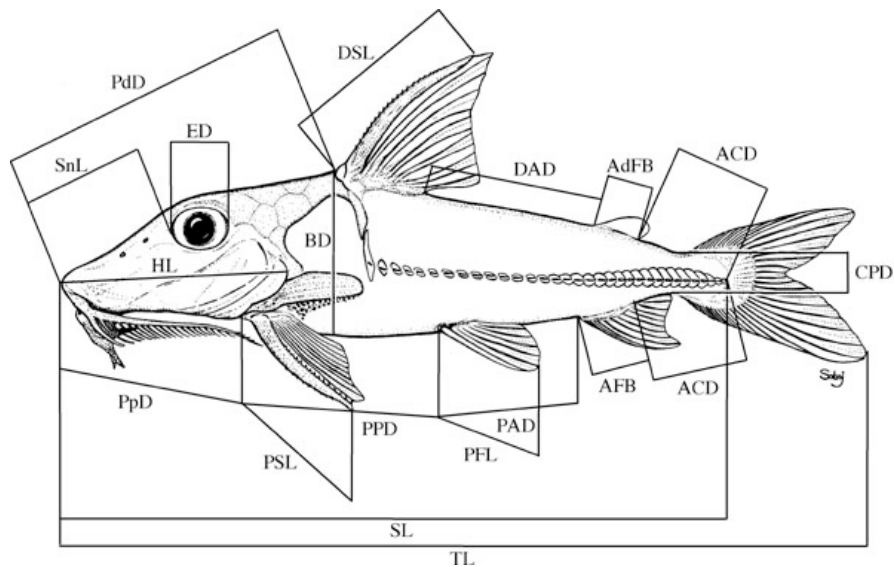


THE ACADEMY OF NATURAL SCIENCES

CENTER FOR SYSTEMATIC BIOLOGY & EVOLUTION



2008 ACTIVITY REPORT

BY THE NUMBERS

Research Visitors 253
Student Visitors..... 230
Other Visitors..... 1,596
TOTAL..... 2,079

Outgoing Loans..... 535

Specimens/Lots Loaned..... 6,851

Information Requests 1,294

FIELD WORK

Botany - *Uruguay*

Diatoms – *Russia (Commander Islands, Kamchatka, Magdan)*

Entomology – Arizona, Colorado, Florida, Hawaii, *Lesotho*, Minnesota, Mississippi, *Mongolia*,
Namibia, New Jersey, New Mexico, Ohio, Pennsylvania, *South Africa*, Tennessee

LMSE – *Zambia*

Ornithology – Alaska, *England*

Vertebrate Paleontology – *Canada (Nunavut Territory)*, Pennsylvania

PROPOSALS

BOTANY

- *Digitization of Latin American, African and other type specimens of plants at the Academy of Natural Sciences of Philadelphia, Global Plants Initiative (GPI), Mellon Foundation Award.*

DIATOMS

- *Algal Research and Ecological Synthesis for the USGS National Water Quality Assessment (NAWQA) Program Cooperative Agreement 3. Co-PI with **Don Charles** (Patrick Center for Environmental Research, Phycology).*
- *Collaborative Research on Ecosystem Monitoring in the Russian Northern Far-East, Trust for Mutual Understanding Grant.*

- *Diatoms of the Northcentral Pennsylvania*, Pennsylvania Department of Conservation and Natural Resources, Wild Rescue Conservation Grant.
- *Renovation and Computerization of the Diatom Herbarium at the Academy of Natural Sciences of Philadelphia*, National Science Foundation Award.

ENTOMOLOGY

- *Survey and Inventory of the Aquatic Insects of the Altai and Hangai Mountain Drainages, Mongolia*. National Science Foundation Award.

ICHTHYOLOGY

- *Digital Imaging of the Primary Type Fish Specimens at the Academy of Natural Sciences, Philadelphia*, National Science Foundation Award.
- *Molecular transect of Astroblepus (Siluriformes: Astroblepidae) across the Peruvian Andes to investigate monophyly of hypothesized morphotypes*, ANSP Laboratory for Molecular Systematics and Ecology Grant. Co-PI with **Anthony Geneva** (LMSE).

