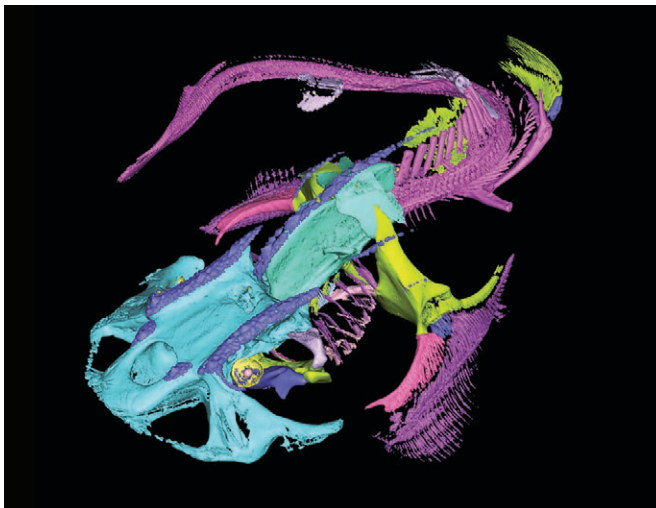


RESEARCH & COLLECTIONS

FALL 2014

Collection News



Ichthyology

Several elasmobranchs from Ichthyology were recently scanned by Callie Crawford at the Medical University of South Carolina on their new Somatom Force CT

scanner. The work is part of the Chondrichthyan Tree of Life project, funded by the National Science Foundation (DEB Award- 1132229) to Gavin Naylor and John Maisey.



Herpetology

In July, Herpetology received approximately 1,200 new specimens to be accessioned into the main research collection. The first group of specimens came from California State University Long Beach. Greg and Neftali, with help from volunteers Heidi Beswick and Stevie Kennedy-Gold, drove to CSU Long Beach to pick up approximately 600 specimens. Most of these specimens were lizards from California and the desert ▶

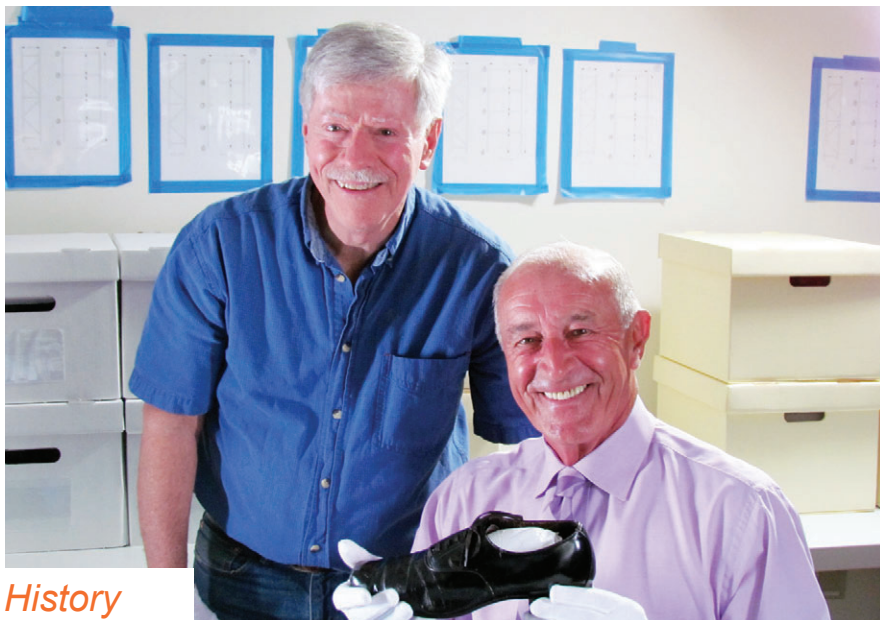
T: Neftali with two UCLA student volunteers. Heidi Beswick and Stevie Kennedy-Gold checking out the CSULB teaching collection while Greg is off photocopying old field notebooks.



T: Some of the ca. 600 reptile and amphibian specimens from Dr. Robert Fisher of the United States Geological Survey that were deposited with Herpetology.

► southwest that were collected by Dr. Jim Archie of CSULB. Thanks to the help of our amazing UCLA student volunteers, Stevie, Heidi, Nick, and Danielle, almost 95% of this collection has been incorporated into the NHM research collection.

Later in July, Greg picked up another collection of approximately 600 reptile and amphibian specimens that had been collected by Dr. Robert Fisher of the United States Geological Survey. These specimens were all from southern California and were collected as part of surveys over the past decade to examine the impacts of habitat fragmentation of species ranges.



History

Len Goodman, celebrity judge on TV's "Dancing with the Stars," examines the tap shoes from the film *Top Hat* (1935) for a British television documentary on the legendary film star Fred Astaire. The shoes are part of the History Department's extensive collection of artifacts and documents on the early days of the motion picture industry in Los Angeles. Seated is Goodman along with John Cahoon, Collections Manager in the History Department.

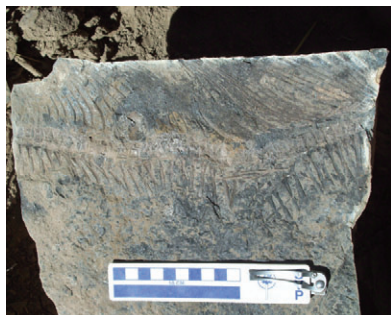
Seated is Goodman along with John Cahoon, Collections Manager in the History Department.

closing of the museum this October for a major renovation, which will include new exhibit designs. As a result, History collections will be returned to NHM for future exhibit and research programs. NHM items currently on display range from rare automobiles, colorful gas pumps, tools, oil cans, exhibit props, and movie lights. Pictured (at left) is Kristen Hayashi examining one of numerous tools in the Breer Blacksmith Shop.



