Research & Collections News

The Occasional Newsletter of the Research and Collections Staff

Natural History Museum of Los Angeles County

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.

Reminder: This issue and all previous issues can be found on the web at:
http://collections.nhm.org/newsletters

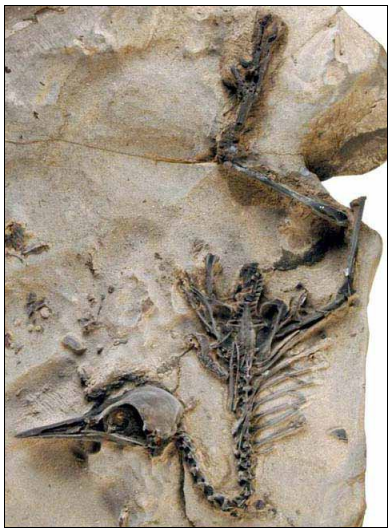
November, 2007

(covering the months of September and October, 2007)

Collection News

Dinosaur Institute

In September Luis Chiappe visited museums in New York and Washington, D.C. While this trip was partly focused on research, he also attended meetings and visited exhibits in relation to the creation of our future Age of Dinosaurs exhibit. Among the exhibits he visited were the Fossil Halls, Human Origins, and Mythic Creatures at the American Museum of Natural History, and Dinosaur Gallery, the Hall of Mammals, and the Korea Gallery at the National Museum of Natural History, the latter two designed by Reich & Petch. From Washington, he traveled to Spain, Denmark, and Austria, where he lectured (Burgos, Spain) and conducted research (Madrid, Copenhagen, and Vienna) on a diversity of projects involving non-avian dinosaurs and early birds.



Above: One of the 55-million-year-old birds from Denmark that Luis Chiappe is working on as part of a National Science Foundation-funded project.

Dinosaur Institute again!

In late September, Aisling Farrell, Curatorial Assistant, traveled to Dalian (NE China) to prepare two Mesozoic birds from the Liaoning Province. The project is part of an ongoing collaboration between the Dinosaur Institute and the Natural History Museum in Dalian. Luis Chiappe will travel to China later in the year to conduct research on the newly prepared specimens along with Graduate-student-in-residence Jingmai O'Connor. This cooperation effort not only enhances our knowledge of the Cretaceous biota of China with its amazing fossils, but also opens a communication line with Natural History Museums all over the world.

Above: Late Cretaceous *Hongshanornis* from China exhibiting exceptional feather preservation, microscope work at the Dalian Natural History Museum, a well-preserved Cretaceous enantiornithine bird preserved with an almost complete skull from China (species to be described) and a diorama from the Natural History Museum in Dailan.

Rght, clockwise: Seahorse on the menu in Beijing, Pangiayuar market in Beijing, The Natural History Museum, Dalian, China

Crustacea

Over the past few months, a major effort has been taking place to organize and digitize an important part of the scientific literature on the systematics of the decapod Crustacea (crabs, shrimps, lobsters, and their allies). This work is part of a multi-institutional, National Science Foundation-funded initiative called "Assembling the Tree of Life: Decapoda." Dean Pentcheff, Regina Wetzer, Jody Martin, and four USC undergraduate students have been collecting the bibliographic information that underlies the systematic work of this important group of animals, as well as scanning the historical literature of the field. Unlike many other fields of science, work in evolutionary systematics requires having the original descriptions of species, genera, and other taxonomic groupings. Many of these descriptions are in 18th, 19th, and early-20th century publications. Research in systematics and biodiversity is increasingly happening in Latin American and Asian countries where workers do not have easy access to this historical literature. Without access to those publications, workers in the field are unable move this science forward. The goal of effort is to make that material digitally available to workers everywhere through Web servers hosted by the NHMLAC. Progress to date can be seen at: http://decapoda.nhm.org/references

Field Work

Entomology

Rare ant-phorid fly catch

Many of the phorid flies that Entomology Curator Brian Brown studies are internal parasitoids of ants, whose larvae feed on the contents of the ant's body. Usually, establishing the host ant species of a parasitoid fly is the result of painstaking fieldwork, but on this occasion we have been extremely lucky. The catch from a Malaise trap (a tent-like structure with a collecting bottle on top) from Costa Rica, sent to Brown by a colleague, contained the ultimate of rarities: a fly preserved while still in the act of parasitizing its host ant. The fly was described as a new species of the genus *Apocephalus* by Brown in 2000 from specimens collected (alone) in Malaise trap samples, but the host ant remained a mystery. Now we know that the host is a species of *Gnamptogenys* that is yet to be identified. Although he has been looking at Malaise trap samples for over 20 years, this is the first time that Brown has seen such a preserved pair.

