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.
Scholarly or scientific investigation or inquiry.
See synonyms at inquiry.
Close, careful study.
When performed on collections, the *raison d'être* of all great natural history museums.

May, 2006

(covering selected activities and events during the months of March and April, 2006)

Collection News

Mineralogy: The Ben Frankenberg Collection of Bisbee Minerals

In March of this year the museum was given an important collection of minerals from the historic copper mines of Bisbee, Arizona. Here is the story of the collection and the man who built it.



A century ago Bisbee, Arizona, was a boom town. This was the heyday of mining, when Bisbee was the world's largest producer of copper and became known as the "Queen of the Copper Camps." This was also a period during which tons of beautiful specimens of azurite, malachite, and other copper minerals were mined, only to end up smelted as ore.

Fortunately, some individuals with keen perception of natural beauty (and some expendable income) recognized the extraordinary nature of the "ores" and sought to preserve the finest examples. Among these enlightened individuals was Ben Frankenberg, who for three decades purchased fine specimens from miners who frequented his store. He even grubstaked some to go out and dig specimens for him. He built a diverse collection of twelve dozen mineral specimens from the mines of Bisbee, which serves to document the most important period of mineral production at one of the world's most famous producers of exceptional mineral specimens.

Ben Frankenberg was born in 1872 in Cincinnati, Ohio. In 1892 at the age of 20, he came West in search of adventure and opportunity. He gave up a budding career in the dress goods business in Chicago where he been employed in the famous Marshall, Field & Company department store. Upon moving west, his first job was as an advertising agent for a New Mexico company and then he served as representative for a Chicago store. In 1898, he arrived in Bisbee. A Frankenberg family story relates that as he arrived in Bisbee for the first time, he was witness to the



hanging of several cattle rustlers. His immediate reaction was that this must be a lawabiding town and he decided to settle there and open a dry goods store.



He called his store "The Fair," perhaps after a large department store with that name in Chicago. His first store occupied a 15 by 20 foot room on Brewery Gulch. In less than 4 months he replaced his original store with a larger one on Main Street. Before too long Ben's brother Sam joined the business and then their brother-in-law, Moses Newman, became a partner in 1901.

A new two-story store built in 1902 had 12 employees and featured a variety of departments with the latest in fashions from New York and Paris. Following a fire in 1908, which destroyed many of the buildings on Main

Street, a new store was opened in 1909. "The Fair" by this

time had become the largest clothing store in Cochise County.

Ben made frequent trips back East to buy merchandise for the store. On one of these trips, he met Clara Kaufman, a family friend from Baltimore. In 1915 they were married in Hampton, Virginia and Clara headed back to Bisbee with Ben to raise a family. They had three children: Babbette (Bobbe), born May 16, 1916; Maynard (now Maynard Franklin), born March 9, 1919; and Benjamin, Jr., born January 31, 1924, and died February 28, 1973.



The Frankenberg brothers and Moses Newman sold their store in 1928. Today, "The Fair" is a museum operated by the Bisbee Restoration Society. In the years leading up to the sale of "The Fair," Ben began planning a move for his family to Beverly Hills, California. He commissioned a house to be built there, naturally with a large built-in display case for his mineral collection.





Ben Frankenberg died in 1964 at the age of 92. His daughter Bobbe cherished her father's mineral collection and continued to maintain it in the family home. She became interested in the Natural History Museum of Los Angeles County and for a time in the early

1970's served as a museum docent. In of March 2006. Bobbe and her brother Maynard Franklin donated remarkable the collection mineral to the museum in the memory of their



parents, Ben and Clara. Selected pieces are shown at right and above.

Highlights from the Ben Frankenberg Collection are currently on display in the Hall of Gems and Minerals in a pedestal case in front of the Gem Vault.

Rancho La Brea

The excavation of LACMA's new underground parking structure in the former May Company parking lot has uncovered at least five new asphaltic fossiliferous deposits. These are being excavated by ArachaeoPaleo Resource Management Inc., a company led by longtime Page Museum volunteer and museum associate Robin Turner. Instead of salvaging the fossil deposits in plaster jackets (as was done when the Page Museum was built), Robin and her team have invoked a technique used to relocate large mature trees in order to bodily remove the fossil deposits to the side of the construction site where they may be excavated in more leisurely fashion. These new deposits include fossil leaves and insects as well as the usual cast of mammals and birds associated with the La Brea tar pits. The fossils will, after cleaning, be deposited in the Rancho La Brea Department collections.

