

Ulmus americana

ACADEMY

FRONTIERS



Habitat:

*Moist soils of bottom lands
and upland flats, Great
plains to the Atlantic coast*

The member magazine of the
Academy of Natural Sciences

WINTER 2011

Greetings From the Academy



Katie O. Clark/ANSP

HAPPY NEW YEAR! Here at the Academy, we are energized and eager to take on 2011. It's a launch pad year for us, as we approach our bicentennial in 2012. There's much to be done as we prepare to celebrate two centuries of exploring the natural world and sharing it with you.

With the start of a new year, we have three ambitious but reachable goals in mind. We want to raise both the financial viability and the public visibility of this great institution. We're strongly focused on pushing our real science forward. A few recent additions to our already talented and committed staff will help us to raise the profile of the Academy.

We recently welcomed Sara Hertz as vice president of strategic initiatives. Sara comes to us from the Philadelphia Zoo, where she successfully managed their 150th anniversary celebration as well as the organization's capital campaign. Among her many objectives, Sara will help us to build momentum for an exciting bicentennial. We've also retained consultant Rick Biddle from the nationally known, locally based firm Schultz & Williams, who will help us as we continue to finalize an action plan for the coming years. The intent of this plan is to make programmatic, operational, and physical changes to the Academy starting this year, to propel the Academy into its third century. Finally, we're happy to announce the appointment of Cathy Wilt as director of our prized Ewell Sale Stewart Library and the Academy Archives. Cathy brings 30 years of experience in library services and already has a great vision for the future of our Library. I'm thrilled with the team we have in place.

The new year brings another exciting change to the Academy. We've entered into a partnership with GDF SUEZ Energy Resources NA, the second largest non-residential retail energy supplier

in the U.S. They have donated Green-e certified renewable energy certificates, which will offset our expected energy use with 100 percent renewable energy over the next two years. These certificates represent the environmental attributes of electricity generated from wind, solar, or other Green-e certified renewable power facilities. Organizations like the Academy use these certificates to reduce their indirect greenhouse gas emissions and support the operation and development of domestic sources of cleaner, renewable energy. Our partnership with GDF SUEZ furthers our commitment to the environment—we are delighted to have this opportunity to work with them.

I hope you enjoy this issue of *Academy Frontiers*. None of what we do would be possible without your support. Your commitment helps transform visions and goals into realities. Thank you.

All the best,

George W. Gephart Jr.
President and CEO

Table of Contents

3 Calendar of Events

4 On Exhibit

6 Academy Abbreviated

8 Feature Story

13 From the Library

14 Academy Support

18 Snapshots

19 Sustainability Matters

On the cover: *This image is one of a series of mixed media works on paper created by Philadelphia native MF Cardamone. Titled "Meeting Places," this stylized natural history specimen was inspired by the Penn Treaty elm. This piece is a study in the contrasts of meeting places. Historically, trees were considered sacred, spiritual places to hold meetings. The Philadelphia skyline is representative of where important meetings are now held. Cardamone focuses on the relationships, both historical and modern, that people have with plants and the natural world. To learn more about an upcoming exhibit featuring more of her work, see page 4. © MF Cardamone*

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— CONNECTING PEOPLE TO NATURE SINCE 1812 —

Join us for these upcoming events!

JANUARY

January 15–April 17

FLORA FANTASTICA:

THE WHIMSICAL BOTANICAL ART OF MF CARDAMONE

Art of Science Gallery

15, 16, and 17 **HEAT WAVE WEEKEND, 10 A.M.–5 P.M., EACH DAY**

Tired of the cold? Visit the Academy over the three-day weekend and chase that chill away. Learn about Academy expeditions to some of the hottest spots on earth. Conduct your own climate change experiment and meet some animals that have developed unique adaptations to high temperatures.

29–30 **BIZARRE BEASTS PAST AND PRESENT OPENING WEEKEND**

Celebrate the opening of the exhibit *Bizarre Beasts Past and Present* with a weekend of special live animal shows, rarely seen fossils from the Academy's collections, craft-making, and more educational fun for the whole family. The exhibit runs through April 24.

FEBRUARY

3 **MEGA-BAD MOVIE NIGHT, 6:30–8 p.m.**

Join us at the Academy to watch the “awesomely awful” *Mega Shark Versus Crocosaurus*.

4–5 **SAFARI OVERNIGHT FOR FAMILY AND FRIENDS**

Bring a sleeping bag and experience the Academy and its animal treasures after dark!

19–20 **PALEOPALOOZA**

This two-day festival of gigantic proportions features rarely seen specimens from the Academy's world-famous fossil collection. Meet special guest Dr. Scott Sampson, host of the PBS hit series “Dinosaur Train.”

26 **“URBAN FORESTRY HIKE” ADULT PROGRAM, 11 A.M.–1 P.M.**

(RAIN/SNOW DATE: MARCH 5)

In honor of the International Year of the Forests, we will take a closer look at trees growing in the concrete canyons of Philadelphia and right outside the Academy's doors.

MARCH

12–13 **SAFARI OVERNIGHT FOR FAMILY AND FRIENDS**

Bring a sleeping bag and experience the Academy and its animal treasures after dark!

19 **“FOSSIL COLLECTING” ADULT FIELD STUDY, 10 A.M.–4 P.M.**

(RAIN/SNOW DATE: MARCH 26)

Join the Academy's Ned Gilmore, collection manager of the Vertebrate Paleontology Department, as he takes you back in time 70 million years to the Late Cretaceous period.



Spring Break Camp at the
Academy of Natural Sciences...
Where Science runs WILD!
April 18–29, 2011
Ages 5–12 | 9 a.m.–4 p.m. daily
Visit ansp.org/springcamp for registration forms and additional information.



SAVE THE DATE

PALEO
palooza
get your fossil on!

Special presentations by
Dr. Scott Sampson,
host of the hit
PBS series
Dinosaur Train!

