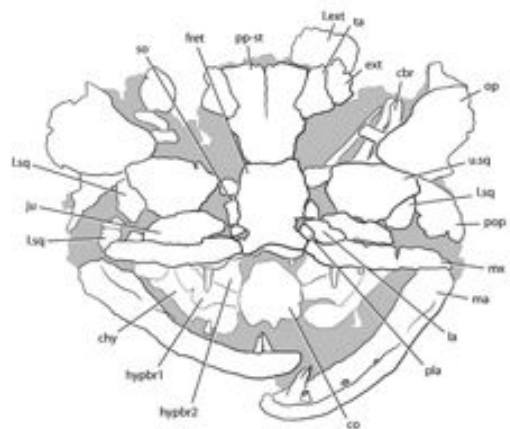
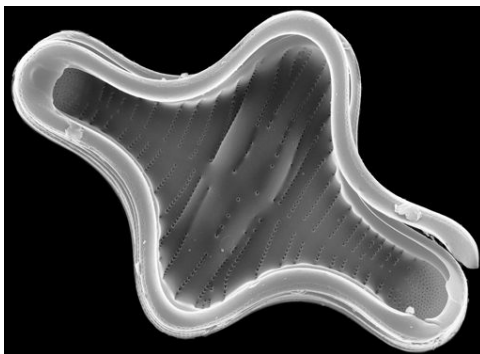


CENTER FOR SYSTEMATIC BIOLOGY & EVOLUTION

2011 ACTIVITY REPORT



STAFF MEMBERS (2011)

ADMINISTRATION

Dr. Ted Daeschler, Vice President
Steven Dilliplane
Kristen Kepics
Drew Lynford
Andrew Schneider

BOTANY

Dr. Ernie Schuyler, Curator Emeritus
Dr. Tanya Livshultz, Assistant Curator
Elana Benamy
Alina Freire-Fierro
Dr. John Hall
Amanda Labadie
Dr. Rick McCourt
Miguel Pérez

DIATOM HERBARIUM

Dr. Marina Potapova, Assistant Curator
Jennifer Beals
Alys Kirsch

ENTOMOLOGY

Dr. Daniel Otte, Curator/Chair
Dr. Jon Gelhaus, Curator
Greg Cowper
Alain Maasri
Stephen Mason
Jason Weintraub

ICHTHYOLOGY

Dr. John Lundberg, Curator/Chaplin Chair
Dr. Katriina Ilves
Kyle Luckenbill
Dr. Mark Sabaj-Pérez

INVERTEBRATE PALEONTOLOGY

John Sime

MALACOLOGY

Dr. Robert Robertson, Curator Emeritus
Dr. Gary Rosenberg, Curator/Pilsbry Chair
Paul Callomon
Judy-Lynn Goldberg
Amanda Lawless
Dr. David Robinson, USDA APHIS

ORNITHOLOGY

Dr. Nate Rice

VERTEBRATE ZOOLOGY

Dr. Ted Daeschler, Associate Curator/Chair
Ned Gilmore
Fred Mullison

VIREO

Doug Wechsler, Director
Daniel Thomas

JESSUP & MCHENRY FELLOWS

Maria Silvina Ussher
John Pfeiffer
Ching-Wen Tan
Jana Vesela

Cover images - clockwise from upper left: *Cicindela sexguttata*; *Chaetodon cingulatus*; *Laccognathus embryi*; *Opisthostoma grandispinosum*; *Parsonsia alboflavescens* visited by *Biomyoides cyaneus*; *Tabellaria vetteri*

BY THE NUMBERS

Research Visitors225
Student Visitors.....526
Other Visitors.....2,672
TOTAL3,423

Outgoing Loans.....182

New Species Described7

Accessions39,330

Specimens/Lots Loaned11,216

Information Requests2,115

FIELD WORK

Botany – *Arizona, Bahamas, Ecuador, Mexico, Panama, Pennsylvania, Taiwan*

Ichthyology – *Mongolia*

Entomology – *Kentucky, Michigan, New Jersey, North Carolina, South Africa, Tanzania, United Kingdom, Virginia*

