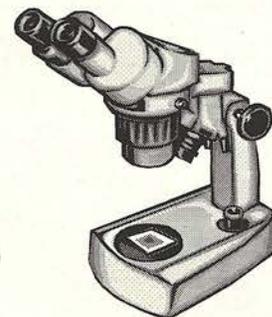


NEWS FROM THE MUSEUM

by Doug Yanega, Senior Museum Scientist



This past year has been a very busy one in the Museum, especially in terms of affiliated personnel. Our big NSF-funded bee-databasing project has continued plugging along, and Keve Ribardo and I now have data and georeferencing for nearly 100,000 bees from the LACM, CSCA (in Sacramento), UC Berkeley, and ERM collections entered into our database. The ERM database in total now contains some 425,000 records, including a lot of material that belongs to other collections, and over 160,000 of these records are uploaded and made available to the public through the DiscoverLife data portal.

Over the summer, we said goodbye to Vladimir Berezovskiy, who had worked here for 15 years, and retired in June—though he still drops by from time to time, and does some “free-lance” slide preparation for us and others in the department. We’ve been especially fortunate to have funding available to put several curatorial assistants on our payroll over the last year, including former student Cole Watson, who has been helping sort recent acquisitions to order, and organizing some large donations for incorporation into the collection (including an amazing and huge assortment of specimens from Vandenberg AFB, donated by FERM member Gordon Pratt), and Jee Park, who has been dehydrating ethanol samples, and point-mounting large numbers of dried specimens. More recently, former Heraty lab student Roger Burks returned to Riverside, and we were able to hire him to assist with the curation of our vast unsorted mass of Chalcidoid wasps, an arrangement which has been very mutually beneficial. We’ve also added donations from the Hogue and Hlavac families, after the passing of these former UCR entomologists who kept personal collections, which have now made their way back to us.

This was also a good year for field collecting, and not all of it was done by Greg Ballmer this time around (despite his trip to Laos and several more local solo excursions). I took a long road trip with an old friend, Dr. James Adams from Dalton State College, starting in Georgia, passing through Missouri and Kansas, to Denver (where I gave a presentation to the Lepidopterist’s Society), then continuing on to elsewhere in Colorado, then to Arizona and New Mexico, and finally back to Georgia again—collecting all along the way, naturally. Those trips, plus another BioBlitz this past Spring in Joshua Tree NP, and malaise samples from various countries, made for a good number of new additions to the museum. Much of this news has appeared on the FERM FaceBook page over the past year, and I’d like to encourage FERM members who have not already done so, to track that page down (admittedly not an easy trick, but if nothing else, you can contact myself or another FERM officer/member to get the link) and give us a Like! Those of you who have been following the page there know we’d started out 2012 trying to keep track of new species discovered among our holdings, and I can announce here that we lost track, but according to Serguei and Roger, there were apparently a large number of new chalcidoid wasps they discovered this past year, to tack on to the dozen species I’d personally been aware of; so our total for 2012 is something more on the order of 100 additional new species! In the modern social media era, where even new insect discoveries can show up in one’s internet newsfeed, we may have to give some serious thought to better self-promotion (though I’m not fully convinced that naming new species after celebrities is really the best way to go about it).

Meetings and Partings

by John Hash & Doug Yanega

Last year’s FERM guest speaker, Dr. Donald Feener Jr., had no difficulty keeping the undivided attention of the audience. Dr. Feener distilled decades of his research program on the behavioral and ecological interactions of phorid flies and their ant hosts into an hour long presentation of fascinating natural history that even turned quite comical at times, with video of tiny *Pseudacteon* spp. attacking ants in slow motion, set to appropriate music. The presentation was full of great anecdotes and travel experiences from his extensive fieldwork. Some of his early study on these host/parasitoid interactions paved the way for use of phorids as biological control agents for red imported fire-ant in the United States, the first demonstration of the effect that the flies have on the foraging behavior of ants.

