Message from the Co-Chairs

Paul Theerman
National Library of Medicine

Tim L. Pennycuff
University of Alabama at Birmingham

We hope that you will join us for the Science Technology and Healthcare (STHC) Roundtable meeting this month during the SAA conference in San Francisco. We are scheduled to meet on Wednesday, August 27 from 5:30 – 7:30 p.m. in Yosemite A at the Hilton San Francisco, the main SAA conference facility.

STHC’s mission is to provide a forum for archivists working at institutions in the natural and social sciences, technology, and the health sciences. It provides a means for members to discuss projects, problems, and products in common.

Following the STHC Roundtable business meeting, there will be a presentation by Will Snow, project manager of Stanford University’s SALT Project (Self-Archiving Legacy Toolkit). Stanford’s University Archives has initiated a project to “digitize and present the collected papers of luminary faculty” by more than simple digitization. Snow will discuss the project’s use of semantic processing technology to improve access into the individual’s collection and will describe a key element of the project: the ability of the faculty to self describe his/her corpus of work.

Following the presentation, there will be time to discuss ideas for presentations for the 2009 meeting in Austin and the tradition of the STHC “Roundtable Round Robin” to discuss the “hot topics” by STHC members.
If you are unable to travel to San Francisco this year, we do hope to see you in Austin in 2009!

The Roundtable Agenda is below. We look forward to seeing you at the Roundtable.

**STHC Roundtable 2008 Meeting**

**Wednesday, August 27, 2008, 5:30–7:30 P.M.**

**Hilton San Francisco**

*Agenda*

**Welcome and Introductions**

**Approval of Minutes**

**Council Representative**

**Program Committee Representative**

**Old Business:**


Election of new STHC Co-Chair.

Archival Elements Newsletter: Ewa Basinska.

STHC listserv: Russell Johnson.

STHC website: Rose Roberto.

Warnow-Blewett Award: Jean Deken.


Stanford's University Archives are beginning to digitize and present the collected "papers" of luminary faculty. The full potential of this resource of scientific legacy is not realized by simple digitization. Through the application of semantic processing technologies (coupled with rich visualization tools), a luminary's lifetime collection of research, publications, correspondence and presentations can be accessed not only by keyword, but also by concept, collaborators, time, place, organization and even project. Our hypothesis is that these facets will transform the processing and delivery of personal archival collections, and expose the historical context and intellectual concepts threading through the careers of some of the greatest scientists and thinkers of the 20th century.

Central to the vision of SALT is the notion of self-description of a luminary's own corpus. In addition to providing oral history, video commentary and textual annotation to their collected works, the toolkit gives eminent researchers the tools to create, apply and edit their own taxonomies, ontologies and controlled
vocabularies to their works.

We are testing these tools with Edward Feigenbaum, a luminary AI scientist, whose collected papers have been partly digitized and analyzed.

New Business

Proposed program ideas for SAA 2009—August 11–16—Austin, Texas.

Roundtable Round Robin: “Hot Topics” from STHC members.

Adjournment

Our chief concern is to ensure that the STHC Roundtable reflects the interests of its participants. We welcome all suggestions relating to the above topics or concerning any other issues members might like to see addressed at our meetings. Please do not hesitate to get in touch with either of us:

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Around and About Archives

SAHMS Meeting Announcement: Birmingham, Alabama, March 6-7, 2009

Tim L. Pennycuff
University of Alabama in Birmingham

The 11th annual meeting of the Southern Association for the History of Medicine and Science (SAHMS) will be held in Birmingham, Alabama, March 6-7, 2009. The meeting is being hosted by the Historical Collections unit at the University of Alabama at Birmingham. UAB was the host site for the organization’s second meeting in 1999.

SAHMS meetings continue the group’s original mission “to promote awareness at colleges and universities in the South of the importance and usefulness of the history of medicine and science.” The annual conference is aimed at providing a means for exchange and sharing of research, ideas, and interest related to the history of medicine, science, and technology. Faculty, students, scholars and independent researchers have all presented papers at SAHMS.
While SAHMS meets exclusively in the South, its membership and conference speakers are not limited to Southerners! Recent conferences have included speakers from across the country and from Canada, the United Kingdom and Denmark. Papers are not limited to topics with a Southern focus either, and papers recently presented include topics on ancient medicine, medicine of the early Republic, Latin American medicine, and human experimentation in the 20th century.

A call for papers is currently posted on the SAHMS website, http://www.sahms.net/. Proposals are being accepted until September 30th.

Refer to this website for hotel, travel and other conference information from the local arrangements committee, all of which will be posted later in the year as those details are finalized.

See you in Birmingham in March 2009!

May 2008

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**UAB Celebrates the 50th Anniversary of the Reynolds Historical Library**

**Tim L. Pennycuff**  
University of Alabama in Birmingham

On February 2, 1958 the Lawrence Reynolds Library was formally dedicated in ceremonies at the University Medical Center in Birmingham, Alabama. The specially designed facility housed an invaluable collection of almost 6,000 medical texts and manuscripts that had been collected by Lawrence Reynolds. The newly opened building housed the Reynolds collection, contained work space for staff, provided a reading area for students, faculty and visiting scholars, and even contained a small apartment for use by Reynolds during his visits to Birmingham.

