

# Research & Collections Newsletter



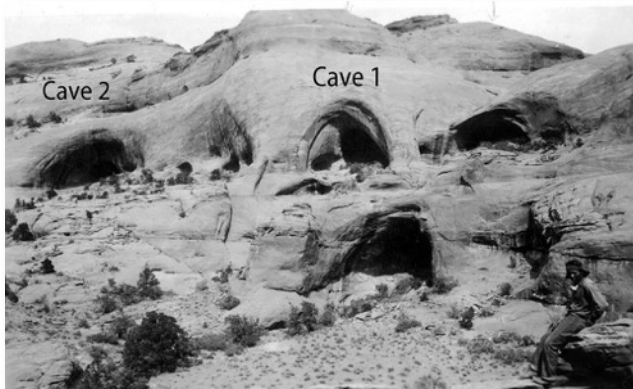
Fall 2015

**re•search** (ri-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

#### *Mountain Sheep Horn Sickle*



Anthropology received some funds from the Department of the Interior to rehouse our collections from the Desha Caves 1 and 2 sites in Utah. These sites were excavated by the Van Bergen-Los Angeles Expedition to Utah in 1930 and were later submerged as a result of the Glen Canyon Dam.

Collections from these caves were well preserved in the dry climate of southwestern Utah. While Collection Manager Chris Coleman and Anthropology volunteer Rocío Santoyo were working to photograph the collections prior to their rehousing we came across a sickle made from a bighorn sheep horn.

The sickle is notched for attachment to a handle and has use polish in the curved area from harvesting wild seed bearing plants. In 1951 Robert F. Heizer published an article "The Sickle in Aboriginal Western North America," *American Antiquity*, Vol. 16, No. 3 (Jan. 1951), pp. 247-252, which indicates these are found throughout northern Arizona and southwestern Utah.

This sickle however was probably used to harvest rice grass, a naturally occurring grain found in the Southwestern United States, known to be used by prehistoric



and present day Native Americans as a dietary supplement. Phil Geib and Michael R. Robbins, in their publication “The Desha Caves: Radiocarbon Dating and Coprolite Analysis,” Utah Archaeology, Vol. 16, No.1 (2003), report that human coprolites from this site contained, among other wild plant remains, examples of rice grass. Radiocarbon dates taken from cave samples indicate the age of this sickle is between 1400 and 1800 years.

## Ethnology

On July 13, 2015, an outrigger canoe that had been on loan to the L.A. Maritime Museum since 1989 returned to storage at NHM. The canoe was made in 1971 by a Sonsorol native on Ngerekebesang Island (Arakabesan Island), Palau, Micronesia. It was made at the request of Dr. Giles Mead, then Director of NHM, and when it arrived it was immediately put on display in the museum’s South Pacific Hall. Outrigger canoes of this type were and still are widely used in the South Pacific. Compared to other types of canoes, outrigger canoes are faster and offer more stability in rough water and are therefore perfect for use among island hopping cultures.

When they took the canoe off display, the Maritime Museum stored the canoe's hull and its outrigger at different locations. Getting the parts out of the buildings and into their crates proved to be an interesting challenge, but Director Marifrances Trivelli was able to provide us with some limited space to do the necessary preparation. At one point Conservator Tania Collas and Collection Manager KT Hajeian were cleaning and preparing the canoe’s sail in a room that was part of the former Army barracks at Fort MacArthur, and it still contained 1940-era beds and trunks! With all the logistical issues, this was a fairly difficult loan recall to process and involved the patient assistance of Registrars Susan Oshima and Molly Sjoberg, the tireless efforts of Tania Collas and the generous help of Carlos Carillo and his crew.



The outrigger canoe and all its parts on display at NHM in the 1970s.

## Dinosaur Institute



On August 25, after returning from fieldwork in the Augusta Mountains, Nevada, Dr. Martin Sander and his student Tanja Wintrich of Bonn University took multiple histology samples from the humeri of the impressive *Polycotylus latippinis* specimen, LACM 129639, as well as from the smaller fetal material associated with it. After dark in the Dinosaur Hall, the team spent close to 6 hours patiently setting up and drilling cylindrical sections using a special hollow steel tube called a core drill while simultaneously applying water to guard against friction and breakage. With these samples, Dr. Sanders hopes to identify growth rates to determine reproductive strategy and feeding ecology. If you look closely, boreholes from these core samples were left visible so visitors can witness scientific research at work. During his visit, Dr. Sander also took histology samples from the bones of a newly discovered titanosaur sauropod collected during the 2013 Augustyn Dinosaur Expedition to New Mexico.

Dr. José Patricio O'Gorman visited the collection in early August to research plesiosaurs of the Moreno Formation, which outcrops in the Panoche Hills, just west of Fresno. Studying specimens



collected over 76 years ago, he brings a fresh research perspective to material that has formed the backbone of the Mesozoic collection of the NHM for many years. During his visit, he focused on CIT 2748, the type specimen of the elasmosaurid plesiosaur, *Aphrosaurus furlong*, one of the last surviving plesiosaurs.



The Dinosaur Institute also hosted Dr. Fabien Knoll of the University of Manchester, who came to study Mesozoic birds with Dr. Luis Chiappe in July; their project involved synchrotron analyses (a synchrotron is a particle accelerator) of a 125-million-year-old specimen from Spain.

## Herpetology

### Collection Updates

This summer, with the help of field tech Stevie Kennedy-Gold, there has been a great deal of curatorial activity in the Section of Herpetology. The biggest project was a major overhaul of approximately 75% of the collection. The taxonomy was updated, many specimens previously in overloaded jars were moved into new jars, and alcohol levels were checked and topped. Some of these upgrades were overdue by several decades. Further, over 80 salvaged specimens were preserved and added to the collection. These specimens were mostly salvaged roadkill collected by citizen scientists who brought the specimens and their locality data to the Museum.



*Stevie Kennedy-Gold and Neftali Camacho taking tissue samples prior to preserving salvaged roadkill specimens.*

## Museum Archives

Dr. Jose Luis Blondet, Associate Curator of Special Events at LACMA, used photographs and correspondence in the Museum Archives to help tell the story of LACMA's early collections of Chinese Art when it was part of the Los Angeles County Museum of History, Science and Art. His focus was on the Munthe Chinese porcelains that had a controversial history and were on exhibit from 1927 through 1940. This is part of the LACMA 50th anniversary celebration.

Kim Walters, Temporary Museum Archivist, contributed the following samples of research activities with the Museum Archives collections.

Dr. Chris Manias, from King's College London, recently spent a few days researching museum documents for a book he is writing on the history of paleontology, titled "The Lost Beasts: International Palaeontology and the

Evolution of the Mammals, 1880-1950.” He centered his attention on the La Brea Tar Pits and on correspondence of early museum paleontologists Hildegard Howard and Chester Stock.

Cathy Chambers and Laura Daroca from the Otis College of Art and Design are using the Museum Archives to document the 100th anniversary of the college in 2018. Otis College of Art and Design was originally part of the museum, and the archives contain a wealth of information including documents, exhibition catalogs, and images.