Invertebrate Paleontology – *New Jersey*

Malacology – *Philippines*

Diatoms - *Wyoming*

Ornithology – *Vietnam*

Vertebrate Paleontology – *Canada, Pennsylvania*

PROPOSALS

BOTANY

- Origin and Diversification of *Monnina* (Polygalaceae). Bentham-Moxon Award, Kew Gardens
- *Digitization TCN Collaborative Research: North American Lichens and Bryophytes: Sensitive Indicators of Environmental Quality and Change*. National Science Foundation
- *Global Plants Initiative*. Andrew W. Mellon Foundation. \$94,000.
- *Global Plants Initiative*. Andrew W. Mellon Foundation. \$ 27,000.

ICHTHYOLOGY

- *Revisiting reefs: A 55-year comparative analysis of reef fish communities at Andros Island, The Bahamas in a regional ecological and evolutionary context*, National Geographic Society, Committee for Research and Exploration
- *Molecular systematics and comparative phylogeography of Caribbean reef fishes*, National Science Foundation, Division of Environmental Biology
- Georeferencing U.S. Fish Collections: a community-based model to georeferencing natural history collections, National Science Foundation, Division of Biological Infrastructure
- *Last Chance to Document the Aquatic Biodiversity and Its Functions in the Lower Xingu Rapids, Brazil*, National Science Foundation, Division of Environmental Biology

MALACOLOGY

- *Digital Imaging of Molluscan Type Specimens at the Academy of Natural Sciences of Philadelphia*

DIATOMS

- “Barnegat Bay diatom water-quality calibration”. US EPA/ New Jersey DEP, \$108,207. 1/1/2012-12/31/2012. Co-PI Potapova (with M. Enache and D. Charles). Submitted and funded.
- “Diatom Quality Assurance and Special Taxonomy Investigation”, Kentucky Division of Water, \$15,050. 5/10/2011- 9/30/2011. PI Potapova. Submitted, funded and completed.

- “Algal Research and Ecological Synthesis for the USGS National Water Quality Assessment (NAWQA) Program Cooperative Agreement 3, Year 5”, USGS, \$299,000+\$100,000 (supplement). 2/1/2011-7/31/2012. Co-PI Potapova (with D. Charles). Funded.
- “Discovering Diversity of the Freshwater Diatoms of the United States” NSF DBI pre-proposal, submitted. Co-PI Potapova (with P. Kociolek, S. Spaulding, and M. Edlund).

PRESENTATIONS

- Arce, M., R.E. Reis and **M.H. Sabaj Pérez**. Molecular phylogeny of thorny catfishes (Siluriformes: Doradidae) (oral presentation*). XIX Encontro Brasileiro de Ictiologia hosted by Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus, Amazonas, Brazil, 30 Jan–4 Feb 2011.
- Correa Roldán, E., and **M. Sabaj Pérez**. Peces de la familia Doradidae (Ostariophysi: Siluriformes) en el Perú (poster presentation). XIX Encontro Brasileiro de Ictiologia hosted by Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus, Brazil, 30 Jan 4 Feb 2011.
- Daeschler, T.**, 21 March 2011. Northeastern/North-Central sections of the Geological Society of America, Annual Meeting, Pittsburgh. *The first Devonian record of a whatcheerid tetrapod (Catskill Formation; Upper Devonian)*.
- Daeschler, T.**, 25 February 2011. Geobiology Symposium XIX, University of Pennsylvania. *Paleoecological and paleogeographic implications of a new species of Laccognathus (Porolepiformes, Sarcopterygii) from the Late Devonian of the Nunavut Territory, Canada*.
- Freire-Fierro, A.** (co-authored with members of my PhD dissertation committee). Systematics of *Monnina* (Polygalaceae). Botany Meetings 2011. St. Louis, MO.
- Freire-Fierro, A.** Talk about the Department of Botany. 2011 Gesneriad Society Convention. Academy of Natural Sciences. July.
- Gelhaus, J.** 2011. Developing entomological science while chasing bugs: 15 years of exploration in Mongolia. *Invited Tanner Lecturer*, M. L. Bean Life Science Museum, Brigham Young University, Provo, Utah, March 24, 2011.
- Gelhaus, J.**, R. W. Bouchard, Jr. 2011. First record of a skating crane fly. *Annual Meeting of the North American Dipterist Society*, Timpanogos Lodge, Sundance, Utah, June 7-10, 2011.
- Gilmore, N.**, presented "Fossil collecting at the Academy of Natural Sciences: The first 75 years" to the Delaware Valley Paleontological Society in October, 2011.
- Gilmore, N.**, presented a program to the Audubon Wildlife Society on the Reptiles and Amphibians of the lower Delaware Valley
- Hall, J. D.** & K. G. Karol. Inventory of freshwater algae of Harriman State Park (New York).