Dr. Reynolds was a great bibliophile and collector of medical texts and manuscripts, a life-long passion that he cultivated through friendships with several rare book dealers. Reynolds (1889-1961) was an Alabama native who graduated from the Johns Hopkins University School of Medicine and who had a successful radiological
practice in Detroit, Michigan. He never married and was able to devote considerable time and resources to his passion for books and for collecting. He eventually acquired one of the best medical collections in private hands, with medieval manuscripts, early printed works, and early editions of the classics of modern medicine and science, including Harvey, Vesalius, Pare, Newton, and Osler. In addition to books, Reynolds also acquired letters written by medical greats, such as Jenner, Osler, Pasteur, and Nightingale, and numerous medical objects, including several 17th century ivory anatomical manikins.

Over the years, Reynolds was approached by officials from several institutions who each hoped to obtain the collection. Luckily for Alabama, he decided to donate the collection to the medical school in his home state. The library’s dedication ceremony was a festive occasion and the facility a source of pride for Reynolds. It was also a source of pride for the personnel in the emerging medical center, which had been established in Birmingham just 14 years prior to the library’s dedication. Since 1975 the Reynolds collection has been housed within UAB’s Lister Hill Library of the Health Sciences, and today it is one of three components of the library’s Historical Collections unit, the other two being the UAB Archives and the Alabama Museum of the Health Sciences. The Reynolds Library currently houses over 12,000 books with a growing collection of almost 1,000 texts related to medicine during the Civil War.

Celebrations for the library’s fiftieth anniversary kicked off on February 8th with the Reynolds Historical Lecture, an event held annually at UAB as part of Medical Alumni Weekend. Stephen J. Greenberg of the National Library of Medicine’s History of Medicine Division was the 2008 lecturer. His lecture, “Real Books: What They Are & Why We Still Need Them,” was appropriate for the occasion of the library’s anniversary. The lecture was preceded by the broadcast of a video compilation of memories of the library, featuring archival photographs and excerpts from oral histories of former and current university faculty and staff and, fittingly, from one of Reynolds’ nieces, a nonagenarian who had attended the library’s dedication in 1958.

Following the lecture, a reception was held in the Alabama Museum of the Health Sciences. UAB President Carol Z. Garrison, Reynolds Associate Steering Committee Chair H. Hughes Evans, and former Steering Committee chair Wayne H. Finley began the reception by carving the library’s anniversary cake, a wonderful concoction created to resemble rare books. In addition to the festivities surrounding the February lecture, two open-house receptions were held in March, one for the students, faculty and staff from UAB’s Medical Center and the other for students, faculty and staff from the university’s social science and humanities schools. Reception attendees received screen-printed tee-shirts complete with the UAB Historical Collections logo and an image from Vesalius’ De Fabrica. At the
reception, staff displayed many of the department’s treasures, including incunabula, rare texts, manuscripts, archival material and university-related memorabilia. A photographic exhibit featuring select treasures from all three units of Historical Collections was also installed as part of the library’s anniversary celebrations.

Historical Collections staff garnered good campus and community publicity for the library’s anniversary festivities with articles appearing in several campus publications, in the local Birmingham newspaper, and in a segment broadcast on the local NBC affiliate to highlight the library’s rare and unique treasures.

May 2008

New Website: A History of UCSF

Lisa A. Mix
University of California, San Francisco

The UCSF Library is pleased to present a new website, A History of UCSF http://history.library.ucsf.edu. The site tells the story of University of California, San Francisco, from the origins of schools and hospitals in early San Francisco, affiliation with the University of California, its development as a distinct UC campus, to its place today at the forefront of biomedical technology, research, education, and health care.

The site includes a chronological history, historical images, and individual essays on significant people, buildings, and special topics. The website project was a collaboration of the UCSF Library, the Schools of Dentistry, Medicine, Nursing, and Pharmacy, the Graduate Division, and the UCSF Medical Center. Collaboration from each of the schools and divisions was essential to the success of the project in order to ensure balanced and accurate coverage of the history of all of the health professions at UCSF.

Faculty from the Department of Anthropology, History, and Social Medicine wrote the narrative history and the essays. An editorial board composed of a representative from each school, the Graduate Division, and the Medical Center reviewed and approved the content. Working with the editorial board was the most challenging yet rewarding aspect of the project. Archives & Special Collections staff provided research assistance, prepared digital images, proof-read and edited the text, and did quality control work on the website.

Phase I, including coverage of the development of UCSF through 1958, went live on May 1. Content through 1989 and a brief overview of more recent events, along with additional biographies, essays, and images, was added recently. The complete site went live on July 31.

The website was funded by the UCSF Office of the Executive Vice Chancellor and Provost, A. Eugene Washington, M.D. Please take a look at the site at http://history.library.ucsf.edu. We welcome comments from the Archives community.