As for partings, several FERM members who were students at UCR have gotten their degrees since the last FERM Newsletter, including Lily Berniker, Kristen Hladun, Wei-Song Hwang, Jason Mottern, Adena Why, and Guanyang Zhang. We’d like to wish them all well in the future, and - who knows? - some of them may even come back as FERM guest speakers some day!

2012 in Review

By Gene Drake

I don't know how the rest of you feel, but from my perspective the year went by far too fast for my own comfort. I do trust that each of you had some great days afield in pursuit of interesting insects. I was busy as the proverbial "cat on a hot tin roof".

In January I found myself digging in the bottom of clear cold streams along California's coast looking for nymphs of the winter emerging stonefly genus *Isocapnia*. At this point there is nothing known about the immature stages of *Isocapnia*. With the high price of gold, every person that discovered my activity on the stream bottom wanted to know if I have struck it rich yet. Rich? That is open for discussion; how do you put a dollar value on a day spent in clear cool water with the birds singing in 400 year old Canyon Live Oak trees, while overhead you have a blue sky and a few puffy white clouds passing by at about 5,000 feet. Finish that day with view of the sunset over Morro Bay accompanied by a small fire in the fireplace in your room. There is a remote possibility *Isocapnia* nymphs may never actually be found! This January the winter emerging *Calileuctra dobryi* nymph will be in the headlights, in order to finish a paper sitting on the shelf.

I am not an avid bird watcher, but I did get to record Arctic Loon on my life list this last year. One lone lost Arctic Loon was found feeding and preening on San Simeon Creek's lagoon at the ocean. The month was February and my wife has a documentation photo of the event. The Morro Bay bird festival was in full swing and hundreds of people added Arctic Loon to their life list. How Arctic Loons and stoneflies get mixed on one day afield is just serendipity, nature is that way sometimes.

During April, May and June I placed yellow pan traps along a riparian pathway through Amador County, on the western foothills of the Sierra Nevada. In this location there was a large number of leafhopper species which translates into collecting large numbers of Mymarids. Several specimens of a Mymarid that is barely more than 1/4 of a millimeter in length were added to the museum's collection. I don't know if Serguei can stand me bringing another vial of Mymarids into the Entomology Research Museum. I hope to mount the Diapriidae and Scelionidae found in the yellow pans on these trips to Amador County. That curation will be a major undertaking all by itself.

This last Spring Vladimir Berezovskiy retired, who had been slide mounting all of the Mymarids processed for Serguei's publications. A quick sort of the Amador County collections found only one known species of Mymaridae and a large number of unknown species. That is correct; a large number of slides will need to be made. We might need to pass a hat for dollar contributions and hire Vlad back on "time and a half basis". There is no way he can do the job on simple 8 hour work days. I will truly miss his smiling face on my days in the Entomology Museum. Somehow, Cole Watson, Roger Burks and Keve Ribardo simply don't have the smile. Don't get me wrong - they are nice fellows! - but only Vlad had that special greeting smile. However, time marches on and we will cope with our loss. I wish Vlad a happy, healthy and long retirement.

In June there was a FERM collection trip to Joshua Tree National Monument on tap. Tap! Tap! Oh yes, I had a broken water pipe in Riverside at 4:00 AM that morning. There was water everywhere except in the tap where it should have been; and things went downhill from there on for the next 24 hours. So much for that trip.

Eyes in the Sky

by Gene Drake

Google Earth has stepped up the resolution of its photographs of the earth's surface, at least in northern California. In May 2012 I set out a series of yellow pan traps to capture parasitic Hymenoptera along a small stream in northern California. In September I went to Google Earth to confirm the GPS data on the collection site. Every one of my yellow pans not under a tree was visible. The pans were 6 inches in diameter and about 5 feet apart; I can now give you the GPS data coordinates on each pan in the array from my computer screen. Don't venture away from the tree line unless you are ready to be exposed to everyone's view. The resolution of these new public photos is unbelievable. Doing vegetation mapping with this new photo detail would be no problem.

