Research & Collections Newsletter

January 2013

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

Anthropology

This beautifully carved stone model of a "ti'at," a traditional Tongva plank canoe, was purchased from the artist to display in the upcoming *Becoming Los Angeles* exhibit. Dr. Margaret Hardin purchased the carving directly from traditional Chumash carver Ted Garcia using funds supplied by the James Irvine Foundation. Aside from a slight difference in the shape of the vessel's profile, the Tongva ti'at and the Chumash "tomol" were similarly constructed and used, indicating a tradition of interaction between the neighboring Southern California groups. Many pieces of driftwood were carefully stitched together with plant fiber, and the holes were then plugged by waterproof tar, a valuable natural resource of both groups and still an identifiable characteristic of Los Angeles County today.

The last few decades have seen a resurgence of efforts in both the Tongva and Chumash communities to reconnect with their heritage. The first reconstruction of a traditional plank canoe in nearly two hundred years was a Chumash tomal launched in 1976. A reconstructed ti'at named *Moomat Ahiko* (Breath of the Ocean), built by the Ti'at Society of the Tongva, was first launched out of Catalina Island in 1995 and has since returned to the ocean multiple times; in later years it was accompanied by *Elye'wun* ("swordfish"), the 2nd reconstructed tomol.

Dr. Kara Cooney, an Egyptologist and Assistant Professor of Egyptian Art and Architecture at UCLA, visited the Anthropology Department last November to view the two ancient coffins in our collections. They were recovered from excavations relating to the Aswan Low Dam at the beginning of the 20th century and donated by Dr. Peter Janss in 1923.

Of the two coffins, A.1287.23-2 is in the best condition and complete with lid. Dr. Cooney confirmed that it dated to the XII Dynasty (1991–1786 BCE) and that it belonged to a female named "Three Reed Leaves" pronounced similar to "Yee." Dr. Cooney was able to locate the glyph for her name on the lid of the coffin and noted that it was indicated by three linear motifs representing reeds. The rest of the hieroglyphs on the coffin relate to prayers for her afterlife including the statement "…beloved of her mother and father…". The mummified body would have been placed on her side facing a "false door" indicated in the picture by the two eyes framed in a square. The ancient Egyptians considered this false door to be a portal to the afterlife.

Polychaete Worms

In November Leslie Harris visited the Benthic Lab at Moss Landing Marine Laboratories to assess a major collection of invertebrates offered to us for deposition. The specimens were amassed during an eight-year study of rocky intertidal and subtidal areas from northern California to the Mexican border sponsored by the California Department of Fish and Wildlife. These sorts of areas are rarely sampled, so the material represents an unprecedented set of new species, geographic range extensions, and a valuable snapshot in time of the region's biodiversity. The collection is huge, containing nearly half a million specimens. Held in plastic tubs, it occupies the entire wall of a semi-trailer. We won't take the whole collection but will winnow out the most valuable components to augment our holdings.

Research Library

In collaboration with the Advancement Office, Chief Librarian Richard Hulser provided a special presentation about the Research Library for an invited group of donors. Highlights included display and discussion of rare items from the library's special collections. Some items displayed were two mid-19th century maps of Mexico that included much of what is now known as California, a 1928 bound volume of the Hollywood Filmograph newspaper, and an 1898 large folio of hand colored prints depicting a variety of dramatically plumed Birds of Paradise such as the one shown on the right.

Field Work

Polychaete Worms

Leslie Harris flew up to Washington State with a day's notice to chase after a second Japanese dock torn free by the 2011 tsunami. With colleagues Drs. John Chapman, Ralph Breitensten, Jessica Miller (all Oregon State Uni-

versity), Jim Carlton (Williams College), and representatives from the Washington State Parks and National Marine Sanctuary, a field lab was set up in Forks, Washington (home of the "Twilight" series). The dock was found on a remote rocky beach and proved to have a much different set of native Japanese seaweeds and invertebrates from the first one, which beached itself at Newport, Oregon, earlier this year. A more detailed account of her trip, titled "Raiders of the Lost Dock," is available from Leslie Harris (lharris@nhm.org).

