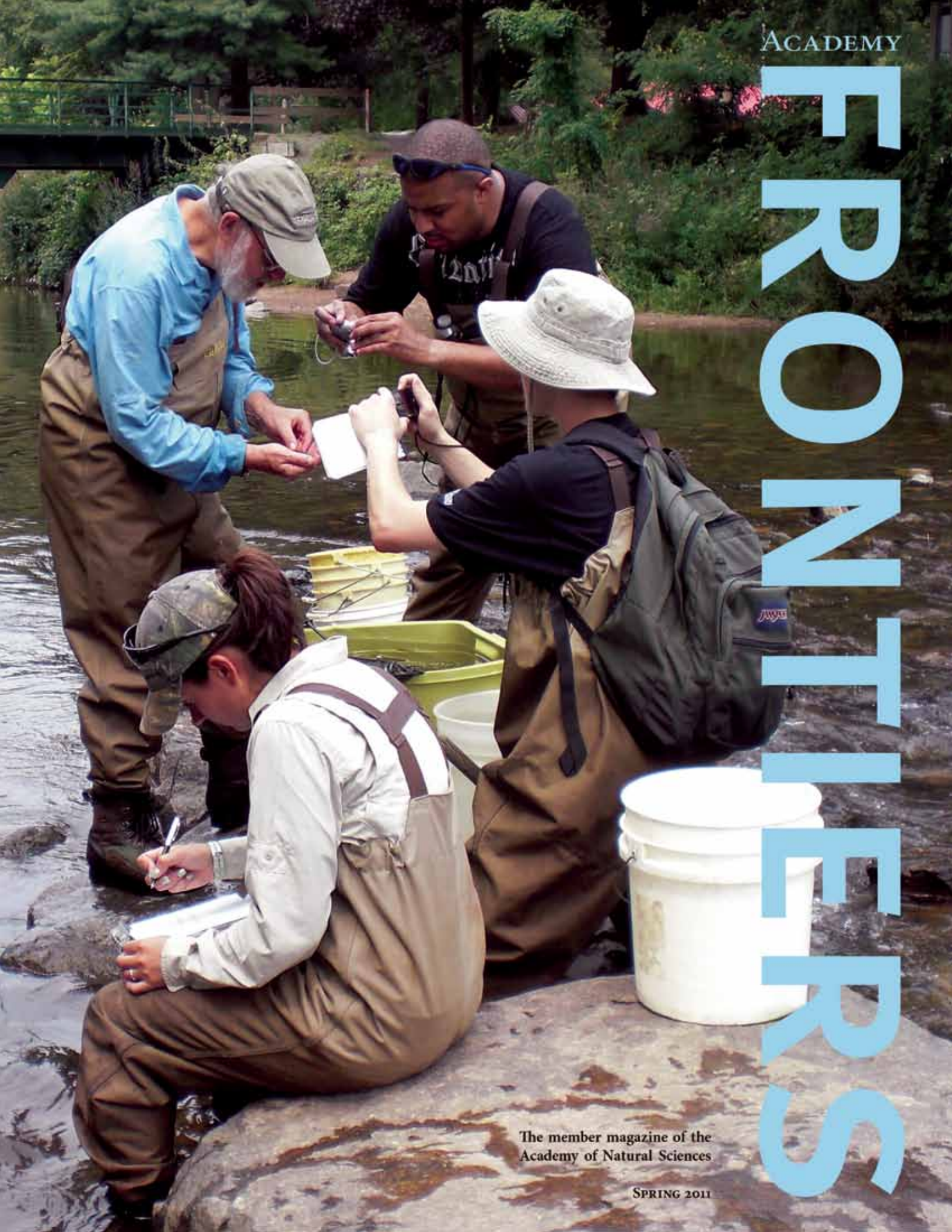

# Academy Frontiers

The member magazine of the Academy of Natural Sciences

Spring 2011

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*Academy Frontiers* is a quarterly publication of the Academy of Natural Sciences, 1900 Benjamin Franklin Parkway, Philadelphia, PA 19103.

Academy membership includes a subscription to *Academy Frontiers*, free admission to the museum, discounts in the Academy Shop and Ecology Café, invitations to special events and exhibit openings, and much more.

For information about Academy membership, call 215-299-1022 or visit ansp.org/membership.

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On the cover: *The Academy's Dr. Rich Horwitz (left), senior scientist in the Patrick Center for Environmental Research, leads a group of participants on an electrofishing field study last summer in Manatawny Creek, near Pottstown, PA. Electrofishing is a technique used by Academy scientists to catch and release wild fish populations for study. Participants in this electrofishing field study helped collect data on 19 different species. To learn more about our field study programs and how you can accompany Academy scientists in the field, see page 10. Jill Sybesma/ANSP*

# Greetings From the Academy

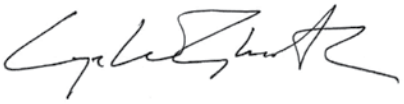
**This time next year we will be at the top of our Bicentennial year** and we couldn't be more excited. As we count down the days, we are working to prepare the Academy for this extraordinary celebration. We are thrilled to announce some changes to our museum that you'll see happening throughout this year. Our list of improvements includes a renovated 19th Street entrance to complement the newly renovated main entrance, fresh new exhibits that highlight our historic collections and important scientific research, and other exciting enhancements designed to help you to better enjoy the museum. Basically, we're working hard to get our house in order for the biggest celebration in our history—and a kickoff to the next 200 years!

One thing we're planning for the Bicentennial year is an exhibition of the Academy's greatest treasures. This will be our opportunity to introduce you to our scientists and their work and share some of the most amazing things in our collection—it promises to be truly stunning. Throughout our Bicentennial year, we'll be working to strike a balance between celebrating our storied history and collections and showcasing the fascinating research that is currently taking place. While we're proud of our first 200 years of scientific discovery, the research at the Academy today is just as relevant and important as the greatest discoveries in our past.

