Research & Collections Newsletter

September 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

Ichthyology

In June the Southern California Coastal Water Research Project (SCCWRP) donated their reference collection of fishes and invertebrates to the Museum, including a juvenile ribbonfish (right). The collection numbered over 1,418 lots that were packed in 15 drums. Thank you to Kathy Omura, Nefty Camacho, Adam Wall, Phyllis Sun, and Mario Enriquez, for unpacking and re-alcoholing the specimens.

At right: Juvenile King of the Salmon ribbonfish **Trachipterus altivelis.**

Research Library

Gail Vanderhilde, granddaughter of entomologist Commander Charles M. Dammers, visited the Research Library with some of her family to see her grandfather's original papers and drawings. This was Gail's second visit and all were very excited to see their ancestor's work. Gail plans to bring others in the family to see the materials in the near future. Special thanks to Julian Donahue for his help during Gail's visit. (For more detailed coverage see under *Public Outreach*, below).

The Research Library was fortunate to have 13 people including a number of professional librarians from the local chapter of the Special Libraries Association and some of their friends do volunteer work on Saturday August 18th. They helped re-organize hundreds of books in the collection,right, and some of them can be seen in the photograph to the right.

A special thank you to Frances Azaren who volunteered in the library for one week in August while her young son was busy learning and having fun in one of the NHM Education department's summer programs.

Ornithology

The important avian skeleton collection of California State University at Long Beach has been transferred to the Natural History Museum of Los Angeles County. Consisting of some 4,000 skeletons, the collection adds important breadth and depth to the existing Ornithology skeleton collection (already numbering nearly 14,000 specimens). The CSULB collection had not been databased, so its incorporation into our collections and into the LACM database will make it far more accessible to the scientific community. Ornithology Collections Manager Kimball Garrett will work with his volunteers to inventory, re-box, catalog, database, and integrate this major collection.

Registrar's Office

On June 1st the Registrar's Office coordinated and supervised the rigging of Charles Knight's 1925 "Rancho La Brea" mural from the southwest changing (AKA "Bog") gallery. For a number of years, this diptych mural has been safely housed in the gallery in a 305" x 20" x 131" crate. However due to construction of the forthcoming freight lift, the crate needed to be moved out of the museum. The size of the crate created logistical challenges as the doorways in the museum cannot accommodate a crate of that height. The only way the crate could be moved out of the building was through the 133" high hole in the wall of the gallery.

The Gradall and crane working together to pull the crate out of the building.

Rigging the crate out required the use of specialized dollies to roll the crate to the opening in the wall, a gradall to pull the crate out of the building, and a crane to lower the crate to the ground. Once the crate was safely on the ground, it was rolled down the sidewalk to the curb where it was then once again rigged onto a flatbed truck for transportation to offsite storage. The Vertebrate Paleontology section was on hand to help with crowd and traffic control while the crate was traveling down the sidewalk and rigged onto the truck. From start to finish, the whole rigging project took seven straight hours to complete.

Rancho La Brea

Anna Holden was hired in May as a temporary curatorial assistant to help with the curation of the extensive collection of Rancho La Brea insects. She curated the RLB insect type collection following its relocation from Invertebrate Paleontology and ground-sourced the previously published identifications from the 1913–15, 1929, and Pit 91 collections. She also assisted with the identifications of the insects from Project 23. As a result over a dozen insect species were added to the RLB faunal list. Anna researched and identified bark and jewel beetle engravings on fossil wood from Project 23 (to be discussed in a forthcoming issue of the *Naturalist*) and determined that Rancho La Brea hosts one of the largest known collections of fossil insect galls. She also experimented with dermestid and mealworm larval colonies to help determine which insects were responsible for the holes, channels, and tiny quarries bored in the foot bones of some Rancho La Brea herbivores.

Project 23:

Six boxes have now been completed; two more are in progress with a third, Deposit 5A, to be opened soon. After 3½ years of digging we are nearing the end of excavating bones from the large vent deposit in the southern end of Box 1. From the surface to its base, the deposit is just more than nine levels or 230 cm (7.5 feet) high. So far we have cleaned, repaired, identified, cataloged, curated and databased over 10,000 fossils from this vent and are cleaning many more of these in the Fishbowl Lab. This deposit has produced our only associated skeleton of *Panthera atrox*, and several sabertoothed kittens as well as interesting taphonomic information about the formation of the deposit. It was featured in the BBC documentary filmed here last spring, and we hope to finish excavating this large deposit by the end of the year.

What remains of the main deposit in Project 23's Box 1.

We have started a collaborative project with UC Irvine's W. M. Keck Carbon Cycle Accelerator Mass Spectrometry Laboratory to date the fossils from Project 23. John Southon, Benjamin Fuller and Simon Farahi have run the samples through their AMS (pictured at left) with some promising results. They are also working on a technique to clean the asphalt out of the bone samples as well.

L-R: John Southon, Aisling Farrell, Simon Farhni, Benjamin Fuller and John Harris at the Keck/AMS Lab in August.

We have also started collaborating with Dr. Alex Sessions of the Division of Geological and Planetary Sciences at the California Institute of Technology with help from Katherine Lai on examining new methods of cleaning bulk matrix from Project 23.

Malacology

Malacology has acquired several lots of the recent invasive freshwater bivalve species *Dreissena polymorpha* (Pallas, 1771) [Zebra Mussels] and *D. rostriformis bugensis* Andrusov, 1897 [Quagga Mussels] from the California Department of Fish and Game. Both species are native to eastern Europe and have wreaked havoc with native spe-

cies in the eastern U.S., particularly in the Great Lakes. Despite exhaustive measures the state was able to keep both species out of California until 2007-2008. Fortunately, Zebra Mussels have been restricted to San Justo Reservoir in San Benito County. Unfortunately, Quagga Mussels were discovered in Lake Mead in 2007 but now inhabit all lakes and reservoirs that receive Colorado River water. Both species out compete native species and clog water intake structures, pipelines, and water treatment facilities. Anyone who would like to see these aquatic pests should drop by Malacology.

Zebra Mussels invade Malacology.

Half of the city model being rigged into the new gallery.

Conservation

The Conservation Section recently completed the move, treatment and installation of the Los Angeles City Model. The project began in late 2009 when Contract Conservator Claire Dean completed extensive documentation and began treatment on the model. Earlier this summer, the model was separated and rigged into the Becoming Los Angeles galleries. The Exhibits staff, after months of arduous planning, successfully rigged the model pieces into its permanent case.

Conservators Tania Collas, Elizabeth Homberger, and Laleña Vellanoweth continued final treatment, which included reattaching small buildings, stabilizing losses and lifting paint, retouching overpaint from past restoration campaigns, and dry cleaning, much of it done from a bridge and upside down! Many thanks to Karl Urhausen for helping with restoration work.

Assistant Registrar Anna Campomanes documenting the city model treatment with Laleña Vellanoweth and Liz Homberger.

NHM Exhibits staff rigging the second half of the delicate city model into the new case.

