

Museum Quarterly

LSU Museum of Natural Science

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Paleontology

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Letter from the Director...



Soon, a new Curator of Mammals

The Department of Biological Sciences conducted a successful search this winter for a new Assistant Professor and Curator of Mammals to replace **Mark Hafner**. **Dr. Jake Esselstyn** has signed on to take over when Mark retires in the summer of 2013. Jake is exactly what we hoped for—an outstanding evolutionary biologist who is also an experienced and dedicated field biologist and collector.

Jake's biography appears later in the Newsletter, so I won't belabor it here. But I'd like to highlight one facet of his career that makes him particularly attractive as a museum curator. Jake conducts research in one of the world's most important biogeographic regions—Indonesia. This country, along with Malaysia, is the birthplace of biogeography, where Alfred Russel Wallace discovered evolution by natural selection and dazzled the natural history world with his masterpiece, *The Malay Archipelago*. The islands and complex physiographic structure of Indonesia present thousands of natural experiments in speciation and biodiversity, and Jake is going to take advantage of these. Most researchers avoid Indonesia because of the difficulty and expense of working there. But Jake accepted this challenge, spent 4 months in Jakarta making the contacts necessary to do research, and succeeded in launching an exciting program. He also wrote and received two lucrative NSF grants to fund the work.

With Jake joining the Museum, we now have a critical mass of researchers working in the Indo-Malayan Archipelago. These include two Malaysian students, **Dency Gawin** and **Vivien Chua**, concentrating on bird biogeography in Sarawak and Sabah, a *Ron and Mary Neal Graduate Fellow*, **John Mittermeier**, working on bird conservation in the Moluccas, and a soon-to-be *Board of Regents Fellow*, **Ryan Burner**, studying community ecology in Kalimantan. Before long, this SE Asian group will leave LSU's vaunted Neotropical troops in the dust.

Fred Sheldon

Louisiana Winter Bird Atlas project completes fifth and final year

by Dr. J.V. Remsen



One of the projects undertaken by the Museum's "Louisiana Bird Office" is the Louisiana Winter Bird Atlas (LWBA), which has just finished its fifth and final year. The LWBA, designed with the input of Bird Office Coordinator and doctoral student **Richard Gibbons** and MNS staffers **Steve Cardiff** and **Donna Dittmann**, seeks to quantify winter bird distribution in Louisiana using the state's 800 or so USGS quads as a grid. With so many quads to sample and not enough skilled volunteers to cover them all, our original goal was to sample just 25% of the quads reasonably thoroughly, i.e. with at least 20 hours of field time. But the project has become so popular that we sampled more than 40% of all 800 quads with this level of coverage, plus another 13% with at least 10 hours of coverage – see the map below generously created by Mike Baldwin. More than 65% of all 800 quads have at least some coverage.

Thanks to a grant from the Coypu Foundation, we were able pay a few observers to atlas remote quads in Louisiana, but all the other effort, all 13,200+ hours, was strictly volunteer, with almost all of Louisiana's top birders participating heavily in the project, many of whom are recipients of this newsletter. To participate, an observer has to know the birds not only by sight but

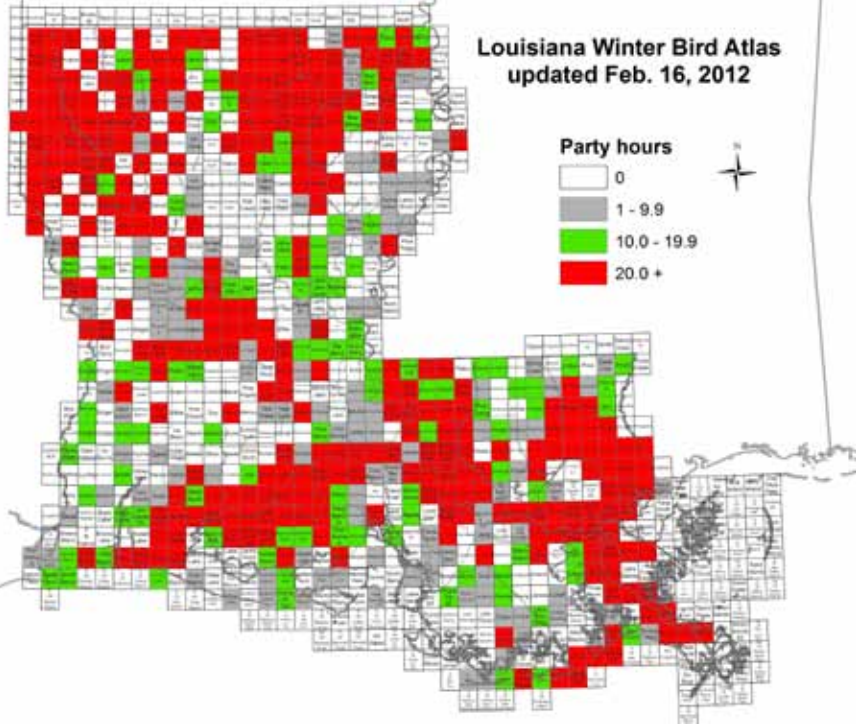
also by sound, and that requirement limits participation to fewer than 100 birders with suitable skills. We also defined "winter" as 10 January to 20 February to limit the sampling period to the time when migration is at a low point.

The goal of the project is to produce a distribution map for each species that occurs in winter in Louisiana that not only indicates presence and absence throughout the state but also provides an index of relative abundance. The standard way to measure relative abundance for birds is "individuals per party hour" so that differences in effort among the quads are accounted for. So, the eventual product will be a map like the one shown below for each species and with each sample quad coded for relative abundance of that species. This will be the first quantitative depiction for any state of relative abundance



Above: American Avocet (*Recurvirostra americana*), a common winter sighting along the Louisiana coast. Photograph by Glenn Seeholzer.

Right: Sandhill Cranes overwinter in Louisiana using harvested fields of central and southwest Louisiana for foraging areas. Photograph by Richard Gibbons.