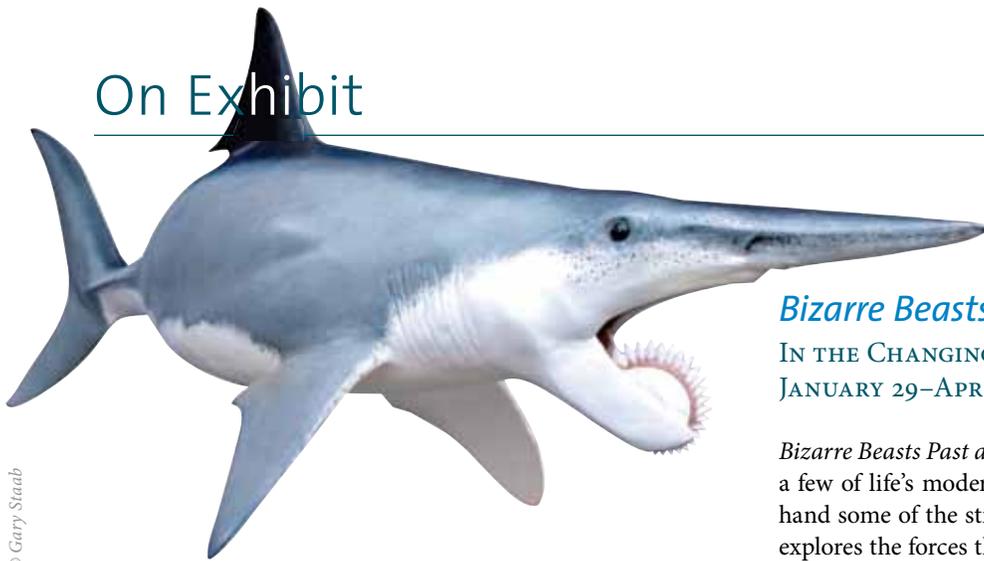
SATURDAY–SUNDAY
FEBRUARY 19–20
10 A.M.–5 P.M.

Free with general admission

THE
ACADEMY
OF NATURAL
SCIENCES

— CONNECTING PEOPLE TO NATURE SINCE 1812 —

On Exhibit



© Gary Staab

Bizarre Beasts Past and Present

IN THE CHANGING EXHIBITS GALLERY
JANUARY 29–APRIL 23, 2011

Bizarre Beasts Past and Present takes you back in time—and into a few of life’s modern nooks and crannies—to experience first-hand some of the strangest animals ever to inhabit the earth. It explores the forces that cause life to change over time and adapt to different environments and reveals that fact is often stranger than fiction.

Bizarre Beasts Past and Present is produced by Staab Studios.

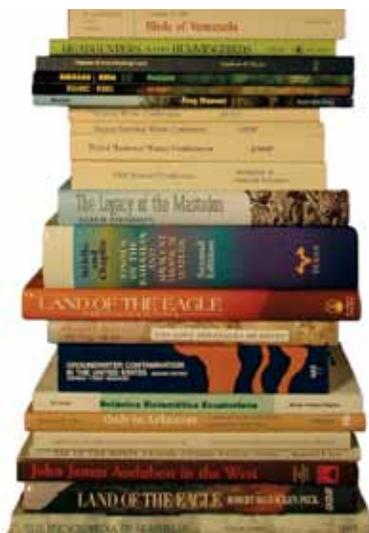
Flora Fantastica: The Whimsical Botanical Art of MF Cardamone

ART OF SCIENCE GALLERY
JANUARY 15–APRIL 17, 2011

Flora Fantastica features a collection of mixed media works on paper from Philadelphia native MF Cardamone, who studied art at the Tyler School of Art and botany at the Barnes Foundation Arboretum School. Inspired by the pressed botanical specimens at the Academy of Natural Sciences and other natural history museums, Cardamone whimsically records the life histories of plants by combining specimens with images and words that playfully modernize the traditions of specimen mounting and botanical illustration. The result is complex visual narratives that reveal the science, history, and beauty of their subjects.



© MF Cardamone



Bruce Tepper/ANSP

We Wrote the Book

OUTSIDE OF THE LIBRARY

Did you know that Academy members, correspondents, and staff have written hundreds of books? They range from scholarly works to popular works like field guides and children’s books. Academy authors have been writing books for the past 200 years, and they continue to do so today. Stop by this exhibit to see some selected works by staff and friends of the Academy—who knows, you may recognize a title or two that’s sitting on your own bookshelf! Don’t forget to keep coming back, as we’ll regularly rotate the books on display.



Katie O. Clark/ANSP

Academy Voices

CATHY WILT

CATHY WILT WAS NEVER ONE OF THOSE SIT-AND-READ-BOOKS TYPES, a curious trait in someone with a 30-year career in libraries. And though she lingers outside of the usual librarian stereotype, she has nevertheless devoted her professional career to transforming libraries into the best resources they can be while making sure the world knows about them.

Wilt was recently hired as director of the Academy's Ewell Sale Stewart Library and Archives, having previously served as president of LYRASIS, the oldest and largest non-profit library consortium in the U.S. She is a self-described "digital girl" and has made it a priority to make digitization in the Academy Library bigger and better.

From the start, Wilt was impressed with the Ewell Sale Stewart Library's holdings of rare, often priceless historic works in every discipline of natural science. The Archives hold more than one million manuscripts including field

notes, diaries, drawings and letters, and thousands of photographs, maps, art and artifacts. But what can make a collection even more remarkable is its accessibility.

"We need to find technology solutions to help us perfect the way we make these collections accessible," Wilt says. "Part of my work is to put information together to support the educational process and empower the people for a free-informed society."

Long before her involvement in the fast-paced world of technology, Wilt lived a simpler life. She grew up in small-town, rural Charlottesville, VA, where she felt at peace by the water.

"Both sides of my family are water people," she says. "My great grandfather was in the shrimp business and my grandfather was a lighthouse keeper. I can crab, fish, and pull eels off the line and throw them back. I'm all about the water. The hum of life is audible there."

Wilt earned a bachelor's in educa-

tion from James Madison University, a master's in library science from the University of Pittsburgh, and a second master's in educational media from Temple University. At Pitt, she served as the orchestra librarian, managing the scores distributed to the musicians. This was a particularly fitting position, since Wilt is a classically trained viola player, a guitarist, and folk singer.

Wilt has lived in the Philadelphia area on and off for 20 years. Much of her experience has been in libraries in the Philadelphia area, including Ursinus College and Drexel University. Prior to her position as president of LYRASIS, she was executive director of its predecessor, PALINET, based in Philadelphia.