Field Work

Herpetology

Greg Pauly traveled to Davis, CA, May 26 to June 3 for fieldwork examining competition between non-native Red-eared Slider Turtles and our native Western Pond Turtles. This summer, the fieldwork benefitted from the assistance of seven undergraduate students, and for one day, undergraduate Eva Bush and her three sons. Greg is examining behavioral and physiological changes in the native turtles following a major removal of the non-native turtles in 2011. The hope is to gain an understanding of the impacts of competition from the non-native turtles on our declining native turtle.

Greg also traveled to southern Alabama and Mississippi for three weeks of turtle trapping in June. This work is funded by a United States Fish and Wildlife Service grant to examine population connectivity among the eight remaining populations of the federally threatened Alabama Red-bellied Turtle. Captured turtles were measured to assess body condition, a tissue sample was collected for the population genetic analyses, and the animals were released. In addition to the target species, six other turtle species as well as a few alligators were encountered. When not turtle trapping, Greg conducted nighttime surveys for other species and collected another 100 specimens for the museum, including many salvaged roadkills.

Vertebrate Paleontology

In mid-June through late July, Dr. Xiaoming Wang, Curator of Vertebrate Paleontology, co-led a team of American and Chinese vertebrate paleontologists and sedimentologists to the Tibetan Plateau. This year they briefly explored the Hongyazi

At locality ZD1055, where several beautifully preserved limb bones of theTibetan woolly rhino **Coelodonta thibetana** *were found.*

Basin, a promising new locality discovered last year, but concentrated their efforts in the Zhada Basin, which is by far their richest basin in Tibet. Highlights of this year's discoveries include an extinct giraffe, *Palaeotragus*, and several raccoon dog jaws and teeth (see photos).

An ossicone (antler-like cranial appendage) of **Palaeotragus**. *Although the neck of this giraffe was not as elongated as in its modern counterparts, if it browsed on tree leaves (as is assumed), this would have interesting implications for a high altitude basin (3800-4500 meters above sea level) that is now above the tree line.*

Anterior tip of a skull of a raccoon dog, **Nyctereutes**, *with three left incisors.*

Meetings, Workshops, and Presentations

Research Library

As the 2012 chair, Museums, Arts & Humanities division of Special Libraries Association (SLA), chief librarian Richard Hulser presided over several sessions at the SLA annual conference in Chicago July 15-18, 2012. Of particular note was a panel on "Museums, Libraries and 21st Century Skills" with key speaker Susan Hildreth, IMLS director. Richard was also a panelist in a session on expanding application of library and information management skills beyond traditional arenas. On the lighter side, Richard arranged and hosted a chocolate reception at The Newberry Library for about 200 of the more than 3,500 conference attendees, and part of the spread of goodies can be seen in the photograph to the right.

Ornithology

Ken Campbell traveled to Vienna, Austria, in June to participate in the 8th International Meeting of the Society of Avian Paleontology and Evolution. He presented two papers, one a biographical tribute to a renowned French paleornithologist, Dr. Cécile Mourer-Chauvire, and the other a technical report on new finds of an extinct fossil owl from the Northern Channel Islands.

Herpetology

Neftali Camacho and Greg Pauly attended the World Congress of Herpetology, which was held with the Joint Meeting of Ichthyologists and Herpetologists in Vancouver, British Columbia, from August 8th to the 14th. Nefty presented a poster on herpetology's newly acquired collection, entitled "Contributions of a once orphaned museum collection towards understanding changes in reptile and amphibian diversity in heavily urbanized southern California." Greg gave a talk on his ongoing research on the conservation genetics of the federally-threatened Flattened Musk Turtle. Collection related highlights of the meeting included a full day symposium entitled "Technology and Innovation in Collections" and a meeting on the latest developments of the VertNet Data Portal, which is a multi-institutional network for searching collection records.

History

Dr. William Estrada participated in a panel discussion on May 6 and 7 at the Santa Barbara Presidio State Historic Park. This invitational working conference, "Presidios, Ports, Pueblos and Caminos: Reassessing California's Novohispano Legacy," was organized by the Santa Barbara Trust for Historic Preservation and the El Camino Real de California Initiative. The purpose of this conference was to explore the environmental and cultural history of El Camino Real (the Kings Road), and its potential as a UNESCO World Heritage site. In June he also gave a talk on Los Angeles history for the Huntington Westerners at Beckham Grill in Pasadena.

In early recognition of the upcoming 100th anniversary of the opening of the museum, Cathy McNassor presented a noontime research seminar on May 31, titled *Los Angeles County Museum, 1910 – 1941*. The talk was illustrated with images from the museum archives collection and focused on the museum's early history up to the onset of World War II. Ms. McNassor was asked to give the talk a second time and did so on August 22.

Mineral Sciences

In August, Eloïse Gaillou and Tony Kampf (at left) attended the 7th International Conference on Mineralogy and Museums in Dresden, Germany. Eloise presented a talk entitled "On the peculiarities of Australian and Venezuelan pink diamonds: influence of geologic settings" and Tony presented the talk "Pseudotypes." The conference also included a visit to Freiberg, Germany, to see the Terra Mineralia exhibit and the Reich Zeche silver mine. Another highlight was a tour of the Green Vault to see one of the largest collections of European treasures, including the Dresden Green diamond.

Malacology

Emeritus curator Jim McLean and Malacology Research Associate Patrick LaFollette attended the 78th annual meeting of the American Malacological Society in Cherry Hill, NJ, June 16th – 21st. Both were invited speakers of the Symposium on Molluscan Diversity. Jim presented *Revision of living and fossil Liotiidae and Areneidae of the world: The beaded operculum synapomorphy* and Pat presented *Status of cataloguing the megadiverse marine gastropod family Pyramidellidae.*

Mammalogy

Jim Dines traveled to Reno, Nevada, in June for the annual meeting of the American Society of Mammalogists, where he presented a paper on the evolutionary significance of pelvic bones in modern whales and dolphins. He was also re-appointed Chair of the Society's Marine Mammals Committee.

Vertebrate Paleontology

In late May, Dr. Xiaoming Wang, Curator of Vertebrate Paleontology, gave a keynote speech in the Neogene Climate Evolution in Eurasia (NECLIME) Symposium organized by the Nanjing Institute of Geology and Palaeontology of the Chinese Academy of Sciences. His presentation focused on continental Asian biostratigraphy and geochronology, a subject in an upcoming book co-edited by Xiaoming Wang, Lawrence Flynn (Harvard University), and Mikael Fortelius (University of Helsinki), to be published in late 2012 or early 2013 by Columbia University Press.

Group photo of the NECLIME Symposium in the Nanjing Institute of Geology and Paleontology (NIGP). More than forty participants from seven countries, most of them plant taxonomists, ecologists, and palynologists, gathered in picturesque NIGP from May 27–29. This symposium is the 13th such meeting since 2001.

Crustacea

In late July, Jody Martin, Curator of Crustacea, attended the 10th International Larval Biology Symposium at U.C. Berkeley to discuss and advertise his upcoming book "Atlas of Crustacean Larvae" and present a poster showing images and details from the volume.

