

Research & Collections Newsletter



March 2012

re•search (rī-sûrch', rē'sûrch) n. **1.** Scholarly or scientific investigation or inquiry. See synonyms at **inquiry**. **2.** Close, careful study. **3.** When performed on collections, the *raison d'être* of all great natural history museums.

Collection News

Mineral Sciences

Mineral Sciences made a number of acquisitions at the Tucson Gem and Mineral Show in February. These include an amethyst “scepter” from Hallelujah Junction, California, two small quartz crystals with hydrocarbon inclusions and a faceted peridot gem from a pallasite meteorite. (The peridot formed over 4.5 billion years ago, so this is now the oldest gem in our collection.) Two other especially interesting gems are pictured here. The first is a 3.23-carat hauyne (pronounced *how-een* or *ow-een*) (above right). Hauyne is a very rare mineral that generally occurs only in tiny crystals in certain alkali-rich volcanic rocks such as phonolites. The cause of its striking electric-blue color is not well understood, but some evidence suggests color centers created by sulfur polymerization. Hauyne only occurs in gem quality in the Eiffel region of Germany, but gems larger than one carat are almost unheard of. At 3.23 carats, our hauyne gem is one of the largest known.

The vivid pink gem, also pictured, is a 2.4-carat pezzottaite donated by Polychrome Minerals. Pezzottaite comes from one small 2003 discovery in a pegmatite deposit near Antsirabe, Madagascar. It was initially mistaken for beryl and sold as pink beryl or “rasberyl,” but it was later described as a new mineral species — a cesium-rich member of the beryl group. Since that original discovery, no more pezzottaite has been found.



Herpetology



New curator of herpetology Greg Pauly showed up to his first day of work with 1732 reptile and amphibian specimens in tow (one of 13 transport buckets is shown in the picture). Most of these specimens were collected between 1953 and 1961 from southern California. These specimens were previously housed at the University of California at Irvine and later transferred to the University of California at Davis. Unfortunately, these specimens were largely unavailable to the research community because their records had not been digitized and made available in an easily searchable database. The decision was made to give the collection to the museum to maximize the utility of the specimens to the scientific community.

This material provides an important snapshot of the changing biodiversity of this heavily urbanized region. These historical records can now be compared to more recent records such as those obtained through the museum's citizen science project *Lost Lizards of Los Angeles* (LLOLA), which records lizard observations throughout the area. Other highlights of the collection include records for species of conservation concern such as the Two-striped Gartersnake and the Coast Horned Lizard and a previously uncatalogued paratype of the San Lorenzo Island Rattlesnake, *Crotalus ruber lorenzoensis*.

Ichthyology

The megamouth shark tank (right), along with the coelacanth and associated sign, was moved near the South Entrance on January 5th, to make room for work on the passenger elevators. The move went flawlessly thanks to Kristina Lockaby and her crew from Exhibits and General Services. (Photo by Katie Kramer)



Rancho La Brea

On the 10th of February a group associated with the Castroville Mammoth Project, Tim King (UC Berkeley / Stanford), Dan Cearley (Foothill College), Hannah Dibner (Foothill College), Thomas Wake (UCLA), Joshua Ballze, and Mark Hylkema (Foothill college), visited the Page Museum and consulted with Lab Supervisor Shelley Cox on the identification of some of the fossils that have been collected from a site found in the artichoke fields on a family farm in Castroville, California, in December 2010. An extensive team composed of faculty and students from Foothill College, UC Santa Cruz, San Jose State University, UCLA, DeAnza College, UC Berkeley, Stanford, Penn State, and Santa Clara University have been investigating, excavating, and analyzing the skeletal remains of a Columbian mammoth and other Pleistocene fossils. Since the middle of last year Assistant Lab Supervisor Trevor Valle has been involved with consulting on the excavations.