Rancho La Brea

In November 2012 Christopher Shaw, Carrie Howard, Beau Campbell and Bruce Fischer from the Page Museum, along with Fred Croxen, Robert Predmore, Maureen Garrett and two undergraduate students from Arizona Western College in Yuma, Arizona traveled for a weekend to El Golfo de Santa Clara, Sonora, Mexico to collect and record Irvingtonian fossils. They were successful in removing a gomphothere (which is a mastodon-like animal) partial skull that was discovered on a previous expedition. They also recovered over 200 microfossils from two different microsites.

Left to right: Robert Predmore, Fred Croxen, Bruce Fischer and Beau Campbell flipping a gomphothere field jacket the badlands in El Golfo de Santa Clara, Sonora, Mexico.

Vertebrate Paleontology

On 21 November and 14 December Howell Thomas and Dr. Larry Barnes journeyed to the Sharktooth Hill Bonebed in California's San Joaquin Valley to collect middle Miocene fossil whales. These specimens were generously donated to the museum by property owner Mr. Rob Ernst and will undergo preparation in the Vertebrate Paleontology laboratory. We are appreciative of the assistance from our volunteer field crew, Jimmy Kaplan, Brian Watkins, and photographer Debora Lee.

Meredith Rivin shows Dr. Xiaoming Wang terrestrial fossils collected from the early Sespe Formation of Orange County.

On 3 January Dr. Xiaoming Wang, Vanessa Rhue, and Howell Thomas went on a field trip to the John D. Cooper Archaeological and Paleontological Curation Center in Orange County. Director of the Cooper Center, Dr. Jere Lipps, invited the Vertebrate Paleontology staff for a collections visit and tour of the repository.

The Cooper Center is a partnership between Orange County Parks and California State University Fullerton to preserve, curate, and manage the fossils and artifacts collected within the county. Meredith Rivin, Associate Curator of Paleontology at the Cooper Center and Research Associate at LACM, gave a stellar tour of the paleontology laboratory, main collection storage, and warehouse buildings containing oversized materials. Gabriel Santos, Curatorial Assistant at the Cooper Center, demonstrated the use of their new NextEngine 3D scanner and offered to partner with LACM in future educational endeavors. The Vertebrate Paleontology staff at LACM look forward to future visits and collaborations with our colleagues at the Copper Center and anticipate the description of significant specimens from its holdings.

Meetings, Workshops, and Presentations

Polychaete Worms

A talk entitled *Hitchhiking Aliens: Unexpected Consequences of the Japanese Tsunami* was given by Leslie Harris in November as part of the museum's noon-time seminar series. This was based on her work investigating the invasive species living on the dock that floated all the way from Misawa, Japan, to Newport, Oregon, as a result of the 2011 tsunami. A popular subject, five days later she presented it again for the Los Angeles Black Underwater Explorers and will give it another four times for various groups including the Aquarium of the Pacific (Long Beach) on May 7th and possibly the Vancouver Aquarium (British Columbia).

Mineral Sciences

In December Eloïse Gaillou attended the fall meeting of the American Geophysical Union in San Francisco. AGU's fall meeting is one of the largest scientific conferences in the world, with approximately 20,000 attendees. Eloise presented a poster on her work using blue diamonds to study boron in the deep mantle. Her poster can be can be seen here: http://fallmeeting.agu.org/2012/files/2012/11/V43A-2822_Gaillou_Boron.pdf

Research Library

Chief librarian Richard Hulser participated in the Internet Librarian Conference in Monterey, California in late October 2012. He led a workshop on technology strategy planning, presented two papers on "Cloud Computing" and vendor negotiations, and was a panelist for a discussion on uses of social media to connect institutions to their visitors and customers.

Vertebrate Paleontology

In late November and early December, Curator Xiaoming Wang gave a guest lecture on principles of cladistics to a group of undergraduate and graduate students at the Nanjing University, Xiaoming's alma mater, and a presentation on Tibetan paleontology at the School of Ocean and Earth Science, Tongji University in Shanghai.

External Funding

Vertebrate Paleontology

A private grant of $250,000 has been secured to fund a Ph.D. graduate student at USC on a project of "Evolutionary History and Conservation of the Channel Island Fox." This interdisciplinary project aims to integrate modern DNA data with historical and fossil materials, and is the result of collaboration with Roberta Marinelli (Wrigley Institute of for Environmental Studies), Suzanne Edmands (USC Biology), Jim Dines (LACM Mammalogy), and Xiaoming Wang (LACM VP).