External Funding

Ichthyology

We are happy to report that Fishes received a grant from the National Science Foundation's Collections in Support of Biological Research program for $113,795 over three years, to support georeferencing (adding latitude and longitude coordinates) to our collection database. This is part of our ongoing efforts to improve both the collection and its associated data, and the grant will support a curatorial assistant to do the georeferencing.

Ornithology

Ken Campbell has been awarded a National Science Foundation "Dimensions in Biodiversity" grant of $260,867 as part of a five-year, seven U.S. institution effort to determine how the modern Amazonian biota and its environment were assembled over time. The total award is to be $1,999,606, and the other six institutions and their portions are: American Museum of Natural History ($549,321), Middle Tennessee State University ($211,044), the Field Museum ($235,176), the New York Botanical Garden ($267,267), University of Colorado, Boulder ($211,066), and the University of Michigan ($264,865). In addition, this is a collaborative project with a number of Brazilian institutions and colleagues who have received a grant of approximately $1,500,000 toward the project. Campbell's participation is to be dedicated to resolving the geologic history of the Amazon Basin, and particularly the age of the Amazon River, something he has been working on for many years.

Research Library

The Research Library recently received several donations of books and equipment. One donation included 1,500 linear feet of book shelving from California State University Northridge Library that is used but in excellent condition. This shelving will be used to replace some of the damaged shelving in the library.

Dale Johnson, daughter of former volunteer and scientific illustrator Frances Runyan, donated two collections of books and NHM publications to the Research Library and NHM Archives, with more arriving in the near future. Many of Frances Runyan's original drawings of plants are in the Research Library's special collections.

Vertebrate Paleontology

Research Associate Dr. Daryl P. Domning of Howard University (right) and Curator Emeritus Lawrence Barnes have received a grant from the National Geographic Society to support their field work in coastal Baja California Sur in the spring of 2013. They intend to continue their investigations of fossil marine vertebrate localities that they visited with U.S. and Mexican students and Mexican researchers in the spring of 2012.

Mammalogy

Mammalogy received another contract from the National Marine Fisheries Service to process, curate, and archive marine mammal specimens. Work performed under this agreement is in addition to our regular stranding program activities and adds to our standing as a regional repository for marine mammal specimens and data.

Public Outreach

Ichthyology

Bob Grove brought his Ocean Science class from the Art Center College of Design of Pasadena to the Fish and Herpetology Collections in July.

History: International Weekend with a Western Flair

During the weekend of March 17, the William S. Hart Museum and Natural History Museum hosted the Costume Society of America's Symposium *Interpreting History Through Costume* at the William S. Hart Park and Museum. Participating speakers came from around the world and presented on varying topics relating to the history of costume from movie costumes to traditional dress. One of the speakers was History Collections Manager Beth Werling, who presented a paper on silent screen star Mary Pickford's use of costume in film. The Hart Museum also exhibited a two day exclusive "real versus reel" display. Symposium participants were challenged to decipher which costumes were real and which were used in film. Object comparisons included sandals from "The Ten Commandments" and a headpiece from "Dorothy Vernon of Haddon Hall" to authentic Californio sandals belonging to Antonio Coronel and a hat worn by President Thomas Jefferson. Thank you to Hart Museum and History Department staff for making the national and international guests feel like a part of history!

Vertebrate Paleontology

During the third week of August, the National Geographic Channel's episode of *America's Lost Treasures* aired, featuring as that episode's winner Vertebrate Paleontology volunteer Lisa Tohill and Curator Emeritus Lawrence Barnes. Lisa's winning entry as an American treasure is a fossil skull of a new type of dolphin that she collected at the globally-significant Sharktooth Hill area near Bakersfield in central California. Part of this episode had been recorded earlier this year both on-site at Sharktooth Hill and in the Museum's Vertebrate Paleontology Department. Lisa and Dr. Barnes are preparing a manuscript describing her new fossil.

National Geographic film production crew on-site at Sharktooth Hill with Lisa and Sean Tohill and Lawrence Barnes.

Rancho La Brea

Curators Cupboard was held at the Page Museum in conjunction with Junior Scientist on May 12th, 2012. Dr. John Harris, Gary Takeuchi, Anna Holden, Trevor Valle and Aisling Farrell displayed specimens from Project 23, highlighting in particular the reptiles, insects and big cats. Public behind-the-scenes tours of the Fishbowl Lab lead by Shelley Cox were also offered free of charge on a first come, first served basis. Junior Scientist partici-

Anna Holden explaining how this insect damaged wood excavated from Project 23 has significant information about the climate during the end of the last Ice Age in Los Angeles.

pants also had the opportunity to talk to one of the excavators at Project 23 and learn about freshly excavated bones.

The R&C staff at the Page Museum gave many tours of the lab, collections and excavations this summer. This included training days for new volunteers in the Education Department, classes for Adventures in Nature and introductions to local playwrights in preparation of the short plays being performed at the Page Museum on weekend nights in September. Trevor Valle, Gary Takeuchi and Aisling Farrell also gave tours to 25 Earth Science teachers as part of a 2-day professional development course collaboration between the Education Department and UCLA.

Marine Biodiversity Center

Molly Porter (School Programs) and Regina Wetzer have been pooling their expertise and working with colleagues at UCLA to provide targeted science teacher events. Together Molly and Regina have hosted diverse groups of Southern California science teachers. Events have included local tide pooling, in laboratory experiences, and an open house for educators to showcase teacher training opportunities at NHM. A grant from the Boeing Community Employee Fund has contributed to the enrichment of teacher-training, research-based biodiversity programming.

Museum Members search the talus slope for rubies.

Mineral Sciences

In July, Alyssa Morgan, Tony Kampf and mineralogist Bob Housley led a Gem and Mineral Council field trip to Cascade Canyon, near Upland, CA. This canyon is the site of a landslide off Mt. San Antonio that moved metamorphic rocks rich in pinkish red corundum (a.k.a. rubies) down to lower elevation. Rubies can still be found along San Antonio creek though you must brave ticks, foxtails, rough terrain and of course, rattlesnakes. See more info and pictures here: http://nhminsci.blogspot.com.

Malacology

Scavengers Safari: On June 2nd Lindsey Groves led *Glorious Gastropods and Beautiful Bivalves* for eight participants in a behind-the-scenes tour of Malacology. The tour featured rare and common species, large and small varieties, and weird and bizarre forms of mollusks.

Invertebrate Paleontology, Malacology, Crustacea, and Marine Biodiversity Center

Bug Fair: Mary Stecheson (IP), Lindsey Groves (Malacology), Adam Wall (Crustacea), Kathy Omura, Phyllis Sun, Regina Wetzer, Dean Pentcheff, Jonathan Sepulveda, and volunteers Maria & Robert Peltekova (MBC) participated in the annual Bug Fair, May 19th and 20th. Featured were fossil arthropods from Cambrian through Pleistocene and preserved Recent specimens for comparison. The emphasis was on the evolutionary relationships of the Arthropoda, and exhibited specimens included trilobites, eurypterids, spiders, crabs, lobsters, and insects.