Backyard Biodiversity

Entomology Curator Brian Brown has operated a Malaise trap in his backyard sporadically over the last several years, to monitor the insects present in a typical suburban lot. Usually he collects a wide but fairly mundane variety of insects, including many species of phorid flies, his research specialty. In early September of this year, however, he obtained two female specimens of one of the rarest of all phorid flies, *Hypocerides nearcticus*. Known previously from a single male specimen from the Washington, D.C., area, this enigmatic species has eluded capture ever since (and Brian Brown has looked at a LOT of insect trap samples over the last 25 years!). Although a generally dark brown, fairly featureless fly, *H. nearcticus* has distinctive swellings on the leading edge of the wing, on the costal vein, which make its identification certain. One of the two specimens was preserved for the collection and one is being used for a molecular study on the relationships of phorid genera. In the two months since catching these two specimens, the backyard Malaise trap has caught no further *H. nearcticus*. Why this incredibly rare fly would suddenly appear in a typical backyard is a good question, and unfortunately we know nothing of its way of life. Its brief presence in September is a good demonstration of how poorly known our natural world remains, even on our doorsteps.

Entomology again!

Giar-Ann Kung (Entomology Research Assistant) traveled to Centraal Suriname Nature Reserve and Brownsberg Nature Park in Suriname in August, making important collections of *Dohrniphora* and ant-parasitizing *Pseudacteon* phorid flies. The specimens were collected for Curator Brian Brown's NSF-funded projects.

Left: Giar-Ann setting up a Malaise trap at Brownsberg Nature Park.

Right: View of the rainforest and the Suriname River, flying to Central Suriname Nature Reserve.

Entomology yet again...

Although we are late to report it, Roy Snelling participated in a Rapid Assessment Project (RAP), his fourth, under the auspices of Conservation International, in the Mamberamo Basin, Papua (formerly Irian Jaya), Indonesia, from 20 April to

16 May. The Mamberamo Basin sites were in previously logged lowland swamp forest in an area never previously investigated. The survey party included botanists, ichthyologists, mammalogists/herpelologists, ornithologists and one entomologist: Roy Snelling. Most of the scientists were Indonesians from the museum at Bogor, Indonesia. One botanist was from Lae, Papua New Guinea, and one ornithologist was from the Netherlands. The purpose of the RAP was to quickly inventory select groups of plants and animals at two sites each along the Gesa and Warembori Rivers.

Snelling focused on ants, his specialty group, and collected 99 total samples. Approximately 118 species were collected, a large number but still somewhat less than what he had hoped for. Several previously undescribed ant species were collected, and the botanists collected a few new plants, including a strange new species of palm. The sites along the Warembori River were both mangrove and "black water" swamps that are more or less perpetually under water up to 3 feet deep. Of course, lots of rain was no help. The survey party did have two days without rain, although both were days when they had to pack in or out of one of the Gesa River sites along an overgrown former logging road, with no cover and in approximately 95/95 (degrees/humidity). Conservation International is considering a follow-up trip next year, with helicopters available to ferry the scientists (including Roy) into otherwise inaccessible areas in the nearby Van Rees Range, where they might be able to walk around with dry feet.

Ornithology

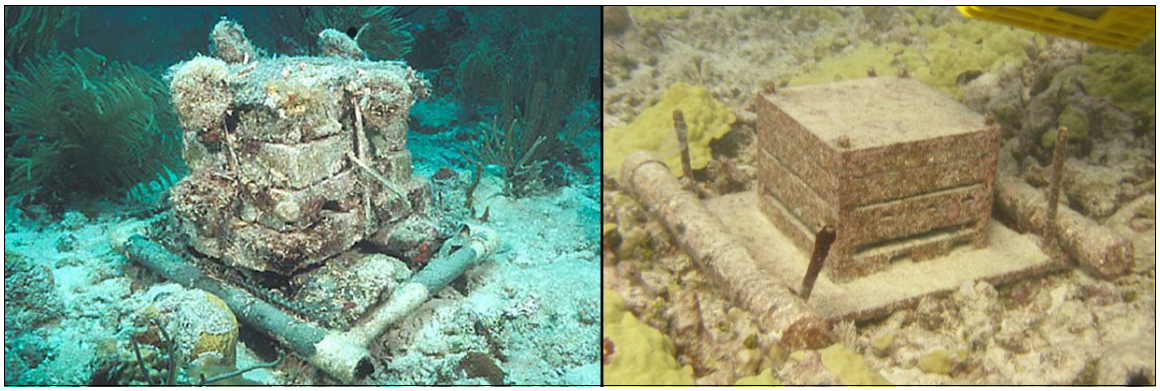
The Natural History Museum partnered with Audubon California and PRBO Conservation Science to conduct a survey of all of California's interior valleys for the Long-billed Curlew (*Numenius americanus*), a species of conservation concern that also happens to be the world's largest sandpiper. Kathy Molina and Kimball Garrett of the Section of Ornithology coordinated the survey for southeastern California's Imperial Valley on 13-16 September 2007. For our portion of the survey we used 27 volunteer observers to cover 25 assigned areas, yielding complete coverage of the agricultural habitats in the Imperial Valley. The Imperial Valley survey yielded some 10,260 curlews; along with roughly 25,000 birds counted in the Central Valley, this accounted for a large portion of the world's population of this species.

