disciplines have recognized the need for policies and procedures to handle requests for sampling of specimens that partially or completely destroy the sample. Recognizing that specimens were collected in order to be used for research, the intention of such policies is

primarily to minimize the impact of invasive procedures. An analysis of existing policy statements as well as workshop discussions involving representatives of 12 disciplines revealed common concerns among the disciplines. These concerns focus on the goals of such policy statements (e.g., the intent of the statement; relevance to the discipline, museum profession, and individual institution, etc.) as well as minimal requirements for procedural protocol to implement the policy (e.g., who has the authority to review requests and make decisions; what conditions should an institution place on the researcher, etc.). Examples are provided to indicate how some institutions have addressed these issues.

DESIGN AND SELECTION OF STORAGE CABINETS FOR NATURAL HISTORY COLLECTIONS

DANIELSON, BRUCE, Delta Designs Ltd., P.O. Box 1733, Topeka, Kansas 66601

A short talk and discussion concerning facets of museum storage cabinet layout, design, and construction based on the experiences of Bruce Danielson, President, Delta Designs Ltd. How does a registrar, curator, or collections manager know what size of cabinet is best for their collection? What should he or she look for in design, construction, and service? Who are the main players in the storage cabinet field? Answers to these questions addressing some common and not so common problems. Cost, quality, and service will be addressed.

MOUNTING CASTS OF SKELETONS: A TECHNIQUE FOR PRESERVING ORIGINAL SPECIMENS

DYER, DAVID L., Museum Studies Program, 307 Morrill Hall, University of Nebraska-Lincoln, Lincoln, Nebraska 68588-0338

Casts of original skeletal material were used to mount nine skeletons of Pleistocene mammals for a new Ice Age exhibit at the Cincinnati Museum of Natural History. The use of casts allows the original skeletal material to be safeguarded from potential damage during mounting and allows the bone to remain available for research purposes. An aesthetically pleasing, freestanding mount can be produced by using casts which convey the same information to the viewer as an actual bone mount.

RE-ORGANIZATION OF COLLECTIONS AND RESEARCH AT THE CANADIAN MUSEUM OF NATURE

FITZGERALD, GERALD R. and PATRICK W. COLGAN, Canadian Museum of Nature, P.O. Box 3443, Station D, Ottawa, Ontario, Canada K1P 6P4

Our Museum is developing a new managerial philosophy emphasizing objective priorities and programmes, responsibility and accountability of staff, and the generation of products through a structure of matrix management in which projects cut across lines of authority. Two line divisions, Collections and Research, have been formed within the Programmes Branch, each with a Chief. Collections staff are organized in six Sections: Conservation, Registration, and the four aggregate collections of Botany, Earth Science, and Invertebrate and Vertebrate Zoology. Four corresponding Departments hold the research staff together with those of the similarly-named Collections Section, and are co-chaired by the Collections Manager and a scientist of the Department. Institutes on research themes such as biodiversity operate as projects, affording linkages across taxonomic areas. This organization permits both intellectual integration and managerial control.

RECOMPUTING AT THE CANADIAN MUSEUM OF NATURE: AN UPDATE ON THE DEVELOPMENT OF A NEW COLLECTION DATABASE SYSTEM.

FRANK, PETER, Canadian Museum of Nature, P.O. Box 3443, Station D, Ottawa, Ontario, Canada K1P 6P4

Some of the collections at the Canadian Museum of Nature started computerizing their specimen data in the early 1970's. Since that time, several different hardware and software systems have been used with varying degrees of success. A new database application has been under development for several months. A demonstration of one part of the new application was given at the computer workshop held at the SPNHC annual meeting in Ottawa last year. This paper will give a brief history of the use of computers in collections at the CMN and will update the development of the new application as well as attempt to look into the future of computers in collections at the museum.

PRESERVING DNA IN LIQUID-PRESERVED MUSEUM SPECIMENS

GOEBEL, ANNA M. and JOHN E. SIMMONS; Department of Environmental, Population and Organismic Biology, University of Colorado, Boulder, Colorado 80309-0334; Museum of Natural History, University of Kansas, Lawrence, Kansas 66045-2454

Traditionally, fixatives have been chosen for the quality of preservation of morphological characteristics. Recently, however, methods have been developed for the extraction and analysis of DNA from museum specimens, including liquid-preserved specimens. We suggest that liquid preservation be reexamined to determine the best methods for preserving both DNA and morphological characteristics.

