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SPNHC NEWSLETTER

Society for the Preservation of
Natural History Collections

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The Herbarium and eBay — a New Meaning of "Online Specimens"

RICHARD K. RABELER

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1205 N. University Ave., Ann Arbor, MI 48109-1057

Just like a number of my colleagues, I collect items outside of my professional interests. One of the "tools" that collectors now have is the Internet and there is a rapidly growing interest in on-line trading and auction sites. The eBay web site is both the largest and probably best known of these sites, with about four million items of all sorts being auctioned simultaneously on any given day.

Last October, I decided to search on the word "herbarium." Unlike four months previous when I did not find anything, this time quite a number of "items" were returned, mostly botanical prints. But I also found the following Item Descriptions: "HOT COLLECTABLE!! - Antique Pressed Botanical"; "1908 Antique Pressed Botanical - COLLECTABLE!!!" My interest was piqued; while I had seen some interest in bound herbarium books, I had not seen our modern sheets described as "collectables" (hot or otherwise).

The items were mounted specimens from the herbarium of Charles H. Bissell (1857-1925), a botanist who helped found the Connecticut Botanical Society in 1903 (L. Klise, pers. comm.). When I looked at the various items, I found nine specimens with labels indicating they were from the Plantae Grayanae Exsiccatae (PGE), a series of 1500 collections distributed from 1902-1952 by Harvard University (E. Wood, pers. comm.). The only ownership mark was an oval "Herbarium of C.H. Bissell." The initial offering price ranged from \$9.99 to \$29.99 for a set of three specimens. The seller suggested they would make a nice "home accessory." I was curious about two things; the origin of these specimens and where they might end up. I posted a summary of what I'd found on NHCOLL-L so others in the community could also be aware of what I'd found. After learning the seller was from New Haven, Connecticut, Tim White (Yale Peabody Museum) contacted his colleagues Lucinda McWeeney and Linda Klise at the Yale Herbarium while my col-

league Tony Reznicek (Curator of Vascular Plants, University of Michigan Herbarium) contacted Les Mehrhoff (Collections Manager, University of Connecticut Herbarium) to both inform them of our findings and to see what information they might know. From Les' reply to Tony, I learned that the seller had purchased about 200 of the PGE specimens from an estate sale along with a second collection; 300 unmounted specimens from F. Tracy Hubbard, based in Cambridge, Massachusetts. I forwarded this information to Lucinda at Yale.

Where are the specimens now? Let me have Leo Hickey (Curator for the Botany Division) and
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Dealing with Databases

GARY ROSENBERG AND PAUL J. MORRIS
Academy of Natural Sciences, Biodiversity
Group, 1900 Benjamin Franklin Parkway,
Philadelphia, PA 19103

Databases seem a constantly moving target: each year brings new software and new buzzwords. One can easily get caught up in developing a database and migrating from one platform to another, but never get much data into the system (sound like strategic planning?). Without a certain amount of planning, however, the system will end up dictating rather than facilitating your work. I present here a short summary of database principles and briefly discuss database standards and data modeling as ways to avoid some common pitfalls.

The Oxford English Dictionary (2nd edition, 1989), dates the word "database" 1962. "Database" first referred only to collections of computerized data but later was extended to non-digital collections. Calling index card files or museum collections databases is not really appropriate, however,
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The Society for the Preservation of Natural History Collections was formed in 1985 and is recognized as a non-profit organization [501(c)(3)] in the United States. SPNHC members receive *Collection Forum*, a bi-annual journal of reviewed technical information, and two issues of the *SPNHC Newsletter* each year. The Society for the Preservation of Natural History Collections (SPNHC) is a multidisciplinary organization composed of individuals who are interested in development and preservation of natural history collections. Natural history collections include specimens and supporting documentation, such as audio-visual materials, labels, library materials, field data, and similar archives. The Society actively encourages the participation of individuals involved with all aspects of natural history collections.

The *SPNHC Newsletter* (ISSN 1071-2887) is published twice a year, February and August, by the Society for the Preservation of Natural History Collections, c/o Peabody Museum of Natural History, Yale University, 170 Whitney Avenue, PO Box 208118, New Haven, CT 06520-8118, USA. Changes of address should be directed to Lisa Palmer, Treasurer, PO Box 797, Washington, DC 20044-0797; palmer.lisa@nsmnh.si.edu.

Submissions are welcome. Please forward announcements, articles and notes to Tim White, Newsletter Editor, Invertebrate Paleontology, Peabody Museum of Natural History, Yale University, 170 Whitney Ave., PO Box 208118, New Haven, CT 06520-8118, USA; (203) 432-3767 (voice); (203) 432-9816 (fax); tim.white@yale.edu (email).

Deadlines for future newsletters are August 9, 2000, February 7, 2001, and August 8, 2001.

Presidential Profile

SALLY Y. SHELTON

*Office of Collections, National Museum of Natural History,
Smithsonian Institution, Washington, DC 20560*

As the first month of 2000 closes, SPNHC members are active on many fronts. With the New Year we reluctantly say farewell to Kate Shaw as SPNHC Managing Editor and Chair of Publications, and enthusiastically welcome Janet Waddington to that role. Thanks to Janet for bringing all of her knowledge and skill to this position, and to Kate for getting SPNHC publications back on track and for continuing to advise on publications issues as needed. If you haven't looked at the SPNHC web site lately, check it out at www.spnhc.org and let Jon Greggs know what a great job he has done. And please be sure you're currently subscribed to NHCOLL-L, the first place SPNHC news and notes are posted. Thanks, also, to those of you who have either nominated someone for election or have yourselves agreed to stand for election. Ballots will be out soon, thanks to Judith Price and her committee. Please take a moment to vote—your voice matters very much. SPNHC is an evolving organization and needs your perspective as it matures and strengthens.

There are several very important meetings in 2000. SPNHC is co-sponsoring a panel at the annual meeting of the Association of Systematics Collections, to be held in conjunction with the American Association of Museums' annual meeting in Baltimore this May. The panel will be held on Monday afternoon, May 15, and is titled "Genetic Resources: Management, Ethics and Use." This starts where last summer's SPNHC program on genetic resources left off, and will segue into a separate session on bioprospecting and international genetic resource treaty issues. The core questions are defining genetic resource collections, especially vis-a-vis traditional systematics collections, and figuring out a process for establishing best practices and policy guidelines for use. For more information and registration, check out <http://www.ascoll.org/2000program.html>.

The SPNHC meeting is set to go in Halifax, Nova Scotia, July 10-14, with an outstanding program planned. Look for details at the web site posted by the Halifax local com-

mittee at <http://nature.ednet.ns.ca/nature/SPNHC2000/>. This year's theme is "Maritime Natural History," and the proposed programs prove that the Haligonians are tackling this theme from many directions, from whale watching to Bay of Fundy intertidal paleontology to the Titanic. I promise to wear the sou'wester hat, which Iris and Alex brought to last year's banquet, to THIS year's banquet if Halifax ties or breaks the attendance record set in Washington.

Two major projects that need to be worked on between now and the annual meeting in
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Treasurer's Report

LISA F. PALMER

*Division of Fishes, National Museum of
Natural History, Smithsonian Institution,
Washington, DC 20560*

SPNHC had a healthy year in 1999. Preliminary analysis of financial records indicates that a total of 665 members and library subscribers renewed their membership last year. The 2000 renewal season is in progress. Over 430 member and library subscriber renewals have been received. Please renew by sending your check, money order, or Visa/MasterCard payment in US dollars to the SPNHC Treasurer, P.O. Box 797, Washington, DC 20044-0797 USA. Membership forms are available at the SPNHC web site, <http://www.spnhc.org>.

Publication sales are relatively slow this year compared to this time last year. One reason being that Volume 2 of our storage book, *Storage of Natural History Collections Ideas and Practical Solutions* is currently out of stock. SPNHC plans to reprint this popular publication before the end of the year. However, Volume 1, *Storage of Natural History Collections: A Preventive Conservation Approach* is still available for \$36. Both storage volumes are widely used by museum

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Committee Reports

Conservation Committee

The Annual Meeting in Halifax looks to be a busy schedule in a beautiful spot. The Conservation Committee is busy preparing for the meeting. Date and time for the committee meeting will be posted in the annual meeting registration material. Please do your best to join the meeting. The following subcommittee updates illustrate the stimulating information that will be included in the Conservation Committee meeting. *Citations Subcommittee.* Paula Work continues to compile the citation column for the SPNHC Newsletters, with the citations submitted by a number of SPNHC members and her own searches. *Research Subcommittee,* chaired by David von Endt, has been very active since the 1999 annual meeting. Paisley Cato has completed the member survey, "Priorities for Natural History Collections Conservation Research." Submitted to the National Center for Preservation Technology and Training (NCPTT), the survey product is now in the edit phase, prior to publication. A summary of the survey results are presented here on page 9 and will be presented at the annual meeting. A proposal titled *A Symposium on Preservation of Native American and Historical Natural History Collections Contaminated with Pesticide Residues* was submitted to the National Center for Preservation Technology and Training (NCPTT). The organizing committee for the proposal is Judith J. Bischoff, Jessica Johnson, Scott Carroll, Catherine Hawks, and Victoria Purewal. Stephen Williams has agreed to serve as principal project contact for the grant. The symposium will bring together conservators, collection managers, scientists, attorneys, Native Americans and other preservation professionals to discuss current scholarship and to map future plans of action related to the issues. If funded, the symposium will be held in spring 2001. David is working with the proposal planning committee on the venue and logistics for the symposium. The *Resource Subcommittee,* chaired by Cindy Ramotnik and Janet Waddington continue to maintain and coordinate bookings for the U.S. and Canadian Resource Display Units (RDUs) respectively. Look for information about the RDUs on the SPNHC web site, www.sphnc.org, and be sure to visit the RDU during the annual meeting in Halifax. The U.S. display continues to travel, and visited two venues in 1999 (the SPNHC Annual meeting in Washington, D.C., and the International Botanical Congress in St. Louis, Missouri). This year, the Canadian display will make its second Canadian appearance. Some new products will be on display for the first time! Remember that the RDUs are available for loan at meetings, conferences and other museum-related activities in the United States and Canada. Contact Cindy (ramotnik@unm.edu) or Janet (janetw@rom.on.ca) for details on how to book a display for your function. Gene Hess, chair of the *Wet Collection Assessment Subcommittee,* is working with Arnold Suzumoto on the *Jars and Lids* publication, and with Rob Waller and John Simmons who are near to completing the *Fluids Assessment* publication. If you are interested in joining the Conservation Committee, please contact Diana Hobart Dicus (dhdicus@micron.net).



Diana Hobart Dicus, Chair
Boise, Idaho

Documentation Committee

Holly McEntee from the University of Wisconsin Museum of Zoology has volunteered to chair the subcommittee on Legal Issues and Concerns. Holly is the Registrar for the UW Zoological Museum and is well informed in this arena. As topics of concern develop, bring them to Holly's attention (hmcntee@facstaff.wisc.edu). I have asked Christine Chandler, a colleague of mine at the Peabody Museum, to join the Documentation Committee. Chris is a vertebrate paleontologist and is putting together the "Calendar of Events" in the Newsletter. She has done an exhaustive search for all workshops, meetings and grant deadlines. Chris can be reached at christine.chandler@yale.edu. We are still in need of a chair of the Guidelines Subcommittee and if you would like to volunteer, contact Tim White (tim.white@yale.edu).

Over the past six months we have begun to develop the Committee's page on the SPNHC web site. Jon Greggs, the SPNHC Web Master has loaded a set of links that deal with computerization, discipline specific guidelines and legal issues. If you have items you think should be cited on the Documentation page, you could send your suggestions to Tim White or Holly McEntee.

In this issue of the Newsletter, we are running the first of three articles on computerization. The first of these essays deals with data models and the organization of data in your database. I asked Gary Rosenberg from the Academy of Natural Sciences in Philadelphia to write this because I have always appreciated his common sense approach to computerization and other collection-related issues. The other two articles will focus on "successful databasing projects" and "on-line catalogs".