- Meeting of the Phycological Society of America. Seattle, Washington. July.
- Hall, J. D.** Molecular systematics and evolution of green plants. Drexel University, Philadelphia, Pennsylvania. October.
- Ilves, K.L.** Molecular systematics, comparative phylogeography, and community ecology of marine organisms. Invited talk, Biology Department Colloquium, Brooklyn College, City University of New York, 18 Feb 2011.
- Ilves, K.L.** Phylogeography: new ways to look backwards at species and community evolution. Invited talk, Ecolunch Seminars, Biology Department, Temple University, Philadelphia, 27 April 2011.
- Livshultz, T.** *Putting milkweeds in context: understanding the origin of floral innovation.* Muhlenberg Botanical Club, Lancaster, PA.
- Livshultz, T.** *Putting milkweeds in context: understanding the origin of floral innovation.* West Virginia University.
- Livshultz, T.** *Putting milkweeds (Apocynaceae subfamilies Asclepiadoideae and Secamonoideae) in context: understanding the origins of extreme pollen transfer efficiency.* International Botanical Congress, Melbourne, Australia.
- Livshultz, T.** *Putting milkweeds in context: understanding the origin of floral innovation.* Cornell University.
- Livshultz, T.** *The botanical herbarium of the Academy of Natural Sciences enters its third century: looking forward and back.* Consortium of Northeast Herbarium, ANSP, Philadelphia.
- Lundberg, J.G.** Neotropical fish diversity, discovery and biogeography (oral presentation). Plenary Lecture, XIX Encontro Brasileiro de Ictiologia hosted by Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus, Brazil, 30 Jan–4 Feb 2011.
- Maasri, A.** 2011. A new ecological era in Mongolia ? Department of Biology, University of Pennsylvania, Philadelphia, Pennsylvania [Casper Lab Meeting seminar].
- Maasri, A.** 2011. The price of Mongolian cashmere: an ecological perspective. Academy of Natural Sciences, Philadelphia, Pennsylvania [ANSP research seminar].
- Maasri, A., Hayford, B., Gelhaus, J.** 2011. Aquatic communities of Mongolia and expected scenarios due to the human caused climate change. *Symposium for European Freshwater Sciences*. Universitat de Girona, Girona, Spain, 28 June 2011.
- Peavey, T., **J. D. Hall**, & K. G. Karol. Identifying Latin American Characeae using DNA barcodes. Northeast Algal Symposium. Woods Hole, Massachusetts. April.
- Perez, W., **R. M. McCourt** & K. G. Karol. A phylogenetic study of *Tolypella* (Characeae). Meeting of the Phycological Society of America. Seattle, Washington. July.
- Potapova, M. and English, J.** 2011. Allometric aspects of frustular morphology in diatoms. Presentation at the 21th North American Diatom Symposium, 14-18 September 2011, Polson, Montana.
- Rosenberg, G.** December 2011. Evolution and diversity of the terrestrial mollusk fauna of Jamaica. Biology Department, University of the Philippines, Diliman.
- Rosenberg, G.** July 2011. Cataloging and computerizing shell collections. Conchologists of America Convention, Port Canaveral, Florida.
- Rosenberg, G.** July 2011. Researching dates of publication in the Internet age. American Malacological Society annual meeting, Pittsburgh, PA.
- Rosenberg, G.** July 2011. The Philippine Mollusk Symbiont International Cooperative Biodiversity Group. American Malacological Society annual meeting, Pittsburgh, PA.