Research Library

The Research Library received an additional number of Frances Runyan's original color paintings, artifacts and NHM-related personal papers from her daughter Dale Johnson. These will be processed for addition to the Runyan special collection in the library.

A 1995 Frances Runyan original color ink & pencil painting of a desert tarantula.

Public Outreach

Mineral Sciences

During November and December Eloïse Gaillou and Alyssa Morgan taught a series of four hour-long classes as part of a new Education and Exhibits training program. This training was for docents, volunteers and gallery interpreters to learn more about geology and mineralogy and to allow more E+E floor staff to work in the Gem and Mineral Hall. The workshop provided a basic introduction to topics such as crystallography, crystal growth, interaction of crystals with light (color and other optical phenomena), formation of planets, geological environments, geochemistry, and history of mining and mineral use by humans. A special emphasis was placed on the connections between studying minerals in the natural world to progress made in fields like solid state physics, materials sciences and engineering.

Vertebrate Paleontology

On 27 November Dr. Sam McLeod (at right, third from right) gave a tour of the Vertebrate Paleontology collections to undergraduate students of Dr. Raul Esperante (far right), Adjunct Assistant Professor of Earth and Biological Sciences at Loma Linda University. The undergraduate students benefited from a behind the scenes view into the collections to enhance their studies of vertebrate fossil taphonomy.

History: Location, Location, Location: Hollywood's Alternate Spaces

On Sunday, December 9, History Collections Manager Beth Werling presented a *Cocktails and Conversations* lecture to NHM supporters and Fellows at the home of Tom Jacobson, Senior Vice President of Advancement. The talk explored the "on location" style of silent film comedy producer, Mack Sennett. Werling entertained guests with rare silent film stills, film clips of the Keystone Kops, and stories about Sennett's daredevil, "guerilla filmmaking" tactics on the streets and in the parks of Los Angeles. The event also featured artifacts from Sennett's career, such as a Pathé motion picture camera (pictured), that are part of the History Department's renowned Hollywood collections. Many of these artifacts will be included in the new *Becoming Los Angeles* exhibition and were presented by Werling and History Department Collections Managers John Cahoon and Brent Riggs. A good time was had by all.

Rancho La Brea

On Saturday December 1st, a group of Museum members came for a tour of the Project 23 excavation as part of the December *Scavenger Safari* program. With rain clouds considerately holding off until after their visit, young scientists and their families were able to examine up close the current phases of digging in Boxes 1 and 14. Currently visible in the main deposit in Box 1 were many vertebrae from adult dire wolves, *Canis dirus* and sabertoothed kittens, *Smilodon fatalis*, along with Golden Eagle-sized wing bones. In Box 14 they were able to see bones from what may be an individual adult ancient bison, *Bison antiquus*. With luck, we'll have a few more volunteer excavators someday!

Preparator Laura Tewksbury showing a freshly excavated fossil in Box 14.

Entomology

Entomology's work was featured in two small popular articles:

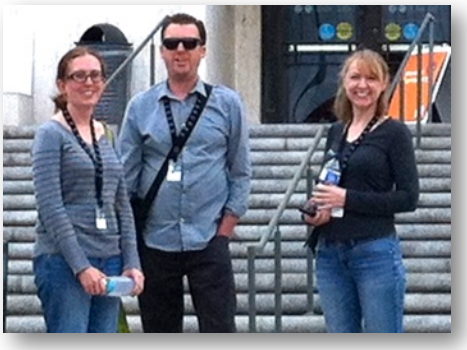
Science News: http://www.sciencenews.org/view/generic/id/346746/description/The_Science_Life

The Scientist: http://www.the-scientist.com/?articles.view/articleNo/33704/title/2012-s-Noteworthy-Species/

Student Mentoring and Research

Research Library

UCLA graduate student intern Michele James (on left) and University of North Texas/CSUN graduate student volunteer Cindy Holsey (on right) have finished their Fall 2012 projects with the Research Library. San Jose State University graduate student volunteer Joshua Shulman continues helping with library projects into 2013. These are just a few of the many volunteers dedicating time in the Research Library.