Although the Academy has been digitizing collections since 1998, Wilt has her sights set on new technologies that will allow us to extend that virtual access worldwide. After all, "we've got an incredible story to tell," she says. 🌊

Academy Abbreviated

LEIDY AWARD HONORS ONE OF AUSTRALIA'S LEADING THINKERS AND WRITERS

ON NOVEMBER 16, 2010, the internationally acclaimed scientist, author, and environmental activist Dr. Tim Flannery (below right) was honored with the Academy's



Katie O. Clark/ANSP

Joseph Leidy Award, the institution's highest scientific honor. It is the first major scientific award that the Australian native has received from an American institution and, in turn, he is the first Australian to receive it.

Flannery's resume is impressive. He has discovered more than 30 new mammal species or subspecies during his career, and has authored 19 books and more than 130 peer-reviewed scientific papers in influential publications such as *Nature*, *Science*, and *Natural History*. Most importantly, Dr. Flannery's groundbreaking research on extinction and past climate has informed his more recent efforts regarding human influences, wildlife conservation, and climate change.

"Joseph Leidy is one of my great scientific heroes—an honorable man and great scientist," Flannery says. "Receiving the award is one of the greatest honors that has

ever been bestowed on me. It's a crowning achievement, really. Just fantastic."

Flannery was chosen to receive the award because, according to Academy Senior Fellow Robert Peck, he is so accomplished in many of the disciplines to which the Academy has been devoted for almost 200 years: vertebrate paleontology, mammalogy, evolutionary biology, and climate change.

The Joseph Leidy Award was established in 1923 to recognize excellence in publications, explorations, discoveries or research in the natural sciences. Leidy was a leading 19th-century anatomist, paleontologist, parasitologist, and president of the Academy of Natural Sciences. Previous recipients of the Leidy Award include Academy ornithologist James Bond (1975), biologist Dr. Edward O. Wilson (1979), and Academy Curator of Entomology Dr. Dan Otte (2009).

SAVE THE DATE FOR SCIENCE

IF YOU LOVE SCIENCE, you won't want to leave town this April. You'd miss out on a milestone event that's bringing together the entire city to celebrate something that is a part of us all—science!

The Academy is participating in the inaugural Philadelphia Science Festival, a two-week, community-wide celebration of science that will take place annually in April, featuring lectures, debates, hands-on activities, special exhibitions, and a variety of other informal science education experiences for Philadelphians of all ages. Best of all, the majority of the events offered are free to the public.

The Academy of Natural Sciences joined with institutions across the city including the Franklin Institute, American Philosophical Society, Chemical Heritage Foundation, the College of Physicians of Philadelphia and the Mutter Museum, Drexel University,

New Jersey Academy for Aquatic Sciences, Pennsylvania Horticultural Society, the University of Pennsylvania Museum of Archeology and Anthropology, Philadelphia Zoo, Please Touch Museum, the School District of Philadelphia, Temple University,

University of Pennsylvania, University of the Sciences, the Wagner Free Institute of Science, and the Wistar Institute.

From April 15–28, the festival will not only showcase the role that science plays in the city and region, but provide innovative opportunities to build community around science, engineering, and technology. These events will take place in Philadelphia's branch libraries, community centers, museums, recreation centers, neighborhood gardens, bars and restaurants, and aim to bring hands-on science to every city resident in a relevant and interesting way.

Check back here in *Academy Frontiers* and on our website at ansp.org for more details on the Academy activities and programs planned for the festival. For general information about the festival, visit philasciencefestival.org.

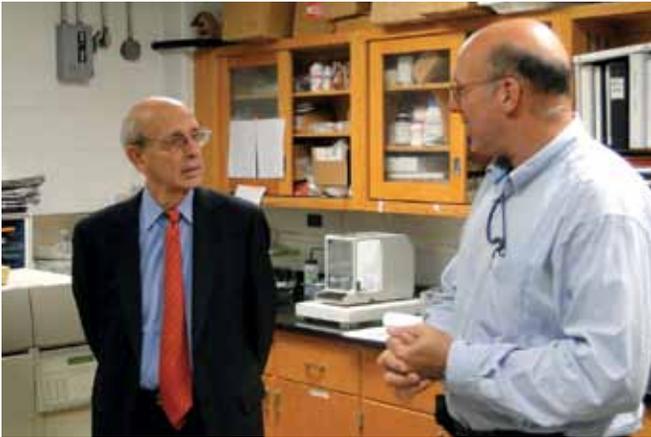


Academy Abbreviated

AN ESTEEMED VISITOR

ON OCTOBER 19, a very special guest was treated to a behind-the-scenes tour of the Academy—U.S. Supreme Court Justice Stephen Breyer (far left, shown with the Academy’s Dr. David Velinsky). Accompanied by seven federal marshals, Justice Breyer was shown highlights from the Library and several laboratories and research areas. He even contributed a fingernail clipping to the Patrick Center for chemical analysis.

“It was a treat for me to see the Academy,” Justice Breyer said after his visit. “What a marvelous institution! From Jefferson’s bones to the blue butterflies, the tour was filled with interest. Thank you very much.”



Dennis Murphy/ANSP

Get Connected

Anyone can be a naturalist. In each issue of *Academy Frontiers*, our scientists and experts share their knowledge to help you explore the natural world around you.

In this issue, David Hewitt, research associate in the Academy’s Botany Department, suggests we celebrate the International Year of Forests with a closer look at the majestic London plane tree (*Platanus x acerifolia*), a species you have likely passed by throughout the neighborhoods of Philadelphia and in the city’s suburbs. These trees are easy to identify, even in winter.

The United Nations declared 2011 as the International Year of Forests, and for people living in cities and suburbs, that might not seem like something to get involved in. However, even in the most concrete-covered areas, trees and plants are there—in vacant lots, in backyards, and even cracking through the sidewalks. On February 26, Hewitt will host an “Urban Forestry Hike” adult program where we’ll take a closer look at some of the trees growing in downtown Philadelphia, and learn how to identify some of them.

In addition to its large size, the London plane tree has some interesting characteristics that make it fairly easy to identify. They can easily grow to more than 60 feet tall—even in downtown Philadelphia, it’s common to see them

with trunks a couple of feet across at eye level. Their bark is a hodgepodge of browns, grays, creamy whites, and olive greens, a combination similar to military camouflage. Nothing else in the Philadelphia area has the London plane tree’s size and bark patterning, and once you get to know it, you’ll see this tree everywhere.