The Petersen Automotive Museum was built and run by the NHM in its early years. Many artifacts from the History Department have been on display in the popular ground floor Streetscape galleries since 1994 when the museum opened. This summer, NHM's History staff Beth Werling, Kristen Hayashi, Ayesha Salatore, and Betty Uyeda have been inventorying the collection in preparation for the

On September 5 the History Department received a donation of two archival boxes of assorted materials (late 19th and early 20th century) excavated from below the Hammel Building by Roberta S. Greenwood, President of Greenwood & Associates, a Los Angeles-based firm specializing in prehistoric archaeology, historical archaeology, architectural history, historical research, and public interpretation. The historic 1909 Hammel Building is located at El Pueblo de Los Angeles Historical Monument, the birthplace of the city, where Dr. William Estrada previously served as curator of history and has had a long association with Greenwood & Associates.



Dinosaur Institute

The Dinosaur Institute is in the process of accessioning material collected during fieldwork in the Augusta Mountains of Nevada during August. The German crew, led by Dr. Martin Sander of the University of Bonn, returned with ichthyosaurs from the Tobin and Favert formations of the Middle Triassic. These formations contain the oldest marine reptiles in North America, and they will fill a critical gap in the Mesozoic collection. DI staff included Jose Soler for the entire expedition with a weekend visit by Dr. Luis Chiappe. Two specimens were collected, and the group will return next year in what we hope will become an integral part of the Dinosaur Institute's international collaborative field programs.



Rancho La Brea

Fossil Lab manager Shelley Cox worked on the conservation of the fossil deposit in the Observation Pit at the west end of Hancock Park. With the help of volunteer Mary Simun, they cleaned and repaired the real bones that are embedded in stained concrete to simulate a typical Rancho La Brea deposit. The Observation Pit was designed by Harry Sims Bent and opened in 1952. It was the first museum in Hancock Park and has always been a popular spot with visitors as they walk down circular stairs to view the fossils.

From July 7th–11th, Dr. William Anyonge, Department chair of Biology from Xavier College in Ohio, visited the Page Museum to continue his long association with the Rancho La Brea collections. His aim is to reconstruct the locomotor and dietary habits of wolves that coexisted with saber-tooth cats in the late Pleistocene.

Research Associate Larisa DeSantis of Vanderbilt University worked in the Rancho La Brea collections from July 16th–25th. During this summer's visit Larisa sampled over 80 isolated teeth of *Canis dirus*, *Smilodon fatalis*, *Equus occidentalis*, *Camelops hesternus* and *Bison antiquus* from several different pits. Her work is a combination analysis of tooth microwear and stable isotopes to examine the changing dietary ecology of the

herbivores and carnivores during the end of the Pleistocene. She also gave an evening public lecture at the Page Museum and an R&C seminar on her work.



Research Associate Dr. Benjamin Fuller visited the collections in mid-August to continue his collaboration with RLB staff on stable isotope analysis. The latest work has included many specimens from Project 23, but future work will address dietary preferences and their changes around the end of the Pleistocene. Dr. Fuller also gave a lunchtime R&C seminar on this collaborative work.

TL: Shelley Cox (left) and Mary Simun conserving the fossils in the Observation Pit

TR: Research Associate Larisa DeSantis of Vanderbilt University

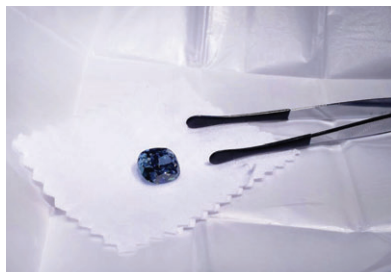
B: Research Associate Dr. Benjamin Fuller



Asphalt impregnated specimens of the burrowing bivalve *Tresus nuttalli* (Conrad, 1837) from MetroRail borehole near Hancock Park

Malacology / Invertebrate Paleontology

Invertebrate Paleontology (via Malacology) has acquired a suite of late Pleistocene marine invertebrate fossils from a MetroRail exploratory borehole at Wilshire Blvd. and Ogden Ave., Hancock Park. Most of the asphalt-impregnated fossil specimens are living today and are indicative of an environment very similar to that of Santa Monica Bay. The fauna is dominated by shallow, calm water species, in particular the large burrowing bivalve *Tresus nuttalli* (Conrad, 1837) [Pacific gaper clam].



Mineral Sciences

In January of 2014, a 29.6 carat blue diamond was found at the Cullinan mine near Pretoria, South Africa. The rough was purchased by New York diamond manufacturer Cora International LLC. After nearly six months of cutting and polishing, the rough diamond has become the 12 carat "Blue Moon." Cora has generously lent the diamond to NHMLAC for both research and exhibition. The diamond will be on display in the Gem and Mineral Hall until January 6, 2015.