Right Bottom: This Lark Bunting was discovered by Paul E. Conover near Welsh, LA, on 19 February 2012 during the Winter Bird Atlas. One of the rarer species found during the project, this bird remained for several weeks and was enjoyed by many of the state's birders. Photo on 20 February 2012 by Steven W. Cardiff.

Left Bottom: One of the rarer hawk species to occur in Louisiana, this immature Ferruginous Hawk was found at Lacassine National Wildlife Refuge on February 6, 2012. Photograph by Donna Dittmann.

of winter birds and should prove useful to anyone doing basic or applied science on Louisiana birds. It will quantify the many north-to-south and west-to-east gradients that we suspect exist in many of our winter species. The LWBA will also provide baseline data for monitoring long-term population trends of Louisiana birds. We hope that this project provides a model for initiation of similar projects in other states.

Lagniappe for atlasers has been the discovery of many good new birding areas. Also, atlasers have

turned up lots of unusual records, including Louisiana's first Gray Flycatcher, its second Fork-tailed Flycatcher and Red-throated Loon, and many dozens of records of species on the state's "Review List," the list of species that occur so infrequently in Louisiana that each record is evaluated by the Louisiana Ornithological Society's Bird Records Committee.

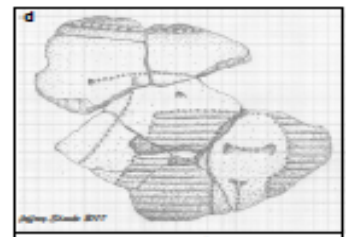
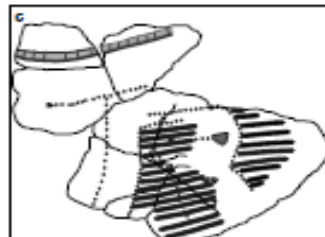
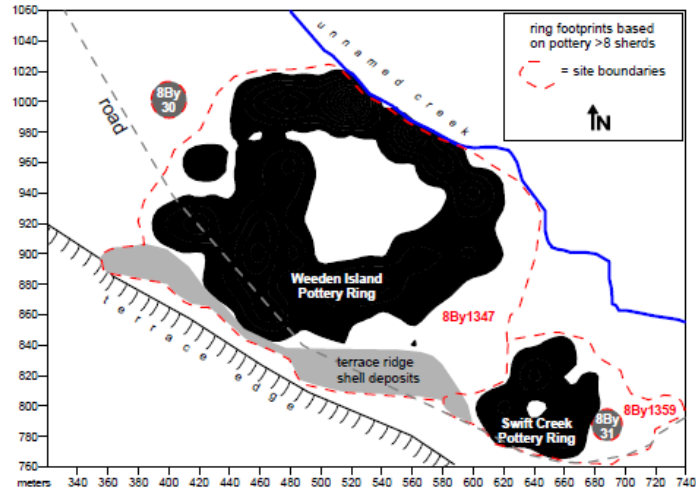
For additional information and everything you ever wanted to know about the LWBA, just Google your way to the project web site.



Summer School in Archaeology

by Dr. Rebecca Saunders

Dr. Rebecca Saunders is directing an archaeological field school on Tyndall Air Force Base (near Panama City, Florida) this summer. With students from the Department of Geography and Anthropology, Saunders will be investigating two prehistoric sites that appear on the landscape as donut-shaped, or ring, areas of organically stained soil, shell, and pottery. Each site is associated with a sand mound. Radiocarbon dates suggest that the two site areas were occupied successively. A smaller, earlier ring dates to between A.D. 1 and A.D. 400 while a larger ring (accompanied by a larger mound) dates to ca. A.D. 400-900. In addition to further delineating site boundaries and the relationship of the sites to one another, Saunders is interested in the pottery from the sites. Surface decoration on the pottery is quite similar to pottery of the same time period in south Louisiana, suggesting considerable interaction between folks on the Florida panhandle and those in coastal Louisiana.



Top: Maps showing the mounds and village areas of the sites to be investigated by a field school this summer. Below the map are artifacts to be used for training. The decoration on this pottery, from the larger ring site, is very similar to a type called French Fork Incised from Louisiana.

News from the Vertebrate Paleontology group

by Dr. Judith Schiebout



Volunteer Bill Lee led a trip to the Tunica Hills in search of bones of Pleistocene animals in March. Best find was a tooth of a giant ground sloth.

Left Photo: (Left to Right) Geology students Ian Cannon and Trevor Fanning, with Bill Lee.

Photo by volunteer Jocelyn Cristobal.



LSUMNS Assists at the Seventh Annual Eagle Expo

By Donna L. Dittmann and Steven W. Cardiff

The Seventh Annual Eagle Expo was held 9-11 February 2012, and this was the fifth straight year that **Donna L. Dittmann** and **Steven W. Cardiff** participated in the event representing LSUMNS.

Eagle Expo is based in Morgan City, LA, at the southern end of the Atchafalaya Basin, which has one of the densest breeding populations of Bald Eagles in the lower forty-eight states. The large numbers of eagles in this area virtually guarantees festival participants will be treated to numerous sightings of these magnificent birds, as well as good photo opportunities. A variety of boat tours are available that explore the diversity of the local area's lakes and bayous, and Donna and Steve are leaders each year, usually on the Turtle Bayou trips where they assist participants with spotting eagles and eagle nests, and discuss eagle identification and natural history; LSUMNS Graduate Student **Ryan Terrill** also assisted with boat tours in 2011. The Turtle Bayou tours have routinely tallied dozens of Bald Eagles during a 2-3

hour trip, with a maximum of 81 just this year on 9 February. From the boat, most participants will have great views of adult eagles, including some observed attending nests with young, sometimes even delivering food items such as American Coots or young nutria. In addition to the many nesting pairs of eagles, large numbers of non-breeding, sub-adult eagles of various ages can be observed and it is fun to discuss how to age these individuals by their plumage. The Turtle Bayou area also hosts spectacular concentrations of other waterbirds, including ducks, many species of waders, American Coots, and Common Gallinules, as well as large numbers of a variety of other birds of prey, especially Turkey Vultures and Red-tailed Hawks (good for ID comparisons with eagles). Because the Eagle Expo usually takes place during the Winter Bird Atlas period, Steve and Donna have been able to multi-task during field trips by counting all birds seen and contributing to the atlas database. Eagle Expo also offers photography workshops

Above: A variety of different boats were used during Eagle Expo – here **Steve Cardiff** is on the bow during a trip on Turtle Bayou.