- Rosenberg, G.** March 2011. Patterns of biodiversity in Philippine marine mollusks: how hot is the hotspot? PMS-ICBG annual meeting, University of Utah.
- Rosenberg, G.** October 2011. Co-leader (with Ellinor Michel) of discussion on ICZN amendment on electronic publication. Natural History Museum London.
- Sabaj Pérez, M.H.** Piscatorial travelogue of the 2007 ACSI - PIPE to Serra do Cachimbo, Brasil (oral presentation). Ictiofauna da ecorregião Tapajós-Xingu Symposium, XIX Encontro Brasileiro de Ictiologia hosted by Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus, Brazil, 30 Jan–4 Feb 2011.
- Sabaj Pérez, M.H.** Status of Neotropical catfish taxonomy and systematics with emphasis on recent discoveries (oral presentation). Invited Speaker, XI Congreso Colombiano de Ictiología y II Encuentro Suramericano de Ictiólogos hosted by La Asociación Colombiana de Ictiólogos – ACICTIOS, Ibagué, Tolima, Colombia, 8–13 May 2011.
- Sabaj Pérez, M.H., J. Birindelli, L. Sousa, A. Netto-Ferreira and N. Lujan.** Piscatorial Travelogue of the 2007 ACSI-PIPE Expedition to Serra do Cachimbo, Brazil (oral presentation). Joint Meeting of Ichthyologists and Herpetologists (JMIH) hosted by University of Minnesota & St. Olaf College, Minneapolis, Minnesota, 6–11 July 2011.
- Sime, J.,** gave a poster presentation entitled "A placoderm with pachyosteorhynchus affinities from the Catskill Formation (Upper Devonian), Tioga County, Pennsylvania". at the 2011 Geological Society of America Annual Meeting.
- Wechsler, D.,** Photography techniques for Science Writing Bootcamp – Highlights Foundation.
- Wechsler, D.,** Macro photography workshop for ANSP members.
- Wechsler, D.,** Salt marsh field trip and lecture for WINS.

HIGHLIGHTS

INTERDEPARTMENTAL HAPPENINGS

- In Dec 2010, Mr. Shewell “Bud” DeBennville Keim, nephew of Henry W. Fowler, the first Curator of Fishes at the Academy, made a private donation of \$25,000 to Ichthyology to support the curation of his uncle’s fishes in 2011. In appreciation for his generous gift “Bud” received in June a 35-page photo album of “Fowleriana”. The album included a variety of images and text celebrating Fowler’s fishes and his many accomplishments. The album was assembled by **Mark Sabaj Pérez**, included images and layout by **Kyle Luckenbill** and **Mark Sabaj Pérez**, and was reviewed by **John Lundberg**, **Clare Flemming** and other ANSP staff assisted MSP’s archival research.

BOTANY

- **Elana Benamy** participated in the 2011 Meeting of The Society for the Preservation of Natural History Collections and to the workshop “Poisons in Collections.”
- Botany staff completed databasing and imaging of Vascular Types collection; all images and records published online at JSTOR Plants (<http://plants.jstor.org>). Botany staff also participated in the 4th Annual Meeting of the Global Plants Initiative Project in Panama

City and the Annual Meeting of the Consortium of Northeastern Herbaria. Botany also solidified collaboration with National Taiwan University. Represented Academy in signing memorandum of understanding that resulted in online deployment of PH specimens in the National Digital Archive of Taiwan (<http://tai2.ntu.edu.tw/>).