The London plane is particularly well adapted to urban areas and is a hybrid of the oriental plane tree (*Platanus orientalis*), and the American sycamore, (*Platanus occidentalis*). In addition to its ubiquity in U.S. cities, it is also very commonly planted in London—so its name is quite appropriate!

Trees in the city play just as big a part in our ecology as the trees in large forests. We hope you’ll join us in recognizing the trees growing in the concrete canyons of Philadelphia and right outside the Academy’s doors.

The “Urban Forestry Hike” adult workshop will take place on Saturday, February 26, from 11 a.m.–1 p.m. The workshop is limited to 12 participants, and the cost is \$15 for members and \$20 for nonmembers. Please call 215-299-1060 to register. ☺



Katie O. Clark/ANSP



CLUES apprentice Patrice Gardner catches her very first fish (a striped bass) on a professional development outing last summer to Barnegat Bay, N.J., part of an intense training schedule for all CLUES apprentices. With the help of Don Wittrock, youth and community programs manager at the New Jersey Academy of Aquatic Sciences, Patrice and other apprentices received training on this weeklong workshop in team building, communication, and conflict resolution.

A REAL LEARNING EXPERIENCE

By Katie O. Clark
Editor

SOMETIMES, THE BEST THINGS COME IN THREES. The Academy has completed one full year of an educational program called CLUES, which brings together Academy educators, young professionals, and underserved families in nearby communities. It's a win-win...win situation.

Communities of Learning for Urban Environments and Science (CLUES) is a five-year program funded by the National Science Foundation and the U.S. Institute of Museum and Library Services. It focuses on teaching science to families in underserved communities and is a collaboration of the New Jersey Academy for Aquatic Sciences, the Franklin Institute, the Philadelphia Zoo, the Academy, and 10 community-based organizations (CBOs) in the Philadelphia-Camden region. The program not only has the museum educator-learner dynamic, but also includes a unique "middle man"—local young professionals who are looking to gain some invaluable skills.

"What makes this program so special is that we have individuals called apprentices," says Jacquie Genovesi, senior director of education for the Academy. "They are people who live in the different communities we are trying to better serve and they bring a wealth of knowledge and experience about their families and neighborhoods. We train them to be informal science educators."

What happens is simple: educators from the collaborating museums train the apprentices a few times a week for several months. The apprentices take these skills back to their neighborhood churches, schools, and community centers and deliver to their communities useful and relevant information on science topics like recycling, bird migration, climate change, and overall environmental stewardship. The families are also invited to attend workshops at each of the museums, offering them an experience they might not have had otherwise.

The goal is to reach 15,000 families.

For North Philadelphia resident Tobo Adin, the CLUES program helps round out her children's education.

"CLUES is incredible and I'm very grateful because my children don't get enough science in school," says Adin, who has four children, ages 15, 14, 9, and 7. "I know the importance of education and it means the world to me; I learn a lot and the kids learn a lot."

But the families in the CBOs are not the only ones learning. The apprentices enjoy a one-of-a-kind professional opportunity and gain crucial skills. They also train at all of the museums, spending one year at each one, so they get a taste of what each offers.

Being an apprentice has given a professional boost to Patrice Gardner, 27, who is wrapping up her first year as a CLUES apprentice at the Academy. She's spent time in many of the Academy's exhibits, and in the field with the families from her CBO.

"It's been really interesting—I've learned about lesson plans, how to speak in front of crowds, different methods of teaching. It's been a big help for me," she says.

What is most rewarding for Gardner, though, is watching her "students" learn.

"They seem very excited," she says. "They're concerned about things like sustainability, conservation, and being mindful of what they do and how it affects the environment. They really enjoy the activities and appreciate the knowledge that they are given. I'm happy to be a part of that."

While the Academy has a long history of reaching out to underserved communities in the region, there is a new push on spreading the word about climate change and what it means to Philadelphia families, Genovesi says. "We're making issues that may seem irrelevant, relevant, and we're helping people understand why we all should care."

"Science education is important for everybody," Genovesi adds. "Everyone should be able to see how science relates to their life. We are a science institution and we have to make science fun and accessible." 🌱

For more information on the CLUES program, visit www.fi.edu/clues/. For more information on additional education programs at the Academy, visit ansp.org/education/special_programs/index.php.

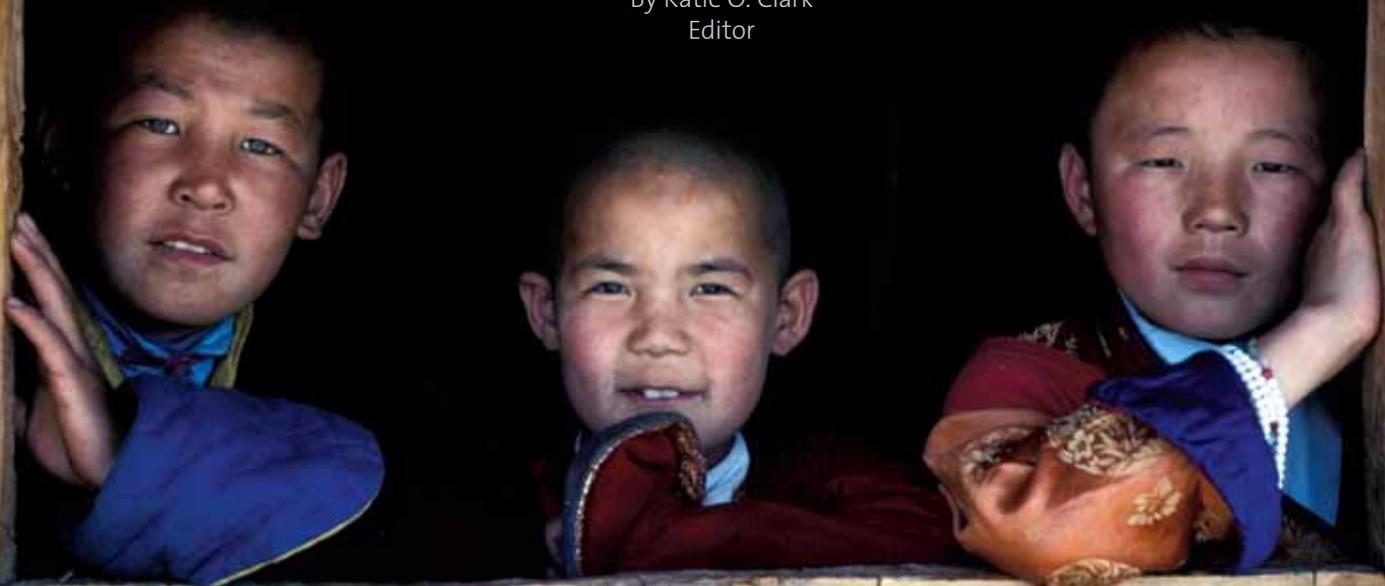


In the fall, families from the Trenton, New Jersey area learned about sustainable gardens. Under the guidance of apprentice Kala Franks-Jenkins, who has spent her first year of CLUES training at the Academy, the families learned that recyclable items like plastic bottles can be reused for other purposes, such as automatic water feeders for plants.