2012 Bug Fair DIS participants (L to R behind table) Maria and Robert Peltekova (MBC volunteers), Kathy Omura (MBC), and Adam Wall (Crustacea).

Entomology and Research Library

Gail Vanderlinde of Atascadero, California, connected with an unknown part of her family history at the Museum in July, as a result of historical research being undertaken by Bill Wilkman in Riverside, California, in connection with a supermarket development project that involved property of potentially historical significance that had been owned by her grandfather, Commander Charles Montagu Dammers (British Navy, ret.). Dammers (1878–1956) farmed a 20-acre orange grove in Riverside, California, but was known in entomological circles for his painstakingly accurate watercolor illustrations of the early stages (egg, larva, pupa) of southern California moths and butterflies. In the 1920s Dammers began working with the Museum's entomologist, Dr. John Adams Comstock, a relationship that produced more than 30 papers in the *Bulletin of the Southern California Academy of Sciences* on Lepidoptera life histories, most co-authored with Comstock. Dammers also had at least 19 insect taxa named in his honor. Gail's father, Charles H. Dammers, was estranged from Commander Dammers, and Gail had had little contact with her grandfather and knew nothing of his entomological talents—until she was located by Wilkman in the course of his research on the Dammers Riverside property. Wilkman contacted Julian Donahue (Entomology, retired), who enlisted Chief Librarian Richard Hulser's assistance in locating the paintings, and this summer Gail and members of her extended family visited the Museum twice to view the exquisite paintings—several hundred of them, in 13 loose-leaf binders with associated rearing notes. The paintings had been housed in the Entomology section for decades, where they were frequently consulted, but are now more securely housed in the Research Library. Halftone reproductions of some of the paintings appeared in the Museum's 1973 publication, *The Butterflies of Southern California*, by Emmel and Emmel.

Examining the Dammers watercolors (from left: Bill Wilkman, Wilkman Historical Services; Julian Donahue, Entomology; Gail Vanderlinde; Richard Hulser, Chief Librarian).

Mammalogy

Jim Dines participated in a Molecular Evolution Workshop in late July for science teachers and advanced students from West Adams High School. The week-long workshop was organized by USC Professor Matt Dean and funded by the NSF. Workshop participants learned about the importance of systematic collections and their utility in evolutionary studies, gained first-hand experience in lab techniques such as DNA extraction and the polymerase chain reaction, and learned how to use bioinformatics tools to analyze genomic data.

Student Mentoring and Research

Research Library

The Research Library continues to have a number of volunteers throughout the year. Pictured to the right are library graduate students Nita Lieu (SJSU), Dianna Parsons (UCLA) and recent graduate Melanie Tran (UCLA). Nita continues to volunteer one day a week helping with various projects and Dianna just finished an internship in the library focused on getting serials information into the online catalog. Melanie graduated from UCLA in June and has been selected for a full-time eight month 'graduate internship in special collections cataloging' at The Getty beginning in September 2012.

Laura Barnes (SJSU) (not pictured) recently finished her library internship focused on updating the design of the library's online catalog and helping with the design and implementation of the library's external website.

Herpetology

Jennifer McKenzie and Robyn Screen, two University of California, Davis undergraduates, have been working away on turtle fieldwork throughout the summer under Greg Pauly's advisement. Jenn and Robyn have been conducting mark-recapture studies of Western Pond Turtles at three sites with varying degrees of urbanization in the same watershed. To date, the early results suggest that the more urbanized Central Valley localities, despite being in protected parks or reserves, are doing very poorly, while the less urbanized population in a seasonal creek has far more recruitment and less adult mortality. A second round of trapping is underway, but the early results indicate that Central Valley populations of Western Pond Turtles may be in much worse shape than previously thought. Both undergraduates hope to continue the research next summer before they head off to graduate school.

History

While on a vacation to London, Cathy McNassor spent four days at the Wellcome Library reading the correspondence of Dr. Roy Lee Moodie, the "Father of Paleopathology." Moodie is known for his explorations into the evidence of disease in fossils and prehistoric man. After his death in 1934, his papers were sent to the Wellcome Trust in London and now are part of the library's archival holdings. Ms. McNassor spent one day at the Well-

come Library on a previous occasion, and the most recent visit completes this phase of her research into the life and work of Moodie.

Rancho La Brea

For the month of July, high school student Adrienne Chainey from the Bay area (Adi for short) volunteered six days a week in the R&C Division at the Page Museum. Adi and her family have been Museum Members for many years, and she has participated in the Red Rock Canyon Family Fossil Collecting Trip for the past several years. Adi has a passion for paleontology and has visited the Page Museum many times. Finally this summer she was old enough to volunteer! In Adi's own words;

"So I went in to my volunteer job at the La Brea Tar Pits, not really knowing what to expect, and without a massive knowledge of skills that would be useful in the museum/laboratory setting. However, in no time I began to learn: how the old cataloging systems worked, how to excavate in Project 23, how to microfossil sort, and curate specimens. But more than the basics of being a lab worker or an excavator, I also got the feel for how working in an actual museum is, and all of the necessary "behind the scenes" work that must be done to keep a museum functioning, from rearranging boxes and taking inventories, to organizing and cleaning displays. By far though, my favorite experience, wasn't really a singular experience at all, it was simply my growth in knowledge, especially my new knowledge of osteology, which I know will be crucial in both school and a future career in paleontology. All around, my experience at the La Brea Tar Pits was an incredible, educational and enjoyable time."

Adi Chainey assisting visting reasearchers Larisa DeSantis (background) and Shelly Donohue in making silicone molds of bear teeth.

Mammalogy

USC undergraduate student Molly Leighton (at left) was awarded a competitive summer research fellowship to work on a project analyzing the stomach contents of dolphins collected and archived by our Marine Mammal Stranding Program over the past 3 decades. Preliminary results show the two dolphins in the genus *Delphinus* that occur in southern California feed on different prey (i.e., engage in niche partitioning). Interestingly, it also appears that the distribution of these two dolphin species changes concomitant to shifts in the occurrence of prey species, which in turn may be caused by changes in the ocean's surface temperature.

Vertebrate Paleontology

On 7 August Howell Thomas, Senior Paleontological Preparator, journeyed to the Vernon Marine Mammal Warehouse to look for the occurrence of various pathologies in modern marine mammals. This work is part of his research pursuits on pathologies in fossil marine mammals. Howell took this opportunity to mentor various students in his search for pathologies. Meredith Rivin, Associate Curator of Paleontology at the John D. Cooper Center, Gabe Santos, student volunteer at the John D. Cooper Center, and both Vertebrate Paleontology & John

D. Cooper Center student volunteers Kathleen Gonzales and Brian Watkins accompanied Howell Thomas and participated in identifying pathologies in the modern marine mammal collections.