MINERALOGY

- *Re-housing the Mineral Collection at the Academy of Natural Sciences of Philadelphia*, Pennsylvania Historical and Museums Commission Grant.

PRESENTATIONS

- Birindelli, J. L. O., L. M. Sousa, and **M. H. Sabaj Pérez**. Morphological diversity of gas bladders in thorny catfishes (Siluriformes: Doradidae). Joint Meeting of Ichthyologists and Herpetologists, Montréal, QC.
- Daeschler, E. B.** The origin of tetrapods. American Association for the Advancement of Science Special Meeting. Boston, MA.
- Downs, J.** Cranial endoskeleton of Tiktaalik roseae (Tetrapodmorpha, Elpistostegalia). Society of Vertebrate Paleontology Annual Meeting. Cleveland, OH.
- Geneva, A.** Amplified Fragment Length Polymorphisms Reveal Population Structuring and Long Distance Dispersal in New Caledonian Insular Gecko Species (Reptilia: Diplodactylidae). Joint Meeting of Ichthyologists and Herpetologists, Montréal, QC.
- Livshultz, T.** and D. J. Middleton. Phylogeny and Classification of Apocynaceae sensu lato in the Flora of Cambodia, Laos, and Vietnam. 1st Symposium of the “Flore du Cambodge, do Laos et du Vietnam”. Phnom Penh, Cambodia.
- Lundberg, J. G.** New views of global freshwater biogeography from the tree of catfish life. South African Society of Systematic Biologists Annual Meeting.
- Lundberg, J. G.** The phylogenetic diversification and age of catfishes. Symposium on Ostariophysan fish paleontology and evolution. Society of Vertebrate Paleontology Meeting.
- Lundberg, J. G.** The fossil record of freshwater fishes in South America. Brazilian Society of Vertebrate Paleontology Biannual Meeting.
- Sabaj Pérez, M. H.** All Catfish Species Inventory Expedition to Mongolia. Aquarium Club of Lancaster. Lancaster, PA.

- Sabaj Pérez, M. H.** Calling all catfishes: overview of the All Catfish Species Inventory and the renaissance of taxonomy. Saint Joseph's University, Department of Biology. Philadelphia, PA.
- Sabaj Pérez, M. H.** and J. L. O. Birindelli. Revision of Recent Doras Lacepède, 1803 (SiluriformesL Doradidae), with descriptions of three new species. Joint Meeting of Ichthyologists and Herpetologists, Montréal, QC.
- Sabaj Pérez, M. H.**, D. A. Neely, B. Mendsaikhan, C. Sabaj Pérez. Piscatorial travelogue of the 2006 expedition to Mongolia. Joint Meeting of Ichthyologists and Herpetologists, Montréal, QC.
- Sabaj Pérez, M. H.** and **J. P. Sullivan**. All Catfish Species Inventory. 14th Annual Coalition for National Science Funding Exhibition & Reception (The Path to Innovation: Scientific Discovery and Learning). Washington, DC [poster presentation].
- Tsang, S., R. Hortwitz, and **A. Geneva**. Population structure and genetics of the bridle shiner (*Notropis bifrenatus*) in drainages of the American Northeast. Sigma Xi Annual Meeting, Washington, DC.

HIGHLIGHTS

INTERDEPARTMENTAL HAPPENINGS

- **Jon Gelhaus** (chair)(Entomology), **Marina Potapova** (Diatoms), **Nate Rice** (Ornithology), and **Mark Sabaj Pérez** (Ichthyology) drafted a new Academy Collection Policy to be approved by the Board of Directors.

BOTANY

- **Tanya Livshultz** and **Alina Freire-Fierro** attended the Latin American Plant Initiative conference in Buenos Aires in November.
- A fundraiser was held at the Karl Haas Estate for the Botany Chair Endowment in September.
- As part of the Membership Steering Committee, **Alina Freire-Fierro** assisted in the launching of the Consortium of Northeastern Herbaria's website (<http://www.northeasternherbaria.org>).
- **Alina Freire-Fierro** received the "Pablo Arturo Suárez" Medal from the Municipality of Baños, Tungurahua, Ecuador in December.
- As of the end of 2008, nearly 1.5 million (1,445,824) specimens are housed in the herbarium – 1,077,264 accessioned specimens and 36,287 databased.