In this issue of *Academy Frontiers*, look for an article on Mary Gibson Henry, an early botanical explorer who donated thousands of important specimens to the Academy. We hope you enjoy this piece, as you'll see many more like it in *A Glorious Enterprise*, a history of the Academy's first 200 years written by Academy Senior Fellow Robert M. Peck and historical biographer Patricia Tyson Stroud. The book, described by Peck as a "family history" of the Academy, is full of vignettes about some of our most important early members. It is set for publication just in time for our bicentennial.

Thank you, as always, for your support of the Academy and your commitment to our next century and beyond.

All the best,



George W. Gephart Jr.
President and CEO


Academy of Natural Sciences
– Connecting People to Nature Since 1812 –

TEAR HERE

# JOIN US FOR THESE UPCOMING EVENTS!

## APRIL

**15–28 Philadelphia Science Festival**
The Academy is participating in a city-wide celebration of science. Visit philasciencefestival.org for a full listing of activities at the Academy and throughout the city.

**18 Science on Tap "Quizzo," 6 p.m.**
National Mechanics, 22 S. Third Street, Philadelphia

**18–29 Academy Explorers Spring Break Camp**
Ages 5–12, 9 a.m.– 4 p.m., Monday through Friday
Visit ansp.org/springcamp for registration forms and additional information.

**19 An Evening with Tim Flannery, author of *Here on Earth*, 6 p.m.**

**21 Urban Sustainability Forum, 6–8:30 p.m.**
Philadelphia City Council Candidates Forum

**22 Earth Day Festival, 10 a.m.–5 p.m.**
Join us in celebration of our planet! Academy staff will give tips on how to be a better steward of the environment, increase your sustainability practices, and become a "greener" person.

**April 23– July 31 Art of Science Gallery**
*A Pennsylvania Fishery: Fish Portraits by Flick Ford*

**27 Author Talk: Andrea Wulf, 6:30 p.m.**
*Founding Gardeners: The Revolutionary Generation, Nature, and the Shaping of the American Nation*

**28 Town Square, 6 p.m.**
"Innovative Agriculture for the 21st Century"

## MAY

**6 Friends and Family Safari Overnight 6:30 p.m., May 6 to 9 a.m., May 7**
Enjoy interactive activities, meet some of our live animals, and sleep next to lions, tigers, or *T. rex*!

**14 "Useful Urban Plants" adult program, 10 a.m.–noon (rain date 5/22)**
Join the Academy's Botany Department for a walk in the Northern Liberties neighborhood and learn about native and introduced plants.

**14–15 Mother's Day at the Museum**
Meet some moms (both human and animal) who have made monumental contributions to science.

**17 Annual Cheryl Beth Silverman Memorial Lecture, 6:30 p.m.**
Keynote speaker, paleontologist Jack Horner

**21–22 *Fore! The Planet: A Putt-to-Learn Adventure* opening weekend**
Explore a tropical rain forest, navigate a polluted waterway, and follow the path of a migrating hawk—all while having fun playing miniature golf! Created by and based upon the research of the Academy, *Fore! The Planet* features 18 holes of indoor golf in which players test their putting skills and environmental knowledge. The exhibit runs through September 25.

**26 Center for Environmental Policy, 6 p.m.**
Intergovernmental Panel on Climate Change (IPCC) Nobel Laureate Christopher H.D. Magadza presents "Lake Kariba: Fifty Years On"

## JUNE

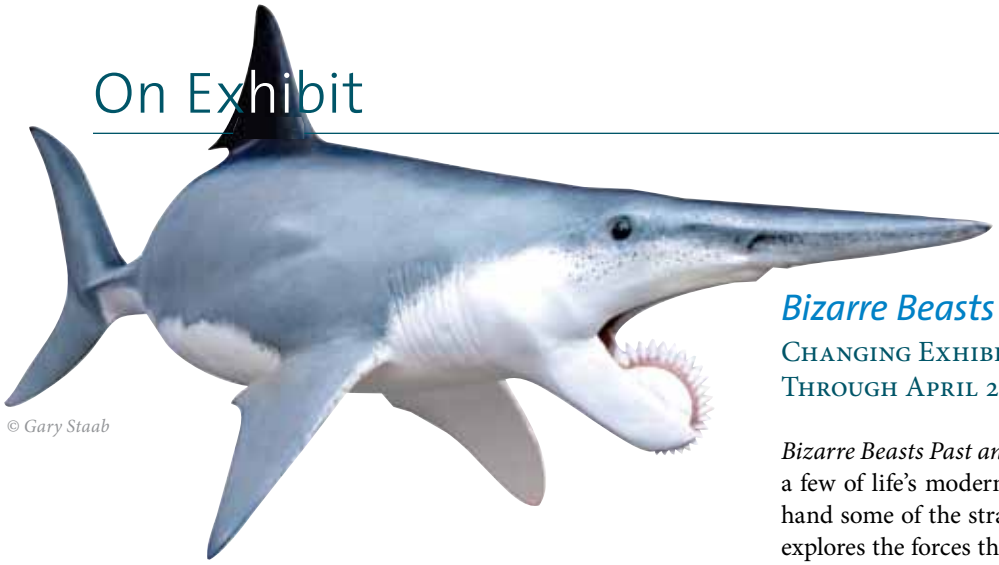
**4 "Crabby Creek" adult field study, 9 a.m.–3 p.m. (rain date 6/18)**
Be an Academy scientist for the day! Assist with ongoing stream research at Crabby Creek in Chester County. Collect aquatic insects and then sort, count, and identify specimens of interest.

**18–19 "Father's Day/ Golfing Green" weekend**
Celebrate with dad, swing a club, and have a blast learning about the environment!

THE ACADEMY OF NATURAL SCIENCES
– Philadelphia –

For more information on our programs or events, including how to sign up, visit our website at ansp.org.

# On Exhibit



© Gary Staab

## *Bizarre Beasts Past and Present*

### Changing Exhibits Gallery
### Through April 24

*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.