- **Alina Freire-Fierro** led a workshop on Plant Systematics offered to members of the Philadelphia Botanical Club and, together with former Flora of Pa Intern, Teresa Trego and Philadelphia Botanical Club President, Janet Novack, led the workshop “Urban Useful Plants, coordinated by Education,
- **Alina Freire-Fierro** was a Student Research Associate at the Smithsonian Institution, council Member for the Latin American Association for Botanists and received a Ph.D. Candidacy at Drexel University.
- **John Hall** inventoried the genera of algae in herbarium and organized algal specimens in a modern phylogenetic classification system. John Hall and **Richard McCourt** developed experiments introducing high school students to algae and molecular biology and introduced primary school students in Philadelphia to microscopy and microalgal diversity. Along with co-PIs, John Hall and Richard McCourt helped develop content for the Green Algal Tree of Life webpage (gratol.org), a portal for information on green algae and the Green Algal Tree of Life Project.
- **Maria Silvina Ussher** (McHenry Fellow) completed imaging and online publication of more than 1600 images from the Bryophytes Type Collection (website in progress): I:\BioVolMain_Unity\Jessup2011\Images PART 1.

MINERALOGY

- ANSP staff organized a display of Delaware County, PA, minerals from the Academy collection for the 2011 Philadelphia Mineral Treasures And Fossil Fair in Fort Washington, PA.
- Three new specimen cabinets were installed with funds from the Hattersley Collections Care Upgrade Fund.
- ANSP staff conducted a series of tours of the Mineral Collection for members of the Philadelphia Mineralogical Society.

ICHTHYOLOGY

- As of 18 Jan 2012 the Fish Collection database records 1,413,672 specimens in 139,263 lots. Subtracting 2,476 specimens (1,886 lots) recorded as deaccessioned (= true), storage = HWF tank, and/or inventory = M (missing) gives an estimate of 1,411,196 specimens in 137,377 lots for current size of cataloged portion of ANSP Fish Collection. Significant additions to the cataloged collection in 2011 include 1695 specimens (203 lots) from the Bahamas collected by **Katriina Ilves** et al. in 2010; 4449 specimens (48 lots) from Mongolia collected by **Mark Sabaj Pérez** et al. in 2011; 562 specimens (150 lots) from Amazonas, Venezuela collected by **Mark Sabaj Pérez** et al. in 2004, 2005 & 2010; 410 specimens (111 lots) from the Peruvian Amazon collected by **Mark Sabaj Pérez** et al. in 2010; and 209 specimens (27 lots) from Colombia donated by Jonathan Baskin. A total of **65 paratypes representing 22 species** (published or in prep) were newly designated from cataloged material or promised to ANSP as gifts. About 354 specimens (116 lots) were cataloged from backlog (e.g., Fowler specimens, Lundberg’s Calhamazon/Orinoco material).