Above. An adult Bald Eagle sits on its the nest, its two downy chicks barely visible observed during the Turtle Bayou boat trip on 11 February 2012

and bird-oriented seminars. In 2009 and again this year, Donna and Steve also presented a Powerpoint presentation titled *An Introduction to Louisiana's Diurnal Raptor Species* at the Expo's Saturday morning program session.

For more information about Eagle Expo visit: <http://cajuncoast.com/public/events/eagleexpo/>



Below. Bald eagles put on quite a show during Eagle Expo here an adult flies by the boat heading for its nest to deliver an American Coot.



Above. Many non-breeding Bald Eagles are also in the area. Although distant, this image shows three immature birds: (left; a first year bird hatched during the previous season); presumably a fourth year individual on the right; and a fourth or fifth (or sixth) year individual in the middle that looks otherwise like an adult but on close inspection still had dark smudging on the otherwise white tail feathers.



News from the Palynological group

By Dr. Sophie Warny

This academic year has been a good year for our group. In addition to the research papers my students and I published, I am really happy to report that three of our Master's students successfully defended this semester. Shannon will stay as a doctoral student, while Kevin and Carlos are moving on with their lives. They both accepted positions in industry. Kevin will work for Chevron in Pittsburg and Carlos for Ecopetrol in Colombia. We will definitely miss them! Below is a brief abstract of their research.

Shannon Ferguson

Shannon evaluated Pleistocene to Holocene climatic changes in the Black Sea by conducting a detailed dinoflagellate cyst analysis of sediments recovered from DSDP sites 380.

Abstract (Ferguson, 2012)

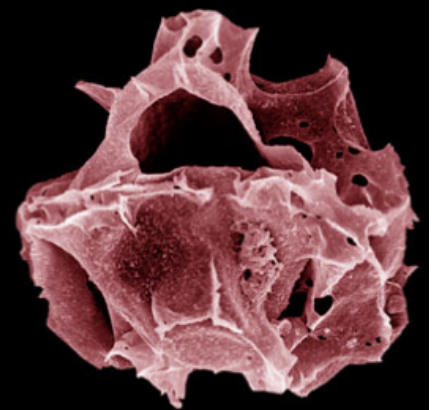
Site 380 of the Deep Sea Drilling Program [DSDP] is located in the southwestern region of the Black Sea (42°05.94', 29°36.82'E). The location of this site is important due to its proximity to the narrow Bosphorus strait, the only present-

day connection between the Black Sea and the Aegean Sea. Drops in eustatic sea level during extensive Pleistocene glacial episodes disconnected the Black Sea from the Aegean Sea at the Bosphorus strait, creating a change from brackish to freshwater within the Black Sea during these intervals. Organic-walled phytoplankton (dinoflagellate cysts, acritarchs, and fresh-water algae) are investigated to better constrain these glacio-eustatic sea-level changes associated with extensive Pleistocene glacial episodes that resulted in interruption of water exchange between the Black Sea and the Aegean Sea. A combination of high-precision analysis of morphological changes seen in two of the most abundant dinoflagellate cyst species present, *Galeacysta etrusca* and *Spiniferites cruciformis*, is undertaken and is combined with dinoflagellate assemblage changes to evaluate a possible morphological response of the cysts to changes in sea-surface salinity and better quantify the impact of sea level changes on the history of the connection.

Shannon Ferguson
CENEX, Louisiana State University
Baton Rouge, USA

Galeacysta etrusca

This specimen is one of the many morphotypes of *G. etrusca*. This dinoflagellate cyst species is endemic to the Black Sea and the Mediterranean region in general. Its morphology (especially the periphragm and the central body) changes in response to sea surface salinity changes.



Kevin Jensen

Kevin conducted a high-resolution palynological analysis of the St. Stephens Quarry in Alabama in order to locate the Eocene-Oligocene boundary and characterize the environmental changes that occurred across this boundary in the Northern Gulf of Mexico region.

Abstract (Jensen, 2012)

The **Eocene-Oligocene** (E-O) transition is a key interval in geological history because it marks a major change in Earth's climate and because these strata are also popular oil targets in the Gulf Coast. E-O sequences in Alabama are stratigraphically complex. The St. Stephens Quarry (SSQ) in Alabama is one of the few accessible quarries along the Gulf Coast where the E-O boundary is visible in outcrop. Despite the abundance of research projects conducted in the SSQ, many controversies still surround the E-O boundary placement and correlation to the Global Stratotype in the Massignano section in Italy that is based on the extinction of the *Hantkeninidae* family.

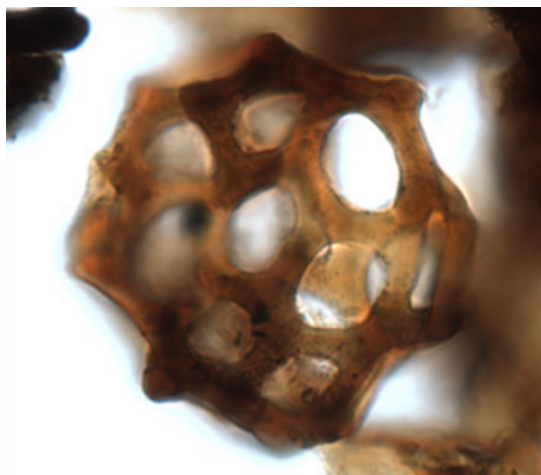
The lack of *Hantkenina sp.* (Miller et. al., 2008) in a core from near the SSQ and the stratigraphy there contribute to the controversy in boundary placement. To supplement the rarity of foraminifera biomarkers in the section, I present the results of a high-resolution palynological study of the St. Stephens Quarry in Alabama, to help better constrain the boundary placement and associated environmental changes. The new data provide 1) an alternate biostratigraphic zonation and locate the E-O boundary based on organic-walled microfossils to increase biostratigraphic control in the Gulf Coast region, 2) a way to supplement and assist biosteering when foraminifera are not present, and 3) new environmental data (sea-surface conditions and climate) across the boundary. By comparing SSQs palynomorph assemblages to worldwide stratigraphic charts we have established that the E-O boundary occurs within the transition between the Shubuta marl and the Bumpnose limestone (between 3.60-3.65m depth).