## History

### *PBS Films at William S. Hart Museum*



*PBS cameraman Gus assessing the scene.*

A PBS crew filmed the Charlie Russell paintings, illustrated letters, sketches and sculptures at the William S. Hart Museum in August for an upcoming documentary on the famed Western artist, who was also a personal friend of Bill Hart’s. In addition to filming the collection, producers also interviewed History Department Collections Manager Beth Werling on camera. She was asked to discuss the relationship between Hart and the Russell family as well as what the Hollywood social scene was like when the Russells arrived here in the 1920s. The documentary is scheduled to air in three one-hour segments in Montana (Russell’s home) and surrounding states while a one-hour version will air locally sometime in 2016.

# Field Work

## Dinosaur Institute

### *Ghost Ranch, New Mexico*

New NHM Associate Curator Dr. Nathan Smith led a fieldwork expedition to Ghost Ranch, New Mexico, to collect Late Triassic dinosaurs from the Hayden Quarry. Ghost Ranch is best known from Georgia O’Keefe’s classic paintings, but also contains a treasure trove of vertebrate fossils. Smith and his team collected nearly 900 specimens from the 212 million year-old rocks, including new material of the carnivorous dinosaur *Tawa hallae*. These fossils are some of the oldest and best-preserved dinosaurs from North America. Smith and colleagues also published a paper in Proceedings of the National Academy of Sciences USA, which integrated fossil and isotope records to explain why dinosaur communities differed across the globe during the Late Triassic.



*A local school group visits Hayden Quarry #3. Tours, workshops, and educational outreach are an integral part of the Ghost Ranch project.*



## Augusta Mountains, Nevada

The 2015 Nevada expedition in collaboration with the University of Bonn, Germany, was an overwhelming success! Lead by Dr. Martin Sander and Ph.D. students Tanja Wintrich and Olaf Dulfer, the crew was made up of M.Sc. students Jasmina Wieman, Ella Teschner and Marie Koschowitz of Bonn University; Tzu-Ruei Yang, PhD student, and intern Chris Sander, also from Bonn; Dr. Aurore Canoville (an Alexander Von Humboldt Fellow from France); Filippo Bertozzo, M.Sc. candidate from Italy; and Jelle Hejne, a M.Sc. student from the Netherlands. The NHM participated with the help of DI Lab Manager Doug Goodreau and Brian Meredith of Education and Exhibits. The team brought 6 partial to complete ichthyosaurs back to Los Angeles, one with a massive 6 foot skull; this large accession had to be airlifted off the mountain by helicopter and was brought to LA through the generosity of the Great Basin Brewing Company, Reno, Nevada.



*The specimen is gradually being jacketed. Filippo Bertozzo serves as scale for the skull, which is about 6 feet long.*



## Utah Expedition

The annual 2015 Haaga Dinosaur Expedition to Utah just keeps going and going. This year was another success with finds that include theropod cranial material, yet another long necked dinosaur bringing the number of individuals in that quarry to at least five, and smaller ornithopod dinosaur bones as well. This year, staff from the La Brea Tar Pits & Museum joined researchers and students from Spain, Argentina, and Portugal to continue unearthing what has become an incredible Late Jurassic bone bed. Special guests included Trustees Karen and Jim Hoffman, Gretchen Augustyn and family, Princeton University PICS Intern Adriana Stephenson, and intern Emily Jewell from Long Beach, CA, who is currently studying Marine Geology at Eckerd College, St. Petersburg, Florida.

The 2015 Haaga Dinosaur Expedition launched a new social media campaign of broadcasting from the field. NHM Marketing and Communications staff Edgar Chamorro and Rachel Gertz joined the crew this year to bring it to you live! See the interview with Dr. Chiappe: <https://youtu.be/Hxcuutf93jg>



## New Mexico 2015

This year's Augustyn Dinosaur Expedition to the badlands of New Mexico focused on excavating the neck vertebrae of a titanosaurid dinosaur and the collection of micro matrix samples for student projects in 2016. This expedition was joined by international researchers and colleagues from Spain, Argentina, and Portugal, and was led by Dr. Luis Chiappe and Dr. Mike Habib. The crew was made up of staff from the Page Museum, students from USC and Cal State Fullerton, and Dr. A. Bell of the Dinosaur Institute.



*Too big to move?*



*Dr. Mike Habib, USC and students*

## Herpetology

### *An Onslaught on Invasives*

Numerous new populations of nonnative reptiles and amphibians have been documented in the past few months. The rate at which these new populations are being discovered is really alarming. However, the rapid rate of discovery doesn't necessarily mean that there is an increased rate at which they are being introduced. Our discovery rate may also be high because of the effectiveness of new citizen science efforts to document these urban populations.



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On July 1st, Invertebrate Paleontology Collections Manager Austin Hendy sent a photo of a lizard found inside the Carson warehouse to Greg Pauly. Greg identified the lizard as a Brown Anole, a species never before found in Los Angeles County. The following day, Collections Manager Neftali Camacho, field tech Stevie Kennedy-Gold, volunteer Miguel

*An unhappy male Brown Anole captured outside the Invertebrate Paleontology warehouse with his red dewlap displayed.*

Aguilar, and Curator Greg Pauly showed up at the warehouse and quickly located a number of additional Brown Anoles in shrubs outside of the warehouse. On a return trip on August 12th, Greg and Stevie found additional anoles including babies indicating this is an established, reproducing population.

Because of the L.A. County Brown Anole discovery, Greg was interested in checking up on some reports from citizen scientists of anoles in Orange County. On September 1st, Greg and Stevie headed to Orange County where they found large populations of Brown Anoles at two sites. These are the first documented established populations in Orange County. Through some sleuthing, Greg and Stevie figured out that the L.A. County warehouse population and one of the Orange County populations had something in common — they both are found around facilities owned by the same nursery company.

The Orange County nursery site is also home to another lizard. After dark, Greg, Stevie, and local resident and Saddleback College professor Tony Huntley continued their field work as they caught Indo-Pacific Geckos, with nearly the exact same range — over multiple blocks — as the Brown Anoles caught earlier in the day. Greg and Tony are now collaborating to check the nursery's other locations in Southern California to see what nonnative species may be there. They are also going to continue working at the Orange County site to understand the breeding biology of these tropical geckos in a Mediterranean climate.

Not to be outdone by lizards, frogs are also making a number of new appearances in Southern California. After collecting the Brown Anoles at the Invert Paleo warehouse, on August 12th, Greg and Stevie headed to another nearby site where they caught African Clawed Frogs. This species has been known to occur at several sites in L.A. County for many decades but this was a new location.

A week later, the Coqui Frog was the focus of fieldwork. Last summer, Greg documented the first Coqui Frogs in L.A. County (second record for the state), and on August 19th, Greg, Stevie, Estella Hernandez, Lila Higgins, six volunteers, and two reporters returned to the site to check on the population. In two hours, they found 101 Coqui Frogs from froglets only a few days old up to adult males and females.

Coqui Frogs are listed as a “restricted species” in the state, and the results of the surveys were sent to the California Department of Fish and Wildlife so they can develop policies to limit further spread of the nonnative frogs.