- **Mark Sabaj Pérez** and **Steven Dilliplane** continued work on the website that will publicly serve the entire fish collection database alongside images of types, other specimens and collecting sites. This work is supported by an NSF grant (DBI 0749515) awarded to **John Lundberg** (PI) and **Mark Sabaj Pérez** (CoPI) in 2008, and Mr. Keim's private donation in 2010. The developing website currently serves the entire ANSP Fish Collection database, as well as images and radiographs of 926 specimens: <http://clade.ansp.org/ichthyology/FTIP/zsearch.php>. **Kyle Luckenbill** continued his preparation of images and radiographs of ANSP primary type specimens. Additional images of oversized specimens contributed by volunteer Will Klein, supervised by **Kyle Luckenbill**. Volunteers Dennis Winters and Daniel Russo assisted the project by editing images. On 20 May 2011 the entire ANSP fish collection database was exported for incorporation into the FISHNET2 meta-database, and is currently available on-line at: <http://www.fishnet2.net/>
- **John Lundberg** served as Senior Editor and **Kyle Luckenbill** served as Production/Illustration Editor on volume 161 of the Proceedings of the Academy of Natural Sciences of Philadelphia published in Nov (not Oct), 2011. Volume 161 included 11 articles (203 p) on a variety of topics spanning diatoms, stable isotopes in osprey feathers, crane flies, land slugs, mollusks, catfishes and Devonian antiarchs.
- In Jan-Feb, **John Lundberg** and **Mark Sabaj Pérez** attended the 19th meeting of the Brazilian Society of Ichthyology held in Manaus, Amazonia, where the two mighty rivers Amazon and Negro meet. Mark gave a paper in a symposium on Xingu River fishes, summarizing and photo-documenting an earlier expedition he did with Brazilian colleagues. Lundberg gave one of the five plenary lectures, an overview of Neotropical fish diversity, discovery and biogeography. Over 900 scientists attended this meeting.
- In May, **Mark Sabaj Pérez** was invited to the 11th Congress of Colombian Ichthyology held in Ibagué, Colombia. Mark gave a talk entitled "Status of Neotropical catfish taxonomy and systematics with emphasis on recent discoveries" featuring accomplishments of the NSF-funded All Catfish Species Inventory. **MSP** also gave an 8-hour mini-course on the diversity and evolution of thorny catfishes (Doradidae) to 16 students at the University of Tolima, Ibagué.
- Mjaan McIvor, a biology student at Central High School, Philadelphia, and WINS student at the Academy of Natural Sciences of Philadelphia, interned for the Summer and Fall in the Academy's Ichthyology Department under the supervision of **Mark Sabaj Pérez** and **Kyle Luckenbill**. Part of her work involved photographing preserved specimens of tetras (Characiformes) collected during a 2010 expedition to Amazonas, Venezuela, by **Mark Sabaj Pérez**. The photos helped participants in the expedition (including **Mark Sabaj Pérez**) to standardize identifications across the four museums at which the specimens are now deposited.
- 146 of McIvor's photos of tetras were uploaded to Facebook 13 Sep 2011, and have since generated 238 comments from ichthyologists in Argentina, Brazil, Switzerland, Venezuela, and the United States...including expert identifications, observations on phenotypic diversity, a lively discussion of allometry (differences in growth between different parts of an organism)...and of course the occasional fish joke.
- Catarina Pien, graduate of Wellesley College and ichthyology volunteer under the supervision of **Mark Sabaj Pérez** and **Kyle Luckenbill**, researched Edward Drinker Cope's type specimens of fishes from South America. Upon becoming the Academy's

first curator of Ichthyology, Henry W. Fowler's highest priority was to sort, identify and accession the large and terribly disorganized collection of fishes assembled and recently donated by Cope. Pien's work includes cross-checking Fowler's accession records with original publications on the fishes by both Cope and Fowler, clearing up problems with identifications and specimen and locality data, as well as photographing the type specimens for the image database and to share with experts on Neotropical fishes. Her work will be featured in a paper (co-authored with **Mark Sabaj Pérez** and **Kyle Luckenbill**) on these valuable early type specimens from South America to be published in the Bicentennial issue of the Academy's Proceedings.

- Daniel Russo, M.Sc. student in Biology at Rutgers University, Camden, continued his ichthyology volunteer work under the supervision of **Katriina Ilves** and **Kyle Luckenbill**, taking digital x-rays of goby specimens for **Katriina Ilves**'s taxonomic research and of ANSP type specimens for the department's ongoing Digital Imaging project.
- Over the course of the entire year, Ichthyology staff remained actively involved in a variety of ANSP and Drexel related public programs and initiatives, and routinely provided ANSP Communications, Exhibits, Education and IA staff with expertise, tours, specimens and media (e.g., 2012 Bicentennial Exhibit, "200 stories" project, ANSP Facebook and Flickr postings, interviews, etc.). Additional month-by-month highlights are as follows. In January, **Katriina Ilves** participated in members' opening of the Bizarre Beasts exhibit. In February, **Mark Sabaj Pérez** gave a 2-hour lecture on ichthyology and tour of lab/collection to Nick Principe and Ichthyology class (13 students) from Ursinus College. In March, **Mark Sabaj Pérez** and **Katriina Ilves** hosted a visit from ANSP WINS (20 girls + 2 coordinators), and gave 45 min presentations to 2 separate groups (MSP a behind the scenes tour, KI an identification lab); **Kyle Luckenbill** led 4 tours of the Ichthyology collection for 35 visitors participating in the Family Safari Overnight. In April, **Mark Sabaj Pérez** provided "expert" commentary on stage in auditorium for Mega-Bad Movie Night showing of the film "Mega Piranha"; **Mark Sabaj Pérez** also interpreted and displayed piranha specimens in Science Live for 1 hour prior to movie; **Mark Sabaj Pérez** participated in Science Carnival on Logan Circle by displaying and interpreting specimens from ANSP fish collection for ca. 3 hours. In August, **John Lundberg**, **Kyle Luckenbill** and **Katriina Ilves** led a 20-minute tour of the Ichthyology and research areas for 12 Drexel University faculty members. In September, **Kyle Luckenbill**, **John Lundberg** and **Mark Sabaj Pérez** participated in Academy Member's night from 5-9 pm; **Mark Sabaj Pérez** pulled and displayed 456 specimens (59 lots) from collection corresponding to species (or their relatives) portrayed in the PIXAR movie "Finding Nemo" and printed color photos of 14 characters for visitors to match to specimens; JGL gave a demonstration at computer workstations of our 3-dimensional (computed tomography) projects with CATSCANS of fish specimens to visualize skeletal anatomy, to explain how CATSCAN radiography is done and applied to our research on fish diversity and evolution; **Kyle Luckenbill** gave a demonstration of the department's digital x-ray equipment and x-rayed objects for visitors (images of the x-rays were posted on the Academy's Flickr website so that members could access their image). Also in September, **Mark Sabaj Pérez** participated in ANSP "Back from the Field" reception for Academy board members, president, and guests with interpretation and display of specimens collected during 2011 Mongolia