Gabe Santos and Meredith Rivin examine the skull of a modern dolphin, **Pontoporia blainvillei.**

Vertebrate Paleontology hosted two high school seniors over the summer in partnership with the museum's Summer Youth Program that provided students with job skills, training, and experience in their field of interest. Sam McLeod and Vanessa Rhue were delighted to have Equan Martin (below left), a senior at Golden Valley High School in Santa Clarita, and Taylor Conley (right), a senior at Junipero Serra High School in Gardena, join our team in June, July, and August. The entire VP staff is appreciative of the enthusiasm shown by Equan in all manner of tasks assigned and the attention to detail that Taylor brought to each of his projects. These young men were involved in many areas of curation such as putting catalog numbers on bones, moving collections to oversized storage, and preparing a fossil whale vertebral series.

Volunteers and Research Associates

Herpetology

One of herpetology's most active volunteers, Amber Suto, has returned to high school to enter her senior year. Amber spent most of her summer in the section, first as an intern in the Troy Tech Magnet Program and later as a dedicated volunteer. She was vital in processing the recently acquired UC Irvine collection and also helped to preserve a huge number of recently donated specimens. Amber has promised that once she settles into the new school year (and gotten through her SATs) that she will return as a volunteer, and we will certainly be happy to have her back!

Marine Biodiversity Center and Collaboratory

The Marine Biodiversity Center (MBC) enjoyed the company of 6 Outreach Instructors for the months of July and August. Lindsay Ash, Nicole Duran, Jason Hammond, Joe Ranoia, Marisol Rojas and Patrick Tanaka volunteered for 2 months and enthusiastically curated over 1,000 lots of invertebrates. They rehoused endangered species of fairy shrimp, unpacked and curated specimens from 50 gallon barrels and changed out bail-top jars for museum-grade glassware. It wasn't just cotton-stoppering vials or handling fragrant ethanol for the 6 Outreach Instructors. They attended Dr. Wetzer's talk on the invertebrate phylogenetic tree and also researched life history information on various invertebrate species. They were a delight to work with and were extremely productive.

Patrick Tanaka curating specimens for the Marine Biodiversity Center.

USC-NHM undergraduate collaboration.

This summer has been busy in the Collaboratory. We hosted two post-docs (Daniel Campo and Matthew Salomon) from the USC-Nuzhdin Lab, who in turn are overseeing three undergrads: Jessica Gabrielia (at left), Clara Vu, and Mishan Rambukwella. Jessica and Clara are lead principle investigators on two projects: "*Drosophila melanogaster* resistance to the fungal pathogen *Beauveria bassiana*" and "Alterations of *Drosophila melanogaster* genomes and chemical resistance," respectively. Jessica, Clara, and Mishan in turn trained and supervised 10 local high school students this summer in the fine art of rearing fruit flies for their projects. Once *Drosophila* lines were available, experimentation could begin. Projects will continue through the Fall. North Campus, Nature Lab, and the BIOSCAN projects are opening up new research opportunities. Not only is the arthropod biodiversity survey work underway, but we are also facilitating collaborative experimental science with USC. It has been fun new learning all around.

Anthropology

Katie Smith (at right) volunteered with Anthropology this summer before she returned to Tufts University to continue her studies as an Anthropology major; she is due to graduate with the class of 2013. In her short time here she cataloged 144 stone tools from our Hawaiian accession A.1735, made several house mounts for Ancient Latin American and Hawaiian objects and entered a whopping 1,802 Anthropology Archival records into KE Emu. After she finishes at Tufts she intends to attend the University of Texas at Austin for a graduate degree in Latin American Archaeology. We owe her a huge thanks for all of her hard work!

This month, Joanna Reyes began her internship working on projects for both Education and R&C. Joanna has been helping Gina Hall and Lindsay Ash of

the Outreach Program to develop archaeology themed activities for the Earth Mobile and is assisting KT Hajeian of Anthropology to photograph, re-house, and catalog Hawaiian material from the Ethnology collections. Joanna has a real passion for working with collections and is currently gaining even more experience in the field by also interning at the Wende Museum in Culver City. Joanna (at right) has just obtained her B.A. in Anthropology with a concentration in Archaeology from UCLA. Her genuine enthusiasm, keen attention to detail, and experience with museum databases make her a truly valuable asset to our ongoing efforts to digitize our collections.

Vertebrate Paleontology

Sam McLeod and Vanessa Rhue are pleased to have the volunteer service of Chelsea Leu (left), an undergraduate student at the University of Chicago. This summer she has assisted us with the organization of the VP collections from various Monocline Ridge localities in Fresno County, and the preparation of marine mammal fossils from Sharktooth Hill in central California. Chelsea has an interest in geographical information systems (GIS) and Sam McLeod has involved her in discussions with Bill Mertz, museum database specialist, concerning the digital mapping of our localities via ArcGIS Explorer and KeEmu. Chelsea will return to Chicago at the end of September to continue her studies in paleontology and biological science.

Howell Thomas and Lawrence G. Barnes are grateful for the service and skills of Debora Lee (right), Vertebrate Paleontology 2011 Volunteer of the Year, to assist with photography of both modern and fossil specimens for research publication. Debora has taken on the role of department photographer and has contributed several photos to this September issue of the R&C Newsletter.

Lucas Brown (left), Vertebrate Paleontology volunteer, has been volunteering each day for an hour before doing his regular shift as an Administrative Assistant in Advancement. Howell Thomas is appreciative of his excellent work on a fossil baleen whale jaw from Santa Cruz Island. Lucas is currently working on preparing a fossil dolphin skeleton that literally came from his backyard in downtown Los Angeles.

Distinguished Visitors

Ichthyology

Werner Schwarzhans, working with Jørgen Nielsen and Peter Moeller of the Zoologisk Museum, Denmark, visited in May to look at ophidiiform fishes, including the holotype of *Saccogaster rhamphidognatha* (see x-ray on right, LACM 44189-1)

Douglas Long (Senior Curator of Natural Sciences, Oakland Museum of California) and Kenshu Shimada (Professor in the Department of Biological Sciences, DePaul University) visited Fishes in August to look at several different groups of fishes including a series of shark teeth from the right side of our Megamouth specimen.

Dr. Christian Cramer from the Laboratório de Ictiologia e Pesca, Brazil, visited in August to look at our holdings of loricariid catfishes, including our holotype of *Panaqolus nocturnus* (at left, LACM 41729-51).

Herpetology

Gabriela Rios-Sotelo, a graduate student from San Francisco State University, visited Herpetology to swab amphibian specimens from Japanese islands to test for the presence of chytrid fungus. Chytrid fungus is currently causing massive global declines and extinctions of amphibians. Gabi is using new DNA sequencing approaches to test for the presence of chytrid DNA in museum specimens.

Also, Peter Zani and graduate student Tasha Block from Pomona College recently visited to examine a large series of Side-blotched Lizards collected in the 1960's. A predatory lizard has since moved into this site, and Peter

and Tasha are examining microevolutionary changes, particularly in limb length, of the Side-blotched Lizards following colonization by the predatory species.

Rancho La Brea

Joy Ward and Laci Gerhart from The University of Kansas' Department of Ecology and Evolutionary Biology visited the Page Museum in June to take core samples from fossil branches and tree trunks for their Ice Age climate research. They are comparing mean growth, max growth and variation in growth of tree rings between modern and Ice Age specimens.