Kala Franks-Jenkins

FACES OF CHANGE

By Katie O. Clark
Editor



Robert M. Peck/ANSP

Academy Senior Fellow Robert Peck photographed these three Buddhist monks-in-training during a 1994 research expedition to Mongolia. This summer he will attempt to find, interview, and re-photograph them for an exhibition on changing climactic, environmental, and political conditions in Central Asia.

THE ACADEMY'S DR. CLYDE GOULDEN SAYS CLIMATE CHANGE IS LIKE THE GROWTH OF A CHILD. If you see the child on a day-to-day basis, you may not notice the changes. But if you go away for a year and come back, Goulden says, you recognize that he or she is growing up and really changing. So, for nearly two decades, he has been going away and coming back—to the mountains of northern Mongolia.

And he is certainly seeing the changes.

In 1994, Goulden witnessed near-perfection in the form of a pristine and ancient lake in the northernmost extension of Mongolia. Roughly 100 miles long and 30 miles wide, Lake Hovsgol is one of the purest freshwater bodies in the world.

"I was very anxious to visit," Goulden recalls. "I wanted to learn more about the lake from what had been studied previously by the Russians and Mongolians. Not much had been published in English, so I wanted to learn what was there and the potential for future study."

Over the next 12 years, Goulden and his colleagues traveled to Mongolia once (sometimes twice) a year on grant-funded assignments for studies in biodiversity assessment, environmental monitoring, land-use management, ecotourism development, social anthropology, and capacity building for young scientists.

Mongolia was a particularly interesting study site with its huge land mass, very small human population, and fairly strict political conditions that prevented a lot of human interference. In the 1990s, it was one of the few places in the world that had study sites that were almost completely pristine, so Goulden's arrival couldn't have come at a better time.

In 2008, he shifted his focus to another element of Lake Hovsgol—the nomads who live around it and depend on it to survive. Mongolia has slightly more than two million people living in 604,000 square miles, one of the lowest population densities in the world, including one of the last remaining horse-based nomadic cultures.

Goulden met these nomads on his first trip in 1994. He was accompanied on that trip by Academy Senior Fellow Robert Peck, who photographed the nomadic herders and their families to capture the environment's human element.

"We complement each other," says Peck of his partnership with Goulden. "He's a scientist with a very matter-of-fact point of view. I'm a humanist, if you will, and I approach it more from a cultural context. We both admire each other's field of expertise."

For the past two years, Goulden, together with his wife, Tuya, has been interviewing these nomads to get their perspective on how their environment is changing. The environmental changes recorded by Goulden every year are affecting the herders on a daily basis.

"The changes they are seeing are substantial. They're very concerned, and they're very pessimistic about the future," Goulden says.

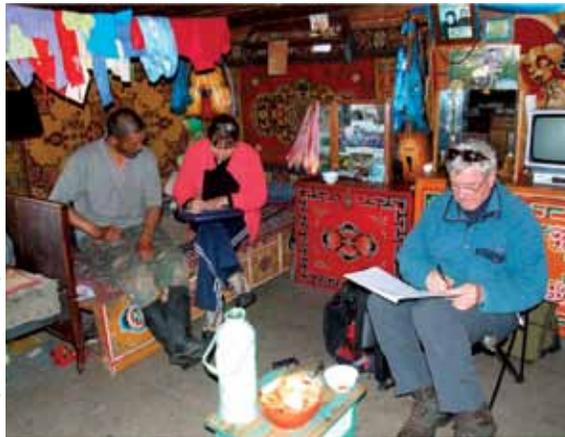
Scientific data collected from Lake Hovsgol over the past two decades docu-

ments climatic change, including a temperature increase of almost four degrees Fahrenheit over the last 70 years. There is an increase in the severity of rain storms, and melting of permafrost, which means the plants are working harder for deep-rooted water, and many species are dying. Fewer plants mean less nourishment for the animals, which are in large part the nomads' livelihood.

As a result, the herders are selling their animals, moving away from the countryside into urban areas, and leaving behind the lifestyle of their ancestors.

"In the middle of Mongolia there are whole cultures that have existed for thousands of years that are having their lives turned upside down in the course of two decades," says Peck.

This summer, Goulden and Peck will visit the Lake Hovsgol area once again; Goulden will continue his interviews with the nomadic herders, and Peck will attempt to track down the very same families he photographed nearly two decades ago. The goal of this trip,



Lkhagva Ariuntseltseg

Dr. Clyde Goulden, together with his wife, Tuya, has been interviewing nomadic herders in Mongolia for the past two years in an attempt to learn more about their perspective on climate change and how it is affecting their way of life.

which is funded by the Trust for Mutual Understanding, is to give the complex topic of climate change a human face by coupling Peck's photographs during the 1990s with new ones he will take in 2011. The photos and Goulden's interviews will personalize the project by allowing the Mongolians to tell their own stories about how climate change has affected their lives.

In addition to telling the herders'

side of the story, Goulden is also concerned with making humanity more aware of the reality of climate change.

"What's happening in Mongolia could be our future here," says Goulden. "The changes that are occurring there could be occurring here over the next 10 or 15 or 20 years. You really have to start thinking about how the changes are affecting people."

"I think people need to know elsewhere in the world that the climate really is changing," Goulden adds. "We need to know that it could happen here and we have to begin to understand how we can adjust to it. This is something that we cannot ignore." ☞

Peck and Goulden hope to create in the near future a museum exhibition, an online exhibition, and possibly one or more publications that will highlight the Academy's long period of research in Mongolia with a particular focus on climate change. To learn more about the Academy's work in Mongolia through its Asia Center, visit <http://asia.ansp.org/>.