Invertebrate Paleontology

Mary Stecheson and her team of USC work-study students recently finished adding database records for the entire California State University Northridge locality register, a total of 1,620 fossil localities. This completes one of the main objectives of our NSF-funded collections improvement project, the assimilation of the former CSUN paleontology collection. In addition, they entered data for 10,122 specimens, which brings the total number of taxonomic records in the Invertebrate Paleontology database to 1,160,122 specimens in 37,500 lots. The Invertebrate Paleontology database is online at http://ip.nhm.org/ipdatabase/index

Field Work

Rancho La Brea



In March, Chris Shaw and Aisling Farrell (Page Education staff) joined teams from Northern Arizona University, Arizona Western College, the Hagerman Fossil Beds National Monument (Idaho), the New Mexico Museum of Natural History, and the Oklahoma Museum of Natural History to collect fossil vertebrates of late Pleistocene (Rancholabrean) age at Térapa in east-central Sonora, México (at left). They assisted in the collection of mastodont-like gomphothere and

giant armadillo-like glyptodont skeletons, found isolated remains of horse, camel, and bison, and assisted in sampling sediments to wet-screen for microvertebrates. It is fascinating to think that this otherwise classic Rancholabrean locality contains animal remains of crocodiles and glyptodonts that are never found at Rancho La Brea.

Rancho La Brea (again)

Chris Shaw returned to El Golfo de Santa Clara in northwestern Sonora in April to work with Fred Croxen and his team from Arizona Western College, to document the occurrance and recover early Pleistocene (Irvingtonian) fossils (at right). During six days of field work, over 400 specimens were collected which included four species that are new to the locality: a freshwater mollusk (a large clam, *Anodonta* sp.), a condor proximal ulna, a shrew dentary, and a cricetine mouse dentary.



Vertebrate Paleontology

Larry Barnes traveled in April to the Smithsonian to work with colleagues on research projects involving fossil sea lions and dolphins. Part of this work is in anticipation of a symposium, to be held in November at the Calvert Marine Museum in Maryland, that will feature the fossils from the Chesapeake Bay area.

Polychaetes

In March Leslie Harris (Collections Manager, Polychaetes) spent another 2 weeks down in Panama as part of Dr. Peter Glynn's on-going project on the effect of El Nino on coral reefs. Dr. Glynn (Univ. Miami) was one of the first to recognize the phenomenon of coral bleaching and has been studying the same reef system since the early 1980s. Among the finds were several new species of polychaetes, ribbon worms (4 out of 5 species collected were new) and shrimp. (See related news under Miscellaneous)

Meetings, Workshops, and Presentations

Vertebrate Paleontology

In March, Vertebrate Paleontology Laboratory Supervisor Howell Thomas traveled to the Japan National Museum in Tokyo to participate in a workshop about desmostylians. Desmostylians are an odd group of quadrupedal, herbivorous extinct marine mammals that inhabited the North Pacific Ocean. Our Museum conserves one of the most comprehensive collections of this group of beasts, and Howell demonstrated replicas and gave lectures (co-authored by Samuel McLeod and Larry Barnes) about some of our very significant fossil desmostylian specimens.

Invertebrate Paleontology

Curatorial Assistant Mary Stecheson spoke at the April meeting of the Pacific Conchological Club in the Museum's Times Mirror Room. Mary's presentation focused on her Master's thesis research into Late Cretaceous gastropods and on recent curatorial projects in the Department of Invertebrate Paleontology.

Crustacea

In early March, curator Jody Martin attended a workshop at Duke University and the National Center for Evolutionary Synthesis. The workshop was for Principal Investigators of grants funded by the "Assembling the Tree of Life" program of the National Science Foundation.