During my Aerial Photography classes in the 1960's I saw a photo pair exposed over Fort Ord at Monterey, CA, taken from a U2 spy plane flying at 20,000 feet. In those photos you could read the playing cards held by each of the GI's playing poker at a standard card table. These photos were not for public consumption. I hope that Google Earth is not headed to that resolution.

Be brave when you venture out in public tomorrow; Google is waiting! And please don't tell me you haven't been warned!

Renew Your Membership and/or Join FERM.

While we realize that you have not been hearing much from us (it's been extremely hard to convince people to contribute articles for the newsletter, and even our FaceBook page has seen little activity), we've been careful - as always - not to spend anything we don't need to. Money donated to FERM will get put to good use, and is greatly appreciated.

To those of you who have been kind enough to contribute your dues recently, we are very grateful, and for the rest of you we include below the usual dues renewal form, which we hope you'll send in soon. Thanks very much!

Friends of the Entomology Research Museum 2013 Membership Form

Check here if you are renewing (renew by July each year)

Name _____

Address _____

Telephone _____ Email _____

MEMBERSHIP CATEGORIES:

Please Check

Basic Membership	\$10.00	<input type="checkbox"/>
Sustaining Member	\$25.00+	<input type="checkbox"/>
Donor	\$100.00+	<input type="checkbox"/>
Benefactor	\$500.00+	<input type="checkbox"/>
Patron	\$1000.00+	<input type="checkbox"/>

Submit your membership form and dues to:

Keve Ribardo, Treasurer
Friends of the Entomology Research
Museum
Department of Entomology
University of California
Riverside, CA 92521-0314

Dues and other contributions are payable by check to the **UCR Foundation**, noting "**Entomology Museum**" on the memo line on your check. (It is **very** important to note "Entomology Museum" in order for your donation to be deposited in the Friends' UCR Foundation account.)

Indochina Inhabitants Ingest Interesting Indigenous Insects

by Greg Ballmer and John J.S. Burton

The prospect of spending a month traveling through the Lao Peoples' Democratic Republic (aka Laos) to collect and photograph insects was irresistible. The primary motive was to produce a book for Lao schoolchildren about the insects in their environment. Both authors had served during the 1960s as U.S. Peace Corps Volunteers in the National Malaria Eradication Project of Thailand, whose language and culture are closely related to the Lao. Aside from the entomological goals, this was a precious opportunity to enjoy the magnificent tropical forest and traditional Lao culture before they become irreversibly lost or adulterated by economic and foreign cultural influences.

The economic development of landlocked Lao PDR has lagged behind some of its more populous neighbors (especially China, Thailand, and Viet Nam) and remains largely a poor agrarian society, reminiscent of rural Thailand 40 years ago. But that is changing as natural resources (chiefly forest products, minerals, and potential for hydro-electric power generation) are increasingly exploited. Tourists have also discovered Lao PDR and the expanding network of paved highways facilitates travel to remote and spectacular scenery, historical remnants of the Indochina wars, and friendly exotic cultures.

One of us (John) already had a preliminary agreement with a charitable Lao publisher, Big Brother Mouse (BBM), to write a pictorial book on insects for Lao children. Be-

cause books are virtually nonexistent in rural Lao schools, BBM aims to improve literacy by producing and gifting books to Lao schoolchildren. Our intent was to include as many arthropod orders as possible, but BBM's American founder and current adviser, Sasha Alyson, asked that the book emphasize the insects that Lao children are likely to eat.