We examined DNA from liver tissue fixed in different liquids and stored in 70% ethanol. Fragment size of DNA extracted from tissues and exposed to different fixatives was compared directly to the fragment size of DNA extracted from frozen tissue of the same animal. Chemical fixatives such as ethanol, formalin, and glutaraldehyde vary in the fragment size of DNA they preserve. Other treatments, such as reduced exposure time to specific fixatives (e.g. 6 and 12 hours in buffered formalin) dramatically reduced the amount of DNA degradation. The use of buffered solutions of fixatives (e.g. formalin) also reduced the amount of DNA degradation. In addition to examining the preservation of DNA fragment size, DNA exposed to liquid fixatives should be tested for ease of amplification by the polymerase chain reaction.

SUMMARY OF THE WORKSHOP ON COMPUTERIZATION OF NATURAL HISTORY COLLECTIONS, UNIVERSITY OF CALIFORNIA AT BERKELEY, MAY, 1992

GOLDEN, JULIA and PAULA M. SUMPTER; University of Iowa, Department of Geology, Iowa City, Iowa 52242; Department of Geology, Milwaukee Public Museum, 800 W. Wells Street, Milwaukee, Wisconsin 53233

A workshop on the Computerization of Natural History Collections was held at the University of California at Berkeley May 26-31, 1992. The workshop was sponsored by the MUSE Project of Cornell University, the Association of Systematic Collections and the Museum Informatics Project of the University of California at Berkeley. Funding was provided by the National Science Foundation.

Twenty-five participants from a variety of institutions heard presentations on data modeling, hardware and software, Local Area Networks, Internet, remote database access and other topics. There were discussions of issues related to museums and computing such as development of community standards. Hands-on experience with several software packages was also provided.

FINS-ATLANTIC GEOSCIENCE CENTRE FIELD INVENTORY DATABASE

HARDY, IRIS A. and LARRY JOHNSTON, Atlantic Geoscience Centre, Geological Survey of Canada, Bedford Institute of Oceanography, Dartmouth, Nova Scotia, Canada

The FINS Field Inventory System Database has been developed by the Atlantic Geoscience Centre, Geological Survey of Canada, for field environments remote from the Bedford Institute of Oceanography (BIO), Dartmouth, Nova Scotia. This system permits downloading of station identification and associated types of analyses performed in the field for the various types of samples retrieved such as cores, grabs, boxcores, water etc. FINS is capable of storing more than one field program at a time on a PC based system. It is completely transportable and can be easily utilized in any environment. FINS is directly linked to a BIO inhouse ORACLE based management system. Downloading occurs once the data has been verified by the inhouse Database Administrator. DBase III+ software provides the necessary database management component of FINS, while support staff provide the software for the input/output, editing and reporting functions of the data. An overview of the development, use and future aspirations of this system will be presented.

NATURAL SCIENCE COLLECTIONS: THE NEED FOR GLOBALLY INTEGRATED PRESERVATION STRATEGIES

HOWIE, FRANK M., Natural History Museum, London SW7 5BD, United Kingdom

Holdings of natural science material now exceed two billion specimens housed in several thousand institutions worldwide. The preservation of this immense heritage presents major problems when setting strategies which ensure they continue to serve society into the future. Ever-competing demands on society dictate that the institutional natural history community must make use of increasingly limited resources in the best ways possible.

Collections can only become enriched through use; a fundamental strategy therefore is to increase their profile as appropriate to local conditions and needs. This will dictate priorities for preservation, and conservation will develop as a natural progression. As a next strategy, research and educational needs for the natural science support disciplines (collections management, conservation, technology, etc.) will need to be assessed and programs crystalized which have global appeal. This presentation outlines the extent and scope of the conservation problem and suggests areas that require urgent development.

THE INSTITUTE OF MUSEUM SERVICES CONSERVATION ASSESSMENT SURVEY: HOW A MUSEUM-WIDE SURVEY CAN BENEFIT NATURAL HISTORY COLLECTIONS

KUCK, HANS GEORG, Crustacea subsection, Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, California 90007-4057

The conservation of collections is a primary responsibility of curatorial staff in all museums. However, the resources necessary to assess the many factors affecting the condition of collections is often prohibitive. The federally-funded Institute of Museum Services (IMS) provides funds for museum-wide conservation, including assessment, treatment, environmental improvements and research for museum collections, and training for curatorial staff, throughout the United States.

In particular, the conservation assessment general survey is meant to assist curatorial staff in becoming aware of conservation problems within their collections, provide suggestions for improvement of existing conditions, and develop an institutional long-range conservation plan. Survey application procedures, staff preparation, potential difficulties, possible benefits and follow-up activities are important topics to investigate prior to applying for IMS funding.