expedition alongside Powerpoint presentation of photos from 2006 expedition. In October, **John Lundberg**, **Katriina Ilves** and **Mark Sabaj Pérez** covered 3 hours in public museum for Drexel Affiliation Day with displays of and specimens from Bahamas, Mongolia and South America. In November, **Mark Sabaj Pérez** and **Kyle Luckenbill** participated in a 1.5-hour “digital@drexel” event at Drexel campus library, exhibiting ANSP online fish database and catfish catscans on computer screens provided by Drexel. In December, **Kyle Luckenbill** assisted Drexel student and advisor in the photography of fish specimens for use in a museum related calendar.

- **Mark Sabaj Pérez** was interviewed by Edwin López for *Al Día* news article on ANSP fish caught by Ernest Hemingway (<http://www.pontealdia.com/philadelphia/ernest-hemingway-le-regalo-un-atun-a-filadelfia.html>). Article published 16 Oct 2011.

ENTOMOLOGY

- Andrés Vélez (Colombia and University of Puerto Rico, Mayaguez, Puerto Rico) was awarded a Jessup Fellowship to study preserved in the ANSP Entomology Collection. His research focused on the systematics of Neotropical Blattodea [Jessup Fellowship awarded in 2010; research visit to ANSP during 2011].
- Bolortsetseg Erdene (Institute of Meteorology and Hydrology, Ulan Bator, Mongolia) visited the department in January as part of the ongoing Mongolian Aquatic Insect Survey.
- Research Associate Sigitas Podenas and his student Pavel Starkovich (Vilnius University, Vilnius, Lithuania) visited the department in February to study the Diptera collection.
- Former Jessup Fellow Fabio Laurindo da Silva (Federal University of São Carlos, Brazil) visited in late February/early March to study the Diptera collection.
- Carolina Medellin (Universidad Nacional de Colombia) visited the department in June to study the Mantodea collection.
- Oskar Conle and Frank Hennemann (Germany) visited the department in September to study Phasmida.
- Helena Carolina Onody (Universidade de São Paulo, Brazil) visited in November to study the Hymenoptera collection.
- Yan Li (Chinese Agricultural University, Beijing, China) arrived in November, 2011 to start a research fellowship studying systematics of Asian Tipulidae (Diptera) [to be completed in mid-2013].
- Tadeusz Zatwarnicki (University of Opole, Poland), visited in December to study the Diptera collection.

INVERTEBRATE PALEONTOLOGY

- There were 2678 specimens donated to the collection during 2011. The majority of new accessions were from the personal collection of Academy volunteer Betty Ruggeri, consisting of fossil mollusks, principally from the Miocene of North Carolina. John Wolf, a volunteer for the Department of Invertebrate Paleontology also made significant contributions of specimens.