Anthropology

On February 29, Dr. Ruth B. Phillips, Canada Research Chair of Modern Culture at Carleton University in Ottawa, visited with the Anthropology Department, in particular to view an outfit in our collection that is important to Canada's indigenous heritage. The outfit was worn by a Mohawk medical doctor, Dr. Oronhyatekha (Pe-



ter Martin 1841–1907), when he gave the welcoming address for the Prince of Wales (later Edward VII) on behalf of the Confederacy Council of the Six Nations in 1860. It was actually Dr. Phillips who alerted us about this important accession when Dr. Hardin showed it to her on a whim during a much earlier research visit to study items with Iroquois moose hair embroidery. Though the original documentation briefly stated its use and origin, we couldn't be completely convinced of the elaborate story's accuracy until Dr. Phillips provided us with this newspaper clipping showing Dr. Oronhyatekha actually wearing the outfit (at left). Dr. Phillips is also the founder of the Great Lakes Research Alliance for the Study of Aboriginal Arts and Cultures (GRASAC), which launched an innovative database of cultural material in 2008. This database is shared with many of Canada's First Nations communities and indigenous organizations in the US in an effort to incorporate both Western and indigenous perspectives.

Vertebrate Paleontology

Lisa and Sean Tohill (at right) visited the Department on several occasions in February and gave the Museum a significant collection of middle Miocene age fossils from the world-famous Sharktooth Hill Bonebed that is exposed on their property near Bakersfield in central California. Included in the collection are new faunal records and other important specimens of sharks, fishes, pinnipeds, whales, and dolphins.



Field Work



Entomology

From February 24 through March 5, a team from the Museum's entomology section traveled to Costa Rica to study the behavior of ant parasitizing phorid flies. Funded by curator Brian Brown's NSF research grant, Inna Strazhnik, Lisa Gonzalez, Costa Rican biologist Wendy Porras, and Brown worked in forests around the town of Guapiles on Costa Rica's Caribbean slope. In addition to the usual amount of specimens collected and new spe-

Costa Rican forest.



cies encountered, they obtained hundreds of video clips of the flies attacking their ant hosts. These clips will allow closer study of behaviors of the flies that can be analyzed in a phylogenetic context once the primary systematic aims of the grant are fulfilled.

Phorid fly laying an egg in an injured ant host.

Meetings, Workshops, and Presentations

Rancho La Brea

On 18 February, Rancho La Brea staff Aisling Farrell, Gary Takeuchi, Trevor Valle, Carrie Howard, and Laura Tewksbury attended the Western Association of Vertebrate Paleontology (WAVP) annual meeting in Mesa, Arizona. Trevor gave a podium presentation on the occurrence of the *Phrynosoma coronatum* complex (coast horned lizard) at Rancho La Brea with particular reference to the new specimens from Project 23 (pictured at right).



Ichthyology

Rick Feeney attended a SCAITE (Southern California Association of Ichthyological Taxonomists and Ecologists) meeting at the Cabrillo Marine Aquarium on January 9th. Andy Lamb gave a talk entitled *Collecting in the Pacific Northwest*.

History

As recipients of Getty Scholarships, Kristen Hayashi and Ayesha Saletore attended the California Association of Museums annual conference in Berkeley, California, on February 15–17. Dr. William Estrada was in Washington, D.C., February 22–24 serving on the Smithsonian’s advisory board of scholars for *Americans All: the Immigration/Migration Initiative*. *Americans All* is a new Smithsonian-wide project that brings together museums and research centers to document and interpret the history and culture of immigration and migration in the United States.

Malacology

Lindsey Groves and Jim McLean (Malacology) and Mary Stecheson (IP) attended the 16th annual gathering of the Southern California Unified Malacologists (SCUM) which was held on Saturday, January 21st in the John M. Olguin Auditorium of the Cabrillo Marine Aquarium, San Pedro, CA. SCUM is an annual gathering of professional, student and amateur malacologists, conchologists, and molluscan paleontologists to exchange ideas about research interests. Malacology associates Ángel Valdés, Daniel Geiger, and Pat LaFollette and volunteer Shawn Wiedrick also attended the gathering. Lindsey and Mary will host SCUM XVII at NHMLAC in of January 2013.

External Funding

Herpetology

Greg Pauly received a grant of \$25,000 from the United States Fish and Wildlife Service to examine the population genetics of the federally threatened Alabama Red-bellied Turtle. The project is a collaboration with Dr. Brad Shaffer at UCLA and Mr. Jim Godwin of the Alabama Natural Heritage Program, Auburn University. This turtle has one of the most restricted ranges of any turtle species in the world and occurs in only eight drainage basins spread across Mobile Bay in southwestern Alabama and two adjacent rivers in southeastern Mississippi. The funds will allow fieldwork and subsequent microsatellite genetic analyses to assess connectivity among the eight drainages and evidence for recent changes in population size.