## *Fore! The Planet: A Putt-to-Learn Adventure*

### Changing Exhibits Gallery
### Opening May 21

*Fore! The Planet* is a highly interactive and playful exhibition that pairs important environmental issues with the fun of miniature golf! Get the scoop on evolution, dinosaur extinction, butterfly metamorphosis, food chains, and a "hole" lot more! Explore a tropical rainforest, navigate a polluted waterway, and learn how to make a wildlife refuge in your backyard, all while playing miniature golf in *Fore! The Planet*.

## *A Pennsylvania Fishery: Fish Portraits by Flick Ford*

### Art of Science Gallery
### April 23–July 31

*A Pennsylvania Fishery* celebrates the beauty and variety of game fishes that inhabit the waters of the Keystone State. Twenty different species are portrayed in luminous watercolors by noted New York-based fish artist, Flick Ford. An avid angler, Ford began painting fish portraits in 1993 as a way to make a record of his catches. Over the years, he developed a watercolor technique that captures the perfection of the fish at the moment it is pulled from the water.

© Flick Ford

Katie O. Clark/ANSP



# JOHN SIME

**Every day, John Sime works with strange creatures that are not only ancient,** but undeniably spineless. And he finds them inherently fascinating.

As curatorial assistant for the Department of Invertebrate Paleontology, Sime curates the Academy's collection of more than one million specimens, all of them at least 10,000 years old.

What exactly is Invertebrate Paleontology? "It's the study of dead things that don't have backbones," Sime explains. More importantly, it is the study of biodiversity and evolutionary patterns, he adds. Invertebrates are organisms like trilobites, sea sponges, and ammonites, to name a few.

"These things existed during the age of dinosaurs, and way before," he says.

Despite Sime's interest in these organisms, it was the study of animals with backbones that got him hooked on science at a young age.

"Dinosaurs are what really pulled me in. But as a kid, I had mercurial interests—I would study dinosaurs for six months, then move on to whales, then to hyenas and wildebeests, and the idea of migration, one of the last great mammal migrations on earth," he says.

So, it's a good thing he grew up just blocks from the Academy, he says, which served as an outlet and connection to nature for an inner-city kid.

Sime stayed close to the Academy through his younger years and, as a teen, volunteered in the Vertebrate Paleontology Department. He went on to earn a degree in geology from Ohio's College of Wooster.

After graduating, Sime returned to the Academy. "I needed something to do, something to get myself on track," he says. He immediately thought of the Academy's Invertebrate Paleontology Collection.

"When I worked in the Vertebrate Paleontology Department, I used to walk by the invert collection and I would just think about what was in those cabinets," he says. "It popped into my head that someone should be working on that collection."

It was overwhelming at first, Sime says, to be responsible for more than one million specimens. But what he could learn from them is what made it worth his while.

"The collection is a never-ending source of interesting questions," he says. "I think the fact that I'm helping revitalize such an important resource—that's really what I get out of it. It's all about feeling a part of something bigger than yourself."

Sime says while he continues to curate and organize the collection, he hopes one day to have more storage space and a few more staff in the department to help inventory the entire collection and fully realize its scientific value. The Academy's Invertebrate Paleontology Collection is the oldest in the United States and holds material collected and described by the earliest workers in American and British paleontology. Strengths of the collection are in Cenozoic and Cretaceous Mollusca of the New World, particularly the Atlantic and Gulf Coastal Plains; Quaternary Mollusca worldwide; and the Mesozoic of England. About 75 percent of the collection is molluscan fossils.

# Academy Abbreviated

**The Academy recently welcomed two new members to the Board of Trustees.**
These individuals bring diverse professional backgrounds and a unique blend of expertise and guidance to the Academy's governing board.

## DR. PATRICK M. OATES ELECTED JANUARY 2011

Patrick is the President & CEO of Orisun Therapeutics, an early stage pharmaceutical company seeking to commercialize compounds for the treatment of neurological disorders. Patrick is a native Philadelphian who understands the importance of giving back to the city that has given him so much. He serves on the board of numerous non-profit organizations including the Philadelphia Zoo, the Free Library of Philadelphia, and the Philadelphia Tribune Charities.

"I am honored to serve on the board of the Academy of Natural Sciences, one of this country's historic treasures. The Academy has distinguished itself as the premier institution of science in Philadelphia and the world. I hope to ensure this institution's longevity through my contribution of time, talent, treasury, and resources."

## JOHN J. SOROKO ELECTED JANUARY 2011

John is the chairman and chief executive officer of Duane Morris LLP, a law firm headquartered in Philadelphia with offices nationally and internationally. Among a number of other positions, John is a director of the Pennsylvania Horticultural Society and a member of the Philadelphia Museum of Art's corporate executive board. He is an avid collector of Audubon's quadruped "imperial" prints.

"The Academy's Library— and, in particular, its collection of Audubon prints—is remarkable. We are very fortunate to have such a special resource here in Philadelphia. That said, my favorite parts of the Academy are the dioramas featuring North American small mammals."

## FIELD TRIPS FOR GROWN-UPS

**The Academy is Philadelphia's best-kept secret,** and a terrific place to visit with your friends or colleagues. We welcome groups of all kinds—clubs, college classes, corporations, or simply informal groups of friends or family. And, group tours offer special access and insights into the Academy's hidden treasures—from spellbinding stories of discovery to the chance to see Thomas Jefferson's personal fossil collection.

The Academy offers special admission rates and programs for groups of 10 or more adults—after all, why should kids have all the fun? We offer several different types of tours, from private gallery tours where an experienced guide shares "insider information" about our iconic exhibits to more intimate behind-the-scenes collections tours. We can help you craft a museum experience that matches your group's interests.

Members receive a 10% discount on group tours. Simply provide your membership number when you make your reservation.

Explore beyond the dinosaurs. Plan your next group outing to the Academy and experience something truly unique at one of Philadelphia's landmark destinations. To schedule a group visit or tour, please contact our Group Sales Department at 215-299-1153, e-mail groups@ansp.org, or visit ansp.org/groups.