Speaking of data models and computerization projects, plans are underway to host a symposium on "Data models, data standards, discipline-specific projects and on-line collections" at the SPNHC 2001 meeting in San Francisco at California Academy of Science. If you have anyone in mind as a potential speaker, contact Tim White or Rob Huxley. I hope to see you in Halifax. I know I am looking forward to another harbor cruise. Hmm, where did I put my Dramamine?



Tim White
Yale Peabody Museum

Publications Committee Help Wanted!

I would like to take this opportunity to introduce myself as the new Managing Editor of SPNHC. I have a tough act to follow taking over from Kate Shaw and will be appealing to the SPNHC membership for as much help as possible. A very high priority is *Collection Forum*, which has grown into a widely read and internationally respected journal. Unfortunately, a top quality journal is only possible with top quality manuscripts. We need manuscripts! Please consider *Collection Forum* first when you are planning to publish on any aspect that addresses the mission of SPNHC "to improve

preservation, conservation and management of natural history collections to ensure their continuing value to society." Check the Instructions to Authors on the inside back cover of any current issue for formatting and submission procedures. Case studies are generally not considered suitable unless they incorporate conclusions that make the study applicable to other situations.

Great manuscripts alone are not enough; we also need conscientious referees for this peer reviewed journal. If you would like to review articles for *Collection Forum*, please let me know. I would like to keep a file of potential reviewers from different disciplines.

The following committee positions need to be filled:

Associate Editor, Book Reviews - receives and solicits new books for review, and finds someone to review them for *Collection Forum*. The Book Review Editor doesn't have to actually write the reviews, or even read the books, but you can if you want.

Associate Editor, Collection Forum - shepherds manuscripts through the review process and advises on their suitability for publication. Additional responsibilities may be requested. Representation from as many disciplines as possible is desirable. This position usually sees short spurts of activity with big gaps in between. You will always be asked before a manuscript is assigned to you.

Special Project Manager - this is an unofficial title for a very important job. We need someone who can help get special publications through the whole process of selecting a publishing house, determining costs of production and distribution, and so on, in close communication with the Special Publication Editor(s), the Treasurer, and the Managing Editor. If you have publishing experience, this might be the job for you. Pioneer a new position for SPNHC.

If you are interested in joining the Publications Committee, please contact me. Janet Waddington, Managing Editor, SPNHC, Royal Ontario Museum, 100 Queen's Park, Toronto, ON, Canada M5S 2C6; janetw@rom.on.ca (email).

Janet Waddington
Royal Ontario Museum



Five Year Planning Committee

As we reported in the last Newsletter, SPNHC is embarking on the development of a second Five Year Plan to take us from the year 2000 when the current one concludes. The Long Range Planning Committee (LRPC) formally began the project at our DC Meeting. We were entrusted with this task, not because the first one was faulty, but because 1) it will soon be time for another one, and 2) collections-related fields are continually changing along with global economic, political, technological and environmental changes.

SPNHC is comprised of and in turn represents its membership. The Long Range Planning Committee needs your input, ideas, opinions, to do the best job we can in creating this Plan. You will find a special insert in this Newsletter, outlining the LRPC's current think-

ing and asking for responses. Please review the questions on the insert and respond to the LRPC by April 15. This is an ideal opportunity for you to contribute in a grassroots way to your Society.

Linda Thomas, Chair
Sessional Committee on Long Range Planning

Botany Special Interest Group

Fifteen delegates attended the Botany Special Interest Group Meeting at the 15th annual meeting in Washington, DC. John Pindermoss graciously accepted the position of chair and Alex Wilson acted as recording secretary. As no formal agenda had been formulated, a variety of topics were raised. Various adhesives were discussed including Polyvinyl Acetate (significance of acidification), Ethyl vinyl Acetate, Methyl Cellulose (problems with curling labels) and Archer's (loss of flexibility, toxicity of toluene solvent). The problem of "shadows" appearing around specimens on herbarium sheets was mentioned in connection with Willow and Borage. It was suggested that these specimens might have been dipped in a mercury salt solution. Some have interleaved these specimen sheets with waxed paper. Specimens of *Monotropa* turn black. Attempts to prevent this discolouring with liquid nitrogen have resulted in the specimen shattering. *Geldium* also turns black. It was suggested that pretreatment with formalin could prevent this. The Survey of Herbarium techniques done 1978 was discussed. Some thought it would be good time to repeat this survey. Attention was drawn to two recent publications on herbarium techniques (one from SPNHC, one from the Natural History Museum in London). The topic of shipping herbarium supplies (excess to institution's needs) to underdeveloped countries was raised. The problem of accessing the components of unconventional botanical collections (albums, photos, etc.) was raised. It was agreed that the quality of cataloging was the solution. Bound specimen are artifacts and generally not disassembled and incorporated into collections. Supporting documentation is best curated by specialists in the topic area. The dilemma of how to instruct herbarium users as to the rules of the institution was well addressed in a new publication from the Canadian Museum of Nature. Topic is treated with humour in a series of cartoons. Some discussion on security matters led to the conclusion that most visitors should not be left completely alone in collection storage areas although this is common practice. Most agreed that collection managers and curators must place added emphasis on "customer service" in the contemporary work place. Other topics were introduced but most participants have alternate commitments and the meeting adjourned after about an hour.

Alex Wilson
Nova Scotia Museum of Natural History



Membership

It has come to our attention that *Ronald Cole*, founding curator of the Museum of Wildlife & Fisheries Biology at the University of California, Davis, is retiring on March 1, 2000. Ron has been a SPNHC member since 1988. The university hired him in 1972 to build a "small" teaching collection for use in campus classes. This collection has now grown to include 12,000 specimens of birds, fish, and mammals, a photographic slide library of nearly 5,000 images, and an extensive print library. Much of Ron's tenure has been spent in the field, collecting specimens throughout North America, Africa, Latin America, Australia, and Papua New Guinea. When on campus, in addition to his curatorial duties, he annually taught courses dealing with museum science, including 30 years teaching students how to prepare and preserve materials for museum collections. Ron's successor is Mr. Andrew Engilis, a Research Affiliate with the Bishop Museum in Honolulu, Hawaii, and most recently a Senior Regional Biologist with Ducks Unlimited. Mr. Engilis can be reached via email at aengilisjr@ucdavis.edu and by telephone at (530) 752-0364. Ron will continue at the museum as Curator Emeritus, and he can be reached via email at recole@ucdavis.edu.



*Tim White, Newsletter Editor
Yale Peabody Museum*

Presidents Profile...

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Halifax are the Long-Range Plan (under the leadership of Linda Thomas) and the Leadership Manual (under the leadership of Steve Williams). Please contact Linda or Steve if you have thoughts or comments on these. Beth Merritt is working on an exciting program proposal for the Professionalism Committee that may benefit all SPNHC members. Please contact her for details.

In November, the U.S. Department of Interior and the Texas Association of Museums will co-sponsor the third biannual Conference on Partnership Opportunities for Federally Associated Collections, to be held in Austin, Texas. Details are posted at <http://museums.doi.gov/fedcoll/fedcoll3/>. Federal and non-Federal managers of Federal collections of all kinds are encouraged to attend this meeting. SPNHC members are already at work on a pre-conference workshop on scientific permits.

Where do we need you? Everywhere. We need your articles for the Newsletter, your papers for the annual meeting and Collection Forum, and your expertise and enthusiasm for all the tasks and responsibilities that keep SPNHC lively and relevant. We need your nominations for SPNHC awards and offices, your thoughtful and critical input on the Long-Range Plan, and your voice in the Annual General Meeting. If you are wondering if SPNHC has a place for your talents, research, experience and expertise, be assured that the answer is "yes."

New and Reinstated Members

Individuals

Donald Azuma
Margot Bruun
Amanda Cordes
Suzanne Cowan
Roland Cunningham
Maria Eifler
Gail Elia
Richard Fedele
Claire Forman
Charlene Fricker
Larry Gall
Neil Gilmore
Linda Gottfried
Jo Hatton
Steven Hill
Bonnie Isaac
Dan Kushell
Rebecca Conner Nemeth
William Mathews
Paul Morris
Naturales Museo
Robin Panza
Joan Pearlman
Jeff Person
Pamela Polloni

Katherine Rankin
Steve Ressel
Nathan Rice
Caroline Sakaguchi-Kunioka
Lisa Sasaki
Bill Saul
Andrew Sicree
Allison Smith
Earle Spamer
Bob Wittlinger

Libraries

Buffalo State College
Art Conservation Dept.
Chicago Botanic Garden
Herbarium
Queensland Museum
Library
Research Institute of
Texas
Santa Barbara Botanic
Garden Library

Life Membership

The SPNHC Life Membership is a special membership category for those interested in the long-term financial stability of our organization. Life membership monies are invested towards the future goals of the Society. SPNHC life memberships are available for \$625. The fee is 25 times the Individual Membership rate, currently \$25. Life Memberships may be paid in one of three ways:

- (1) one-time payment of \$625;
- (2) two-year installments of \$350/1st year and \$275/2nd year;
- (3) three-year installments of \$300/1st year, \$200/2nd year and \$125/3rd year.

Please contact the Treasurer should you wish further information about life memberships.

Lisa F. Palmer, Treasurer

The Herbarium and eBay....

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Linda Klise (Collections Manager for Paleobotany) describe their involvement and the subsequent resolution.

"In October of 1999 our division became aware that items from a substantial collection of early 20th century herbarium specimens from New England were being offered for sale over the internet. The collection consisted of approximately 500 specimens both mounted (200) and unmounted (300) by recognized collectors with complete label data and other documentation. We were very reluctant to purchase this collection as this helps to set a market value for scientific specimens and, thereby, increases the security risk for museum collections. However, in addition to the undoubted scientific and historical value of the collection it also complements the Peabody Museum's Herbarium Collection, often filling gaps in the New England ranges of species held by the Peabody. Thus, after carefully studying the collection, both of us strongly believed that this collection should be retained as a unit to serve the interest of scientific study and research. We were also aware that the owner had purchased these specimens as an investment and was not interested in donating the collection to the Museum.

After expressing our interest in this collection, we informed the owner the Peabody Museum could not place a value on these specimens. The owner contacted us a few days later offering the collection at a price that we felt was too high. She had placed the same value on all 500 mounted and unmounted specimens without regard to the time and material needed to properly curate and mount the 300 unmounted specimens. We informed her of this, but assured her we were still interested in purchasing the collection. She then came back with what we believe to be a reasonable offer based on her knowledge of herbarium specimens and auctions: \$24.00 for each of the 200 mounted specimens and \$5.00 for each of the 300 unmounted specimens for a total of \$6,000.

With this offer in hand we then submitted a request to The Bay Foundation to support the cost of purchase and curation of these important botanical specimens. The Bay Foundation has supported the Herbarium's efforts in the past and awarded the Botany Division \$8,695 to purchase these 500 specimens and to provide for their curation and mounting for storage. As they are catalogued, all data will be made available over the Peabody web site (<http://www.peabody.yale.edu>)."

With the hot market in collectibles, we may again see similar listings on the online auctions. While herbarium personnel have traditionally valued their collections based on expenses to prepare them or replace them with similar material, it may be time to look at the potential "collector value". As Sally Shelton (National Museum of Natural History) noted in a reply posting "market value is an external factor that museums cannot control or ignore." While we tend to focus on the scientific side of the specimen, others focus on the historical or even the aesthetic. Herbarium sheets are sometimes sold or exhibited as mixed-media art items. One respondent to my NHCOLL-L posting noted seeing framed sheets with \$350 price tags in antique shops in New York City.

Tony Reznicek pointed out that if one does display herbaria sheets without UV protection, one will eventually have a bleached, worthless specimen. Every herbarium probably has a few specimens with accompanying data so brief as to be virtually of no scientific value - it would not be a great loss if they were to be displayed. Should we as collections personnel be "on the lookout" for old herbarium sheets that do have complete data to protect them from meeting that fate? I think so.

Richard is an Adjunct Research Investigator and Collections Manager, Vascular Plants at the University of Michigan Herbarium. His collection interests focus on compactor installation, data management, and saving orphaned collections. Editor.

Treasurer's Report...