June 2008
Collection Announcement: Bret Ratner Papers Open to Research

John Zwicky
American Academy of Pediatrics

The American Academy of Pediatrics announces that the Papers of Bret Ratner, MD, FAAP, are open for use by researchers. Dr. Ratner was born on April 28, 1893. He graduated from New York University’s College of Medicine in 1918 and went on to pioneer the field of pediatric allergy. He wrote numerous articles in the field, not only in medical publications but in popular magazines. He also taught clinical pediatrics and immunology at New York University’s medical college. An early member of the American Academy of Pediatrics, he helped found the Academy’s Section on Allergy, one of its first three specialty sections. Dr. Ratner died on October 11, 1957 after suffering a heart attack on a train en route back to New York after presenting a paper at the annual meeting of the Academy. His son-in-law, Dr. Murray Dworetzky, donated the papers to the Academy.

The collection consists of his articles, some correspondence, lectures, editorial comments, manuscripts and notes. Those wishing to use the collection must first make an appointment with the archivist, John Zwicky at jzwicky@aap.org or 847/434-7094. Contact address is American Academy of Pediatrics, 141 Northwest Point Blvd. Elk grove Village, IL, 60007. Public Transportation is available during the morning rush until about 9 AM and in the afternoon from about 3:40 PM. We also have a cafeteria on site. We are open from 8 AM to 4:30 PM.

June 2008

Collection Announcement: Saratoga Horticultural Research Foundation Collection

Elizabeth C. Phillips
University of California, Davis

The University of California, Davis Department of Special Collections is pleased to announce the availability of the Saratoga Horticultural Research Foundation (SHRF) Collection. This collection documents the work of an association of California horticulturalists active from 1952 to 2006 whose goal was to improve and enrich western ornamental horticulture through the promotion of shade trees, California native plants, and drought-tolerant plants.

The Saratoga Horticultural Research Foundation was founded in 1952 by a group of visionary horticulturalists and nurserymen committed to improving western horticulture. From a small initial group, the Foundation grew to about 400 members engaged in research, educational outreach, and promotion of selected cultivars. During its fifty-four years, the Foundation not only met but exceeded its original vision. The SHRF introduced many favorites such as Magnolia grandiflora “Samuel Sommer” and Ginkgo biloba “Autumn Gold”, but the Foundation was also in the vanguard of environmentally responsible planting. In response to several years of drought in the late 1970s and early 1980s, the Foundation actively researched and encouraged the use of drought-tolerant California native plants and trees, shade trees to cool hot streets and sidewalks, and non-thirsty plants to be used in place of lawns and other heavily-watered areas. This emphasis on low-water and shady ornamental landscapes made the Foundation one of the early promoters of home water and energy conservation.
In 2006, the board of the SHRF felt that the Foundation had succeeded in its mission and opted to disband. At this time, the Foundation donated its archives to UC Davis’ Department of Special Collections along with a generous donation for processing and promoting the materials. The board also created the Saratoga Horticultural Research Foundation Endowment at UC Davis’ College of Agricultural and Environmental Sciences; this endowment supports research and educational programs to continue fostering the introduction of new and improved plants.

The Saratoga Horticultural Research Foundation Collection spans the years 1938-2008 (bulk 1950-1998) and includes minutes, correspondence, financial records, research notes and data, project plans, and photographs relating to the Foundation's operation and horticultural research. The finding aid to the Saratoga Horticultural Research Foundation Collection is available at the Online Archive of California at http://www.oac.cdlib.org/findaid/ark:/13030/kt3m3nd10c.

The UC Davis Department of Special Collections is located at 100 North West Quad, Davis, California, 95616. Reading room hours are Monday – Friday, 10:00 AM – 5:00 PM. Inquiries about the Saratoga Horticultural Research Foundation Collection may be directed to Liz Phillips at ecphillips@ucdavis.edu.

June 2008

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**AIP Processing Grants**

**Joseph R. Anderson**

**American Institute of Physics**

The deadline for applying for American Institute of Physics, Center for History of Physics' grants to process archival collections in physics, astronomy, geophysics and related fields (e.g., optics, acoustics, rheology) has been extended from 8/1 to 9/15/08. Grant amounts may be up to $10,000, and AIP usually awards three grants annually. For the announcement, guidelines, and a list of previous recipients, see our Website at http://www.aip.org/history/grants_archives.html. And for additional information, please email janderso@aip.org.

August 2008

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The Science, Technology, and Healthcare Roundtable will be meeting on Wednesday, August 27, 2008 from 5:30 - 7:30 p.m. STHC will host a presentation by Will Snow, manager of the SALT project at Stanford University Libraries and Academic Information Services. For the full agenda see "Message from the Co-Chairs".

**Pre-Conference Tours/Open House:**

For information on pre-conference tours see:

**Tour of Computer History Museum**

401 N. Shoreline Boulevard
Mountain View, CA 94043
August 26, 2008
Capacity 20

Stanford Linear Accelerator Center (SLAC) Archives
Archives and History Office
M/S 82, Sand Hill Road
Menlo Park, CA 94025
Contact Laura O'Hara at 650-926-8584

For the full SAA program, please see the following:
http://saa.archivists.org/Scripts/4Disapi.dll/4DCGI/events/82.html?Action=Conference_Detail&ConfID_W=82
#schedule

STHC-Themed Programs:
Please be sure to read the abstracts for other sessions, because we might have missed some