Vertebrate Paleontology

Xiaoming Wang, John Long, and other co-PIs received a grant of \$43,415 from the Sedimentary Geology & Paleobiology Program of the National Science Foundation, entitled *Critical Transitions Across the Phanerozoic: A Roundtable Workshop on Sino-US Collaborative Research on Major Events in the History of Life during the Past 600 Million Years*. This grant paid for an international conference that was held at the Museum on March 9–11, attended by about 70 geologists and paleontologists from China, Finland, Sweden, and the United States.

History

The History Department has been awarded a \$20,000 Haynes Foundation grant to catalog and create an online finding aid for one of its largest photo collections.

Public Outreach

Rancho La Brea

The month of February was an exciting month of public outreach for the excavators of Project 23. On February 3, excavators Michelle Tabencki and Christina Lutz participated in the Student Science Exchange at Marlborough High School, where several local scientists were invited to share their work with students. Power Point presentations about Project 23 and Rancho La Brea were given.

Christina Lutz (left) and Michelle Tabencki giving a presentation at Marlborough High School about the tar pits and careers in paleontology.



cho La Brea were held in several classrooms with approximately 15 students per classroom. On February 17, Michelle and Christina visited Bancroft Middle School for their annual Career Day event. Several dozen students visited tables where professionals displayed tools of their trade and discussed aspects of their careers. The Project 23 table exhibited a cast of a *Smilodon fatalis* skull, a cast of a Columbian mammoth femur, dental picks, brushes, field books and dirty excavation shirts. At both events, students were encouraged to explore science and paleontology as a career choice.

Mineral Sciences

The Gem and Mineral Council hosted a joint banquet with the Mineralogical Society of Southern California. The featured lecturer was Dr. Brendan Laurs of the Gemological Institute of America. His talk, entitled *Search in Tibet for the Source of Gem Andesine*, described an expedition to authenticate one of the sources of the controversial red andesine feldspar gemstone that first appeared on the market during the last decade. This gem made such a splash initially that it was named the official gemstone of the Beijing Olympics, and thousands of these gems were sold on TV. Unfortunately, many of the gems tested were found to have been artificially colored red by diffusion of copper into colorless feldspar. This has generated several large class-action lawsuits. Dr. Laurs was invited to participate in the expedition by members of the Chinese jewelry industry to validate the source. Instead, he found only poor quality stones and discovered that local Tibetans had been hired to salt the mines.

Herpetology

Herpetology was featured at the February 18th Curator's Cupboard. Greg Pauly and talented volunteer Tanja Wolfmeyer staffed two tables featuring unusual reptiles and amphibians—incredibly poisonous newts, the world's largest salamander species, spitting cobras, and flying frogs, lizards, and snakes (and yes, there really are flying snakes). Collections manager Neftali Camacho led six behind-the-scenes tours for enthusiastic visitors and even more enthusiastic Junior Scientists. Leslie Harris from the Live Animal Program also joined in the fun and showed off some of our living snakes and lizards including several feeding demonstrations. (Photo by Briana Burrows)



Ichthyology

Chris Chabot brought a marine biology class from the Department of Ecology and Evolutionary Biology at UCLA to visit the Fish Collection on the 17th of February.

Student Mentoring and Research

Rancho La Brea

Rancho La Brea is continuing their collaboration with Dr. Wendy Binder in the Biology Department at Loyola Marymount University this semester. Two undergraduate students, Richard Smith and Genevieve Guerra, are taking an independent study class that involves them visiting the collections at the Page Museum to gather

morphological data on dire wolf postcranial elements as part of an ongoing study headed by Dr. Binder.

Loyola Marymount University undergraduate students Richard and Genevieve are measuring dire wolf postcranial specimens as part of an ongoing project with Dr. Wendy Binder.



History



Hans Brestel (left) has joined the History Division as an intern in the Museum Archives and the Seaver Center. Mr. Brestel is a Master's candidate at California State University, Northridge, working on a degree in history. Currently he is

working on a collection of papers that belonged to Russell J. Smith, who was in charge of the Museum's education programs from 1931 to 1968.