Joy Ward and Laci Gerhart drilled for cores for climate research. Inset: Close up of one of the Ice Age tree cores.

Andy Grass from the University of Iowa visited the Page Museum in May to study the ground sloth collections. He was particularly interested in the scapulae for inferring age and locomotion in ground sloths. He has worked at the Tarkio Valley site in southwest Iowa where three differently aged *Megalonyx* were found, an adult, a juvenile, and a baby. However the only element that is present in all three species are the scapulae, so his project is examining the differences in the shape of the scapulae through ontogeny. He is also examining if levels of arboreality can be inferred from scapula shape.

Researcher Andy Grass (foreground) used a microscribe to take landmark data on ground sloth scapulae at the Page Museum.

Robert McAfee, Assistant Professor at Ohio Northern University, spent two days in the ground sloth collections at the Page Museum this summer taking photographs and landmark data with a miroscribe as part of his ongoing Xenarthran research. He is particularly interested in post-cranial elements such as the atlas, astragalus, and scapula. The primary goal was to gain a greater understanding of the morphology of these elements and how the changes in shape would be reflected in both taxonomy and behaviors.

Researcher Rob McAfee taking landmark data on a sloth scapula at the Page Museum

Larisa DeSantis and Shelly Donohue from Vanderbilt University visited the collections at the Page Museum in July. Larissa's primary goal was to finish taking data on felid dental characters as part of a larger paleo-ecological project. She already took molds of the teeth on a previous visit. Shelly is working on a bear paleo-ecological study looking at microwear on teeth. She took silicone molds of the teeth of *Arctodus simus* from our collections.

Other researchers this summer include H. Todd Wheeler who spent a week examining *Smilodon fatalis* skulls and jaws. Loyola Marymount University undergraduate students Genevieve Guerra and Richard Smith have been continuing their research with *Smilodon fatalis* post cranial measurements as part of an ongoing project headed by Dr. Wendy Binder. Dr. Graham Slater (Smithsonian post-doc researcher) spent a day in the collections gathering cranio-dental measurements and scapula photos from *Panthera atrox*, *Smilodon fatalis* and *Arctodus simus*.

Malacology

It has been a busy summer for Malacology. Ángel Valdés (Cal. Poly. Pomona) visited the collection on four occasions to examine the nudibranch holdings. He was accompanied by grad students Dieta Hanson, Erika Espinoza, Jermaine Mahguib, Jennifer Alexander, and Jessica Goodheart on two of his visits. In early August, 2006 Research Experience for Undergraduates (REU) participant Vinicius Padula (Zoologische Staatssammlung Munchen, Germany) visited with Ángel. Advanced collector Eddie Hardy (Birmingham, England) visited for four days and photographed gastropod type specimens for research purposes.

Malacology visitor Eddie Hardy (Birmingham, England) photographing type specimens..

Doug Eernisse (CSU Fullerton) and grad student Candice Aguirre visited to examine the holdings of fissurellid gastropods. Doug visited again in July with Colombian visitors Luz López de Mesa, Fanny Gonzalez, Ana María Echevery, and Edgardo Londoño (Universidad del Valle, Colombia) who were researching chitons and limpets. Also visiting Doug at the same time was Lesley Brooker (University of Sunshine Coast, Queensland, Australia).

Malacology visitors (L to R) Doug Eernisse (CSU Fullerton), Lesley Brooker (Univ. Gold Coast, Queensland, Australia), Jim McLean (Malacology), Edgardo Londoño, Fanny Gonzalez, Ana María Echevery, and Luz López de Mesa (Univ. del Valle, Colombia)

Amira Ainis, Queeny Lapena, and Lisa Manirath (CSU Los Angeles, Anthropology) compared specimens from Santa Cruz Island midden deposits with modern specimens. Landsnail specialist Lance Gilbertson (Newport Beach, CA) visited on two occasions to examine helminthoglyptid snails and deposit manuscript type specimens. Fossil collectors Ed Hernandez and son Robert brought in Pliocene mollusk specimens from Montebello for identification.

Vertebrate Paleontology

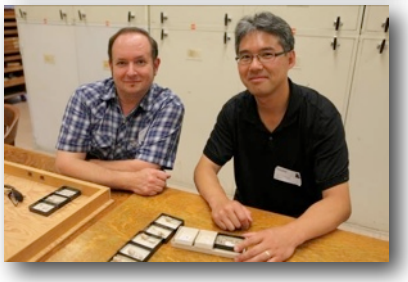
From 30 April through 2 May Vivianne Bernardo de Sant'Anna (right), Pós-graduação em Zoologia Laboratório de Ictiologia, Museu de Ciências e Tecnologia — PUCRS, Porto Alegre, Brazil, visited our collections for the second time since 2009 to examine our fossil needle and flying fishes, Beloniformes, from various southern California fossil localities.

From 9 through 13 July, Dr. Brian Beatty (left), Assistant Professor in the Department of Anatomy at the New York College of Osteopathic Medicine in New York, visited the collections to study our *Desmostylus* fossils from Monocline Ridge in Fresno County, California. Brian also gave a Research and Collections Seminar on 12 July concerning his marine mammal research.

On 11 and 12 July Dr. Larisa Grawe DeSantis (right), Assistant Professor in the Department of Earth and Environmental Sciences at Vanderbilt University in Nashville, Tennessee, visited our collections to do isotopic and microwear analysis on specimens from the Pleistocene deposits at McKittrick in central California. These studies are relevant to the doctoral research of Lindsey Yann, who is interested in how paleoecological niches and niche partitioning of Pleistocene camelids affect the distribution of modern, arid-adapted camelids.

On 12 July, Dr. Jere Lipps (far left) and Meredith Rivin, of the California State Fullerton John C. Cooper Center in Santa Ana, brought several of their volunteers and students to visit the Department of Vertebrate Paleontology and to observe fossils from southern California, particularly from Orange County.

On 2 August, Dr. Robert K. McAfee (right), Assistant Professor in the Department of Biological and Allied Health Sciences at Ohio Northern University, visited our collections to continue his research on fossil ground sloths. Here Robert is taking measurements of astragalii (ankle bones) from San Josecito Cave, Nuevo Leon, Mexico.



On 3 August, Gabriel Santos, a student volunteer at the California State Fullerton John C. Cooper Center in Santa Ana, visited to examine our desmostylian specimens.

On 20 August, Dr. Douglas Long (left), Chief Curator of Natural Sciences at Oakland Museum of California, and Dr. Kenshu Shimada (right), Associate Professor of Paleobiology at DePaul Univserity in Chicago Illinois, examined our collection of fossil megamouth sharks of the family Megachasmidae.

On 13 August 2012, Graham Slater (right), a post-doctoral researcher in the Department of Ecology and Evolutionary Biology at University of California, Los Angeles, visited our collections to examine carnivores as part of his morphological evolution research.