Carlos Santos

Carlos came to conduct a palynostratigraphic study of the Umir Formation, in the Middle Magdalena Valley Basin (MMVB), in Colombia. Although his work was to provide data to help with biosteering and dating sequences of economical value, the data he acquired provide a very important insight into a fundamental change in plant evolution. His work documents in great details the replacement of gymnosperms by angiosperms immediately prior to the Cretaceous/Tertiary boundary (K/T boundary).

Abstract (Santos, 2012)

The Late Cretaceous Umir Formation in Middle Magdalena Valley Basin (MMVB) was recently acknowledged as a new target. However, there is little known about the regional distribution of the Umir Formation since it is affected by structural complexity and a major regional unconformity. To improve biosteering of the Umir Formation and reduce exploratory risks, a detailed biostratigraphic analysis of the Umir Formation in the MMVB is presented. Eighty samples from four cores drilled in the Central Eastern MMVB were analyzed for palynological content. These cores represent 976.6 meters of the Middle to Upper Umir Formation. The sediment yielded a good recovery of pollen, spores and dinoflagellate cysts of Maastrichtian age, typical of Northern South America. The assemblage is dominated by species such as *Echimonocolpites protofranciscoi*, *Proteacidites dehaani*, *Buttinia andreevi*, *Spinizonocolpites baculatus*, *Proxapertites* spp., *Colombipollis tropicalis*, *Arecipites regio*, *Echitriporites trianguliformis*, *Echitriporites suescae*, *Psilatriteles* spp., *Scabratriletes granularis* and *Gabonisporis vigorouxii*. Dinoflagellate cyst assemblages, include abundances of *Andalusiella* and *Palaeocystodinium* genera and skolechorate cysts dominated by *Achomosphaera - Spiniferites* complex. *Manumiella seelandica*, a dinoflagellate cyst that is a latest Maastrichtian global marker is recorded for the first time in the MMVB.



Carlos Santos
CENEX, Louisiana State University
Baton Rouge, USA

Buttinia andreevi

This pollen grain is an important biostratigraphic marker of unknown taxonomic affinity (most likely an angiosperm). This specimen was extracted from the Late Maastrichtian Umir Formation, Middle Magdalena Valley Basin, Colombia. It did not survive the end Cretaceous extinction.

Three informal zones (A, B and C) are proposed. Zone A covers the Middle Umir, and Zones B and C characterize the Upper Umir member. Alternating spikes of peridinoid (*Andalusiella* and *Palaecosytdinium* genera) and skolochorate cysts, and abundances of *Echimonocolpites protofranciscoi* and *Proxapertites* genus characterize layers close and within the Upper Umir sandstones, showing potential to assist correlations and to evaluate lateral continuity of this new reservoir.

Based on the palynological assemblages, it is suggested that the Middle Umir Formation was deposited in a lagoonal environment with coastal swamps and estuarine conditions that evolved into a semi-restricted bay with river influx for the Upper Umir formation.

Palynological record of the Umir Formation reflects both the drastic replacement of the gymnosperms by the angiosperms and the Late Cretaceous provincialism of peridinacean dinocysts.

What's in the works?

The lab will stay very active next year, with four doctoral candidates and two Master's of Natural Science students/teachers:

Kate Griener is working on a very exciting new technique that entails measuring stable isotopes in single grain of pollen she picks from Antarctic sediments in order to obtain proxies on paleohydrology. Her research is part of our CAREER grant. Kate will be starting her third year and hopes to have her first paper submitted shortly to EPSL.

Marie Thomas is finishing up her first year as a doctoral student. She is conducting a detailed palynological analysis of sediments recovered from the Gulf of Papua by Dr. Andre Droxler's team at Rice University. The core covered the last 120 thousand years. They should have

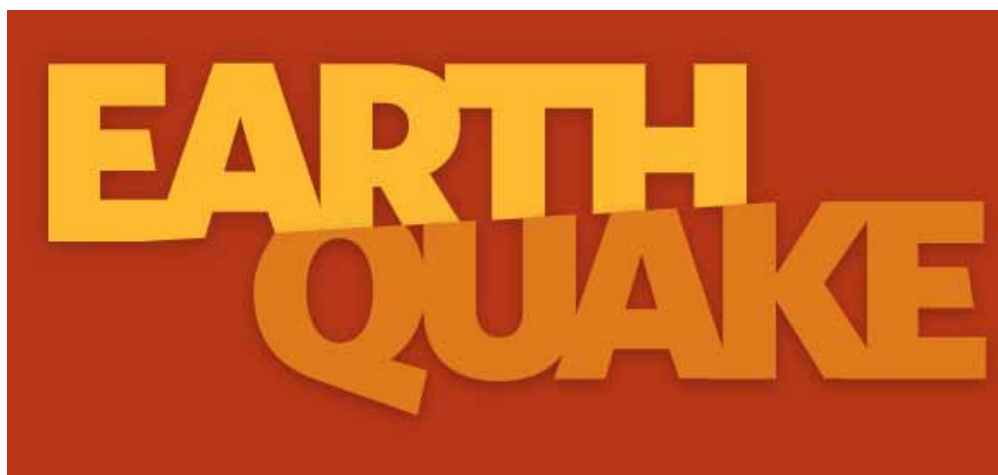
captured changes in sea-level and climate associated with the Last Glacial Cycle, including extreme events such as the last glacial maximum. Her work should allow us to compare the environment between the last interglacial and our current interglacial phase.