Polychaetes

The French Frigate Shoals saga continues

For 3 weeks in September and October Leslie Harris (Polychaete Collections Manager) went back to the site of last year's Northwest Hawaiian Islands expedition to collect the ARMS (Artificial Reef Matrix Structures) put out by Jody Martin (Curator of Crustacea) and crew. Unfortunately Jody wasn't able to go this year for the harvesting. Rusty Brainard, the PI of the project, and other NOAA personnel had decided to standardize construction of the ARMS by using plastic instead of the concrete that Jody and Todd Zimmerman used successfully in the LACM Guana Island Biodiversity Survey. Leslie and Jody had predicted that plastic might not be as effective as concrete; sadly, they were proved right. Instead of luxuriant growths of coral, sponges, and bryozoans, there was

only a thin layer of turf algae covering the new (plastic) ARMS. However, some of the differences might also be attributable to the fact that the devices were deployed in two different oceans (Central Pacific vs. Caribbean) and in slightly different habitats, depths, and currents. Our knowledge of settling cues and settling patterns of reef creatures is still very incomplete. Below left: ARMS from Guana Island, Caribbean, after 1 year. Below right: plastic ARMS recently recovered off French Frigate Shoals, NWHI, Hawaii.



The inner layers, while not as rich in life as the ARMS from Guana Island, still had a good assortment of invertebrates, especially of sessile organisms like sponges and bryozoans. Processing the ARMS meant bringing each one back to the shipboard for photography of each layer and every type of animal, and for fixation, labeling, and packaging for the trip back home. Depending on how many animals were found the ARMS took 1-3 days apiece to process.

Processing in the lab

That meant there was little time for Leslie's other job on the cruise – processing polychaetes and other invertebrates (at right) collected from drift nets. Sixteen out of the 20 scientists on board were dedicated to finding and retrieving marine debris off the coral reefs at FFS. In 10 years NOAA's marine debris program has brought in nearly 600 tons of nets, buoys, and assorted junk from the Northwest Hawaiian Islands (NWHI). This marine debris is injurious not only to the reef animals but also to fish, turtles, marine mammals, and birds, who get caught in the nets and die or end up with a belly full of plastic instead of food only to die of starvation. The debris, which arrives from all over the north Pacific, can carry invasive species, something the three agencies that oversee the NWHI would like to prevent. The animals Leslie collected will be deposited here, ready for specialists to identify and determine their status as native or introduced to the area.

Left: Marine debris removed from reefs in the Northwestern Hawaiian Islands.

Crustacea

During the summer of 2007, Regina Wetzer led a two-week expedition to the Pacific island of Samoa (right) to collect small crustaceans. Participants also included Dean Pentcheff from NHMLAC and Niel Bruce from the New Zealand National Institute of Water and Atmospheric Research. Two weeks of shore and SCUBA work yielded a diverse collection of Crustacea. The main target of the trip was isopod crustaceans, but those were curiously sparse. This same research team has seen similar low abundances of this crustacean group on other isolated Pacific islands, and it may be that the distance from continental centers of diversity leads to this effect. Another sobering observation on this trip was the clear evidence of a massive recent death of reef-building corals. Because of the scale of the die-off, it is most likely attributable to global changes in ocean temperature rather than to local effects of the Samoan islands.

Meetings, Workshops, and Presentations

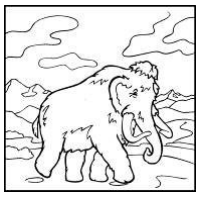
Vertebrate Paleontology

In October, Xiaoming Wang participated in a National Science Foundation workshop at the Denver Museum of Nature & Science. The theme of the workshop was related to "critical transitions," which include the end of Cretaceous (K/T) extinction and paleoclimates in Tibetan Plateau. Xiaoming chaired the Tibetan Plateau session of the workshop.

This year, the annual meeting of the Society of Vertebrate Paleontology was held in Austin, Texas. Participants from the Vertebrate Paleontology department include Sam McLeod, Gary Takeuchi, Jack Tseng, Howell Thomas, Xiaoming Wang, John Harris, Aisling Farrell, and Luis Chiappe. Xiaoming Wang, with Óscar Carranza-Castañeda of Universidad Nacional Autónoma de México, gave a talk at the SVP entitled "A basal hog-nosed skunk, *Conepatus* (Mephitidae, Carnivora), from late Miocene to early Pliocene of central Mexico and origin of South American skunks." In addition, Xiaoming Wang co-authored a presentation with Steven Wallace of East Tennessee State University entitled "First mandible and lower dentition of *Pristinailurus bristoli* with comments on life history and phylogeny." Jack Tseng, with Xiaoming Wang and J. D. Stewart, gave a presentation entitled "Tough New World: discovery of an unusual immigrant mustelid with crushing dentition from the middle Miocene of coastal California." John Harris, with Chris Shaw and Joy Ward, gave a presentation on "The late Pleistocene environment at Rancho La Brea."