Volunteers and Research Associates

Herpetology

After visiting the collection to pursue research on morphological variation in Western Fence Lizards, Pasadena Community College student Tanja Wolfmeyer signed on as a volunteer. Tanja is helping accession the new UC Irvine collection and also put in a full day at the specimen tables during the recent Curator's Cupboard.

Ichthyology

Dr. Jonathan Baskin, a research associate, visited several times during January and February to work on his collection of southern California freshwater fishes that he has donated to the Museum.

Rancho La Brea

The Rancho La Brea curatorial assistant volunteer crew is steadily growing. New volunteers are helping with Project 23 cataloging, data entry backlog and other various care of collections duties. Emily Forscher comes to us with a BA from Princeton in Art and Archaeology and has already made an impressive dent with data entry from one of the 1914 catalog ledgers. Colette Badmagharian graduated with a BA in Art History from UCLA and is helping with a variety of collections work including data entry. Chelsea Rohrbach, who also works part-time

in Guest Relations at the Page, is primarily cataloging new Project 23 specimens. All data entered into the computer will be imported in the Museum's data base EMu.



Emily Forscher entering data from 1914 Hancock Collection.



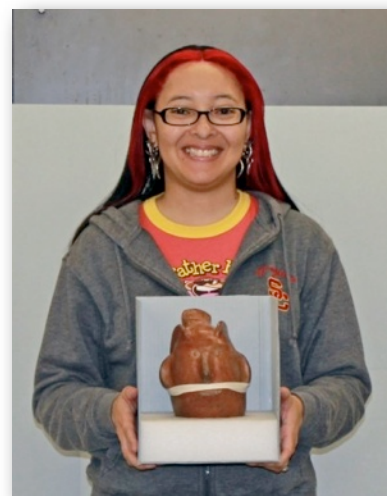
Colette Badmagharian working in the *Smilodon pelvis* collection.



Chelsea Rohrbach cataloging Project 23 specimens.

Anthropology

The Anthropology Department would like to welcome Goldi Chon-Upton (pictured at right) to the team! Goldi is from New Orleans Louisiana and has a B.A. in Anthropology from California State Fullerton. Formerly she was a Gallery Host here at NHM from June 2011–January 2012 and began volunteering with us in February. Her research and graduate degree interests lie in Forensic Anthropology where she wants to pursue a Master's Degree and eventually a Ph.D. For now Goldi is gaining experience in Archaeological Collections Management making storage mounts for our Ancient Latin American ceramic artifacts. In the short time she has been with us Goldi has already mastered the art of making "house-mounts."



Distinguished Visitors

Rancho La Brea

Natural History Museum Foundation Trustee Karen Hoffman and her guest, Eelco Kruidenier, photographer at Naturalis in Leiden (the national natural history museum of the Netherlands), visited the Page Museum for a behind-the-scenes tour on February 23rd.

Herpetology

National Academy member David Wake and his wife Marvalee, both from the University of California at Berkeley, visited the collection in February. Marvalee re-identified a caecilian before being whisked away by her granddaughter, Summer, to see the Dinosaur Hall. David examined a number of *Batrachoseps* (slender salamanders) and bolitoglossine salamanders for his research and to help us update their identifications.

Ichthyology

Riley Buehler from the Department of Anthropology at San Diego State University visited the Fish Collection again to look at skeletons of cabezon and barracuda.

Bruce Welton (pictured at right) visited Ichthyology to look at some elasmobranch material including some basking shark (*Cetorhinus maximus*) gill arches and rakers.

Nate Bruns from CSUN visited the Collection again at the end of February to reexamine some halibut (*Paralichthys*) specimens from Baja California, Mexico, to see how they matched his DNA analysis of them.