Jill Bambrick is also completing her first year. She is conducting a doctoral dissertation under the primary guidance of Dr. Sam Bentley (LSU Geology and Geophysics) and my co-guidance. This project brings our group to its most "modern" study as Jill plans to develop a high-resolution Holocene environmental study of marine and terrestrial processes and climate conditions in the Okak Bay region, Labrador, Canada. Her approach will combine Sam's sedimentological expertise and our palynological techniques. Jill plans to analyze the impact of climate change on patterns of human settlement and habitation.

Shannon Ferguson will stay with our group and start a doctoral dissertation. The final details of her projects are in the works, but Shannon will focus on climatic changes associated with the Last Glacial Cycle in the Gulf of Mexico.

In addition to these full time students, our group also includes two full time teachers who are working on their Master's of Natural Science. Steve Babcock and Breigh Rainey are combining palynological and GIS data and developing science curriculum for science educators in Louisiana and abroad.

Finally, some of the SEM pictures we took of spores and pollen will be featured in the new science exhibits, called Earthquake, that will open May 23, 2012 at the California Academy of Sciences in Golden Gate Park, San Francisco, CA.



HERPETOLOGY NEWS

By Cathy Newman



Cathy Newman is lead author on an exciting collaborative paper published in the May 2012 issue of *Molecular Phylogenetics & Evolution* that uncovered a new leopard frog species in New York City. This study used DNA data to identify populations of unknown leopard frogs with unique mating calls distinct from the calls of the two known species in the region: the northern and southern leopard frogs. All of the leopard frogs in the region look very similar to each other, but DNA analyses showed that the frogs with strange calls are in fact genetically different from the known species. This new species is

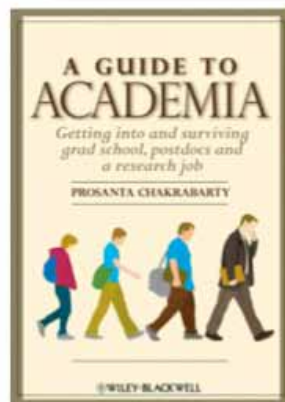
restricted to a very small geographic range, including Staten Island, northern New Jersey, and southeastern mainland New York. The discovery has garnered regional, national, and international press, including the New York Times, National Science Foundation, Times London, and BBC. This new frog species does not yet have a name, but Cathy and her collaborators are currently analyzing additional data and preparing a second paper that will formally describe and name this frog. Cathy plans to continue studying North American leopard frogs across their geographic ranges for her dissertation.

A new
book

by LSUMNS
Fish Curator

A Guide to Academia: Getting into and Surviving Grad School, Postdocs and a Research Job

Prosanta Chakrabarty



- A practical "how-to" guide for students considering a career in academia
- Provides real-world examples of successful applications and interview techniques
- Organized along a natural career timeline, beginning with undergraduate applications to graduate study and concluding with achieving a tenure-track position
- Includes sections on taking the GRE, writing your first CV, creating a professional website and getting published in peer reviewed journals
- Easily adaptable to students across disciplines in the natural sciences

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Collecting bamboo-specialist birds in southeastern Peru

By Ryan S. Terrill and Michael G. Harvey

This November, we and LSUMNS staffers **Dan Lane** and **Brian Smith** were joined by **Sheila Figueroa Ramirez** and **Walter Vargas Campos** from CORBIDI, (LSUMNS's partner organization in Peru), Dr. John Klicka from University of Nevada – Las Vegas, and itinerant vagabond field ornithologist Justin Hite for a short trip to a large region of bamboo forest in southeast Peru near the border with Bolivia and Brazil. We were in search of a few poorly known species of birds found only in that region and primarily in bamboo. These birds

were of special significance to LSUMNS, because three of our main “target” birds have histories closely intertwined with the Museum.

The Black-faced Cotinga (*Conioptilon mcilhennyi*) is a bizarre and distinctive bird discovered and described in the 1960s by retired curator and museum associate John O’Neill, and had not been collected again since that decade. Its specific name, *mcilhennyi*, honors John S. McIlhenny, famous Louisiana naturalist and the son of the inventor of Tabasco sauce, who was an ardent LSUMNS supporter. In fact, the McIlhenny family continues to support LSUMNS in ornithological work in South America.

The Rufous-fronted Antthrush (*Formicarius rufifrons*) has one of the tiniest geographic ranges of any bird in South America, and was not even described until the late 1950’s. After its initial discovery, the bird was not detected again until museum associate Ted Parker rediscovered the species over twenty years later in Manu National Park. Since then, the species has been detected in a small area around the Rio Manu in southern Madre de Dios and in western Brazil, but its range and biology are still poorly known. While a doctoral student at LSU, Andy Kratter, in one of the first published estimates of the population size of a South American bird, estimated that there were only 5000 individuals of this species.

The Rufous Twistwing (*Cnipodectes superrufus*) was first discovered as a misidentified specimen in the Museo,

Lima, by Dan Lane, and was subsequently found in the wild. This bird held special significance on our trip, because it was Dan’s first chance to see in life the species that he had discovered and described.

We were all attending the ninth Neotropical Ornithological Congress in Cuzco the week before, and as the meetings closed, we planned our move to the lowlands to look for, and hopefully collect, some of these birds. We traversed Cuzco in taxis and busses with

Above: A Royal Flycatcher knocks everyone’s socks off.

expedition gear and nitrogen tanks, stopping traffic, and annoying tourists and locals alike in the narrow one-lane streets. Dozens of drivers laid on their horns at us as we loaded and unloaded gear, but our minds were already on the bamboo. Our target site was a huge area of lowland bamboo that had never been thoroughly surveyed. Due to the travel-by-river nature of most fieldwork in the Peruvian lowlands, most bamboo had only been studied directly adjacent to rivers, and so the avifauna of bamboo far from rivers is quite poorly known. This is, in fact, Dan's pet hypothesis about why the Rufous Twistwing went so long without being discovered.