STHC Roundtable Meeting - SALT: Self-Archiving Legacy Toolkit
5:30 - 7:30 pm, Wednesday, August 27, 2008
Yosemite A

206. Using Local and International Anniversaries for Outreach Opportunities
10:30 - 12:00 pm, Thursday, August 28, 2008
Continental Parlor 3

Graduate Student Poster Presentations
5:30 - 7:30 pm, Thursday, August 28, 2008
Poster 12
"The Old Problem of New Media: Archivist in the Laboratory"
Jennifer Waxman

401. 21st Century Data Curation for Archives, Libraries, Museums
2:30 - 4:00 pm, Friday, August 29, 2008
Plaza Room A

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Be Careful What You Wish For:
How to Manage Artifacts in an Archival Repository

Carolyn Texley (Archival Management Consultant), Mott Linn (Clark University), Judy Robins (Museum of Anesthesiology), Jennifer Searcy (Abbott Laboratories), and John Zwicky (American Academy of Pediatrics)

The following text is based on the presentation given at the 2007 STHC Meeting

Be careful what you wish for, for you will get it! That said, there are many reasons why archivists should include artifacts in their repositories. Three-dimensional artifacts are part of the cultural record, with many of the same qualities we recognize and evaluate for text and image-based records: legal or evidential, research, and archival values all apply. They can be difficult to separate from collections—both physically and intellectually. We can accommodate additional identification, description, and access points for these items in much the same way that we have approached our visual materials and the more challenging text-based collections. Group and
series level description is very workable for artifacts. General group descriptions can be used for things like commemorative coins and campaign buttons. Item-level access can then be done in the same way that we make those decisions for other archival materials.

More tools are being created for control and access. The pressure to produce digital collections over the past decade has led to development of some very useful tools that can be applied to all varieties of cultural heritage materials. These are cross-professional tools for the most part, fostering much-needed cooperation between archives, museums and libraries. The Library of Congress cataloguing and distribution service provides many tools—especially the noble work on authorities for names, subjects, occupations and genres. Archivists will find the work of the visual materials community especially useful in learning to create practical and integrated access to artifacts.

Item-level access is becoming more feasible than we are used to as archivists—and it is a requirement for digitization projects. Descriptive and data standards require input from the experiences of those used to dealing with large quantities of information. We need to be careful that digitization projects do not compromise the context we are committed to preserving. This is an important role for archivists in the new world of inter-institutional collaboration.

Core description of similar artifacts could be shared between institutions. The descriptive standards pioneered by the Getty Institute -- the Thesaurus for Graphic Materials, the Art and Architecture Thesaurus, and Cataloguing Cultural Objects (CCO) -- are all being refined by museum, library, and archives professionals, especially those concerned with visual resources. With some experimentation, practice and patience it’s possible to devise usable, consistent and integrated descriptive practices in our institutions, without sacrificing local conventions and needs. The demands of artifacts for a different kind of granularity in the use of genre terms (what it is versus what it is all about) and name authority offers new discipline that can only enhance access to more traditional archival materials.

The opportunities for collaboration with other institutions through traditional, web-based, and interactive exhibits can also be a boon for institutions where exhibition space and technical infrastructure are limited. Collaboration also expands grant possibilities, which can be especially helpful for specialized collections. Including access to three-dimensional artifacts and their context can help to refine and broaden descriptive practices, keep us ready to participate in appropriate digitization projects, and further integrate our collections within and between institutions.

Because of the positive and negative aspects of caring for scientific instruments, archivists sometimes have a love/hate relationship with these items. There are a number of positives. They provide a good way to do outreach to classes. The Clark University Archives has a Hipp Chronoscope used by the Psychology Department in the 1890s. This was probably the most advanced way for psychologists of that era to keep time. The American Psychological Association, which was founded at Clark, sometimes sponsors workshops, which visit the archives. The archivist brings out the instrument and a photograph of it in use in 1892, and explains how it was used in experiments testing the senses. Another way to do outreach with scientific instruments is to use them in displays or exhibitions. Three-dimensional objects catch people’s attention. If a display only has two-dimensional objects, it just is not as appealing. By including three dimensional objects, you can greatly increase interest in an exhibit. Clark University has the first launch pad used by Clark physics professor Dr. Robert Goddard, the father of modern rocketry. It is a nice thing to put on display because it captures people’s imagination. People are stunned by the small size of the launch pad compared to that for today’s space shuttle, which is bigger than the library at Clark.

Scientific instruments can also assist with research. A physics professor visited Clark to look at a Michelson interferometer for an historical paper he was working on. With the equipment available he got a hands-on
"look" at things. Another positive aspect is the ability to generate good publicity. Those who curate instruments know what a bother it often is to store them because of issues such as their size, shape, and weight. Another difficulty is that we describe them differently than a collection of papers. Preservation workshops generally do not deal with description of artifacts, thus leaving the curator in a quandary.