A few weeks later, joint NHM-UCLA LaKretz postdoc Elizabeth Long made another frog discovery, this time a lone Cuban Treefrog in Hollywood. There is no evidence that this is an established population, but this is a species to keep an eye out for because it also can easily be spread through the nursery plant trade. You can read more about this find and some of these other recent finds on the Nature in L.A. blog:

<http://www.nhm.org/nature/blog/los-angeles-being-invaded-frogs>

## Malacology

Lindsey Groves and US Geological Survey colleague Daniel Muhs spent a day west of Ventura collecting mollusk fossils from two low elevation marine terraces for research purposes. These terraces may be as young as 4,000 years or as old as 8,000 years and are currently 5 to 30 m above sea level. The age will be determined via carbon



*An African Clawed Frog captured in Torrance. Despite their adorable appearance, they are voracious predators that negatively impact native frogs, fish, and insects.*



and/or amino acid techniques on the mollusk shells and sea-level uplift rates will then be determined and results will be published.

## Urban Nature Group



The urban nature team has been busy conducting field work where they do it best: across the city of Los Angeles! BioSCAN installed three Malaise traps at City Hall! Analysis of the samples has already found over 100 families of insects, a surprising level of biodiversity at this very urban site. Pictured is the trap suspended on the west side of City Hall.

Jann Vendetti did a snail survey out in San Pedro recently and found MANY *Otala lactea* snails (the Milk Snail) estivating on living and dry plants. They are one of the edible “escargot” snails, and are an introduced species to Southern California.

Elizabeth Long participated in the 14th Annual Mono Lake Bird Chautauqua. Elizabeth made sure this 3-day festival wasn't just about birds as she led some of the more than 400 participants on a bug field trip!

Lila Higgins found a species of *Microsania*, a type of flat-footed fly (family Platypezidae) that is attracted to smoke, back in April at the Citizen Science Campout. This find was exciting enough that smoke fly sampling has been done at a number of events since in the effort to capture more specimens of this exciting genus. Above, Lila is joined by Emily Hartop for a smoke fly sampling tea party in the gardens! Although the two didn't catch any flies, they enjoyed their tea and plan to try again soon!



## Vertebrate Paleontology



In August, Xiaoming Wang led a small team in Inner Mongolia, north China, to collect late Cenozoic vertebrate fossils, which is an on-going project for the last 20 years. New discoveries include a large amphicyonid beardog and ancestral crown-antlered deer in the early Miocene Aoerban Formation (about 17–19 million years ago). After that, Xiaoming joined Chinese colleagues for a month-long expedition in the Xorkoli and Tabenbuluk basins in the northern Tibetan Plateau, where they found a giant rhino (indricotherium) larger than elephants.

An exhibit of the famous shovel-tusked elephant, *Platebelodon grangeri*, originally discovered by the Third Asiatic Expedition of the American Museum of Natural History in 1920s. Xiaoming Wang designed this small exhibit at the Sunit Zuoqi County Museum. Art in background by Julie Selan.



## Sharktooth Hill trip



Larry Barnes took volunteers Mick Persion, Debora Lee, and Brandon Hupka to Sharktooth Hill, Kern County, CA, on Aug. 9, 2015. This was Brandon's first trip to Sharktooth Hill, during which he found a symphysial tooth of a hexanchid shark. Between Dr. Barnes and Howell Thomas, with more than 100 years of Sharktooth Hill digging experience between them, this is the third one of this type they have seen.

*Brandon Hupka admiring his find.*

# Meetings, Workshops, and Presentations

## Dinosaur Institute

Dr. Luis Chiappe attended the 5th Latin-American Congress of Vertebrate Paleontology in Uruguay; he co-authored a talk on newly discovered specimens of enantiornithes, a group of very diverse Mesozoic birds found recently in Brazil. He then visited Dr. Herculano Alvaranga, Director of the Museo de Historia Natural, Taubate, to continue the collaborative research on these interesting fossils. Originating from the urban core of the city of Presidente Prudente, on the western edge of São Paulo State, a trove of Late Cretaceous fossils of these ancient birds are amongst the few records known from South America outside Argentina.

## Urban Nature Group

On September 17, Brian Brown gave a talk entitled "BioSCAN: Early Lessons from the Urban Frontier" to students and faculty of the biology department from The Universidade de São Paulo, Ribeirao Preto.

On August 5th, Greg Pauly and the Citizen Science Office (Lila Higgins, Richard Smart, and Miguel Ordenaña) took part in #CitSciChat. This is a monthly Twitter Q&A focused on citizen science and sponsored by SciStarter. The August #CitSciChat focused on reptiles and amphibians, and the Museum's RASCals and GeckoWatch projects were featured.

On September 20th, Greg Pauly gave a talk on "Reptile and Amphibian Discoveries by Southern California's Citizen Scientist Army" at the Santa Monica Mountains NRA Reptile and Amphibian Show.

# Public Outreach

## Dinosaur Institute

### *Adventures in Nature*



Using water colors to test jacket identification systems.

First Annual Psychedelic Dinosaur Jacketing Contest! This year, the Dinosaur Institute brought water colors to plaster in our first artistic approach to building plaster jackets. All participants learned how to sort matrix for micro fossils, work with power tools to remove the matrix surrounding the fossils, fill out forms describing the methods of preparation and features of their particular fossils and finally apply burlap strips, soaked in plaster to the unprotected fossils in an effort to ready them for storage and/or transport.

## History

A display of a “natural” sparsely-developed city of our distant past was presented by the Seaver Center through its collection of historic photographs during the two-day L.A. Urban Nature Fest held in June. The photo shows Collections Manager John Cahoon with some folks.

## History to Pebble Beach Concours D’Elegance

The History Department’s 1911 Pope-Hartford roadster was invited to participate in the *Pebble Beach Concours D’Elegance* on the Monterey Peninsula on Sunday, August 16th. The Pebble Beach event, which is held annually, is regarded as the most elite in the world with only the rarest and most unique cars invited to this one-day only “Super Bowl” for automobiles. The Natural



History Museum was fortunate again to not only have one of our vehicles invited, but also to have the Pebble Beach organization underwrite the transportation, security, and storage costs for the Pope-Hartford to attend. History Department Collections Manager Beth Werling, along with NHM Automotive Consultants Pete Eastwood and Derek Bower, presented the car to the judges. NHM Trustee Richard Roeder is pictured here with the Pope-Hartford at the *Concours*.





## Malacology

Malacology participated in the first Nature Fest on Saturday and Sunday, June 27th – 28th. Lindsey Groves exhibited introduced terrestrial and freshwater mollusks of the Los Angeles Basin on Saturday and Jann Vendetti exhibited a variety of landsnails on Sunday. Both Lindsey and Jann each gave a five minute ‘speed talk’ promoting Malacology’s Citizen Science SLIME program (Snails and slugs Living In Metropolitan Environments). Dozen’s of SLIME kits for collecting landsnails were given out to festival visitors. Many thanks to Christy Evans for volunteering for this event.

Lindsey Groves participated in four Adventures in Nature sessions. Featured topics were the Rock Cycle for kindergartners, 1st, 3rd, and 4th graders and Tectonics of Southern California for 5th and 6th graders.