UNAUTHORIZED COLLECTING OF FOSSIL VERTEBRATES ON FEDERAL LANDS IN NORTHWEST NEBRASKA: A CASE STUDY

LAGARRY-GUYON, HANNAN E., Division of Vertebrate Paleontology, University of Nebraska State Museum, Lincoln, Nebraska 68588-0514

In 1991 the USDA Forest Service (Challenge Cost-Share Agreement # 02-07-91-013) requested that the University of Nebraska State Museum survey paleontological resources on the Oglala National Grassland (near Toadstool Park, Sioux County, Nebraska) and assess the impact of unauthorized fossil collecting in tourist-frequented areas. We surveyed 25.4 mi^2, of which 11.4 mi^2 (41%) was fossiliferous bedrock consisting of the Paleogene-aged deposits of the White River* and Arikaree Groups [*from oldest to youngest: Chadron Fm. (5 mi^2); Brule Fm. (Orella Mbr., 2 mi^2 and Whitney Mbr., 3.5 mi^2)]. Collecting fossil vertebrates on National Grasslands without a Special Use Permit (USDA Forest Service) is illegal (Federal Register 30355, 26 August, 1986) and subject to fines and/or imprisonment. Of the bedrock surveyed in 1991, 2.5 mi^2 (21%) showed physical evidence of illegal vertebrate fossil collecting in the form of shallow excavations, abandoned tools, plaster, etc. Illegal activity was concentrated in the Chadron Fm. (>80%), which is most accessible to vehicles. During the survey we identified 39 areas of special sensitivity (complete skeletons, skulls, groups of individual specimens, and microfossil sites), of which 11 (28%) showed evidence of unauthorized collecting. Based on these data, and actual observation and documentation of individuals collecting illegally, we recommended that regulation in the form of permitting, increased patrolling, and prompt prosecution are necessary in order to reduce the loss of vertebrate fossils in this area. Fossils collected during this survey are housed in the vertebrate paleontology collections of the University of Nebraska State Museum and were collected under USDA Forest Service Special Use Permit (User No. 2033).

ASBESTOS CONTROL IN THE MUSEUM ENVIRONMENT

MAKOS, KATHRYN A., Smithsonian Institution, Office of Environmental Management and Safety, 490 L'Enfant Plaza, Suite 4202, Washington, DC 20560

The proper management of asbestos-containing materials (ACM) in a building involves a number of tasks including baseline identification surveys, informing staff as to precautions needed when working around ACM, periodic inspections, and ultimately, complete removal of the material. Museums may have additional and unique problems with asbestos control. Asbestos itself may be an integral part of a collection item, or collections may be contaminated by asbestos, requiring cleaning before being handled, displayed or loaned.

Traditional regulatory protective measures do not easily apply to these cases. For instance, asbestiform mineral specimens or fragile textiles cannot be studied under local exhaust hoods or cleaned with direct vacuuming without risking loss of specimen. Pottery with powdery slips or raised surfaces obviously cannot be washed or vacuumed. Presented in this paper are examples of how access and exposure to asbestos containing and contaminated collections can be controlled.

To address more general problems of asbestos building materials, a facility owner needs to develop a pro-active plan for managing ACM in-place. This "Operations and Maintenance" plan is important especially to smaller facilities with limited resources, since complete (and expensive) removal of ACM may not be the only option available. Damaged or deteriorated ACM which poses a health risk to occupants and workers must be abated as soon as possible. However, ACM in good shape, with a low probability of releasing fibers, might be safely left in place if management controls are implemented. Step by step guidance is given for an Operations and Maintenance plan, including examples of safe work practices, inspection forms, and staff training.

A final discussion will focus on how best to manage an asbestos abatement project by a small facility with limited access to technical specialists. Selection of a qualified abatement contractor and environmental monitoring firm to protect your interests on the jobsite will be addressed.

OSHA HEALTH STANDARDS UPDATE

MAKOS, KATHRYN A., Smithsonian Institution, Office of Environmental Management and Safety, 490 L'Enfant Plaza, Suite 4202, Washington, DC 20560

The Occupational Safety and Health Administration (OSHA) has recently promulgated certain health standards, and are about to revise others, that have a direct impact on collection management operations. Although museums, schools, and other cultural institutions are typical low on OSHA's priority inspection list, compliance with health and safety standards is still an obligation. This presentation provides an overview of three such standards: Hazard Communication, Laboratory Safety, and the soon-to-be-revised Formaldehyde Standard. Requirements explained include employee health hazard awareness training, development of employee exposure monitoring programs (including suggestions for selecting a qualified environmental consultant), establishing a written Chemical Hygiene Plan and a Material Safety Data Sheet file, provisions for medical surveillance, and appropriate engineering and personal protective controls.

DOCUMENTING METHODOLOGIES: WITHIN INSTITUTIONS, WITHIN DISCIPLINES

PINZL, ANN, Nevada State Museum, Capitol Complex, Carson City, Nevada 89710

Oral tradition has been the usual source of preferred materials and methods in Natural History operations. An intrinsic problem in this scenario is the "oral" aspect. Practioners need to write it down so that their successors might stand a chance of understanding the collections they are inheriting. Many institutions have accepted this position and are working on in-house documentation; the disciplines vary in their progress.