Crustacea

The Crustacea lab was well represented at the mid-year meeting of The Crustacean Society, held this year in La Serena, Chile, in October. Four members of the Crustacea Section presented talks or posters: Graduate student-in-residence Todd Haney presented part of his doctoral dissertation research (*Phylogeography of Leptostraca: Historical boundaries in the Gulf of California and adjacent shores*); Dean Pentcheff presented an update on our ongoing efforts to digitize literature on all crabs, shrimps, and lobsters and make it available to the word via the web (*Assembling the decapod tree of life: Making systematic literature globally available*); Regina Wetzer spoke on the results of her NSF-funded work on isopod crustaceans (*The Sphaeromatidae – One world-wide family or a family cluster? What molecular systematics reveals about sphaeromatid isopod (Peracarida) relationships*), and Jody Martin presented preliminary information (via a poster) from his work on crabs from the Northwestern Hawaiian Islands (*Crabs (Brachyura) of French Frigate Shoals, Northwestern Hawaiian Islands Marine National Monument*). This gathering of the world's workers on the crustaceans is an important forum both for presenting the work done here at the Museum and learning what's being done elsewhere. This particular meeting, held in South America, gave many Latin American colleagues a chance to attend an international meeting close to their home, and gave some of us our first look at unique habitats of Chile. Above right is a salt lake in northern Chile's altiplano at about 4500 m above sea level. Guanacos are grazing on the short grasses.



Later in October, USC's Marine Environmental Biology Program had its annual Catalina Island Wrigley Lab weekend retreat (October 19-21, 2007). Speakers and guests included faculty, deans, and science educators. Regina Wetzer was an invited speaker and gave a talk about research at the Natural History Museum. Her talk was titled "From Molecules to Mammoths, Science at the Natural History Museum."

Malacology

Emeritus curator James McLean hosted an all-day workshop in the Education classroom on marine gastropods on October 15th for 11 members of SCAMIT (Southern California Association of Marine Invertebrate Taxonomists), during which he reported on progress with his two volume work *Shelled Benthic Gastropoda of the Northeast Pacific*.

Polychaetes

Leslie Harris (Polychaete Collections Manager) was a keynote speaker at the 1st National Polychaete Symposium, Universidad Autonoma de Nuevo Leon (Monterrey, Mexico), October 14-16. Invited because of her close ties with many Mexican researchers she was

the only participant from outside the country. Leslie's talk on the value of underwater & lab photography of live polychaetes was so well received she was asked to lead a week-long workshop on photography sometime next year. After the symposium she stayed on another two days to help Maria-Elena Gonzalez-Garza, a doctoral student & previous LACM visitor, with her thesis research on capitellid polychaetes.

External Funding

Vertebrate Paleontology

Xiaoming Wang, in collaboration with colleagues from the Florida State University, was recently awarded a National Science Foundation grant "Collaborative Research: The impact of late Cenozoic Himalayan-Tibetan uplift on C4 plant expansion, climate and mammalian evolution in northern China" $25,000 (EAR-0716507).

Public Outreach

Mineral Sciences

Mineral tour to Namibia and South Africa

Tony Kampf just returned from leading a tour to Namibia and South Africa for the Museum's Gem & Mineral Council. Highlights in northern Namibia included visits to several mining areas: Erongo Mountains, Uis tin district, Goboboseb Mountains, Kleine Stitzkoppe, Okorusu fluorite mine and Tsumeb. Also visited were Swakopmund and Etosha National Park. The tour concluded with a visit to the Kalahari Manganese Fields in South Africa.

At the invitation of the Namdeb Diamond Corporation, Tony and a smaller contingent spent several days visiting the diamond mines in southern Namibia, including those along the coast near Oranjemund and Elizabeth Bay and those inland along the Orange River. The group also visited a diamond drillship 40 km offshore.

From left: Okorusu fluorite mine, Uis tin mine, leopard – Etosha, coastal diamond mine, Bogenfels Arch. Below: Daberas diamond mine – Orange River.

Malacology

Lindsey Groves co-led *Fossil hunting in Silverado Canyon,* this time with John Alderson (Invertebrate Paleontology Research Associate) and the Education Division on Saturday, October 20th. John filled in for LouElla Saul who was busy elsewhere awaiting the birth of her second grandchild. Forty-seven participants collected Late Cretaceous (Turonian) [~89 – 90 mybp] invertebrate fossils from the Baker Canyon and Holz Shale members of the Ladd Formation in Silverado Canyon, Santa Ana Mountains, Orange County. Expert field assistance was provided by Christy Evans, Grace Cabrera, and Robin Savoian (Education) and Mary Stecheson (former LACMIP). Invited guests included former LACM VP of Human Resources Brenda Rushforth and her husband Gary. Education VP Carl Selkin and his grandson Andrew were among the participants. Highlights of this trip include a nice specimen of the ammonite *Subprionocyclus neptuni* (Geinitz, 1849) and a rare lobster carapace of the genus *Linuparus* (see images). The fossil collecting site and environs were apparently unaffected by the recent wildfires in Santiago Canyon.