*Conrad Erb Photography*

Katie O. Clark/ANSP

## AN UNLIKELY REUNION

**More than 60 years ago,** New Jersey resident Jim Ruhle made the discovery of a lifetime. At the age of 14, he unearthed the fossil bones of a prehistoric ground sloth from a pile of earth in Mount Laurel, N.J. Ruhle's father called in an expert to examine the bones—Dr. Horace Richards from the Academy of Natural Sciences. Richards determined that the bones belonged to the giant sloth species *Megalonyx jeffersonii*, commonly called Jefferson's ground sloth, named for U.S. President Thomas Jefferson, who first described the species in the late 1700s.

Jim donated the bones to the Academy more than 60 years ago, where they remain today in the Vertebrate Paleontology research collection. Jim's son, Karl Ruhle, recently made the long trip from California to view the bones his father collected more than half a century ago.

"It felt like I had a connection with my dad when he was 14 years old—it was like I was able to go back in time," Karl says. Jim Ruhle says he hopes to pay a visit to the Academy in the near future to see the bones he uncovered in his teens.

To learn more about Jefferson's ground sloth, visit ansp.org/museum/jefferson/megalonyx/index.php.

# 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, Dan Thomas, collection manager for our Visual Resources for Ornithology (VIREO) Department, suggests you look for the Baltimore oriole (*Icterus galbula*), one of our most colorful and vocal birds and a sure sign of the arrival of spring.

The male Baltimore oriole has a brilliant orange breast, belly, and rump, which contrast with its all black head, and a single white wing bar (stripe design across the middle of the wings). Females are basically drab versions of the males, without the black hood and with colors varying from pale orange to dull yellow and even a bit of olive. Baltimore orioles are slightly smaller than the American robin.

Male Baltimore orioles have a very distinctive song described as a clear, wet whistle. "There is not really any other bird in our area that sounds like it," Thomas says. The unique song can vary depending on geographic location, but the oriole's characteristic high, flute-like pitch is what will help you locate these beautiful birds since they spend so much time in the treetops.

But the males don't get to have all the fun. Female Baltimore orioles also sing, and often in complement to their male counterparts. The female's song is simpler than the male's, which is delivered in a quick stream of coupled notes. The males sing to attract mates and defend their territory and the females usually sing while foraging.

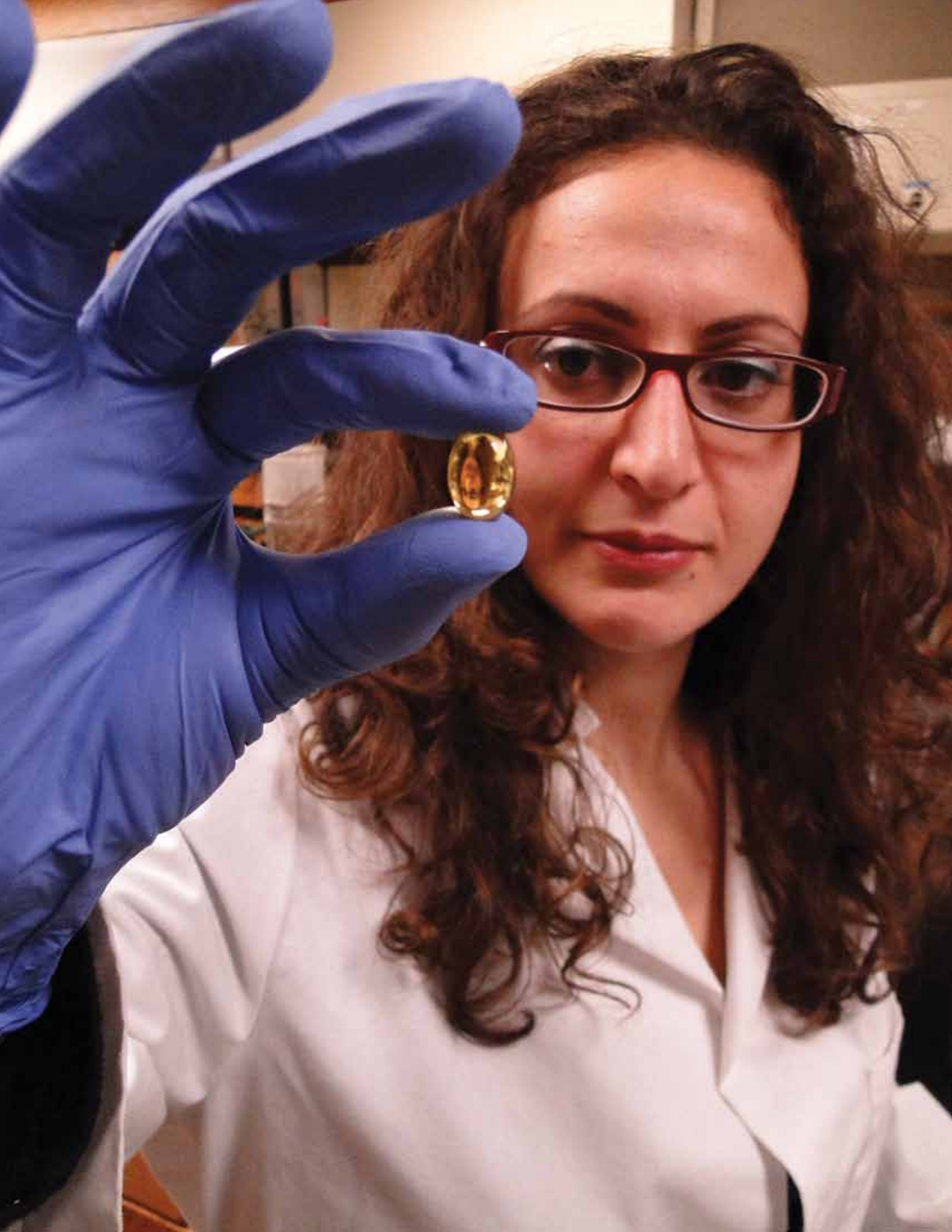
Baltimore orioles arrive in the Philadelphia area in late April or early May, after wintering in Central America and northern South America. They generally like taller, older trees, and deciduous trees—basically any woodland edge near water. Tall sycamore trees along Kelly Drive in Philadelphia's Fairmount Park are a common nesting area for these birds.