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professionals and students alike. An order form for Volume 1 is downloadable from the SPNHC web site. Back issues of our journal, Collection Forum, have been selling well. Incomplete sets are available at the discount rate of \$30 per set for a limited time. Contact Lisa Palmer at palmer.lisa@nmnh.si.edu for details. Sales of our newest publication, *Managing the Modern Herbarium*, were robust during the last half of 1999. Our distributor, Elton-Wolf Publishing, shipped over 350 books within in a few months of publication. We predict sales of this specialized book to do incredibly well. To purchase our newest publication, visit the SPNHC web site to obtain an order form.

Our other finance activities are operating smoothly. This year we have received donations towards the support of our Newsletter, Awards, and unrestricted funds. The SPNHC investment accounts have been totally moved to Charles Schwab Brokerage Accounts, and are under the

watchful eye of Finance Committee Chair, Steve Williams. Jane MacKnight closed the 1999 local committee account in Ohio, and recently shipped the annual meeting financial records to the SPNHC CPA for review. The terms of the \$9,950 US National Park Service grant to review priorities for research in the conservation of natural history specimens have been met. SPNHC member, Paisley Cato, was the principal investigator, and she plans to make the grant's findings available shortly. SPNHC has submitted a second grant proposal to US National Park Service. If awarded, \$19,860 will be used to support a symposium on preservation of Native American and historical natural history collections contaminated with pesticide residues.

Our financial and membership database had a facelift. Thanks to those Yale men, Tim White and Larry Gall, data entry is now a breeze, all SPNHC members and library subscribers have been assigned a unique membership number, and renewal notices and other forms have been integrated into the system. Thanks are also extended to Karen Reed, at the Smithsonian Department of Invertebrate Zoology who maintains the SPNHC database, and to Richard Freeman at the Smithsonian Natural History ADP office for server support.

Databases...

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cause they are organized in a particular way, be it systematic, stratigraphic or alphabetic. In contrast, information in an electronic database can be sorted in many different ways.

Databases contain tables with columns corresponding to fields and rows to records. In some programs, the tables correspond to files, in others, there can be many tables in a file. Fields should be defined narrowly to function well. If the species names in Table 1 were not split into their components, then the table could not be sorted by specific name, author or date, nor could the components be printed independently or in a different order. Only "Homo sapiens Linnaeus, 1758" could be output, but not, "sapiens, Homo", perhaps for an index.

Species ID	Generic name	Specific name	Author	Date
1	Homo	sapiens	Linn aeus	1758
2	Pan	troglydotes	Blumenbach	1775
3	Pan	paniscus	Schwarz	1929

Table 1. Species Names

Relationships can be established between fields in different database tables. For example, Table 1 could be linked to a specimen table (Table 2) via the Species number field, so that species names and attributes need not be stored in every specimen record.

Record ID	Catalog #	Species ID	Element	Locality Code	Donor
1	12345	3	femur	CD94	Schwarz, E.
2	12121	2	cranium	FT123	Smith, J.
3	12122	2	scapula	FT123	Smith, J.

Table 2. Specimen File

This illustrates "normalization", the structuring of a database to minimize redundant storage and increase consistency, which improves performance. For example, the higher classification for each species in Table 1 would be more efficiently stored separately (Table 3) than added in the species table itself, where it would have to be repeated for each species name.

Genus	Family	Superfamily	Order	Class	Phylum	Kingdom
Gorilla	Pongidae		Primates		Chordata	Animalia
Homo		Anthropoidea	Primates		Chordata	Animalia
Pan	Pongidae		Primates		Chordata	Animalia
Pongo	Pongidae		Primates		Chordata	Animalia

Table 3. Taxonomy File

Now suppose that *Pan* is transferred to Hominidae. With higher classification stored in the species table, one might make the change for *Pan troglodytes*, but not for *Pan paniscus*, leading to inconsistency. This particular mistake is not possible in Table 3, where only one change is necessary. Table 3 itself, however, is not normalized, since there is redundancy above the genus level. A child-parent structure (Table 4) is better.

This arrangement has other advantages. No additional fields need be created to add ranks such as subfamily. Ranks are optional, rather than being required by the struc-

Child	Parent	Rank (of child)
Animalia	LIST HEAD	Kingdom
Anthropoidea	Primates	Superfamily
Chordata	Animalia	Phylum
Gorilla	Pongidae	Genus
Hominidae	Anthropoidea	Family
Homo	Hominidae	Genus
Mammalia	Chordata	Class
Pan	Pongidae	Genus
Pongidae	Anthropoidea	Family
Pongo	Pongidae	Genus
Primates	Mammalia	Order

Table 4. Normalized Taxonomy File

ture. Given that phylogenetic systematics is moving toward unranked classifications, it is preferable to have a database scheme that does not depend on them.

The problem with ranks hints that the structure of a database can even constrain the kinds of questions it can be used to address. Imagine searching a collection database to find specimens donated by the author of the species they represent, these being potential type material, or at least authoritatively identified. This would not work in most museum databases, because the "author" field would usually contain last names only (e.g., Table 1), whereas the "donor" field would have last names followed by initials (e.g., Table 2). In a more normalized structure, with more uniform treatment of fields with people's names (e.g., ASC 1993), this query would succeed (finding "Schwarz" in Tables 1 and 2 above).

In addition to limiting queries, a poorly planned database can force undesirable procedures. I have seen a data entry clerk at a major museum ruthlessly abbreviating locality data because a field was too short. A more insidious example is a system that requires a species- or a genus-level identification. What if only the family or order or clade is known? Does that get put in a comments field, and if so, how is it found in a search or printed on the specimen label? Better to allow any taxon name for an identification, but then the link between Table 1 and Table 2 for Species number, doesn't work. Back to the drawing board.

How does one deal with this complexity? One way is to study various community standards to make sure that one has anticipated the fields that one is likely to need, for example Blum (1991) and those listed at <http://biodiversity.uno.edu/cgi-bin/>

continued on page 17

Value versus Valuation—A comment and reply...

This past Fall Richard Raebler, Collection Manager from the University of Michigan Herbarium, posted a comment to the Natural History Collection Listserv (NHCOLL-L) that sparked an interesting discussion about collection values and valuation. Rich's description of this event is described on page 1, but I asked two longtime SPNHC members, Sally Shelton and John Simmons, to debate this issue. Editor.

Comment: *Sally Y. Shelton, Office of Collections, National Museum of Natural History, Washington, DC 20560.*

Value is not the same thing as valuation, and valuation is increasingly a factor in museum collections management and by no means just for insurance purposes. Value can be an inherent or external property, scientific, historic, educational, or monetary. Valuation is always external and as objective as a market economy can be. Valuation and appraisal, strictly speaking, can only be based on fair market (i.e., financial) value. If a value is listed in a legitimate market guide (auction catalogue, etc.), that is a fair appraisal value; if it is not, it is difficult to appraise in a way that satisfies IRS requirements. An appraiser working under IRS rules cannot use other spheres of value that cannot be quantified or capitalized. In this sense, valuation only reflects current market value, no matter how over- or under-assessed that may seem to be. The sober truth is that there is an increasing market for certain types of specimens found in museum collections; that market value is an external factor that museums cannot control or ignore; that this must be taken into account in planning acquisitions, security and policy; and that this is new to some spheres of natural history but old hat to art and archaeology.

For collections without a reasonable fair market value (i.e., there is no sale or auction catalogue reference), there have been many suggestions, ranging from complete avoidance of the issue to a careful calculation of replacement value. The latter is of use in some insurance estimates that would otherwise not be possible, but it is a cumbersome process for large collections. Setting an arbitrary monetary value per specimen may look like a solution, but has not held up well to IRS scrutiny. Moral: don't pretend to be an appraiser. Besides, it is usually considered to be a conflict of interest for a museum employee to make appraisals or recommend appraisers to donors.

We cannot ignore the issue of market value simply because we wish it weren't out there to complicate scientific collections issues. High prices for fossils caused a rash of thefts, lootings, and land damage across the country before people knew what had hit them. Minerals have always been market-driven collections. Now meteorites are becoming the obsession of the former crystal-wearers (they swear they can feel the cosmic vibrations). There are some collections that have little or no market value (though their scientific value is enormous); there are some that have nothing but market value; there are some that have both.

Does market value affecting scientific valuation? That depends on definition of terms. An appraiser can only use market value to produce a monetary assessment of the worth of the collections at a given point in time. Scientific value does not directly enter into this, though scarcity can. An insurance estimate using replacement costs may or may not take curatorial time into account. The better the collections are documented and used, the easier it is to come up with this, though

replacement value is never going to be a pinpoint-accurate value in the eyes of the IRS the way a qualified appraisal will be.

I don't think that market value (which is in most cases a completely external factor that changes rapidly and unpredictably) needs to enter into the discussion of scientific, historic and/or educational value. It must, however, be taken into account when collections security, donations and transactions are discussed. Consider that fossils have had values on the legitimate (never mind black) market like diamonds, while being stored and protected like rocks in a cigar box. We have to know what value the world outside the museum sets on collections, because high values mean that the world will not stay away.

Conclusion: Don't pretend that there is no way to place valuation on the things you value. Educate your board and public about all the other values that will last longer than market value.

Reply: *John Simmons, Department of Herpetology, Museum of Natural History, University of Kansas, Lawrence, KS 66045.*

To say that "value is not the same as valuation" is the equivalent of saying that fish are not the same thing as fishing. Valuation is a subjective process to establish the worth of a museum collection based on some narrow criteria, such as market value. The problem is this estimate becomes what the collection is perceived to be worth on a much broader scale.

Valuation has a limited role in natural history collections, of use only for appraisals or to insure a collection. Appraisals are rare in natural history collections, and most collections can't be insured as they are property of federal, state, or provincial governments.

Reflect on the tragic fate of one of the oldest documented specimens, a mollusk, the type of *Strombus listeri*. First figured in 1685, it was named by Gray in 1852. While on loan for exhibition, the case was knocked over, crushing the shell. The exhibit was insured, but not the shell, because its historical value made it irreplaceable. The settlement considered its value as an example of the species (£10); as a holotype (£100); historical value (£3,890); and restoration (£1000); for a total of £5,000. The problem is that this value is so arbitrary. Just how does one get from priceless to £5,000?

Attempts to value natural history collections have described intrinsic, research, scientific, scholarly, public, cultural, market, insured, and monetary values. Because valuation is limited to insurance and appraisal, only market value is relevant.

Although many of us are horrified at the price of fossils, the commercial natural history market is quite old. Specimens in the early cabinets of curiosity were bought and sold regularly, and just 100 years ago, thousands of dealers in Europe and the Americas sold speci-

mens. The market is having the same effect now as it did in the past—it is valuing the specimens beyond the purchasing power of museums while stripping them of the data that makes them valuable to science. We can't stop the commercial market, but we don't need to aid and abet it, either. Scientific value has nothing to do with market value, nor can it be quantified in monetary terms, given that most of the value of natural history collections lies in their future use.

The problem is, the artificial value we assign for appraisal or insurance will become the sole value of the specimen to everyone but the collection custodians. Administrators and government officials will embrace any assigned monetary value with unpleasant results. If you import a specimen into the US, the 3-177 form asks for its value. How can we claim that it has no commercial value if we assign it an appraisal or insurance value? Once the specimen is perceived to have monetary value, the importing institution will be subject to the same tariffs as commercial dealers.

Insurance is based on replacement value, but even this is absurdly subjective. The fish collection at the Canadian Museum of Nature was estimated have a per-specimen capitalized value of US \$10.43. At the Museo de Ciencias Naturais in Rio Grande do Sul, Brasil, the capitalized value came to US \$28.55 per fish specimen. Why is a dead fish in Canada worth \$18.12 less than a dead fish in Brasil?

Who assigns the value? Valuation will not be done by curators or collection managers, but by commercial dealers, insurance underwriters, and others with no understanding of scientific value. An example of the impact of a valuation decision on natural history collections is NAGPRA, the Native American Graves Protection and Repatriation Act. It has forced the reburial of skeletons and the return of artifacts. NAGPRA mandated that the cultural value of the collections to Native Americans was greater than their scientific value. This valuation was beyond the control of the collection custodians, yet it affects what is being studied in anthropology.