Alan Andersen

Academy Treasures

THE ADAM SEYBERT MINERAL COLLECTION CABINET

ONE THING WAS CLEAR TO ANTIQUE FURNITURE CONSERVATOR ALAN ANDERSEN as he worked on the 19th-century mahogany cabinet, prized as one of the most historic Academy treasures—somebody really loved it.

Andersen recently restored a beautiful wooden cabinet which houses 1,825 mineral specimens once owned by Adam Seybert, one of America's most important early mineralogists. Seybert had the cabinet built specifically to house his collection, which was purchased by the Academy in 1812. At the time, all of the Academy's other collections came as gifts from members or others in the community, so the Seybert collection stands

as the Academy's earliest purchased acquisition.

Today, the Seybert Collection holds the distinction of being the oldest intact mineral collection in the United States. It includes scientifically significant minerals, vials of ash and sulfur, and seven specimens collected on the Lewis and Clark Expedition, the only known surviving mineral specimens from that expedition.

With such an historic distinction comes the ravages of time. The minerals were recently photographed in the cabinet drawers to record their organization, and then rehoused in a new, modern cabinet in the Academy's Mineralogy

Collection. Thanks to funds from Academy supporters Amy and Putnam Coes and the Philadelphia Mineralogical Society, the treasured cabinet made its way to Alan Andersen for restoration.

"When I first saw it, I thought overall structurally it was in good condition—you could tell it was always treated as a special object. But age can do some damage," Andersen says.

Most of the concerns were in the veneers, he says. The veneers were made from mahogany that was glued onto the façade; they were damaged due to the opening and closing of the drawers, and through natural shrinkage of the material onto which they were glued.

Nevertheless, Andersen says the job was simple compared to most of the projects undertaken by his antique restoration company. "Because we have so much period wood and veneers, we were able to match everything exactly like it was done originally."

Andersen stumbled on something quite interesting during the restoration, he says. "Inside there was a wrought iron, handmade locking mechanism to keep all the drawers locked. It's pretty interesting construction and quite an undertaking for a blacksmith. It's just beautifully made and a very involved piece of ironwork that no one would know about unless they took all the drawers out."

"We are very grateful to our supporters who enabled the restoration, and for the skillful hands of Alan Andersen," says the Academy's Dr. Ted Daeschler, who has led the effort to revitalize the Academy's Mineralogy Collection. He adds, "It is a goal of ours to have these important specimens and the historic cabinet—an original part of our vast natural history collections—put on public display for our visitors to enjoy in the future."

If you are interested in learning how you can support the Academy's Mineralogy Collection, contact Amy Miller Marvin, vice president for Institutional Advancement, at 215-299-1013 or marvin@ansp.org.

WE WROTE THE BOOK

By Barbara Ceiga
Vice President for Public Operations

WHEN MOST PEOPLE THINK OF THE ACADEMY, they think of our dinosaurs. Those who know us a bit better think of our vast collections and scientific research. But very few think of the hundreds of books produced by our members and staff over the past 200 years. A new exhibit, called *We Wrote the Book*, celebrates these authors whose work has recorded our understanding of the natural world over the past two centuries.

Suitably located just outside the Ewell Sale Stewart Library, the exhibit is modest in size but packs strong visual appeal. When the project was first conceived last year, the goal was to create a display that made visitors think, “Wow, that’s a lot of books!” And so the search began for books authored by men and women with ties to the Academy.

An initial museum-wide e-mail turned up more than 60 books written by current staff members. Meetings with Library staff, searches of our online library catalog, and lots of Google time generated many more—so many that the Exhibits Department developed a spreadsheet to keep track of them all. What started out as a lighthearted rummage through the card catalog turned into a monumental quest. When the search was finally called off—because we had run out of time, not books—the list contained nearly 700 entries.

And quite a remarkable list of books it is. Scholarly works make up the majority of the entries, but there are also field guides, children’s storybooks, and even poetry. The oldest volumes, written by Academy members, date back to the early 1800s. The most recent one, *Caribbean*

Crickets, was written by Dan Otte, our current Curator of Entomology, and published in 2009.

Retrieving, assessing, checking out, and installing all the books in the exhibit cases took nearly as long as finding the books in the first place. The completed display looks deceptively simple: five towering stacks of books that flank three featured open volumes. The stacks will remain constant, while the featured books will change every few months. Be sure to check back often, to see what’s new.

In the days leading up to the installation of the exhibit, all the books were loaded onto carts, forming a veritable caravan. When a curious passerby was told they were all written by people with ties to the Academy, her response was, “Wow, that’s a lot of books!” ∞



Katie O. Clark/ANSP

Manager of Exhibit Projects Jennifer Sontchi (left) and volunteer Alex Moede organize and check out from the Library each of the books slated for the exhibit.

Academy Support

SPOTLIGHT

The Academy would like to recognize the five most recent individuals elected to the Board of Trustees, as of September 2010. These individuals bring to the Academy's governing board diverse professional backgrounds and a unique blend of expertise and guidance. The Academy's Board of Trustees, now totaling 23, is committed to engaging the community and raising funds in preparation for our bicentennial in 2012.



Peter Austen, Elected September 2010

Peter is president of Willis of Pennsylvania, Inc., and has more than 25 years of insurance brokerage and risk management experience. He is a regional partner with Willis North America, managing offices in Pennsylvania, Delaware, Washington, D.C., and Maryland, where his focus is growth and strategic development. A resident of Radnor, Peter is active in the Greater Philadelphia community, including as a director of the World Affairs Council of Philadelphia.

"My principal interests focus on the Academy's environmental work through the Center for Environmental Policy. I hope to find ways to connect the corporate community with profitable sustainability."



Byron T. Clark, Elected May 2010

Ron is a managing director of sales for BNY Mellon's Wealth Management Group, a division of BNY Mellon, providing asset and wealth management services. He also serves on the Upper Mainline YMCA Association Board and is a member of the Philadelphia chapter of CFA Institute and a lifelong resident of southeast Pennsylvania.