© Johann Schumacher/VIREO

Baltimore orioles are notable for more than just their pretty song. They also weave a rather unusual nest. The females build a gourd-shaped, hanging pendant nest usually placed fairly high up in the canopy. The design of the nest keeps out predators and protects the delicate chicks inside, Thomas says.

These birds will leave our area sometime between late July and late September, so get out and find one today!

To hear an audio clip of the Baltimore oriole's song, visit ansp.org/membership and check the sidebar on the right.



# What's in your kid's vitamins?

By Katie O. Clark
Editor

**Last fall, Academy research associate Dr. Jeff Ashley published the results of a study** that showed over-the-counter fish oil capsules contain more than just heart-healthy omega-3 fatty acids—samples tested by Ashley contained levels of polychlorinated biphenyls (PCBs), a "legacy" contaminant banned in the U.S. in the 1970s. It was important information to share with the public, since many adults, Ashley included, take these popular supplements every day.

After the study, Ashley took a good hard look at someone else who could be affected by these potentially harmful chemicals—his 3-year-old son.

"My son eats 'gummy' vitamins fortified with fish oils every day. I started noticing that fish oil is in a lot children's food—the gummy vitamins, in yogurt, even in syrup that you put on ice cream," Ashley says. "There are so many products out there with fish oil marketed toward children."

Fish oil has many health benefits and has also been linked to enhanced brain development in children. "The old adage that fish is brain food is true," Ashley says. But, after the knowledge he gained from his study of fish oil capsules for adults, Ashley was determined to find out if products aimed at young children—in particular the gummy vitamins—would yield the same results.

"These fish oil supplements have become a popular means of increasing children's intake of polyunsaturated fatty acids," Ashley says. "So, we wanted to know if the levels and potential health effects of organic contaminants such as PCBs would diminish some of the health benefits."

Ashley, who is also an associate professor of chemistry at Philadelphia University, asked former student Josh Ward (Class of 2009, biochemistry) to co-lead the "gummies" project. Ward participated as a student in the original adult fish oil supplements study conducted in 2006.

Ward and Ashley used the resources of the Academy's Patrick Center for Environmental Research to conduct the study. Together with Patrick Center staff scientists Mike Schafer and Linda Zaoudeh, Ward and Ashley tested 13 popular over-the-counter children's fish oil supplements for PCBs. The products ranged from gummies and powdered drink mixes to capsules and chewy candies.

They found that concentrations of PCBs were low compared to the recent study of adult fish oil supplements. While children are exposed to PCBs from daily consumption of fish oil supplements, it is at very low levels. Based on manufacturers' recommended dosages, a child's daily intake of PCBs would range from 2.8 to 50.3 nanograms per day. A nanogram is one billionth of a gram—it's "like throwing a shot glass of liquid into an Olympic-size swimming pool," Ashley says. But, even at these low levels they may still induce some toxicological effects, he adds.

Interestingly, Ashley says that children are exposed to more PCBs through ingestion of fresh or frozen fish compared to these kids' fish oil pills. So, fish oil products such as these pills may be a safer way to get these essential fatty acids. However, fresh fish contains other beneficial nutrients and obviously should not replace any dietary supplement.

"I'm not saying that people should stop taking fish oil pills," Ashley says. "The benefits may far outweigh the negative aspects of these low-level contaminants. You just have to be wary when it comes to fish oil pills for kids," he says, since children would be more affected by these contaminants than adults because they are still developing mentally and physically. The same goes for women who are nursing or pregnant, he adds.

Fortunately, Ashley has some advice: choose fish oil products made from small fish species like anchovies, sardines, and menhaden. "Cod and shark and other top predators tend to accumulate these contaminants to a higher degree, so look for lower trophic-level fishes in the ingredients. They have the essential fatty acids component and they're lower on the food chain."

Another option is to talk to your doctor about a prescription fish oil supplement, which is regulated by the U.S. Food and Drug Administration, unlike regular over-the-counter supplements.

Ashley plans to present his findings in May at the annual conference of the Society for Environmental Toxicology and Chemistry in Milan, Italy. He said none of this work would have been possible without the resources at the Academy. "The Academy's Patrick Center has the proven expertise of doing contaminant analysis and has instrumentation and equipment that is fairly unique."

> *I'm not saying that people should stop taking fish oil pills…you just have to be wary when it comes to fish oil pills for kids."*
>
> Dr. Jeff Ashley, research associate,
> Patrick Center for Environmental Research

"This project is a great example of the kind of collaborations fostered by the Patrick Center," says Dr. David Velinsky, vice president of the Patrick Center. "These collaborations help expand our research capabilities and our educational outreach, and allow us to learn new scientific approaches and move in new directions with our collaborators."

To learn more about the Academy's environmental research, join us at our Earth Day Festival on Friday, April 22. Talk one on one with the Academy's environmental scientists, try your hand at Academy science, get tips and advice on how to become a better steward of your environment, and more! Just visit ansp.org/activities and click on "Festivals."

*Patrick Center for Environmental Research staff scientist Linda Zaoudeh recently worked with research associate and Philadelphia University professor Dr. Jeff Ashley to analyze contaminant levels in children's vitamins fortified with fish oils. Katie O. Clark/ANSP*

Jerry Freilich

*This photo was taken on a birding trip to Delaware in May 1974. The man with the large hat (second from right) is Steve Harty, who for many years led* Expeditions for Everyone. *The photo was taken by Jerry Freilich, who headed up the Academy's Live Animal Center in the early 1970s and also served as the official "in-house" photographer.*

# Your Inner Scientist

By Katie O. Clark
Editor

**Every year, more than 150,000 people of all ages step inside the Academy** to soak up our knowledge about the world outside. From strange beasts that existed millions of years ago to testing the water quality of a backyard stream to global warming—we have an incredible trove of information to share. But, the exhibits and educational programs at the Academy are only part of what we do. Our scientists and experts go into the field and study the natural world in our region, nationally, and internationally, all year long. In observance of our mission to encourage and cultivate the sciences, we are devoted to more than just teaching you about what we've observed—we want you to be a part of it.