Mammalogy

Among the visiting researchers using the collections over the summer months were: Eric Sargis (Yale Peabody Museum), Brian Beatty (NY Institute of Technology), Chris Emerling (UC Riverside), Robert McAfee (Ohio Northern University), Brian Kraatz (Western University), Lorelei Patrick (Louisiana State University), Hannah Walker (UC Davis), Graham Slater (UCLA), and Sarah Kienle (San Diego State University).

Recent Publications

Bracken-Grissom, H., Felder, D. L., Vollmer, N., **Martin, J. W.,** and Crandall, K. A. 2012. Phylogenetics links monster larva to deep-sea shrimp. Ecology and Evolution, 2012; DOI: 10.1002/ece3.347

This short paper finally attributes a "mystery larva" that has been known for more than 180 years with its adult, which is a species of deep-sea shrimp. The paper generated a fair amount of publicity, including the following coverage:

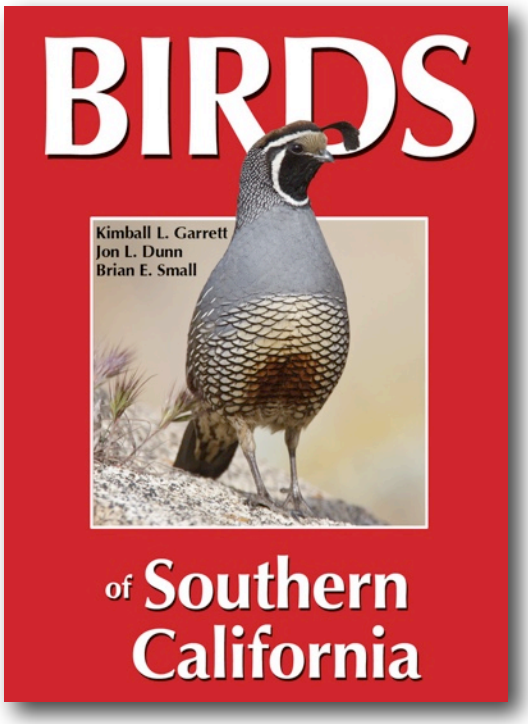
http://www.livescience.com/22731-200-year-old-monster-larva-mystery-solved.html
http://www.msnbc.msn.com/id/48808223/ns/technology_and_science-science/#.UDyk5k-Qm2Q
http://www.huffingtonpost.com/2012/08/28/monster-larva-cerataspis-aristeid-shrimp_n_1835896.html
http://www.foxnews.com/scitech/2012/08/28/200-year-old-monster-larva-mystery-solved/
http://www.sciencecodex.com/george_washington_university_computational_biology_director_solves_200yearold_oceanic_mystery-97362
http://news.fiu.edu/2012/08/monster-larvas-identity-revealed/44477
http://www.cbsnews.com/8301-205_162-57501605/200-year-old-monster-larva-mystery-solved/
http://www.sciencedaily.com/releases/2012/08/120827152052.htm

Campbell, K.E. 2012. Revisiting the extinct eared owl, *Asio priscus*, of the California Channel Islands. 8th International Meeting of the Society of Avian Paleontology and Evolution, Abstracts with Program, p.12, Naturhistorisches Museum Wien, Austria.

Campbell, K.E. Book Review: Living Dinosaurs: The Evolutionary History of Modern Birds. The Auk, 129(3): 568-569. July, 2012.

Garrett, K. L., J. L. Dunn, and B. E. Small. 2012. Birds of southern California. R. W. Morse Co., Olympia, WA.

This is a revised and expanded version of the popular "Birds of the Los Angeles Region," originally published in 2006. The new work treats all of southern California, includes a number of additional species not treated in the L. A. version, and has been expanded to 496 pages.



Hartstone-Rose, A., R. C. Long, **A. B. Farrell**, and **C. A. Shaw**. 2012. The clavicles of *Smilodon fatalis* and *Panthera atrox* (Mammalia: Felidae) from Rancho La Brea, Los Angeles, California. Journal of Morphology 273: 981-991.

Hendler, G., A.E. Migotto, C.R.R. Ventura, and L. Wilk (2012) Epizoic *Ophiothela* brittle stars have invaded the Atlantic. Coral Reefs. DOI 10.1007/s00338-012-0936-6.

The genus Ophiothela*, until recently, was confined to the Pacific Ocean. Surprisingly, one species has established populations at distant points in the western Atlantic. Its presence near Brazilian and Caribbean ports indicates that it could have spread by shipping. Gordon Hendler, Curator of Echinoderms, and his colleagues from Brazil and Canada, recently reported the Atlantic invasion of* Ophiothela *in an advance online issue of Coral Reefs, the journal of the International Society for Coral Reefs.*

It is difficult to envision how Ophiothela *will affect the ecology of its new ocean, because so little is known about its biology. Will it be harmful, like some alien species? One thing seems assured: if it continues to spread its presence will be obvious to snorkelers, divers, and fish.* Ophiothelas*, in multitudes, are capable of densely colonizing the corals and sponges that are such conspicuous tenants of warm-water reefs.*

For a closer look at the animal and at the new publication click on:

http://www.nhm.org/site/sites/default/files/echinoderms/Invasive%20Ophiothela.pdf

Kampf, A. R., Hughes, J. M., Marty, J., and Nash, M. (2012) Postite, $Mg(H_2O)_6Al_2(OH)_2(H_2O)_8(V_{10}O_{28})\cdot 13H_2O$, a new mineral species from the La Sal mining district, Utah: Crystal structure and descriptive mineralogy. Canadian Mineralogist 50, 45-53.

Kampf, A. R., Mills, S. J., Housley, R. M., Bottrill, R. S., and Kolitsch, U. (2012) Reynoldsite, $Pb_2Mn^{4+}{}_2O_5(CrO_4)$, a new phyllomanganate-chromate from the Blue Bell claims, California and the Red Lead mine, Tasmania. American Mineralogist 97, 1187-1192.

Kampf, A. R., Mills, S. J., Housley, R. M., Williams, P. A., and Dini, M. (2012) Alcaparrosaite, $K_3Ti^{4+}Fe^{3+}(SO_4)_4O(H_2O)_2$, a new hydrophobic Ti^{4+} sulphate from Alcaparrosa, Chile. Mineralogical Magazine 76, 443-453.

Kampf, A. R., Mills, S. J., Rumsey, M. S., and Colombo, F. (2012) Pseudotypes. Program and abstract volume, 7th International Conference on Mineralogy and Museums. Dresden, Germany, August 27-29, 2012.

Kampf, A. R., Mills, S. J., Rumsey, M. S., and Spratt, J., and Favreau, G. (2012) The crystal structure determination and redefinition of matulaite, $Fe^{3+}Al_7(PO_4)_4(PO_3OH)_2(OH)_8(H_2O)_8\cdot 8H_2O$. Mineralogical Magazine 76, 517-534.

Laurie, J., B. Choo, S. McLoughlin, S. Hand, P. Kershaw, G. Brock, E. Truswell, W. Boles, and **J. A. Long**. 2012. Chapter 3. Living Australia. In *Building of a Continent — Shaping a Nation: A Geology of Australia*, pp 121-172 edited by: R. Blewett et al., Australian Government Printer & ANU Press, Canberra.