"Ever since I was a kid, the Academy has been one of my favorite museums. Joining the board is a great way to align my family's interests and my personal interest in science education and natural history. I hope to contribute corporate support and business expertise."

HOW THE NEW TAX LAW AFFECTS GIFT PLANNING

THE COMPROMISE TAX BILL, which was adopted by Congress and signed into law by President Obama in December, contains a number of provisions that affect both charitable and family gift planning. Here are some things you might want to consider this year as you plan your gifts to charities and family members.

TAX SAVINGS FROM CURRENT GIFTS

The federal income tax rates created by the 2001 tax act will continue in effect until December 31, 2012. Thus, the new tax act did not change the federal tax benefits from current charitable gifts. If you live in a state, such as Pennsylvania, that has a state income tax and allows

a deduction for charitable gifts, your total tax savings will be the combined amount by which your federal and state taxes are reduced.

TAX SAVINGS FROM BEQUESTS AND OTHER ESTATE GIFTS

The new tax act significantly increased the amount that you can transfer to individuals free of tax, either during or at the end of life. It also decreased the tax rate for transfers that exceed the tax-free amount.

Charitable gifts will continue to be fully deductible for gift and estate tax purposes. If you have a very large estate, a charitable bequest can still result in considerable tax savings. For example, a

\$1 million charitable bequest would reduce federal estate taxes by \$350,000. You will also have more freedom to allocate your estate among children and charity without concern about taxes. Suppose, for instance, that your estate is \$12 million, and you have four children. You could give each child \$2.5 million and \$2 million to charity—perhaps creating a named, endowed chair at the Academy with your bequest, for instance—with zero tax. Previously, to have given each child this amount would have resulted in tax, considerably reducing the amount available to charity.

THE CHARITABLE IRA ROLLOVER

The new law extends a provision al-

Academy Support



Carl S. Cutler, Elected May 2010

Carl is a partner in the Philadelphia office of Brown Brothers Harriman & Co. and chief financial officer for its banking and advisory business. BBH is the oldest and largest private bank in the country, founded in Philadelphia in 1818. He joined BBH over 20 years ago, and is now the partner in charge of the Philadelphia office. Prior to this position, he was employed by Mellon Bank and PNC Financial.

“Given the environmental issues facing the planet, the Academy is uniquely positioned to take a leadership role with both our world-class collections and scientific knowledge. I am thrilled to be part of this organization.”



Sandra L. McLean, Elected September 2010

Sandra is executive director and trustee of The McLean Contributionship, which was established for charitable, educational, and scientific purposes. A Philadelphia native, she has been active in the community, including with Delaware Valley Grantmakers and as assistant secretary of the board of Independent Publications, Inc. At the Academy, she is an active member of the Ewell Sale Stewart Library Committee. Sandra follows in the footsteps of her father, William L. McLean III, who is an Academy trustee emeritus.

“I’ve been coming to the Academy since I was born. I think the Academy is on the cusp of change and I feel I can help make a difference.”



Allen J. Model, Elected May 2010

Allen is the co-founder and managing director of Overseas Strategic Consulting, Ltd., an international consulting company that specializes in strategic communications services in some of the world’s most troubled environments, as well as providing press and government spokesperson training. Allen has served on numerous boards of both public and private corporations, as well as many nonprofit environmental organizations including The Nature Conservancy of Southeast Pennsylvania and The National Audubon Society.

“The Academy provides a unique outlet for my interest in the environment, ornithology, evolutionary biology, and history. This is an extraordinary institution—I’d like to assist in making its mission transparent to a broader public.”

lowing taxpayers, who are age 70½ or older, to make tax-free transfers of up to \$100,000 to charities through December 31, 2011. Transfers within the allowable limit from a regular or Roth IRA to one or more charities will not be included in a taxpayer’s taxable income, and they will count towards the required minimum distributions.

Aside from its simplicity, a direct transfer from your IRA to a charity can be very beneficial if you do not ordinarily itemize your deductions or if, because of the deductible ceiling on charitable gifts, you would be unable to deduct the entire amount if you took a taxable distribution and then contributed it to charity.

INDIVIDUALS WITH PRIVATE BUSINESSES

The new law contains many provisions designed to stimulate business activity, but one that encourages charitable gifts concerns the Subchapter S Corporation, a type of business structure that many small businesses elect. Sometimes the principal owner of such a corporation decides to make his charitable gift by causing the company to contribute some of its assets. Suppose, for example, that the corporation owns a parcel of land valued at \$100,000, which the company purchased for \$20,000, and the company no longer plans to make use of it. The land is contributed to the Academy, and the deduction is claimed by the shareholders in proportion to their

ownership. Previously, the shareholders would have had to reduce the basis in their S stock by the entire \$100,000, which would result in more taxable income in the future. However, the new law permits them to reduce their basis only by the cost basis of the donated asset, \$20,000 in this instance. ☺

We would be delighted to assist you in planning your charitable giving. There are many creative, flexible ways for you to support the Academy and meet your personal financial goals. For more information, please contact Amy Miller Marvin, vice president for Institutional Advancement, at 215-299-1013 or marvin@ansp.org. Thank you for your support of the Academy.

Academy Support

ON BEHALF OF THE ACADEMY'S BOARD OF TRUSTEES, we wish to recognize and thank those supporters who have contributed to the Academy between September 1 and November 30, 2010. Your generosity helps to fund the Academy's many programs of research and education, and we are tremendously grateful for your support.

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Academy Support

The gifts listed below were received in support of the 2010 Shell Show Preview Party, proceeds of which support the Department of Malacology. The event was co-chaired by Sarah & Eric Bazilian, Francie Ingersoll & Matt Taylor, with young friends co-chairs Lesley & Frank Coulson and Colby & Matt Paul. Additional photos from the event may be found at ansp.org/shellshowparty.