The oral must become the recorded both within the institutions and the disciplines.

ACTUAL CONDITION OF THE PRESERVATION OF ZOOLOGICAL COLLECTIONS AT THE YUCATAN PENINSULA

POZO, CARMEN and J. ENRIQUE ESCOBEDO-CABRERA, Museo de Zoologia-CIQRO, Centro de Investigaciones de Quintana Roo, Apdo. Postal 424, C.P. 77000, Chetumal, Quintana Roo, Mexico.

The Yucatan Peninsula, Mexico, is an area in which for over two centuries several scientific expeditions have been carried out. However, the only museum of natural history in this area, where species are being preserved and used for studies, is the zoology museum at the Centro de Investigaciones de Quintana Roo (CIQRO). This Mexican institute started the formation of a scientific regional museum in April 1990; and is located in Chetumal City, the capital of the state of Quintana Roo.

Since then, 13,600 specimens have been preserved and distributed in six different collections. According to the total number of vertebrate species for the state of Quintana Roo, CIQRO's Museum contains 48% of the mammals, at least 15% of birds, 21% of reptiles and 80% continental fish. Regarding the species of invertebrates, the museum contains 41% of butterflies and 100% of ants.

CHARTING A NATIONAL AGENDA FOR THE PRESERVATION OF NATURAL SCIENCE COLLECTIONS

REGER, LAWRENCE L., National Institute for the Conservation of Cultural Property, Inc., 3299 K Street, NW, Suite 403, Washington, DC 20007 USA

A primary goal of the National Institute for Conservation (NIC) is to formulate a unified, comprehensive framework for the long-term financial stabilization necessary to ensure the care of our nation's heritage collections. As part of this effort, NIC, in conjunction with the Association for Systematics Collections, the Society for the Preservation of Natural History Collections, and the United States National Science Foundation, is exploring the conservation needs of natural science collections. The goal of the project is to stimulate new resources for the care of the collections that form the basis for mankind's understanding of the natural world.

As part of the study, NIC has met with natural scientists from major disciplinary societies, and with administrators, educators, conservators, collections managers, conservation scientists, and materials scientists to assess problems and to develop strategies to meet the challenge of insuring the scientific integrity and the long-term preservation of research collections.

The preliminary findings from the project strongly underscore the need for

- international, multi-disciplinary approaches to collection conservation research;
- a broad array of education and training initiatives, from discipline-specific preventive conservation seminars, to graduate training for research oriented geo- and bioscience conservators and collection managers; and
- a major effort in information dissemination and technology transfer from other fields to the natural science community.

The formal reports from the study will be published at the end of 1992.

HUMAN SKELETONS: PROMOTING A NEW ACTIVISM AMONG MUSEUM STAFF

REINHARD, KARL J., Department of Anthropology, University of Nebraska-Lincoln, Lincoln, Nebraska 68588-0368

Human skeletal collections have been the focus of increasing debate over the last two decades as the value of collections has been debated among anthropologists and museum staff. From this debate, there has emerged a view among some museum administrations that destruction of collections by reburial is an expedient, desirable option rather than facing the potential of poor publicity by studying the remains.

This pattern is destructive to the process of gaining insights into the rise and cause of modern disease states among existing Native American tribes. The University of Nebraska State Museum has taken an activist stance in educating involved parties to the value of proper study and reburial of human skeletal collections. As a result, a great deal of information was retrieved for the Omaha Tribe that relates directly to the increase in diabetes during the last century. This experience is contrasted with the destruction of Tohono O'Odham remains by the administration of the Arizona State Museum. In examination of these two experiences, it is apparent that the Nebraska experience was of great benefit to the well being of modern Omaha people.

STUDYING NATIVE AMERICAL SKELETAL COLLECTIONS FOR THE BENEFIT OF MODERN TRIBES: WHAT IS THERE TO LEARN?

REINHARD, KARL J., Department of Anthropology, University of Nebraska-Lincoln, Lincoln, Nebraska 68588-0368

With regard to the clinical literature regarding modern Native American diseases, one theme frequently repeated is that the cause of many modern maladies is due to relatively rapid change in diet and activity patterns among Native Americans during the last few centuries. Equally important is the history of infectious disease exposure during the last three hundred years. Therefore, coming to an understanding of modern problems depends on the analysis of skeletal remains held in museum collections. In addition, genetic identification of skeletons with modern tribes is

becoming a possibility with the advent of DNA analysis of archaeological bone. The study of DNA and RNA also presents the possibility of identifying disease organisms by extracting residual viral or bacteria DNA/RNA from bones.