Field Work



Dinosaur Institute: Dinosaur Hunting

The Haaga 2014 Utah Dinosaur Expedition took place from July 14 to August 11, and included a crew of more than 20 people. Working in the Morrison Formation "Gnatale" quarry, the team collected 22 jackets containing the fossils of at least three sauropod dinosaurs. This year, the quarry was expanded another 5 sq. meters, plans were put in place to coordinate ongoing taphonomic and paleoenvironmental studies with researchers from The Museum of Moab, and prospecting for potential new sites took place further north, near Fruita, Colorado, while highlighting it all on the NHM's social media sites.

The expedition included a number of Natural History Museum staff (R&C, E&E, and M&C departments), trustees, returning and new volunteers, domestic and international students, along with representatives from The Bureau of Land Management and the Museum of Moab.

The 2014 Augustyn Dinosaur Expedition to the badlands of New Mexico was also very successful. For three weeks from July 9 to August

1, a Dinosaur Institute crew of 12 people returned to excavate the two sauropod sites discovered last year, one of them of enormous size. Working in the Late Cretaceous Kirtland Formation (ca. 68 million years ago) can be grueling: the sediments consist of both hard, concreted sandstone and a more weathered and friable sandstone.



The expedition was led by Ph.D. Student-in-Residence Justin Hall and NHM staff members Jose Soler and Karl Urhausen (preparators), volunteers Doyle Trankina and Jessica Uglesich, Research Associate Dr. Mike Habib (USC), and international visitor Pedro Mocho (Doctoral Student, UAM, Madrid).

T: Doyle Trankina and Justin Hall excavate the cervical vertebrae of a sauropod dinosaur in New Mexico.

B: Argentine Jonatan Kaluza works on a giant block containing a pelvis, vertebrae and the femur of a sauropod dinosaur.



Island Night Lizard, *Xantusia riversiana*, on San Clemente Island.

Herpetology

Greg Pauly traveled to San Clemente Island 22–24 July as part of a joint collecting trip with U.S. Navy biologists. The goal of the trip was to collect lizards from the island, especially the Island Night Lizard, *Xantusia riversiana*. The Island Night Lizard is an “island giant,” meaning that this island species is much larger than closely related species of night lizards on the mainland. The Island Night Lizard had been listed as a federally endangered species from 1977 until March 2014. The removal of non-native grazers (such as sheep) from the Channel Islands and the subsequent recovery of the vegetation allowed the night lizard population to rebound, resulting in their delisting. Greg collected a small sample of lizards for use in morphological and genetic studies examining differentiation of populations on the three Channel Islands that make up this species’ entire range.

Other recent fieldwork included two day trips to study nonnative lizards. On July 1, Greg led a large group to sample for invasive Italian Wall Lizards in San Pedro. The group included Miguel Ordeñana and Richard Smart from NHM, NHM Fellow Kenneth Kirschbaum and his son Hayden who is a

collaborator on the research project, Herpetology summer volunteer Amber Suto, and four students from Greg’s UCLA course: Stevie Kennedy-Gold, Haley Glass, Helen Sung, and Heidi Beswick. The goal of the trip was to map the range limits of this nonnative species, and the group was very successful in doing so. Unfortunately, the Italian Wall Lizards, which appear to be outcompeting native lizards, are continuing to rapidly expand their range in this urban neighborhood.

A similar collecting trip was conducted August 1 to determine the range size of nonnative Green Anoles found in the Hancock Park neighborhood near the Wilshire Country Club. This population represents the first Green Anole population documented in Los Angeles County and the second in California. With the help of 6 volunteers, Greg was able to collect 19 anoles and discover that the population is spread across several square blocks. The volunteers included three students from Saddleback College: Rachelle Brown, Adam Rey, and Brett Schiller; two students from UCLA: Stevie Kennedy-Gold and Danielle Tran; and high school student Adam Stanford-Moore.

Meetings, Workshops, and Presentations

Malacology

Lindsey Groves presented an overview on a suite of late Pleistocene asphalt-saturated marine invertebrate fossils from a MetroRail exploratory borehole at Wilshire Blvd. and Ogden Dr., Hancock Park, for Gallery Interpreters Stephanie Cranage, Jessie George, Jason Hamidi, Anya Hunter, Jessie

Jennewein, Gustavo Lopez, Brayden, Moore, Rocio Santoyo, Maddie Smith, and Chris Warren, and Page Educators Dan Keefe, Agnes Nouie, and Kelsey Ziff. Topics discussed included the various species, depositional environments, local tectonics, stratigraphy, specimen preservation, and paleoenvironment.

Mineral Sciences

21st General Meeting of the International Mineralogical Association

Anthony R. Kampf attended the meeting of the International Mineralogical Association in Johannesburg, South Africa (September 1-5). Dr. Kampf presented a paper describing his research on new minerals containing polyoxometalate anions. He was also a co-author on five other papers that were presented at the meeting. In addition, Dr. Kampf participated in meetings of the Commission on New Minerals, Nomenclature and Classification to which he is the U.S. delegate.

Public Outreach



Conservation

On Sunday, September 7, 2014, Tania Collas and Elizabeth Drolet hosted behind-the-scenes tours of the Conservation Lab for visitors on a Scavenger Safari, sharing their work on a variety of artifacts being prepared for exhibit and loan.

Pictured here, Elizabeth talks about her treatment of an early model Kodak camera used to document a 'round-the-world bicycle trip taken from 1890 to 1893.