DIATOMS

- 2,680 permanent diatom slides were accessioned into the Diatom Herbarium.

ICHTHYOLOGY

- Newly catalogued specimens: 1,532 specimens in 374 lots from Belize, Bolivia, Brazil, Colombia, Guyana, Mexico North Korea, Peru, Seychelles Islands, Suriname, Taiwan, Thailand, United Kingdom, USA and Venezuela.
- Published Special Catfish Volume of the *Proceedings of the Academy of Natural Sciences of Philadelphia*.

- Procured and directed installation of the Hattersley CCUF-funded digital x-ray system.
- **John Lundberg** served as the external member on the National Science Foundation search committee for two permanent program directors: Systematic Biology & Biodiversity Inventories and Evolutional Processes.
- As the President Elect for the American Society of Ichthyologists and Herpetologists, **John Lundberg** served on the Executive Committee and chaired the committee for judging student awards.
- **John Lundberg** and **John Sullivan** mentored Janice Cunha, a graduate student from Brazil, during her visit in November.
- **Mark Sabaj Pérez** mentored Ericka Vanessa Correa Roldán, undergraduate student from Lima, Peru, who received a DeepFin Student Exchange Award to visit the Academy in April to study doradid catfishes.
- **Mark Sabaj Pérez** responded to various media requests (Philadelphia Inquirer, City Paper, etc.) for information regarding naming of catfish for former ANSP employee Frank Gallagher. Also gave live interview for NBC10.
- **Mark Sabaj Pérez** created new FileMaker database to store catalogued records of ANSP fishes and tissues and imported ANSP computerized catalog from old MUSE database where it had resided since 1987.

LMSE

- Small grant awarded to **Rich Horwitz** (Patrick Center for Environmental Research, Fisheries) to analyze population structure in the bridle shiner, a once common fish species which has recently become increasingly rare, using molecular techniques. Ultimately, we would like to determine genetic relationships among fish from different sites in New Jersey and Pennsylvania and elsewhere in the species' range and determine population history (expansion or contraction) of fish within single areas.
- Small grant awarded to **Mark Sabaj Pérez** (Ichthyology) to examine the phylogeography of the *Astroblepus* species complex in the Peruvian Andes using mt and nuclear sequence data, and to find correlations between molecularly defined clades and shared morphological, distributional, and/or ecological traits.
- Small grant awarded to **Jason Weintraub** (Entomology) for the conservation of the eastern populations of *S. idalia* is unfortunately a politically charged topic. The creation of a subspecies opened the way for potentially listing under current endangered species law, but the flawed basis for such a taxonomic decision can backfire. A sound understanding of *S. idalia* phylogeography is an essential prerequisite to any listing as well as any translocation efforts especially given the rarity and vulnerability of the remnant populations in the East. Our aims are to ascertain the reality of the subspecies as described by Williams (2002a) and more broadly to examine the evolutionary history of eastern *S. idalia*.

MALACOLOGY

- Curation of the Katori collection continues. The database of translated localities (the Chimei-tron) continues expanding with the help of volunteer Miki Inagaki, and at the end of 2008 contained 1868 unique records. The ratio of new localities among Katori labels to those already in the Chimei-tron has fallen to approximately 1:20.

- Rehousing of lots full time by **Judy-Lynn Goldberg** continued until the end of December. It is currently being performed by volunteers only. Three new workspaces were installed on the east wall of the main collections room.
- Apart from loans and some redistribution to accommodate the PCER orphans collection project, no work was performed on the alcohol collection in 2008.
- Unpacking of the Hemmen collection into its temporary space by volunteers continues.
- Considerable time went into the Shell Show Preview Party and related exhibit work.
- Dan Graf's former office was repurposed as a work room. His outstanding loans were returned and material kept in his office was either redistributed or collated pending cataloging. The library book shelving was expanded and the books decompressed to make further expansion space.

MAMMALOLOGY

- Twelve gorilla and orangutan skulls from the collection were CAT scanned by researchers at the University of Pennsylvania.