To demonstrate the value of skeletal collections in documenting changing disease patterns, specific diseases such as diabetes, middle ear disease, and smallpox will be discussed. The techniques through which ancient activity patterns and diet can be identified are presented. Finally, DNA studies during the past five years will be summarized and suggestions made regarding the application of these techniques to skeletal remains.

CONSERVATION AND MANAGEMENT OF IN SITU DINOSAUR TRACKWAYS

SHELTON, SALLY Y., Natural History Conservation Laboratory, Texas Memorial Museum, 2400 Trinity, Austin, Texas 78705

The discovery of a previously unknown dinosaur trackway in Austin provided a practical opportunity for effective field conservation at the start of the project. Methods used for cleaning, protecting, and interpreting the trackways were selected with the long-term conservation of the tracks in situ as the first consideration. Conservation recommendations for the preservation of any in situ fossil materials are proposed.

RETROSPECTIVE MADRID: THE 1992 INTERNATIONAL SYMPOSIUM

SIMMONS, JOHN, Natural History Museum, Dyche Hall, University of Kansas, Lawrence, Kansas 66045-2454

The 1992 International Symposium for the Preservation and Conservation of Natural History Collections is a milestone in the continuing effort to develop a greater awareness and understanding of modern concepts in collection care. Highlights of the meetings will be reviewed for those who were unable to travel to Madrid.

PREPARATION/CONSERVATION METHODS IN PALEONTOLOGY - ARE THEY COMPROMISING THE INTEGRITY AND POTENTIAL RESEARCH VALUE OF THE SPECIMEN?

SNIDER, JULIANNE, Illinois State Museum, Research and Collections Center, 1920 South 10 1/2 Street, Springfield, Illinois, USA 62703

More refined and sophisticated methods of surface examination, dating, DNA extraction, etc., are being adopted by paleontologists as research tools. Standards of what constitutes a "valuable" specimen are rapidly changing. The preparator/conservator of fossil material must keep up with the changes so as not to diminish the research potential of a specimen. To make these moves forward the preparator/conservator must have a clear understanding not only of what will be required of him/her but where he/she stands now. An objective examination of procedures currently in use in field, laboratory, storage, and on exhibit should be undertaken. Are the procedures and reason for their use well documented? Should all fossils be treated the same? Are results compatible with current research methods? Are there other ways of doing things? While it is easy to ask the questions, answers may not be straightforward.

TREATMENT OF LOCALITY DATA IN COMPUTER DATABASES FOR NATURAL HISTORY COLLECTIONS: SOME CAUTIONARY NOTES

VINDUM, JENS V. and DAVID B. CATANIA, Department of Herpetology and Department of Ichthyology, California Academy of Sciences, Golden Gate Park, San Francisco, California 94118-4599

Two essential components of a natural history collection are the specimens and their associated data. As the number of natural history collections converting from a manual system to an automated data processing system increase, care must be taken to conserve the integrity of the original data, especially the locality information. Locality data are too often rearranged, updated to "conform" to the presumed most recent geographical nomenclature, or simplified to accommodate to the structure of a particular database.

A collection database should be designed to provide three basic functions: data storage, data retrieval, and data manipulation. Most databases are arranged so that the fields (descriptors) used for the storage or locality information are also used as search fields. Thus, to ensure efficient data retrieval from most databases, significant portions of locality data need to be manipulated and standardized. However, a database should have a means of storing locality data as an archival record and still be able efficiently to retrieve information. To preserve the integrity of the original locality information, the field(s) used for this archival storage should be separate from those data fields against which most queries are lodged; only the latter should be subjected to modification.

AN INEXPENSIVE STORAGE SYSTEM FOR LARGE FOSSIL SLABS

WADDINGTON, JANET B., Department of Invertebrate Palaeontology, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, Canada M5S 2C6

Large thin fossil slabs that do not fit into standard drawers or cabinets may be stored on closely spaced shelves supported by a framework of inexpensive steel slotted construction angle. The fossils rest on sliding shelf glides which may be pulled out to allow easy access for viewing or removing the slabs.

It is important to consider the weight loading capacity of the floor when designing any space-efficient storage for rocks.

EFFECT OF RELATIVE HUMIDITY ON CRANIAL DIMENSIONS OF MAMMALS

WALLACE, A. MICHELLE, STEPHEN L. WILLIAMS, and CLYDE JONES, Museum of Texas Tech University, Lubbock, Texas 79409-3191

Mammalian systematics has relied heavily on morphometrical analyses of cranial dimensions. Special care is usually given to critically evaluating variation attributed to individuals, age, sex, and geography. Because bone is anisotropic, responding to moisture changes in different amounts and directions, it was questioned whether differences in relative humidity could contribute to observed variability.

A series of skulls of the same species were specially selected to minimize recognized forms of variation. These skulls were measured at relative humidities near 20% and 80%, which simulate conditions known to occur in collections. Results showed that differences do exist, but the magnitude may not be sufficient to question most morphometric studies.