History

On Sunday June 29th the History Department hosted 82 Museum Fellows and NHM NEXT guests at the new collections storage facility. Included was a presentation by Material Culture Collections Manager

Beth Werling followed by a series of guided tours of the automobile collection by the History staff and associates (Dr. William Estrada, Beth Werling, Brent Riggs, Betty Uyeda, John Cahoon, Christy Evans, ▶

► Ayesha Saletore, Janis Ashley, Jaci Rohr, Jennifer Petes, Pete Eastwood, and Derek Bower.) NHM has the largest car collection on the West Coast at a public institution. Shown is a bird's-eye view taken by Collections Manager John Cahoon.



Rancho La Brea

The summer has been busy at Rancho La Brea. On June 19th, as a kickoff to our new summer programming, the opening of the Observation Pit and the start of the Pit 91 summer excavation, we held a large media event with over 60 journalists attending. Dr. John Harris led a tour around Hancock Park and into the Page Museum; they visited the Pit 91 excavation, the year-round Project 23 excavation and our exhibit galleries inside the museum. The new programming provides scheduled interactions with staff on a daily basis: "Excavator Tours" visit the Observation Pit, "Project 23 Revealed" interacts with the excavation team and "Inside the Fossil Lab" asks questions to lab staff via a two-way microphone and speaker. The Rancho La Brea team was involved in a number of outreach activities this summer including: behind-the-scenes tours and presentations for Adventures in Nature classes, a VIP sleepover on August 9th with a lecture by Dr. John Harris and various other daytime tours such as a delegation from the Egyptian Ministry of Antiquities and Fayoum University.



Herpetology

Hair was not in short supply in herpetology as Neftali Camacho and Greg Pauly got all spruced up for the first Hair Ball. Reptile and amphibian specimens displayed for the event all had head crests or other cranial adornments. Some of the specimens on display included the Basilisk Lizard, Australian Thorny Devil, and Rhinoceros Viper.

Neftali Camacho participated in June's Curator's Cupboard, which focused on the theme of "Extinction." Neftali provided behind-the-scenes tours, which included the extinct Golden Toad of Costa Rica and



various other amphibians that are threatened, endangered, or extinct.



Neftali also took part in August's Scavenger Safari during which he took guests behind the scenes to look at a range of specimens from the California Newt to the Komodo Dragon.

Herpetology once again took part in Adventures in Nature this summer. Neftali took part in the week-long program allowing campers the opportunity to identify local amphibians and reptiles using identification keys. ►

T: Neftali Camacho and Greg Pauly showcasing specimens at the Hair Ball. In case it wasn't obvious, Greg's hair was styled by Neftali.

► Greg Pauly took part in some offsite outreach. Greg traveled to White Point Nature Preserve, which is one of the Palos Verdes Peninsula Land Conservancy preserves. Greg gave a short lecture followed by a lizard walk on Saturday June 21 with a repeat performance on Saturday July 19. The goal of the event was to encourage participation in the RASCals project and the White Point Nature Preserve biodiversity survey, which are both citizen science projects on iNaturalist.org. Greg is particularly excited about working with the White Point staff because this preserve is only 450 meters from the current edge of the range of the nonnative Italian Wall Lizard in Coastal San Pedro.

T: Leslie Harris (Polychaetes) and Curators Cupboard visitors discussing invasive invertebrate species in Oregon and Washington that came from Japan.

B: Herpetologist Greg Pauly talking about an introduced species of monitor lizard with Curators Cupboard visitors.



Curators Cupboard

Ichthyology, Echinoderms, Polychaetes, Herpetology, Malacology & Crustacea

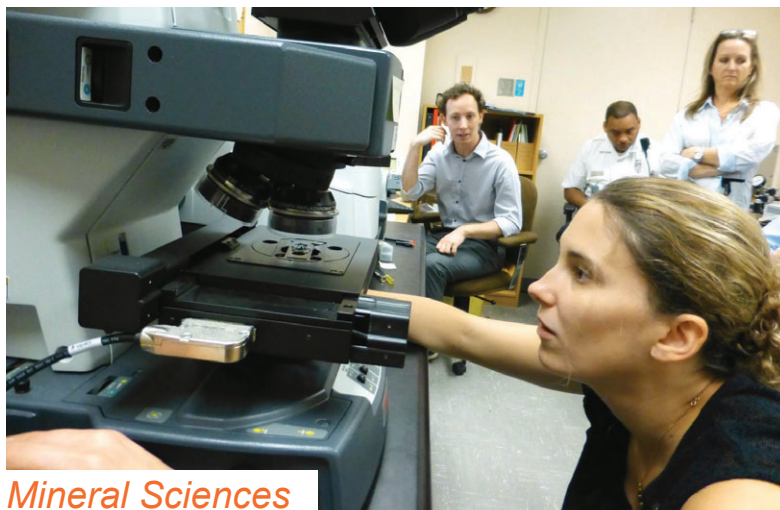
Rick Feeney and Estella Hernandez (Ichthyology and Entomology), Gordon Hendler (Echinoderms), Kirk Fitzhugh and Leslie Harris (Polychaetes), Greg Pauly (Herpetology), and Lindsey Groves (Malacology), and Adam Wall (Crustacea) participated in the Curators Cupboard on Saturday, August 16th, which featured invasive and/or introduced species. Ichthyology exhibited introduced exotic fishes in southern California. Gordon featured his research on an invasion of Atlantic waters by an alien species of a 6-armed brittle star that was formerly restricted to the Pacific Ocean. Since 2000, it has spread across thousands of miles of coastline from Brazil into the Caribbean Sea. Likely all the invaders represent a single clone, since these animals reproduce asexually by repeatedly splitting in two. Leslie exhibited an assortment of marine invertebrates that were transported across the north Pacific to Oregon and Washington on docks that were torn away from moorings in Misawa, northern Honshu, Japan, during the devastating seismic sea wave (tsunami) that struck in March of 2011. Kirk highlighted invasive species of terrestrial annelids.