*Nature Fest volunteer Christy Evans talks with festival visitors about introduced terrestrial and freshwater mollusks in southern California.*

## Marine Biodiversity Center and Crustacea



At the first annual L.A. Urban Nature Festival, the Marine Biodiversity Center and Crustacea hosted a table highlighting local marine protected areas (MPAs). These are a part of state and national systems of protected areas established to conserve biodiversity in open ocean, coastal and inter-tidal waters — a vital asset to the future of marine habitats. Festival attendees were introduced to and encouraged to visit and get to know their local MPAs in addition to building their own MPA at our table with their favorite marine life (pictured). Much fun and drawing outside the lines ensued!

*Junior Scientists collaborating to create their marine protected area.*

## Urban Nature Group

Urban Nature Fest was an exciting event for the urban nature team, who were all in their element for the weekend of festivities! S.L.I.M.E. kits were given out to interested citizen scientists at the Malacology table, the 30 new flies and their genitalia (as well as many other local insects) were featured at the Entomology table, Elizabeth Long did a talk on butterflies, and Greg Pauly, Miguel Ordeñana, Jann Vendetti and Brian Brown did speed talks! Also during UNF was the BioSCAN “Thank You Luncheon” for the incredible site hosts for phase I of the project. Our site hosts enjoyed mingling with each other and the BioSCAN staff to celebrate citizen contributions to NHM research!

Summer Nights in the Garden twice featured a bee hotel activity for guests. An entomologist was on hand to answer questions and give participants a valuable introduction to local solitary bees. We look forward to getting

data contributions from the hotels that guests made to our iNaturalist site. If you have a bee hotel in your yard, please feel free to contribute to our project!



The urban nature team was also found everywhere you looked at Dino Ball, with performances by Greg Pauly, Chris Thacker, Jann Vendetti, Elizabeth Long, Lisa Gonzalez, and Emily Hartop teaching our guests all about the amazing nature we have right here in and around our city.

Both Lisa Gonzalez and Emily Hartop contributed a segment to Adventures in Nature this summer, teaching the young participants about the world of insects. Lisa also conducted a Scavenger Safari.

Jann Vendetti conducted an educator workshop with thirty-one teachers about Snails and Slugs Living in Metropolitan Environments (S.L.I.M.E.). The day started with a lecture on snails and slugs accompanied with specimens from the Museum's collection and then a walk to the Rose Garden to collect snails and slugs.

Bioblitz LA was tremendously successful, collecting over double the number of observations they were originally hoping for (over 10K, with an initial goal of 5K). The event ran throughout the summer and included an event at City Hall (coordinating with our Malaise trapping), a day at Griffith Park which recorded 230 observations in a single day, a Moth Night for nocturnal collection (240 submissions for that evening), and a final event in our own Exposition Park.

Greg Pauly promoted RASCals in the news with both an *L.A. Times* article and a blog that was featured by multiple sources, including *Discover Magazine* and *PLoS ONE*. Brian Brown promoted BioSCAN with interviews with New Hampshire Public Radio and the *LA Ecovillage Blog*.

## Vertebrate Paleontology

Vertebrate Paleontology Collections Manager Dr. Samuel A. McLeod and Assistant Collections Manager Vanessa R. Rhue led behind-the-scenes tours to Museum VIPs for Scavenger Safari, 6 June and 1 August 2015. Museum guests and their families were able to take a closer look at the fossil fish, amphibians, reptiles, birds, and mammals maintained in public trust. Insights concerning the acquisition, preparation, storage, and maintenance of our collections was shared. This program provides an intimate setting for participants to engage with our staff and ask questions concerning the day to day tasks of our discipline.

Staff, volunteers, and interns assisted with tours of the Vertebrate Paleontology collections and laboratory space for the Museum's summer camp program, Adventures in Nature. Children of various ages learned about the diverse fossils found in their own back yards... from the small teeth of rodents in the Mojave Desert to the large tusks of Mammoths from the greater Los Angeles basin.



Vertebrate Paleontology volunteer Sophie Wang (left) and VP intern Aidan Thurling (right) talk about the various tools used to prepare fossils in our lab.



## Nature Festival

A participant of NHM's Los Angeles Nature Festival was Charles Darwin, whose presentation in the Museum Library included photo ops, a map of his voyage, a scale model of the HMS Beagle, and from the museum's collections, a Galapagos Tortoise and a Marine Iguana. Darwin may be better known by most of you as Senior Paleontological Preparator Howell Thomas.

Artist and Vertebrate Paleontology volunteer Hiromi Gibbs supervised drawing lessons in the Museum Library, and encouraged Festival visitors to go into the Museum's garden and draw what inspired them.



Assistant Curator of Fossil and Modern Marine Mammals Dr. Jorge Velez-Juarbe participated in Nature Festival; his presentation featured information about

modern marine mammal specimens as well as the fossil, the Hollywood Bowl Desmostylian (a relative of the *Neoparadoxia cecilia* Barnes, 2013, located in the Age of Mammals Hall).



## Colossal Fossil Fest Santa Barbara

More than 700 visitors attended Santa Barbara Museum of Natural History's first Colossal Fossil Festival. NHM Senior Paleontological Preparator Howell Thomas displayed specimens of marine mammal pathologies and paleopathologies to Festival guests; VP volunteer Debora Lee photographed the event. During Colossal Fossil Festival, Howell met with members of SBMNH's staff, who invited him to study that institution's collection of dwarf Mammoth bones from the Channel Islands. Howell's research, along with that of Paul Collins, Dr. Krista Fahey, and Dr. Charles Rennie, will result in a publication about osteoarthritis and other bone pathologies found in SBMNH's and NHM's dwarf mammoth specimens.



*Howell showing off his pathologies.*



## Cabrillo Beach Marine Aquarium's Shark Week

2 August, Dr. Jorge Velez-Juarbe and Vertebrate Paleontology volunteers Kathleen Gonzales and Debora Lee participated in Cabrillo Marine Aquarium's Shark Week. Dr. Velez-Juarbe presented images of shark bites in fossil marine mammal bones, as well as actual shark teeth; Ms. Gonzales spoke about various cultures' shark-themed artifacts; Ms. Lee discussed pathologies in shark teeth, and photographed NHM's participation in the event. Eight August, Kathleen and Debora once again shared their knowledge with Aquarium visitors for the final day of Shark Week. Many thanks to NHM's department.



ments of Anthropology, Marine Mammals, and Vertebrate Paleontology for their contributions of images, specimens and/or personnel to Cabrillo Beach Marine Aquarium's Shark Week.

Volunteer Kathy Gonzales talks to the crowds.

# Student Mentoring and Research

## Dinosaur Institute

### Visiting Ph.D. Student Becky Wu

Becky received a master's degree in Geosciences from National Taiwan University. Her thesis and followup research have focused on *Stegodon*, an extinct member of the Proboscidea that lived primarily in Plio-Pleistocene Asia. Her current interest is in theropod and avian evolution, which is why she comes to L.A. to work with Drs. Alyssa Bell and Luis Chiappe on the morphometrics of Hesperornithiformes.