The future will bring economic pressure on museums to allow destructive sampling (for DNA), for bioprospecting in collections by pharmaceutical companies, to dispose of collections of low monetary value, and to repatriate those of high monetary value. If we allow valuation to determine the worth our collections, it will be difficult to resist these pressures. Rather than embracing a process detrimental to collections, our energy should be directed towards educating administrators, boards, and the public about the scientific and cultural value of collections. If you must use valuation for appraisal or insurance purposes, make sure that the assigned value is not applied to the collection for other purposes.

Priorities for Natural History Collections Conservation Research: Results of a Survey of the SPNHC Membership

PAISLEY CATO

*San Diego Natural History Museum, Balboa Park,
1788 El Prado, San Diego, CA 92101*

Under the direction of the Conservation Committee and its Research Subcommittee, Paisley Cato surveyed the membership by mail to develop an updated list of priorities for natural history collections conservation research. This report summarizes background information, development and implementation of the survey instrument, results and data analysis of this project.

The survey instrument was developed with input from a core group of 40 professionals. The results from a previous multidisciplinary project on the conservation of natural science collections (Duckworth et al., 1993) and projects on conservation research needs conducted by the American Institute for Conservation (Merrick, 1996; Hansen and Reedy, 1994) were used as the basis for development of topics for research and/or transfer of information. Given the variety of disciplines and job functions represented within the membership, the survey was structured to permit analysis based on respondents' job functions and type of materials represented as their most critical needs.

The survey was mailed to 548 individual and institutional SPNHC members in September, 1999. From the 244 surveys returned, 229 were used for analysis, representing 42% of the membership. Responses

were analyzed and tables included in the report show percentages and weighted averages for research priorities. Sixteen topics were rated with an above average priority rating. Ten of these topics were selected by at least half of the respondents as the highest two ratings:

- Impact of preparation materials and methodologies on chemical and physical properties of specimens
- Impact of preparation materials and methodologies on scientific utility of specimens
- Development of preparation methodologies that maximize scientific utility of specimens
- Impact of treatments on the scientific utility of specimens
- Methods to assess systematically the condition of specimens over time
- Methods to assess systematically the condition of a collection of specimens over time
- Methods to assess risks to collections to rationally identify priorities for collection preservation investments and research
- Proper relative humidity and temperature parameters for general collection
- Materials specifications for containers
- Methods for repair/restoration of damaged specimens.

All of these topics should be given the highest priority for natural history collections conservation research. Additional topics were rated as priorities for transfer of information, with special attention given to conservation of documentation. Results of this survey will be discussed at the annual meeting in Halifax this summer.

Brazilian Law and Fish Collecting in Brazil

STANLEY H. WEITZMAN¹ & HANS-GEORG EVERS²

¹*Division of Fishes, National Museum of Natural History, Smithsonian Institution, Washington, DC 20560-0159.* ²*Edgar-Ross-Strasse, D-20251 Hamburg, Germany.*

The following letter from Dr. Roberto E. Reis, the President of the Sociedade Brasileira de Ictiologia (Brazilian Society of Ichthyology), was prompted by some recent unfortunate incidents of illegal fish collecting in Brazil by foreign nationals who attempted to export live and preserved fish without the proper Brazilian permits. The collectors involved were detained, deported to their home countries, and their collections confiscated. The Brazilian laws mentioned in the letter below apply to scientific collecting only and concern the exportation of both live fish and fish collected for scientific study. This letter has been distributed widely in Brazil to ichthyologists, to museum and university scientists, and to foreign individuals and museums and universities involved in neotropical research. However, because these laws also apply to aquarists who may attempt to export live and / or preserved fish from Brazil for scientific purposes, and because some aquarists are also occasionally involved in research or like to do their own collecting and studying of fish in the field where they may be mistaken for scientists, we here publish this letter as an aid to their activities. Scientific collecting in Brazil is regulated by CNPq (in English this acronym stands for the Ministry of Science and Technology of the Brazilian Government), which has published a series of regulations that must be strictly followed to avoid problems with Brazilian authorities. Commercial collection and exportation of Brazilian fish for the aquarium trade are regulated by Ibama (the Brazilian equivalent of the United States' Environmental Protection Agency). However, Dr. Reis informs us that collecting native Brazilian fish for home aquarium use in Brazil is not regulated, but that it is illegal to keep native fauna in captivity in Brazil, a seeming contradiction.

Each of us has had a long association with either Brazilian ichthyologists (especially Weitzman) or licensed Brazilian aquarium exporters (especially Evers), and we—like Dr. Reis—would like to see such legal ichthyological associations continue. As Dr. Reis notes, Brazilian ichthyology and ichthyologists have long had and profited very much from such associations. One witness to the fruits of this association is a 1998 volume of 603 pages published in Porto Alegre, Brazil, entitled *Phylogeny and Classification of Neotropical Fishes*. This book, with its 29 chapters about many aspects of neotropical ichthyology, is the result of cooperative research by ichthyologists from many parts of the world and is a landmark testament to the international cooperation mentioned by Dr. Reis. The book is the fruit of an International Symposium on Phylogeny and Classification of Neotropical Fish held in Porto Alegre, Rio Grande do Sul, Brazil, from July 20 to 26, 1997. Aquarists sometimes find new species, those previously unknown to science. It is imperative that such finds are treated according to Brazilian law if aquarium

and scientific collaboration with Brazil is to continue. Any person trained in systematics or taxonomy alone can describe new species of Brazilian fish, but only as long as they return and deposit the holotype and at least half of the paratypes in a Brazilian museum. We would like to emphasize here that aquarists' published observations on the breeding habits and other behavior of their fish have sometimes led scientists to study and find new modes of reproduction in fish and to study odd and interesting secondary sexual characteristics of their fish. These studies in turn sometimes lead to information that allows a better understanding of the evolutionary relationships among fish. This kind of relationship among aquarists and scientists is important, and it is to help aquarists and scientists who may read these pages to be aware of and to conform to such laws that we here publish Dr. Reis's letter.

We would also like to emphasize one facet about the aquarium hobby that we think is extremely important but is seldom discussed, especially in the aquarium literature. This is the relationship of conservation to the hobby. Both of us are conservationists, but some conservationists condemn the aquarium hobby as destructive of wildlife. In our opinion the aquarium hobby is a great tool for teaching ecological requirements of organisms to children and adults alike. Learning how to keep and breed fish and conform to their many and varied ecological needs according to the natural habitats of the many different fish species and genera that aquarists keep is an excellent way to learn about ecological requirements for survival of many kinds of organisms in nature. A true conservationist needs to know and understand the ecological needs of the organisms he or she is interested in protecting. Without that knowledge some people with conservation at heart blunder and do more damage than good to the animals they want to protect. In our view and experience far more damage is done to fish populations by habitat destruction via deforestation and other means of habitat alteration by man than by fish being collected commercially or otherwise for aquarium purposes.

Finally, we note here that some other countries in South and Central America have laws similar to those of Brazil, and we believe very strongly that it is in the best interest of both aquarists and scientific ichthyologists to attempt to conform to these laws.

Field Work and Scientific Fish Collection in Brazil with Emphasis on Cooperation With Foreign Scientists and Institutions

ROBERTO E. REIS

*Museu de Ciência e Tecnologia – PUCRS,
Av. Ipiranga 6681 - Cx P. 1429, 90619-900 Porto Alegre RS Brazil*

This letter is addressed to all members of the scientific community associated with ichthyology and especially curators of zoological collections, editors of scientific journals and aquarium magazines, and individuals involved in the execution of field work and the publication of results from field work.

Brazilian ichthyologists have a long history of cooperative ichthyological research and exchange of students with research scientists in North America and Europe as well as in various South and Central American countries. Such exchange of ideas and cooperative research have been highly profitable to all parties involved and have greatly increased knowledge of neotropical fish and their biodiversity.

The Brazilian scientific ichthyological community and the international scientific community involved in the study of neotropical fish firmly believe that this international cooperative research must be continued and hopefully increased for the best possible progress in the study of South and Central American ichthyology. However, recently some isolated episodes of illegal collection, including collecting of fish, by foreign individuals as well as the illegal deposit of type specimens, especially holotypes, in foreign institutions has come to Brazilian public attention via newspapers. These articles to some degree are misleading the Brazilian public regarding international research cooperation and field expeditions involving foreign researchers in field expeditions.

Recently several foreign aquarists / researchers were detained for collecting fish illegally in Brazil. Some of these persons also have described new species of fish in aquarium magazines and have broken Brazilian law by depositing the holotypes in foreign institutions. These persons were detained in Mato Grosso and Amazonas and deported to their countries by the Brazilian Environmental Agency (Ibama). The newspaper reports classified the episodes as "biopiracy." This topic has been increasingly discussed in the Brazilian public press in recent years, and at least six such cases were reported this year.

The Sociedade Brasileira de Ictiologia (Brazilian Society of Ichthyology) promotes the concept that such activities must be prevented to the full extent of Brazilian law so that it can continue to endorse international cooperation in ichthyological scientific research as is exemplified by the Calhamazon Project recently developed by several scientists and students from South and North America.

The inhibition of these undesired illegal activities should be undertaken by Brazilian and foreign institutions and individuals. This can be done by:

- Refusal to catalog fish specimens illegally collected in Brazil—Brazilian curators can be prosecuted for cataloging illegally collected specimens.
- Refusal to catalog holotypes into non-Brazilian collections based on fish specimens collected in Brazil.
- Editorial refusal to publish papers based on illegal field work.

The conduct of scientific expeditions in Brazil by foreign researchers (defined as "activities carried out within the Brazilian national territory by foreign individuals or foreign nationals involving transportation of human and material resources with the objective of collecting data, materials, biological and mineral specimens, items of native and popular culture, past and present, by

means of any resources and techniques, for the purpose of study, dissemination and research") is regulated in Brazil by the Decree No. 98.830 of January 15, 1990, of the Ministry of Science and Technology of the Brazilian Government.

The full procedures and requirements for conducting field work in Brazil are published on the Internet at <http://www.cnpq.br/sci/expeditions.htm> in English and <http://www.cnpq.br/sci/expedicoes.htm> in Portuguese. This legislation basically mandates that:

- Field work activities include joint participation and responsibility of a Brazilian institutional counterpart having a high level of scientific competence and reputation in the field of research related to the project.
- Materials collected and subsequently identified as representative (e.g., types) will be restored to an appropriate Brazilian institution.

The Sociedade Brasileira de Ictiologia therefore calls for continued cooperation with foreign ichthyologists and institutions that have manifested their agreement in conducting field work and publication of scientific ichthyological research that follow procedures that uphold Brazilian laws.

Roberto Reis' letter was sent to the Brazilian ichthyology community and is posted on the Sociedade Brasileira de Ictiologia web site (www.sbi.bio.br). This article was translated by Stan Weisman and Hans-Georg Evers in English for the Tropical Fish Hobbyist and in German in Die Aquarien- und Terrarienzeitschrift (Datz). This article is kindly reprinted with permission of Mary Sweeney, editor of the Tropical Fish Hobbyist.

Stan Weisman is a curator of Ichthyology at the Smithsonian's National Museum of Natural History and Hans-Georg Evers is a freshwater aquarist, who has written several books on aquarium fishes and numerous articles for German aquarium magazines. Roberto E. Reis is a professor at Pontificia Universidade Católica do Rio Grande do Sul (PUCRS) and the current President of the Sociedade Brasileira de Ictiologia. Editor.

Remember the Resources Display



for your next event!

**Special
Announcements**

Nature's Treasurehouses

The Natural History Museum is hosting an international conference, Nature's Treasurehouses?, from 4-7 April 2000 in London. This conference will explore natural history's place in society, especially at the present and in the future. The first of its kind, this conference is the core of a series of events at The Natural History Museum to celebrate the Millennium. Presentations and debates involving high-level speakers will tackle broad issues that include science, economics, media and communication, culture and education. This conference is for policy-makers, museum professionals, curators, scientists, information specialists, media and communication professionals, industrialists and educators; all those with a stake in the future of biological and geological diversity and sustainable development. Over the period of the conference a number of temporary public exhibition projects have been developed to link directly into the Nature's Treasurehouses? Conference themes. Including an innovative collaboration between The Natural History Museum and The Serpentine Gallery. In addition, the BBC will be holding a series of discussion programme concerning the making of natural history programme, involving scientists and BBC producers discussing specially edited clips. Full details including speakers, times, and booking information are available at the conference web site (<http://www.nhm.ac.uk/conference>). Nature's Treasurehouses Science Directorate, The Natural History Museum, Cromwell Road, London SW5 7BD United Kingdom, +44 (0)20 7942 5816 (voice); +44 (0)20 7942 5841 (fax).