When we all arrived in Puerto Maldonado, the hot and humid lowlands were an abrupt change from the thin, crisp air of Cuzco. We arranged for a bus, and were soon heading north on a highway towards the Peru-Brazil border. The morning after arriving at the little town of Iberia, we set out on foot to scout out the local birdlife. As we walked out of town, the diversity was immediately impressive, and we all had a great feeling about the area. As we walked down a wide logging road, we were looking for tall, pristine bamboo patches, and we heard a sputtering call from some short, highly disturbed bamboo right next to the road. Dan jerked his head and told us he thought that might actually be the Twistwing. We found the bird, and within minutes were all observing the Rufous Twistwing singing at point-blank range! None of us thought the bird would be this easy to find, and knowing that we had come to the right spot, a maelstrom of high-fives and celebratory dances ensued.

It took another full day to try to find a campsite. As we explored the area, we soon found that it was quickly changing. Forest was being logged daily, and new roads were everywhere. Clearly, the new trans-continental highway that runs right through town had brought an explosion of development. We explored along rivers and roads, and found a new bridge had been built. I flagged down a passing motorcyclist, and soon found large stands of bamboo and a potential campsite down a small muddy road. We were now ready to begin fieldwork.

The next few days were a blur of intense activity

and excitement. Gathering at camp after our morning exploits, each of us recounted the new and interesting birds seen, heard, or collected. We found the cotinga and antthrush almost immediately, right near camp. We also found many birds far from their expected ranges or habitats, including a potentially new taxon of flycatcher. Each morning was a rush of excitement; each night was spent plotting the work for the next day. Camp ran smoothly, and John Klicka and Brian Smith's experience with fieldwork combined with Sheila's preparatory skills, Dan's knowledge of bird vocalizations and distribution, and Walter's and Justin's zealous dedication to fieldwork made our team about as perfect as we can imagine.

We collected our target birds and many more, all of which will be coming back to LSU soon, and everyone gained much experience and knowledge about birds of southeastern Peru. Furthermore, we are already working on publishing our results from this trip, which will be one of the first published accounts of the birdlife of this type of habitat.



Above: Dan, Ryan, Justin, and Mike celebrate finding the *Cnipodectes superrufus*.

LSUMNS hosts Louisiana Bird Records Committee 2012 Annual Meeting

By
Donna L. Dittmann
and Steven W. Cardiff



The Louisiana Ornithological Society's Louisiana Bird Records Committee (LBRC) 2012 Annual Meeting was hosted at the LSUMNS Ornithology Collection on Saturday, 10 March 2012. The LBRC was founded in 1979 (**Dr. J. V. Remsen** was an original member) making this the 33rd Annual Meeting. Since the LBRC's inception, Committee archives have been generously maintained at LSUMNS, and beginning in 1995, LBRC Annual Meetings have been held at the Museum not only because the archives are housed here but because access to the bird specimen collection can greatly facilitate rare bird record reviews through direct examination of "record" specimens as well as comparative materials. Museum Staff **Donna L. Dittmann** (Secretary, Voting Member, Newsletter Editor, and author of "Reports of the LBRC") and **Steven W. Cardiff** (Chair and Voting Member) are currently LBRC officers. Highlights of this year's meeting included the addition of three species to the State bird list (Prairie Falcon, Black-headed Gull, and Ladder-backed Woodpecker), bringing the official Louisiana total to 474 species.

For more information about the LBRC, go to the LOS-LBRC website at: <http://www.losbird.org/lbrc/lbrc.htm> . Much more detail about the 2012 Annual Meeting can be found in the "Newsletter of the Louisiana Bird Records Committee - Annual Meeting Report 2012" at: <http://losbird.org/lbrc/LBRCNewsletter2012.pdf>

Above.

New to the Louisiana bird list was this Prairie Falcon discovered by **Steven W. Cardiff** and **Donna L. Dittmann (photographer)**, 28 December 2011 during the inaugural White Lake Christmas Bird Count at White Lake Wetland Conservation Area.



THE REBIRTH OF THE LSU MUSEUM OF NATURAL SCIENCE FISH COLLECTION

BEFORE (2008): NO TISSUE COLLECTION, 280K DISORGANIZED AND POORLY STORED SPECIMENS, MOLDY WALLS, NO TEMPERATURE AND HUMIDITY CONTROL, PRECARIOUS SHELVING



AFTER (2012): 4000+ TISSUE SAMPLES, 400K+ SPECIMENS (15K+ LOTS), TEMPERATURE AND HUMIDITY CONTROL, THERMO-LABELS, TISSUE AND WET COLLECTIONS ACCESSIBLE ON-LINE



Curator Prosanta Chakrabarty would like to acknowledge the hard work of Caleb McMahan as well as the many undergrads and grad students who helped out cleaning and organizing jars: Parker House, Valerie Derouen, Justin Kutz, Jessica Spedale, Santiago Claramunt, David Anderson, Gustavo Bravo, James Maley, Paige Patterson, Maiadah Bader, Shelley Chauvin, Jessica Salter, Jill Dowling, and Ross Hartfield. Museum of Natural Science Director Fred Sheldon, Dean Kevin Carman, and Biological Sciences Chairs, Marcia Newcomer and Jim Moroney, also provided much needed financial and emotional support.

The LSU Museum of Natural Science welcomes Dr. Jake Esselstyn and his family!



A
few
words
about our
new curator
of
mammals

Jake grew up in western Oregon and completed his undergraduate degree in Wildlife Science at Oregon State University. At the time, he was interested in ecology and conservation biology. Looking for adventure, he joined the Peace Corps and spent several years working as a biologist in the Philippines. While he was there, he had the opportunity to survey small mammals in the mountains and caves of Palawan Island, in the southwestern part of the country. This was an eye-opening experience because he quickly realized how little was known about basic levels of biodiversity. It was clear that our knowledge of how many species of mammals lived on Palawan was substantially underestimated. At this point he became hooked on the work that natural history museums do to document and understand biodiversity. He thus went on to pursue a PhD at the University of Kansas, which, much like LSU, has an active natural history museum affiliated with a biology department. For his PhD research, he investigated the diversity, relationships, and biogeography of shrews across Southeast Asia, but with an emphasis on the species endemic to

the Philippines. After receiving his degree in 2010, he was awarded an international post-doctoral fellowship from the National Science Foundation and began working at the University of Indonesia and McMaster University on projects designed to illuminate the diversity and relationships of Indonesian small mammals. He plans to continue this work at LSU with an active field research program and investigations of molecular and ecological diversity in mammals.