Malacology

Daniel Geiger (Santa Barbara Museum of Natural History) visited Malacology on two occasions to examine scisurellid mollusks and to discuss molluscan systematics with Jim McLean. Leean Moore (Cogstone Resource Management) brought in specimens for identification purposes. Ángel Valdés (Cal. Poly. Pomona), student Dieta Hanson, and visitor Jazmín Ortigosa (UNAM) to use the SEM facilities and examine nudibranch holdings. Zofia Książkiewicz (Polish Academy of Science) examined Malacology holdings of the land snail families Vertiginidae and Valloniidae as part of her research. Richard L. Squires (CSUN) discussed fossil Trochidae with Jim McLean and brought Pliocene specimens for identification. Former museum Habitats staff members Joe Cöcke and Chuck Fischer visited Malacology for fossil specimen identifications and to donate a rare shrimp-like fossil collected at Silverado Canyon to IP. UCLA professor David Jacobs and student Janet Buckner visited Crustacea, Echinoderms, the Marine Biodiversity Center, and Malacology to borrow specimens for teaching purposes.



Anthropology

On February 24, the International Visitors Council of Los Angeles hosted several museum colleagues from Serbia as part of the United States Library Of Congress Open World Program. The visitors went on several tours here at NHM including a tour of the Visible Vault and our Archaeology Storeroom. Though our collections are different from and larger than those at the museums that most of the visitors represented, we still had plenty in common to discuss. We found that we share the same enthusiasm for their preservation, face similar storage challenges, and have even taken similar steps to making the collections more widely accessible to the public.

Vertebrate Paleontology



Dr. Chang Chun-Hsiang and Mr. Chong Kun-Wei of National Museum of Natural Science in Taiwan visited the Department of Vertebrate Paleontology in early February. Dr. Chang, a specialist on Ice Age mammal fossils dredged up from the sea floor around Taiwan Strait, examined our dwarf mammoth material from the California Channel Island.

Xiaoming Wang (left) showed Dr. Chang Chun-Hsiang the preparation lab in Vertebrate Paleontology.

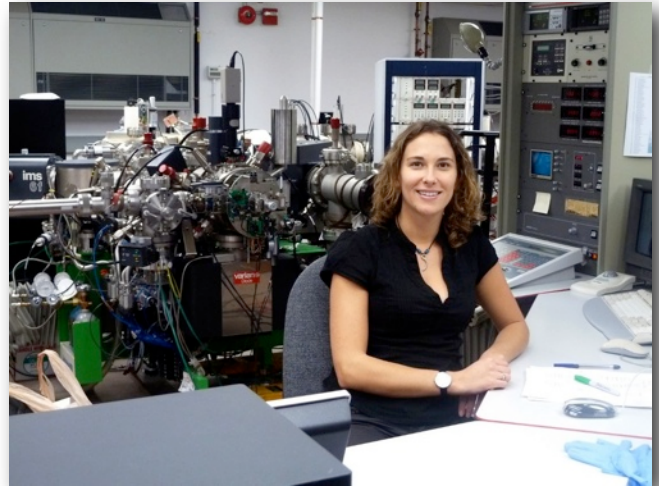
Recent Publications

- Fierstine, H. L., R. W. Huddleston, and **G. T. Takeuchi**. 2012. Catalog of the Neogene bony fishes of California: A systematic inventory of all published accounts. *Occasional Papers of the California Academy of Sciences* 159, 206pp.
California is endowed with an abundance of Neogene marine sedimentary deposits that often entombed fishes from a wide range of water depths and habitat types. Much work was done in the early 1900's and the last major review was published in 1943. Despite the potential created by earlier workers, the Neogene fishes of California have been largely ignored for the past seven decades. This monograph comprehensively summarizes the published fossil record of Neogene bony fishes from California and it is hoped that it will create a solid foundation on which new research on California fossil fishes can be built. Many of the important fossils mentioned in this volume are housed in the collections of Vertebrate Paleontology at the Museum.
- Gaillou E.**, Post J.E., Butler J.E. (2012) Boron in natural type IIb blue diamonds: chemical and spectroscopic measurements. *American Mineralogist* 97: 1–18.
- Gaillou E.**, Fritsch E., Massuyeau F. (2012) Luminescence of gem opals: a review of intrinsic and extrinsic emission. *Australian Gemmologist* 24: 200–201.
- Kampf, A. R.**, Mills, S. J., Housley, R. M., Rumsey, M. S., and Spratt, J. (2012) Lead-tellurium oxysalts from Otto Mountain near Baker, California: VII. Chromschieffelinite, $Pb_{10}Te_6O_{20}(CrO_4)(H_2O)_5$, the chromate analogue of schieffelinite. *American Mineralogist* 97: 212–219.
- Mills, S. J., Ferraris, G., **Kampf, A. R.**, and Favreau, G. (2012) Twinning in pyromorphite: The first documented occurrence of twinning by merohedry in a mineral of the apatite supergroup. *American Mineralogist* 97: 415–418.
- Mills, S. J., **Kampf, A. R.**, Dini, M., and Molina, A. (2012) Die weltbesten Destinezit-Kristalle und andere seltene Sulfate von Mejillones, Chile [The world's best destinezite crystals and other rare sulfates from Mejillones, Chile]. *Mineralien Welt* 2/2012, 73–81.
- Pauly, G. B.**, Bennett, S.H., Palis, J. G., and Shaffer, H.B. 2012. Conservation and genetics of the Frosted Flatwoods Salamander (*Ambystoma cingulatum*) on the Atlantic Coastal Plain. *Conservation Genetics* 13:1–7.
- Rossmann, G. R., Ma, C., and **Kampf, A. R.** (2011) Quartz carving with inclusions of izoklakeite. (in Gem News International). *Gems & Gemology* 48: 324–325.
- Chang, K. (30 January 2012) For Scientists, Hope Diamond's Blue May Offer Geology Lesson. *New York Times*.
<http://www.nytimes.com/2012/01/31/science/scientists-examine-hope-diamond-for-clues-to-its-blue.html>.