MINERALOLOGY

- Specimen boxes were replaced with new, foam-lined archival boxes for the entire Vaux Mineral Collection.
- Hannah Kligman, an REU summer student, completed a project entitled "The Value of Historical Mineral Collections to the Academy of Natural Sciences of Philadelphia".

ORNITHOLOGY

- Major donation (~1000 skins) of specimens collected in southern California in early 1900s.

VERTEBRATE PALEONTOLOGY

- **Ted Daeschler** was appointed Vice President of CSBE in September.
- **Ted Daeschler** and **Ned Gilmore** participated in development of the *Hadrosaurus fouldii* exhibit in celebration of the 150th year anniversary of its discovery and description.
- Participated in 2008 Legislators Reception at the Capitol Rotunda in Harrisburg, Pennsylvania.
- Judge Marjorie Rendell and her party viewed the Jefferson Fossil Collection.
- **Ted Daeschler** served on National Science Foundation panels for the Sedimentary Geology and Paleobiology program.

VIREO

- Accessioned 7,098 new images including 60 species new to the collection, bringing the total to 151,683 images.
- Increased images available online by 23% (12,433) to bring the total to 67,433.
- Added 934 additional species to the online collection.
- Number of registered users grew by 24% (1,188) for a total of 6,165.

PUBLICATIONS

- Abell, R., M. L. Thieme, C. Revenga, M. Bryer, M. Kottelat, N. Bogutskaya, B. Coad, N. Mandrak, S. Contreras Balderas, W. Bussing, M. L. J. Stiassny, P. Skelton, G. R. Allen, P. Unmack, A. Naseka, R. Ng, N. Sindorf, J. Robertson, E. Armijo, J. V. Higgins, T. J. Heibel, E. Wikramanayake, D. Olson, H. L. López, R. E. Reis, **J. G. Lundberg**, **M. H. Sabaj Pérez**, and P. Petry. 2008. Freshwater Ecoregions of the World: A New Map of Biogeographic Units for Freshwater Biodiversity Conservation. *BioScience* 58(5): 403-414.
- Aguilera, O., J. Bocquentin, **J. G. Lundberg** and A. Maciente. 2008. A new cajaro catfish (Siluriformes: Pimelodidae: *Phractocephalus*) from the Late Miocene of Southwestern Amazonia and its relationship to †*Phractocephalus nassi* of the Urumaco Formation. *Paläontologische Zeitschrift* 82(2):231-245.
- Azpelicueta, M. M., **J. G. Lundberg**, and M. Loureiro. 2008. *Pimelodus pintado* (Siluriformes: Pimelodidae), a New Species of Catfish from Affluent Rivers of Laguna Merín, Uruguay, South America. *Proceedings Academy of Natural Sciences, Philadelphia* 157: 149-162.
- Bartlett, C. R.** 2008. Case 3460. *Liburnia* Stål, 1866 (Insecta, Hemiptera, Delphacidae): proposed designation of *Embolophora monoceros* Stål, 1855 as the type species. *Bulletin of Zoological Nomenclature* 65(3) 183-187.
- Bartlett, C. R.**, L. L. Deitz, and M. J. Rothschild. 2008. Treehopper diversity (Hemiptera: Membracidae) of Little Orleans, Allegany Co., Maryland. *Proceedings of the Entomological Society of Washington* 110(1): 130-143.
- Birindelli, J. L. O., L. M. Sousa, and **M. H. Sabaj Pérez**. 2008. New species of thorny catfish, genus *Leptodoras* Boulenger (Siluriformes: Doradidae), from Tapajós and Xingu basins, Brazil. *Neotropical Ichthyology* 6:465-480.
- Byers, G. W. and **J. K. Gelhaus**. 2008. Tipulidae. Chapter 23, pp. 763-790 in Merritt, R. W., K. Cummins, and M. Berg (eds.), *An introduction to the aquatic insects of North America*, 4th ed. Dubuque, IA: Kendall-Hunt Publishing.
- Callomon, P.** and **M. A. Snyder**. 2008. A new species of *Fusinus* from Thailand and the Andaman Islands with three distinct growth phases. *Venus* 66(3-4):119-126.
- Callomon, P.** and **M. A. Snyder**. 2008. On the genus *Fusinus* in Japan IV: *F. longissimus* (Gmelin, 1791) and two new species. *Venus* 67(1-2): 1-13.
- Carlisle D. M., C. P. Hawkins, M. R. Meador, **M. Potapova**, and J. Falcone. 2008. Biological assessments of Appalachian streams based on predictive models for fish, macroinvertebrate, and diatom assemblages. *Journal of the North American Benthological Society* 27(1): 16-37.
- Claeson, K. M., **J. G. Lundberg**, **K. Luckenbill** and J. W. Hagadorn. 2008. Anatomy of the very tiny: tomographic insights into the morphology of rare South American catfish *Sarcoglanis simplex* (Siluriformes: Trichomycteridae). *Palaeontologica Electronica* 11(2):6a.