North Campus / BioSCAN

This Fall semester, USC undergraduate student Eddy Giang has been adapting *Drosophila melanogaster* (fruit fly) rearing techniques to phorid flies. *Drosophila* has long been the "work horse" of model organisms because it is easy to care for, has a short generation time, and its genome is well understood. Phorid flies are of particular interest because they are so diverse, they occur on North Campus and in the Los Angeles Basin, and we have the world expert on the group, Dr. Brian Brown, in-house. Eddy has been collecting and rearing phorids and exploring the conditions necessary to rear and maintain successful lab cultures. Eddy has also been collecting preliminary data on their activity during day and night (light/dark cycles). This type of investigation will help us look at how urban light pollution affects their circadian rhythms.

Vertebrate Paleontology

On 20 November Mary Dalton and Matthew Flores, undergraduate students at Humboldt State University, visited our collections to survey our fossil sirenian materials. Mary has had a long-time interest in sea cows and chose to focus on the evolution of this group for her school project.

On 17 December, Ashley Leger and Aly Baumgartner from the Mammoth Site at Hot Springs, South Dakota, visited our collections. Ashley is a Ph.D. student at South Dakota School of Mines and Technology and examined our Columbian Mammoth specimens a couple years ago, but on her most recent visit she focused on gathering cranial metrics from our Santa Rosa Island pygmy mammoths, *Mammuthus exilis*.

Volunteers and Research Associates

Dinosaur Institute

The Dinosaur Institute would like to introduce continuing and new volunteers, Karol McQueary, Viji Shook and Michael Serwich.

Karol spent her career as an elementary school teacher and later as a principal. Since her retirement two years ago, she has taught English as a second language for adults at her former school and served as a volunteer at the museum, both as a docent-in-training and working in the dinosaur lab. She is excited about being a part of the scientific work of the museum, especially working on the Sauropod bones from the quarry in Utah. Karol especially enjoys inviting classes from her former school to the museum to visit on her dino lab days, when she can show them the work involved in preparing and restoring dinosaur fossils for display. Education remains her passion, and the Natural History Museum provides a perfect outlet for her efforts.

Viji Anton Shook (B.A. — USC, M.A. — George Washington University) is a continuing volunteer at the Dino Lab. She has also volunteered at the NHM Marine Biodiversity Center and the Insect Zoo. Her many interests include an advanced yoga practice, working with LA area house rabbit rescues, baking, organic gardening, hiking, biking and traveling to the Deep South and abroad. Viji received the NHM Outstanding Volunteer of the Year Award from the Dino Lab in 2011. She loves the challenge of working with 100+ million year old specimens and the thrill of uncovering bones unseen by human eyes.

Michael Serwich was mentioned in the December issue but it is difficult to catch him out of costume. He is a performance artist and most recognized as NHM's *T. rex* puppet. Our photographer was able to snap a quick photo as he relaxed between shows in the Dino Lab.

Distinguished Visitors

Malacology

Kaustuv Roy (UC San Diego) visited Malacology in early November to examine bivalves for an upcoming grant proposal. Paul Valentich-Scott (Santa Barbara Museum of Natural History) was a guest speaker at the November meeting of the Pacific Conchological Club and visited the section to examine Magellanic Province bivalves and request a loan. Charles Drost (US Geological Survey, Flagstaff, Arizona, Biological Science Center) visited Malacology to examine terrestrial snails of San Clemente and Santa Cruz islands for a survey report (he also visited Herpetology). Ángel Valdés (Cal. Poly. Pomona) visited the section to examine nudibranch holdings. Natalie Martinez-Takeshita and Grace Shin (USC) spent a day in Malacology photographing oyster specimens for research purposes. Malacology volunteer/associate Shawn Wiedrick (also Pacific Conchological Club president) visited the collection to examine micro-mollusks of the Panamic Province for a research project.

Dinosaur Institute

Visiting postdoctoral researcher Trond Sigurdsen from McGill University, Montreal, Quebec, Canada has recently relocated to Los Angeles and plans to continue his research on early mammals and amphibians. He is shown here while examining our Late Jurassic Fruita Collection of Colorado.