In 2009, the Academy made a commitment to offer field studies designed for those wishing to learn something about natural history in an informal way by studying outdoors. This recent recommitment was inspired by a long-running and successful field trip program established at the Academy in 1937. Called *Expeditions for Everyone*, this programming was the first of its kind in Philadelphia, and one of the first in the country.

Interestingly, *Expeditions for Everyone* did not begin as something intended for Academy members. Rather, it was part of an outreach into the community, attracting large numbers of people from various professions. The field trips took place locally, and eventually went national with trips to Florida and California, and international, with trips to Costa Rica and Panama.

For now, our recent revival of this field trip programming—which is open to Academy members and the public—will stay close to home. But apparently there is a big interest in field trips to hidden-gem locations found right in our own backyard.

"People are really glad that we are offering these programs again," says Jill Sybesma, who coordinates the Academy's adult programming. "They are super excited that there are new programs available—it gives them an outlet to be with

like-minded people and learn something at the same time."

The destinations and purposes for these field studies vary greatly, covering any of the Academy's scientific disciplines. From fossil collecting trips along the Delaware Canal, to electrofishing trips in Pottstown streams, to urban forestry hikes just outside the Academy doors, there's something for every interest.

What's unique about these programs, Sybesma says, is that participants aren't just tagging along and watching the scientist at work. They're taking part in the process.

"Participants can record data, measure fish, sort insects, help set up collection traps— they can *be* a scientist rather than just shadow one. You get to do what they do and learn from them," she says.

The participants aren't the only ones who benefit from the process, she adds. "They're still getting work done. And, it gives the scientists a chance to show off their research—research that might not be well known."

New Jersey resident Joanne Maxwell and her husband, John, have participated in nearly all of the Academy's field study programs since last year.

"It's a unique opportunity to learn more about the natural world from a scientific perspective, and to get a real view of how scientific research is done," she says. And, she adds, "the caliber of these programs is universally excellent, reminding me of the best courses I had in college."

Even though the field study offerings are fairly new, some programs are already selling out in a matter of days. Upcoming field studies include a "Useful Urban Plants Walk" in Philadelphia's Northern Liberties section in May; a Chester County Crabby Creek field study in June to collect aquatic insects; and another electrofishing trip in July. There are plans to hold an insect field study this fall in the New Jersey Pine Barrens that might take place around the time of a new moon and focus on nocturnal insects.

"I'm still thinking of ideas," Sybesma says. "We're trying out a lot of different things."

Eventually, Sybesma says, with enough interest from the public, she hopes to offer overnight field studies further away from the city.

"That interest is definitely growing," she says.

Stay up to date with the Academy's field study program schedule by regularly visiting ansp.org/adult-programs/workshops.php.

Katie O. Clark/ANSP

*Dr. David Hewitt (far right), research associate for the Academy's Botany Department, recently led a group on an urban forestry walk where participants examined different species of trees located around the Academy.*

# Academy Treasures

*In 2012, the Academy of Natural Sciences will celebrate its bicentennial. Many colorful and brilliant individuals, past and present, have made the Academy what it is today. To celebrate them, Senior Fellow Robert M. Peck and historical biographer Patricia Tyson Stroud are in the final stages of writing* A Glorious Enterprise, *a "family history" profiling the interesting people who have been involved with the Academy over the past 200 years. In each issue of* Academy Frontiers *this year, we will present profiles like these in anxious anticipation of the book's release in early 2012.*

## MARY GIBSON HENRY—IN JOHN BARTRAM'S FOOTSTEPS

By Elizabeth P. McLean, contributing writer for *A Glorious Enterprise*

*Mary Gibson Henry and her daughter, Josephine Henry, examine plant specimens they collected during one of their many joint expeditions. Hundreds of their specimens are cared for in the Academy's herbarium, where they continue to provide important information about plant communities in many parts of North America.*

**Mary Gibson Henry (1884–1967) was an intrepid plant explorer,** whose 20th-century exploits seem, at times, a throwback to the 19th century. In the early 1930s, she made four expeditions to uncharted parts of northern British Columbia, covering thousands of miles on foot and on horseback. Thanks to the Canadian cartographer who accompanied her on several of these trips, Mount Mary Henry was named in her honor. The route she blazed on her 1935 expedition formed the basis of the Alcan Highway. She was awarded the Mungo Park Medal by the Royal Scottish Geographical Society in 1948 "for explorations in Northern British Columbia." Her greatest interest, however, was in plants of the southeastern United States where she made more than 60 collecting trips and discovered a number of new species and subspecies of plants.

A woman of means, Mrs. Henry was known to travel in style. For her southern forays, she rode in a chauffeur-driven Cadillac at her husband's insistence. The car was fitted with book shelves for her many reference books, a lighted desk for recording her notes, and a ventilated "attic" for drying the plants she collected. Despite such elegant means of transportation, these were not trips of comfort. In an autobiographical memoir of 1950, she observed that "wading, usually barelegged, through countless rattlesnake-infested swamps add immensely to the interest of the day's work" and noted in her diary more than one close encounter with a potentially deadly viper: "…coral snake. Beautiful, but bad. I cut its head off with my spade." On one occasion she and her daughter Josephine stumbled upon an illegal still in the woods, and were accosted by the moonshiners who owned it: "three men with rifles, who threatened us roughly… we felt as though we were in the movies."

Henry often consulted William Bartram's classic book *Travels* (1791) during her southern field trips, noting with excitement in her diary whenever she found plants he had described in the areas he had visited. Of *Aesculus sylvatica* (Bartram) she commented: "some coincide exactly with Bartram's descriptions, even to the stippling."