Norman MacLeod
The Natural History Museum

University of Colorado Museum and Field Studies Program

The Museum and Field Studies program at the University of Colorado, Boulder offers the Master of Science degree in the museology of natural sciences. University Museum collections emphasize the Rocky Mountain region, but faculty research and curatorial strengths are international. Our collections are particularly strong in the archaeology of the U.S. Southwest, southern Rocky Mountain flora, the Tertiary fossil record of the western interior, Rocky Mountain mollusks and vertebrates, and the butterflies, bees, beetles and spiders of the western U.S. The University Museum is developing a major new exhibit on bio-diversity along the Front Range, offering opportunities for students to translate natural science research into public programs. The program admits twelve students each year. The curriculum emphasizes collections management, field research, and education/exhibitory. The program is cross-disciplinary, and admits students in art, history, and humanities disciplines represented in museums. That mix creates a lively student environment. The Denver-Boulder region is home to major museums; botanical gardens, zoos, and a new aquarium; state and national parks; and a wide range of field research opportunities. Students will intern at local museums and at national institutions. Graduates hold

positions at major museums across the region and the country. For information, consult the web page at www.colorado.edu/CUMUSEUM/.

Steve Lekson
University of Colorado Museum

XVIIIth (New) International Congress of Zoology

The XVIIIth International Congress of Zoology to be held in Athens, Greece (August 28 - September 2, 2000) is accepting abstracts for posters dealing with on-going projects at natural history collections. Among the 16 symposia at the Congress, several deal with topics of interest to the collections community. Additionally, general discussion groups, including one on zoological education, one dealing with the coordinated development of collections databases and another on the implications of the loss of taxonomic expertise address topics of importance to systematic biology and other collections-based science. The symposia and discussion groups each include a netforum, wherein participation by all zoologists who have access to the Internet is possible, not only those who plan to attend. For further information see the ICZ XVIII web-site: http://lionfish.ims.usm.edu/~musweb/icz_xviii/icz_home.html.

Stuart Poss
Gulf Coast Research Laboratory Museum
ICZ XVIII Webmaster

ACCESS TO COLLECTIONS Sponsored by the BCG, GCG & NSCG

The Biological Curators Group, Geological Curators Group and Natural Science Conservators Group cordially welcome SPNHC members to this meeting to be held on 3-4th April 2000 in the victorian seaside resort of Scarborough, UK. 'Social inclusion' is one of the UK governments new buzzwords and with the advent of 'Best Value', museums must show their commitment to providing access for all.. Within the scientific community there are calls for repatriation of type specimens and collections, particularly from countries to whom loans of material are sometimes refused and who cannot afford to send researchers to the holding institutions. This two day conference will look at how we afford access to collections, to the scientific community, the public and other users. It will consider the issues raised by how we enable (or don't enable) access, examples of good practice, how museums can break down barriers and are reaching beyond their walls. Registration is £25. Call for Papers: Papers and posters on any aspect of collections access, community and outreach work, joint working partnerships etc. For further details please contact: Nick Gordon, Curator (Natural Sciences), New Walk Museum, New Walk, Leicester, England LE1 7EA UK, United Kingdom; 44 116 2554100 (voice); 44 116 2553084 (fax); gordn001@leicester.gov.uk (email).



Nick Gordon
New Walk Museum

ASIH CURATION NEWSLETTER SUBSCRIPTION RENEWAL

In the past, the Curation Newsletter has been distributed at American Society of Ichthyologists and Herpetologists meetings and sent by mail to approximately 400 addresses. In the interest of minimizing reproduction and mailing costs, we are asking interested recipients of the Newsletter to access it electronically (<http://www.utexas.edu/depts/asih/coms/ihcc/news/news.html>) rather than requesting a printed copy. This issue of the Newsletter will be mailed to all on the current mailing list but we are requesting a subscription renewal ONLY by those who do not have access (or do not expect it within the next year) to the internet, or cannot otherwise access the Newsletter electronically. Libraries and those wishing to renew should send their name, title, institution name, department and address to Susan L. Jewett, Division of Fishes, National Museum of Natural History, MRC 159, Smithsonian Institution, Washington, DC 20560; 202-357-3300 (voice); jewett.susan@nrmh.si.edu (email).



Susan L. Jewett
National Museum of Natural History

Collections on the Mend

Museum of Southwestern Biology

The Museum of Southwestern Biology at the University of New Mexico in Albuquerque, will be moving to a new facility on the UNM campus in the Summer of 2000. The Divisions of Arthropods, Biological Materials, Fishes, Amphibians and Reptiles, Birds, and Mammals will be closed to visitors and loan activity starting on 1 March 2000. The UNM Herbarium will close 1 April. Normal museum activities should resume by early January 2001. This nine month cessation of normal operations will allow museum staff time to concentrate on the variety of tasks involved in relocating these collections. We are sorry for any inconvenience that this may cause and appreciate the patience of the research community. Until further notice, our mailing addresses and divisional phone numbers will remain the same.

Timothy K. Lowrey, Director
Museum of Southwestern Biology

Mollusca Collections, National Museum of Natural History

The collections and offices of Cenozoic Mollusca in the Department of Paleobiology, National Museum of Natural History, Smithsonian Institution, are in the process of being moved and reorganized within the East Wing of the Museum. Unfortunately, we shall be unable to process loans and receive visitors to the collections until this process is completed late this spring. A notice of reopening will be sent to PaleoNet and the Mollusca mailing list at

SPNHC (Canada Corporation)

The Society for the Preservation of Natural History Collections was incorporated in Canada in 1988 as a registered charitable organization. The goals and objectives of SPNHC-Canada (not its official name) are the same as those of SPNHC (the one this Newsletter belongs to). Membership is by application to the Board of Directors. There are no fees and no benefits of membership. Donations to SPNHC-Canada are tax receiptable for Canadian residents. Revenue is used to support the goals of individual SPNHC projects (that's the SPNHC you all know and love), or any other project that supports the goals and objectives of the society (i.e., SPNHC-Canada), and may be so directed by the donor. Confused? So are we. Questions about donating to SPNHC-Canada may be directed to Janet Waddington, Chair, Board of Directors (janetw@rom.on.ca) or Jerry Fitzgerald, Secretary/Treasurer (gfitz@mus-nature.ca).

Janet Waddington
Royal Ontario Museum

that time. The collections, offices, and Dall Library of the Mollusk Division of the Department of Invertebrate Zoology are also in the process of being moved, but their new home will be in the West Wing of the Museum. Sadly, this spatial separation of fossil and Recent mollusks will now make it more difficult for those researchers who must work with both Recent and fossil material. Contacts for the Cenozoic Mollusca move at the Smithsonian are Thomas Waller (waller.thomas@nrmh.si.edu) or Warren Blow (Blow.warren@nrmh.si.edu) and the contact for the Recent Mollusca is Cheryl Bright (bright.cheryl@nrmh.si.edu), Collections Manager of the Department of Invertebrate Zoology.

Thomas Waller
National Museum of Natural History

UCMP Invertebrate Collections

The invertebrate collections in the University of California Museum of Paleontology will be closed for reorganization and integration of the Menlo Park Cenozoic and Mesozoic invertebrate collections beginning in late January 2000. This project is expected to take about six months to complete, during which time we will be unable to receive visitors to the invertebrate collections or process loans. We apologize for any inconvenience this may cause. The paleobotany and vertebrate collections will remain open during this work. For additional information contact, check the UCMP web site at www.ucmp.berkeley.edu.



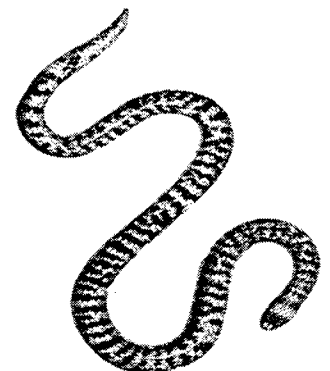
Karen Wetmore Grycewicz
University of California Museum of Paleontology

Publications of Interest

This section is from the Conservation Committee and chaired by Paula T. Work of the Citations Subcommittee. Prices and availability are cited when available. Annotations are provided by Diana Dicus {DD}, Jessica Johnson {JJ}, Rob Waller {RW} and Paula Work {PW}. Contributions and comments may be submitted to Paula Work, Grier Collection Research Center, 1720 Gilbert Avenue, Cincinnati OH 45202; 513-345-8506 (voice); 513-345-8501 (fax); ptwork@cincymuseum.org (email).

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POSITION ANNOUNCEMENTS

If you would like to submit job descriptions, please send postings to the Newsletter Editor. See the SPNHC web site, www.spnhc.org, for current postings.

Collection Manager in Botany, Academy of Natural Sciences (Philadelphia). The Biodiversity Group of the Academy of Natural Sciences (Philadelphia) is seeking a Collection Manager (CM) for the Academy's botanical collections. The CM will be responsible for caring for the collections, including processing and cataloging incoming material, maintenance of systematic order, identification, conservation and preservation of specimens, and keeping records of collections usage and growth that facilitate applications for grant funds. Qualifications include at least a Master's degree (Ph.D. preferred) in botany and five years experience working with museum collections in a position with similar responsibilities (with proof of sound training in collection management, recent graduates will be considered). Application materials including a letter of interest, curriculum vitae, and names, addresses, and telephone numbers of at least three references should be sent to: Botany CM Search, c/o Mark Isaksen, Academy of Natural Sciences, 1900 Benjamin Franklin Parkway, Philadelphia PA 19103; 215-299-1028 (fax); isaksen@acnatsci.org (email). Review of applications will begin 30 March 2000, and continue until a suitable candidate is identified.

Assistant or Associate Curator, Section of Malacology and Invertebrate Paleontology, Carnegie Museum of Natural History. Applications with Ph.D. are invited for the position of Assistant or Associate Curator to oversee the Section of Malacology and Invertebrate Paleontology. Other qualifications include external funding for research and experience in curation, public education, and exhibits. Applicants should send curriculum vitae, addresses of three references, reprints, and letter describing professional goals by March 1, 2000 to: Bradley C. Livezey, Dean of Science, Carnegie Museum of Natural History, 4400 Forbes Avenue, Pittsburgh, PA 15213-4080.

Assistant or Associate Professor, Museum & Field Studies Graduate Program. The University of Colorado Museum invites applications for a tenure-track, 9-month Assistant or Associate Professor appointment (with a summer administrative stipend) to coordinate the Museum & Field Studies Graduate Program. Academic fields represented in the program include Anthropology, Art History, Education, Biology, Paleontology, and Public History. Experience working with graduate students in museums or museum/field studies graduate programs is desirable. The appointment will be made jointly with the appropriate department. Responsibilities as coordinator include recruiting and advising students, assisting with curriculum development, marketing, developing on- and off-campus partnerships to foster student internships, and assisting with career placement. Ph.D. or equivalent degree and a record of published research required. Please send CV, 3 representative publications, statements of research, teaching, and museum-related experience, and have three letters of reference sent to Dr. Tom A. Ranker, University of Colorado Museum, Campus Box 218, Boulder, CO 80309-0218.

Curator of Natural Science, Putnam Museum of History and Natural Science. Immediate opening involving responsibilities for the academic interpretation of natural science collections. The Curator

of Natural Science assists with the management and care of the natural science collections and exhibits and conducts research in support of the museum exhibits and publications. The position will also represent the museum in state and regional biological and scientific associations. The Putnam museum is located on the Mississippi River in the Quad Cities region of eastern Iowa and western Illinois. Minimum qualifications include bachelors degree/masters preferred, and two years of prior experience in a museum or related research or educational institution with knowledge of museum practices and curatorial methods. Send letter of Interest and resume to Director, Putnam Museum of History and Natural Science, 1717 W. 12th Street, Davenport, IA 52804.