Later in March, Jody Martin and Regina Wetzer (Research Scientist, Crustacea) attended a workshop at the National Museum of Natural History (Smithsonian) working on Jody's NSF Decapod Crustacea Tree of Life grant and Regina's NSF Isopod Crustacea grant. Jody was invited to give a presentation as part of the USNM's regular seminar series and spoke on historical trends in crustacean systematics and how these trends relate to our perception of global marine biodiversity.

Jody also gave an invited seminar at California Lutheran University on April 12, this time on the deep-sea crustaceans of hydrothermal vents.

Dinosaur Institute

During April 13-15, Luis Chiappe co-organized the 3rd International Symposium on Dinosaur Eggs, Embryos, and Developmental Biology in Plaza Huincul, Patagonia, Argentina. The meeting included a day-excursion to the dinosaur egg locality of Auca Mahuevo, guided by Luis. Between April 17-22, Luis Chiappe and 15 other colleagues from Japan, China, Canada and the US were hosted by the 2006 Goseong Dinosaur Exposition in South Korea. Activities involved a one-day symposium (Luis gave a lecture; paper published by Paleontological Society of Korea) and visits to several dinosaur footprint and egg localities.

External Funding

Malacology and Archaeology on behalf of R & C

The Museum's REU (Research Experiences for Undergraduates) program, overseen by Angel Valdes and Scott Van Keuren, received a \$10,000 donation from the Margaret I. Adams/Robert M. Adams Foundation to support an international student and a \$1,000 gift from Elaine Kramer to support various activities in the program. See related story under Outreach.

Vertebrate Paleontology

Graduate student Jack Tseng of Vertebrate Paleontology has been awarded a \$9,000 grant from the USC to convert CAT scan data of a giant fossil hyena from China into a functional analysis of bone-cracking adaptations. See related story under Student Mentoring.

Public Outreach

Joint Museum-Mexico Initiative: The Launch of INBECAH

On Wednesday evening, April 26th, the Natural History Museum and the Consul General of Mexico in Los Angeles jointly held a reception launching the Binational Initiative for the Study and Conservation of the Coral Reef Communities of Huatulco, Mexico (for which the Spanish acronym is INBECAH).

INBECAH is a major programmatic effort designed to develop a Mexico-U.S. partnership at the forefront of the growing international interest in marine biodiversity and the impact of people on marine environments. It places the Natural History Museum, Oaxacan researchers at the Universidad del Mar, the local community in Huatulco, and the business and management interests at the Bahías de Huatulco Resort at the center of the developing effort to better manage coral reefs on the Pacific Coast of Oaxaca. With INBECAH, the museum and our Mexican partners have developed a highly visible, international initiative that puts into practice the vision for, and key guiding principle of, the museum to advance knowledge and provide life-long learning experiences that promote stewardship of our natural and cultural worlds.

Ambassador Ruben Beltran, Museum President Jane Pisano, Bill Wood (Curator, Anthropology) and Ángel Valdés (Curator, Malacology) all spoke emphasizing the importance of the initiative and encouraging approximately 50 of the Ambassador's guests to bring their support to the initiative. In addition to Bill and Ángel, from the Research and Collections division, Regina Wetzer, Leslie Harris, and Darolyn Striley attended providing the Ambassador's guests with an orientation and first hand introduction to our extensive collections of (and research interests in) Mexican marine life.

Rancho La Brea and Vertebrate Paleontology

In April the Rancho La Brea and Vertebrate Paleontology departments lent casts and specimens of fossil mammals from Rancho La Brea, McKittrick and Maricopa to the Baker Museum for a special exhibit as part of the celebrations of the centenary of the City of Coalinga.

Museum REU Program (Malacology, Archaeology, and all R & C)

The Museum's REU (Research Experiences for Undergraduates) summer internship program, overseen by Angel Valdes and Scott Van Keuren, is getting ready for its second year. This year we will have a very diverse group of students who will be conducting research with curators in Crustacea, Echinoderms, Malacology and Anthropology. We look forward to having the students on board starting June 5th. The REU program also received additional funding to support the participation of international students (see under External Funding).

Dinosaur Institute

Doug Goodreau visited the Natural History Museum of Dublin, Ireland, and transported several dinosaur bones collected in Kazakhstan by Luis Chiappe. These fossils will be part of a temporary display at the Dublin's Natural History Museum.