After hearing about these problems of caring for scientific instruments, you may still want to collect them, but wonder how to do so. For this we often rely on donors. But how do we find donors and how do we find what we want? The more we know about the creators of collections, the better we can target our solicitations to include those objects that will enhance our understanding and exclude those that do not. When we ask for an individual’s personal effects, we hope for the things that anyone might have, but that were uniquely his. Even the most pedestrian object may have a story to tell. Ask for that story. Remember that objects may have more emotional significance to the donor than any documents will ever have. Encourage donors to make sure that the wishes of family members have been consulted. Offer them the right of first refusal for objects that might be deaccessioned. Give your repository an out: include language in your deed of gift that makes clear your right to dispose of material. Refusing to accept gifts with strings attached is your best defense against white elephants and the evils of duplication. A well-written deed also gives you the flexibility to please your donors by accepting gifts that you do not have to keep. One donor may be glad to know you have found another home for his object; another may be glad just to have it out of the house.

Unlike manuscripts, objects often have a basis for an income tax appraisal. Television programs like “The Antiques Road Show” have raised expectations. Be sure to tell donors that you cannot provide them with a monetary value of their gifts. The American Society of Appraisers has very few members who specialize in science and technology, so we recommend that donors contact their local antique shops. Dealers will know who among their colleagues specializes in scientific and medical objects.

If the donor cannot tell you what it is, call on your colleagues. The American Association of Museums Curators Committee routinely posts inquiries on its listserv headed “What is this?” Use in-house resources. (One panelist found a description of an unidentified machine in an issue of her own house journal!) Call on experts, starting with your clientele. Get to know those dealers who specialize in science, technology and medicine. Go web surfing! There are collector’s clubs, museums and academic department devoted to everything under the sun. Former users of such machines are another source. They can tell you what it is and how they used it.

If you have an acquisitions budget, vendors can be a great resource for enhancing your collections. Tell them what you want and they will tell you what they find. Call on them when you are mounting an exhibit. You may find information and digital images on the web that can be added to your files even if you do not buy. If you do buy online, be selective. Set your price limit and stick to it. Dealers have their limitations; they can make honest mistakes. A seller’s lack of expertise may be your gain. Regardless of their familiarity with what they sell, many vendors are experts at how to sell. Be careful to read the fine print, examine their pictures carefully and ask for more information. Consider reputation of the vendor and be sure to get an agreement for the money-back return of your purchase within a reasonable time.

There is no substitute for a photographic record of each object. Even mass-produced objects have individual traits and histories that help to identify them and to explain them. Photos in the accession file are proofs of your ownership and your stewardship. And digital photos are increasingly demanded by our clientele. Your images can be protected to a limited extent by digital watermarking software. Or, you may wish to consider the Open Archives Initiative (OAI), which promotes the use of unprotected images on web sites. If you choose OAI, be sure that the images you provide are in the public domain.

So, now that we have these objects, what do we do with them? We should develop a simple approach that we
can use for all types of objects. First, we need to survey our collections and inventory them to see what types of objects we have, how many we have, what condition they are in and when were they created. Next, develop a plan for processing. Separate objects by category to aid in handling and storage. Some objects, based on composition and condition, are potentially harmful to other objects, as well as to people. These should be stored separately and handled only by experienced staff members. To ensure the survival of objects in our repositories, archivists and curators must provide the proper environment. To do this, we must recognize the five main agents of deterioration: temperature, humidity, light, air pollution, and pests. Fortunately, almost all objects will remain stable when we do the following: maintain a temperature of 68 to 70 degrees and humidity of 40 to 55%, use moderate lighting with shields to screen out ultraviolet rays, seal drafts and avoid open windows to exclude air pollutants, monitor for signs of pests and install sticky traps under shelving.

Major repositories often spend huge sums for environmental protection. Few of us have the money to buy cutting-edge technology. Archivists must assess their preservation needs in the light of their budgets to determine which devices are adequate for their repository’s needs. Environmental monitors range from inexpensive light exposure strips to elaborate hygrometers. Often, light exposure strips, pest sticky traps, and simple temperature and humidity gauges, combined with regular visual inspection by staff, will be enough to insure the safety of most objects in archival repositories.

Try to handle objects as little as possible. If the object must be handled, grasp it firmly but gently with two hands. For metal objects, use clean cotton gloves and for handling possibly hazardous objects, use surgical gloves. For storage of objects in archival collections, keep the objects separate from records within the repository. Items should be housed in size-appropriate acid-free boxes that are lined with archival-quality foam or cushioned with acid-free paper. These boxes should then be stored in appropriate cabinets and/or shelving.

Archivists in scientific, technological, and medical repositories must be acutely aware that the objects entrusted to their care may be harmful to them. These may present chemical, physical and biological hazards. Some objects have sharp edges, some are heavy and/or uneven in weight, and some may emit radiation. Chemical hazards include objects that contain chemicals. (When one of panelists had to move a mercury vacuum pump, some mercury came out. There are better ways to get to know the hazmat officials in your institution.)

Chemicals can exist in a multitude of forms such as liquids, mists, vapors, dusts, fumes, gases, and solids. Some examples are asbestos, arsenic, mercury, and controlled medical substances such as narcotics and radioactive materials. Sometimes too, perfectly harmless chemicals change over time and become dangerous, even explosive. Biological hazards are often the result of the object’s storage conditions, its decomposition over time, the deterioration of its container, and each handler's own sensitivities. People can be allergic to bacteria, fungi, viruses, plants, animals (including parasites), and other substances that might be present in the artifact.