The Royal College of Surgeons of England, Trainee Conservator. The College houses four museums, two of which are open to the public, contain the nationally-designated Hunterian collection of anatomical and pathological specimens as well as other collections relating to human anatomy, pathology, natural history and the history of surgery. A vacancy has arisen for a trainee conservator to assist the Head of the Museums Conservation Unit in conserving the College's collections, with particular reference to the conservation of biological and human anatomical spirit specimens. You should hold a degree-level qualification relating to artifact conservation, preferably with experience and/or interest in some of the following: the handling/preparation of biological or anatomical specimens, the conservation of historic spirit specimens, taxidermy, dissection and/or histopathological specimen preparation. The post will initially be held on an eighteenth month contract, with possible appointment to a permanent position thereafter. Salary: GBP13,260- 14,790 per annum (depending upon experience). For details please contact Martyn Cooke, Head of the Museums Conservation Unit on +44 171 973 2189 (voice); mcooke@rcseng.ac.uk (email).

Collections Manager, Louisiana State University Herbarium, Department of Biological Sciences. The Louisiana State University Herbarium and Department of Biological Sciences invites applications for the position of collections manager. Minimum qualifications include a Master's degree or equivalent in plant systematics or related field and 2-4 years related experience, or a Ph.D. specializing in plant systematics. The supervision and training of students and others workers in herbarium activities, development and management of digital herbarium data bases; assisting the scientific community, general public, and governmental agencies in plant identification and the provision of pertinent technical information; and participation in funding raising and grant proposal preparation. Salary commensurate with qualifications and experience. Start date is approximately June 1, 2000; application deadline March 31, 2000, or until an applicant is selected. Send letter of application, resume, and names of at least three references to L. Urbatsch, Department of Biological Sciences, 508 Life Sciences Building, Ref. log # 000183, Louisiana State University, Baton Rouge, LA 70803; (225) 388-8555 (voice), (225) 388-2597 (fax); leu@lsu.edu (email).

Collection Manager in Ornithology, Peabody Museum of Natural History, Yale University. The Yale Peabody Museum of Natural History seeks an Ornithology Collection Manager. Qualified applicants should have a Masters or Ph.D. degree in Vertebrate Zoology, and must have experience in systematic ornithology, field collecting, and diverse specimen preparation techniques. Demonstrated competence in all aspects of the growth, maintenance and utilization of museum collections essential. Must have effective communication and interpersonal skills, and be able to work independently. Supervisory experience preferred. Salary commensurate with skills and experience. For further information contact Curator Jacques Gauthier, Division of Vertebrate Zoology, Peabody Museum of Natural History, Yale University, 170 Whitney Ave., PO Box 208118, New Haven, CT 06520-8118 USA; (203) 432-3150 (voice); (203) 432-3134 (Fax); jacques.gauthier@yale.edu (email). Yale is an equal opportunity employer.

Collection Manager in Vertebrate Paleontology, Peabody Museum of Natural History, Yale University. The Yale Peabody Museum of Natural History seeks a Vertebrate Paleontology Collection Manager. Qualified applicants should have a Masters or Ph.D. degree in Vertebrate Paleontology, and must have experience in vertebrate systematics and diverse field collecting techniques. Demonstrated competence in all aspects of the growth, maintenance and utilization of museum collections essential. Must have effective communication and interpersonal skills, and be able to work independently. Supervisory experience preferred. Salary commensurate with skills and experience. For further information contact Curator Jacques Gauthier, Division of Vertebrate Paleontology, Peabody Museum of Natural History, Yale University, 170 Whitney Ave., PO Box 208118, New Haven, CT 06520-8118 USA; (203) 432-3150 (voice); (203) 432-3134 (Fax); jacques.gauthier@yale.edu (email). Yale is an equal opportunity employer.

Databases...

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hl?data-std. Community standards now usually include data models, which are often summarized in E-R (entity-relationship) diagrams. Data models can also specify integrity rules and dynamic properties. Teorey (1994) is a good introduction to datamodeling; Bruce (1992) provides a detailed standard.

E-R diagrams are particularly useful for visualizing kinds of relationships between objects, in particular, whether a relationship is one-to-one, one-to-many or many-to-many. For example, the relationship between Table 1 and Table 2 above is one-to-many, Figure 1 shows this as an E-R diagram. (The "crow foot" symbol at the right end of the link means "many"; not all of the fields from Table 2 are shown.)

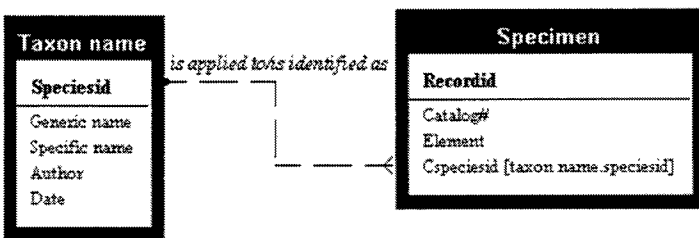


Figure 1. An Entity-Relationship Diagram.

One taxon name can be the identification for many different specimens. However, each specimen (or lot) can have only one identification, which may not be a desirable property. Suppose a specimen has been reidentified several times, because of synonymy or misidentification. The query that we considered before, matching author with donor, would fail if the specimen had been reidentified since it was donated. What we need is a many-to-many relationship between the tables, but this cannot be implemented directly; instead, an associative entity is created, with a flag for which identification is current (Figure 2).

By considering for each relationship if a one-to-one relationship is necessary, or is just an artifact of the structure, more general mod-

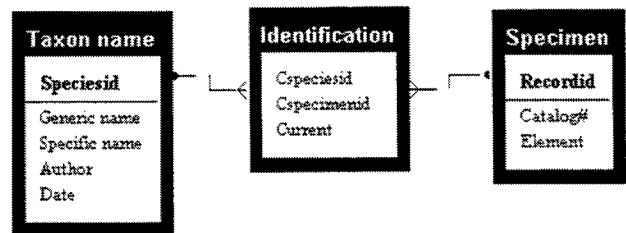


Figure 2. An Associative Entity-Relationship Diagram.

els can be developed that do not constrain the types of questions that may be asked. This will ensure that the collection database is a tool supporting research in addition to collection management.

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Gary Rosenberg has been the Curator of Malacology and Invertebrate Paleontology at the Academy of Natural Sciences in Philadelphia for the past 11 years. Paul Morris has been the System Manager for the Biodiversity Group at the Academy for the past two years. Both Gary and Paul received their Ph.D.'s at Harvard University and where inhabitants of the Museum of Comparative Zoology.

This article is sponsored by the SPNHC Documentation Committee and is the first in a series of essays on the computerization of natural history collections. Editor.

CALENDAR OF EVENTS

The Calendar of Events is maintained by Christine Chandler of the Documentation Committee. Application deadlines, conferences and symposium relevant to collection management, computerization and conservation of natural history collections are listed. Notices may be submitted to Christine at Division of Vertebrate Paleontology, Peabody Museum of Natural History, 170 Whitney Ave., PO Box 208118, New Haven, CT 06520-8118; (203) 432-3748 (voice); (203) 432-9816 (fax); christine.chandler@yale.edu (email).

February, 2000

February 7 – 12, 2000. **Heritage Interpretation at The Cultural Resource Management Program, University of Victoria.**

For more information, visit our web site at www.uvcs.uvic.ca/crmp/ or contact Kelly Wilhelm (250) 721-6119 (voice); kwilhelm@uvcs.uvic.ca (email).

February 11, 2000. **Board of Directors & Regular Membership Meeting of The Society of Mineral Museum Professionals (SMMP),** Tuscon Convention Center, Tuscon, AZ USA.

February 13 – 17. **Smithsonian Institution, National Conference on Cultural Property Protection,** Arlington, Virginia. To register, call (202) 633-9446.

February 15, 2000. *The Center for Museum Studies' 2001 Fellowships in Museum Practice proposal deadline for projects beginning in October, 2000.*

February 16 - 18, 2000. **Solving Fungal Problems in Heritage Collections collection care course offered through The Cultural Resource Management Program, University of Victoria.** For more information, visit our web site at www.uvcs.uvic.ca/crmp/ or contact Joy Davis, (250) 721-8462 (voice); (250) 721-8774 (fax); joydavis@uvcs.uvic.ca (email).

February 21 – 26, 2000. **Museums in the Marketplace with Pamela Johnson at The Cultural Resource Management Program, University of Victoria.** For more information, visit our web site at www.uvcs.uvic.ca/crmp/ or contact Kelly Wilhelm (250) 721-6119 (voice); kwilhelm@uvcs.uvic.ca (email).

February 26, 2000. **College Art Association Conference: The Tug of War between Faculty, University, and Publisher for the Rights to the Products of Contemporary Education, NYC.** Call (212) 691-1051 ext. 206 for reservations. For list of speakers and abstracts: <http://www.ninch.org/copyright/townmeetings/nyc.html>.

February 28, 2000. **Designing Experience-Based Learning Projects, Informal Learning Experiences (ILE) Professional Development Workshop,** Pacific Science Center, Seattle, Washington (additional sites TBA). For further information, contact: Bob Russell, (202) 364-8841 (voice); hanarus@aol.com (email).

March, 2000

March 1, 2000. **IMLS, National Leadership Grants for Museums (Museums On-Line, Museums in the Community, & Professional Practices) deadline.** Contact: Institute of Museum and Library services (IMLS), 1100 Pennsylvania Ave. NW, Washington, DC 20506 USA; (202) 606-8539 (voice); or check the IMLS web site at <http://wwwwww.ims.gov>.

March 1, 2000. **NEH, Seminars and Institutes grants (Education Programs) deadline.**

March 1 – 2, 2000. **Northeastern Forest Pest Council Annual Meeting, Portsmouth, New Hampshire.** For more information, contact: Charlie Burnham (617) 626-1455 (voice); Charlie.Burnham@state.ma.us (email) or Kenneth Gooch (413) 442-8928 ext. 28 (voice); Ken.Gooch@state.ma.us (email).

March 2, 2000. **Museum Theatre: An Interpretive Tool in Museums and Outreach Programs an Institute for Learning Innovation seminar.** To register or receive more information contact Elizabeth Donovan at (410) 268-5149 (voice); donovan@ilinet.org (email); visit our web site at www.ilinet.org.

March 3 – 5, 2000. **Annual Meeting of the Western Association of Vertebrate Paleontologists,** Museum of Northern Arizona, Flagstaff, Arizona, USA. Direct request for information to: Museum of Northern Arizona, 3101 N. Fort Valley Road, Flagstaff, Arizona 86001 USA, or contact Barry Albright at (520) 664-5211 ext. 242 (voice); balbright@mna.mus.az.us (email) or Dave Gillette at (520) 774-5211 ext. 246 (voice); dgillette@mna.mus.az.us (email);.

March 5 – 7, 2000. **Looking In, Reaching Out, Preparing for Tomorrow,** Virginia Association of Museums Annual Conference, Alexandria, Virginia. Contact: VAM, 2800 Grove Ave., Richmond, VA 23221 USA; (804) 649-8261 (voice).

March 6 - 8, 2000. **Conservation environment workshops presented by New York University, School of Continuing and Professional Studies:** Conservation Environments for Museums and Libraries (March 6), Establishing a Conservation Environment Monitoring Program (March 7), and Fundamentals of Conservation Environment Lighting (March 8). For additional information, contact The Real Estate Institute, NYU, 11 West 42nd St., New York, NY 10036; (212) 790-1362 or (212) 790-1647 (voice).

March 6 – 11, 2000. **Museums in the Marketplace** with Pamela Johnson, offered through the Cultural Resource Management Program, University of Victoria. Contact Joy Davis, Program Director, for information.

March 7, 2000. **GCG Workshop: Basic Gemstone Identification.** Contact: Dale Johnston, North Somerset Museum Service, Burlington Street, Weston Super Mare BS 23 1PR; 01934 621028 (voice); 01934 612526 (fax).

March 14 - 15. **NHM: Insect Pests in Museums. 2-day course.** For information, contact Phil Ackery, Dept. of Entomology, The Natural History Museum, Cromwell Road, London SW7 5BD; 0207 942 5612 (voice).