She sought superior colors and forms in the wild in such plants as a yellow *Lilium superbum*, and a pink *Iris verna*. These she propagated in her garden in Gladwyne. In time, she turned her home and garden into the Henry Foundation for Botanical Research. Occasionally, she released plants into the nursery trade. She also hybridized such plants as *Amaryllis x henryae* and *Berberis x gladwynensis* "William Penn" to sell and give to friends.

Mary Henry was particularly fond of lilies and was proud to have discovered and named *Lilium iridollae*. She collected seeds and pressed specimens which she shared with the Arnold Arboretum, the Royal Botanic Garden in Edinburgh, and the Academy of Natural Sciences. She was respected by professional botanists and developed a particularly close relationship with Dr. Edgar T. Wherry of the University of Pennsylvania and Francis Pennell of the Academy. It is estimated that Mary donated more than 4,000 specimens to the Academy, including numerous species described by her and other botanists. Her collections are foundational for our knowledge of the flora of British Columbia and the southeastern United States.

# SAVING COOK'S ATLAS

By Catherine C. Wilt, Director of Library Services and Archives

Ewell Sale Stewart Library/ANSP

*This engraving is titled* A Man of Kamtschatka, Travelling in Winter, *plate 70 in Captain Cook's atlas.*

**The Academy's Ewell Sale Stewart Library houses an amazing collection,** with more than 200,000 volumes dating from the 1500s to the present. We have many beautiful illustrated works from the 18th and 19th centuries including a wealth of expedition literature.

One particular treasure is a breathtaking atlas, part of a four-volume set entitled *A Voyage to the Pacific Ocean. Undertaken, By the Command of His Majesty, For Making Discoveries in the Northern Hemisphere. Performed Under the Direction of Captains Cook, Clerke, and Gore, in His Majesty's Ships the Resolution and Discovery; in the Years 1776, 1777, 1778, 1779, and 1780.* It is the account of Captain James Cook's third and final voyage, during which he discovered Hawai'i, then sailed north to pass through the Bering Straits looking for a northwest passage. When his ships were blocked by the Arctic ice wall, he returned to Hawai'i where he was killed in February 1779 while attempting to rescue a stolen boat.

The first edition was published in 1784 and is a three-volume set plus an atlas describing the journey through text and dramatic engravings. Volumes I and II were written by Captain James Cook while Volume III was written by Captain James King. The second edition of this work was published a year later in 1785. The Academy owns both editions.

One of the Academy Library's key responsibilities is to maintain the condition of these rare works for researchers and for future generations. Through the generosity of anonymous donors, we are about to embark on the conservation and restoration of the atlas from the first edition, which contains 63 plates and maps documenting the people, places, and wildlife Cook encountered on this expedition. The atlas is a large book folio, measuring approximately 22 inches high by 17 inches wide. This first edition set was presented to the Library in 1835 by William Maclure, the third president of the Academy who served from 1817–40.

The restoration process will take approximately six months and will involve dissembling the book completely, testing the paper to ensure it can withstand treatment, meticulously washing and de-acidifying each page, sun bleaching and air-drying the pages, rebinding the work, and reusing important original parts like the endpapers and bookplate in the restoration.

You too have the opportunity to support the continuing conservation and preservation of the treasures held at the Ewell Sale Stewart Library and Archives by sponsoring the conservation of a specific book or by joining the Friends of the Library group. One of our next priorities will be to restore the three volumes that accompany the atlas. Please contact Cathy Wilt at wilt@ansp.org or 215-299-1145 if you are interested in helping the Academy with this important effort.

Katie O. Clark/ANSP

*The spine of the atlas is in great need of repair. Anonymous donors have provided funds for conservation of this treasured volume.*

# SPOTLIGHT ON JIM AND JEAN MACALEER

**Jim Macaleer says it all started with a Boy Scout merit badge.** As a 15-year-old scout, he was tasked with identifying as many birds and birds' nests as possible—the requirements of earning a birding merit badge. It was then that he discovered an absolute love for birding. Ironically, this is only where this budding new hobby began—it wasn't until 50 years later that Jim picked up where he left off.

In 1993, Jim and his wife, Jean, were invited to a bird watching event sponsored by a local conservation organization. Remembering his days as a scout, Jim's love of birding was officially rekindled. Shortly after, the Macaleers took a group trip to New Zealand and Australia and found themselves "sneaking off to go bird watching while everyone else was doing the tourist-y stuff." During that trip, they identified nearly 200 different bird species.

"That trip kind of built a fire under us," Jim says.

So, it was a natural fit in 1998 when a friend asked Jim to join the Academy of Natural Sciences' Board of Trustees. With a world-renowned Department of Ornithology and a top-notch collection of study skins representing nearly 90% of all the bird species on earth, the Academy proved worthy of Jim's time and energy.

"It was the ornithology piece that got me interested," Jim says, "but I take a big interest in the all the different scientific disciplines; all of them fascinate me."

Jean, an avid fly fisher and gardener, has always been impressed by the Academy's collections. "There are just millions of things from the beginning of time—it's a wonderful place with a wonderful collection of everything," Jean says.

Jim and Jean have been supporting the Academy since 1998, when Jim was first elected to the Board. He served as a trustee until 2004 and then took on the role of chairman in 2006, the title that he presently holds. Recently, they decided it was time to support the Academy in another way—by naming the Academy in their wills.

"We believe in the future of this place—not only in the tremendous scientific work that is happening today, but the countless scientific discoveries to come," Jim says. "By arranging for a bequest to the Academy in our wills, we know that we can continue to support the Academy long after we're gone."

The Macaleers chose to direct their bequest to the Academy's endowment, which will allow their gift to generate support for the Academy in perpetuity, and for the Macaleers to establish a lasting legacy at the place that has meant so much to them. "I've been a big proponent of growing the endowment," says Jim. "This is a way for me to give back and to support future generations of scientists at the Academy at the same time."

The Academy's scientific work and environmental research deserves support, Jim says, because "a lot of this important work wouldn't get done if the Academy didn't do it."

