MUSEUMS ARE NOT ATTICS

Rodney C. Ewing

I am a museum addict. I get a rush when strange, unrelated objects are juxtaposed next to one another behind the glass of a poorly illuminated cabinet. The first symptoms of this affliction appeared early in life, when I proudly displayed rocks and plants from the yard in my garage and charged my parents a modest admission fee. Still, from the human impulse to collect and display comes some of the world's magnificent museums.

I recently had the opportunity to visit one of my favorites, the Harvard Museum of Natural History. It is in an old red brick building, and iron-work stairs lead to the second-floor entrance. The main attraction is the collection of glass flowers, representing hundreds of species as scientifically accurate, life-size models. The collection is the work of Leopold and Rudolph Blaschka, father and son descendants of Bohemian glass-makers, who made these models over a fifty-year period ending in the 1930s (SEE PARTING SHOTS, PAGE 287). Next to the room of glass plants are the mineral-specimen displays. Giant crystals occupy floor-to-ceiling cabinets on opposite sides of the room and act as huge magnets for the small children pressing up against these cases. Smaller specimens are arranged by chemical group in old-style, glass-covered cabinets that rise to just below waist level. Most visitors pass through the grid of cases too quickly to appreciate what has been preserved for them, rushing to touch a few large meteorites in a small exhibit. Beyond is a narrow, crooked room with a series of exhibits on global climate change that features a constantly running film by Daniel Schrag (an *Elements* author) discussing the effects of climate change and challenging the audience to register their views by pressing buttons on a console in front of the screen. The kids treat answering his questions as if it is a video game where speed and force are more important than the right answer. With a quick turn, you pass into a room that (as I later realized) must be part of the Peabody Museum, but you are still not out of hearing of the pounded buttons of climate change. You pass large-scale reproductions of Mayan murals lining both sides of the room, until you finally emerge into a larger room of huge stone carvings and glass cases with a mixed assortment of Mesoamerican objects, such as brightly quilted vests, mannequins in natural dress, and a contemporary array of objects that celebrate the Dia de Los Muertos. If you go upstairs, you are in the South Pacific; downstairs, you may view a collection of early Japanese photographs with fine images of the indigenous Ainu. By retracing your steps back to the entrance, you can begin another journey in the opposite direction, where there is an exhibit of nests and eggs (with the world's largest egg), a display of the skeletons of dinosaurs and mammals in small dioramas, and at the very end of this journey a giant, 42-foot, short-necked plesiosaur, the Kronosaurus, from the Cretaceous of Queensland. After some hours on this Sunday afternoon, I reached saturation and walked into a fresh rain, happy that museums are very much a part of life.

Still, one has to worry about the fate of modern museums of natural science and particularly the large collections that support these displays. The Harvard Museum has a long history tied to the very foundations of our science and is an essential part of the scientific enterprise of exploration, collection, and classification. The greats, from Louis Agassiz to Stephen Jay Gould, were curators as well as professors—and these collections were integral to their research. The mineral collection now has over 60,000 catalogued specimens and 10,000 micromounts. Charles Palache and Clifford Frondel used and nurtured this collection.

Today's museums are moving beyond this sense of "collection" and are becoming interactive, "hands-on" affairs that have the laser focus of a google search. You can walk through lava tubes with badly simulated glowing lava below your feet or stand on a shaking platform that imitates an earthquake. Modern museums are becoming an entertainment for the senses, but often provide precious little for the mind. This shift from science to entertainment means that in some communities the museum becomes an economic "driver," pulling visitors to the community or locals to a renewed downtown. This change in purpose has an important impact on the fate of the precious collections so meticulously gathered by generations of natural scientists.

Once a collection becomes static—and the main issues become cost and space—then the banners of neglect, sell, and disperse are on the horizon. A recent major example of this fate was the mineral collection of the Philadelphia Academy of Natural Sciences (see www.minvision.com/article-87.html). The collection dates from the earliest years of the Republic, and the first contribution (1725 specimens) was from the first American formally trained in mineralogy, Adam Seybert (1773–1825), who studied under René Haüy. Through subsequent, major additions (the Franklin Institute donated its entire collection, as did William Vaux on his death in 1882), the collection grew to some 30,000 specimens by the early 20th century. The last curator was Samuel G. Gordon (1897–1952), who also founded the *American Mineralogist*, first published in 1916. After Gordon, there were no mineral curators (except for a period of five years) to look after the collection. Most of the collection was stored, with the loss of some material by neglect. In 2006, much of the collection (about 19,000 specimens) was sold to a consortium of mineral dealers in order to raise funds for other scientific activities of the Academy. Nearly half of the collection went to other museums, such as the Carnegie Museum in Pittsburg and the Gemological Institute of America.

> We need to create a structure and system of support that preserve the cultural and scientific heritage of our mineral collections.