Rancho La Brea

Dr. Adam Hartstone-Rose Assistant Professor of Biology and Anthropology at Pennsylvania State University, along with Penn State undergraduate student Dylan Albert and Page Museum volunteer Ryan Long visited the collections at the Page Museum in mid-December. Since completing the publication on felid clavicles at Rancho La Brea, Dr. Hartstone-Rose has been interested in studying some of the more interesting skeletal elements that are preserved in the asphalt. This trip was to gather preliminary data and photograph the bacula (penis bone) collection.

left to right: Ryan Long, Dr. Adam Hartstone-Rose and Dylan Albert studying the bacula collections at Rancho La Brea

In mid December Stephen Rowland, University of Nevada, Las Vegas (UNLV), visited the Page Museum collections to examine our holdings of dire wolf, *Canis dirus,* metapodials (foot bones) for comparison with a metapodial collected last year by a UNLV geologist. The fossil was discovered near Tule Springs, a fossil-rich area recognized for its range and abundance of Ice Age animal. This is possibly the first fossil evidence that dire wolves once lived in Nevada.

Dr. Diane M. Erwin, the Curator of Paleobotany from the University of California Museum of Paleontology in Berkeley, CA (UCMP), Joyce Gross (a gall specialist from the California Academy of Sciences in San Francisco), and Anna Holden from the Entomology Department at the Natural History Museum of Los Angeles County visited the collections at the Page Museum in December. They met to continue progress on a collaborative project examining the fossil gall collection at Rancho La Brea. This ongoing effort focuses on cynipid wasp oak galls from the Late Pleistocene. Cynipid wasps manipulate the hormones of growing plant tissue to create structurally

complex and sometimes elaborate growths called "galls," which provide shelter and nutrition for growing larvae until they mature. Rancho La Brea holds one of the largest and most valuable gall collections, including at least one undescribed species. Anna Holden will be travelling to Cal Academy and UCMP in January to use both institutions' comparative collections for further identifications. Anna Holden, Dr. Diane M. Erwin, Joyce Gross, along with Dr. Kathy Schick, another gall specialist from Berkeley, plan to meet at least 4–5 times for this extensive project, and will also conduct field research to collect modern comparative material. Aside from enhancing a sparse gall fossil record, this research will set many minimum dates for different gall morphologies and potentially enhance our knowledge of additional native plant distributions.

Left to right: Dr. Diane M. Erwin, Joyce Gross and Anna Holden examining, identifying and photographing the fossil gall collection at the Page Museum.

Ashley Leger and Aly Baumgartner (Mammoth Site, South Dakota) visited the Page Museum collections in mid December to examine mammoth material. In particular they were interested in the skull and jaws of the Columbian mammoth individual known as Zed. The project is part of their ongoing work documenting mammoths in North America and comparing them to the mammoth remains from the Mammoth Site of Hot Springs, South Dakota. The Mammoth Site contains about 60 individual mammoths that were preserved by entrapment in a karst sinkhole during the Pleistocene.

Left to right: Ashley Leger and Aly Baumgartner examining a Columbian mammoth skull in the Fishbowl Lab at the Page Museum.

Vertebrate Paleontology

Palaeoicthyologist Dr. Michael Newbrey (right), of the Royal Tyrrell Museum of Palaeontology in Alberta, Canada, visited our collections 8–9 November. Dr. Newbrey came to examine our specimen of *Cretalamna appendiculata*, an extinct mackerel shark that lived during the Cretaceous.

On 14 November Dr. Suyin Ting, Collections Manager and Research Associate of the Museum of Natural Science at Louisiana State University, came to visit our collections and work with Dr. Xiaoming Wang.

Dr. Matthew Davis, an Icthyology post-doc at the Field Museum of Natural History, came to visit our collections on 30 November. Matthew and his colleagues are working on North American killifishes and topminnows of the family Fundulidae. Our type specimens of *Fundulus curryi* and *Fundulus davidae* from Death Valley and the Mojave Desert presented the opportunity to incorporate fossil taxa into their phylogeny in order to address questions of temporal patterns in speciation and biogeography.