March 15, 2000. **Museum Assessment Program: Institutional Assessment (MAP I), Collections Management Assessment (MAP II), Public Dimension Assessment (MAP III) application deadline.**

- March 15, 2000. *Application deadline for the Academy of Natural Sciences Research Experience for Undergraduate Fellowships.*
- March 16, 2000. *National Telecommunications and Information Administration (NTIA), Technology Opportunity Program application deadline.*
- March 18 – 19, 2000. **Y2K Archaeology Expo 2000**, Tucson, Arizona. Contact: Darlene Lizarraga, Arizona State Museum, Univ. of Arizona, P.O. Box 210026, Tucson, AZ 85721-0026 USA; (520) 626-8381 (voice); (520) 621-2976 (fax); darlene@al.arizona.edu (email).
- March 22, 2000. **Conservation Center for Art and Historic Artifacts (CCAHA) & NEH, Water, Water Everywhere: Good Decision Making When Recovering Water-Damaged Paper Collections**, Philadelphia, PA. Complete program & printable registration form are available on CCAHA's web site: www.ccaha.org or contact: Preservation Services Office, CCAHA, 264 S. 23rd St., Philadelphia, PA 19103 USA; (215) 545-0613 (voice); (215) 735-9313 (fax); ccaha@ccaaha.org (email).
- March 24, 2000. *Peabody Museum, Harvard University, Summer Internship in North American Collections*, application deadline.
- March 27, 2000. *NEA, Creation and Presentation, Planning and Stabilization deadline.*
- March 28, 2000. **National Archives' Annual Preservation Conference, Washington, DC: Deacidification Reconsidered.** Contact Eleanor Torain, Conference Coordinator (NWT), 8601 Adelphi Rd., Rm. 2807, College Park, MD 20740-6001; (301) 713-6718 (voice); (301) 713-6653 (fax); preserve@nara.gov.
- March 28 - 29, 2000. **Disaster Preparedness and Recovery offered by SOLINET** with J. Sara Paulk at the University of North Florida, Jacksonville, FL USA.
- March 28 – 30, 2000. **Preservation Options in a Digital World: To Film or To Scan** presented by the Northeast Document Conservation Center. For information, contact Jamie Doyle (978) 470-1010 ext. 217 (voice); jdoyle@nedcc.org (email).
- March 29 – 31, 2000. **North American Textile Conservation Conference: Conservation Combinations**, Asheville, North Carolina, USA. Contact: C. McLean or C. Varnell, NATCC Symposium 2000, L.A. County Museum of Art, 5905 Wiltshire Blvd., Los Angeles, CA 90036 USA.
- March 29 – April 1, 2000. **World Marine Millennial Conference, Peabody Essex Museum, Salem, Mass.** Contact PEM for more information: Peabody Essex Museum, East India Sq., Salem MA 01970 USA; (800) 745-4054 ext. 3213 (voice); www.pem.org.
- March 30 – April 1, 2000. **AAM Professional Education Program: Legal Problems in Museum Administration**, Boston, MA. See <http://www.aam-us.org> for details.
- March 31 - April 1, 2000. **The Kansas Academy of Science** will conduct its 132nd Annual Meeting on at the Hutchinson Community College in Hutchinson, Kansas. As a part of the KAS2000 meeting, we will be also hosting a Paleontology Symposium, called "Half a Billion Years of Kansas History". The Call for Papers, registration form and other information is on line at www.oceansofkansas.com/kas2000.html.
- March 31, 2000. *Application deadline for Museum Studies Summer Internship, Milwaukee Public Museum. For additional information, please contact Dawn Scher Thomae at (414) 278-6157 (voice); thomae@mpm.edu (email).*
- ### April, 2000
- April 1, 2000. **IMLS, National Leadership Grant for Museums (Library-Museum Collaborations) deadline.** Contact: Institute of Museum and Library services (IMLS), 1100 Pennsylvania Ave. N.W., Washington, DC 20506 USA; (202) 606-8539 (voice); or check the IMLS web site at <http://www.imls.gov>.
- April 3 – 4, 2000. **Meeting of the Native American Grave Protection and Repatriation Committee**, Juneau, Alaska, USA.
- April 3 - 4, 2000. **BCG Conference and AGM: Access to Collections.** Contact: Nick Gordon, New Walk Museum, New Walk, Leicester, LE1 7EA; 0116 2554100 (voice); 0116 2553084 (fax).
- April 3 - 8, 2000. **Caring for Museum Collections, collection care course** offered by The Cultural Resource Management Program, University of Victoria. For more information, visit our web site at www.uvcs.uvic.ca/crmp/ or contact: Joy Davis, (250) 721-8462 (voice); (250) 721-8774 (fax); joydavis@uvcs.uvic.ca (email).
- April 4 - 8, 2000. The Natural History Museum, London, will host **Nature's Treasurehouses?, an International Conference on the Role of Natural History Museums and Collections.** Presentations and debates will explore natural history's place in society: past, present, and future. Contact: Conference Coordinator, Science directorate, Natural History Museum, Cromwell Road, London SW7 5BD, England, or send email containing your name and address to conference@nhm.ac.uk.
- April 4 – 8, 2000. **18th Annual Meeting of the Visual Resources Association**, San Francisco, California, USA. For complete information and preliminary schedule of events, visit the VRA web site at <http://www.oberlin.edu/~art/vra/con1.html>.
- April 5 - 7, 2000. **Collections Maintenance at the Northeast Document Conservation Center facility** in Andover, Massachusetts. Cost is \$500 for series of five workshops. If you have questions, contact Karen Brown, Northeast Document Conservation Center, 100 Brickstone Square, Andover, MA 01810; (978) 470-1010 (voice); kebrown@nedcc.org (email).
- April 7 – 8, 2000. **Florida Symposium of Dinosaur-Bird Evolution**, Dania Beach, Florida, USA, sponsored by the Graves Museum of Archaeology & Natural History. Check out <http://www.gravesmuseum.org> for details.
- April 10, 2000. *NSF, Geoscience Education proposal submission deadline.*
- April 10 – 15, 2000. **Approaches to Repatriation with Tom Hill at The Cultural Resource Management Program at the University of Victoria.** For more information, visit our web site at www.uvcs.uvic.ca/crmp/ or contact Kelly Wilhelm (250) 721-6119 (voice); kwilhelm@uvcs.uvic.ca (email).
- April 13, 2000. **Assessing the Impact of Community-Based Programs**, an Institute for Learning Innovation seminar. To register or receive more information, contact Elizabeth Donovan

at donovan@ilinet.org (email); (410) 268-5149 (voice). Visit our web site at www.ilinet.org.

April 16 – 19, 2000. **Museums and the Web 2000 Conference, Minneapolis, Minnesota.** Contact: Jennifer Trant and David Bearman, co-chairs, Archives and Informatics, 2008 Murray Ave., Suite D, Pittsburgh, PA 15217 USA; (412) 422-8530 (voice); www.archimuse.com/mw2000.

April 17 - 20, 2000. **Geoscience 2000, University of Manchester.** Direct inquiries to the Conference Office: Conference Office, The Geological Society, Burlington House, Piccadilly, London WC1V 0JU; 44 (0)20 7494 0579 (fax); geo2000@geolsoc.org.uk (email).

April 18 – 20, 2000. **44th Meeting of the Ecological Genetics Group (EGG), Edge Hill, Ormskirk, Lancashire UK.** Further information can be found at <http://www.edgehill.ac.uk/egg/>. The meeting will be preceded by a molecular data analysis workshop on 17 April 2000.

April 26 – 29, 2000. **The New York Natural History Conference: A Forum for Current Research.** Check out the New York State Museum web site, <http://www.nysm.nysed.gov/nhc.html>, for details.

May, 2000

May 3 - 5, 2000. **Architectural Records: Preserving and Managing the Documentation of Our Built Environment at The Athenaeum, Philadelphia.** For further information, visit CCAHA's web site at www.ccaha.org or contact the Preservation Services Office, Conservation Center for Art and Historical Artifacts, 264 South 23rd St., Philadelphia, PA 19103 USA; (215) 545-0613 (voice); (215) 735-9313 (fax); CCAHA@ccaaha.org (email).

May 13 - 15, 2000. **Annual Meeting of the Association of Systematic Collections, Baltimore, Maryland, USA.** See <http://www.ascoll.org> for details; asc@ascoll.org (email).

May 14 - 17, 2000. **Conference of the Canadian Association for Conservation of Cultural Property in Ottawa.** See <http://www.cci-icc.gc.ca> for details.

May 14 – 18, 2000. **American Association of Museums Annual Meeting, Baltimore, MD.** Theme: Museums 2000: Reflection, Vision & Change. See <http://www.aam-us.org> for details.

May 15 – 18, 2000. **BioEd 2000: The Challenge of the Next Century – International Union of Biological Sciences, Paris, France.** See <http://www.unige.ch/fapse/SSE/teachers/giordan/LDES> for information and registration forms.

May 17 – 20, 2000. **CCI Symposium: The Conservation of Heritage Interiors, Ottawa, Canada.** Contact: Canadian Conservation Institute, Symposium 2000, 1030 Innes Rd., Ottawa, Ontario K1A 0M5 Canada; james_bourdeau@pch.gc.ca (email).

May 20 - 26. **The Institute for Legal and Ethical Issues in the New Information Era: Challenges for Libraries, Museums, and Archives conference.** Space is limited. For more information visit the Center for Information Policy Research's web site at www.slis.uwm.edu/ilei.

May 24 - 29. **Annual Meeting and Symposium of the International Committee on the Training of Personnel of ICOM at the University of Victoria.** For more information visit the ICTOP/ICOM web site at <http://www.city.ac.uk/ictop>.

May 29 – June 2, 2000. **Hennig XIX, the 19th Annual Meeting of the International Willi Hennig Society, Leiden, The Netherlands.** Contact: Leids Congre Bureau BV, PO Box 16065, 2310 GB Leiden, The Netherlands, or +31 71 5148203 (voice); +31 71 5128095 (fax); lcb@wxs.nl (email).

June, 2000

June, 2000. **Mineralogical Museums in the 21st Century, an International Symposium on the History of Mineralogy, Natural History Museums, Classification of Minerals, Crystal Chemistry, and Gemology.** St. Petersburg, Russia. Contact: Galina Anastasenko (812) 328-94-81 (voice); dept@mineral.geol.pu.ru (email).

June, 2000. **14th Annual Meeting of the Society for Conservation Biology, Missoula, Montana, USA.** Direct email inquiries to scb2000@selway.umt.edu. For additional information, contact Brett Walker, Wildlife Biology Program, Univ. of Montana, Missoula, Mt 59812 USA; (406) 243-4493 (voice).

June 1 - 2, 2000. **Selection for Preservation at the Northeast Document Conservation Center facility in Andover, Massachusetts.** Cost is \$500 for the series of five workshops. If you have questions, contact Karen Brown, Northeast Document Conservation Center, 100 Brickstone Square, Andover, MA 01810 USA; (978) 470-1010 (voice); kebrown@nedcc.org (email).

June 1 - 3, 2000. **Bookbinding conference at the Rochester Institute of Technology** on the occasion of the installation of the Bernard C. Middleton Collection of Books on Bookbinding at RIT. Contact: Fred Jordan (716) 229-2144 (voice); email fjordan@eznet.net or David Pankow (716) 475-2408 (voice); dppwml@rit.edu.

June 4 – 9, 2000. **Biogeography of Southeast Asia 2000 – Organisms and Orogenesis, Leiden, The Netherlands.** Contact: Leids Congre Bureau BV, PO Box 16065, 2310 GB Leiden, The Netherlands, or +31 71 5148203 (voice); +31 71 5128095 (fax); lcb@wxs.nl (email).

June 8 - 13, 2000. **28th Annual Meeting of the American Institute for Conservation of Historic and Artistic Works (AIC), in Philadelphia,** will focus on preservation issues relating to electronic media. Contact the American Institute for Conservation of Historic and Artistic Works (AIC), 1717 K Street, NW, Suite 200, Washington, DC 20006; (202) 452-9545 (voice); 202-452-9328 (fax); infoaic@aol.com (email); <http://aic.stanford.edu/> (www).