Above: Participants on outcrop of Late Cretaceous Ladd Formation, Silverado Canyon.

Right: Ammonite [*Subprionoclyclus neptuni* (Geinitz, 1849)] from the Holz Shale Member of the Ladd Formation, Silverado Canyon.

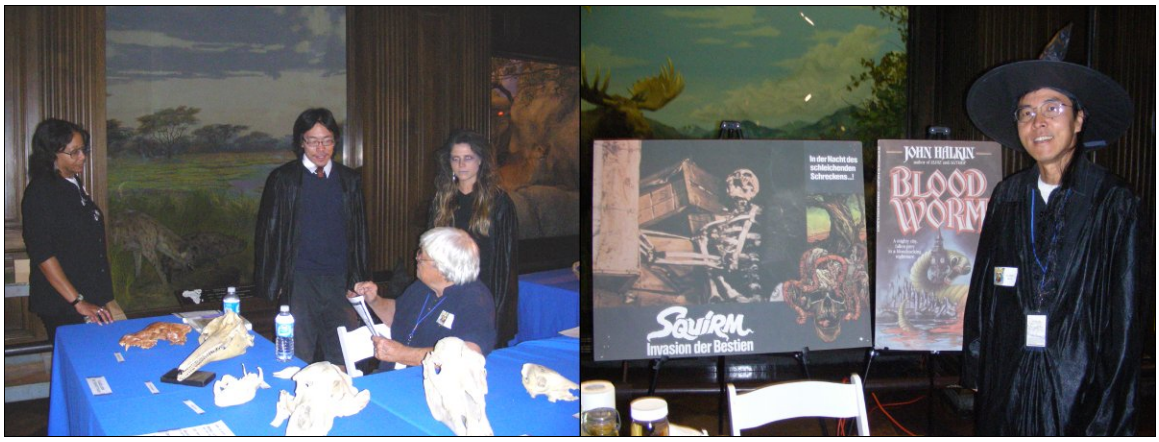
Above: Lobster carapace [*Linuparus* sp.] from the Holz Shale Member of the Ladd Formation, Silverado Canyon.

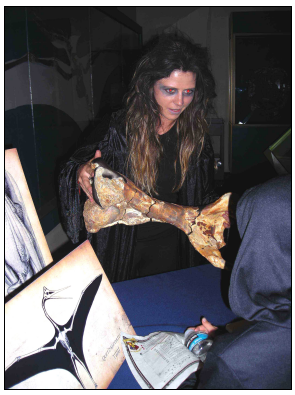
Right: LACM staff and former staff at Silverado Canyon (L to R): **John Alderson** (IP Research Associate), Mary Stecheson (former LACM IP), Robin Savoian (Education), **Lindsey Groves** (Malacology), Grace Cabrera (Education), Brenda Rushforth (former LACM HR), and Christy Evans (Education).

Haunted Museum

As in the past, most of R & C was heavily involved with the Haunted Museum experience on October 28. R & C staff included Ornithology (Ken Campbell, Kimball Garrett), Ichthyology (Christine Thacker), Mammalogy (Jim Dines), Polychaete Worms (Kirk Fitzhugh), The Dinosaur Institute (Luis Chiappe), Vertebrate Paleontology (Xiaoming Wang), Rancho La Brea (John Harris), and others, only some of which are mentioned here. The world of worms was represented at this year's event with "Blood Stew." Dr. Kirk Fitzhugh, Curator of Polychaetes, sacrificed vast quantities of blood for the cause of furthering fascination for our vermiform kin.

Above and right: Kirk Fitzhugh, with some of the worm fans attending the *Haunted Museum*. Giving blood in the name of science makes one hungry.





More Haunting: Above left: The Vertebrate Paleontology table in the Hall of African Mammals. The theme this year is "transfiguration," as conceived by graduate student Jack Tseng (center), and assisted by volunteers Debora Lee (left), Christina (right standing), and Patty (right sitting). Above right: Xiaoming Wang standing in front of the Annelid-Polychaetes display of Kirk Fitzhugh.

At left, the humerus of *Quetzalcoatlus* (the largest animal known to fly) from the Late Cretaceous of Texas.

Still more haunting: Above left: The Wizard of Echinoderms (Gordon Hendler) casting a spell over a clonal sea star, for the benefit of visitors to the Academy of Magic Limb Regeneration. Above right: Gordon Hendler and Danielle Lacharite (organizer of the event).