Recent Publications

Gaillou E., Post J.E., Rose T., Butler J.E. 2012. Cathodoluminescence of natural, plastically deformed Pink Diamonds. *Microsc. Microanal.* 18: 1292–1302.

Kampf, A. R., Marty, J., Nash, B. P., Plášil, J., Kasatkin, A. V., and Škoda, R. 2012. Calciodelrioite, $Ca(VO_3)_2{\cdot}4H_2O$, the Ca analogue of delrioite, $Sr(VO_3)_2{\cdot}4H_2O$. *Mineralogical Magazine* 76: 2803-2817.

Kampf, A. R., Mills, S. J., Merlino, S., Pasero, M., McDonald, A. M., Wray. W. B., and Hindman, J. R. (2012) Whelanite, $Cu_2Ca_6[Si_6O_{17}(OH)](CO_3)(OH)_3(H_2O)_2$, an (old) new mineral from the Bawana mine, Milford, Utah. *American Mineralogist* 97: 2007-2015.

Meseguer, J., **Chiappe, L.M.**, Sanz, J.L., Ortega, F., Sanz-Andrés, A., Pérez-Grande, I. and Franchini, S. 2012. Lift devices in the flight of *Archaeopteryx*. *Spanish Journal of Palaeontology* 27 (2): 125-130.

Mills, S. J., Kartashov, P. M., **Kampf, A. R.**, Konev, A. A., Koneva, A. A., and Raudsepp, M. (2012) Cordylite-(La), a new mineral from the Biraya Fe–REE deposit, Irkutsk, Russia. *Canadian Mineralogist* 50: 1281-1290.

Mills, S. J., Whitfield, P. S., **Kampf, A. R.**, Wilson, S. A., Dipple, G. M., Raudsepp, M., and Favreau, G. 2012. Contribution to the crystallography of hydrotalcites: the crystal structures of woodallite and takovite. *Journal of Geosciences* 57: 155-161.

O'Connor, J.K., Y. Zhang, **L. M. Chiappe**, Q. Meng, L. Quanguo, and L. Di. 2013. A new enantiornithine from the Yixian formation with the first recognized avian enamel specialization. *Journal of Vertebrate Paleontology* 33(1):1-12.

Tong, H.-w., N. Hu, and **X. Wang**. 2012. New remains of *Canis chihliensis* (Mammalia, Carnivora) from Shanshenmiaozui, a lower Pleistocene site in Yangyuan, Hebei. *Vertebrata PalAsiatica* 50(4):335-360.

Wetzer, R., Perez-Losada, M., & Bruce, N. L. 2013. Phylogenetic relationships of the family Sphaeromatidae Latreille, 1825 (Crustacea: Peracarida: Isopoda) within Sphaeromatidea based on 18S-rDNA molecular data. *Zootaxa* 3599 (2): 161–177.

Staff Departures and New Staff

Rancho La Brea

Beau Campbell (right) recently joined the Research and Collections staff at Rancho La Brea assisting the Lab Manager in the Fishbowl Lab. He graduated from San Diego State University with a Bachelor's Degree in Anthropology and a minor in Geology. Beau has been a volunteer with us in the department for over a year. During that time he gained invaluable experience with the large salvage effort, Project 23. He excavated fossils, prepared them in the Fishbowl lab and identified and cataloged many specimens for the collections. Beau was also a staff member in the Guest Relations department staff. Welcome Beau!

Miscellaneous

Rancho La Brea

In mid-December Collections Manager Aisling Farrell traveled to the High-Resolution X-ray Computed Tomography Facility at The University of Texas at Austin with a *Smilodon fatalis* skull. She met with a film crew working for the BBC on a documentary about the Ice Age due to be released later in 2013. The *Smilodon* skull was the star, along with Research Associate and CT scanner operator Mathew Colbert, who was filmed preparing the skull to be scanned and was followed through the whole scan process. The piece will be aired in conjunction with Dr. Blaire Van Valkenburgh's interview in the documentary about her work with CT scanned fossils.

Research Associate Mathew Colbert placing the Smilodon skull inside the CT scanner while being filmed for the BBC documentary **The Ice Age**.

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 and Photo Editing:
Phyllis Sun, Marine Biodiversity Center, and Dean Pentcheff, Research Associate.

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