When approaching the handling and storage of objects that might present hazards, we must assess the situation and develop a plan of action to mitigate risks from those hazards. For objects that present physical hazards, we should work to eliminate the condition. If an object has sharp edges, make sure that the edges are buffered. Staff should wear both hand and eye protections when handling hazardous objects. When handling powders or molds, an air-filtration mask is also needed. An object that is fragile, heavy or unevenly weighted should be stored on easily accessible shelving, never overhead. Staff should work in teams to handle such items. Keep up-to-date records on common allergens. Also, a good environmental monitoring system will help keep mold, fungi and parasites in check.

It is extremely important to take chemical hazards seriously; they present a mortal danger to staff. First, identify possibly hazardous material (including controlled substances) in the collection and prepare a detailed inventory of objects that may contain these materials. To identify items that you are unsure of, contact agents of the U. S. Department of Justice, state agencies (most notably crime labs), and local pharmacists. Be aware
that in doing so you may trigger unintended consequences, including the possible confiscation of those and other objects from your collection.

After identifying which items can be kept, consider the following recommendations. Items that are traditional over-the-counter preparations are considered non-toxic if normal precautions are followed and if they are not controlled substances, they may be retained and stored as usual in museum and archival collections. Non-controlled drugs that would require a physician’s prescription to obtain today or may be potentially hazardous in some applications should be stored in a locked cabinet away from the rest of the collection. Controlled substances or items that may pose a health hazard because of their age or level of deterioration should be emptied of their contents in accordance with the local laws, and in some cases should be completely destroyed. (Do not flush! It is illegal in some communities, and in some cases can cause a hazardous chemical reaction.) For any object that is even suspected of falling into the last category, contact your Regional Hazardous Waste Coordinator or the Drug Enforcement Agency for instructions on how to properly dispose of this material.

We hope that archivists will consider the benefits of keeping artifacts in their repositories. When we are careful to handle them properly, they can help us tremendously in telling the stories we want our collections to tell.

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**The Development of Science and Slavery in Britain**

_**Rose Roberto**_

_University of Leeds_

_Leeds, United Kingdom_
At the main entrance of the Brotherton Library is a display case with 12 items from Special Collections. This exhibit was put up at the end of 2007, because like many institutions in Britain, the University of Leeds Libraries (of which the Brotherton is a part) chose to commemorate the 200 year bicentenary of the British Slave Trade Act, which legally ended the capture, kidnapping and transportation of Africans to British territory. While the 1807 Parliament Act was not the end of slavery itself, it was a legal step in that direction. It also signaled a sea-change in the general British public’s perception and acceptance of the institution of slavery. Many ordinary people joined the abolitionists in the first national (and then international) consciousness-raising campaign (Wood, p. 205).

While many of the items chosen for display are not surprising, such as rare books and letters by abolitionists like Thomas Clarkson, Ottobah Cugoano, and Olaudah Equiano, a certain pharmacopoeia book also in the display case may at first be surprising given this topic. However, *A Compleat History of Druggs* by Pierre Pomets was selected for the exhibition because it contains illustrations of slaves laboring on a sugar plantation. Indeed, many records and archives of the history of science—given greater publicity due to the bicentenary—also contain information related to history of the slave trade, clearly demonstrating what Theodore R. Schellenberg distinguishes as a record's primary and secondary values. The primary value is evidence of its origin, development, and originator conduct; the secondary value is its role in providing information which contributes substantially to research in any other field of knowledge (Cook, p. 86). In this essay, by very briefly looking at a just few British scientists and physicians who lived during the 17th, 18th, and 19th centuries -- Robert Boyle, Hans Sloane, Joseph Banks, Charles Darwin, David Livingston and John Kirk -- I will present a general overview of official British policy and general attitudes toward slavery as well as the evolution of the British abolition movements at the time. A quick look at the second Charter of the Royal Society, the world's oldest scientific academy in continuous existence, also reveals that it was established not purely as a venue for fundamental research, but that there were imperialist economic interests, which made it inevitably involved with Great Britain’s biggest commerce: the traffic of human beings on a massive scale.

The British played no part in the origins or early development of the Atlantic slave trade (Walvin, p. 50). Their participation began in 1562 when John Hawkins shipped some 300 people from Africa to Hispaniola. This “modest traffic” continued in a “restrained” fashion through the next 100 years as a part of the more general trade with West Africa because these early ventures were overshadowed by profits made from government supported privateers — pirates — looting Spanish ships (Govier, p. 204). It was not until the British seized St. Kitts and Barbados in the mid 1620s, when Spanish and Portuguese global supremacy was declining, that the British established long-term commercial interests linking the slave trade and their New World settlement.
During this time, Mark Govier argues that the “Royal Society was part of the British imperial complex and thus shared and partook in whatever that complex created and destroyed.” (Govier, p. 204). He finds that not only was the Royal Society given official recognition by the crown in the same year as the Royal Adventurers, the merchant company that would initially control the monopoly on the slave trade, but that many Royal Society Fellows also had overlapping memberships with first the Royal Adventurers and later the Royal African Company (Govier, p. 204). Essentially this means that both early scientific research and slaving commerce had government support and both relied on each other: early science in Britain was funded directly and indirectly with slave trade profits; slave trade relied on scientific knowledge and leadership to expand and manage the system's growth; and the slave trade provided scientific specimen collectors with a global network of contacts and resources.