### Internships

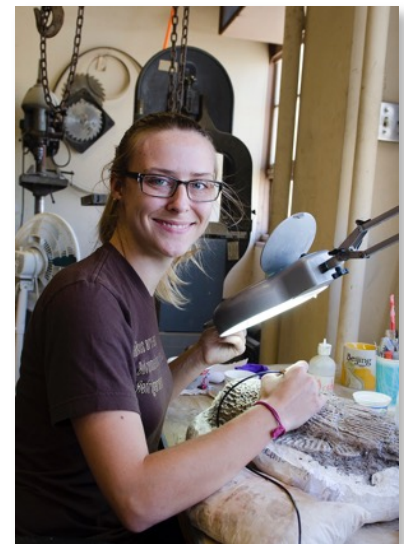
This was a busy summer in the Mesozoic Collection! The Dinosaur Institute welcomed 2 summer interns for 10 weeks: Adriana Stephenson, the Princeton Intern in Civic Service (PICS) 2015 candidate sponsored by Dr. Paul Haaga; and Emily Jewell, a southern California native from Long Beach who is studying for her B.Sc. in Marine Geology at Eckerd College, St. Petersburg, Florida.



Adriana Stephenson

Adriana's project was to inventory the Mesozoic collection located on site. By the time she left for fieldwork, she logged over 1600 records with their new locations updated in KeEmu. Not a small task. She did fossil preparation work on Triassic specimens from the Petrified Forest National Park, worked on a massive sauropod cervical vertebra that was collected during the Augustyn Dinosaur Expedition 2014 and finished her tenure with conservation work on the left premaxilla and maxilla of the holotype specimen of *Magnapaulia laticaudus*, very delicate and difficult work.

Emily's project also included inventory in the collection; her focus was the ongoing "Return to Hell Creek Project." She inventoried the dense cabinets containing the Hell



Emily Jewell



Creek Formation specimens, the oversized cabinets, and the holotype collection. She did an incredible job preparing the interclavicle of a Petrified Forest metoposaur. Both of these young ladies joined Dr. Chiappe and colleagues for one week of fieldwork to the Bisti Wilderness of New Mexico and to the Gnatalie site in Utah. The DI Collection Manager, Maureen Walsh, looks forward to developing the DI's internship program in the future.

## History

Daina Coffey, a doctoral candidate in history from the University of Chicago, interned with the Seaver Center and the Research Library during July and August, inventorying a newspaper collection and scanning and cataloging glass negatives. Daina received her undergraduate degree from UC Berkeley. She had this to say about her experience at NHM: "The staff at the Seaver Center taught me how to think critically (and creatively) about describing and organizing unusual photos and newspapers of early twentieth-century Los Angeles so that researchers might easily access them. I often left the Museum each day covered in 150-year-old newspaper dust, and as a historian, I have never felt more connected to the past."

*Daina Coffey in the newspaper processing area.*



## Urban Nature Group



Some of you may have noticed mysterious white, blue and yellow bowls or plastic bottles placed throughout the Nature Gardens over the summer. These party bowls and water bottles are actually pan traps and bait traps, two common collection tools used by entomologists. Our wonderful BioSCAN summer students Saba Saberi and Ben Refoua set them up as part of a short experimental run to compare the catch from these bowls, called pan traps, to the BioSCAN Malaise trap. Lisa Gonzalez replicated this experimental design at one of the BioSCAN sites in Glendale. We are almost done going through all of the samples from this project and are excited to get down to analysis and see if we see any significant differences between collection methods.

## Vertebrate Paleontology

Assistant Collections Manager Vanessa R. Rhue was pleased to award Aidan Thurling a position in the Vertebrate Paleontology Internship program for the summer of 2015. Aidan's industriousness and professionalism set her apart from the other applicants this year. In the fall, Aidan will be entering her senior year at Cal Poly San Luis Obispo, where she is pursuing a B.S. degree in Biological Science. During her time there, she has acquired experience collecting biological data and identifying specimens — especially mammals — and has sought to gain

*Vertebrate Paleontology Intern Aidan Thurling places yellow withdrawal labels in our collections, where she recently pulled specimens for an institutional loan.*



more exposure to the field of paleontology. Aidan started her internship in June and completed over 150 hours of service by the end of August. During her time with us, she assisted staff with a suite of collections and lab projects, such as inventorying a marine mammal reprint library, curating tiny fossils of amphibians, reptiles and birds from the Mehrten Formation (Hemphillian in age), washing matrix and picking microfossils, preparing a large fossil blue whale specimen, assisting with outgoing loans, and creating archival housings for our specimens. In her spare time, she enjoys riding horses, playing the saxophone in her school's marching band, and dotting on her beloved chinchilla, Pogo. Thank you, Aidan, for your excellent work on our collections this past summer. We look forward to having you return next year!

## Marine Biodiversity Center



Jennifer Pan, who has been volunteering for the Marine Biodiversity Center for the past year, has received a USC Provost's Fellowship to study crabs in the family Cancridae for the Fall 2015 Semester.

# Volunteers and Research Associates

## Dinosaur Institute

### *Collections — 4th Floor*

The Dinosaur Institute would like to thank Paul Bryne for his dedication to the NHM this summer. Paul joined us in July and made great progress working in the collection on the Hell Creek microsite, Bug Creek, and on the holotype duckbill dinosaur *Magnapaulia laticudus*. After successfully removing matrix from large broken fragments, contacts can now be made and whole elements glued together. Collected in the late 60s, many of these large broken chunks have been put aside because of the specimens' importance. With no prior experience, Paul took very well to the delicate and often difficult job of removing matrix from the bones of this very important specimen.





## Urban Nature Group

The Urban Nature team has been proud to recently welcome aboard a team of volunteers that not only help us behind the scenes, but can be found staffing the table in the Nature Lab. Please stop by and say hi to: Barbara Baker, Maria Friesen, Bob Gorcik, Brianna House, Anya Hunter, Daisy Sanchez, and Maria Wong.

## Vertebrate Paleontology

John Sifling joined our Vertebrate Paleontology Volunteer Team in June and has literally jumped right into the workflow. John's first assignment was to assist with



the archival housing of a

large fossil baleen whale specimen. The size, shape, weight, and fragility of the specimen presented its own challenges. John worked closely with VP Volunteer Tyler Lancaster and VP Intern Aidan Thurling to trim down the supporting plaster jacket and fabricate a new lid for the specimen using plaster, fiberglass, polyester felt, and electrical conduit for handles. Another challenge was to level the supporting holder and affix wheels to the base so that the specimen could be moved into oversize storage yet remain easily accessible to future researchers. All of us in Vertebrate Paleontology appreciate John's energetic personality, intuitive sense of team leadership, and determination to make things work with the available resources. John comes to us as a retired Commander from the United States Coast Guard, and holds a Master's degree in Physical Oceanography. He's had an avid interest in paleontology and museums since childhood and is thrilled to be of service behind-the-scenes. Welcome aboard, John!

*Vertebrate Paleontology Volunteer John Sifling secures ties to the plaster holder in preparation for moving the large fossil baleen whale skull into our collections (a cast of the specimen is visible on top).*

Melissa Halverson is the latest addition to our Vertebrate Paleontology Volunteer Team. Melissa comes to us with a Master's degree in Anthropology from UT Austin and a certificate in Museum Studies from the University of Washington. The museum world is nothing new for Melissa — she has worked in a collections capacity for museums in Illinois, including the Mitchell Museum of the American Indian, the Field Museum, and the Dupage County Historical Museum. Melissa is currently assisting us with the wrapping and packing of a large return loan. We look forward to involving her in future collections care projects and already appreciate her careful handling of specimens. In her spare time, she enjoys reading historical fiction, baking, playing the piano, and taking dance lessons. Thank you, Melissa, for your weekly volunteer commitment (even while you work a full time job!).