June 14 – 20, 2000. **Joint Meeting of the American Society of Ichthyologists and Herpetologists & Participating Societies (American Elasmobranch Society, Neotropical Ichthyological Society, Herpetologists' League, Canadian Association of Herpetologists, & Society for the Study of Amphibians and Reptiles), La Paz, Baja California Sur, Mexico.** See www.utexas.edu/depts/asih/ for details.

June 17 - 21, 1999. **Annual Meeting of the American Society of Mammalogists,** University of New Hampshire.

June 24 – 28, 2000. **Annual Meeting of the American Society of Parasitologists,** San Juan, Puerto Rico.

June 25 – 29, 2000. **Managing Effectively in the New Century, 14th Annual Museum Management Program, Univ. of Colorado, Boulder.** For more information, contact: Victor Danilov,

Director, University of Colorado Museum Management Program, 250 Bristlecone Way, Boulder, CO 80304 USA; (303) 473-9150 (voice).

June 26 – 30, 2000. **Symposia on Freshwater Crabs of the World, Macro-crustaceans of the Eastern Pacific, and Habitat Loss and Crustacean Diversity, Puerto Vallarta, Mexico.** See The Crustacean Society web page for details: <http://www.lam.mus.ca.us/~tcs/framdex.htm>.

July, 2000

July 1, 2000. **National Endowment for the Humanities Preservation and Access application deadline.**

July 6 – 8, 2000. **Current Issues in Exhibitions Seminar, Washington, DC. 2000 AAM Professional Education Seminar.** Contact: Professional Education Programs; (202) 289-9114 (voice); seminars@aam-us.org (email); www.aam-us.org.

July 6 - 12, 2000. **ALA Annual Conference, Libraries Build Community, in Chicago.** See <http://www.ala.org> for details.

July 10, 2000. **NSF, Biological Databases and Information proposal submission target date.**

July 10 - 14, 2000. **15th Annual Meeting of the Society for the Preservation of Natural History Collections.** Halifax, Nova Scotia. Hosted by the Geological Survey of Canada and Nova Scotia Museum of Natural History.

July 10 - 14, 2000. **4th International Brachiopod Congress, London, UK.** Contact: Sarah Long 0207 942 5712 (voice).

July 12 – 14, 2000. **5th International Ancient DNA Conference, Manchester Conference Centre, Univ. of Manchester Institute of Science and Technology (UMIST), Manchester, England.** Contact: Terry Brown, Dept. of Biomolecular Sciences, UMIST, Manchester M60 1QD UK; +44 161 200 4173(voice); +44 161 236 0409 (fax); terry.brown@umist.ac.uk (email).

July 23 – 28, 2000. **9th International Congress for Culture Collections (ICCC-9), Brisbane, Australia.** The web site address is <http://wcdm.nig.ac.jp/wfcc/ICCC9/ICC9.html>.

July 23 – August 4, 2000. **14th Annual Western Archives Institute, Univ. of Redlands, Redlands, California.** Contact: Administrator, Western Archives Institute, 1020 O St., Sacramento, CA 95814 USA; (916) 653-7715 (voice); (916) 653-7134 (fax); ArchivesWeb@ss.ca.gov (email).

July 26 – 30, 2000. **53rd Annual Meeting of the Lepidopterists' Society, Winston-Salem, North Carolina, USA.** Check the Society's web page for future details.

August, 2000

August, 2000. **New Trends in Paleoichnology, 31st International Geological Congress, Rio de Janeiro, Brazil.** Organizer: Renata Netto.

August 6 – 10, 2000. **Joint Meeting of the American Bryological & Lichenological Society (ABLS), American Fern Society (AFS), American Society of Plant Taxonomists (ASPT), & International Association of Plant Taxonomy (IAPT), Portland Convention Center, Portland, Oregon, USA.** Meeting homepage: Botany 2000.

August 14 - 19, 2000. **118th Stated Meeting of the American Ornithologists' Union, Joint Millennial Meeting of American Ornithologists' Union, British Ornithologists' Union, Society of Canadian Ornithologists, Memorial University of Newfoundland, St. John's, Newfoundland, Canada.** See www.fmnh.org/aou/aoupage.htm for details.

August 20 - 26, 2000. **International Congress of Entomology, Iguassu Falls, Brazil.** Contact: Dr. Decio Luiz GaO. Box 231, 86001-970 Londrina-PR, Brazil, or check out the ICE web site at: <http://www.embrapa.br/ice/>.

August 23 – 27, 2000. **Joint ICOM's International Committee for Documentation (CIDOC) and the Canadian Heritage Information Network (CHIN) Meeting, Ottawa, Canada.** For further announcements check out CHIN & CIDOC's web sites: www.chin.gc.ca/cidoc and www.cidoc.icom.org.

August 28 – September 1, 2000. **Joint 48th Symposium of Vertebrate Palaeontology and Comparative Anatomy (SVPCA) with 8th Symposium of Palaeontological Preparation and Conservation, University of Portsmouth, England.** Check SVPCA's web site for details: www.svpca.org.

August 28 – September 2, 2000. **28th (New) International Congress of Zoology, Athens Greece.** For information, see the ICZ XVIII web site at http://lionfish.ims.usm.edu/~musweb/icz_xviii/icz_home.html.

August 28 - September 3, 2000. **SAA Annual Meeting, in Denver.** See <http://www.archivists.org> for details.

September, 2000

September 1, 2000. **NSF, Biological Resources application deadline.**

September 6 – 9, 2000. **Museum Computer Network Conference. Museums and Technology: The Name of the Game is Change, Las Vegas, Nevada, USA.** For more information, point your browser to: <http://www.mcn.edu/mcn2k/index.htm>.

September 21 - 22, 2000. **Preservation Administration at the Northeast Document Conservation Center facility in Andover, Massachusetts.** Cost is \$500 for series of five workshops. If you have questions, contact Karen Brown, Northeast Document Conservation Center, 100 Brickstone Square, Andover, MA 01810; (978) 470-1010 (voice); kebrown@nedcc.org (email).

September 22 - 28, 2000. **XIV International Conference on Archives: Archives of the Information Society in the New Millennium, Seville, Spain.** See the ICA web site at <http://www.archives.ca/ica>, or contact: International Council on Archives, 60 rue des Francs-Bourgeois, F-75003 Paris, France; 100640.54@compuserve.com (email).

October, 2000

October 10 - 14, 2000. **IIC Congress: Tradition and Innovation: Advances in Conservation, Melbourne, Australia.** See <http://www.natmus.dk/cons/iic/conferences/melbrn/melbrn.html> for details, or contact: IIC – Buckingham St., London, WC2N 6BA, UK; iicon@compuserve.com (email).

October 11 – 14, 2000. **Southeastern Museums Conference 2000 Annual Meeting, Knoxville, TN USA.** Contact: Shelley Ritter, Curator, MS Dept. of Archives & History (601) 359-6901 (voice); (601) 359-6981 (fax).

October 15 – 21, 2000. **Non-Destructive Testing: 15th World Conference, Rome, Italy.** Contact: Roma 2000, G. Nardoni, President ICNDT, Via A. Foresti 5, 1-25 127 Brescia, Italy; aipnd@mail.protos.it (email).

October 24 – 26, 2000. **The International Conference on Conservation, Krakow, Poland.** Contact: Zbigniew Wiklacz, Instytut Historii Architektury, 31-002 Krakow, Poland.

October 25 – 27, 2000. **The Real Thing: The Work of Museums in the New Millennium, New England Museum Association Conference, Portland, Maine USA.** Check out details at NEMA's web site: <http://www.nemanet.org>.

October 26–27, 2000. **Developments in the Technology of Digital Printing: Preservation and conservation Issues for Libraries, Archives, and Museums, London.** Technical & research papers are invited. Contact: Dr. Anthony W. Smith, Camberwell college of Arts, Wilson Road, London SE5 8LU; +44 207 514 6427 (phone); 514 6405 (fax); a.w.smith@camb.linst.ac.uk (email).

November, 2000

November 6 – 10, 2000. **Prevention of Hazards in Storage Areas, Prevention 2000 International Conference, Draguignan, France.**

November 10–12, 2000. **Taxonomic Databases Working Group (TDWG) Annual Meeting: Digitizing Biological Collections, Senckenberg Museum, Frankfurt, Germany.** For further information, check TDWG's web site: <http://www.tdwg.org>.

November 10 - 12, 2000. **Envisioning the Past: Constructing Knowledge through Pictorial Traditions of Representations, University of Southampton, UK.** Visit our web site at: <http://www.arch.soton.ac.uk/DeptStuff/representation.htm>.

November 13 - 15, 2000. **3rd Conference on Partnership Opportunities for Federally Associated Collections, Austin, Texas.** For more information contact: Texas Association of Museums, 3939 Bee Caves Rd., Bldg. A, # 1B, Austin, TX 78746 USA; <http://www.io.com/~tam/doicall.html>; (512) 328-6812 (voice); (512) 327-9775 (fax); tam@io.com (email).

December, 2000

December 4 - 8, 2000. **4th International Conference on Mineralogy and Museums, Melbourne, Australia.** Contact William D. Birch, bbirch@mov.vic.gov.au (email).

Autumn, 2000

Autumn, 2000. **60th Annual Meeting of the Society of Vertebrate Paleontology, Mexico City, Mexico.** Check SVP's web site for details: <http://www.museum.state.il.us/svp//>.

January, 2001

January, 2001. **BCG: Documentation. Training meeting.** Contact: Nick Gordon, New Walk Museum, New Walk, Leicester, LE1 7EA or 0116 247 3030 (voice).

January 3 – 7, 2000. **Joint TCS & SICB Meeting, Chicago, Illinois, USA.** See The Crustacean Society web page for details: <http://www.lam.mus.ca.us/~tcs/framdex.htm>.

May, 2001

May 29 - June 4, 2001. **AIC Annual Meeting, Dallas, Texas.**

June, 2001

June 26 - July 1, 2001. **7th North American Paleontology Convention hosted by the Museum of Paleontology at the University of California, Berkeley.** Preliminary information is available at <http://www.ucmp.berkeley.edu/napc/NAPC2001.html>.

August, 2001

August 12 - 16, 2001. **Joint Meeting of the American Bryological & Lichenological Society (ABLS), American Fern Society (AFS), & American Society of Plant Taxonomists (ASPT).** Albuquerque Convention Center, Albuquerque, New Mexico, USA.

September, 2001

September, 2001. **An International Conference on the History and Future of Conservation (no formal title yet) will be held in the Education Centre of the Great Court of the British Museum.** Abstract submission deadline is May 31st, 2000. Advice on abstract suitability may be had by contacting waoddy@british-museum.ac.uk (email).

Summer, 2001

Summer, 2001. **16th Annual Meeting of the Society for the Preservation of Natural History Collections.** California Academy of Sciences, San Francisco, California. Contact Local Committee Chair Jean DeMouth (jdemouth@calacademy.org) for further information.

Summer, 2002

Summer, 2002. **17th Annual Meeting of the Society for the Preservation of Natural History Collections.** Redpath Museum, Montreal, Quebec, Canada. We have a strong bid from the Redpath Museum, in Montreal for the year 2002. The staff has chosen the year 2002 well in advance, because they have upgraded their Victorian lecture hall to encompass a videoconferencing facility and will have complete renovation of the main gallery. Some SPNHC members will recall that the Redpath hosted a meeting in 1987. Ingrid Birker was the Chair of the Host Committee then, and will be co-coordinating the 2002 meetings with Gerry Fitzgerald at the CMN (Canadian Museum of Nature). Should our membership vote to accept this kind invitation the proposed dates are June 15 - 20, 2002. Ingrid will present a formal invitation at the next AGM in Halifax. Members in attendance will be able to vote on this and any other bids received at that meeting. At this time, we have no other bids. Add this to your growing list of reasons to come to the 2000 SPNHC Meetings in Halifax!



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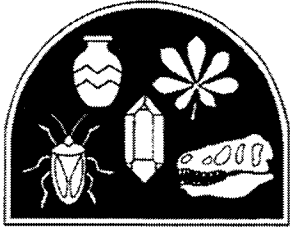
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Future Sites of our Annual Meetings

2000 ♦ *GSC-Atlantic & Nova Scotia Museum of Natural History* ♦ *Hallifax, Nova Scotia*

2001 ♦ *California Academy of Science* ♦ *San Francisco*