Herpetology showcased a variety of species including recent finds from



the L.A. area that were discovered through our citizen science efforts. This also gave us a chance to promote the RASCals (Reptiles and Amphibians of Southern California) project. Introduced and invasive freshwater and terrestrial mollusks of southern California were featured by Malacology including the latest introduced species, the Channeled Apple Snail (*Pomacea canaliculata*), now found in Echo Park but native to southern Brazil and northern Argentina and Uruguay. Adam Wall led four tours showcasing notable invasive crustaceans. Adam's crusty friends ranged from Chinese mitten crabs with their habit of burrowing into and weakening dams, to the benign common roly polly *Armadillidium vulgare*. MANY thanks to all of the volunteers who assisted with this event.

Student Mentoring and Research



Mineral Sciences

Eloise Gaillou using FT IR spectroscopy to measure the concentration of impurities in the Blue Moon diamond.

Dr. Eloise Gaillou visited the Smithsonian Institution in Washington DC in order to analyze the Blue Moon diamond. She conducted infrared spectroscopy in order to determine the boron content of the diamond, the element that gives the diamond its unique blue

color. She also conducted some phosphorescence spectroscopy to try to understand the rare red glow of the diamond after exposure to an ultraviolet light. The experiments are presented on the Mineral Sciences Department blog: <http://nhminsci.blogspot.com>

Volunteers and Research Associates



Herpetology

Neftali Camacho with UCLA undergraduate volunteers Danielle Tran, Heidi Beswick, and Stevie Kennedy-Gold.

Herpetology was in the very fortunate situation of being almost overflowing with volunteers this summer. Amber Suto returned for her third summer to work in the collection. Amber started with us as a high school intern, but

she is now an undergraduate starting her sophomore year at Michigan State University. Amber assisted in training new volunteers and helped with organizing the tissue collection, consolidating teaching specimens, ►

► assisting in Adventures In Nature, and helping on local field collecting trips. As always, she was a tremendous help, and we hope she returns next summer.

Our other summer volunteers included six undergraduates from UCLA and three students from Saddleback College. The UCLA students took Greg's Field Biology Course during spring quarter. Amazingly, of the 10 students in the class, six are now volunteering with Herpetology. Stevie Kennedy-Gold, Heidi Beswick, Nick Lou, and Danielle Tran all worked in the collection and assisted with local fieldwork. Thanks to these students, we have sorted, cataloged and incorporated most new specimen acquisitions. Haley Glass and Helen Sung also volunteered as field assistants.

The three Saddleback College students are Rachelle Brown, Brett Schiller, and Adam Rey. They participated in a new internship program and worked 1-3 days a week at the Museum. They helped us with everything from fieldwork to sorting, cataloging and shelving specimens.

Invertebrate Paleontology

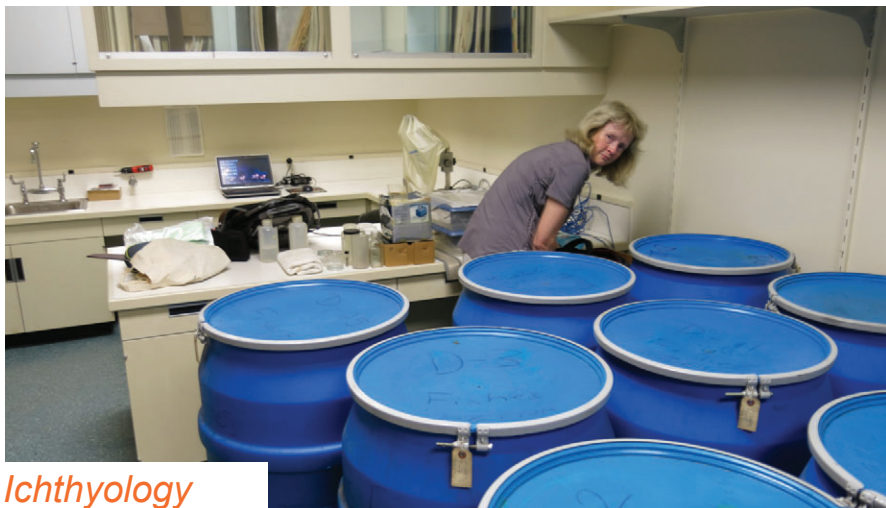
On Sunday, August 14 (the hottest day of summer 2014!), 18 volunteers participated in a fun and productive afternoon of unpacking specimen drawers in the invertebrate paleontology collections. Much of this collection is still "packed" with foam and newspaper since its successful move to the off-site warehouse facility in Carson, CA. These volunteers filled an entire dumpster with packing material, clearing approximately 1,100 specimen drawers, which are now available to researchers. Special thanks to Liz Andres, Volunteer Coordinator, for assembling such an enthusiastic and hard-working team!