A SURVEY OF POLLUTANT CONCENTRATIONS IN MINERAL COLLECTION CABINETS

WALLER, R. ROBERT, KATHERINE J. ANDREW and JEAN TETREAULT, Canadian Museum of Nature, Box 3443, Station D, Ottawa, K1P 6P4 (RRW, KJA) and Canadian Conservation Institute, Department of Communications, 1030 Innes Road, Ottawa, Ontario, Canada K1A 0C8 (JT)

The concentrations of four types of gaseous pollutants have been semi-quantitatively determined in samplings of cabinets from three mineral collections. The pollutants measured included: acidic vapors (thought to be primarily carboxylic acid vapors), mercury vapor, sulfur dioxide, and silver tarnishing gasses (thought to be primarily hydrogen sulfide). The three collections provided examples of the three material combinations commonly used for the construction of collection storage hardware. These were: metal drawers in metal cabinets, wood drawers in metal cabinets and wood drawers in wood cabinets. Although the methods of monitoring pollutant levels (outlined by Andrew *et al*, SPNHC 1991 Conference) were not exacting, significant differences in pollutant concentrations between collections were noted. Interpretation of pollutant concentrations as functions of position within the crystal-chemical classification system used to organize collection storage generally showed patterns that most mineralogists or chemists would anticipate. Several exceptions to these patterns, which have significant implications for collection care, were also noted.

NEW ASM STANDARDS FOR THE MANAGEMENT AND CARE OF RECENT MAMMAL COLLECTIONS

WILLIAMS, STEPHEN L. and LAURA L. JANECEK, Co-Chairs, Subcommittee for Reviewing Collection Standards, Systematic Collection Committee, American Society of Mammalogists

In 1973, the American Society of Mammalogists' Systematic Collections Committee initiated a program for promoting acceptable curatorial standards in the systematic collections that are used for mammalian research. This program recognized 14 minimal standards that were expected of collections that received ASM recognition. For over 15 years, the Systematic Collection Committee has served these collections by providing on-site assessments at the request of the institution in question. Because the Committee has become very interested in 1) encouraging collection staffs to go beyond minimal standards, 2) involving more collections, and 3) implementing new information and standards of practice for the management and care of collections, it is now considering a major revision of the standards. The new standards under consideration are based on a tier system of excellence and include details about financial support, collection storage and operations, record-keeping, and personnel.

EVALUATION OF DISPOSABLE INK PENS FOR PERMANENT RECORDS IN MUSEUMS

WOOD, ROSE M. and STEPHEN L. WILLIAMS, Museum of Texas Tech University, Lubbock, Texas 79409-3191

There are several brands of disposable, black ink pens that are commercially available, and some of these pens are advertised to possess archival qualities. The cost and convenience of using disposable pens makes it worthwhile to investigate the value of these products for writing permanent records in museums. A study was conducted to compare black ink pens for their usefulness in museums. Characteristics examined and compared included shade, lightfastness, pH, bleeding potential, resistance to fluids, resistance to smearing, and suitability for different writing surfaces. The study showed that some pens were better than others for various uses in museums.

A DATABASE FOR FROZEN TISSUES AND KARYOTYPE SLIDES

WOODWARD, SUSAN M. and WENDY E. HLYWKA, Mammalogy, Royal Ontario Museum, 100 Queen's Park Crescent, Toronto, Ontario, Canada M5S 2C6

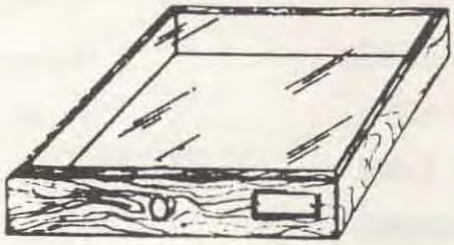
A dbaseIII+ database system was designed to manage a frozen tissue and karyotype slide collection of approximately 5,000 specimens. This system was developed to integrate this ancillary material with an existing museum study specimen database, having many fields in common. The integration facilitated single data entry for museum study specimens which have associated frozen tissues and karyotype slides. Upon completion of processing of museum study specimens, the relevant data housed in a temporary database are transferred to permanent tissue/karyotype and museum study specimen databases. A menu-driven system was created to permit user flexibility and control in producing summary listings of the database contents in order to meet a variety of retrieval requirements. The tissue database can operate as a stand alone system and is applicable to any taxon.