- de Jong, H., P. Oosterbroek, **J. Gelhaus**, H. Reusch, and C. Young. 2008. Global diversity of craneflies (Insecta, Diptera: Tipulidea or Tipulidae *sensulato*) in freshwater. *Hydrobiologia* 595: 457-467.
- Downs, J. P., E. B. Daeschler**, N. H. Shubin and F. A. Jenkins, Jr. 2008. The cranial endoskeleton of *Tiktaalik roseae*. *Nature* 455:925-929.
- Duckworth, J. W., T. P. Inskipp, E. Pasquet, P. C. Rasmussen, **N. H. Rice**, C. R. Robson, and D. G. D. Russell. 2008. A re-evaluation of the status of Tawny Eagle *Aquila rapax* in South-East Asia. *Forktail* 24:127-129.
- Freire-Fierro, A.** 2008. Filadelfia y la Botánica en Norteamérica. *Boletín de la Sociedad Argentina de Botánica* 43(1-2): 179-187.
- Freire-Fierro, A.** 2008. Crassulaceae. En Zuloaga, F., O. Morrone, y M. J. Belgrano (eds.). Catálogo de las Plantas Vasculares del Cono Sur. Monographs of Systematic Botany 107. St. Louis, MO: Missouri Botanical Garden.
- Freire-Fierro, A.** y F. Pastore. 2008. Polygalaceae. En Zuloaga, F., O. Morrone, y M. J. Belgrano (eds.). Catálogo de las Plantas Vasculares del Cono Sur. Monographs of Systematic Botany 107. St. Louis, MO: Missouri Botanical Garden.
- Hood, R. W., R. F. Kirchner, **J. I. Earle**. 2008. A new state record of *Allocapnia simmonsii* Kondratieff and Voshell (Plecoptera: Capniidae) from West Virginia, U.S.A., with additional records from Pennsylvania and Virginia. *Entomological News* 119(3): 303-305.
- LaPolla, J. S.**, C. Burwell, and S. G. Brady. 2008. A new ortheziid (Hemiptera: Coccoidea) from Australia associated with *Acropyga myops* Forel (Hymenoptera: Formicidae) and a key to Australian Ortheziidae. *Zootaxa* 1946: 55-68.
- Lundberg, J. G.** and W. M. Dahdul. 2008. Two new species of the South American catfish genus *Megalonema* (Siluriformes: Pimelodidae) allied to *Megalonema xanthum* Eigenmann, 1912, with description of a new subgenus. *Neotropical Ichthyology* 6(3):439-454.
- Lyons, W. G. and **M. A. Snyder**. 2008. New genera and species of Peristerniinae (Gastropoda: Fascioliariidae) from the Caribbean region, with comments on the fascioliariid fauna of Bermuda. *Veliger* 50(3):225-240.
- McCafferty, W. P. and **J. A. Santiago-Blay**. 2008. A new Cretaceous mayfly from Burmese amber (Ephemeroptera: Australiphemeridae). *Entomological News* 119(5): 492-496.
- Neely, D. A., **M. H. Sabaj Pérez**, and B. Mendsaikhan. 2008. First Records of *Rhinogobius lindbergi* (Teleostei: Gobiidae) and *Abbottina rivularis* (Teleostei: Cyprinidae) in the Lake Buyr Drainage, Mongolia. *Journal of Great Lakes Research* 34(2):334-341.
- Piorski, N. M., J. C. Garavello, M. Arce H., and **M. H. Sabaj Pérez**. 2008. *Platydoras brachylecis*, a new species of thorny catfish (Siluriformes: Doradidae) from northeastern Brazil. *Neotropical Ichthyology* 6:481-494.