“Slavery touched all forms of life in the UK and the Royal Society was no exception as can be seen in our archives” states a website created in 2007 by library and archive staff. (Royal Society, Ref.10) Another website created as part of bicentenary notes that some of the implications of slavery were a cause for concern for the deeply religious Robert Boyle. Boyle, a mathematician who lived from 1627-1691, is best remembered for Boyle’s Law on gas. The Boyle Papers (Vol. 4 f. 118), kept in the Royal Society archives reveal that Boyle questioned the idea of keeping an enslaved person indefinitely, especially if that slave had converted to Christianity. (Royal Society, Ref.11)

A copy in the Boyle Papers (Vol. 4 f. 118) of a draft Act of Parliament proposed in 1670 notes that the principle that a Christian should not be enslaved by another man of the faith has led to planters and owners of slaves actively discouraging the conversion of slaves for fear of losing their property and investment. The proposed solution was not the abolition of slavery, however, but the provision that the baptism of slaves would not affect the ‘service’ due from them to their ‘former masters’. Proposals (f. 127-8) that seem to have been drafted by Boyle himself the same year list two (alternative) proposals...The first allows for the freeing of a Christian slave but not the offspring of this slave while the second proposes rights for a Christian slave, including the ownership of goods and the right to seek legal redress against mistreatment by a master. (ibid.)

The Royal Society archivist further comments on the passage above that there is no “evidence that this command, remarkably enlightened for its time, was followed.” This is not surprising given that slavery was becoming a mainstay of Britain's income. James Delbourgo notes around this time the shift from identifying Jamaican colonizers as “Christians” to “whites” and the use of the nouns “blacks” or “negroes” (from the Spanish word for black) to denote enslaved Africans (Delbourgo, p. 8).

By the 1680s, other major shifts in the Caribbean besides semantics begin to occur: French and British start fiercely competing with each other for more territory; indentured white labor starts to decline; the enslaved African population has risen from a few hundred into the thousands – 38,000 on Barbados alone; and a class of large plantation owners had emerged. (Walvin, p. 52) As a steady labor force is becoming necessary to cope with the demanding nature of crops like sugar and tobacco, factors institutionalizing and justifying slavery for life start to emerge. Although Barbados sets the pace for this new economy, Jamaica, with its larger area of land and climate more suitable for a range of crops, soon outstrips Barbados as the main agriculture producer. When the British first seized Jamaica from Spain, the enslaved population consists of 42,000 people; fifty years later the enslaved population is 118,000. (Walvin, p. 53) And it is still growing. By 1698, when the Royal African Company monopoly ends with the rise of private traders, an average number of 20,000 people per year are forcibly being transported.

In 1707, Hans Sloane published A Natural History of Jamaica. His trip to Jamaica in 1687, on which his book was based, coincides with this dramatic period of transition. The account includes a catalogue of the flora and fauna of the island, a description of its climate, food, and inhabitants, and information about slaves. In fact much of the scientific information he collected about the island was from interviewing island natives and
enslaved Africans (Delbourgo, p.3-4).

Sloan was Ulster-Scot by birth, and lived from 1660 to 1753. Sloan, after whom Sloan Square in London is named, was president of both the Royal Society and of the Royal College of Physicians. His visit to Jamaica and the specimens that he collected were so significant that he greatly influenced others to become collectors. Pierre Pommet, among others, dedicates his Natural History of Druggs to Sloan. The Jamaica trip was significant for Sloan for personal reasons as well as professional. He met his wife, the daughter of a planter, in Jamaica and for the rest of his life his income came from those estates. The contacts he made in Jamaica sent him specimens from their travels to the rest of the world to add to his collections of botanical specimens. After his death, he bequeathed these to the British nation and they became the foundation of the British Museum and later the Natural History Museum in London.

Many today have forgotten about Sloan's voyage because of later voyages, first by Joseph Banks on the Endeavour, then by Charles Darwin on the Beagle. We will first look at the scientific work and times of Banks. Banks lived from 1743 to 1820, was a naturalist and a botanist who also bequeathed a significant collection to the Natural History Museum. His short biography listed in Records of the Royal Botanic Gardens, Kew states he was the longest serving president of the Royal Society and was appointed by King George as adviser to the Royal Botanic Gardens at Kew. His London home was a scientific base which housed his natural history collections that were made freely available to bona fide scientists and researchers. Until his death, this house was a centre for the wider scientific community. He did not discriminate between British and foreign scientists. He was, in fact, influential in maintaining scientific relations with France during the French Revolution and the Napoleonic Wars. (Papers of Sir Joseph Banks, Botanist, in RM 3, National Archives Catalogue)

The late 18th century is characterized by its series of revolutions: the American Revolution, the French Revolution, and the Industrial Revolution. Britain's loss in a foreign war (the American Revolution) was a symptom to many that something was wrong with the British state. John Gascoigne writes that a revolution in government was also occurring, essentially replacing administration by aristocrats who managed their areas like little fiefdoms with administration by experts in their field organized into government departments. An indication of the increasing size and complexity of the British State was that informal methods of advancing empire became less significant. (Gascoigne, p. 85) Banks and the Royal Society were becoming the de facto advisors on science, technology, and ways that commerce within the empire could be run more efficiently. Banks' expertise was called upon because he had visited places around the empire.