*Vertebrate Paleontology Volunteer Melissa Halverson poses with one of our most recent collection additions, a fossil dolphin skull from Ventura County.*



# Distinguished Visitors



Dr. Q. Meng presents Dr. J. Pisano with gifts from the BMNH.

## Dinosaur Institute

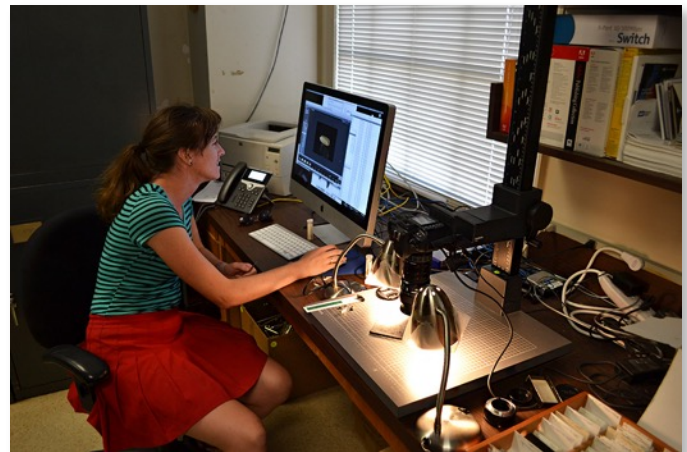
### *International Visitors*

The DI welcomed Dr. Q. Meng, Dr. L. Zhang and Mr. L. Di of the Beijing Natural History Museum, Beijing, China. Museum director Dr. Meng is a long time colleague and friend of Dr. Luis Chiappe, who hosted his visitors during the week of September 13–17. The agenda included a meeting with Dr. Jane Pisano, President, followed by tours of the IP Collection at Carson and the Herpetology, Crustacea, Ichthyology and the Marine Biodiversity Center collections at the NHM. Dr. Meng was very impressed with the *Nature Gardens* and *Lab, Dinosaur* and *Age of Mammals Halls*, in addition to the wonderful *Mummies* exhibit and *Becoming*

*LA*. Thanks to Drs. N. Smith, A. Bell, J. Vendetti, C. Thacker, R. Wetzer and Collection Managers Adam Wall, Austin Hendy, Neftali Camacho, Maureen Walsh and R&C Assistant to VP Maria Ponce.

## Malacology

Lynn Wang (USC) spent much of the summer photographing oyster specimens for research purposes. Ángel Valdés (Cal Poly Pomona) made three visits to Malacology to use the SEM and research opisthobranch specimens for a chapter in Jim McLean's Northeast Pacific Gastropod book. Cal Poly Pomona students Craig Hoover, Hessam Ghanimi, Haleh Golestani, Sabrina Medrano, and Jenny McCarthy made SEM and photography visits with Ángel. Dave Woodward (Grand Terrace, CA) and Lance Gilbertson (Newport Beach, CA) visited Malacology to use the SEM with Jann Vendetti and deposit some Kern County land-snails. Dave also made a visit to the Carson Malacology / Invertebrate paleontology facility to examine landsnails of the family Helminthoglyptidae for research purposes. Jessica Morales, Jessica Rosales, and Lauren Mirasol (Cal. St. LA, Anthropology) spent a day at the Malacology / Invertebrate Paleontology facility examining landsnails of San Nicolas Island to identify specimens collected whilst conducting thesis field work. Daniel Geiger (SBMNH) spent several days in Malacology reviewing materials for Jim McLean's Northeast Pacific gastropod book and photographing fissurellid and seguenziid gastropods.



Cal Poly Pomona student Jenny McCarthy using the Malacology camera setup to photograph opisthobranch shells for Jim McLean's Northeast Pacific identification guide.



Cal. St. Los Angeles Anthropology students (l to r) Lauren Mirasol, Jessica Morales, and Jessica Rosales examining landsnails from San Nicolas Island, CA.

Cal. St. Los Angeles Anthropology students (l to r) Lauren Mirasol, Jessica Morales, and Jessica Rosales examining landsnails from San Nicolas Island, CA.



## History

Anatol Shmelev, Ph.D., Curator of the Russian and Eurasian Collection at the Hoover Institution, Stanford University, visited the Seaver Center for materials related to Russia and Russian immigrants, especially those who settled in Southern California. He was amazed at some of the materials discovered, among them correspondence of A.C. Lathrop, Alice Blackwell and Catherine Breshkovsky of Russia. Breshkovsky, known as the "Grandmother of the Russian Revolution," was an inspiring figure to many American progressive women thanks to her many years of exile and tireless work for the revolutionary cause in Russia. These letters are valuable for illustrating the international nature of the women's movement in the early 20th century. The L.A. County Incorporation Records revealed the richness of charitable and social organizations established by Russian immigrants, supplemented by some excellent illustrative material found in several ephemera collections and photographic files. Pulled from the Research library, two issues of a Russian-language newspaper issued in Harbin, China, also made an impression. The newspaper, "Russkii golos," may well have been brought to California by Russians entering via China (large numbers of Russians escaping the Bolsheviks took this route in the early 1920s). As it turns out, these holdings are the only copy of these particular newspaper issues in the Western world. Mr. Shmelev was impressed: "Originally, I wasn't expecting to find much, but I was stunned by the value and variety of the collections, as well as by the helpfulness and knowledge of the staff. The Seaver Center is an incredible resource for California history, and its collections can be mined by those looking at the history of ethnic groups and the transnational dimension in California's past."

## Vertebrate Paleontology

The Vertebrate Paleontology Department has been pleased to host several international collections visitors this summer! Dr. Alan Tennyson, Curator of Vertebrates at Te Papa (the national museum of New Zealand), visited our collections on 25 June to examine our fossil sea birds. Graduate student Jaime Priego Vargas, of



*Graduate student Jaime Priego Vargas applies a blue molding compound to the occlusal surface of *Equus conversidens* molars in order to study the microwear patterns.*

the Universidad Autonoma del Estado de Hidalgo, Mexico, visited our collections for two weeks (6–17 July). Jaime is studying biodiversity and conservation under the direction of his thesis advisor, Dr. Victor Manuel Bravo Cuevas. Fossil horses from San Josecito Cave, Nuevo Leon, Mexico, were the subject of his recent visit. Also studying fossil horses from our collections this summer was Dr. Leonardo Avilla, who re-

turned for the second time this year (13–16 July). Leonardo is from UNRIO, Brazil, and continued to examine our Rincon horse faunas from the Hemphillian of Chihuahua, Mexico.

On 10 August, Vertebrate Paleontology Collections Manager Dr. Samuel A. McLeod toured Wendy Askey and her children around our collections, lab, and exhibits. Wendy anticipated a visit to southern California with her family and contacted our Museum to inquire about the specimens collected by her grandfather-in-law, Marion Bonner. The Bonner family collected some spectacular fossils over the years. Much of their prospecting occurred in the Cretaceous Niobrara Chalk beds of western Kansas. Currently, our Museum has nine specimens on exhibit that were collected by Marion Bonner, including fish, turtle, bird, pterosaur, mosasaur, and plesiosaur. These and many other fossils collected by the Bonner family are in the collections of the Dinosaur Institute. It was a delight



*Alan Tennyson of Te Papa, New Zealand, holds a small limb bone of a fossil sea bird, collected from the Jewett Sand, Kern County, California.*

to tour around these honored guests — especially to show the children the legacy of their great-grandfather's work.