This chapter (and the whole book) can be downloaded for free at the following link:

http://epress.anu.edu.au/titles/shaping-a-nation/pdf-download

McLean, J. H. 2012. New species and genera of colloniids from Indo-Pacific coral reefs, with the definition of a new subfamily Liotipomatinae n. subfam. (Turbinoidea, Colloniidae). Zoosystema 34(2): 343-376.

This paper treats micro-gastropods, half of which are here on loan from the MNHN collection and half of which are from the LACM collection, collected by our field associates during the 1980s and 1990s. A new subfamily, three new genera, and seven new species of colloniid gastropods, which resemble liotiids, are described from localities in the central and south Pacific. The new species are micro-mollusks of 3-8 mm in diameter. This shows the value of our world-renowned micro-mollusk collection.

Mills, S. J., **Kampf, A. R**., McDonald, A. M., Favreau, G., and Chiappero, P.-J. (2012) Forêtite, a new secondary arsenate mineral from the Cap Garonne mine, France. Mineralogical Magazine 76, 769-775.

Mills, S. J., Sejkora, J., **Kampf, A. R.**, Grey, I. E., Bastow, T. J., Ball, N. A., Adams, P. M., Raudsepp, M., and Cooper, M. A. (2012) Krásnoite, the fluorophosphate analogue of perhamite, from the Huber open pit, Czech Republic and the Silver Coin mine, Nevada. Mineralogical Magazine 76, 625-634.

Prieto, R., **D. Janiger**, M. A. Silva, G. T. Waring, and J. M. Goncalves. The forgotten whale: A bibliometric analysis and literature review of the North Atlantic sei whale *Balaenoptera borealis*. Mammal Review 42(3):235-272. 2012.

Salerno, P. E., and **Pauly, G. B.** Clutch size variation in egg-brooding *Stefania*. South American Journal of Herpetology 7:47–54.
Frogs of the genus Stefania *are unusual in that females brood the developing eggs on their backs. After collecting five egg-carrying females from the summit of Chimanta Tepui in Venezuela, we reviewed reproductive patterns in the genus.*

Wang, X., **Z.J. Tseng**, and **G.T. Takeuchi**. 2012. Zoogeography, molecular divergence, and the fossil record — the case of an extinct fisher, *Pekania palaeosinensis* (Mustelidae, Mammalia), from the Late Miocene Baogeda Ula Formation, Inner Mongolia. Vertebrata PalAsiatica 50(3):293-307.

Wang, Y., S. Khawaja, **X. Wang**, B.H. Passey, Y. Xu, C. Zhang, **Q. Li**, **Z.J. Tseng**, **G.T. Takeuchi**, and T. Deng. 2012. Isotopic evidence for late Cenozoic environmental change in SW Tibet. Geological Society of America 2012 Annual Meeting, Charlotte, Session T125, Quantitative Cenozoic Terrestrial Climate Reconstructions in the Northern Hemisphere: Evidence from Paleo-Proxies and Beyond 2012:Abstract 206096.

Wang, X., L. J. Flynn, and M. Fortelius. 2012. Neogene continental Asian biostratigraphy and geochronology: where we are and where we are heading. NECLIME Symposium Program and Abstracts, Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, pp. 21-22.

Wang, X. 2012. Passing the smell test: in tracing the skunk lineage, appearances can be deceiving, so can odors. Natural History 2012:22-29.

Zhang, C., Y. Wang, **Q. Li**, **X. Wang**, T. Deng, **Z.J. Tseng**, **G.T. Takeuchi**, G. Xie, and Y. Xu. 2012. Diets and environments of late Cenozoic mammals in the Qaidam Basin, Tibetan Plateau: evidence from stable isotopes. Earth and Planetary Science Letters 333-334:70-82.

Miscellaneous

Herpetology

On July 20 photographers from MIRADA visited the section to photograph reptile skin patterns as reference for two upcoming monster movies, Guillermo del Toro's *Pacific Rim*, and a new version of *Godzilla* being directed by indie director Gareth Edwards. Some of their subjects included lava lizards, armadillo lizards, and snapping turtles. Who knows, maybe Godzilla's new nemesis will be Gamera.

Rancho La Brea

Curatorial Assistant Gary Takeuchi was interviewed on June 8th and July 6th for the Tokyo Broadcasting System (TBS) travel show, Fun Mysteries of the World, which has been on TV in Japan for over 25 years. The show profiles different interesting or family friendly destinations from around the world.

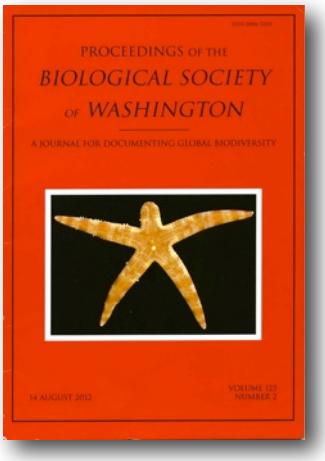
Gary Takeuchi describes the skull of Zed for **Fun Mysteries of the World.**

In early June every skull from the Dire Wolf skull exhibit at the Page Museum was removed so new lights could be installed behind the exhibit. During this four day process, R&C staff and volunteers carefully took down, cleaned, condition reported, repaired if necessary, photographed, and then re-installed each of the 400 skulls. A time lapse film of the skulls being removed and re-installed were featured in a June 19th blog post at http://www.tarpits.org/blog

Staff and volunteers assisted in the cleaning, conservation and photographing of 400 dire wolf skulls at the Page Museum before they were re-installed on their famous skull wall.

Anthropology Professor Brian Bartelt and his students from Los Angeles City College (LACC) visited the Page Museum in May with a cart full of modern bones that had been discovered in a soon-to-be demolished building on LACC's campus. Shelley Cox identified the specimens as a partial skeleton of a giraffe, an African lion skull and a bovid femur. The femur had a penciled note as being a gift from the Leakey family.

Shelley Cox identified modern bones that were brought in by the Anthropology Department from LACC.



Echinoderms

Gordon Hendler, Curator of Echinoderms, was elected to serve on the Council of the Biological Society of Washington, which is an international organization of biologists who study the taxonomy and systematics of eukaryotic organisms. The Society's venerable publication series are important outlets for taxonomic research, and the cover of its most recent *Proceedings* volume is shown at right. The Council acts as a sounding board to officers of the Society. Since 1880, officers and council members have been composed of scientists of the Smithsonian Institution and other federal agencies. Until now there had been little representation on the Council from outside Washington, DC.

Conservation

Assistant Conservator Liz Homberger was recently awarded Professional Associate Status with the American Institute for Conservation of Historic and Artistic Works (AIC).

The *Research & Collections Newsletter* is issued five times per year, in January, March, May, September, and November, by the Research and Collections staff of the Natural History Museum of Los Angeles County.

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

Layout: N. Dean Pentcheff, Research Associate.

Photo Editing: Phyllis Sun, Marine Biodiversity Center.

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