Malacology

Malacology has nine new volunteers who are all working on various aspects of the collection. All are Jann's former students from Evolution and Introductory Biology courses at Glendale Community College and Cal State Los Angeles from 2013-2014. They've done excellent work so far! Ralph Keating has been sorting and identifying Channel Islands terrace deposit fossil mollusks with collection manager Lindsey Groves, and adding locality labels to the collection. Andrew Abi-Jumaa has been organizing and

identifying hundreds of cowries from collections donated by Jay Bisno and G. Baldwin. Sue Virnig is making specimen drawer and case labels for the curated sea slug collection. Alyssa Chacon is assembling molluscan specimens without locality data to be sorted and identified. Lidia Fernandez, Bronte Boyadzhyan, Sarmen Shabanian, Anna Chilingarian, and Krystal Burns are sorting alcohol-preserved mollusks given to Malacology from the Marine Biodiversity Center, with the aim of integrating these into the collection.

Distinguished Visitors



Ichthyology



Peter and Jayne Last from CSIRO (Commonwealth Scientific and Industrial Research Organisation) in Tasmania, Australia, visited the Fishes Section in July to examine and photograph all our rays (stingrays, bat rays, skates, etc.) because they are working on a guide to "rays of the world."

T: Jayne Last looking through our drums of fish for ray specimens.

B: Peter Last working on the ray manuscript.



Malacology

In early June, Bethany Ader (Cogstone Resource Management) delivered a suite of Pleistocene marine invertebrates from a MetroRail borehole at Wilshire Blvd. and Ogden Dr., Hancock Park, for deposition at NHMLAC. Prior to her hire date, Jann Vendetti (CSULA) visited Malacology to use the SEM and examine saccoglossan



sea slugs. Michael Kay (Applied Earthworks, Pasadena, CA), pictured above, made three visits to Malacology to compare some late Pleistocene/early Holocene mollusks from Guatemala with Recent specimens for research purposes. Ángel Valdés (Cal Poly Pomona) made two visits to Malacology to use the SEM

T. Charles Drost and Ryan O'Donnell (USGS) examining helminthoglyptid snails from Santa Cruz Island, CA

and examine nudibranchs and seaslugs with students Tabitha Lindsay, Jenny McCarthy, Jazmin Oritgala, Jermaine Mahguib, and Elysse Ornelas. Doug Eernisse (CSU Fullerton) made two visits with graduate students Bryan White and Kyle Sirovy to examine limpets and chitons. Student/volunteer Diannev Gonzalez (CSU Monterey Bay) spent time with several invertebrate staff, including Jody Martin, Kirk Fitzhugh, and Lindsey Groves, to discuss marine biology careers and graduate programs. Charles Drost and Ryan O'Donnell (US Geological Survey, SW Biological Science Ctr., Flagstaff, AZ) visited Malacology to examine terrestrial snails (especially the family Helminthoglyptidae) from the Channel Islands. Note that they were the first Malacology visitors at the Carson Facility!

Vertebrate Paleontology



Dr. Anneke H. van Heteren of the Universität Bonn, Germany, visited our collections 17–24 July to study *Mammuthus exilis*, our fossil pygmy mammoths from Santa Rosa Island. Anneke is interested in asking questions about dwarfism on islands and is seeking to do so by examining the bone microstructure of both extant and fossil mammals. During her week-long stay, she took bone core samples of our pygmy mammoth fossils for micro-CT analysis and traditional bone histology.



Dr. Julia Sankey is the Professor of Geology/Paleobiology at California State University, Stanislaus. Julia visited our collections on 28–31 July to examine our fossil mammals from the Mehrten Formation. The Mehrten is Hemphillian in age and has produced an abundant mammalian fauna dominated by horses and other herbivores.