INDEX OF AUTHORS

Makos, Kathryn A.	Paper	Thur 9:45	page 17
Makos, Kathryn A.	Paper	Thur 10:20	page 18
Makos, Kathryn A.	Hazard Workshop	Thur 2:35	---
Pinzl, Ann	Paper	Wed 9:35	page 18
Pozo, Carmen	Poster	Wed 3:00	page 18
Reger, Lawrence L.	Keynote address	Thur 1:30	page 19
Reinhard, Karl J.	Paper	Wed 10:10	page 19
Reinhard, Karl J.	Paper	Wed 10:50	page 19
Shelton, Sally Y.	Paper	Thur 9:00	page 20
Simmons, John E.	Poster	Wed 3:00	page 15
Simmons, John E.	Paper	Wed 9:20	page 20
Snider, Julianne	Paper	Wed 11:20	page 20
Sumpter, Paula M.	Paper	Thur 11:10	page 15
Tetreault, Jean	Paper	Thur 10:55	page 22
Vindum, Jens V.	Computer Workshop	Thur 2:35	page 21
Waddington, Janet B.	Paper	Wed 11:35	page 21
Wallace, A. Michelle	Poster	Wed 3:00	page 21
Waller, R. Robert	Paper	Thur 10:55	page 22
Williams, Stephen L.	Posters	Wed 3:00	pages 12, 21, 22
Williams, Stephen L.	Paper	Thur 10:40	page 22
Wood, Rose M.	Poster	Wed 3:00	page 22
Woodward, Susan M.	Computer Workshop	Thur 2:35	page 23

R. CUEVAS COMPANY

Custom Wood Products
Entomology Drawers
and
Vertebrate Trays



1721 NW 59th St. Terr.
Topeka, KS 66618-1803

(913) 246-0730
Rudy Cuevas - *Owner*

The key to your collections

Accession™ 2.1

Affordable: starts at $995
Astonishingly easy to use
Available in multi-user version
Appropriate for all collection types

Software for collections management on the Macintosh® computer

"Accession 2.0 retains the best features of Accession 1.0 including its unbeatable price, while adding powerful new capabilities ... "
David Bearman, *Archives and Museum Informatics* Vol. 5, No. 4 (Winter 1991)

Fully functioning demos for Art or History are available for $20. For more details, a demo, or a copy of Mr. Bearman's review, contact:

OakTree
Software Specialists

498 Palm Springs Drive, Suite 100
Altamonte Springs, FL 32701
Tel: (407) 339-5855

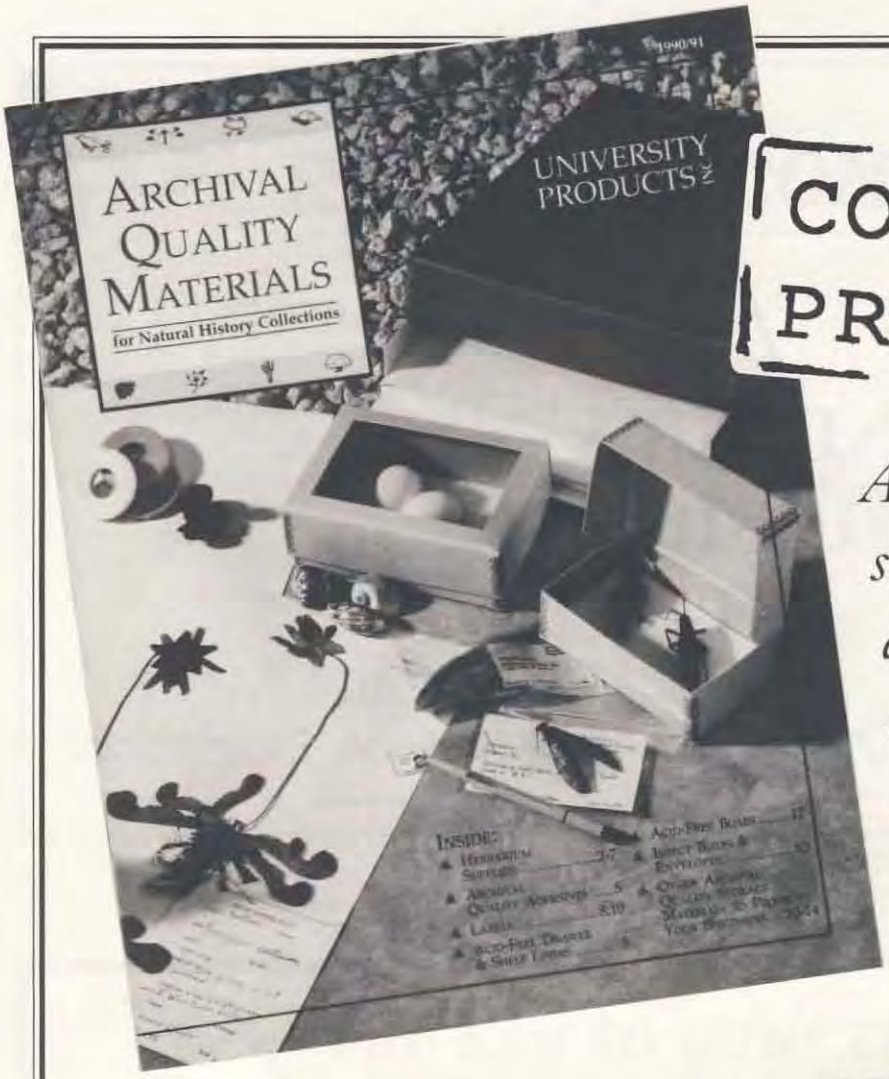
Macintosh is a registered trademark of Apple Computer, Inc. Accession is a trademark of OakTree Software Specialists.