*Wendy Askey's son (center) stands in our Vertebrate Paleontology collections, carefully holding the distal phalanx of a fossil horse.*

Dr. Mizuki Murakami of Waseda University, Japan, spent two days in our Vertebrate Paleontology collections (25 and 27 August). On this particular visit, Mizuki focused on studying the ear bones of pygmy sperm whales. He examined materials from the Lee Creek Mine Yorktown

Formation of North Carolina, the Hemphillian Tirabuzon Formation of Baja California, and the middle Miocene Round Mountain Silt of Kern County, California.



*Dr. Mizuki Murakami photographs the lateral view of a small sperm whale skull from the Sharktooth Hill Bonebed, Kern County, California.*

Eric Scott, Curator of Paleontology at the San Bernardino County Museum, visited our Vertebrate Paleontology collections 31 August to sample a specimen from Gypsum Cave, Nevada.

Eric's area of expertise is fossil horses and he is interested in the fauna from this Pleistocene cave deposit. Eric hopes that the sample will yield radiocarbon and DNA results, thereby shedding light on the age of this fauna.



*Eric Scott carefully drills a small sample of bone from a horse cranium, collected from Gypsum Cave, Nevada.*

## Recent Publications

**Bell, Alyssa & Luis M. Chiappe** (2015) A Species-level phylogeny of the Cretaceous Hesperornithiformes (Aves: Ornithuromorpha): Implications for body size evolution amongst the earliest diving birds. *Journal of Systematic Paleontology*. DOI:10.1080/14772019.2015.1036141.

**Kampf, A.R.**, Adams, P.M., Nash, B.P. and Marty, J. (2015) Ferribushmakinite,  $Pb_2Fe^{3+}(PO_4)(VO_4)(OH)$ , the  $Fe^{3+}$  analogue of bushmakinite from the Silver Coin mine, Valmy, Nevada. *Mineralogical Magazine* 79: 677-686.

**Kampf, A.R.**, Housley, R.M., Dunning, G.E. and Walstrom, R.E. (2015) Esquireite,  $BaSi_6O_{13} \cdot 7H_2O$ , a new layer silicate from the barium silicate deposits of California. *Canadian Mineralogist* 53: 3-12.



**Kampf, A.R.**, Hughes, J.M., Marty, J., Nash, B.P., Chen, Y.-S. and Steele, I.M. (2015) Bluestreakite,  $K_4Mg_2(V^{4+}_2V^{5+}_8O_{28}) \cdot 14H_2O$ , a new mixed-valence decavanadate mineral from the Blue Streak mine, Montrose County, Colorado: crystal structure and descriptive mineralogy. *Canadian Mineralogist* 53: 1007-1018.

**Kampf, A.R.**, Plášil, J., Kasatkin, A.V. and Marty, J. (2015) Bobcookite,  $NaAl(UO_2)_2(SO_4)_4 \cdot 18H_2O$ , and wetherillite,  $Na_2Mg(UO_2)_2(SO_4)_4 \cdot 18H_2O$ , two new uranyl sulfate minerals from the Blue Lizard mine, San Juan County, Utah, USA. *Mineralogical Magazine* 79: 695-714.

Ksepka, D. T., J. F. Parham, Allman, J. F., M. J. Benton, M. T. Carrano, K. A. Cranston, P. C. J. Donoghue, J. J. Head, E. J. Hermsen, R. B. Irmis, W. G. Joyce, M. Kohli, K. S. Lamm, D. Leeher, J. S. L. Patané, P. D. Polly, M. J. Phillips, N. A. Smith, **N. D. Smith**, M. van Tuinen, J. L. Ware, R. C. M. Warnock. (2015). The Fossil Calibration Database, a new resource for divergence dating. *Systematic Biology* 64: 853–859.

*More than twenty paleontologists, molecular biologists, and computer programmers from five different countries have contributed to the development of The Fossil Calibration Database, a free, open-access resource that stores carefully vetted fossil data. The database was launched in February, and a scientific paper announcing the resource was published in the September issue of the journal Systematic Biology.*

*The database is a result of over five years of work from an international team including Dr. Nathan Smith, a new Associate Curator in the Dinosaur Institute. "Fossils are essential for understanding the timing of evolutionary events in life's history," Dr. Smith said. "The temporal information associated with fossils can be used to calibrate 'molecular clocks,' which allow us to answer diverse questions in biology, such as when certain groups originated, the speed at which genes are evolving, whether or not speciation and extinction rates have changed through time and how biodiversity has been shaped by climatic changes in Earth history."*

*Since its launch in February, the site has logged 11,782 unique visitors, 85,633 page views and 178,498 total views. Science, a highly revered, leading journal of original scientific research, global news and commentary, wrote an excerpt on the new database.*

For more information on the database visit:  
<http://fossilcalibrations.org>.

*The fourth Working Group Meeting for the Fossil Calibration Database was held at NESCent May 5th-7th, 2014. Members include (Left to right): Jim Allman, Manpreet Kohli, Barbara Dobrin, Karen Cranston, Jennifer Rumpf, Daniel Ksepka (co-leader), Chris Torres, Kristin Lamm, Marcel van Tuinen, Matthew Phillips, Jason Head, Nathan Smith\*, David Polly, Adam Smith, Rachel Warnock.*



**Long, Elizabeth C.**, Kyle F. Edwards and Arthur M. Shapiro (2015). A test of fundamental questions in mimicry theory using long-term datasets. *Biological Journal of the Linnean Society*. DOI: [10.1111/bij.12608](https://doi.org/10.1111/bij.12608)

Mitchell, R.H. Welch, M.D., **Kampf, A.R.**, Chakmouradian, A.K. and Spratt, J. (2015) Barrydawsonite-(Y),  $Na_{1.5}CaY_{0.5}Si_3O_9H$ : a new pyroxenoid of the pectolite-serandite group. *Mineralogical Magazine* 79: 671-686.

Navalón, G., J. Marugán-Lobón, **L.M. Chiappe**, J.L. Sanz, and Á.D. Buscalioni (2015) Soft-tissue and dermal arrangement in the wing of an Early Cretaceous bird: Implications for the evolution of avian flight. *Scientific Reports* 5, 14864; doi: [10.1038/srep14864](https://doi.org/10.1038/srep14864)

Tait, K.T., Dicecco, V., Ball, N.A., Hawthorne, F.C. and **Kampf, A.R.** (2014) Backite,  $Pb_2Al(TeO_6)Cl$ , a new tellurate mineral from the Grand Central mine, Tombstone Hills, Cochise County, Arizona: description and crystal structure. *Canadian Mineralogist* 52: 935-942.

Thomas, H.T., and L.G. Barnes. (2015). The bone joint pathology osteochondrosis in extant and fossil marine mammals. *Contributions in Science* 523: 1-35.