Echinoderms

On October 27th, Gordon Hendler (Curator of Echinoderms) hosted 5 groups of Patron Level museum members for "Scavenger's Safari" tours. Participants viewed parts of the museum's collection of dried echinoderm specimens, a selection of specimens preserved in alcohol, some special microscopic preparations, and had an opportunity to learn about research conducted by the curator. Each of the half-hour tours went very quickly. In every instance, a glimpse of exotic sea stars, sea urchins, brittle stars, sea cucumbers, or feather stars elicited a torrent of questions.

The next evening, Prof. Gordon Hendler (Wizard of Echinoderms) presented "Magic Limb Regeneration" at the Haunted Museum event (see above). Many families visiting the limb regeneration academy to collect "briny sea salt" for their *potion du jour* discovered the amazing capacity of echinoderms to regenerate and to clone themselves. Kids enjoyed examining asexually reproducing sea stars under a microscope, and parents learned some unfamiliar terms such as "autotomy," "fissiparity," and "water vascular system," which are invaluable for Scrabble and crossword puzzles. Many also discovered for the first time that scientific research is conducted by the curatorial staff of the Natural History Museum.

Polychaete Worms

On 5 and 19 September, Dr. Kirk Fitzhugh, Curator of Polychaetes, presented five hours of lectures on evolution versus creationism and the principles of scientific investigation in the Education Division's *Fall Professional Development Series Workshop*.

Right: Kirk Fitzhugh giving one of his lectures on the nature of science to our Education Division staff during their *Fall Professional Development Series Workshop*.

On 28 September, Kirk presented a two-hour talk on evolutionary biology, intelligent design, and the nature of science to museum docents during their *Welcome Back* event. Finally, on 20 October, Kirk presented a talk to docents at the Page Museum on evolutionary biology, intelligent design, and the nature of science.

Distinguished Visitors

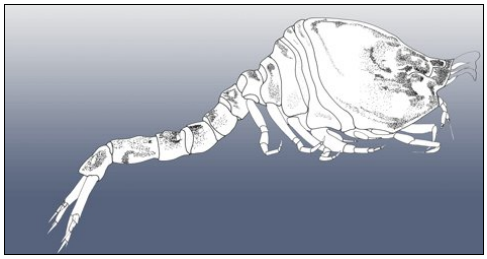
Vertebrate Paleontology

Drs. Deng Tao and Li Qiang from the Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences, visited the department of Vertebrate Paleontology to collaborate with Xiaoming Wang on a number of projects related to the geology and paleontology of the Tibetan Plateau.

Malacology

Malacology research associate Lance Gilbertson visited the collection in mid-October continuing his research on helminthoglyptid land snails of the Pacific southwest. Kelvin Barwick (CC San Francisco) spent time in the malacology collection following the monthly SCAMIT meeting (see meetings section) examining nuculanid bivalves. Brian Urbano (Universidad Nacional Autónomia de México, Instituto de Ecologica) spent four days measuring and photographing the Malacology holdings of the gastropod *Cerithium maculosum* for his thesis research.

Crustacea



Dr. Sarah Gerken spent an intense week in the Crustacea Lab reviewing our collections and making some outstanding finds of previously undescribed cumacean crustaceans (at left) and their distributions. Sarah has been in and out of our lab and collections her entire graduate student career as an NSF-funded PEET student and research associate. She is a newly tenured Professor at the University of Alaska and a success story, demonstrating that it is possible to do morphological systematic research in an academic environment.

Recent Publications

Bobe, R., A. K. Behrensmeyer, G. G. Eck and **J. M. Harris.** 2007. Patterns of abundance and diversity on late Cenozoic bovids from the Turkana and Hadar basins, Kenya and Ethiopia. In Bobe, R., Z. Alamseged, and A. K. Behrensmeyer (eds). *Hominin environments in the East African Pliocene: an assessment of faunal evidence*, pp. 129-158. Dordrecht, Netherlands; Springer-Verlag.

Chiappe, L. M. and G. Dyke. 2007. The beginnings of birds: Recent discoveries, ongoing arguments and new directions. *In* Anderson, J. and Sues, H-D. *Major Transitions in Vertebrate Evolution*, pp. 303-336, Columbia University Press.

Coria, R. and L. M. **Chiappe**. 2007. Embryonic skin from Late Cretaceous sauropods (Dinosauria) of Auca Mahuevo, Patagonia, Argentina. *Journal of Paleontology* 8(16): 1537-1541.

Domning, D. P., and L. G. **Barnes**. 2007. A new name for the "Stanford Skeleton" of *Paleoparadoxia* (Mammalia, Desmostylia). *Journal of Vertebrate Paleontology* 27(3):748-751.