- Plötner, J., **T. Uzzell**, P. Beerli, C. Spolsky, T. Ohst, S. N. Litvinchuk, G. D. Guex, H. U. Reyer, and H. Hotz. 2008. Widespread unidirectional transfer of mitochondrial DNA: a case in western Palaearctic water frogs. *Journal of Evolutionary Biology* 21:668-681.
- Podenas, S.** 2008. First records of crane flies (Diptera, Limoniidae, Tipulidae) for Lithuania in 2007. *Acta Zoologica Lituanica* 18(3):207-210.
- Podenas, S.** and V. Podeniene. 2008. Tipuloidea excl. Tipulidae. Pp. 345-354 in Ziegler, J. (ed.): *Diptera Stelviana. A dipterological perspective on a changing alpine landscape*, vol. 1 - *Studia Dipterologica*. suppl. 16. Halle (S.): Ampyx-Verlag.
- Potapova, M. G.** and K. C. Ponader. 2008. New species and combinations in the diatom genus *Sellaphora* (Sellaphoraceae) from Southeastern United States, *Harvard Papers in Botany* 13(1):171-181.
- Rosenberg, G.** 2008. The land snails. Pp 43-46 in *Jamaica: A photographic journey through the land of wood and water* by Eladio Fernández. Jamaica.
- Sabaj, M. H.**, D. C. Taphorn, and O. E. Castillo. 2008. Two new species of thicklip thornycats, genus *Rhinodoras* (Teleostei: Siluriformes: Doradidae). *Copeia* 2008:209–226.
- Sabaj Pérez, M. H.**, and J. L. O. Birindelli. 2008. Taxonomic revision of extant *Doras* Lacepède, 1803 (Siluriformes: Doradidae) with descriptions of three new species. *Proceedings of the Academy of Natural Sciences of Philadelphia* 157:189–233.
- Santiago-Blay, J. A.** 2008. Case 3398. Aulacoscelinae Chapuis, 1874 (Insecta, Coleoptera, Orsodacnidae or Chrysomelidae): proposed conservation. *Bulletin of Zoological Nomenclature* 65(2):97-105.
- Santiago-Blay, J. A.** 2008. Lubricating jelly helps improve image clarity of inclusions entombed in amber and copal. *Annales de la Société Entomologique de France* 44(2):209-210.
- Santiago-Blay, J. A.** 2008. In memoriam Niilo Virkki (1924-2005). *Koleopterologische Rundschau* 78:446.
- Snyder, M. A.** and **P. Callomon**. Fascioliariidae. In *Philippine Marine Mollusks* by G. T. Poppe (ed.) 2:80-112.
- Sullivan, J. P.**, Z. Peng, **J. G. Lundberg**, J. Peng, and S. He. 2008. Molecular evidence for diphyly of the Asian catfish family Amblycipitidae (Teleostei: Siluriformes) and exclusion of the South American Aspredinidae from Sisoroidea. *Proceedings Academy of Natural Sciences of Philadelphia* 157:51-65.
- Torke, B.** 2008. New Combinations and Species-level synonyms in *Swartzia* (Leguminosae: Papilionoideae). *Novon* 17:110-119.
- Torke, B.** 2008. Three new species of *Swartzia* (Leguminosae-Papilionoideae) from northern South America. *Botanical Journal of the Linnean Society* 153:343-355.
- Torke, B.** and B. Schaal. 2008. Molecular Phylogenetics of the Species-Rich Neotropical Genus *Swartzia* (Leguminosae, Papilionoideae) and Related Genera of the Swarzioid Clade. *American Journal of Botany* 95(2):215-228.

Uit de Weerd, Dennis. 2008. Delimitation and Phylogenetics of the Diverse Land Snail Family Urocoptidae (Gastropoda: Pulmonata) Based on 28S rRNA Sequence Data: A Reunion with Cerion. *Journal of Molluscan Studies* 74:317-329.

Wechsler, Doug. 2008. *Marvels in the Muck: Life in the Salt Marshes*. Honesdale, PA: Boyds Mill Press. 48pp.