Ancient DNA, Extinct Birds, and the Future of Science Funding

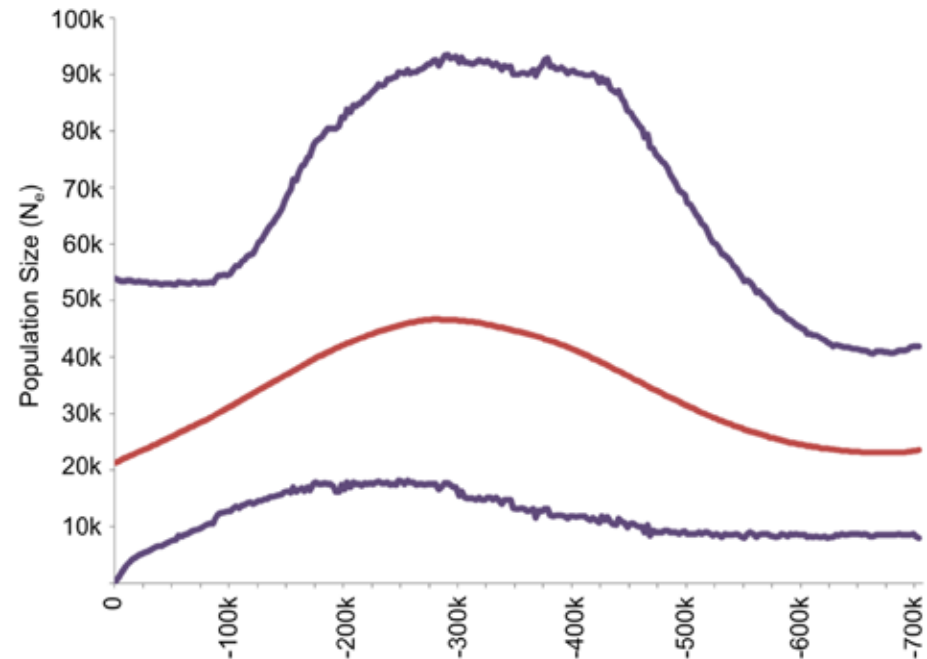
By Michael Harvey

Federal funding for biological research has become increasingly difficult to come by. Federal funding rates (the proportion of applications funded) from the National Science Foundation were 27% and 26% in 2002 and 2003, respectively. In 2010 and 2011, however, respective rates were down to 19% and 18%. As a result, many scientists are branching out in order to find support for their research. A recent phenomenon in research funding is called “crowdfunding”. In crowdfunding, a research project is publicized using networking tools like the internet and this newsletter. The public can then fund research efforts collectively, using pooled donations from interested parties. Recently, an online platform for crowdfunding scientific research projects called petridish (www.petridish.org) has emerged. LSUMNS postdoctoral research **Brian Smith** and I, both in the Brumfield lab, decided to experiment with crowdfunding by profiling a research project using petridish.

Crowdfunding seems to work best for “sexy” research projects that appeal to the public. Brian and I have been planning just such a project. Seven bird species are known or thought to have gone extinct in North America since the arrival of Europeans. We are particularly interested in four of these species – the Passenger Pigeon, Ivory-billed Woodpecker, Carolina Parakeet, and Bachman’s Warbler. The Passenger Pigeon is thought to have been one of the most abundant birds on Earth before its startling decline and extinction at the beginning of the Twentieth Century. The Ivory-billed Woodpecker may have always been rare and restricted to only the tallest, most primeval forests – the last confirmed sightings

were from the early 1940’s in Louisiana. The Carolina Parakeet was the only eastern parrot and it disappeared also in the early Twentieth Century. The Bachman’s Warbler, a bird of southeastern bottomlands, survived into the 1960’s in extensive swamps in South Carolina. Unfortunately, we still know very little about the population status and general biology of each species before Europeans arrived, or the reasons that they declined.