Crustacea

In March, Jody Martin was invited to work with staff of the Long Beach Aquarium of the Pacific and other invited professionals to outline and discuss a proposed new exhibit on crustaceans being planned by LBAOP for the spring of 2007.

R & C / California Lutheran University Partnership

In April, representatives from several research areas (Chris Thacker, Ichthyology; Xiaoming Wang, Vertebrate Paleontology; Kirk Fitzhugh, Polychaetes; Jody Martin, Crustacea) met with Dr. David Marcey, CLU, to begin discussing how to go about funding the development of high school teaching modules to improve methods for teaching evolutionary biology in the United States.

Student Mentoring

Vertebrate Paleontology

Graduate student Jack Tseng of Vertebrate Paleontology has been awarded a \$9,000 grant from the University of Southern California to convert CAT scan data of a giant fossil hyena (genus *Dinocrocuta*) from China into a functional of bone-cracking analysis adaptations. The grant involves collaborative efforts by faculty of the Natural History Museum (Xiaoming Wang) and USC (Jill McNitt-Gray of USC's Departments of Kinesiology and Biomedical Engineering and Henryk Flasher of the Department of Aerospace and Mechanical Engineering). In addition, the USC Dental School provides partial software access and support for the 3D digitization program MIMICS.

number of undergraduate students



The grant will be used to hire a Dinocrocuta giganteas (above) in contrast to the extant spotted hyena Crocuta crocuta (below).

from USC to work on a multi-disciplinary investigation on various aspects of the hyena cranial and dental functional morphology.

This superbly preserved *Dinocrocuta* skull is on loan from the Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences, and will be part of the dissertation materials for Jack Tseng. Weighing about 500 lbs, Dinocrocuta was the largest predator in the late Miocene of Eurasia and must have reined supreme during much of its existence (about 12-8 million years ago). It has similar modifications in the teeth as those observed in the bone-cracking spotted hyena. The mesh created from digitized CT images of the skulls will be used to test whether the skull structure in the fossil species is similarly well-adapted to bone-cracking as the modern species.

Rancho La Brea

Jean Jing Huang, graduate student in Environmental Science and Engineering at Caltech, sampled the pond water from the Pit 61-67 compound in Hancock Park in order to culture phototropic microbes that have colonized this unusual habitat.

Dinosaur Institute

Graduate Student-in-Residence Jingmai O'Connor was hosted by the staff of the Japanese newspaper, *The Asahi Shinbum*—the sponsors of Japan's *Dinosaur Expo 2005*. She brought back from Tokyo a tooth of the *Tyrannosaurus rex* "Thomas" on loan to the National Science Museum of Japan.

Vertebrate Paleontology

Christine France, graduate student in the Geology Department at the University of Maryland, visited the VP Department to sample the isotopic composition of fossil bone from the asphaltic deposits from McKittrick, California. She hopes to document the food chain in this assemblage and compare it with that documented at Rancho La Brea by John Harris, Joan Coltrain and colleagues.

U.C. Berkeley Ph.D. student Nicholas Pyenson visited the Vertebrate Paleontology Department for a week in April. He catalogued and studied fossils that are part of the large collection that was systematically excavated from the Sharktooth Hill Bonebed in central California with support from a NSF grant to Larry Barnes. Larry Barnes traveled in April to La Paz, Baja California Sur, to participate as a member of the thesis committee for Universidad Autónoma de Baja California Sur student Gabriel Aguirre. Gabriel's final thesis presentation, on 28 April, was about a fossil dolphin that is related to the false killer whales. His research centers around an amazingly complete fossil skull that was found on Isla San Jose, in the Gulf of California, on a Museum Member's cruise that was organized through the Museum Travel Program.

Invertebrate Paleontology

Scott, David head of the UCLA/Getty MA program in conservation, and Robyn Hodgkins, UCLA Chemistry graduate student, visited the Invertebrate Paleontology collections on April 6 in order to examine the effects of natural chemical alterations in geologic specimens, including the formation of Byne's disease. Their visit to IP was arranged and accompanied by Tania Collas, NHMLAC Conservator. Specimens from the



An Invertebrate Paleontology specimen with Byne's disease (photograph taken by Tania Collas).