Recent Publication

- Bracken-Grissom, H.D., S. Ah Yong, R. Wilkinson, Z. Yang, J. Brienholt, F. Palero, T-Y. Chan, M. Bendall, R. Feldmann, C. Schweitzer, K.H. Chu, D.L. Felder, R. Robles, D. Kim, M. Tsang, **J. Martin**, and K.A. Crandall. 2014. Emergence of the lobsters: Phylogenetic relationships, morphological evolution and divergence time comparisons of a fossil rich group (Achelata, Astacidea, Glypheidea, Polychelida). *Systematic Biology* 63(4): 457-479.
- Brandvain, Y., **G.B. Pauly**, M.R. May, and M. Turelli. 2014. Explaining Darwin's corollary to Haldane's rule: The role of mitonuclear interactions in asymmetric postzygotic isolation among toads. *Genetics* 197: 743-747.
- Christy, A.G., Mills, S.J. and **Kampf, A.R.** (2014) The structural architecture of tellurium oxycompounds. 21st General Meeting of the International Mineralogical Association, South Africa, 1-5 September, 2014. *Abstract Volume*, p. 347.
- Friis, H., Larsen, A.O., **Kampf, A.R.**, Evans, R.J., Selbekk, R.S., Aranda Sánchez, A. and Kihle, J. (2014) Peterandresenite, $Mn_4Nb_6O_{19} \cdot 14H_2O$, a new mineral from a syenite pegmatite of the Larvik Plutonic Complex, southern Norway. *European Journal of Mineralogy* 25, 567-576.
- Kampf, A.R.**, Hughes, J.M., Nash, B.P. and Marty, J. (2014) New polyoxometalate minerals from the western United States. 21st General Meeting of the International Mineralogical Association, South Africa, 1-5 September, 2014. *Abstract Volume*, p. 374.
- Kampf, A.R.**, Mills, S.J., Hatert, F., Nash, B.P., Dini, M. and Molina Donoso, A.A. (2014) Canutite, $NaMn_3[AsO_4]_2[AsO_2(OH)_2]$, a new protonated alluaudite-group mineral from the Torrecillas mine, Iquique Province, Chile. *Mineralogical Magazine* 78, 787-795.
- Kampf, A.R.**, Nash, B.P., Dini, M. and Molina Donoso, A.A. (2014) Torrecillasite, $Na(As,Sb)^{3+}_4O_6Cl$, a new mineral from the Torrecillas mine, Iquique Province, Chile: description and crystal structure. *Mineralogical Magazine* 78, 747-755.
- Kampf, A.R.**, Plášil, J., Kasatkin, A.V. and Marty, J. (2014) Belakovskiiite, $Na_7(UO_2)(SO_4)_4(SO_3OH)(H_2O)_3$, a new uranyl sulfate mineral from the Blue Lizard mine, San Juan County, Utah, USA. *Mineralogical Magazine* 78, 639-649.
- Kampf, A.R.**, Richards, R.P. and Nash, B.P. (2014) The 2H and 3R polytypes of sabieite, $NH_4Fe^{3+}(SO_4)_2$, from a natural fire in an oil-bearing shale near Milan, Ohio. *American Mineralogist* 98, 1500-1506.
- Li, Q., G.-p. Xie, **G.T. Takeuchi**, T. Deng, Z.J. Tseng, C. Grohé, and **X. Wang**. 2014. Vertebrate fossils on the Roof of the World: Biostratigraphy and geochronology of high-elevation Kunlun Pass Basin, northern Tibetan Plateau, and basin history as related to the Kunlun strike-slip fault. *Palaeogeography, Palaeoclimatology, Palaeoecology* 411:46-55.
- Mills, S.J., Christy, A.G. and **Kampf, A.R.** (2014) Walking in a tellurium wonderland. 21st General Meeting of the International Mineralogical Association, South Africa, 1-5 September, 2014. *Abstract Volume*, p. 374.
- Mills, S.J., Etschmann, B., **Kampf, A.R.**, Poirier, G. and Newville, M. (2014) Sb^{5+} and Sb^{3+} substitution in segnitite: a new sink for As and Sb in the environment and implications for acid mine drainage. *American Mineralogist* 98, 1355-1359.
- Muhs, D.R., **Groves, L.T.**, Schumann, R.R., 2014. Interpreting the paleozoogeography and sea level history of thermally anomalous marine terrace faunas: A case study from the last interglacial complex of San Clemente Island, California. *Monographs of the Western North American Naturalist* 7:82-108, figs. 1-12.
- A rich invertebrate fauna from terraces 2a and 2b at Eel Pt., San Clemente Island, is documented and indicates a "thermally anomalous" fauna (i.e., a mix of cool and warm water faunas). These anomalous faunas are due to distinctly different uplift rates in a short period of time.*

- Pauly, G. B.** Citizen scientists helping to document non-native species. *Eye on Invasives (California Department of Fish and Wildlife)* 4:2.
- Rumsey, M.S., Welch, M.D., Origlieri, M.J., Cressey, G., **Kampf, A.R.**, Burgio, L., Spratt, J. and Humphreys-Williams, E. R. (2014) A redefinition of claringbullite to $\text{Cu}_4\text{ClF}(\text{OH})_6$; the importance of type material and group/series based studies. 21st General Meeting of the International Mineralogical Association, South Africa, 1–5 September, 2014. *Abstract Volume*, p. 375.
- Welch, M., Mitchell, R., **Kampf, A.**, Chakhmouradian, A. and Spratt, J. (2014) Compositional and structural diversity in pyroxenoids revisited: a new drier-chain silicate $\text{Na}_{1.5}\text{Y}_{0.5}\text{CaSi}_3\text{O}_9\text{H}$. 21st General Meeting of the International Mineralogical Association, South Africa, 1–5 September, 2014. *Abstract Volume*, p. 340.
- Williams, P., Downes, P., Grice, J., Hibbs, D., **Kampf, A.**, Leverett, P., Malcherek, T. Schlüter, J., Sciberras, M. and Welch, M. (2014) A nomenclature for the Atacamite Family. 21st General Meeting of the International Mineralogical Association, South Africa, 1–5 September, 2014. *Abstract Volume*, p. 376.

Staff Departures and New Staff



Malacology

The Division of Invertebrate Studies is delighted to welcome Dr. Jann Vendetti, who was hired in August as the Twila Bratcher Endowed Chair in Malacological Research. Jann received her Bachelor's degree in Biology and Geology from Colgate University in 2001 where she worked on dragonfly mating behavior and fossil Devonian sponges. She earned her Ph.D. in Integrative Biology from the University of California, Berkeley, in 2009 where she was affiliated with the UC Museum of Paleontology and studied marine whelks in the gastropod family Buccinidae. This research integrated molluscan paleontology, molecular biology, and larval biology. While at UC Berkeley, Jann was a laboratory instructor and teaching assistant for courses in Paleontology, Biological Oceanography, Evolution, and

Jann Vendetti in shell collections at University of California, Museum of Paleontology

Introductory Biology. From 2010–2014 Jann has been a postdoctoral researcher at California State University, Los Angeles, where she focused on phylogenetics, morphology, and evolutionary biology of sea slugs called sacoglossans, and contributed to the description of new species, a regional monograph of Caribbean species, and the largest phylogenetic study of the group to date. Jann considers herself primarily an evolutionary biologist and malacologist, with expertise in general paleontology and Cenozoic molluscan paleontology. She is also interested in adaptive radiations, the conservation of molluscs, and general invertebrate zoology.