*Neoparadoxia cecialina*, Barnes 2013, in the *Age of Mammals Hall*, has osteochondrosis in its right wrist.

Welton, Bruce J. (2015). A new species of Late Early Miocene *Cetorhinus* (Lamniformes: Cetorhinidae) from the Astoria Formation of Oregon, and coeval *Cetorhinus* from Washington and California. *Contributions in Science* 523: 67-89.

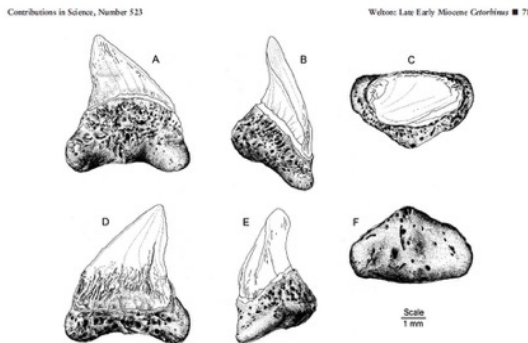


Figure 4. *Cetorhinus piersoni*, new species, holotype tooth, LACM 155792, from LACM locality 7886, Astoria Formation, Lincoln County, Oregon. A, lingual view; B, mesial view; C, apical view; D, labial view; E, distal view; F, basal view. Scale bar = 1 mm.

Vertebrate Paleontology Research Associate and former Curator Bruce J. Welton describes a new species of basking shark from our collections. The species name, *Cetorhinus piersoni*, is in honor of Mr. Guy E. Pierson, who not only collected many of the Astoria Formation teeth of *C. piersoni*, but numerous other marine vertebrates from the area that are now housed in our Vertebrate Paleontology collections.

The figured holotype tooth of *Cetorhinus piersoni* (LACM 155792) from the Astoria Formation, Lincoln County, Oregon.

Whiteside, J. H., S. Lindström, R. B. Irmis, A. Kasprak, I. J. Glasspool, M. F. Schaller, M. Dunlavey, S. J. Nesbitt, N. D. Smith, and A. H. Turner. 2015. Late Triassic ecosystem instability and the delayed rise of dinosaurs. *Proceedings of the National Academy of Sciences USA* 112: 7909–7913. DOI:10.1073/pnas.1505252112

*Climate and plant community instability may have prevented the success of dinosaurs in tropical latitudes during the Triassic Period, according to a new scientific paper published in the Proceedings of the National Academy of Sciences USA. Dr. Nathan Smith, new Associate Curator of the Natural History Museum of Los Angeles County's Dinosaur Institute, joined an international team — led by Dr. Jessica Whiteside of the National Oceanography Centre at the University of Southampton, and co-authors Sofie Lindström, Randall Irmis,*

*212 million years ago in what is now northern New Mexico, the landscape was dry and hot with common wildfires. Early dinosaurs such as the carnivorous dinosaur in background were small and rare, whereas other reptiles such as the long-snouted phytosaurs and armored aetosaurs were quite common. Artwork by Victor Leshyk.*





*Ian Glasspool, Morgan Schaller, Maria Dunlavey, Sterling Nesbitt, and Alan Turner — to study the Late Triassic environments and ecosystems preserved in the Chinle Formation of northern New Mexico. The study found that the plants within the formation change from a seed fern-dominated system to a conifer-dominated system, and that individual plant groups repeatedly alternated from rare to common through time. Carbon isotope data suggest an overall arid environment, albeit one affected by strong environmental fluctuations between humid and arid conditions. Widespread fossil charcoal material suggests frequent wildfires during the Triassic, possibly due to environmental fluctuation that encouraged plant growth during humid periods and enhanced moisture loss during arid times. The results suggest that the fluctuations, accompanied by high atmospheric carbon dioxide, may have prevented widespread establishment of large herbivorous dinosaurs in tropical latitudes until the Jurassic Period because of unpredictable resource availability.*

## Staff Departures & New Staff

### Dinosaur Institute

#### *New Associate Curator, Nathan Smith*

As an Associate Curator in the Dinosaur Institute, Dr. Nathan Smith supervises the Dinosaur Institute staff and conducts paleontological research in support of the Institute's programs. Originally from Crystal Lake, Illinois, Nate grew up fascinated with dinosaurs, science, and baseball. He received his B.A. in Biology from Augustana College, a M.S. in Geoscience from the University of Iowa, and a Ph.D. in Evolutionary Biology from the University of Chicago. Nate also served as a postdoctoral research scientist at the Field Museum of Natural History and an Assistant Professor of Biology at Howard University before joining the Natural History Museum in 2015. Paleontological fieldwork has taken Nate to Antarctica, Argentina, China, and the southwestern and western United States. His research has been funded by the National Science Foundation and National Geographic, and focuses on the evolution and biogeography of Triassic–Jurassic dinosaurs, Cenozoic waterbirds, scleractinian corals, and the application of phylogenetic comparative methods to broad questions in systematic biology and paleontology. The origin and initial diversification of dinosaurs represents one of the most poorly known events of vertebrate evolution, and much of Nate's recent research in Ghost Ranch, New Mexico, and the Central Transantarctic Mountains has helped



to fill major geographic, temporal, and taxonomic gaps in our understanding of early dinosaurs and the world they inhabited. These studies have received international press coverage, and Nate's collaborative Ghost Ranch field program was featured in the 2007 3-D IMAX® movie *Dinosaurs Alive!*



### Museum Archives

Kim Walters has joined NHM as Temporary Museum Archivist. Kim has worked in university, corporate, and museum libraries and archives for more than 30 years. She has extensive experience managing archives and overseeing records management. She directed the Southwest Museum/ Autry Braun Research Library where she was responsible for the special collections including the museum's

historic business archives, which are similar to NHM's.

Kim is working with Chief Librarian Richard Hulser to continue organizing the museum's archives and has found many interesting documents relating to projects conducted over the last 100 years, including the La Brea Tar Pits excavations and Channel Island Biological Survey fieldwork. The Archives includes collections of art, science and history exhibition catalogs and brochures documenting the museum's history from opening day in 1913 to the present.

# Miscellaneous

## Urban Nature Group

The urban nature team has joined the Nature in LA blog (<http://www.nhm.org/nature/blog>) and is publishing urban nature news weekly on Tuesdays. All the urban nature projects have new (or improved) websites up that can be found here: <http://www.nhm.org/nature/citizen-science/help-a-scientist>.

Phase I of the BioSCAN Project has wrapped up after 2 years of continuous sampling at 30 sites across L.A. that resulted in 2,800 samples! Analysis of the data is underway (including that of over 43K phorids that were identified to species), and Phase II recruitment (where we will have 16 sites from ocean to desert) has begun.

ButterflySCAN has wrapped up and held a Thank You party for participants on 8/7 (see photo at right). Observers put in >140 hours of effort surveying butterflies in the neighborhoods around the BioSCAN sites. Collectively they submitted ~2200 records to the eButterfly database website (<http://e-Butterfly.org>), greatly expanding the reach of eButterfly in southern California. The observers documented 28 species of butterflies during their bi-weekly surveys between March and June, including several species that have not been caught in the BioSCAN Malaise traps.



The *Research & Collections Newsletter* is issued quarterly 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:* Dean Pentcheff.

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