MALACOLOGY

- Rosenberg ran a five day short course in malacology in the Philippines, with a dozen graduate students and faculty from Philippines institutions attending.
- 2011 saw the largest-ever growth in the number of cataloged lots for a single year with the incorporation of the Hemmen Collection into the database.
- The electronic inventory of the collection started on January 12 and by year's end had accounted for 275,000 lots, or about two-thirds of the total dry collection.

DIATOMS

- Employed 3 student volunteers, 1 adult volunteer, 8 work study students from Temple University, and 1 Drexel University Co-op student.
- Added cards for 672 taxa, including scanned images of new taxa and taxon descriptions, to the diatom New Species File.
- Added 88 taxa to Diatoms of the US website. <http://westerndiatoms.colorado.edu/>
- Hosted NAWQA workshop for 6 research scientists to utilize the diatom collection and library and collaborate on contributions to the Diatoms of the US website.
- Participated in Science Live in the museum once a month, speaking to 20-100 people per shift
- Made the Diatom Herbarium Collection Database available online, including 472 type images of 185 species. <http://clade.ansp.org/diatoms/interim/index.php>

ORNITHOLOGY

- Ornithology staff continued to skin Pennsylvania ducks to track avian influenza and prepare specimens of birds killed at local towers and buildings (Light's Out Monitoring with PA Audubon, Philadelphia Zoo).
- Much of above-mentioned bird skinning was done for Science Live. During the summer Dana Cohen, Dani Smith, Ben Bussmann and Nate Rice skinned birds every Wednesday for this outreach program.
- Nate Rice continued a study with David Velinsky and Paula Zelanko (PCER) on Osprey stable isotopes and molt patterns. The first (of likely several) publication of this work appeared in the Academy's Proceedings.
- For the third year the department has helped Dr. David Mizrahi (New Jersey Audubon, ANSP Research Associate) import shorebird feather and blood samples from South America (Suriname).
- Julie Reich continued her research on identifying living relatives of former collection donors. Her work was instrumental in bringing members from several families into the collection for visits.
- Kim Custer continued volunteering in Ornithology and working on an extensive study of our S. N. Rhoads collections. Some of this work is appearing on a Google Earth project of Academy's historic expeditions (Sara Neville research project with Education Department).

HERPETOLOGY

- Morgan Kaelin from the College of the Atlantic in Bar Harbor, Maine, completed a 10-week student internship in the Department of Herpetology during Jan-March, 2011. He work focused on curation of the recently acquired Feirer Collection.

- Ned Gilmore conducted an early spring amphibian field trip at Woodland Beach, Delaware for ANS WINS program.

VERTEBRATE PALEONTOLOGY

- Loan of *Megalonyx jeffersoni* fossils from the Thomas Jefferson Fossil Collection for a special exhibition at the Rosenbach Museum and Library (Philadelphia, PA).
- Ned Gilmore conducted fossil collecting field trips for the Academy's adult and family programs to the C & D Canal in Delaware City, Delaware.
- Ned Gilmore conducted fossil collecting field trips for the Academy's summer camp to the C & D Canal in Delaware City, Delaware, and Big Brook, Monmouth Co., NJ.
- Ned Gilmore conducted fossil collecting field trips for the WINS program to Big Brook, Monmouth Co., NJ.

VIREO

- Licensed an additional 1,100 images to Audubon Guide Apps for a total of 3,139 images in the app
- Billed \$12,325 in licensing and location fees for film productions and documentaries

PUBLICATIONS

- Birindelli, J.L.O., and **M.H. Sabaj Pérez**. 2011. *Ossancora*, new genus of thorny catfish (Teleostei: Siluriformes: Doradidae) with description of one new species. *Proceedings of the Academy of Natural Sciences of Philadelphia* 161:117–152.
- Carvalho, M.R. de, **M.H. Sabaj Pérez** and N.R. Lovejoy. 2011. *Potamotrygon tigrina*, a new species of freshwater stingray from the upper Amazon basin, closely related to *Potamotrygon schroederi* Fernandez-Yépez, 1958 (Chondrichthyes: Potamotrygonidae). *Zootaxa* 2827:1–30.
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