Herpetology

With the USC school year back in session, we were able to get Azia Willis to return as a work study student for a second year. Last year Azia updated all our records for our histology slide collection. This year, Azia will assist in updating the tissue collection and cataloging newly acquired specimens. We are excited to have Azia back, especially now that she has a full year of experience working in the collection.

BioSCAN

The BioSCAN project welcomes 13 new work-study students for the fall (Annika, Christy, Dana, Emma, Niko, Jessica, Katie, Kiana, Kimberly, Mark, Rachel, Sean, and Sonia) who join returning students Christine, Jean, Jose, Juhi, Julia, Nicole, Sharon, Tammy, Jessie, and Intern Kelsey Bailey. Keep up with the buzz at <http://research.nhm.org/bioscan/bioscanbuzz/>



BioSCAN and Entomology

Dr. Elizabeth C. Long, our jointly appointed NHM and UCLA La Kretz Center for California Conservation Science Postdoctoral Fellow, arrived in late August. Elizabeth received her Ph.D. in Ecology from UC Davis, has extensive teaching experience,

and is a butterfly expert working on population genetics, phylogenetics, and biogeography. She will be reconstructing historical butterfly distributions of Los Angeles using our historical collections, new field surveys, and lab studies.



Marine Biodiversity Center

We welcome Jenessa Wall to the lab as our new Assistant Collection Manager. Jenessa has a B.Sc. in Biology from UC Santa Cruz. She began volunteering for us in 2009. She contributed to the literature portion

of the Decapod Tree of Life Project, has extensive experience with wet specimen curation, and, since August 2013, was an intern on the BioSCAN project. We are delighted now to have her full time.



Miscellaneous



Rancho La Brea

On June 21st the George C. Page Museum held the inaugural mash-up of fashion and science fundraiser dubbed The Ice Age Hair Ball. To help celebrate 100 years of digging at Rancho La Brea, hair was all the rage and Ice Age mammals were the inspiration. Highly-stylized hair was required for the event; the more outrageous the better! The Museum welcomed over 500 guests with many departments involved in the success of the evening. Fossil Lab manager Shelley Cox gave VIP behind-the-scenes tours; Research Associate Christopher Shaw talked about the paleopathology collections, augmented by specimen photographs taken by lead excavator Carrie Howard; the excavation team and their volunteers gave presentations, behind-the-scenes tours and interacted with guests on the torchlight tours.

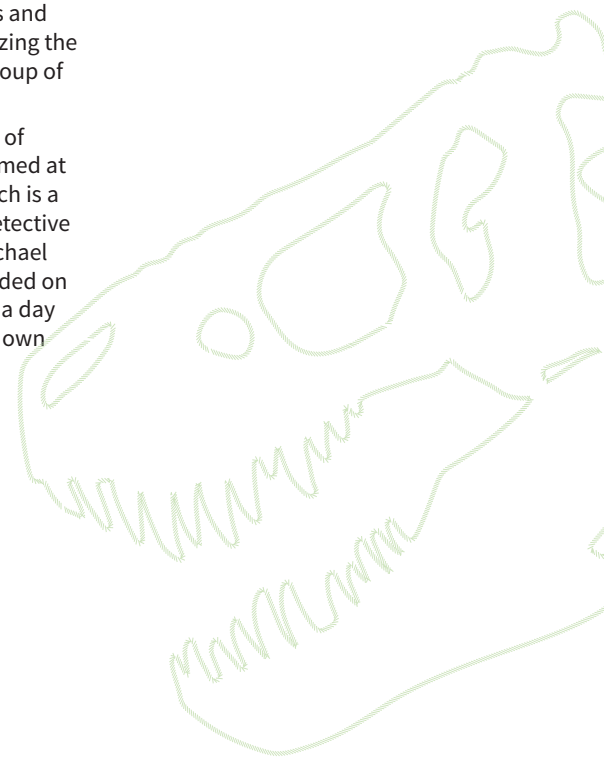
Students from Caltech and staff from Oak Crest Institute of Science

in Pasadena visited Hancock Park this summer to sample liquid asphalt for microbial analysis. These two institutions have a partnership called the Summer Research Connection, which creates small student-teacher collaborative groups and places them in laboratories where they perform scientific research under the guidance of mentors. Following up on a Ph.D. thesis by Dr. Jean-Paul Baquiran on microbial metagenomics in Hancock Park, the students gained firsthand experience collecting samples and have spent the summer analyzing the prokaryotes and a selected group of functional genes using PCR.

Be sure to look for an episode of “Bosch” next year that was filmed at Pit 91 this summer. Harry Bosch is a fictional Los Angeles Police detective who was created by writer Michael Connelly. A large crew descended on the excavation compound for a day of filming with actors and our own excavation staff as extras.



1. Lucy Filippone and Cecilio Garcia in Pit 91
 2. Laura Tewksbury, Carrie Howard, Karri Rice & Cynthia Egan, Box 14
 3. Shelley Cox giving a tour of the Fossil Lab
 4. Christopher Shaw with pathology specimens



Editor: Dr. Joel W. Martin, Curator of Crustacea and Chief of the Division of Invertebrate Studies.

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