During Banks' famed trip with Captain Cook in late 1770 and early 1771, while he was collecting botanic specimens from Queensland, his mother, Sarah Bate Banks (O'Brian, p.16), was in London working with abolitionist Granville Sharp to have Thomas Lewis, her free black servant, recently kidnapped by his former employer, released (Schama, p. 53). This was just six months before Sharp worked on the famed James Somers case. In both cases, Judge Mansfield presided and because of the positive outcomes for both of Sharp's clients, Mansfield seemed to have inadvertently set the legal precedent that people, even slaves, could not be transported from England against their will. Colonial residents stopped bringing their slaves to Britain for fear of losing them. This effectively ended the holding of slaves within England itself, though not within her colonies.

As one of the de facto government advisors on science and utilizing British empire resources, Banks had direct dealings with other abolitionists, most notably through membership in the Africa Association, in which William Wilberforce, Thomas Clarkson, and Josiah Wedgewood were also members (Gascoigne, p.179). The aims of the association included missionary work, checking other European political influence in Africa, promoting general geographic exploration and expansion of trade with West Africa, establishing a market for the growing volume of goods the industrial revolution made possible, and eventually replacing the slave-based commerce which was legally abolished in 1807 (Gascoigne, p. 179-180). Between 1808 and 1830, the total slave population of the British Caribbean territories declined from 800,000 to 650,000 (Ferguson, p.118) as the
commercial power of the Empire shifted away from this area.

Slavery did of course continue in the southern United States, and on a far larger scale in Brazil, where it was not abolished until 1888. Charles Darwin (1809-1882), famous for his theory of evolution by natural selection, was born after the Slave Trade Act was passed and during his early life slavery itself was abolished throughout the empire. However, like Hans Sloan disembarking in Jamaica, Darwin also encountered enslaved people while on the voyage that would make him famous. He writes upon returning to the Beagle:

On the 19th of August we finally left the shores of Brazil. I thank God, I shall never again visit a slave country. To this day, if I hear a distant scream, it recalls with painful vividness my feelings, when passing a house near Pernambuco, I heard the most pitiable moans, and could not but suspect that some poor slave was being tortured, yet knew that I was as powerless as a child even to remonstrate. (Darwin, p. 500)

After 1838 ended slavery in the British Empire, British abolition movements continued but evolved to focus on the slavery in the United States and eastern slave markets in Africa run by Arab and Portuguese slave traders. Another Royal Society library and archives website states that these later scientists and physician-missionaries spent years trying to end international slavery with varying degrees of success.

From 1858 to 1864 the British Government funded David Livingstone's (1813-1873) expedition up the Zambezi River. Livingstone's desire to bring "Christianity and Commerce" to Africa married well with the Government's wish to examine the natural resources of this part of East Africa and assess their economic potential. In order to achieve the aims of the expedition Livingstone included in his team an economic botanist (and physician), John Kirk...[who] accompanied Livingstone on long journeys to investigate Lake Nyasa and explore the Victoria Falls. In doing so he made his name as a botanist. Elected a Fellow of the Royal Society in 1887, Kirk's certificate mentions his having been "Chief Officer and Naturalist of Dr Livingstone's Government Expedition to the Zambezi, Nyassa Country, during which he made large Collections, Observations, and Drawings of great scientific value." Some of the plants Kirk collected can still be found...at Kew Gardens where botanical specimens, some now endangered, are preserved. (Royal Society, (Ref.9)

After Livingston's death, Kirk (1832 – 1922), who later became the British administrator in Zanzibar, then pledged to continue Livingston's work to end East African slave trade. For years he negotiated with the ruler of Zanzibar, Sultan Bargash, gaining his confidence and promising to help enrich the East African domain through legitimate commerce. The Sultan banned slave trading in 1873, and by 1885 the region was larger and more profitable (Ferguson, p. 119). Had the "Scramble for Africa" not occurred, where European powers divided vast areas of territory among themselves, disregarding local leadership (and in the case of Zanzibar, Britain completely abandoning it to German interests), Kirk's diplomatic work may have been considered one of the great success stories of the anti-slavery movement.

In 2007, the bicentenary of the UK Parliament Slave Trade Act was remembered by many in different ways. A wide range of heritage institutions looked at their collections in creative ways to find links with this anniversary, including institutions where on the surface there are no obvious ties. Many archives and special collections documenting scientific work of the period have some strong links to the slave trade, and deeper research into the lives of a few key figures in science and medicine show that they were personally affected by their contemporary issues the way we are affected by major events that happen in our own time.

This short essay has given examples of how the slave trade was a vehicle of exchange and provided a global network of contacts and resources for those who undertook scientific investigations across the vast British Empire, whatever their initial motivation. Early science in Britain was funded directly and indirectly with slave trade profits; and the slave trade relied on scientific knowledge and leadership to develop the system's growth and then later the better leadership from the next generation to eventually replace this horrible system.
References


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