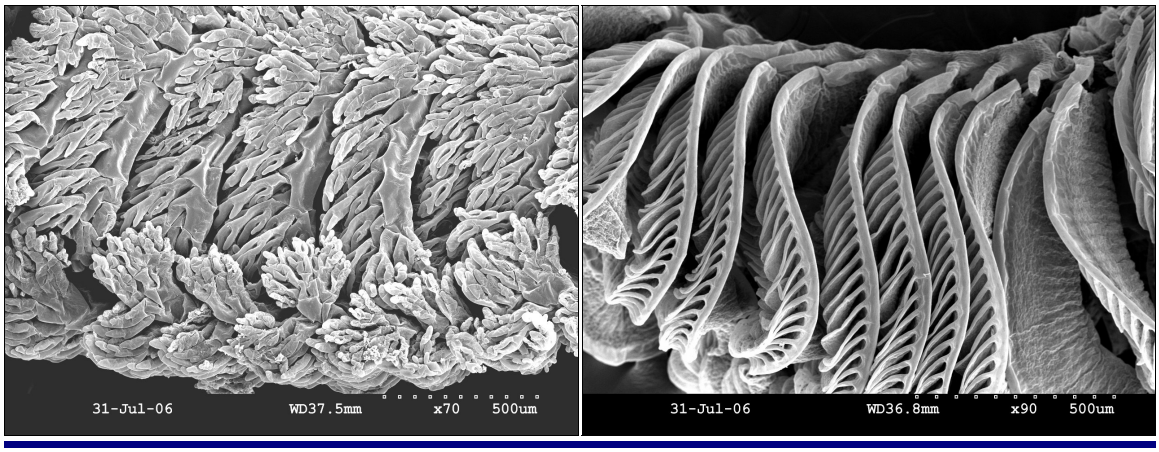
Fang, X., W. Zhang, Q. Meng, J. Gao, X. **Wang**, J. King, C. Song, S. Dai, and Y. Miao. 2007. High-resolution magnetostratigraphy of the Neogene Huaitoutala section in the eastern Qaidam Basin on the NE Tibetan Plateau, Qinghai Province, China and its implication on tectonic uplift of the NE Tibetan Plateau. *Earth and Planetary Science Letters* 258: 293-306.

Fitzhugh, K. 2007. Fact, theory, test, and evolution. *Zoologica Scripta*, online early publication: http://www.blackwell-synergy.com/toc/ZSC/0/0.

Harris, J. M. and Liu, L-P. 2007. The Suoidea: Suidae, Tayassuidae and Sanitheriidae. In Prothero, D. R. and S. E. Foss (eds) *Artiodactyls*, pp. 61-80. Baltimore; Johns Hopkins University Press.

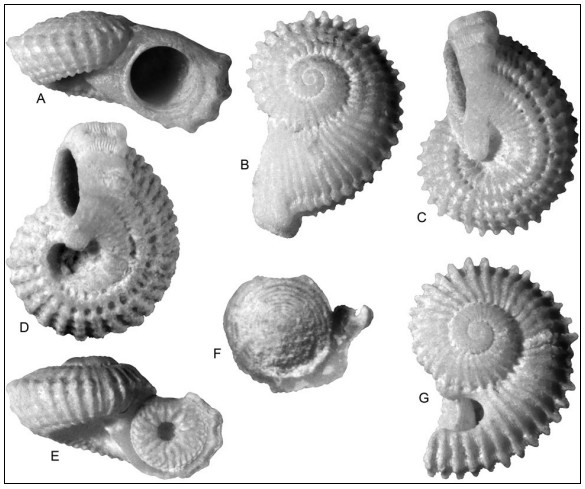
Liddicoat, J. C., X. **Wang**, Z. Qiu, and Q. Li. 2007. Recent palaeomagnetic and magnetostratigraphic investigations on and around the Tunggur tableland, central Nei Mongol. *Vertebrata PalAsiatica* 45(2): 110-117.

Martin, J. W., E. M. **Liu**, and D. **Striley**. 2007. Morphological observations on the gills of dendrobranchiate shrimps. *Zoologischer Anzeiger* 246: 115-125.
As part of our investigation into the decapod crustacean "Tree of Life"(evolutionary relationships), we used the electron microscope to examine one of the important features that supposedly define this major group of shrimps. Quite surprisingly, we found that not all members of the group have "branching" gills for respiration (below left); some have very "flattened" gills (below right), which they were not previously known to have.



McLean, J.H. and Kiel, S. 2007. Cretaceous and living Colloniidae of the redefined subfamily Petropomatinae, with two new genera and one new species, with notes on opercular evolution in turbinoideans, and the fossil record of Liotiidae (Vetigastropoda: Turbinoidea). *Paläontologische Zeitschrift* 81(1/3):254-266, figs. 1-8.

A new micro-gastropod genus Litiopoma *from the tropical Indo-Pacific represents a living fossil of an otherwise Cretaceous group, defined as the basal subfamily in the trochoidean family Colloniidae. Below are images of the type specimens.*



At left: **Figs. 4A-G**. *Liotipoma wallisensis* new species. Type material, all specimens from off Wallis Island, NE of Fiji (Holocene: Colloniidae, Petropomatinae). **A-C**. Three views (apertural, apical and umbilical) of holotype, male shell (height 2.0, diameter 4.1 mm). **D**. Umbilical view of mature female paratype (height 2.6, diameter 4.4 mm). **E-G**. Immature paratype specimen with wedged operculum in place (shell height 1.9, diameter 3.5 mm). **E**. Apertural view. **F**. Inner side of same operculum, showing attached portion of columella, after breaking it free; diameter of operculum 1.2 mm. **G**. Spire view, shell drilled by predator, showing conical profile of operculum. [From McLean & Kiel, 2007].