*Katie O. Clark/ANSP*

# 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 December 1, 2010 and February 28, 2011. 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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*Katie O. Clark/ANSP*

*Academy members were invited to a special preview of our popular exhibit* Bizarre Beasts Past and Present, *which runs through April 24.*

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*continued on next page…*

# PLANNED GIVING AT THE ACADEMY

**Like the Macaleers, you can make a planned gift to the Academy,** and help ensure the continuation of our work for generations to come. The Academy's new Planned Giving program provides a variety of creative and flexible ways for you to support the Academy now and into the future, while fulfilling your own charitable and financial goals at the same time. You can make a gift that the Academy can use right away, or a gift that will benefit the Academy at some point in the future. You can also make a gift that will provide income back to you.

Later this year, the Academy will establish a new society—the 1812 Society—to honor our planned giving donors. If you've already remembered the Academy in your estate plans, please let us know so that we can welcome you as a charter member. If you'd like to learn more about how you can make a planned gift and become a member of the 1812 Society, please contact Amy Miller Marvin, Vice President for Institutional Advancement, at 215-299-1013 or marvin@ansp.org and she would be delighted to assist you. All inquiries will be kept strictly confidential. Thank you for your support of the Academy of Natural Sciences!

# Academy Support

*More than 280 people came out in February to attend the second Mega-Bad Movie Night, with the a screening of the film* Mega Shark vs. Crocosaurus. *Commentators and Academy staff members Paul Callomon and Jason Poole led the hilarious, Mystery Science Theatre 3000-esque journey.*

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*A special reception was held in February as a thank-you to friends and supporters of the Academy and to kick off the Paleopalooza festival weekend, which pulled in record attendance and membership numbers.*

# Snapshots

## IN THE FIELD

The Academy's Dr. Ted Daeschler (center), associate curator of Vertebrate Biology and vice president of the Center for Systematic Biology and Evolution, recently led an international group of 20 paleontologists to Devonian-age fossil sites along highway road cuts in north central Pennsylvania. The trip was held in the days preceding the Society of Vertebrate Paleontology's annual meeting in Pittsburgh. Daeschler's frequent work at these sites is part of his ongoing paleontological research.

Fred Mullison/ANSP

Katie O. Clark/ANSP

## BEHIND THE SCENES

Not all documents in the Academy Archives are paper. Here Academy Archives assistant Megan Gibes, a work study student from Temple University, carefully inspects and rehouses the original copper-plate engravings created by Academy member Charles LeSueur (1778-1846). These extremely rare plates were used to illustrate our earliest publication, *Journal of the Academy of Natural Sciences* (1817-1825). The plate in the center foreground depicts the trilobite *Paradoxus boltoni*—the Academy has the copper plate, the original art, and the vintage publication. Add to this Charles Willson Peale's portrait of LeSueur which hangs in the reading room of the Academy's Ewell Sale Stewart Library and you have an entire suite of materials.

# Flashback

Ewell Sale Stewart Library/ANSP

**One of the big draws here at the Academy of Natural Sciences are the dioramas**—these beautiful and lifelike natural history moments frozen in time have enthralled visitors for many years. Have you ever wondered how these specimens were acquired? The giant sable antelope specimens, for instance, were brought to us in 1929 after an action-packed expedition headed by Prentiss N. Gray, one of our most esteemed trustees. Gray, a banker by trade, was also a celebrated adventurer and world traveler. In fact, he is responsible for the discovery of a low-altitude pass through the Canadian Rockies, which was named Gray Pass in his honor. In 1929, he embarked on an expedition through Africa with three goals in mind: to bring back a series of photographs and motion pictures of East African game, obtain a representative collection of birds of Angola, and to secure a group of giant sable antelope for the Academy's new diorama installations. The photo here depicts a 3/4-ton Ford truck that Gray had specially outfitted for the grueling trip through the wilds of Africa. He had two heavy-duty axles placed in the rear with six tires. The truck was designed specifically to film wild game on the move, and Gray captured African wildlife scenes that, up until 1929, have never been witnessed before. He also accomplished his major task—to secure a group of wild sable antelope. They can be seen today on display on the second floor here at the Academy. If you are interested in learning more about the African expedition, we suggest *African Game-Lands*, a graphic itinerary of Gray's 1929 trip, published by the Boone and Crockett Club. ~ *Joseph Annaruma, Academy Archives volunteer.*

# Sustainability Matters

By Roland Wall, Director of the Center for Environmental Policy

As we enter a new decade, both our planet and our society are facing major challenges. Water shortages, climate change, loss of soil, and demands of growing populations are all real issues that will call for imagination and persistence on the part of people around the world. Many of these problems come together around the issue of agriculture and food production. Besides air and water, no process is more important to human existence and none is as tied to the earth's natural systems.

Having enough food affects every element of our lives and livelihoods. Agriculture and food production also have major impacts on environmental sustainability. Modern agriculture techniques have been very successful in producing food for an expanding population, but they also use huge amounts of water, energy, and chemicals. The long-term impacts on soil fertility and the health of both humans and the environment are uncertain as well.

In response to these problems some growers are practicing cutting-edge techniques incorporating ecological principles to improve harvests and minimize impacts. Examples of this can be found in organic and sustainable agriculture, the comprehensive technique known as permaculture, and the rapid expansion of urban farming.

Can these innovative practices really make a difference? The Academy, in collaboration with the Pennsylvania Association for Sustainable Agriculture will present a series of forums this spring highlighting issues surrounding food and farming. The series features panel discussions linking food and food production to environmental and economic sustainability. Join us and be a part of the discussion.

**APRIL 28: Innovative Agriculture for the 21st Century**
**MAY 23: Local Food—Safe Food: Bringing it to Market**

All programs are free and open to the public and will be held in the Academy's Auditorium. Programs will start with a networking reception at 6 p.m., followed by the presentation at 6:30 p.m. For more information, please call 215-299-1108 or visit ansp.org/environmental.

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