Invertebrate Paleontology collections may be useful in their studies of how to prevent potentially damaging chemical changes from occurring in certain antiquities of the Getty Museum.

Distinguished Visitors

Malacology and Invertebrate Paleontology

Fossil mollusk researcher Tom DeVries (Burke Museum of Natural & Cultural History, University of Washington) visited the Malacology and Invertebrate Paleontology collections for research purposes in April. Tom is an authority on Neogene mollusks of southern Peru and northern Chile and is currently comparing Recent and Miocene teguline gastropods for a forthcoming paper. Post-doctoral mollusk specialist Marcello Rivadeneira (UC San Diego) visited the Malacology collection for research purposes in March and April.

Crustacea

Dr. Niel Bruce, long time Research Associate in Crustacea and a co-investigator on Dr. Regina Wetzer's NSF-funded project to study the relationships of sphaeromatid isopods (a family of marine pill bugs), worked with us again in March and April. Niel is a scientist for NIWA, New Zealand's National Institute of Water and Atmospheric Research.

Recent Publications

Alejandrino, A. & **A. Valdés**. 2006. Phylogeny and biogeography of the Atlantic and eastern Pacific Hypselodoris Stimpson, 1855 (Nudibranchia:Chromodorididae) with a description of a new species from the Caribbean Sea. Journal of Molluscan Studies 72: 189-198.

Chiappe, L. M., & G. Dyke. 2006. The early evolutionary history of birds. Journal of the Paleontological Society of Korea 22(1): 133-152).

Fitzhugh, K. 2006. The philosophical basis of character coding for the inference of phylogenetic hypotheses. Zoologica Scripta 35: 261-286.

Göhlich, U., & **L. M. Chiappe**. A new carnivorous dinosaur from the Late Jurassic Solnhofen archipelago. Nature 440: 329-332.

Heard, R. W., **J. W. Martin**, T. J. Hansknecht, and D. B. Cadien. 2006. New records for *Cubanocuma gutzi* Băcescu and Muradian, 1977 (Crustacea: Cumacea: Nanastacidae) from the western Atlantic. Gulf and Caribbean Research 18: 47-51.

This tiny little crustacean, once thought to be restricted to waters off Cuba, is reported for the first time from a much wider range of localities and habitats.

Kampf, A. R. 2005. Died, Julius Weber, 89. Mineralogical Record, 36: 140.

Kampf, A. R. 2005. In Memoriam: Julius "Julie" Weber (1914-2003). Rocks & Minerals, 80: 205-206.

Kampf, A. R. 2005. Finding Fault in California. *Book review in* Media Reviews. *Rocks and Minerals*, 80: 208-209.

Kampf, A. R. 2005. Within the Stone. *Book review in* Media Reviews. *Rocks and Minerals*, 80: 211-212.

Kampf, A. R. 2005. Evidence from the Earth: Forensic Geology and Criminal Investigation. *Book review in* Media Reviews. *Rocks and Minerals*, 80: 289-290.

Kampf, A. R. 2005. The crystal structure of cobaltarthurite from the Bou Azzer district, Morocco: the location of hydrogen atoms in the arthurite structure-type. *Canadian Mineralogist*, 43: 1387-1391.

Kampf, A. R. 2006. Mineral Collection Cataloging Software. *Rocks and Minerals*, 81: 121-123.

Komai, T., **J. W. Martin**, **K. Zala**, S. Tsuchida and J. Hashimoto. 2006. A new species of *Mirocaris* (Crustacea: Decapoda: Caridea: Alvinocarididae) associated with hydrothermal vents on the Central Indian Ridge, Indian Ocean. Scientia Marina 70 (1): 109-119.

This is only the second species of shrimp described from deep-sea hot vents in the Indian Ocean. What makes it remarkable is that the only other species in this genus (Mirocaris), M. fortunata (which also was described by Jody), is from vents on the seafloor in the middle of the Atlantic.