IN SUPPORT OF THE 2010 SHELL SHOW PREVIEW PARTY

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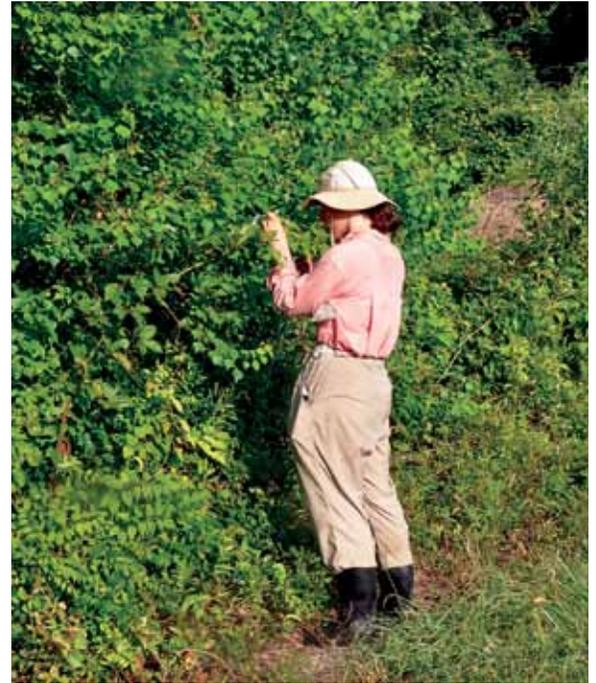
Roughly 200 supporters of the Academy turned out for the Shell Show Preview Party, a kickoff event for the annual Philadelphia Shell Show and Festival in October. Proceeds from the event support the Academy's Malacology Department.

Snapshots

IN THE FIELD

Dr. Tanya Livshultz, assistant curator for the Botany Department, collects climbing dogbane flowers (*Thrysanthella difformis*) during a recent field study in Mississippi to study pollen transfer efficiency in dogbanes. She studies the collected flowers to count how much pollen was removed from and deposited into each flower and calculates the percentage of removed pollen that is ultimately delivered (the pollen transfer efficiency).

Pollen transfer must occur to effect seed and fruit production and is an essential step in plant reproduction. The aim of Dr. Livshultz's research is to compare the pollen transfer efficiency of dogbanes with their close relatives, the milkweeds (which include the 120 North American species in the genus *Asclepias*, along with about 2,900 other species distributed around the world). Milkweeds are known to have some of the most efficient pollen transfer mechanisms on earth. On average, 25% of pollen removed from a milkweed flower is delivered, versus less than 1% for a typical flower. Dr. Livshultz is the first to measure pollen transfer efficiency in dogbanes, which will allow her to determine exactly how much efficiency-gain was produced by the novel floral structures in the milkweeds and ultimately to understand why the milkweeds evolved to be so efficient. 🌿



Ilse Parentage



Katie O. Clark/ANSP

BEHIND THE SCENES

Manager of Living Exhibits Laura McRae conducts some routine maintenance on a barred owl, named Sage, in the Academy's Florence R. Foerderer Live Animal Center. Laura and other staff trim the beak and talons of each raptor approximately once a month. The birds are not sedated or anesthetized during the procedure—just gently restrained by trained handlers. Laura uses nail clippers, like those used for dogs, on the larger raptors' talons, and smaller bird nail clippers for the smaller raptors' talons. She uses an electric Dremel tool to trim and shape the beak. Trimming a bird's beak and nails, when done correctly, does not hurt the bird—the staff is careful to only remove the overgrown portion of the beak and nails. In the wild, a bird's beak and nails are constantly growing and then worn down through their daily activities such as hunting, walking, and grasping tree branches. But in captivity, it is much harder for a bird to keep its beak and nails worn down naturally. So, to keep them comfortable and happy, we do it for them! 🌿



ERNEST HEMINGWAY, ONE OF AMERICA'S MOST CELEBRATED WRITERS, was a world-class sportsman, and sport fishing was his passion. In fact, the Academy has in its Ichthyology Collection several game fish specimens caught by Hemingway, who became a member of the Academy in 1929. In 1934, Academy Managing Director Charles M.B. Cadwalader requested Hemingway's services for an important research project in the waters off Cuba. The Gulf Stream Marine Test of 1934-35 was headed by the Academy's chief ichthyologist, Henry W. Fowler. Hemingway jumped at the chance to assist the Academy in this research project, which would study the life histories, migrations, and classifications of Atlantic marlin,

tuna, and sailfish. In August 1934, Fowler, Cadwalader, and Hemingway spent a month on Hemingway's boat the *Pilar*, catching, measuring, and classifying numerous catches from sun up to sundown. Correspondence between Cadwalader and Hemingway after the trip illustrates that Hemingway's assistance enabled Fowler to more accurately classify the marlin of the Atlantic Ocean, since the Atlantic marlin differs in some ways from marlin found elsewhere. This photo shows Hemingway posing with one of many impressive catches. More than 40 letters between Cadwalader, Fowler, and Hemingway are housed in the Academy's Archives and are available for research. ~ *Joseph L. Annaruma, Academy Archives volunteer.* ∞

Sustainability Matters

By Roland Wall, Director of the Center for Environmental Policy

Recent years have seen a change in how we look at the environment. New thinking—often collectively referred to as “sustainability”—recognizes that it's impossible to separate environmental issues from most of the other important questions facing society.

In the past, it was common sense that you can't worry about “people” and “the environment” at the same time. Environmental quality was a luxury for the pampered few when times were good and society was prospering.

However, threats to natural systems are also threats to human systems, and in many cases they are broad, complicated, and intractable. Anyone who thinks that climate change, for example, is a special interest doesn't understand the profound effects it may have on agriculture, fisheries, water supplies, and economic prosperity.

A Google search for “sustainability” reveals 34 million separate pages, and sometimes it seems as if all of them are trying to come

up with a new definition for the term. Most agree, though, that sustainability is about improving the quality of human life within the limitations of natural resources and ecosystems.

Think of the natural systems involved in the long journey our food takes from a seed in the ground to leftovers in the fridge. Or the path of a drop of water from the rain clouds to the bathtub. Or, that all of these processes are powered by energy that originates in places we will never see. Meeting basic human needs sustainably will be the challenge of our age.

In the coming year, the Academy's Center for Environmental Policy will be exploring the interconnections on which human life and livelihoods depend. Lectures, forums, and workshops will consider what sustainability means for the human life support system. We hope you'll join in the discussion as we explore some of the most important environmental issues of our time. ∞

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There will be a **hole** lot of excitement
at the Academy this summer!



Fore! The Planet is a highly interactive and stimulating exhibit that pairs important environmental issues with the fun of miniature golf! Learn about evolution, dinosaur extinction, butterfly metamorphosis, and much more!

Member Preview: Friday, May 20
Exhibit opens: Saturday, May 21