Staff Departures and New Staff

Mineral Sciences

Dr. Eloïse Gaillou (right) joined the Department of Mineral Sciences as Associate Curator in January 2012. She obtained her Master's degree in Geology in 2003 from the University of Clermont-Ferrand (France) and her Ph.D. in Materials Science in 2006 from the Institut des Matériaux Jean Rouxel (IMN) Nantes (France). From 2006 to 2010, she was a postdoctoral research fellow in the Department of Mineral Sciences at the Smithsonian Institution and then held a combined postdoctoral research fellowship with both the Smithsonian and the Carnegie Institution (Department of Terrestrial Magnetism) until the end of 2011. Dr. Gaillou's research focuses on gem materials, especially opals and diamonds. Welcome Eloïse!



Herpetology

Our new herpetology curator, Dr. Greg Pauly (pictured second from left), joined the museum in January. Greg received his B.S. in 1999 from the University of California, Davis and a Ph.D. from the University of Texas, Austin in 2008. He then returned to Davis for three years as a postdoctoral researcher before moving south to start at the Museum, where he has already been helping out with North Campus and Curator's Cupboard. His research focuses on the conservation of reptiles and amphibians and the evolution of mating signals in frogs.

Miscellaneous

Rancho La Brea

On January 23rd and 24th Giant Screen Films (GSF) interviewed and filmed staff and volunteers at the Page Museum as part of a nationwide release IMAX film called *The Ice Age*. One of the stars of the film is our Columbian mammoth, Zed. In the Fishbowl Lab his skull was being prepared by volunteers Herb and Abraham. Lab Supervisor Shelley Cox and Trevor Valle began preparation of his left tusk. Carrie Howard and Michelle Tabencki excavated a fossil-dense grid in Pit 91. Laura Tewksbury and Christina Lutz excavated in Box 14 of Project 23. Chief Curator John Harris and Collections Manager Aisling Farrell were interviewed throughout the day at various locations in the park, the excavation site, and in the Museum. The film will explore the critical interplay be-

tween adaptation, habitat loss, human innovation and global climate change. With extensive use of CG animals, the audience will be transported back to the Pleistocene. Developed with a planning grant from the National Science Foundation and produced by Giant Screen Films and D3D Cinema in association with The Field Museum, *The Ice Age* will release in digital 3D and giant screen theaters, possibly in late 2012.



Michelle Tabencki (right) and Carrie Howard excavate in Pit 91 for the IMAX film, *The Ice Age*.



Shelley Cox explains microfossil sorting for the IMAX film, *The Ice Age*.

Assistant Lab Supervisor Trevor Valle (right, at left) was interviewed on February 9th for *The Science Show* on ABC's Radio National in Australia by host Robyn Williams. The podcast is available at: <http://www.abc.net.au/radionational/programs/scienceshow/la-brea-tar-pits/3862218>



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All issues of the newsletter may be found at: <http://collections.nhm.org/newsletters>