Pluth, J. J., Steele, I. M., **Kampf, A. R.** and Green, D. I. 2005. Redgillite, $Cu_6(OH)_{10}(SO_4)$ \cdot H₂O, a new mineral from Caldbeck Fells, Cumbria, England, UK: description and crystal structure. *Mineralogical Magazine*, 69: 973-981.

Sirota, L., and **J. W. Martin**. 2006. Rediscovery of the Laomediid Shrimp *Naushonia macginitiei* (Glassell, 1938) (Crustacea: Decapoda: Thalassinidea: Laomediidae) from off Southern California. Bulletin of the Southern California Academy of Sciences.

This very unusual little lobster-like shrimp was known from only five specimens collected back in the 1930s. We reported it for only the third time and documented its habitat as being in shallow grass flats in San Diego Bay.

Van Keuren, **S.** 2006. Decorating Glaze-Painted Pottery in East-central Arizona. In *The Social Life of Pots: Glaze Wares and Cultural Dynamics in the Southwest, AD 1250-1680*, edited by Judith A. Habicht-Mauche, Deborah L. Huntley and Suzanne L. Eckert, pp. 86-104. The University of Arizona Press, Tucson.

Wood, W. W. 2006. Review: Mayas in the Market Place: Tourism, Globalization, and Cultural Identity. Walter E. Little. Austin: University of Texas Press, 2004. x+320 pp., illustrations, epilogue, appendix, notes, bibliography, index. American Ethnologist 33(1): posted online March 2006.

The April issue of the Gunma (Japan) Museum of Natural History Bulletin includes an article in which Larry Barnes names a new kind of extinct sperm whale, *Brygmophyseter*. The name, meaning "biting sperm whale," alludes to the presence in this early fossil of functional upper and lower teeth. In contrast, the living sperm whales have only lower teeth. The skeleton upon which the new sperm whale was named, shown below, is one of the most complete fossil whale skeletons ever discovered, and it is exhibited at the Gunma Museum of Natural History.



Staff Departures and New Staff

Invertebrate Paleontology

The Department of Invertebrate Paleontology thanks their outstanding team of USC work-study students for the 2005-2006 academic year: Patrick Bowen (Senior, Physics), Samantha Cowles-Eagan (Sophomore, Anthropology), and Drew Fodor (Sophomore, Business). Billy Noiman also helped out over the USC winter break. These students were instrumental in the completion of our NSF grant, and they were always cheerful, focused and reliable. We really appreciate all of their hard work!

Miscellaneous

Rancho La Brea

The Viewing Station, located on the south side of Pit 91 in Hancock Park, got a facelift in late March. Aisling Farrell, Kristen Vowels (Senior Excavator), and Samantha Green (Excavator) coordinated volunteer help in the task of cleaning and repainting the interior, while new interior lighting and window glass for viewing the excavation were installed. Updated educational material has been created and new information will be added as time approaches for the Pit 91 excavation to begin in late June.

R & C, the Museum, and the March of Dimes

Many thanks to all staff members who so generously donated to the 2006 March of Dimes campaign. The annual *Walk America* took place this past Saturday (April 29th) in

Griffith Park. This year's staff participants included Christy Evans (Education), Terri Togiai (R & C), Maria Ponce (R & C), Lisa Escovedo (History), Dorothy Ettensohn (Mineralogy), Sharon Takashita (Guest Relations), George Davis (Crustacea), and Cathy & Lindsey Groves (Echinoderms and Malacology respectively).

Polychaetes

During her last collecting trip to Panama with Dr. Glynn, Leslie Harris discovered an unknown genus of alpheid shrimp which has been named *Lesliebetaeus* in her honor. The description has just come out in Zootaxa: Anker, A., Poddoubtchenko, D., Wehrtmann, I.S. 2006. *Leslibetaeus coibita*, n. gen., n. sp., a new alpheid srimp from the Pacific coast of Panama (Crustacea: Decapoda). Zootaxa 1183: 27-41. (http://www.mapress.com/zootaxa/)



Photograph of the new shrimp genus Lesliebetaeus, *named after Leslie Harris*.

As in previous years, the R & C Newsletter will take a hiatus until the September issue, at which time we will cover activities during May, June, July, and August.