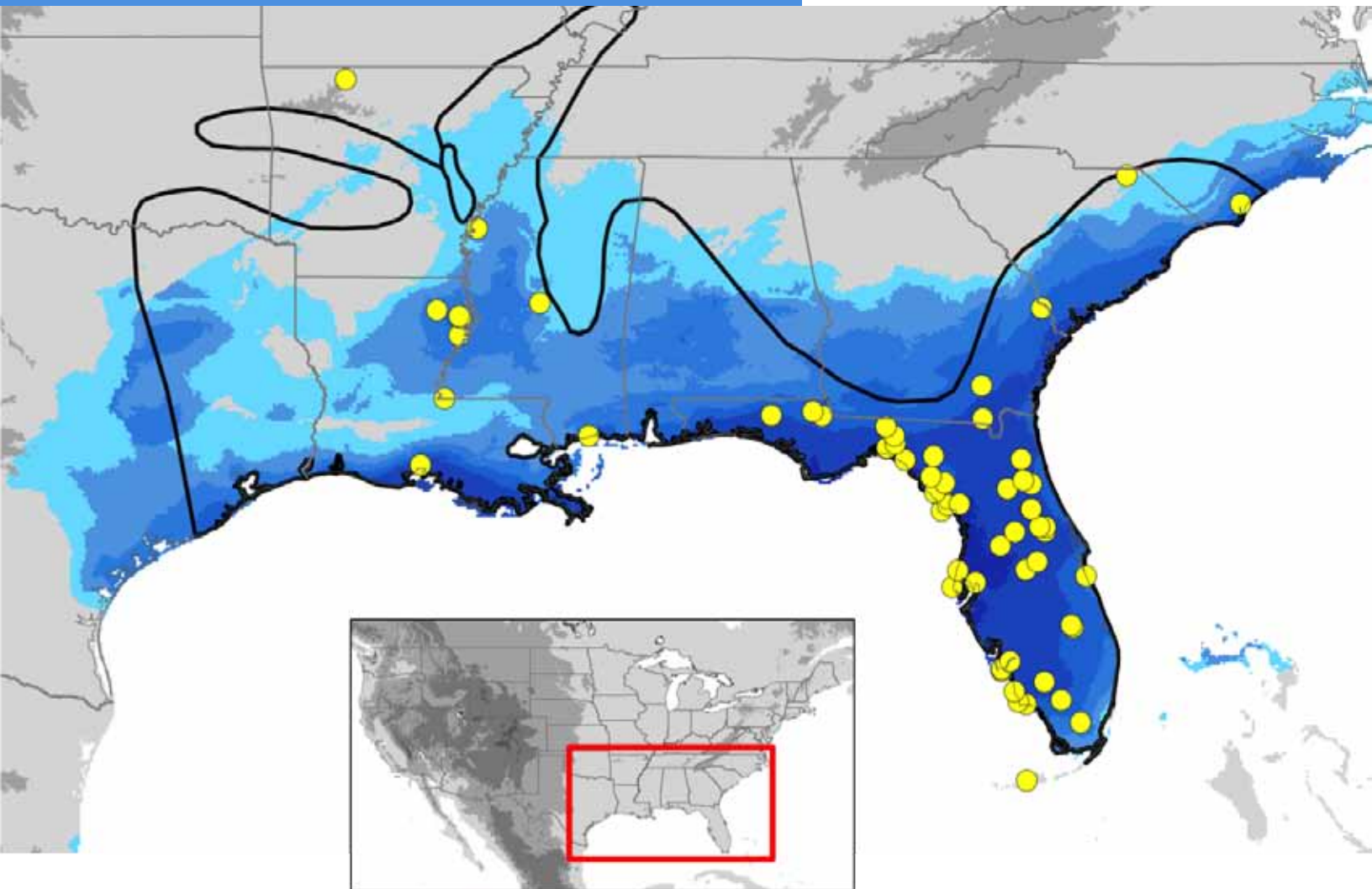
New scientific tools promise to help us understand when and why these birds went extinct. We can now extract DNA from even very old museum specimens (“ancient” DNA). Fortunately, many specimens of these extinct species have found their way into museums, and can be used for this research. We can then use DNA sequences to conduct population genetics analyses. Genetic variation can actually tell us a lot about the histories of these birds. We can determine population size based on the amount of variation, and determine whether there were population increases or decreases and how long ago they occurred by reconstructing the histories of genes. These techniques will give us an idea how abundant these species were historically, and whether they declined before or after European colonization of the Americas. Another tool, Geographical Information Systems (GIS), can help us model the geographic ranges of these species based on localities where they were observed before they went extinct. We can model the expected historical range of each species, and also look at habitat destruction in the range leading up to the present to see if habitat loss was likely a factor in the extinctions.



This project promises to take advantage of museum collections to unlock some of the secrets of avian extinctions. This will not only help us understand what and why we lost these species, but may help us to prevent future extinctions. This will also be a test of crowdfunding as a tool for scientific research. Good or bad, science is at a transition, and appealing directly to the general public may become a necessary part of successful research projects in the future. If you are interested in learning more about, or donating to, this project, please visit www.petridish.org and click on the project “Using Ancient DNA to Reconstruct Avian Extinctions”. Share the link with your friends and family, and you will be participating in crowdfunding, perhaps the future of science funding.

Top: An example of a Bayesian Skyline Plot showing changes in effective population size back in time with lines for the mean and upper and lower confidence intervals.

Bottom: A niche model showing the hypothetical historical distribution of Ivory-billed Woodpecker based on known records (yellow dots). Darker blue indicates higher probability of occurrence.





Raising Virginia: The Scientific Way

By Elizabeth Derryberry

As a behavioral biologist, I thought I would be primarily obsessed this year with watching the behavioral development of my new daughter, Virginia. She is of course advanced in every way. She does everything early – holding up her head, sucking her thumb, smiling, laughing – and next she'll be writing sonnets. In fact, these behaviors come so easily and quickly, that I've found myself obsessing over an unexpected question. How early can one start a life list?

Life lists seemingly have few rules. You see a bird, or you hear its song, and you can add it to a list of the other species that you have seen or heard. You don't have to prove to anyone that you saw or heard the bird. It's a matter of knowing that you know what it is. This seems very straightforward, until you consider it from the perspective of an infant. Does one have to be cognizant of what a bird is to start a list? If you see or hear a bird, but don't know that you know what a bird is, then does this still count as seeing or hearing that bird? To put it more simply, does simply being captivated with a mockingbird singing outside one's window enough to add *Mimus polyglottos* to one's list? How about listening to a discussion between **James Maley** and **Dan Lane** about how cedar waxwings got their name? Does that warrant the addition of *Bombcilla cedrorum*?

Now, it may appear that I'm being a bit of a tiger mom, or should I say ornithologist mom, about this point. I should clarify that we're not in competition with the new baby down the block, nor is a life list a requirement for getting off the waitlist at the local day care (I wish it was!). Rather, I see the prospect of starting a life list with Virginia as a way of engendering a life long love of birds as well as a chance to take advantage of the amazing ability of young children to classify to link that love of birds to a deeper knowledge about them. Although I can't seem to answer the question of whether or not Virginia can start her life list now, I imagine that like most parenting questions, there really is no answer.

Top: Elizabeth Derryberry holding her new daughter, Virginia



John S. McIlhenny

The LSUMNS was delighted to receive this framed photograph of the late John S. McIlhenny, who graciously funded MNS research in the Neotropics for decades; this research also led to the discovery of several new species of birds, including *Conioptilon mcilhennyi* (see article on p. 11). His family continues to support the LSUMNS ornithological work in South America, as does the Coypu Foundation, established by John S. McIlhenny. The photograph was donated by Lisa Osborn, the great-grand-daughter of legendary LSUMNS supporter E. A. McIlhenny. We also thank LSU alum Bill Matthews for helping with this donation. We are deeply grateful.

Left: John S. McIlhenny holding Margaret Stones plant paintings



Thanks are extended to Tulane University for donating its mammal, herpetology, and ornithology collections to the LSU MNS!





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