DELTA DESIGNS LTD.

CUSTOM MUSEUM STORAGE CABINETS

"Quality Through Incremental Change"

P.O. Box 1733 • Topeka, Kansas 66601 • 913-234-2244



COLLECTION PROTECTION

Are improper storage methods destroying your specimens, ...as well as your efforts & accomplishments?

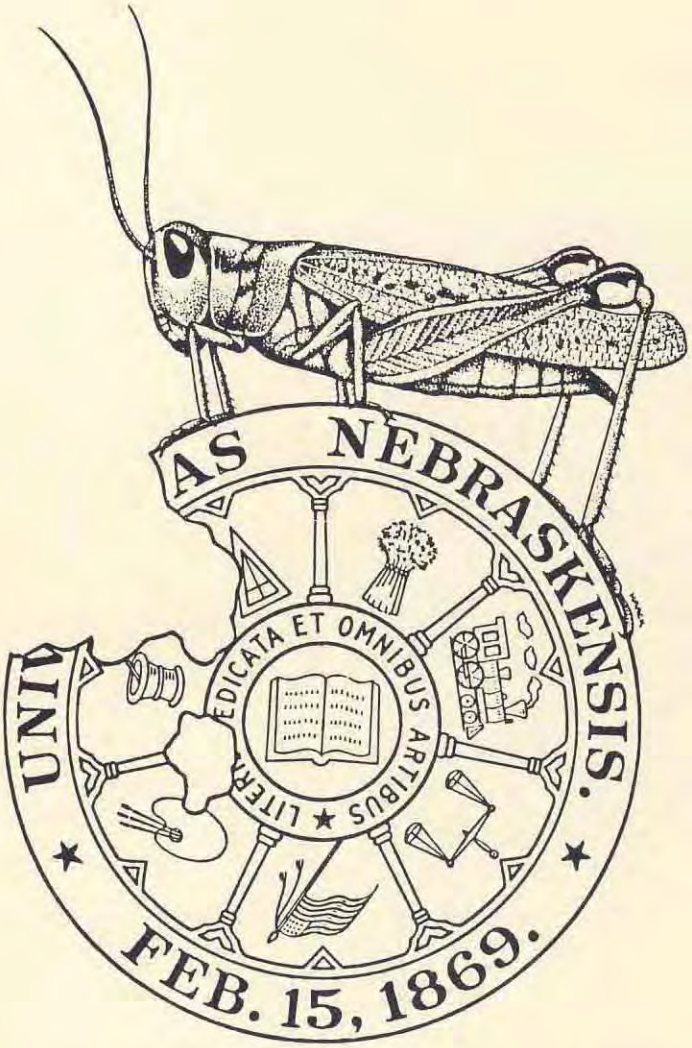
Proper storage materials will not only help you to organize your collection, but protect individual specimens from the many elements which can jeopardize their long-term existence. University Products offers a complete line of archival storage materials designed specifically for natural history collections. Our catalog contains the familiar products you use everyday, as well as solutions to those problems which just won't go away. They include...

- **Resistall: Label Paper for Wet Collections**
- **Herbarium Supplies**
- **Volara Polyethylene Foam**
- **Polyfelt: Virgin Polyester Felt**
- **Foil-Back Shelf Liner**
- **Insect Mailers & Pinning Boxes**
- **Clear View Boxes: See Contents without Opening Lid**
- **Acid-free Boxes**
- **Archival Quality Adhesives**

Can't find what you need? Just give us a call. Be sure you have *collection protection*.
Call or write for your free copy of our Natural History Collections Catalog.

UNIVERSITY PRODUCTS INC

517 Main St, P.O. Box 101, Dept. H2, Holyoke, MA 01041
To Order: (US) 1-800-628-1912; (MA) 1-800-336-4847
Or FAX: (413) 532-9281; Questions? Call 1-800-762-1165



Migratory grasshoppers and the University of Nebraska have had a long association. Lawrence Bruner, the father of Nebraska entomology and the founder of the Museum's collections of insects, conducted extensive research on grasshoppers before the turn of the century.