We knew that giant water bugs (*Lethocerus indicus*: Belostomatidae), weaver ants (*Oecophylla smaragdina*: Formicidae), and silkworm pupae (*Bombyx mori*: Bombycidae), are sometimes included in the diets of Southeast Asians; but it was surprising to learn that rural Lao often snack on a much wider variety of insects. In village markets we found orthopterans (chiefly grasshoppers, crickets, mole crickets, and katydids), cicadas, June beetles, "giant stink-bugs" (Tessaratomidae), and hornet and wasp nests with fat larvae. Most kinds of insects were available fresh or already fried, seasoned, and ready to eat, either sorted or as mixtures. The latter were often very diverse, including cerambycids, diving beetles, mantids, moths, termites, and many or even most of the types of insects that would normally be attracted to a black light. In our travels, we soon discovered that insect light traps were in widespread use, especially near the Mekong River bordering Thailand. This is something we had not seen in previous visits to the Lao PDR and is apparently an innovation recently introduced from neighboring Thailand (according to one villager). The traps typically consist of two UV lights, one atop a 5-6 meter pole and the other nearer the ground, above a bucket or basin of water and in front of

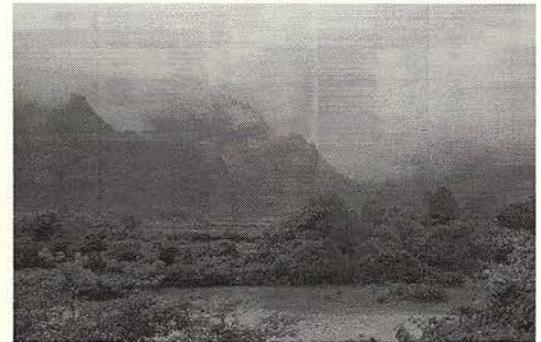


John Burton at UV light trap

a length of corrugated metal serving as a reflector and baffle to intercept flying insects. When in operation, we found the basins swarming with swimming/drowning insects of all sorts. The trapped insects are typically scooped out each morning and the most desirable ones tossed into a wok with hot oil, after which they become a tasty snack, rather than a main course.

Insects have long been a part of the informal diet of rural Lao. For example, silkworm pupae are a by-product of the cottage silk industry, while ant larvae and seasonally abundant crickets, grasshoppers, and June beetles can fulfill a dietary need out of necessity in lean times. The appearance of these and other insects in commercial quantities seems to be a new trend, mirroring the situation in Northeastern Thailand where fried insects are often sold at roadside snack shops alongside more mundane offerings, such as roast chicken and fresh fruit.

Insects are generally known to be a high quality source of protein, fats, and vitamins; but that is not why rural Lao eat them. When freshly fried and seasoned, they become a tasty, crunchy snack. Although culturally equivalent to potato chips, cheese puffs, and pretzel snacks in the Western diet, fried insects are probably a bit more healthful. Yum!



Song River Valley near Vang Vieng



Giant Stink Bugs (*Tessaratomidae*); a pest of Longan trees



Green Weaver Ants (*Oecophylla smaragdina*)



Dung Beetles (*Scarabaeidae*)

New non-native spiders in southern California

by Rick Vetter

Southern California is a magnet for the establishment of non-native species, with all our different habitats. Although insects usually get the attention, mostly due to some detrimental or destructive aspects of their biology, spiders are also establishing here as well. Recently, two species have started calling southern California home.

The brown widow spider, *Latrodectus hesperus*, was first found in Torrance in Los Angeles County in 2003 and has spread through urban Los Angeles and San Diego metropolitan areas. They started showing up in Riverside in 2010 and have taken over patio furniture and barbecues. This spider is a ubiquitous urban pest species, where people would remark that they used to have three or four black widows in their backyard but now they have 15 to 20 brown widows. The spider is typically tannish brown with stripes and spots but can vary from an almost white color to almost as dark as a black widow. The easiest way to verify a brown widow infestation is by the egg sacs which are round and covered with spikes looking like a giant pollen grain. They are found almost exclusively outside (not even in garages), within 3 feet of the ground. They are very common in the undersides of inexpensive patio furniture, picnic tables, the curled lips of potted plants and the recessed handle on plastic trash bins. Although they are widow spiders, their bites are mild in comparison to black widows. Two recent publications in collaboration with a colleague at Fullerton College and four of his students investigated the localities where brown widows are found in southern California in different habitats and a semi-fruitless search for a biocontrol agent.