Snelling, R. R., B. L. Fisher, and P. S. Ward. 2007. Advances in ant systematics (Hymenoptera: Formicidae): homage to E. O. Wilson - 50 years of contributions. *Memoirs of the American Entomological Institute* 80: 1-690.

This book contains 27 chapters written by most of the world's ant experts, paying homage to fellow ant taxonomist and conservation advocate E. O. Wilson.

Tseng, J. J., and X. **Wang**. 2007. The first record of the late Miocene *Hyaenictitherium hyaenoides* Zdansky (Carnivora, Hyaenidae) in Inner Mongolia and an evaluation of the genus. *Journal of Vertebrate Paleontology* 27(3):699-708.

Wang, X., Z.-d. Qiu, Q. Li, B. Wang, Z.-x. Qiu, W. R. Downs, G. Xie, J. Xie, T. Deng, G. T. **Takeuchi**, Z. J. **Tseng**, M. Chang, J. Liu, Y. Wang, D. Biasatti, Z. Sun, X. Fang, and Q. Meng. 2007. Vertebrate paleontology, biostratigraphy, geochronology, and paleoenvironment of Qaidam Basin in northern Tibetan Plateau. *Palaeogeography, Palaeoclimatology, Palaeoecology* 254: 363-385.

Wares, J. P., S. Daley, R. **Wetzer**, and R. J. Toonen. 2007. An evaluation of cryptic lineages of *Idotea balthica* (Isopoda: Idoteidae): morphology and microsatellites. *Journal of Crustacean Biology* 27(4): 643-648.

Staff Departures and New Staff

Malacology

Although it is now widely known, Malacology curator **Ángel Valdés** departed LACM in mid-September for the greener pastures, higher salary, and better benefits of Cal Poly

Pomona, where he will be teaching Evolutionary Biology and Marine Biology. Ángel joined the LACM staff in June of 2001 after a competitive search for a successor to long-time curator James McLean, who served for 37 years. After joining the LACM Invertebrate Zoology staff, Ángel continued his impressive publishing record, traveled the world in search of undescribed nudibranchs, mentored graduate and undergraduate students, and participated with the IZ staff (notably Jody Martin, Kirk Fitzhugh, Regina Wetzer, and Gordon Hendler) to establish the Marine Biology Processing Center (MBPC) with a co-written 2003 NSF grant. Ángel also spearheaded the effort to secure NSF funding to purchase the Museum's first Scanning Electron Microscope and create the LACM SEM center. Under Ángel's guidance the opisthobranch portion of the Malacology gastropod collection grew significantly. His departure leaves a tremendous gap in the staff, and his cheerful demeanor and warm personality will be sorely missed by all. We indeed wish him well in his future endeavors. Ángel's departure marks the 15th loss of a curator during the last 5 years.

Mineral Sciences

New Mineral Sciences collections Manager

In September, Alyssa R. Morgan joined the staff as collections manager in Mineral Sciences. A native of Seattle, Washington, Alyssa received her B.S. in geology from the University of Washington in 1999 before heading east to continue her studies at Brown University in Providence, Rhode Island. She completed her M.S. at Brown in 2002 and is finishing up the requirements for her Ph.D.

Alyssa's research has involved igneous petrology, geochemistry and planetary geology, particularly focusing on lunar materials. While at Brown, she designed and taught advanced undergraduate courses in mineral/rock hand sample identification and optical mineralogy. She spent much time organizing and cleaning samples from Brown University's mineral collection in order to redesign the mineralogy labs and create a more extensive teaching collection for the laboratory courses. She also involved herself in public outreach events, helping with meteorite identification.

Dinosaur Institute

New Students

The Dinosaur Institute would like to welcome two new students who have begun work under the OEDG (Opportunities for Enhancing Diversity in the Geosciences). This is an NSF-funded grant program that will expose the students to some of the academic activities of professional paleontologists including, collection-based projects at the Museum, lecture series at USC, and a variety of fieldwork. At the end of the year the students will give a talk on their experience and present their project work. The OEDG is set up to encourage students to transfer to a 4-year college and continue on to graduate studies. To learn more about the OEDG "Proyecto Dinosaurios" visit http://dinosaurs.nhm.org/education/proyecto

At left: Erika Canola (OEDG student)

Above: Sean Hurt (OEDG student)

And finally....

Happy Holidays!

Because this is the last R & C Newsletter for calendar year 2007, the R & C staff takes this opportunity to wish all of you a happy and safe holiday season and a bright and productive New Year.

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