This event and others has stimulated a proposed policy statement by the Mineralogical Society of America (http://www.minoscam.org/MSA/policy.html) designed to preserve mineral collections. Although I think that it is easy to sign on to the spirit of the proposal, I do not think that it recognizes the realities of small, but precious, collections held by universities and other private organizations. These collections are often created and sustained by just a few individuals without any substantial support from the organization. When these individuals are gone, there is no institutional memory of their origin or the obligation to have them continue. The financial support that might have gone to a curator competes against salaries for new professors, technical staff, and students. Often, little research relies on the collections, and despite their great cultural and monetary value, they are stored behind closed doors. If a major collection, such as that of the Philadelphia Academy of Natural Sciences, can fall prey to dismemberment, this must happen many times, without notice, to smaller institutional collections around the world.

What can be done? I think that the first step is to make clearer statements about the cultural and scientific value of such collections. There is a special connection to the past in handling material first studied by René Haüy. The scientific value lies in having material that has already been carefully analyzed or that has special properties or provenance. I have often relied on museums for a few rare minerals that preserve a record of radiation damage in specific, but unusual, structures. Professional mineralogists may appreciate the value of collections, but this is less clear to the public that sees only the exhibits at the museum. This is why it is so important to carry out scientific research on the collections, as well as emphasize public outreach, acquisition, and curating.

Finally, with proper financial support, certain national and regional museums should be designated as the proper recipients of collections that no longer have a home. It is not easy for an institution to divest itself of a collection. Most institutions want to preserve the cultural and scientific value of their collection, but this can be complicated by

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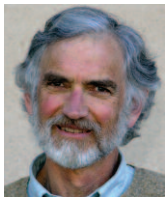
2008 AGU VGP FELLOWS

Congratulations to the 2008 Fellows of the American Geophysical Union (Volcanology, Geochemistry, and Petrology Section)!



CHARLES R. BACON

For detailed field-based studies of volcanoes leading to establishing critical links between volcanic and tectonic processes

PATRICIA DOVE

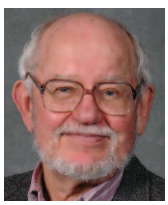
For seminal contributions toward a molecular-scale understanding of mineralization and dissolution in inorganic and biological environments

R. LAWRENCE EDWARDS

For pioneering work on U-series systematics and contributions to paleoclimatology, neotectonics, the ^{14}C timescale, and paleoceanography

RONALD GREELEY

For pioneering work on processes and history throughout the solar system through the integration of field, laboratory, modeling, and observational studies



GILBERT N. HANSON

For work in the development and application of fundamental trace-element and isotope tools that are used today in many disciplines of the geosciences

JAMES GREGORY HIRTH

For work on the rheology of quartz, olivine + melt + H_2O, serpentine, and gabbro, and interdisciplinary insight, dedicated teaching, and service to AGU

TETSUO IRIFUNE

For contributions to the understanding of the mineralogical structure and dynamics of the Earth's interior through high-pressure experimental studies

TERRY A. PLANK

For contributions to the understanding of convergent margin processes and the formation of the continental crust

BARRY VOIGHT

For fundamental contributions to the understanding of volcano deformation, assessment of volcanic hazards, and forecasting

TIM DREVER HONORED AT THE GOLDSCHMIDT CONFERENCE

A special session was convened at the 2008 Goldschmidt Conference to pay tribute to James I. (Tim) Drever for his contributions to geochemistry and for his long career at the University of Wyoming. In addition to his best-selling book *The Geochemistry of Natural Waters* and countless research papers, Tim served as a long-time editor of *Chemical Geology* and as the president of the Geochemical Society and was a founding advisor to *Elements* magazine. The session "Rates of Geochemical Processes and Their Application to Natural Systems" included a keynote address by Art White (U.S. Geological Survey) entitled "Approaches to Estimating Chemical Weathering Rates"; invited talks by David Clow (U.S. Geological Survey)—"Sensitivity of Mineral Weathering Rates to Annual Variations in Climate," and by Chris Gammons (Montana Tech University)—"Biogeochemical Processes in Flooded Underground Mine Workings of Butte, Montana, USA"; and an additional 28 volunteered presentations on mineral weathering and secondary precipitation, global climate cycles, environmental geochemistry of mining, geochemistry of natural waters, and redox reactions at mineral surfaces. A highlight of the festivities was a reception for Tim and his wife, Irene, held at the botanical gardens of the University of British Columbia. Many old and new friends, all wearing a "Friend of Tim" badge, toasted Tim as the "first critical zone geochemist" and a "true gentleman scientist."

Tim and Irene Drever with Hiroshi and Koya Ohmoto. Tim and Hiroshi were grad students together at Princeton in the 1960s.

From left to right, present and past presidents of the Geochemical Society: Marty Goldhaber, Sue Brantley, and Tim Drever

The "Friend of Tim" button, destined to be a collector's item!

Lisa L. Stillings
USGS

TRIPLE POINT *(cont'd from page 221)*

covenants on donated specimens or the cost of properly appraising the value of the collection. The situation at the Philadelphia Academy is regrettable, but understandable. Collections in storage are not different from our attics filled with old, but valued memorabilia. If we want to prevent these events in the future, we have to clean out our attics and put these collections to scientific use or on display. We need to create a structure and system of support that preserve the cultural and scientific heritage of our mineral collections.

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