While searching for brown widows in Ventura County, I came across a spider that I did not recognize. It was as large as a black widow, looked suspiciously like a member of the genus *Steatoda* (Theridiidae) but was much larger than any known *Steatoda* from California. Examination of the spiders back in Riverside confirmed that it was the European *Steatoda nobilis* which has spread in western Europe. It possibly was brought over to this country by military folks in Port Hueneme in Ventura County. This spider may only have just started becoming established because it has only been found in good numbers in Ventura County. However, I have now had single specimens submitted to me from Fullerton, Oakland and Monterey.

Publications:

- Vetter, R. S., L. S. Vincent, A. A. Itnyre, D. E. Clarke, K. I. Reinker, D. W. R. Danielsen, L. J. Robinson, J. N. Kabashima, and M. K. Rust. 2012. Predators and parasitoids of egg sacs of the widow spiders, *Latrodectus geometricus* and *Latrodectus hesperus* (Araneae: Theridiidae), in southern California. *J. Arachnol.* 40: 209-214.
- Vetter, R. S., L. S. Vincent, D. W. R. Danielsen, K. I. Reinker, D. E. Clarke, A. A. Itnyre, J. N. Kabashima, and M. K. Rust. 2012. The prevalence of brown widow and black widow spiders (Araneae: Theridiidae) in urban southern California. *J. Med. Entomol.* 49: 947-951.
- Vetter, R. S. and M. K. Rust. 2012. A large European combfoot spider, *Steatoda nobilis* (Thorell, 1875) (Araneae: Theridiidae) newly established in Ventura County, California. *Pan-Pac. Entomol.* 88: 92-97.

Got an idea for a FERM article???

More than ever, we need YOUR contributions for the FERM newsletter! Remember, this newsletter won't have much in it unless we have material from you folks that we can publish. Feel free to send in photos, articles, websites, recent publications related to insects and even stories about how the ERM has assisted you in your bug-related endeavors. We're especially looking for travelogues of collecting trips abroad, especially if you can give a talk to a FERM meeting – we'd really like to go back to having more than one meeting per year!! Send them to dyanega@ucr.edu, preferably as attachments (not in email text). Additional information is on the front page. THANKS!





Photo by G. R. Ballmer ©

***Systropus* (Diptera: Bombyliidae)**

There are – not surprisingly, given how natural selection operates – a very large and diverse array of insects that are mimics of stinging Hymenoptera (bees and wasps). Some are more convincing than others, and some deviate more strongly from their ancestral “groundplan” appearance, and this issue’s Bug of the Month is just such an example. While a careful and educated observer could easily tell this is a fly (two wings, plus knob-like halteres), recognizing that it is a Bombyliid (“bee fly”) is a much more difficult task, especially since most other Bombyliids are hairy or scaly. The species in the photo is from the Lao PDR (taken on the expedition that Greg Ballmer talks about in this issue), and is a mimic of indigenous Asian Vespid wasps in the genus *Delta*, but the genus *Systropus* has a few members that occur in the United States, where they mimic Sphecid wasps in the genera *Ammophila* and *Sceliphron*. All known members of the genus *Systropus* develop as internal parasites of the caterpillars of Limacodid moths (“slug moths”), consuming the larva entirely, but only after it spins its cocoon, so the fly completes its development in a well-protected situation: the outer layer of the cocoons of most Limacodids contain embedded venomous stinging hairs that were previously part of the caterpillar’s defenses, shed when the caterpillar began to produce its cocoon. Few vertebrate predators are bold enough to grab a Limacodid cocoon in their mouth, and given how tough and leathery the inner cocoon is, even fewer can actually penetrate it. What is most remarkable, actually, is that such a slim, fragile fly is capable of bursting its way OUT of such a tough moth cocoon!